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Director

ARIZONA DEPARTMENT OF WATER RESOURCES

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PHOENIX, ARIZONA 85012-2105

(602) 771-8500

December 1, 2009

Tucson Pima Water Study
PO Box 2344
Tucson, Az. 85701

RE: Comments on Draft Phase II Staff Report

Dear Tucson/Pima Water Study Team:

The Arizona Department of Water Resources appreciates the opportunity to comment on the Draft Phase II Staff Report which was recently released.

In the Respect for the Environment section, the report lists several goals and recommendations. Recommendation 1.2 states that *"The City and County should evaluate the effectiveness of programs and policies, within their respective jurisdictional areas and water service areas, regarding the protection of groundwater-dependent and hydro-riparian areas from groundwater withdrawal and surface water diversions. This protection will be accomplished by evaluating the feasibility of* ***prohibiting, where legally possible, new non-exempt wells and limit pumping of new exempt wells within and near shallow groundwater ecosystems…"*** (emphasis added).

Arizona Revised Statutes, Title 45, Chapters 2 and 3.1, give the Arizona Department of Water Resources express authority over the drilling of wells throughout the state, as well as the authority over providing limitations on withdrawals/recovery from wells located within the Tucson AMA. Local jurisdictions may not have the legal ability to prevent the drilling of private wells, nor of limiting the pumpage from them. Therefore as a clarification, we suggest that the language in Recommendation 1.2 be modified. A suggested correction could include language such as "…City and County should promote changes to State law regarding drilling and pumping of wells within and near shallow groundwater ecosystems."

Please feel free to contact me if you have any questions about this clarification.

Sincerely,

Jeff Tannler, Area Director
ADWR Tucson AMA
400 West Congress, Suite 518
Tucson, AZ 85701

From: William W. Altaffer [mailto:William.Altaffer@azbar.org]
Sent: Monday, January 11, 2010 7:13 AM
To: District3
Subject: Water Committee report

Dear Sharon,
Although I did not serve on the Tucson/Pima County Water/Wastewater Committee, I attended most of the meetings. I read the materials and conducted additional on-line research. Since the 9:00AM time of your joint city/county meeting is not conducive to public participation, I hope you will allow me to express some of my concerns by email. I have listed these below. Thank you for your time and attention in this matter.
Colette Altaffer
323-9827

1.) SALT: This is the proverbial elephant in the room. Although salt will have an enormous impact on our region, it was not discussed in any great detail during the two years that this committee met. According to a report written by two University researchers, the CAP will bring 200,000 metric tons of salt to the Tucson Active Management Area each year. http://www.cap-az.com/includes/media/docs/Corral.pdf (Introduction, page 1) To put that into perspective, the average rail car holds approximately 100 tons of freight. A metric ton weighs 240 lbs more than America's "short" ton. http://www.railcarmover.com/appissue.asp http://wiki.answers.com/Q/How_many_pounds_equal_a_ton

Unlike a train, however, that salt travels wherever the CAP goes. It fouls our soil and our aquifer and clogs our appliances and our kidneys. In large enough quantities, it can interfere with the biological processes needed in sewage treatment. It may eventually render our soil sterile, leaving us to live in a dust bowl.

Desalination is an expensive process. In 2004, the Bureau of Reclamation conducted a study for the city to examine the cost of treatment of CAP water and disposal of the waste brine. http://www.usbr.gov/pmts/water/publications/reportpdfs/report036.pdf The projected construction costs alone approached $400 million and the disposal of the waste product was costly, with a proposal to ship it by pipeline to the Colorado river. Because desalination is an energy-intensive process, the annual operating costs can be substantial. In 2006, Thomas McCann, an attorney with the Central Arizona Project Conservation District, conducted a legal seminar about the Yuma Desalting Plant. He explained that it would cost an estimated $30 million annually to run the Yuma Desalination plant in order to produce 78,000 acre feet of treated water.

Furthermore, as the UA researches noted (Introduction, page 2) the standard reverse osmosis process looses approximately $20 million worth of water per year.

The salt problem will be exacerbated if the Rosemont mine is allowed to move forward, since mines have a legal right to ground water and Rosemont will replace that water with CAP water.

infrastructure mistakes have combined into an almost insurmountable obstacle. Even if, by some miracle, we could gain access to more CAP water, it would require expansion of the height of the CAP canal at some point in the future. According to the cost figures that Vince Vasquez, Don Diamond's representative to the committee, obtained, that would increase the cost of CAP water from its current $700 per acre foot to nearly $15,000 per acre foot. There are few citizens who could afford water at that cost. The Southern Arizona Leadership Council's response to this, in a poorly written paper, is to grant water to those areas that can demonstrate an economic benefit. I guess that leaves the environment wanting.

You are in the unenviable position of trying to pull a rabbit out of a hat here. I hope that you, and all our elected officials, are up to the task.

Brenda Garcia

From: Angie Gelsinon [angie@kaneenpr.com]
Sent: Monday, January 11, 2010 12:28 PM
To: Nicole Ewing-Gavin
Subject: FW: E-mail from TucsonPimaWaterStudy.com - Comments

-----Original Message-----
From: noreply@tucsonpimawaterstudy.com
[mailto:noreply@tucsonpimawaterstudy.com]
Sent: Monday, January 11, 2010 12:14 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: mkiser@dakotacom.net

Comments/Questions: Dear Committee Members:

I attended many of your meetings over the past 20 months and tried to keep up with reading the white papers and documents you read with care. You've engaged in a monumental task and carried it out with affection, attentiveness, acumen and perhaps most important, humor. You've created a space where people and groups that heartily disagree with each other can come together and be heard. Thank you!

I only have a few comments, two related to a memo I prepared a few months ago for you about best practices regarding Integrated Water Resources Management.

First: In the memo and in meetings I've tried to suggest that, in keeping with international best practices for sustainable water management - which in part focus on enacting change at the appropriate scale - it would be important that regional dialogue include the question of whether we need a state water plan. Numerous states have adopted them or are in the process of adopting them; some of our own experts have called for dialogue about such a plan. Given that many state laws and policies affect our area, and that "new water sources" for now at least largely amount to the Colorado River in one way or another, it's vital that regional dialogue be placed in this wider state-wide context.

Second: I continue to think it's important that we seek out peer review, especially as regional dialogue proceeds, from outside, internationally-recognized experts who have experience creating regional, state and national water plans. This, in part, for the value of bringing in people removed from local dynamics; and in part, for the perspective they could offer, based on experience creating other plans.

Last: In future documents I think it's critical to emphasize at the outset why we need a new paradigm. We do, because this is a singular new moment when we face climate change, depleting aquifers and rivers, energy depletion and population growth and other factors all at once.

Good luck as you move forward and again, thank you.

Sincerely,

Madeline Kiser

Do you wish to receive emails and posted mail information from the Water Infrastructure, Supply and Planning Study?

Yes

Sent: Monday, January 11, 2010 7:41 AM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: rosenb4@gmail.com

Comments/Questions:
We live in a desert with dwindling water resources. A regional body to deal with water issues makes most sense.

I live in a HOA community that has common water. Because there are no water meters on individual units no one really cares about usage or dripping faucets.

If a Regional Government Water Authority had the power and/or resources to enforce retrofit for all indivual living quarters with individual water meters this could make a difference. As long as multi-family communities have common water supplies and bills water problems will continuously plague us. This would be only one issue for a Regional Water Authority to resolve.

Resolution of water issues requires a regional perspective to sustain this drying community.

Do you wish to receive emails and posted mail information from the Water Infrastructure, Supply and Planning Study?

Yes

Sent: Monday, January 11, 2010 11:06 AM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: SMWronko@cox.net

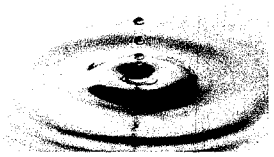
Comments/Questions: My issue...wastewater rates-
I believe that charging me for "something" that I do not use is illegal. I own a single family residence and live by myself. I maintain a garden and have outdoor landscaping that require water. Please advise me on where I may file a more formal and detailed complaint.
Thankyou,
Steven M. Wronko

Do you wish to receive emails and posted mail information from the Water Infrastructure, Supply and Planning Study?

No

Tucson Regional Water Coalition

Prosperity - Sustainability - Community



January 11, 2010

Arizona Builders Alliance

Alliance of Construction Trades

Marana Chamber of Commerce

Metropolitan Pima Alliance

Northern Pima County Chamber of Commerce

Safe and Sensible Water Committee

Southern Arizona Home Builders Association

Southern Arizona Leadership Council

Tucson Association of Realtors

Tucson Metropolitan Chamber of Commerce

Tucson Utility Contractors Association

Tucson Hispanic Chamber of Commerce

Pima County Board of Supervisors and City of Tucson Mayor & Council,

The Tucson Regional Water Coalition ("the Coalition") is a group of business and trade organizations collectively representing over 250,000 jobs in the Tucson region. The Coalition's membership includes Arizona Builders Alliance, Alliance of Construction Trades, Marana Chamber of Commerce, Metropolitan Pima Alliance, Northern Pima County Chamber of Commerce, Safe and Sensible Water Committee, Southern Arizona Homebuilders Association, Southern Arizona Leadership Council, Tucson Association of Realtors, Tucson Metropolitan Chamber of Commerce, Tucson Utilities Contractors Association, and Tucson Hispanic Chamber of Commerce. The member organizations recognize the importance of water to our local and statewide economy, and have organized to actively engage policymakers on critical water management issues.

The Coalition has closely monitored and when able participated in the City/County process. Our efforts to engage and contribute to the process have included regular attendance of Oversight Committee meetings, formal correspondence on key issues, a presentation during Phase I of the Coalition's foundational principles, the Phase II white paper and panel discussion on the economic value of water, as well as several meetings with City and County staff. The Coalition's participation has consistently focused on: 1) establishing an inclusive and transparent regional planning process; 2) recognizing the importance of water to regional economic growth and security; and 3) creating high-quality information to rationalize dialogue and decision-making.

We have reviewed the Phase II Report and evaluated Staff's individual recommendations. Evaluating the report on its merit, there are 25 recommendations that we support, 14 that we oppose, and 17 that we have not taken a position. Our full evaluation of Staff's recommendations is provided as an attachment. We have additional concerns with the tone, content and general direction of narrative portions of Staff's report. In light of our outstanding concerns, we ask that the City and County's elected bodies defer formal adoption of the draft resolution and report. However, if the City and County choose to accept the Phase II Report into the record at this time, the Coalition asks that any resolution or motion include the following amendment:

> *Now therefore, be it resolved that the Pima County Board of Supervisors and the City of Tucson Mayor and Council hereby accept into the record the City/ County staff and Oversight Committee recommendations as set forth in the Phase II Final Report. All portions and sections of Staff's report that are not numbered recommendations shall not be used to provide policy guidance and are not endorsed by the Pima County Board of Supervisors and City of Tucson Mayor and Council.*

4400 E. Broadway, Suite 307, Tucson, AZ 85711 Phone: (520) 327-7619 Fax: (520) 327-7613

Additionally, the Coalition evaluated the Oversight Committee's principles and recommendations. We believe the Oversight Committee's work provides additional direction that must be considered before moving forward on a number of Staff's recommendations. If the City and County choose to accept the Phase II Report into the record at this time, the Coalition asks that any resolution or motion include the following amendments:

> *Now therefore, be it resolved that the Pima County Board of Supervisors and the City of Tucson Mayor and Council, in support of Oversight Committee principles and recommendations set forth in the Phase II Final Report, direct City and County Staff to:*
>
> 1) *Manage water with due consideration to its economic value and importance to regional economic development, studying all costs and benefits of water and wastewater policies in order to establish baseline facts concerning the net outcomes of all policy options or projects under consideration. This shall include a determination of the cost to replace water entitlements proposed for reallocation to environmental restoration prior to moving forward on Staff recommendation B.5.1 (Conservation Effluent Pool), and plans to finance acquisition of replacement supplies such that costs are shared by all beneficiaries.*
>
> 2) *Take a regional approach to water and wastewater in the Tucson AMA, committing resources to ensure a regional process is convened immediately. The regional process shall involve all jurisdictions, private water utilities, and other stakeholders in deliberations, and shall be similar to the RTA model. The regional process shall be led by a consortium of non-governmental entities and include technical assistance from Pima Association of Governments, Arizona Department of Water Resources, and Central Arizona Water Conservation District.*
>
> 3) *Conduct analysis outlined in Staff's recommendations A.3.1 and A.3.2 immediately to determine which "sub-regions" are appropriate to extend Tucson Water infrastructure to provide water service. Analysis shall be timely, address equity, and be updated periodically. Analysis shall focus specifically on near-term economic and fiscal benefits associated with extending service to commercial and industrial parcels located within ½ mile of existing infrastructure, as well as the implications of denying service. Following completion of the analysis, the City shall adopt a formal policy regarding extension of water service outside the "obligated area" and it shall replace the current interim policy.*

The Coalition is encouraged by the regional nature of many recommendations proposed by the Oversight Committee and Staff. We are hopeful that the much anticipated regional process will move forward quickly. The Coalition has consistently voiced concerns regarding the limited participation rights granted impacted parties during Phases I & II. Cooperative regional water planning is a central element to our community's economic development efforts, and sends a positive message to those looking to invest and/or relocate in the Tucson region. We strongly recommend the City and County commit to a truly cooperative process focused on maximizing economic benefits derived from use of the region's available water supply.

Sincerely,

Tucson Regional Water Coalition

PHASE II City/County Staff Recommendations	Agree (25)	Disagree (14)	Explanation
Section A - Comprehensive, Integrated Planning			
1.1 The City and County should require and incent new development and redevelopment projects to implement smart growth principles and concepts and contribute to a sustainable urban form including: • Mix of uses • Open space preservation • Higher densities/density by design • Housing choice • Transportation options • Access to jobs and services • Reduced water and energy consumption • Infrastructure efficiencies A variety of policy and legislative tools as well as incentives should be developed to implement these concepts including: • General and Comprehensive Plan Policies • Land Use Code changes • Other legislative actions • Incentives		X	Not enough time was spent on these issues during City/County Water Study to warrant detailed recommendations in these areas. Recommend deleting this section from the report and deliberate on these important issues in the Regional Visioning Process and/or during the updates to General Plan and Comp Plan.
2.1 The City and County should take steps to encourage growth and new development in areas that are within or adjacent to the existing built environment, are outside of the conservation land system, and are identified as most suitable for development which include the following: • Infill into the existing built environment (highest priority) • Within the Houghton corridor • Within the Southlands area • Within the Southwest area Revitalization of downtown as well as infill and reinvestment in the built-up areas of the community (inside and outside city limits) should be the highest priority for locating future growth in order to make use of existing infrastructure and minimize the consumption of raw land.			No position. Support identified growth areas. Restating those growth areas agreed upon by City and County is sufficient for discussion about urban form for this study. Should recognize that Marana, Oro Valley, and Sahuarita are also known "growth areas."

	Infill should be done in a manner that is economically, environmentally, and socially advantageous. A variety of policy and legislative tools as well as incentives should be developed to encourage growth in these locations including: • General and Comprehensive Plan Policies • Land Use Code changes • Other legislative actions • Differential impact fees • Incentives City and County staff should involve the public in discussion about location of growth and tools to direct growth to these areas as part of their updates to the City General Plan and County Comprehensive Plan.			
2.2	The City and County should influence the location of future growth through where infrastructure is built and public services are provided. The City and County should establish a joint land use/capital improvement planning staff team to plan for the timing, sequencing, location and funding of infrastructure and public services to serve identified growth areas. Financial and infrastructure planning should occur ahead of development pressures. For infill areas, policies should focus on planning for and funding needed investments and improvements that must go along with higher densities and redevelopment. The County has already begun an effort to inventory the planning related activities of its various public works departments, and this could be replicated for the City prior to a joint process getting underway. Updates to the City General Plan and County Comprehensive Plan should set forth policy that requires this process take place.			No position. Support financial and infrastructure planning to occur ahead of growth to facilitate absorption of growing population.
2.3	The City and County should influence the location of future growth through the acquisition of open space. With the support of voters, the County will continue funding the acquisition of natural areas for conservation, recreation, and the protection of water resources. Natural	X		

	preserves assist in defining the urban form, as well as providing multiple benefits such as recreational opportunities, conservation of water resources and natural floodplain functions, and protection of scenic views. In some cases, purchasing land outright or through conservation easements is the most realistic way to preserve areas not suitable for development.			
2.4	The City and County should continue to work with PAG to do growth and urban form scenario modeling on a regional level (including Marana, Oro Valley, Sahuarita, South Tucson, the Tohono O'odham Nation, the Pascua Yaqui Tribe, the San Xavier District and others) similar to the modeling done for the City/County service area in the Growth and Urban Form technical paper. This work could help inform or be done in conjunction with the emerging regional visioning process and could help inform the City General Plan update and County Comprehensive Plan update. Ideally this analysis should also be done at the Southern Arizona and Sun Corridor scales.	X		
3.1	Outside of the Tucson Water Obligated Service Area, in unincorporated Pima County, the City and County should work together to conduct comprehensive water resource planning to identify sustainable water resources to serve these areas. Water resources should be looked at in a comprehensive manner with the goal of making efficient use of water and matching up sources with needs. This planning effort should address the use of potable, reclaimed, effluent, stormwater, rainwater, and graywater. The City and County should evaluate the life-cycle cost and triple bottom line of decentralized wastewater treatment versus centralized systems in light of energy demands and efficiencies, and integration with recharge and reclaimed water systems. As an example, the City and County should work cooperatively to explore the development and operation of reclaimed water systems and recharge facilities at the County's sub-regional wastewater reclamation facilities.		X	Disagree with City's interim policy regarding new service outside "obligated area." Agree that City and County should identify those agreed upon "growth areas" and/or "infill areas" that make sense to extend Tucson Water infrastructure.
3.2	The above described planning effort should help inform future City considerations of extending the obligated service area. These expansion		X	Disagree with City's interim policy regarding new service outside "obligated area." Agree that City and County should identify those

	decisions should be done on a sub-regional basis (vs. a parcel-by-parcel basis) in advance of specific water service requests. Any decision to expand the obligated area should be formalized through Mayor and Council policy. The following factors should be taken into account in making policy decisions regarding expansion of the obligated area within specific sub-regions. • Suitability of growth area • Affect of extensions on future water resource needs for the City's existing obligated area • Fiscal sustainability of development and potential for future annexation • Appropriateness of timing/phasing of development • Economic impact/benefits • Quality and sustainability of urban form • Environmental implications of development • Environmental implications of not providing water service • Social equity and social justice considerations.			agreed upon "growth areas" and/or "infill areas" that make sense to extend Tucson Water infrastructure. Policy must be developed to take us beyond an "Obligated to Serve" policy designed to force annexation. Must understand near-term economic and financial impacts of denying service to parcels in regional growth areas and/or those parcels that are clearly "infill". Must also consider the environmental impacts associated with groundwater pumping that are likely to occur if service is denied. The bar to qualify for Tucson Water service must be lowered
3.3	In addition to the comprehensive, long range planning efforts described above, the City and County should continue to assess and track the impact of individual developments on water resources: • The County should continue to implement the recent amendment to the Water element of the Comprehensive Plan providing the Board of Supervisors with the necessary water resources information concerning individual development requests. • The City should continue to implement the "water checkbook" method of tracking and communicating to the Mayor and Council how much renewable water Tucson Water has available to support proposed new developments or businesses.		X	County Water Resource Element should be rewritten in 2010 Comp Plan Update to reflect unwillingness of City to extend service, to recognize effluent as a renewable water supply, to delete term "renewable and potable", to recognize CAGRD membership as renewable water supply, to recognize that every water provider in the Tucson AMA (including Tucson Water) withdraws water outside the area of hydrologic impact where water is recharged.
3.4	The City should continue to pursue discussions with other water providers regarding potential for wheeling and/or recharge agreements. As an example, Tucson Water and Metro Water/Hub should discuss the potential for wheeling of a portion of metro's CAP allocation to Metro/Hub through Tucson Water's integrated potable water distribution system at a cost of service price, in order to reduce	X		Consistent with Coalition Principle "Support shared use of community infrastructure through cost-effective wheeling agreements..."

Metro/Hub's groundwater pumping in the immediate area.			
3.5 The City and County should work together with other jurisdictions to support regional solutions to address the hydrological disconnect between where water is being pumped and where it is being replenished.	X		Consistent with Coalition Principle "Support shared use of community infrastructure through cost-effective wheeling agreements..."
4.1 Future development should be evaluated in terms of fiscal sustainability from both the capital (initial construction of infrastructure) and operating (ongoing public services and maintenance of infrastructure) perspectives to ensure that new development is self-sustaining and not subsidized over the long term by pre-existing residents and businesses.		X	Anti-growth tone that fails to recognize significant economic and financial benefits associated with population growth (see multiplier effect), including job creation, increased wages, increased sales tax, increased property taxes, increased income tax, etc. Also, fails to recognize significant impact fees and hook-up fees currently in place to ensure that new residents pay proportionate share of the costs.
4.2 The Tucson Water Department and the Regional Wastewater Reclamation Department should continue managing their water/wastewater infrastructure capital improvement programs in a manner that is consistent with the latest nationally accepted industry best practices and continue to ensure that each year's water/wastewater Financial Plan adequately and demonstrably provides mechanisms so that "growth pays for growth."			No position. However, does seems to suggest that growth does pay for growth through currently adopted impact fees and hook-up fees.
Section B – Respect for the Environment			
1.1 The City and County continue to preserve existing riparian areas to the maximum extent possible through land acquisition, regulatory land use controls that limit encroachment into floodplains and riparian habitat, and education and outreach.		X	Use of "to the maximum extent possible" is too strong and fails to meet sustainability criteria of balancing competing interests and/or tradeoffs. While protection of riparian habitat is appropriate (especially through land acquisition), environmental protection needs to be balanced against economic needs such as increased land utilization in urban areas. City and County floodplain and riparian codes should have different levels protection for areas targeted for urbanization (or that are already urbanized) versus those sensitive environmental areas targeted for protection.
1.2 The City and County should evaluate the effectiveness of programs and policies, within their respective jurisdictional areas and water service areas, regarding the protection of groundwater-dependent and hydro-		X	Focus needs to be on providing cost-effective alternatives to groundwater use for those who are near environmentally sensitive areas (i.e. wheeling agreements or simply providing service).

	riparian areas from groundwater withdrawal and surface water diversions. The city and county should promote changes to state law regarding drilling and pumping of wells within and near shallow groundwater ecosystems.			Environmental benefits are regional in nature and costs should be shared by all beneficiaries, which could mean subsidies or cost-sharing to take users off of groundwater (see use of GO Bonds for reclaimed line extensions).
2.1	The City and County should work with stakeholders to develop a shared regional policy for addressing those regulatory compliance projects that require water for short-term or long-term (permanent or seasonal) establishment.		X	Disagree with linking regional water supplies to Federal Section 10 Permits (HCPs). More cost-effective to purchase open space for mitigation credits than to mitigate by way of riparian restoration that are more costly. Effluent supplies dedicated for environmental restoration and reallocated from municipal providers' portfolio should be replaced and costs should be shared by all beneficiaries through volumetric fees on water and/or wastewater bills.
2.2	The City and County should work with stakeholders to develop a regional collaboration for riparian restoration. This effort should include exploring or continuing to pursue: • Enhancing the value of in-lieu mitigation funds received for compliance with local watercourse protection ordinances to fund restoration activities; • Opportunities to partner with non-governmental entities that operate mitigation banks and/or undertake restoration activities; • Continue to evaluate existing County and City-owned lands for suitability for environmental conservation and restoration; • Opportunities to secure grant funding for environmental restoration; • Partnering with experts to identify long-term water quality implications for restoration areas, such as the impacts of higher salinity of CAP, effluent, and reclaimed water.		X	Local watercourse protection ordinances should not be used to exact resources from projects in growth areas where urbanization is desired. Watercourse and riparian ordinances should be written with varying level of protection/requirements for growth areas versus environmentally sensitive areas.
2.3	The City and County should continue to work with ADEQ to develop water quality standards and designations specifically for habitat restoration.			No position.
3.1	The City and County should pursue cost-effective, multiple-benefit, broad scale public projects that utilize reclaimed water to accomplish			No position.

goals such as aquifer augmentation, riparian restoration, habitat protection, environmental enhancement, turf irrigation, and recreational opportunities in combination with flood control and stormwater management facilities, parks and trails, and water recharge and wastewater disposal activities. For example by: • Incorporating ecosystem restoration adjacent to wastewater treatment facilities; • Exploring ways for recharge facilities to support restoration; • Retrofitting existing large stormwater detention basins to support riparian habitat; • Including environmental restoration opportunities as a component in all new stormwater management projects, so that optimal amounts of stormwater are retained for reuse before being discharged to the respective stormwater conveyance systems; and • Incorporating, where possible, rainwater harvesting and ecological amenities into other public projects. • Development of a joint policy that incorporates rainwater harvesting, stormwater detention, non-potable water use, recreation, and ecological amenities to the extent feasible in Capital Improvement Projects budgets, especially in open space areas.			
3.2 The City and County should identify areas within the existing built environment characterized by an abundance of impervious surfaces and identify opportunities for additional stormwater management. This would have water quality, stormwater management, and environmental benefits. To accomplish this, the City and County would need to develop a plan that identifies site-specific locations and standards for implementing stormwater management projects.			No position.
4.1 The City and County should advocate for changes to state statutes to grant full recharge credits to the Secretary of Interior for effluent used to sustain the flows in the Santa Cruz River and the riparian corridor.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies

			should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.2 The City and County, and other regional partners, should develop a "Lower Santa Cruz River Management Plan" that would identify the most effective and sustainable means for using effluent and other renewable water supplies to support and enhance valuable habitat in the Santa Cruz River corridor.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.3 As part of the Management Plan, and building upon the Regional Flood Control District's current cooperative efforts, the City and County should develop partnerships with other effluent rights holders and stakeholders to use our growing collection of pilot restoration projects to demonstrate their potential to maintain and enhance aquatic and riparian habitat along the Santa Cruz River. The City and County can then identify a portfolio of multi-purpose projects for long term implementation in the context of the Management Plan. For example, the emphasis should be on areas such as the reach between the Rillito and the Canada del Oro confluence, where stormwater flows are more concentrated.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.4 The City and County should incorporate into both in-channel and off-channel recharge facilities features which also use the water to support riparian and/or aquatic habitat.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and

			the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
5.1 The City and County will finalize the IGA for the Conservation Effluent Pool (CEP), which will annually provide up to 10,000 acre feet of effluent for environmental enhancements. This agreement will be delivered to the City Mayor and Council and the County Board of Supervisors for review and approval.		X	Do not finalize CEP until accurate accounting of specific costs and benefits—including opportunity costs—associated with reallocating effluent from municipal providers portfolios for environmental restoration. Also, To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
5.2 The City and County will work with stakeholders and other resource experts to link water conservation to the protection of future supplies and to environment preservation/restoration by identifying mechanisms to reserve water saved through conservation programs for specific environmental uses/projects. This will allow community members to directly contribute to environmental protection and enhancement as a result of their individual actions to reduce their use of potable water. It would also provide a mechanism to develop a water source, beyond the CEP, that can be dedicated to projects with an environmental benefit.	X		The so-called Conserve to Enhance Program should be used instead of CEP—not in addition to it. Effluent should be reallocated for environmental restoration only once the community understands all costs and benefits and is willing to pay associated replacement and/or opportunity costs in order to enjoy benefits.
Section C – Water Supply			
1.1 As the ADD Water stakeholders' process proceeds, local water providers and users should maximize opportunities to acquire ADD Water Supplies and explore options to finance these additional supplies when they become available.	X		Agree. Consistent with Coalition Principle "Collectively maximize purchase and underground storage of additional surface water and/or imported groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns"
1.2 All Municipal and Industrial priority CAP allocations will be vulnerable in times of severe shortage on the Colorado River. Therefore, Tucson Water should take the necessary steps to have additional, more reliable water resources to reinforce and buttress its CAP water allocation to serve growth in the existing built environment and yet undeveloped	X		Agree. Consistent with Coalition Principle "Collectively maximize purchase and underground storage of additional surface water and/or imported groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns"

	areas of Tucson Water's Obligated Service Area.			
1.3	The City and County should continue to jointly plan for the acquisition of additional supplies to maximize shared system efficiencies and to achieve their respective sustainability goals. These goals should collectively take into account social, economic, and environmental factors to ensure that all costs and benefits are taken into account.	X		Agree. Consistent with Coalition Principle "Collectively maximize purchase and underground storage of additional surface water and/or imported groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns" and Coalition Principle "Support shared use of community infrastructure through cost-effective wheeling agreements…to achieve greater integration, reliability, flexibility, and reliance on renewable supplies throughout the region."
2.1	The City and County should continue to balance the uses of effluent, dedicating it to the reclaimed system, to environmental purposes, and for aquifer augmentation/recharge credits.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
2.2	Continue to implement ROMP improvements as currently planned and budgeted.	X		
2.3	The City and County should remain vigilant about water quality by continuing efforts at source control, maintaining proactive system monitoring, conducting public outreach & education, and staying abreast of research and regulatory developments related to emerging contaminants in water and wastewater systems.			No position.
2.4	The City and County should evaluate the use of reclaimed water for particular sites with the goal of maximizing the community's overall water resource portfolio by matching up the most effective and	X		Support maximization of effluent for Assured Water Supply purposes. Community should consider wheeling agreements and/or subsidies that reduce costs of reclaimed water to reduce groundwater

resource-efficient water source with a particular site and its needs.			dependency/use where there is a public benefit (i.e. recreation and/or environmentally sensitive areas).
2.5 Tucson Water and Pima County Wastewater should continue to assess the potential water supply benefits as well as the adverse consequences of expanded gray water use within their respective service areas.	X		
2.6 The City of Tucson and Pima County will continue encouraging rainwater harvesting on both residential, commercial, and government properties to defray the high costs associated with stormwater management, and to develop a new source of local, renewable water supply.		X	More research and analysis should be performed before broad endorsement of rainwater harvesting at a variety of scales. Recommend understanding the costs of rainwater harvesting as a supply alternative before considering additional benefits of stormwater management. Need to have credible/sound/objective analysis on this subject before and understanding alternatives before jurisdictions either encourage or require.
3.1 Refine policy and regulations governing the accrual of groundwater credits to provide incentives to groundwater turf users proximate to reclaimed lines to convert to reclaimed water in lieu of pumping.	X		
3.2 Develop alternative operational and permitting strategies to achieve a Class A+ or equivalent water supply for the reclaimed system.			No position.
3.3 The City and County should continue to work with ADEQ and ADWR to develop water quality standards, permits and designations specifically for riparian projects.			No position.
4.1 Expand financing options, including considering the use of General Obligation Bonds to pay for extensions to the reclaimed system without relying solely on paying customers and revenue bonds.	X		Use of GO Bonds is appropriate for extensions of reclaimed system, especially where there is a public/regional benefit (i.e. supports regional environmental goals). Allows all beneficiaries to share associated costs.
4.2 Maintain the current policy that a private customer with a revenue source (e.g. golf courses, industrial) who can pay the full costs of reclaimed water should pay; explore options to encourage potential customers who currently have no financial incentive to join the system to join, such as phased-in rates and expanded potable water ratepayer subsidies.	X		Agree. Subsidies that result in public/regional benefit are appropriate and allow all beneficiaries to share associated costs.
4.3 Work to lower the costs of operating the reclaimed system through efficiency improvements.	X		

4.4 Incorporate the consideration and evaluation of the use of reclaimed water in specific developments into the City and County development review processes.		X	Extension of reclaimed system should be initiated by applicant—not City and County review process. Reclaimed usage is primarily appropriate for large turf users or other large volume users. Not appropriate for individual residential users. Better for non-potable supplies with possible health concerns to be managed by landscape and/or irrigation professionals.
4.5 Tucson Water and Pima County will continue to evaluate opportunities to expand reclaimed water and remediated groundwater use to meet both municipal and environmental-enhancement supply needs.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.6 The City and County should increase the amount of their effluent allocations used in the reclaimed system			No position. Support maximization of effluent for Assured Water Supply purposes. Community should consider wheeling agreements and/or subsidies that reduce costs of reclaimed water to reduce groundwater dependency/use where there is a public benefit (i.e. recreation and/or environmentally sensitive areas).
4.7 Identify, prioritize and pursue additional reclaimed customers based on the following criteria: • Proximity to existing reclaimed infrastructure • Cost to join the system • Energy, operating and maintenance costs • Potable and groundwater savings • Opportunity to mitigate environmental impacts of existing groundwater pumping • Turf areas that provide greatest public benefit • Availability of other water resource options			No position. Support maximization of effluent for Assured Water Supply purposes. Community should consider wheeling agreements and/or subsidies that reduce costs of reclaimed water to reduce groundwater dependency/use where there is a public benefit (i.e. recreation and/or environmentally sensitive areas).
5.1 Continue multi-pronged planning approach that includes diversification of water supplies, increased demand management, and development and maintenance of necessary infrastructure.	X		Agree. Consistent with several Coalition Principles.

5.2 Use scenario planning as a tool to assess the changing planning environment including the potential for extended drought or permanent climate change, and other types of uncertainties, such as new technology, changing regulations, or altered patterns of development in the Tucson area.	X		Agree. Consistent with Coalition Principle "Concerns regarding evolving and/or uncertain conditions should be addressed through iterative risk assessments and decision-making processes, systematically reevaluating risk according to potential financial impact to the region and probability of occurrence."
Section D – Demand Management			
1.1 The City and County partner with ADWR and other stakeholders in collecting uniform data on existing water use patterns to identify conservation potential and to support development of water efficiency and conservation goals. Measures are communicated through the coordinated information campaigns to ensure widespread public awareness of progress towards goals. Potential water use trend evaluation elements include: • indoor versus outdoor water use, • lot size • persons per household • commercial and industrial accounts • non-potable use vs. potable use	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent..."
1.2 The City of Tucson and Pima County continuously improve the effectiveness of their conservation programming through integrated resource planning techniques, including triple bottom line analysis and evaluation of cost / benefit economic thresholds. Results of evaluations are used to revise programs as needed.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent..."
1.3 In the face of uncertainty related to drought and climate change, the City and County should employ an adaptive planning approach that incorporates the following: • Bringing experts together to brainstorm current and future vulnerabilities under range of scenarios; • Scenario planning as a tool to assess the changing planning environment including the potential for extended drought or permanent climate change;	X		Agree. Consistent with Coalition Principle "Concerns regarding evolving and/or uncertain conditions should be addressed through iterative risk assessments and decision-making processes, systematically reevaluating risk according to potential financial impact to the region and probability of occurrence."

• Periodic review and frequent updates to the Drought Response Plans to incorporate the latest information on drought and climate change; • Integrating climate change impacts over time to re-define "normal conditions" when assessing drought; • Evaluation and consideration of the social and financial impacts of drought on the utilities and their customers and ways to address them; • Employing conservative approaches and a multi-pronged preparedness strategy that includes diversification of water supplies, demand management, and development and maintenance of necessary infrastructure to preserve options or the future.			
2.1 The City of Tucson and Pima County should evaluate options for working with regional stakeholders to establish common, measurable water efficiency* and water conservation goals community-wide. Although the City and County can initiate the dialogue, ultimately this goal needs to be advanced through a regional process. Such a process might be convened by an existing regional entity such as Pima Association of Governments (PAG), Southern Arizona Water Users Association, the University of Arizona Water Resources Research Center, and/or Water CASA.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent..."
2.2 Building from the community-wide water efficiency goals, City of Tucson and Pima County, in cooperation with regional stakeholders, develop a menu of water efficiency and water conservation options such as targeted strategies, policies, actions, regulations, and programs.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent..."
3.1 A joint City/County staff team, working with stakeholders, reviews their existing water conservation regulations for consistency with water efficiency goals. Where appropriate, the team recommends new requirements with a priority focus on landscape requirements that maximize non-potable water sources and water harvesting techniques. The team also evaluates the feasibility and benefits of • Developing joint landscape, building and zoning standards that increase the potential for on-site capture, storage and use of		X	All water conservation and management decisions should be subject to rigorous cost analysis that compares alternatives before finalizing decisions. This recommendation does not appear to be supported by analysis.

	rainwater. Incentives to residents, Home Owners Associations and builders should be considered *(this is further described under Goal 4, Recommendation 4.1)* • Updating standards for high efficiency toilets. • Incorporating the concepts of structured plumbing including trunk, branch twig piping systems, and pipe insulation into the plumbing code. • Developing common green building standards • Continuing to coordinate the review and update drought ordinances • Explore the possibility of requiring new facilities funded by County or City bonds to maximize LEED Silver water conservation credits.			
4.1	The City and County, working in cooperation with regional stakeholders, should gather public input regarding water efficiency measures and goals and consider it in the planning and decision making process. An initial step should be to define a list public opinion survey questions to explore public perceptions of quality of life trade offs associated with water efficiency measures and preferred strategies to achieve shared goals. Methods for gathering public input on these questions should also be explored.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
4.2	The City of Tucson and Pima County should explore the feasibility and benefits of consolidating existing programs and fostering regional approaches and partnerships for advancing water conservation and drought education, communications, pilot projects, and training.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
5.1	The Pima County Regional Flood Control District in cooperation with the City of Tucson and other regional stakeholders develops design guidelines/standards to maximize the potential for use of stormwater at the neighborhood scale. Supporting vegetation using harvested stormwater will eliminate the need for some landscape watering. Stormwater flow paths can be depressed to encourage the potential for infiltration and native vegetation can be planted that will thrive in these depressed flow paths. Such a strategy will have the additional benefit of reducing flood peaks		X	More research and analysis should be performed before broad endorsement of rainwater harvesting at a variety of scales. Recommend understanding the costs of rainwater harvesting as a supply alternative before considering additional benefits of stormwater management. Need to have credible/sound/objective analysis on this subject and understanding of alternatives before jurisdictions either encourage or require.

	and improving stormwater quality. To accomplish this, the City and County will review existing policies and regulations and: • Identify opportunities to increase the incidence of water harvesting in private developments through new or expanded incentives and improved consistency between City and County requirements; • Evaluate how development standards and HOA regulations may need to be modified to accommodate this strategy; • Develop retention/detention standards that allow these areas to be better utilized as mini-restoration sites, including maintenance standards and siting of basins within a development/project; and • Develop restoration standards that encourage the creation of higher-value habitat areas without sacrificing the retention/detention function of the basins.			
5.2	The Pima County Regional Flood Control District, in cooperation with the City of Tucson, continues to conduct research and analysis on estimated volumes of harvested rainwater available at the lot scale and costs and benefits of water harvesting as a source of additional water supply and as a stormwater management tool.	X		More research and analysis should be performed before broad endorsement of rainwater harvesting at a variety of scales. Recommend understanding the costs of rainwater harvesting as a supply alternative before considering additional benefits of stormwater management. Need to have credible/sound/objective analysis on this subject and understanding of alternatives before jurisdictions either encourage or require.

Sent: Wednesday, January 13, 2010 1:26 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: jedtaz@cox.net

Comments/Questions: Comments on City/County regional water plan

The plan needs specific definitions for "smart growth" and "sustainability."

Sustainable Urban Forms

For the goal of "Lower water consumption per household" be sure than implementation is confined to voluntary methods with positive incentives rather than punitive command and control regulations.

Any positive effect of lowering greenhouse gas emissions is not supported by empirical scientific evidence, so should not be part of the plan.

Downzoning may cause liability to county taxpayers.

Riparian preservation.
The City/County must also preserve property rights regarding private wells, or be prepared to pay for any decrease in property value.

The City/County must also make sure than riparian preservation does not diminish water availability to residential users. Put people first.

The City/County must also be cognizant of other uses for riparian areas such as the mining of sand and gravel to maintain and expand our infrastructure.

Do exploration drilling and studies to explore possible resources below the currently used groundwater reserves.

To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: leonafdavis@gmail.com

Comments/Questions: After reading Tucson Water's 2008 Update as well as the Phase II Report from the City & County Water and Wastewater Infrastructure, Supply and Planning study, I would like to point out how altering Tucson Water's rate structure would meet several of the goals identified in one fell swoop. Per the 2008 report, one of the two variables affecting our water sustainability is GPCD, currently at an unnecessarily high 177 GPCD. In past years, Tucson Water has approached this issue through well-orchestrated but largely ineffective educational programs. The report states that water-use efficiency, brought about through these educational programs, has been instrumental in maintaining a low water usage rate. Alternatively, I would propose that creating a highly-tiered usage rate would drive an even more dramatic increase in water use efficiency.

As a conservationist and part of the water harvesting business community in Tucson, I have seen that even the most environmentally-minded Tucsonans are still primarily concerned with costs. Our current water rates are artificially low, and the tier system is too gradual to make a serious difference to any single family residence budget. If this structure were to change to include a low setup fee, low $/CCF charge for 0-2 CCFs, and steeply tiered rates from there on up, it would finally make financial sense for ratepayers to practice conservation. No educational campaign would be nearly as effective as this kind of rate change. Additionally, this would be an example of a "conservation program" that would pay for itself, while keeping rates low for water-conservative ratepayers. Most importantly, the associated reduction in GPCD would further ensure Tucson Water's long-term sustainability as a water provider, both by ensuring sustained revenue and decreasing stress on all current water sources.

Thank you for your consideration of these comments.

Sincerely,

Leona Davis
leonafdavis@gmail.com
520-205-0067

Margot W. García, PhD, AICP
3100 E. Calle Portal
Tucson, AZ 75716

January 22, 2010

Mayor and City Council
City of Tucson
Tucson, AZ 85701

Greetings,

I was very disappointed that the Mayor and Council failed to adopt the Phase II report of City/County Water and Wastewater Infrastructure, Supply and Planning Study Oversight Committee at its January 12, 2010 joint meeting with the Pima County Board of Supervisors.

Over the last twenty-one months, I have attended about half of the Oversight Committee's meetings. Adopting this report does not require you to do anything, other than to move the study process forward as envisioned at the creation of this joint effort. In addition the motion to delay was a rebuke of the intensive and dedicated work of a number of citizens as well as city and county staffs.

I was especially dismayed at the statements that the report of Phase II was short on facts. This is disheartening because it shows a lack of understanding of the process. Phase I was an inventory of data about the water and wastewater systems. It was filled with technical information, facts about the systems as well as the regional context. Phase II was an inventory of policies and values - what is important to the citizens of the Tucson basin. The committee members debated at length the definition--and implications of that definition-- of a sustainable community. For me, a sustainable community is one that has a vibrant economy that is sustainable in the context of the natural resources that exist in the region and is ongoing for generations.

For instance, in the Tucson region, we know that sunshine is abundant and water is scarce. We know that we have a multi-ethnic, multi-cultural history that is very attractive to tourism. We know that we have a climate that attracts visitors in the winter when it is cold and snowy elsewhere. The Tucson Gem and Mineral Show is a perfect example of bringing people from all over the world to this locale and encouraging them to do business here. Our hotels, motels, and individual's houses are full of buyers, sellers, and admirers of the wonders of the world of gems and minerals. What other such events could be encouraged that would be so profitable for the community?

Providing sustainable supplies of water to the community, into the future, is a complex issue requiring the balancing of human and environmental needs. I hope you will not think of it as a tradeoff between the environment and humans, because the environment provides many services to the human population that are often not recognized - among them precipitation in its many forms. How our community grows and develops influences the cost of that development. Since the late 1970s, the cost of growth has been studied extensively with cost/benefit studies. It is not rocket science to know that running major water and wastewater pipelines (and roads) past vacant land is not using our capital in an efficient manner. Planning is necessary for efficient and smooth development that benefits the whole community at a price we can afford.

I want to emphasize that the oversight committee and staff went to extraordinary lengths to make the information presented and the deliberations open and transparent. There was an open call to the audience at the beginning of every meeting for people to present ideas. There was a time at the end for observers to comment on discussions that occurred during the meeting. The meetings were videotaped and available on the website. The technical reports were all available for everyone to download and read. Drafts of the final reports of Phase I and II were circulated at community meetings so that citizens could comment on them orally, in writing or postings on the website. The fact that some groups chose not to come and only present their ideas at the last minute should not invalidate the hundreds of

hours spent by those of us who followed and attended the meetings. There has been ample opportunity for people, groups, and ideas to be heard.

I urge you to applaud the hard work of your committee, the city and county staffs, and vote to approve the report and to move forward to the next phase. Don't let this amazing amount of work and effort die.

Sincerely,

Margot W. Garcia

Report on water points to need for a state plan

A report was released recently at a joint meeting of the Tucson City Council and the Pima County Board of Supervisors. The report has the potential to dramatically change the future of Tucson and of our state.

Dozens of city and county employees and the 12 members of the Water and Wastewater Infrastructure, Supply and Planning Study Oversight Committee who wrote the report invested uncountable hours in attending public meetings, reading stacks of technical water documents and above all creating space for hundreds of citizens holding diverse opinions to speak about what we all cherish: our desert and our children.

The committee was commissioned 20 months ago by the mayor and council and the Board of Supervisors to launch a process that is evolving into regional dialogue about our water future at this historic new moment.

The climate is shifting, population is growing, ecosystems are showing signs of stress, aquifers and rivers are depleting, and energy supplies are becoming variable - all at once. Our condition here in the Southwest is considered one of the planet's test cases for vulnerability. We must face new times with new eyes and a new way of looking at and understanding water - a new water paradigm. This is what the City/County Water and Wastewater Study Phase II Final Report calls for.

Its opening paragraphs suggest that - just like cities everywhere, especially those located in dry areas - we need to match aggregate uncertainty with sustainability principles that form the core of what is called, in varying terms, Integrated Water Resource Management. These principles amount to understanding that if we are to care for our children and provide them with jobs in the future, we need to care for the rivers and aquifers they and industry depend on.

The "economy vs. environment" rubric presents a false divide. Around the world as rivers and aquifers run dry businesses are facing added costs trying to compensate for what nature gave for free. Ultimately, losing nature's bounty is a business as well as spiritual depletion. Both are costly.

The committee deserves praise for what amounts to a labor of love. I attended many meetings over the past 20 months and was moved by the expressions of committee members as they sat

listening to passionate and sometimes humorous exchanges from representatives of environmental groups, the business community, public agencies and other entities. It was a triumph, and counts as capital, that so many different people were held together for so long talking about water.

The report has been criticized for being more philosophical than scientific and for lacking adequate public input. But 14 technical papers inform it in addition to multiple presentations given by leading water experts. Hundreds of people attended and spoke at meetings. This is a landmark report because of the effort that went into it and because it attempts to entirely rethink how water is understood and managed.

I wish the report stated more firmly at the outset that this is a singular new moment - that we need a new paradigm because we haven't lived through anything like this time of uncertainty. And I hope it will give rise to what I feel we really need: dialogue about creating a state water plan.

As the report documents, so many local policies intersect with state laws and policies it will likely be hard to manage water sustainably in Tucson and Southern Arizona without adressing the larger thicket of state regulations influencing this area.

But these are relatively small critiques in the face of selfless labor and the capital of holding diverse, thoughtful, critical people together in a room, all the more laudable in these divisive times. The report deserves a vote of support when the City Council convenes on Feb. 17 to discuss it.

And the science behind it deserves widespread public attention and debate because it shifts the prism through which the one resource life and industry depend on is viewed and understood.

E-mail Madeline Kiser at mkiser@dakotacom.net

Tucson Mountains
ASSOCIATION
SINCE 1934

PO BOX 86117 • TUCSON, AZ 85754-6117

January 25, 2010

Mayor Bob Walkup
City of Tucson
City Hall
255 West Alameda Street
Tucson, Arizona 85701

Dear Mayor Walkup:

The Tucson Mountains Association is the neighborhood association of record for a large area spanning portions of the City of Tucson, unincorporated Pima County, and Marana. It includes the area bounded on the north by Twin Peaks Road, on the east by Silverbell Road, on the south by the 22nd Street Alignment/Starr Pass Boulevard, and on the west by Saguaro National Park and Tucson Mountain Park. TMA has, as its mission, on the one hand, protection of the health and well-being of those who reside within our territory; and, on the other, protection of natural habitat, to preserve the biological diversity in the Tucson Mountains and their foothills. These two sides of our mission can be on a collision course with one another, unless we can find a sustainable balance between density of development and available resources. We submit that the health and well-being of the entire population of the Tucson region also depends upon this balance. We commend the City of Tucson and Pima County for recognizing this need and attempting to address it. As such, we are necessarily concerned with water policy, and its effects upon all current and future residents and the environment.

The Joint Water & Wastewater Committee Phase 2 report contributes to improved water resources planning for the Tucson metropolitan area. We compliment the Joint Committee for an excellent professional response to the scope you established for their deliberations. Joint Committee members gave a tremendous amount of time and energy, selfless and without much reward. They genuinely studied massive amounts of information. The Technical Papers, all available to the public on the website, abundantly support the conclusions and recommendations in the report. The County and City staff also worked collaboratively and made substantial contributions. The results will impact future water deliberations and policies. We have two observations as you complete your deliberations and decide on approval of the final report: 1) acknowledging a balance is necessary as we address various needs for water, and 2) supporting the need for a permanent water policy. Our comments related to each of these topics include:

- **Balanced Requirements**—We applaud the Committee's recommended adoption of a new paradigm that provides a balance across all requirements for water—people, economics, and environment. This is especially important in light of the limited supply of water we will face in the future.

Recognizing these limitations, water conservation is consistent with a recent U.S. Geological Survey that documents decreasing water use in the West (with the exception of four states), intense disputes, and ecosystem collapse tied to dwindling supplies. There are different techniques that will aid conservation measures, including rainwater harvesting focusing on roof and paved areas (both residential and commercial), maximum use of gray water for residential and commercial applications, and restoration of selective wetlands or washes with native plantings. Open space acquisition will further address the preservation of important conservation areas designated in the Sonoran Desert Conservation Plan.

- **Permanent Water Policy**—The City of Tucson has an interim water policy that was developed by Regina Romero and endorsed by the Council. Both the Council and Pima County need to adopt permanent water policies. We believe the Committee's Phase 2 Report, especially with regard to Goal 2 (Direct Growth to Suitable Areas) and Goal 3 (Integrate Land Use Planning and Water Resources Planning), provides a sound framework to consider the key elements for a water policy.

At the public hearing on January 11, some expressed concern with the "broad philosophical statements" and potential cost implications of the Phase 2 Report. A careful reading of the Technical Papers indicates that the recommendations of the Committee are fully supported by scientific and technical data presented by staff. Thank you for your consideration of our suggestions as you shape the future of the Tucson area through water resources planning. We strongly urge you to adopt the Phase 2 Final Report as the guidepost for the future.

Sincerely,

Dr. Edwin A. Verburg
President
Tucson Mountains Association

cc: Ward 1 Council Member Regina Romero
Ward 2 Vice Mayor Rodney Glassman
Ward 3 Council Member Karin Uhlich
Ward 4 Council Member Shirley Scott
Ward 5 Council Member Richard Fimbres
Ward 6 Council Member Steve Kozachik
Ramón Valadez, Chairman, Pima County Board of Supervisors

Tucson Mountains
ASSOCIATION
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PO BOX 86117 • TUCSON, AZ 85754-6117

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  Recognizing these limitations, water conservation is consistent with a recent U.S. Geological Survey that documents decreasing water use in the West (with the exception of four states), intense disputes, and ecosystem collapse tied to dwindling supplies. There are different techniques that will aid conservation measures, including rainwater harvesting focusing on roof and paved areas (both residential and commercial), maximum use of gray water for residential and commercial applications, and restoration of selective wetlands or washes with native plantings. Open space acquisition will further address the preservation of important conservation areas designated in the Sonoran Desert Conservation Plan.

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Dr. Edwin A. Verburg
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Ward 4 Council Member Shirley Scott
Ward 5 Council Member Richard Fimbres
Ward 6 Council Member Steve Kozachik
Ramón Valadez, Chairman, Pima County Board of Supervisors

January 26, 2010

The Honorable Mayor and Council Members
City of Tucson
P.O. Box 27210
Tucson, Arizona 85726-7210

Re: **Comments on the "Water and Wastewater Infrastructure, Supply and Planning Study**

Dear Mayor and Council Members:

On December 3, 2009, the Oversight Committee for the joint Water/Wastewater Study voted 10 to 1 to support the Phase 2 final report. With that action, the mandate of the committee ended and we disbanded. On December 17, 2009, the former chair and vice chair wrote to the City Manager and County Administrator announcing completion of our work and disbanding.

On January 12, 2010, the Mayor and Council and Board of Supervisors held a joint public hearing on the Phase 2 final report. City staff recommended that Mayor and Council approve a resolution supporting the goals and recommendations from City/County staff and the committee; directing staff from both jurisdictions to continue the collaboration started with the joint study; directing the City Manager to appoint staff to coordinate implementation of the goals and recommendations; and proposing that the Citizens Water Advisory Committee, Regional Wastewater Reclamation Advisory Committee, the City Planning Commission, and County Planning and Zoning Committee continue in an oversight capacity during implementation of the goals and recommendations. (The resolutions also proposed a role for PAG in starting Phases III to IV of the approved scope for this study).

At this meeting, Mayor and Council voted to continue consideration of the resolution until its February 17, 2010 meeting and invited additional public comment on the Phase II report. (The Board of Supervisors approved its resolution on a 4 to 1 vote.)

As former oversight committee members who voted to support the report, we submit these comments to Mayor and Council, respectfully urging Mayor and Council to adopt the provisions of the resolution in question supporting our Phase 2 report and directing steps towards implementation. (The committee supported a regional dialogue starting after the completion of Phases 1 and 2, but as the committee never discussed a role for PAG in the process, we do not comment on this part of the resolution.)

We urge you to approve the resolution for three reasons: (1) it is in the best interests of current and future Tucson Water customers; (2) the study was fully open, accessible, and transparent; and (3) the goals and recommendations are supported by an in-depth collection and review of data and facts.

Implementing the City/County and Oversight Committee Goals and Recommendations is in the Best Interests of Current and Future Tucson Water Customers

The committee and city/county staff agree Tucson Water and Pima County Regional Wastewater Reclamation Department are well run, professional organizations and that, regarding our current water supply situation, we are in good shape. But, in our introductory message to the Phase 2 Report, we also state:

> "We (Committee and staff) agree that we face opportunities and challenges for the future, and we further agree that now is the best time to prepare to meet these opportunities and challenges. There are several drivers of these opportunities and challenges, including **uncertainty** (climate change and drought); **costs** (for maintaining, rehabilitating and replacing our existing infrastructure; diversifying our water supply; complying with new water and wastewater quality standards); and **growth** (to provide for new water and wastewater demands and the infrastructure to meet that demand).
>
> "To meet and benefit from these opportunities and challenges, we are recommending a new direction in how we think about and do water and wastewater resource planning. This new paradigm includes recognizing where we are now (in an arid environment with water scarcity); envisioning a sustainable water future (water now and in the future for people and the environment from renewable sources); and recognizing four elements of water resource planning (comprehensive planning, respect for the environment, water supply reliability, and demand management.)"

Local and state experts agree that Tucson Water's current entitled water supplies are sufficient for the next twenty to thirty years, but that we will need to take additional actions to provide sustainable water supplies beyond that time frame. We acknowledge that our community will continue growing. To ensure our sustainability, now and in the future, we need to begin developing the capacity to do water resource planning in a smarter, more comprehensive, flexible manner. We recommend that all options regarding our water future be on the table and that all options be explored and evaluated based on social, environmental and economic criteria. There will be plenty of work for the development community in our future; those companies that adapt to the new water resource planning paradigm will flourish and prosper.

Phases 1 and 2 Were Conducted in an Open, Accessible, and Fully Transparent Manner

On April 1, 2008, the City Manager and County Administrator disseminated an updated scope of work for the Water/Wastewater Study. The Scope established the Oversight Committee to provide "independent review and oversight (of the joint study) … to ensure they (Phases 1 and 2) meet the stated desired end products identified in this scope of work." The Scope set a minimum schedule for the committee to meet at least monthly. The oversight committee, in other words, was the first level of openness, accessibility, and transparency.

Tab 1 presents a tabulation of thirty-six public meetings conducted by the oversight committee between April 2008 and December 2009. Twenty-four public meetings were held during Phase 1 and twelve

during Phase 2. These public meetings lasted anywhere between 1.8 hours and 6 hours. On average, ten of the twelve committee members attended these public meetings. Over both phases, the committee devoted over one thousand person hours to public meetings for this study.

The meetings highlighted in yellow were report writing sessions. In nine of the thirty-six meetings, committee and staff drafted and discussed the final reports for Phase 1 and 2 in public. For the committee, these nine meetings represented a commitment of almost 360 person hours of public deliberations.

The Scope, however, went further than relying only on the Oversight Committee for public comment, directing staff and the committee to report back with a "plan for a broad-based and transparent public process for engaging the community in this study. The outreach plan should address … procedures for receiving input from all interested parties, including organizations that have expressed interest in this study to date, regarding the study process, public involvement options, and the documents that are produced in Phases I and II."

Tab 2 contains recommendations for the Phase 1 public outreach plan that were transmitted to Mayor and Council and the Board of Supervisors in a progress report of May 28, 2008. The committee and City/County staff implemented this public outreach plan throughout Phase 1 and Phase 2.

There were opportunities for stakeholders to comment at both the beginning and end of every meeting, as well as to submit written comments throughout the Study. The Committee took these comments seriously, incorporating a considerable number of stakeholder ideas into Committee deliberation and ultimately into the Phase 1 and 2 Reports. While this study focused on Pima County and the City of Tucson, all parties with a stake in regional water and wastewater issues, including other municipalities, water providers and interest groups, were afforded opportunities to submit comments. The Committee kept the door open throughout the process, and gave due consideration to all reasonable public input that was received.

Between thirty-six public meetings and implementation of the public outreach plan, Phases 1 and 2 were truly accessible, open and totally transparent.

The goals and recommendations in the Phase 2 report are supported by a methodical, comprehensive, technically sound analysis of facts and data

The "Message from Oversight Committee and Staff" in the Phase 2 Report states:

> "The strength of the Phase I and Phase II efforts lies in the thorough compilation of information and the deliberative process among technical staff, Committee members and the participating public. This process fostered mutual understanding of common facts regarding planning for a sustainable water future. Additionally, the values that emerged while discussing technical papers provide a window into the larger set of community values that must be considered in planning for a sustainable water future. The vast areas of agreement provide a solid foundation from which to continue City/County coordination in implementing specific actions to advance

> water sustainability. Surfacing areas of divergence is also valuable for highlighting the range of interests and values that exist in the larger regional community and for creating a reference point for future regional dialogue."

Phases 1 and 2 entailed a methodical, painstaking production, review, discussion, and documentation of a comprehensive technical database on water and wastewater systems operated by Tucson Water and Pima County Regional Wastewater Reclamation Department. Phases 1 and 2 were a true collaboration between City/County staff and the committee. The professional stature of city and county staff is acknowledged. Tab 3 presents short "bios" on the ten committee members who supported the Phase 2 goals and recommendations.

While individuals with a wide variety of backgrounds, we shared one trait essential to the successful completion of Phases 1 and 2. We all are well versed in public policy; comfortable with technical discussions; and brought decades of in-depth experience with local issues related to water, wastewater, land use planning, infrastructure, and finance to the discussions.

Tab 4 identifies the twenty public meetings and forty-eight technical presentations and technical papers produced and documented during Phases 1 and 2 of the joint study.

Conclusion

City/County staff and the committee successfully completed the Scope for Phases 1 and 2. We recommend that, at your February 17, 2010 meeting, Mayor and Council endorse the Phase 2 report and direct the City Manager and staff to continue the collaboration started with the joint study; direct the City Manager to appoint staff to coordinate implementation of the goals and recommendations; and propose that the Citizens Water Advisory Committee, Regional Wastewater Reclamation Advisory Committee, the City Planning Commission, and County Planning and Zoning Committee continue in an oversight capacity for implementation.

Respectfully submitted,

Jim Barry
Chris Brooks
John Carlson
Rob Kulakofsky
Bruce Gungle
Tina Lee
Joseph Maher
Bonnie Poulos
Mark Stratton

Tab 1 Schedule of Oversight Committee Meetings during Phases 1 and 2

Phase 1			
Meeting Date	Hours	Members Attending	Person Hours
April 9, 2008	2.0	11.0	22.0
April 18, 2008	2.3	11.0	24.8
April 23, 2008	2.0	11.0	22.0
May 12, 2008	1.8	10.0	17.5
May 21, 2008	2.0	9.0	18.0
June 11, 2008	2.8	11.0	30.3
June 26, 2008	3.0	7.0	21.0
July 9, 2008	3.0	9.0	27.0
July 23, 2008	3.0	10.0	30.0
August 13, 2008	2.0	9.0	18.0
August 27, 2008	3.5	8.0	28.0
9//3/08	2.0	9.0	18.0
September 10, 2008	3.0	10.0	30.0
September 17, 2008	2.0	11.0	22.0
September 24, 2008	2.3	9.0	20.3
October 2, 2008	2.3	9.0	20.3
October 8, 2008	1.8	12.0	21.0
October 15, 2008	2.0	8.0	16.0
October 22, 2008	1.0	11.0	11.0
October 29, 2008	2.0	8.0	16.0
November 15, 2008	6.0	10.0	60.0
December 13, 2008	5.5	10.0	55.0
January 10, 2009	3.8	9.0	33.8
February 21, 2009	2.5	9.0	22.5
Total Phase 1	63.3	9.6	604.3

Phase 2			
Meeting Date	Hours	Members Attending	Person Hours
March 19, 2009	3.0	9.0	27.0
April 23, 2009	3.5	9.0	31.5
May 21, 2009	4.0	9.0	36.0
June 25, 2009	3.3	10.0	32.5
July 16, 2009	3.8	10.0	37.5
August 20, 2009	3.8	11.0	41.3
September 17, 2009	4.0	9.0	36.0
October 1, 2009	4.0	11.0	44.0
October 15, 2009	3.5	9.0	31.5
November 12, 2009	3.5	10.0	35.0
November 19, 2009	4.0	11.0	44.0
December 3, 2009	3.0	11.0	33.0
Total Phase 2	43.3	9.9	429.3
Phase 1 + Phase 2	**106.5**	**10.0**	**1,033.5**
Report Writing			
Phase 1	17.8	9.5	171.3
Phase 2	18.0	10.4	187.5
Total	35.8	10.0	358.8

Tab 2 Public Outreach Plan for the Joint Study

A. Recommendations for Phase 1 Public Process

The Committee is taking a number of steps to ensure that Phase 1 proceeds in an inclusive and transparent manner. These public outreach steps will include, but not be limited to:

- Stakeholder Identification - An initial mailing list of 1,200 + individuals has been created. This list consists of individuals and organizations that have expressed interest in the study to date, and also includes a list of potentially interested parties obtained from the Arizona Department of Water Resources, Pima Association of Governments, the Water Resources Research Center and internal staff mailing lists. Additionally, staff included lists of homeowner and neighborhood associations, business groups, and environmental groups in the initial mailing list (see attached initial list of potentially interested parties). This list has since been expanded to include names provided on meeting attendance rosters, on-line via the Study website (www.tucsonpimawaterstudy.com), and others who have asked to be added to the mailing list.

- Committee Meetings - All Committee meetings are open to the public and interested members of the public are encouraged to attend and provide input. A call to the audience is included as an agenda item at the beginning and end of each meeting. To encourage broad participation from the interested public, the Committee has agreed to hold meetings at times and places convenient to the general public.
    -
- ADA Accessibility – The Committee will ensure that all meetings are held in ADA accessible facilities.

- Website – An interactive website has been created -- www.tucsonpimawaterstudy.com -- and is maintained providing comprehensive information on the study process. Draft interim documents will be published on the website so interested parties can understand and participate in the deliberative process. The website also includes meeting agendas, meeting notices and meeting minutes, a glossary of terms, all final products, committee members and their bios, a host of related information, and opportunities for public input.

- Phone Line/E-mail Address/Mailing Address – A contact card has been produced with the study number, website address, e-mail address and mailing address to be handed out at meetings of the Oversight Committee and other meetings and public places to increase public awareness of opportunities to participate.

- Meeting Notification – Agendas are posted in accordance with Open Meeting law requirements and distributed to Oversight Committee members, the stakeholder mailing list, and the media and are posted on the study website. Meeting notification will be sent out through various community calendars, and bi-lingual posters about the study and the meetings will be created and posted in libraries and on SunTran buses.

- Media Outreach – The media will be sent a copy of the meeting agenda in advance of each meeting.

- Audio and Text Records of Meetings - Detailed meeting minutes provide a written record of each Committee meeting including public comments received at meetings. All meetings are also being

audio-taped. The written meeting summaries and audio recordings are being posted to the Study website.

- Record of Public Comments – All public comments that are received (at Committee meetings and via e-mail, phone, mail, and website) will be transcribed, compiled, and posted to the study website.

- Video of Meetings – The meetings will be digitally video recorded using a single camera and posted to the study website. Channel 12 has agreed to feature the study and the meetings on City News and Community Calendar. Staff plans to work with Channel 12 on the possibility of having a series produced on the Study. This would include short segments covering the study topics that would air on Channel 12 through the summer and fall, and then these segments could eventually roll into a single DVD to capture the key points in phase 1 and be used for educational purposes. Access Tucson as a venue for airing the video recordings of the meetings will also be explored.

- Outreach to Other Jurisdictions and Utilities - Dan Sullivan, Oversight Committee member and consultant for Pima Association of Governments (PAG), reported at the April 9, 2008 meeting that PAG had extended an invitation to its member jurisdictions to participate in the Phase I Inventory and Assessment. The Chair of the Oversight Committee, Jim Barry, has sent two letters of invitation to participate to all jurisdictions, tribal governments and water/ wastewater utilities - on April 15, 2008, an introductory letter inviting input into the process and to begin a Phase 1 & 2 study of their own, and a follow-up letter May 23rd including the list of topics and study template that the City/County will follow (letters attached). Mark Stratton, Oversight Committee member and General Manager of Metro Water, has agreed to reach out to the other providers through the Southern Arizona Water Users Association (SAWUA).

- Review of Study Documents – In early June, the technical information that is being gathered as part of Phase 1 will begin rolling out in the form of documents and presentations at Committee meetings. All materials that are produced will be posted on the website and stakeholders will be informed of opportunities to comment and their availability. There will be opportunities at each Oversight Committee meeting for questions, input, discussion, and identification of follow-up items by committee members and members of the audience. The Committee expects this effort to be an iterative process. Reference materials will be forwarded to the Committee no later than one week prior to each meeting. Following Committee discussion and public comment at the meetings, staff will respond to issues and bring an update back to the Committee at the following meeting for discussion.

- Involving Outside Technical Experts – The Committee and staff will identify and invite experts to present information at Committee meetings on key topics and to serve as expert reviewers of documents produced or serve on discussion panels as part of the study. A panel of experts may be convened for one or more workshops on future scenarios, growth, and sustainable population.

Tab 3 Short Bios of the Ten Committee Members Supporting the Phase 2 Report

Dr. Jim Barry
Dr. Barry served as Chair of the Oversight Committee and represented the Citizens Water Advisory Committee (CWAC).

Jim Barry earned a doctorate from the Center for Policy Studies, School of Management, State University of New York at Buffalo and a Master's in Urban Studies from Loyola University in Chicago.

Jim has lived in the same mid-town neighborhood, two blocks east of Alvernon, between the Doubletree and 22nd Street, since moving to Tucson in June of 1981. In 1983 and 1984, Jim worked in the district office of Congressman Jim McNulty. From February 1985 to February 2005, Jim worked for Pima County, from 1985 to 1994 for the Department of Transportation/Flood Control District and from 1994 to 2005 as Executive Assistant to the County Administrator. Jim retired from the County in February 2005.

In the spring of 2006, the City Manager appointed Jim to the Citizens Water Advisory Committee (CWAC). He was Chair of CWAC from December 2007 to December 2008. The City Manager and County Administrator appointed Jim as Chair of the City/County Water and Wastewater Oversight Committee

Christopher J. Brooks, R.G., Esq.
Mr. Brooks represents CWAC on the Oversight Committee.

Christopher J. Brooks holds a Bachelor of Science degree in Hydrology from the University of Arizona (December 1989) and a Juris Doctor from the University of Arizona, Rogers College of Law (May 2008). He worked for 16 years in Tucson as a consulting hydrogeologist prior to attending law school and currently works for the Water Resources Department of the Tohono O'odham Nation. Mr. Brooks is an Arizona Registered Professional Geologist, an Advisory Board member of Watershed Management Group, Inc. and vice-president of the Peter Howell Neighborhood Association.

John Carlson
Mr. Carlson represented RWRAC on the Oversight Committee

John Carlson got his Bachelor's degree in 1952 from the U.S. Military Academy, West Point and has a Master's degree in Civil Engineering in 1956 from the University of Nevada, Reno.

John Carlson is a registered professional engineer (civil) in Arizona and California. Mr. Carlson worked for Sundt Corporation & Subsidiaries from 1957 to 1997. During his tenure at Sundt he worked on specific projects, as an estimator/lead estimator on numerous heavy/highway, mining, utility, water treatment and military projects. He also worked for the U.S. Army Corps of Engineers from 1952 to 1956. Mr. Carlson has work experience in a wide range of civil, structural and utility-related engineering projects, including twenty trips to Saudi Arabia & the Philippines overseeing contracts, plus congressional testimony on United States contractor's problems. Mr. Carlson's last professional experience was overseeing the rebuilding of the United States embassy in Moscow.

Bruce Gungle
Mr. Gungle represented the Pima County Planning and Zoning Commission (PCP&Z)

Bruce Gungle is a 25 year resident of Tucson who moved here in 1984 to enroll in the Master of Fine Arts program in Creative Writing at the University of Arizona. He has lived in the Tucson Mountain foothills since the fall of 1986, with the exception of a 2 year teaching stint in Japan from 1988-1990. After graduating with an MFA in 1990, Bruce took an active role in a wide array of community groups and an active interest in wilderness conservation issues. Bruce re-enrolled in the University in the mid-1990s, this time across campus in the hard sciences. In 2001 he graduated with a Masters of Science degree in Atmospheric Science, and took a job as a Hydrologist with the United States Geological Survey, Arizona Water Science Center in Tucson, where he continues to work. Bruce was first appointed to the Pima County Planning and Zoning Commission in 1997.

Rob Kulakofsky
Mr. Kulakofsky represented RWRAC on the Oversight Committee.

Rob Kulakofsky is a small business owner who has lived in Tucson for 16 years. He has been involved in neighborhood and environmental issues for the last 14 years. Rob helped found several local neighborhood and environmental organizations and served on the boards of several local non-profit organizations. He remains active in the Sierra Club, Center for Environmental Connections, Environmental Justice Action Group and the Gem and Jewelry Arts Academy.

Rob has also served on several policy-making committees dealing with neighborhood issues, open space and the environment. Some of these are the Tumamoc Area Plan Update Committee; Pima County Planning and Zoning Commission Subcommittee on Environmental Ordinances; Pima County Open Space Acquisition Review Committee; and Steering Committee for the Sonoran Desert Conservation Plan. He was also a member of the City of Tucson Board of Adjustment for eight years.

Tina Lee
Ms. Lee represented CWAC on the Oversight Committee.

Tina Lee was appointed to the Citizens' Water Advisory Committee (CWAC) in 2008 by Ward 1 Council Member Regina Romero. Her experience in water-related issues includes local, state, and federal regulatory compliance with the Clean Water Act, Safe Drinking Water Act, National Environmental Policy Act, and National Pollutant Discharge Elimination System as an environmental consultant and drainage and flood control issues as a member of the City of Tucson's Stormwater Advisory Committee from 2002-2004.

Joseph Maher, Jr. AIA
Mr. Maher represented the City of Tucson Planning Commission on the Oversight Committee.

Joseph Maher, Jr. holds a Bachelor of Architecture degree from the University of Arizona and established his own architectural business in 1983. He has extensive, diverse architectural project experience and community service in Southern Arizona and across the State of Arizona. His credentials reflect a comprehensive diversity of master planning, site and building analysis and feasibility studies along with the diverse and exciting concepts of creating user friendly, functionally cost as well as energy efficiently designed sustainable architecture of all types including Solar & Environmental Homes and additions.

Mr. Maher, Jr. served as the 2009 President SAC-AIA, Southern AZ Chapter American Institute of Architects, Chairman AIA Architecture Week, 2003 to Present, City of Tucson, Planning Commissioner since 2008 and as Board member of Tucson Clean & Beautiful "Trees for Tucson" since 2005. Mr. Maher previously served as a member of the City's Citizens Transit Advisory Committee (CTAC) for the past eight years prior to this membership was Liaison to Downtown Links Committee from CTAC. Mr. Maher is also Liaison to Grant Road Task Force Committee from Planning Commission.

Bonnie T. Poulos
Ms. Poulos represented PCP&Z on the Oversight Committee.

Ms. Poulos has been employed as an Assistant Staff Scientist at the University of Arizona since 1992 specializing in microbiology, molecular biology and marine ecology.

Ms. Poulos has committed her free time to the community by participation in organizations and commissions that seek to improve the quality of life in Tucson. Since 1983, she has involved herself in neighborhood groups, transportation commissions and coalitions, regional planning committees, and environmental planning processes, in an effort to become educated about the issues and invoke change from a grassroots level. Her participation on the Water/Wastewater Oversight Committee was motivated by a belief that public health and environmental issues related to water supplies must be brought to the table and have the same due consideration in determining future water policy as do business and growth issues. Water/Wastewater policy decisions are complex and her two-year commitment to the Oversight Committee provides Ms. Poulos with a foundation for communicating some of these complex issues to the general public so they can get involved and make educated choices about future water policies in the region.

Mark Stratton
Mr. Stratton represented RWRAC on the Oversight Committee.

Mark has spent the last 16 years working with the Metro Water District in Tucson, Arizona as general manager. Prior to that, he worked as planning manager for Pima County Wastewater Management Department. He is a member of the Arizona Department of Water Resources (ADWR) statewide water advisory group (SWAG), and the external advisory committee for the Water Resources Research Center of the University of Arizona. Mark has also served as president of the Southern Arizona Water Users Association (SAWUA) and has been a member of a number of other water related committees and organizations. He is a Past President of the Arizona Water & Pollution Control Association and currently serves as the Arizona representative on the American Water Works Association's Board of Directors. He received his education at the University of Arizona and graduated with a degree in civil engineering.

Tab 4 List of Technical Presentations and Technical Papers from Phase 1 and 2

PHASE 1

JUNE 11, 2008

Overview: and History Water/Wastewater Systems in Pima County, presented by Chris Avery, Interim Deputy Director for Tucson Water and Ed Curley, Long-Range Planning Manager for Pima County Regional Wastewater Reclamation Department

History of the Central Arizona Project, presented by Larry Dozier, Deputy General Manager, Central Arizona Water Conservation District

JUNE 25, 2008

Historical/Hydrologic Overview Of Tucson Active Management Area (AMA), presented by Kenneth Seasholes, Senior Policy Analyst, Central Arizona Project (CAP)

Statewide Provisions Of Groundwater Management Act, presented by Jeff Tannler, Acting Area Director Arizona Department of Water Resources (ADWR) Tucson AMA

Assured Water Supply Rules and Role of Central Arizona Groundwater Replenishment District, presented by Cliff Neal, P.E. Manager Central Arizona Groundwater Replenishment District

Tucson AMA Water Supply And Demand ("Water Budget"); Recharge; Overdraft, presented by Laura Grignano, Water Resources Specialist, (ADWR) Tucson AMA

Customer Demographics; Water Demand; Water Quality; Water Supplies, presented by Chris Avery, Interim Deputy Director for Tucson Water and Eric Wieduwilt, Interim Deputy Director, Pima County Regional Wastewater Reclamation Department

JULY 9, 2008

Tucson Water Potable Water and Reclaimed Water Delivery Systems and System Conditions, presented by Chris Avery, Interim Deputy Director for Tucson Water

Wastewater Delivery System and System Conditions, presented by Eric Wieduwilt, Acting Deputy Director of Pima County Regional Wastewater Reclamation Department

JULY 23, 2008

National and State Infrastructure Issues/Tucson Water Capital Improvement Program, presented by Chris Avery, Interim Deputy Director for Tucson Water

National and State Infrastructure Issues/PCRWRD Capital Improvement Program, presented by Eric Wieduwilt, Acting Deputy Director of Pima County Regional Wastewater Reclamation Department

National and State Infrastructure Issues/Regional Optimization Master Plan, presented by Michael Gritzuk, Director, Pima County Regional Wastewater Reclamation Department

AUGUST 13, 2008

Overview of Financial Best Practices for Water/Wastewater Utilities, presented by Harold Smith, Partner, Raftelis Financial Consultants, Inc.:

Tucson Water Financial Planning, presented by David Cormier, Interim Finance Director, City of Tucson:

Pima County Regional Wastewater Reclamation Department Financial Planning, presented by Jeff Nichols, Deputy Director of Administrative and Financial Services Division, Pima County Regional Wastewater Reclamation Department:

AUGUST 27, 2008

Regional Water Planning Perspectives, presented by Sharon Megdal, Director, Water Resources Research Center

The Ancient Oasis: 4,000 Years Of Agriculture And Water Management In Tucson, presented by Jonathan Mabry, Tucson Historic Preservation Office

Population Trends and Projections, presented by Dave Taylor, PAG:

Population Projection Issues, presented by Bob Cook, alternate member of the Oversight committee

SEPTEMBER 3, 2008

Land Use Growth In Pima County, presented by Arlan Colton, Planning Director For Pima County and Albert Elias, Planning Director, City Of Tucson

SEPTEMBER 10, 2008

Water Harvesting, presented by Charles Cole, private citizen

Climate-Related Resource Uncertainties – Part 1, presented by Dr. Julio Betancourt, Senior Scientist, US Geological Survey:

Climate Related Resource Uncertainties– Part 2, presented by Kathy Jacobs, Executive Director Arizona Water Institute:

SEPTEMBER 17, 2008

Water Resources to Sustain Our Rivers, Wildlife, and Riparian Habitat, presented by Rob Marshall, Director of Science, The Nature Conservancy:

Sustaining Environmental Flows, presented by Julia Fonseca, Pima County Natural Resources Parks and Recreations Department

September 24, 2008

ADWR Water Budget For Tucson Active Management Area, presented by Jeff Tannler, Director, ADWR, Tucson Active Management Area and Laura Grignano, Water Resources Specialist, (ADWR) Tucson AMA

OCTOBER 2, 2008

Water Resource Availability in the Tucson Active Management Area, presented by Sharon Megdal, Executive Director, Water Resources Research Center:

Tucson Water 2050 Plan Update, presented by Chris Avery, Interim Deputy Director Of Tucson Water

OCTOBER 8, 2008

City/County Water Conservation Efforts, Presented By Melaney Seacat, Regional Wastewater Reclamation Department

Conservation And Water Planning Overview, presented By Dennis Rule, Strategic Planning Administrator for Tucson Water And Mitch Basefsky, Public Information Officer for Tucson Water: City/County Water Conservation Efforts

October 15, 2008

Potential New Water Sources, presented by Chris Avery, Interim Deputy Director Of Tucson Water:

Acquiring, Developing and Distributing New Supplies for Central and Southern Arizona, presented by Ken Seasholes, Senior Policy Analyst, Central Arizona Project

Storm Water Recharge, presented by Nancy Freeman, Executive Director, Groundwater Awareness League:

October 22, 2008 Presentations on Sustainability

Ron Proctor representing Sustainable Tucson

Madeline Kiser representing Sustainable Tucson

Colette Altaffer representing the Neighborhood Infill Coalition

Kendall Kroesen representing Tucson Audubon Society

Tres English representing Sustainable Tucson

Linda Ellinor representing Sustainable Tucson

October 29, 2008 Presentations on Sustainability

Carol West, former City Council member

Dorothy O'Brien representing the Town of Marana

Randy Serallio represeneting the Center for Biological Diversity

Trevor Hare representing Sky Island Alliance

Jennifer Neely representing the Sierra Club Rincon Group

Christine Cotton representing Malcom- Pirnie

Alice Roe

Amy McCoy representing the Sonoran Institute

William Crosby

Donna Branch Gilby representing Milgro Co- Housing

Nancy Freeman representing Stormwater Awareness League

Michael McNulty representing Arizona Builders' Alliance, the Alliance of Construction Trades, the Marana Chamber of Commerce, the Metropolitan Pima Alliance, the Northern Pima County Chamber of Commerce, Safe and Sensible Water Committee, the Southern Arizona Homebuilders, the Southern Arizona Leadership Council, the Tucson Association of Realtors, the Tucson Metropolitan Chamber of Commerce, and the Tucson Utility Contractors' Association.

Beryl Baker

Charles Cole

Tracy Williams representing Neighborhood Infill Coalition

Leslie Leberti representing the City of Tucson

Tedra Fox representing Pima County

PHASE 2

APRIL 23, 2009

Conservation White Paper, prepared by Val Little, Water Conservation Alliance of Southern Arizona

Reclaimed Water Technical Paper, prepared by City of Tucson and Pima County staff

CityICounty Consolidated Drought Management Plan Technical Paper, prepared by City of Tucson and Pima County staff

A Primer on Drought and Drought Preparedness, prepared by the Oversight Committee

MAY 21, 2009

City/County Water Conservation Technical Paper, prepared by City of Tucson and Pima County staff

Stormwater Management Technical Paper, prepared by City of Tucson and Pima County staff

Riparian Protection Technical Paper , prepared by City of Tucson and Pima County staff

JUNE 25, 2009

Location of Growth, Urban Form and Cost of Infrastructure: A White Paper supporting Phase 2 of the Water and Wastewater Infrastructure, Supply and Planning Study, prepared by Stantec Consulting, Inc. and Curtis Lueck & Associates

JULY 16, 2009

Integrating Land Use and Water Resources Planning Technical Paper, prepared by City of Tucson and Pima County staff

Population Growth Paper Follow-Up, prepared by Jim Barry, Chair of Oversight Committee

AUGUST 20, 2009

Water as an Economic Resource Paper, prepared by the Tucson Regional Water Coalition, presented by Ron Shoopman, President of the Southern Arizona Leadership Council, with a panel discussion with George Frisvold, Professor, Agricultural and Resource Economics, University of Arizona; Carl Bauer, Professor, School of Geography and Development, University of Arizona, and Tom Arnold, Tucson Water.

Cost of Growth Technical Paper, prepared by City of Tucson and Pima County staff

SEPTEMBER 17, 2009

Water for the Environment Technical Paper, prepared by City of Tucson and Pima County staff

Additional Water Resources Technical Paper, prepared by City of Tucson and Pima County staff

Water Quality Technical Paper, prepared by City of Tucson and Pima County staff

January 29, 2010

6381 W. Sweetwater Dr.
Tucson, AZ 85745

Mayor Bob Walkup
City Hall
255 W. Alameda St.
Tucson, AZ 85701

Dear Mayor Walkup:

I enthusiastically support acceptance of the Phase II report of the Tucsonpimawaterstudy group. As a research scientist specializing in biology (Ph.D., U of A, 1969) and citizen concerned about future water availability in the desert southwest, I have followed with great interest the work of this committee. I attended most meetings and when I missed some I caught up with the videos and reports on their most informative web site. Their process has been an outstanding example of transparency.

As I drove to the first Phase I meeting I attended in 2008, I was skeptical. There are many examples of human societies that failed owing to abuse of their resources and other problems. I wondered if members of the Tucsonpimawaterstudy group would be appointees with a hidden agenda or whether they would use a science-based approach of formulating significant questions, data collection and analysis, and objective review, to reach sound conclusions based on the best available evidence, not personal biases or lobbying pressures.

I was pleasantly surprised. This committee was a group of highly dedicated, hard-working, responsible, creative, concerned citizens, representing such diverse professions as science, engineering, and business. For 20 months they brought in a series of water and wastewater experts, reviewed extensive technical papers, and rigorously discussed the material. Their Phase II report and recommendations are based on objective evidence. I do not think that any other committee could do a better job, given their charge and schedule. As with any discovery process that is conducted properly, people can approach such studies with personal expectations and initial hypotheses, but in the end, a good approximation of the truth is discovered, whether or not the findings fit our preconceived or biased notions, and we should be prepared to adjust and move forward with the recommendations.

The process, as conducted by Dr. James Barry and staff, was the best example of democracy in action that I have ever seen. The public was invited to attend and participate in every meeting, the web site kept everybody fully informed, and at every meeting Dr. Barry aimed to hear all points of view and all data pertinent to the topics discussed, whether they agreed with his views or not. All of the material was digested by the committee, and their Phase II report is outstanding.

The following pertinent, science-backed points in the report are extremely important:

1. With climate change, there will be less water in the Colorado River than there has been in recent decades.

2. If *only* the currently-outlined obligated water service area of Tucson becomes fully developed in the future, sustaining water service will require more water than is available today.

3. Providing water by traditional pipe-and-pump methods *outside* the obligated area will intensify the problem of having insufficient water to go around (unless, perhaps, the obligated area is proportionally reduced). When supply becomes insufficient, somebody will lose out. We need to balance resource availability and use.

4. With the probable exception of rainwater and stormwater harvesting, new water supplies will be extremely expensive to develop – perhaps so much so as to be unaffordable for a large part of our population.

You have the opportunity to accept the Phase II report and move forward with implementation. Alternatively, you could reject it, but I seriously doubt that you could find a better committee and more realistic recommendations. Furthermore, if we delay implementation of some of the items in the report for 15 years or so and allow uncontrolled piping and pumping of Tucson's water hither and yon, southern Arizona will be running out of water, and significant cut-backs in service for some users will result. In the future, Tucson could become known as another example of a city that collapsed, or it could be seen as an outstanding example of appropriate planning with vision.

Sincerely,

Charles J. Cole

cc:
Councilman Fimbres
Councilman Glassman
Councilman Kozachik
Councilwoman Romero
Councilwoman Scott
Councilwoman Uhlich
Chairman Ramon Valadez, Pima County Board of Supervisors

From: noreply@tucsonpimawaterstudy.com
[mailto:noreply@tucsonpimawaterstudy.com]
Sent: Monday, February 01, 2010 2:41 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: FastSaab@aol.com

Comments/Questions: I am puzzled about why this effort appears to be focused entirely on the City of Tucson and Pima County. Why aren't other jurisdictions (the Town of Sahuarita, the Town of Marana, the Town of Oro Valley) and stakeholders (private water companies) more involved in this process?

It is premature to begin making any recommendations or developing a plan until the regional stakeholders are involved in finding a solution for a regional problem.

Mayor Walkup called for a more regional vision at his State of the City address last week. It is this type of exclusionary process, however, that prevents a true regional approach from coming to fruition.

The best thing you could do would be to suspend this process and immediately broaden it to include major water players from throughout the metro area. Otherwise, your work will be doomed to the same location as previous studies. The bookshelf.

>>> <csheafe@comcast.net> 2/2/2010 6:11 PM >>>

It is important that the Council vote to not accept the transfer of its effluent to the conservation resource pool by either delaying their approval of the Phase II report or accepting the report with the exception of all reference to effluent and the concept of an effluent conservation pool until the economic analysis and other information per the recomendation of the City Manager is completed. The concept that a pre allocation of water should be made for conservation in place of establishing a policy that each project must stand on its own merits and must be presented for approval at the time the transfer is needed and further, that an economic impact analysis be included with each application. Chris

Sent: Wednesday, February 03, 2010 4:18 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: dpittman@azbuilders.org

Comments/Questions: To Mayor Bob Walkup and the Tucson City Council:

I am writing to express my views concerning the Tucson/Pima County Water Study Phase II Report on behalf of the organization I represent, the Arizona Builders' Alliance, which is made up of 160 general contractors, subcontractors, suppliers and service firms in the Commercial Construction Industry in metropolitan Tucson.

Clearly, the report contains a great deal of good work and much effort went into it by those who participated. However, it is unfortunate that municipalities and water companies outside of Tucson (from such areas as Marana, Oro Valley, Sahuarita and Vail) did not have a seat at the table during the Phase II process. I hope that changes in future discussions because water planning and usage is a regional issue that should include all affected parties.

The study recommends use of economic/cost analysis to influence future water policy, but in many cases such analysis is conspicuously absent from this report. For instance, it recommends as much as 10,000-acre feet of water be dedicated annually to a Conservation Effluent Pool to irrigate Sonoran Desert areas. Given the fact that a single acre foot of water costs $5,000, the replacement cost of this 10,000-acre-foot water give away could reach as high as $50 million annually. Given that water is a precious commodity can our community and Tucson Water ratepayers afford this? This kind of proposal needs a far greater public policy debate among all segments of our community before being considered.

Is the Conservation Effluent Pool associated with any Habitat Conservation Plans? If so, once allocated and made part of the federal permit process, will the City be able to reallocate that water back to distibute to area homes and businesses?

I believe much of the report contains a decidedly anti-growth message. If these difficult economic times show us anything, it is the importance of a robust business environment to the financial health of our people

and their governmental institutions. Job creation and economic development should be an integral part of all public policy, including water policy and usage.

On that note, the ABA is disturbed about the City of Tucson's current policy not to provide new water hook-ups to certain areas served by Tucson Water that are outside Tucson's City Limits. It has come to our attention that this policy has postponed the development of some 20 commercial operations, including a fire station. Aside from public safety concerns, not allowing these projects is costing the commercial construction industry in Tucson jobs and revenue, the benefits of which are not being circulated throughout our community. Given the current economic state we are experiencing, this policy is inexcusable and should be changed immediately.

Thank you for allowing me the opportunity to express my views on these subjects.

Sincerely,

David Pittman,
Southern Arizona Director
of the Arizona Builders' Alliance

Sent: Wednesday, February 03, 2010 1:42 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: subs@actaz.net

Comments/Questions: The Alliance of Construction Trades (ACT) is concerned that the City/County water policies will be set without a) determining costs of those policies; b) informing the ratepayers and/or the public of potential long-term costs; and c) setting a firm schedule to determine costs, inform the public of those costs and gain consensus for lon-term water policies.

Thank you, James J. Kuliesh, Executive Director ACT

BECKLIN
CONSTRUCTION LLC

February 3, 2010

Mayor and Council
City of Tucson, AZ

Reference: Phase 2 Report on Tucson Pima Water Study

Dear Mayor and Council:

Sound water management policies are essential to ensure our region has a sustainable future. The City/County Study process is a step in the right direction. However, after reviewing the Phase 2 report, I am concerned that there are several key questions that need to be answered prior to adopting the report.

1) What is the implication of this report on jobs and economic investment? Are there recommendations that will stifle job growth?
2) Specifically, how is this report going to be used to shape future water policies and will business groups have a stake in the process?
3) Have all of the costs to the City, taxpayers and businesses associated with the recommendations been identified?
4) Has a cost benefit analysis been conducted on the use of the Conservation Effluent Pool? Does the City have a plan to acquire the water it will be giving away?
5) Will the entire report, including some of the no growth rhetoric in the narrative sections, be used to make policy or will it be limited to only numbered recommendations?

I'm confident that having the answers to these questions will allow you to make informed policy decisions. During these challenging economic times, preserving jobs/economic investment and making smart fiscal decisions, will help ensure a prosperous future.

Sincerely,

Ed Castelhano
Partner, Becklin Construction LLC

2823 N. ALVERNON WAY ▲ TUCSON, ARIZONA 85712
TEL 520-298-4555 ▲ FAX 520-298-9455
www.becklinhomes.com
ROC177715

Sent: Wednesday, February 03, 2010 10:07 AM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: edstolmaker@maranachamber.com

Comments/Questions: Please consder the recommendations from the Tucson Regional Water Coalition (TRWC) on phase 2 of the water study. The recommendations are to help economic development and create jobs in Tucson and the region.

Sent: Wednesday, February 03, 2010 4:15 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: michael@mpaaz.org
The Honorable Robert E. Walkup
Mayor, City of Tucson
PO Box 27210
Tucson, AZ 85726

RE: City/County Water/Wastewater Study Phase II Report

Dear Mayor Walkup:

The Metropolitan Pima Alliance has been an active partner with the City of Tucson and Pima County and a member of the Tucson Regional Water Coalition working to build consensus on the Phase II Report and Recommendations. We commend the staff members in both jurisdictions for their determination, collaboration and their work in putting together a document that identifies our region's water resources and, for the most part, formulates a number of recommendations that will lead our community toward water surety.

However, while we realize no document is going to be completely accepted community-wide, there are two outstanding issues that should require additional discussion and deliberation; namely, the conservation effluent pool and the City's obligation to serve. Concerning the conservation effluent pool, before the City and County enter into any agreement committing 10,000 acre-feet of effluent to environmental restoration, a cost analysis should be conducted to determine the economic value of what could be a viable potable water option in the future.

Second, an analysis should be conducted to determine the economic and fiscal benefits associated with extending service to commercial and industrial parcels located within ½ mile of existing infrastructure, as well as the implications of denying service. This refusal of service under the City's policy concerning an obligation to serve is having negative economic and commerce ramifications. Taking time to further study that policy could result in a more effective approach to regional water delivery.

Thank you for your time and consideration of our request to further study and discuss specific elements of the Phase II Report and Recommendations. This document is very important to our region's sustainability and water surety and we congratulate you for setting the stage through the commencement of this five phase study.

Sincerely,
Michael S. Guymon
Executive Director, Metropolitan Pima Alliance

From: Nancy Freeman [mailto:nancy.freeman@cox.net]
Sent: Wednesday, February 03, 2010 5:10 PM
To: info@tucsonpimawaterstudy.com
Subject: Comments on Water study

Not scientific enough? Forget the science.... Many of the practices of Pima County Wastewater, Flood Control, and Tucson Water are not even logical! One theme is prevalent; each entity wants to control. And you know, that would not be a bad thing, if they wanted to do the best for everyone equally.

I do hope you have the time to read my lengthy comments to the Committee on Dec. 1, 2009

http://www.g-a-l.info/Study-Comments.htm

Further, I gave a presentation to the committee regarding stormwater on

http://www.tucsonpimawaterstudy.com/Reports/FinalReport/Ch/Chapter13/101508transcriptnancyfreeman.pdf

However, for busy people, here is a summary of key points:

Pima County Wastewater creates disconnect:

Pima County approves developments with no public water company available, so that small private water companies dot the landscape. Then the County takes their wastewater to Roger and Ina Rd., so it is not available to the people who produced it.

Pima County is now spending millions for the biggest, best treatment plants because they say, "It is mandated." It is true that it is

mandated that they stop violating the Clean Water Act, but it is not true that they have to build the biggest plants possible, only the best.

They will not do the figures on the creation of small satellite plants where the effluent can be used nearby instead of pumping groundwater. The County is spending $25 million for a pipeline between Roger and Ina Rd. plants because Roger Road is overflowing. Would it be logical to put that $25 million into creating a satellite plant in a region where the effluent can be used? And please note, it is a general principle that the groundwater levels are lower in the outskirts of the basin.

So the fact is that the majority of effluent goes to Roger and Ina Rd. instead of being used on the schools, golf courses and public landscapes in the outskirts of town where it was created. Then it is too expensive to pump it back out from whence it came; this is the reason that not even half the 63 golf courses in Pima County use effluent. Therefore, the suburbanites are paying for wastewater treatment they will never benefit from. Further, all City of Tucson residents are paying wastewater fees to Pima County without ever questioning if they are using the best practices for all.

Flood Control refuses to conserve and use stormwater:

Pima County is a place where it rains a lot all at once.... It's been doing that for how long? And what have the Pima County Flood Control with its 83 employees and $58 million dollar budget (2009) done? In 2008 - 2009, they contracted out a Lee Moore Wash study-not with the intent of doing anything about the horrific flooding in the region. They wanted a map showing the sheet flood zones, so that anyone who built in that region would have to sign a covenant that the County would not be liable for any flood damage. They need to do this because they continue to permit developments that will impact downstream residences. Further, the million dollars was an unnecessary expenditure because the maps on their own database are more detailed, showing exact stormwater flows and depths.

At Sahuarita Highlands, Eric Shepp, a supposed hydrologist for Pima County, said that the development "had not created much more water downstream".... What science? The County had had the developer raise the land level two feet over some 10 acres to keep the sheet flow from entering the development ... and that did not create more water in the adjacent wash? Forget the science. Where's the logic? There is a county ordinance that the water be measured and more water does not go out of the development than came into it. That is never done. When there is a complaint, if anything is done at all, it is to write a "no-action" letter. Susanne Shields said that it was not worthwhile to conserve the stormwater, it would not make that much difference in the water table.... When did they try it and measure results?

Riverside County has been doing it since 1954 with great results. In Pima County, stormwater ruins private property and public infrastructure, while in Riverside County (and many other places) they "save such waters for beneficial use."

Riverside County Flood Control and Water Conservation District

http://www.floodcontrol.co.riverside.ca.us

Mission Statement: "The mission of the Riverside County Flood Control and Water Conservation District is to protect people, property and watersheds from damage or destruction from flood and storm waters and to conserve, reclaim and save such waters for beneficial use."

--Warren D. "Dusty" Williams, General Manager-Chief Engineer

Then there is Tucson Water. They would love to be the water company of the world, but are they doing the best for the majority of the people. They dried up the Tohono O'odham Nation lands with their wells along I-19 and continued to create small pumping stations all over the County-out of their service area. A recent Water Report from the

Director stated "the water levels are rising." Examine the science closely-they are rising in central Tucson where they stopped pumping, and in Avra Valley where they are recharging CAP water, which is a totally a separate basin from Tucson Basin. They plan to stop pumping groundwater in 2050... except in a few outlying areas, but how much will they pump between now and then? How much will the basin levels go down?

Corporation Commission-- Obstacle to sound water management in Pima County:

The Corporation Commission's rules mandate that they cannot allow a private water company to collect funds for needed infrastructure. For example, in 1985, two Green Valley water companies bought CAP allocations; however, there was no conveyance infrastructure. If the water companies had been charging a small fee for the past 25 years, the Green Valley residents would now have a pipeline and delivery of the CAP water to augment their depleting aquifer. Instead, they have paid out a couple of million for the CAP contracts over the 25 years and have received nothing-and are no closer to having delivery of the CAP water. Is the Commission concerned? Not at all, as a matter of fact, at the last Community Water hearing, they questioned why Community Water didn't just give up their allocations. This practice is like not repairing a roof because one does not want to get a loan-so the situation gets worse and worse.

New development pays Impact Fees in Maricopa County:

Some municipalities are now charging an impact fee (Water Resources Acquisition Fee) up to $3,000 per home, but not to exceed 1% of the value of the home. Municipalities in Maricopa County have these fees since 1990. It sure didn't stop their development, and give them some funds to build water infrastructure. This practice could help the realistic concern among Tucsonans for paying for new development.

http://www.mag.maricopa.gov/pdf/cms.resource/Development-Impact-Fees.pdf

http://ag.arizona.edu/AZWATER/awr/mar96/feature1.html

Conclusion: I know you will think, "there is not a thing we can do about Pima County," but you owe it to the Tucson city taxpayers to do something. Whether you accept the study or not, there is much to be done-who will do it?

Thanks,
Nancy Freeman
520/207-6506

From: Saletta, Philip [mailto:psaletta@orovalleyaz.gov]
Sent: Wednesday, February 03, 2010 2:43 PM
To: 'info@tucsonpimawaterstudy.com'
Cc: Loomis, Paul; Garner, William; Carter, Kenneth; Gillaspie,Barry; Kunisch, Al; Latas, Salette; Spoerl, Pat; Watson, Jerene; Lemos, Stacey; Davis, Mary
Subject: Water Infrastructure, Supply & Planning Study

Please find the attached specific comments from Oro Valley Water Utility regarding the City of Tucson/Pima County Water and Wastewater Infrastructure, Supply and Planning Study- Phase 2. We appreciate the opportunity to comment and the City Council of Tucson allowing more time for comments. Please see the attached specific comments in the attached document.

There are numerous areas of the study that reflect many of the challenges that are currently being addressed by the City of Tucson and Pima County. These same challenges are being met by other water providers in the region also. The recommendations in the report as we understand it only apply to the City of Tucson and Pima County. These recommendations should not apply to Oro Valley since there was no Oro Valley representation on the committee.

Oro Valley supports many of the recommendations and is in fact implementing action similar to what has been recommended. For example, Oro Valley has the second largest reclaimed water system in Pima County supplying approximately 2300 acre-feet per year for irrigation water. This is more that 20% of Oro Valley's water deliveries to its customers. We also agree that going to Class A+ water quality for reclaimed water through better treatment of wastewater effluent is good environmental stewardship. Looking for new supplies such the CAP ADD Water process is also very important.

In our review we believe that some of the recommendations made regarding providing water for environmental purposes should not impact Oro Valley's water supply. Oro Valley supports improvement of our riparian areas but water has been set aside for this in the Conservation Pool and should not directly impact Oro Valley's wastewater effluent or other water supplies. Wastewater effluent is a valuable resource that Oro Valley owns and relies on for its reclaimed water system. In addition, if water is to be used for riparian areas or other environmental purposes, how will it be paid for? Will it be part of water and sanitary sewer bills? Will there be a tax created?

Oro Valley has been involved in discussions regarding the annexation of the Arroyo Grande area. Pima County is familiar with the Conceptual Plan that was prepared in conjunction with Arizona State Lands. These Arroyo Grande lands have not been included in the growth model in the

study and we agree with that approach. However, if annexed by Oro Valley, future water service in this area would be provided by Oro Valley Water Utility and wastewater service would be provided by Pima County Regional Wastewater Reclamation Department.

The report recommends proceeding with Phase 3 of the study which included a broader regional approach involving other water providers in Southern Arizona. Oro Valley Water Utility would participate in this study if supported by our Council. However, Phase 3 should not proceed unless there is an acceptable plan and process for adequate and fair representation for the participants.

The above are general comments regarding the study and please also review the attached specific comments. Again, thank you for this opportunity to comment. If you have any questions, please let me know.

Sincerely,
Philip C. Saletta, P.E.
Town of Oro Valley
Water Utility Director
11000 N. LaCanada Dr.
Oro Valley, AZ 85737

Oro Valley Water Utility (OVWU) Comments (2/3/10)

P. 17 & 18

Comprehensive Integrated Planning
2.3 & 2.4 – These growth scenarios do not include Arroyo Grande and should not so long as there are discussions for annexation to the Town of Oro Valley (TOV).
3.1 – Will WR Planning occur in OVWU Service area?
3.4 – Wheeling is appropriate and we support.
3.5 – Will regional solutions include or impact TOV?
4.1 – Does this mean increased water and wastewater impact fees?

Respect for the Environment
3.1 – We must be assured that this would not affect our existing IGA with TW for reclaimed water.
3.1 – We must be assured that this would not affect TOV's Stormwater Utility
4.1 – We must be assured that this would not affect TOV's recharge credits under the Lower Santa Cruz River Managed In-Channel (LSCRMIC) Recharge Project. It should also be considered to allow members of the LSCRMIC Recharge Project to get a similar credit.

Water Supply
1.1 – OVWU supports the ADD Water Project.
2.4 – OVWU supports additional use of reclaimed water so long as the quality and quantity of reclaimed water under our IGA is protected.

3.2 – OVWU fully supports Class A+ reclaimed water.
4.4 – OVWU does not implement or support the idea of reclaimed water for residential use at this time.
4.7 – OVWU supports large irrigated or industrial use of reclaimed water.

Demand Management
2.1 & 2.2 – Regional goals can be discussed and considered but should only be approved by the governing body that is responsible for each jurisdiction. One jurisdiction could not impose its goals on another.
3.1 – OVWU is a leader in water conservation and would support this as approved by TOV Council.
5.1 – TOV has ordinances in place for passive rain water harvesting for new development.

General Questions
There are a significant amount of residences within the Oro Valley Town boundaries that are served by Tucson Water. How will these residences be affected by these recommendations?

All TOV residences are served by Pima County Wastewater Reclamation Department, how do these recommendations impact these residences?

TOV residents should not be adversely impacted by the implementation of these recommendations.

P. 23 –
Recommendations
Most of these recommendations are in place for TOV through its Planning and Zoning approval process.

P. 24 –
Recommendations
These recommendations apply to areas within or adjacent to the Tucson City limits and do not (and should not) apply to areas within TOV.

P. 25-
2.4 - Continuing to work through PAG for regional issues is fine, but each individual jurisdiction should remain in control of the areas within its individual boundaries. PAG should not be the final authority on growth and urban-form.

P. 27 & 28
These recommendations indicate that they should apply only to Tucson and the unincorporated areas of Pima County. Implementation of these recommendations should not impact other jurisdictions.

3.4 The recommendation for wheeling of CAP is something we are also working on with Tucson Water and Metro. OVWU supports this approach.

P. 34 –

4.2 – Any Lower Santa Cruz River (LSCR) Management Plan should not impact the current LSCR Managed In-Channel Recharge Project. Any water used for environmental purposes should be from water owned by Pima County or Tucson Water. None of the effluent owned by Oro Valley should be used for these purposes. Oro Valley has an extensive reclaimed water system and needs its wastewater effluent for this purpose or for long-term storage credits for replacing groundwater use.

In addition, the costs of such programs are expensive. How will the water be paid for if needed to be purchased? What would be the cost impact on Pima County Wastewater taxes and/or wastewater bills?

P. 39 –
1.1 – The ADD Water Project by CAP should be supported and continue.

P. 40 –
2.1-2.6 - These are all good recommendations.

P. 42-
4.5 – Expansion of the reclaimed system is fine so long as it does not impact TOV's existing Reclaimed Water IGA with Tucson Water and TOV's ownership of wastewater effluent.

P. 43 –
1.1 – The recommendation states the City and County should partner with other stakeholders to identify patterns of use and conservation. Providing this information should be voluntary and not cause a burden to the stakeholder or water provider. They should be aware of how this information would be used.

P. 46 –
2.1 – The recommendation discusses working with other water providers regarding developing common goals for water conservation. It recommends a regional process. This would be fine so long as each entity was represented on any future committee or panel that may be formed.

P. 48 & 49 –
3.1 – This recommendation also discusses working with stakeholders regarding water conservation regulations, landscape and building and zoning standards. These are common elements for all jurisdictions, but each jurisdiction should have the authority to independently and individually approve and implement these types of regulations and standards.

P. 50 –
4.1 – Again regional stakeholders have been discussed in this case regarding a public opinion survey. Any survey should be limited to the Tucson Water Service Area boundary. If other water providers choose to participate, it should be after formal review of the survey.

P. 52 through P. 63 –
Oversight Committee Conclusions

In general, we support the recommendations in this section regarding future phases. The recommendations pertain to regional involvement and additional studies and information from other stakeholders and water providers. However, Phase 3 should **not** continue unless there is an acceptable plan for representing all regional water providers.

The main issue here is will TOV or OVWU be involved and also have representation. In the previous process Tucson and Pima County focused on issues pertinent to their coincident water and wastewater service areas. It did not extend beyond those areas served by both Tucson Water and Pima County Wastewater Reclamation Department. As the study moves beyond Phase 1 and 2 studies and a has larger regional approach, then the study needs to not only involve those other water and/or wastewater service providers, but also develop a process that has adequate and fair representation.

At the outset of the Tucson/Pima County study, we asked through the Southern Arizona Water Users Association to participate and have a seat at the table, but instead only representatives appointed by the City of Tucson and Pima County were on the Oversight Committee. Oro Valley is willing to participate if we have a voice and vote in the process.

Another question is who will conduct the study. The Pima Association of Governments Staff could possibly facilitate the Phase 3 Study but the study should not be directly under the PAG Regional Council.

The other question that needs to be answered is who will pay for the costs of the Phase 3 Study. Participation in the study would put a burden on water providers for staff time and providing information.

Again, Phase 3 should not move forward until an acceptable plan is developed for adequate and fair representation.

From: Rick Grinnell [mailto:rick@substucson.com]
Sent: Wednesday, February 03, 2010 8:43 PM
To: info@tucsonpimawaterstudy.com
Subject: Phase II Water and Waste Water Infrastructure Supply and Planning Study comments

Honorable Robert E. Walkup
Mayor, City of Tucson
Members of the Tucson City Council

February 3, 2010

Ladies and Gentlemen:

Thank you in advance for your consideration of this submittal. Without going into the extensive line by line detail of the Phase II Water and Waste Water Infrastructure Supply and Planning Study I have some concerns relevant to the business concerns of many of the Supporters of Smart United Business Strategies. This is an important process and until recently many of the business owners I've spoken with were unaware of the total process and complexity of this study and subsequent report, leaving many with more questions than answers. I respectfully request the following concerns and issues be addressed prior to adoption of the Phase II part of this process. I do realize that Phase III will address some concerns, however advancing this agenda with so little public understanding brings about grave concerns. Many businesses are so busy keep the doors open that this process has gone basically unnoticed.

1. This plan operates under the premise of identifying growth areas without really addressing the economic engines, costs and any quantifiable information needed to support any growth. The quality of growth cannot and will not occur without an aggressive economic plan inclusive of wealth industries to sustain any real opportunities for growth. This issue needs to be introduced now, not later.

2. Water and Land conservation plan does not again point to how this is supposed to work in conjunction with economic engine to pay for all this conservation. How can water be properly incorporated into the economic development picture along with water conservation and land use synchronization policies?

3. Allocation of $50 million (minimum replacement cost) worth of water

for free, with no plan to replace it or consideration for other uses such as economic development. I believe this is putting the cart before the horse. A complete cost, funding mechanism and benefit analysis needs to be conducted in an open discussion with the public. This elected body argued adamantly against Prop 200 because there was no funding for law enforcement and yet this reports uses 10,000 acre feet of water a year as a guide with no funding. A bit of inconsistency in this process. Where's the economic engines to drive this effort?

Finally, this plan seems to do a good job of directing us towards a regional water authority if you will, which is beneficial to all of our region. Water is a regional issue, not just a Tucson issue and I commend you on your willingness to engage this part of the process. It's a big step towards the bigger picture of our region with Tucson leading the way.

Again, this is an overview of concerns that have been raised by many and I apologize if this doesn't make the timeline for public comment. Please feel free to contact me with any questions comments or ideas to expand the public process of education.

Respectfully Submitted on behalf of SUBS Supporters,

Rick

Rick Grinnell, Founder, Lobbyist

Smart United Business Strategies, Inc.

198. W. Franklin St. 85701

Tucson, AZ. 85701

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SAHBA
the community builder
Southern Arizona Home Builders Association

Southern Arizona Home Builders Association

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Fax: (520) 326-8665
Web: www.sahba.org

SAHBA – Comments on City/County Water Study Phase II Report : 30 Day Extension

TO: Mayor Walkup, Members of the Tucson City Council

DA: February 3, 2010

The Honorable Bob Walkup and Council Members:

On behalf of the 650+ SAHBA members, representing tens of thousands of employees, I would like to submit our comments on the Phase II Water Report during this 30 Day Extension. While we agree with the majority of recommendations contained within the report, there are some key issues, which we've previously addressed, that we believe must be resolved before adopting the report.

It is our hope that you will consider our input, as well as the input from the other commenters, to make an informed decision in respect to the Phase II Report and the implementation of the recommendations contained within.

1) **Make Policy Based on Prudent Financial Decisions** – There are several recommendations contained within the Phase II Report that have financial costs to them that is not identified. This prohibits the Mayor and Council Members from making fiscally sound policy decisions based on costs to the City, taxpayers and local businesses.

   SAHBA advocates that the costs for the City of Tucson, Tucson taxpayers and local businesses are identified and shared with Mayor and Council, prior to adoption/implementation.

2) **Protect Jobs & Local Economic Investment** – The City of Tucson's interim obligated to serve water policy jeopardizes economic development projects and job creation/retention by selecting winners and losers for new water hook-ups.

   SAHBA advocate that the Mayor and Council move quickly to craft a formal policy that allows Tucson Water the flexibility to extend service to projects near existing infrastructure that will create jobs and stimulate the economy.

3) **Maintain a Complete Water Portfolio** – The Conservation Effluent Pool (CEP) dedicates up to 10,000 acre feet per year of water to the environment without considering how it could be used instead for economic, social and municipal purposes.

   SAHBA advocates the Mayor and Council not relinquish this water until the costs/benefits and pros/cons of such a policy have been fully considered as well as devising a financial/cost sharing plan to replace the CEP water.

4) **Conduct A Regional Dialogue** – While there has been some discussion from the City and County about Phases III-V of the Study, there hasn't been a clear indication

about how that regional process will occur. It is imperative that a fair and balanced regional discussion take place on water.

SAHBA encourages Mayor and Council to push for a regional consortium to lead Phases III-V of the report. This consortium should include representatives from the government entities in Pima County, stakeholders from the business and environmental communities and other municipal and private water/wastewater providers. PAG should be involved but only to the extent of providing administrative services.

5) **Recognize the Benefits of Economic Growth** – Much of the language contained within narrative portions of the Phase II Report can be viewed as anti-growth. We believe the narrative fails to recognize the benefits of residential and commercial growth in our community such as job creation, economic investment and tax revenue.

   SAHBA advocates that only the recommendations are used as part of future water policies and management decisions.

Thank-you in advance for considering our comments and we look forward to a constructive dialogue on these important issues.

Sincerely,

David Godlewski

Government Liaison, SAHBA

SOUTHERN ARIZONA LEADERSHIP COUNCIL

February 3, 2010

Southern Arizona Leadership Council, SALC, Comments on City/County Water Study Phase II Report 30 Day

TO: Mayor Walkup, Members of the Tucson City Council

The Honorable Bob Walkup and Council Members,

SALC is pleased to submit our comments on the Phase II Water Report during this 30-day period. We appreciate that the Phase II report represents a great deal of work. While the report has substantial value, it is clearly not a consensus document on which all water policy can or should be based.

Many of the recommendations have merit and can form the basis for further research and public comment as we seek to build a sustainable water supply for our city and region. The mayor and council have the opportunity to adopt this report with language that places it in its proper context so that it can be used wisely in future water policy decisions. SALC appreciates your vote to offer a 30 day comment period and now we urge you to adopt the Phase II report with language that recognizes its strengths and also limits its impact on future water policy.

The following is a list of specific recommendations for your consideration.

1. Water Policy decisions must take into consideration the economic value of this precious resource. It is said that every city gets the community it can afford. At no time in our history has this statement been truer. Water is the foundation of our economy. Without an assured supply of water, future economic growth is jeopardized. SALC recognizes and supports the many critical needs for water, including sustaining our people and our environment. Decisions on the use and management of water are far clearer and wiser when the economics of water are considered. Therefore, a cost benefit analysis must be considered as part of every water policy decision.

The Conservation Effluent Pool is an example of a policy adopted unilaterally by the city and the county without an economic analysis or public discussion. Adoption language for the Phase II study should prohibit implementation of the CEP until the proper due diligence is complete. The potential set aside and federalization of 25% of our current effluent is a major issue that demands further discussion and review.

2. The city must act soon to adopt a more flexible and business-friendly water policy that supports job creation and economic development. The City of Tucson is the primary *regional* water provider. The city's current "obligated to serve" policy is costing jobs and hurting our region's economic recovery. This is one region, with one aquifer, and it is essential for the city to fulfill its responsibility to the entire region.

3. The city and county need to keep their promise, given two years ago when they committed to a five-phase process, to now involve the entire region in the water deliberations. SALC opposed the plan two years ago because Phases I & II kept many stakeholders out of the process. Despite our objections, we joined with others in the Tucson Regional Water Coalition to participate in phases I & II – based on the promise of a regional Phase III. SALC is counting on the city and county to live up to their promise and push forward with this crucial next phase.

We stand ready to assist in any way possible. We believe the private sector can partner effectively with the public sector to create a value-added process that informs and improves our regional water sustainability and management.

Sincerely,

Ron Shoopman
President
Southern Arizona Leadership Council

Sent: Wednesday, February 03, 2010 4:32 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: sltofel@tofelconstruction.com

Comments/Questions: I strongly suggest re-addressing the issue of the Conservation Effluent Pool. although this was committed back in 2000, I believe that the urgent nature of the state of the Tucson Metropolitan area economy suggests that this is not the highest and best use for this valuable resource. The more our effluent can be used in landscape, industrial or agricultural applications in lieu of potable water, the better our community will be able toface the very serious challenges before us.

Tucson Regional Water Coalition

Prosperity - Sustainability - Community

February 3, 2010

City of Tucson Mayor & Council,

Arizona Builders Alliance

Alliance of Construction Trades

Arizona Small Business Association

Marana Chamber of Commerce

Metropolitan Pima Alliance

Northern Pima County Chamber of Commerce

Safe and Sensible Water Committee

Southern Arizona Home Builders Association

Southern Arizona Leadership Council

Tucson Association of Realtors

Tucson Metropolitan Chamber of Commerce

Tucson Utility Contractors Association

Tucson Hispanic Chamber of Commerce

The Tucson Regional Water Coalition ("the Coalition") is a group of business and trade organizations collectively representing over 250,000 jobs in the Tucson region. The Coalition's membership includes Arizona Builders Alliance, Alliance of Construction Trades, Marana Chamber of Commerce, Metropolitan Pima Alliance, Northern Pima County Chamber of Commerce, Safe and Sensible Water Committee, Southern Arizona Homebuilders Association, Southern Arizona Leadership Council, Tucson Association of Realtors, Tucson Metropolitan Chamber of Commerce, Tucson Utilities Contractors Association, Tucson Hispanic Chamber of Commerce, *and recently added the Arizona Multi-Housing Association*. The member organizations recognize the importance of water to our local and statewide economy, and have organized to actively engage policymakers on critical water management issues.

The Coalition is encouraged by the fact that you have delayed adoption of the Phase 2 Report to carefully consider each of the policy recommendations. We have reviewed the Phase II Report and evaluated Staff's individual recommendations. Our full evaluation of the recommendations was submitted at the January 12th meeting and it is one of several previous submittals we have attached for your review. You will note that there are 25 recommendations that we support, 14 that we oppose, and 17 that we have not taken a position. Coalition members have additional concerns with the tone and content included in narrative portions of Staff's report.

Given the outstanding concerns of many individuals and groups in our community, we ask that you delay formal adoption of Staff's policy recommendations until you have been provided more detailed information about the costs and implications of specific recommendations contained in the report. We believe that the current proposal to create a more detailed action plan to implement the recommendations—including a timeline, deliverables, costs, roles and responsibilities—should be completed and approved by Mayor & Council prior to formal endorsement of any of Staff's policy recommendations. It is our sincere hope that additional analysis and vetting of the recommendations will result in substantive changes that improve the Phase II Report.

Above all else, the Coalition asks Mayor & Council to focus on critical questions about how Staff's recommended policy directives harm or help: job creation, near-term economic and fiscal conditions, and the long-term economic development and security of the community. We ask that Mayor & Council focus specifically on policy recommendations regarding finalization of the Conservation Effluent Pool, evaluation of the City's Obligated to Serve Policy, and helping to bring together a truly regional water planning process. Each of these areas of concern has a tremendous impact on the City's near- and long-term viability.

Sincerely,

Tucson Regional Water Coalition

Tucson Regional Water Coalition

Prosperity - Sustainability - Community

January 11, 2010

Arizona Builders Alliance

Alliance of Construction Trades

Marana Chamber of Commerce

Metropolitan Pima Alliance

Northern Pima County Chamber of Commerce

Safe and Sensible Water Committee

Southern Arizona Home Builders Association

Southern Arizona Leadership Council

Tucson Association of Realtors

Tucson Metropolitan Chamber of Commerce

Tucson Utility Contractors Association

Tucson Hispanic Chamber of Commerce

Pima County Board of Supervisors and City of Tucson Mayor & Council,

The Tucson Regional Water Coalition ("the Coalition") is a group of business and trade organizations collectively representing over 250,000 jobs in the Tucson region. The Coalition's membership includes Arizona Builders Alliance, Alliance of Construction Trades, Marana Chamber of Commerce, Metropolitan Pima Alliance, Northern Pima County Chamber of Commerce, Safe and Sensible Water Committee, Southern Arizona Homebuilders Association, Southern Arizona Leadership Council, Tucson Association of Realtors, Tucson Metropolitan Chamber of Commerce, Tucson Utilities Contractors Association, and Tucson Hispanic Chamber of Commerce. The member organizations recognize the importance of water to our local and statewide economy, and have organized to actively engage policymakers on critical water management issues.

The Coalition has closely monitored and when able participated in the City/County process. Our efforts to engage and contribute to the process have included regular attendance of Oversight Committee meetings, formal correspondence on key issues, a presentation during Phase I of the Coalition's foundational principles, the Phase II white paper and panel discussion on the economic value of water, as well as several meetings with City and County staff. The Coalition's participation has consistently focused on: 1) establishing an inclusive and transparent regional planning process; 2) recognizing the importance of water to regional economic growth and security; and 3) creating high-quality information to rationalize dialogue and decision-making.

We have reviewed the Phase II Report and evaluated Staff's individual recommendations. Evaluating the report on its merit, there are 25 recommendations that we support, 14 that we oppose, and 17 that we have not taken a position. Our full evaluation of Staff's recommendations is provided as an attachment. We have additional concerns with the tone, content and general direction of narrative portions of Staff's report. In light of our outstanding concerns, we ask that the City and County's elected bodies defer formal adoption of the draft resolution and report. However, if the City and County choose to accept the Phase II Report into the record at this time, the Coalition asks that any resolution or motion include the following amendment:

> *Now therefore, be it resolved that the Pima County Board of Supervisors and the City of Tucson Mayor and Council hereby accept into the record the City/County staff and Oversight Committee recommendations as set forth in the Phase II Final Report. All portions and sections of Staff's report that are not numbered recommendations shall not be used to provide policy guidance and are not endorsed by the Pima County Board of Supervisors and City of Tucson Mayor and Council.*

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Additionally, the Coalition evaluated the Oversight Committee's principles and recommendations. We believe the Oversight Committee's work provides additional direction that must be considered before moving forward on a number of Staff's recommendations. If the City and County choose to accept the Phase II Report into the record at this time, the Coalition asks that any resolution or motion include the following amendments:

Now therefore, be it resolved that the Pima County Board of Supervisors and the City of Tucson Mayor and Council, in support of Oversight Committee principles and recommendations set forth in the Phase II Final Report, direct City and County Staff to:

1) *Manage water with due consideration to its economic value and importance to regional economic development, studying all costs and benefits of water and wastewater policies in order to establish baseline facts concerning the net outcomes of all policy options or projects under consideration. This shall include a determination of the cost to replace water entitlements proposed for reallocation to environmental restoration prior to moving forward on Staff recommendation B.5.1(Conservation Effluent Pool), and plans to finance acquisition of replacement supplies such that costs are shared by all beneficiaries.*

2) *Take a regional approach to water and wastewater in the Tucson AMA, committing resources to ensure a regional process is convened immediately. The regional process shall involve all jurisdictions, private water utilities, and other stakeholders in deliberations, and shall be similar to the RTA model . The regional process shall be led by a consortium of non-governmental entities and include technical assistance from Pima Association of Governments, Arizona Department of Water Resources, and Central Arizona Water Conservation District.*

3) *Conduct analysis outlined in Staff's recommendations A.3.1 and A.3.2 immediately to determine which "sub-regions" are appropriate to extend Tucson Water infrastructure to provide water service. Analysis shall be timely, address equity, and be updated periodically. Analysis shall focus specifically on near-term economic and fiscal benefits associated with extending service to commercial and industrial parcels located within ½ mile of existing infrastructure, as well as the implications of denying service. Following completion of the analysis, the City shall adopt a formal policy regarding extension of water service outside the "obligated area" and it shall replace the current interim policy.*

The Coalition is encouraged by the regional nature of many recommendations proposed by the Oversight Committee and Staff. We are hopeful that the much anticipated regional process will move forward quickly. The Coalition has consistently voiced concerns regarding the limited participation rights granted impacted parties during Phases I & II. Cooperative regional water planning is a central element to our community's economic development efforts, and sends a positive message to those looking to invest and/or relocate in the Tucson region. We strongly recommend the City and County commit to a truly cooperative process focused on maximizing economic benefits derived from use of the region's available water supply.

Sincerely,

Tucson Regional Water Coalition

TUCSON REGIONAL WATER COALITION

December 1, 2009

Dear City/County Study Oversight Committee and Staff,

The Tucson Regional Water Coalition has closely monitored and when able participated in the City/County process throughout Phases I & II. Our efforts to engage and contribute to the process have included regular attendance of Oversight Committee meetings, formal correspondence on key issues, a presentation of our foundational principles on water sustainability, and the Phase II white paper and panel discussion on the economic value of water. The Coalition's participation has consistently focused on: 1) establishing an inclusive and transparent regional planning process; 2) recognizing the importance of water to regional economic growth/security and managing it accordingly; and 3) creating high-quality information to rationalize dialogue and decision-making.

The Coalition recently reviewed the Draft Phase II Staff Report. We are encouraged by the regional nature of some goals and recommendations. Discrete references and recommendations to work collaboratively as a region to acquire new water supplies, to use GO Bonds to pay for reclaimed line extensions, to establish performance-based regional conservation goals, and a commitment to compare the cost-effectiveness of various conservation methods against that of various supply augmentation options are positive steps toward more sustainable regional water planning. However, there are several other areas the Coalition feels must be addressed before the report is finalized.

The Coalition has stressed the importance of economic analysis throughout Phases I & II. Use of economic analysis in water policy and planning is widely considered a best practice approach by industry associations such as the American Water Works Association, industry professionals, and academia. Economic analysis methods provide much needed transparency and quality data to inform policy decisions, and are a fundamental building block to sound water management. The current draft does include occasional references to the use of cost-benefit analysis, but there are major policy recommendations throughout the document that lack sound analysis.

For example, the draft document includes a strong endorsement of rainwater harvesting at a variety of scales and for a variety of purposes. While the Coalition does not oppose rainwater harvesting, these broad policy endorsements lack analysis of costs and benefits associated with a range of alternatives and a comparison against other supply augmentation strategies such as water right acquisition. We recommend adding qualifying language throughout the document, committing the jurisdictions to perform the proper analysis to determine the cost-effectiveness of rainwater harvesting as well as other water conservation measures and supply augmentation alternatives. Any sums of money exacted from various industries and segments of the community by new regulations or fees should be justified by thorough and thoughtful analysis of alternatives.

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Similarly, the draft document includes extensive discussion of allocating water resources to environmental restoration. The Coalition generally supports policy that allocates water to the environment, provided the community is informed of the associated costs and benefits of all allocation decisions (i.e. the pending Conservation Effluent Pool). As outlined in the Coalition's white paper on the economic value of water, there are potentially significant opportunity costs and/or replacement costs associated with reallocating water from urban to environmental uses. Therefore, we believe the jurisdictions should provide the public with more information about the costs and benefits associated with individual restoration projects and prioritize projects based on a comparison of net benefits. Moreover, high priority restoration projects (defined as those with the greatest net benefit) should be compared to net benefits associated with a variety of urban uses before reallocation is decided.

Reallocation decisions must involve an informed community discussion about whether we are collectively willing to forgo the net benefits of alternative uses of water. The jurisdictions have not performed the analyses needed to initiate a legitimate policy discussion on reallocating water from urban to environmental uses. Until these analyses are performed and a community values discussion initiated, the Coalition recommends the jurisdictions add qualifying language throughout the document committing to perform the proper analysis to determine net benefits of all water allocation decisions—particularly those reallocating resources out of the urban water sector such as the Conservation Effluent Pool.

The Coalition believes that all water reallocation decisions should be project-specific and approved individually. That is, rather than setting aside 10,000 acre-feet of water for environment restoration—as contemplated by the Conservation Effluent Pool—each proposed restoration project should determine the annual water demand, the duration of supplemental water, a detailed description of project benefits, and a description of project costs (including any opportunity costs associated with reallocation). This process ensures the community evaluates critical reallocation decisions with full-knowledge of specific costs and benefits, and accurately determines whether the proposed project is the best use of the region's water supplies at that time.

Finally, the Coalition has consistently voiced concerns regarding the limited participation rights granted to impacted parties during Phases I & II. Exclusion of key regional stakeholders from deliberative processes during Phases I & II delayed and possibly impaired efforts to convene a truly regional water planning process. It is critical that the Phase II Report include a commitment by the City and County to help convene a regional process. Cooperative regional water planning is a central element to our community's economic development efforts, and sends a positive message to those looking to invest and/or relocate in the Tucson region. We strongly recommend the City and County commit to a cooperative process focused on maximizing regional net benefits derived from utilization of the region's available water supply.

Sincerely,

Tucson Regional Water Coalition

PHASE II City/County Staff Recommendations	Agree (25)	Disagree (14)	Explanation
Section A - Comprehensive, Integrated Planning			
1.1 The City and County should require and incent new development and redevelopment projects to implement smart growth principles and concepts and contribute to a sustainable urban form including: • Mix of uses • Open space preservation • Higher densities/density by design • Housing choice • Transportation options • Access to jobs and services • Reduced water and energy consumption • Infrastructure efficiencies A variety of policy and legislative tools as well as incentives should be developed to implement these concepts including: • General and Comprehensive Plan Policies • Land Use Code changes • Other legislative actions • Incentives		X	Not enough time was spent on these issues during City/County Water Study to warrant detailed recommendations in these areas. Recommend deleting this section from the report and deliberate on these important issues in the Regional Visioning Process and/or during the updates to General Plan and Comp Plan.
2.1 The City and County should take steps to encourage growth and new development in areas that are within or adjacent to the existing built environment, are outside of the conservation land system, and are identified as most suitable for development which include the following: • Infill into the existing built environment (highest priority) • Within the Houghton corridor • Within the Southlands area • Within the Southwest area Revitalization of downtown as well as infill and reinvestment in the built-up areas of the community (inside and outside city limits) should be the highest priority for locating future growth in order to make use of existing infrastructure and minimize the consumption of raw land.			No position. Support identified growth areas. Restating those growth areas agreed upon by City and County is sufficient for discussion about urban form for this study. Should recognize that Marana, Oro Valley, and Sahuarita are also known "growth areas."

	Infill should be done in a manner that is economically, environmentally, and socially advantageous. A variety of policy and legislative tools as well as incentives should be developed to encourage growth in these locations including: • General and Comprehensive Plan Policies • Land Use Code changes • Other legislative actions • Differential impact fees • Incentives City and County staff should involve the public in discussion about location of growth and tools to direct growth to these areas as part of their updates to the City General Plan and County Comprehensive Plan.			
2.2	The City and County should influence the location of future growth through where infrastructure is built and public services are provided. The City and County should establish a joint land use/capital improvement planning staff team to plan for the timing, sequencing, location and funding of infrastructure and public services to serve identified growth areas. Financial and infrastructure planning should occur ahead of development pressures. For infill areas, policies should focus on planning for and funding needed investments and improvements that must go along with higher densities and redevelopment. The County has already begun an effort to inventory the planning related activities of its various public works departments, and this could be replicated for the City prior to a joint process getting underway. Updates to the City General Plan and County Comprehensive Plan should set forth policy that requires this process take place.			No position. Support financial and infrastructure planning to occur ahead of growth to facilitate absorption of growing population.
2.3	The City and County should influence the location of future growth through the acquisition of open space. With the support of voters, the County will continue funding the acquisition of natural areas for conservation, recreation, and the protection of water resources. Natural	X		

	preserves assist in defining the urban form, as well as providing multiple benefits such as recreational opportunities, conservation of water resources and natural floodplain functions, and protection of scenic views. In some cases, purchasing land outright or through conservation easements is the most realistic way to preserve areas not suitable for development.			
2.4	The City and County should continue to work with PAG to do growth and urban form scenario modeling on a regional level (including Marana, Oro Valley, Sahuarita, South Tucson, the Tohono O'odham Nation, the Pascua Yaqui Tribe, the San Xavier District and others) similar to the modeling done for the City/County service area in the Growth and Urban Form technical paper. This work could help inform or be done in conjunction with the emerging regional visioning process and could help inform the City General Plan update and County Comprehensive Plan update. Ideally this analysis should also be done at the Southern Arizona and Sun Corridor scales.	X		
3.1	Outside of the Tucson Water Obligated Service Area, in unincorporated Pima County, the City and County should work together to conduct comprehensive water resource planning to identify sustainable water resources to serve these areas. Water resources should be looked at in a comprehensive manner with the goal of making efficient use of water and matching up sources with needs. This planning effort should address the use of potable, reclaimed, effluent, stormwater, rainwater, and graywater. The City and County should evaluate the life-cycle cost and triple bottom line of decentralized wastewater treatment versus centralized systems in light of energy demands and efficiencies, and integration with recharge and reclaimed water systems. As an example, the City and County should work cooperatively to explore the development and operation of reclaimed water systems and recharge facilities at the County's sub-regional wastewater reclamation facilities.		X	Disagree with City's interim policy regarding new service outside "obligated area." Agree that City and County should identify those agreed upon "growth areas" and/or "infill areas" that make sense to extend Tucson Water infrastructure.
3.2	The above described planning effort should help inform future City considerations of extending the obligated service area. These expansion		X	Disagree with City's interim policy regarding new service outside "obligated area." Agree that City and County should identify those

	decisions should be done on a sub-regional basis (vs. a parcel-by-parcel basis) in advance of specific water service requests. Any decision to expand the obligated area should be formalized through Mayor and Council policy. The following factors should be taken into account in making policy decisions regarding expansion of the obligated area within specific sub-regions. • Suitability of growth area • Affect of extensions on future water resource needs for the City's existing obligated area • Fiscal sustainability of development and potential for future annexation • Appropriateness of timing/phasing of development • Economic impact/benefits • Quality and sustainability of urban form • Environmental implications of development • Environmental implications of not providing water service • Social equity and social justice considerations.			agreed upon "growth areas" and/or "infill areas" that make sense to extend Tucson Water infrastructure. Policy must be developed to take us beyond an "Obligated to Serve" policy designed to force annexation. Must understand near-term economic and financial impacts of denying service to parcels in regional growth areas and/or those parcels that are clearly "infill". Must also consider the environmental impacts associated with groundwater pumping that are likely to occur if service is denied. The bar to qualify for Tucson Water service must be lowered
3.3	In addition to the comprehensive, long range planning efforts described above, the City and County should continue to assess and track the impact of individual developments on water resources: • The County should continue to implement the recent amendment to the Water element of the Comprehensive Plan providing the Board of Supervisors with the necessary water resources information concerning individual development requests. • The City should continue to implement the "water checkbook" method of tracking and communicating to the Mayor and Council how much renewable water Tucson Water has available to support proposed new developments or businesses.		X	County Water Resource Element should be rewritten in 2010 Comp Plan Update to reflect unwillingness of City to extend service, to recognize effluent as a renewable water supply, to delete term "renewable and potable", to recognize CAGRD membership as renewable water supply, to recognize that every water provider in the Tucson AMA (including Tucson Water) withdraws water outside the area of hydrologic impact where water is recharged.
3.4	The City should continue to pursue discussions with other water providers regarding potential for wheeling and/or recharge agreements. As an example, Tucson Water and Metro Water/Hub should discuss the potential for wheeling of a portion of metro's CAP allocation to Metro/Hub through Tucson Water's integrated potable water distribution system at a cost of service price, in order to reduce	X		Consistent with Coalition Principle "Support shared use of community infrastructure through cost-effective wheeling agreements…"

Metro/Hub's groundwater pumping in the immediate area.			
3.5 The City and County should work together with other jurisdictions to support regional solutions to address the hydrological disconnect between where water is being pumped and where it is being replenished.	X		Consistent with Coalition Principle "Support shared use of community infrastructure through cost-effective wheeling agreements…"
4.1 Future development should be evaluated in terms of fiscal sustainability from both the capital (initial construction of infrastructure) and operating (ongoing public services and maintenance of infrastructure) perspectives to ensure that new development is self-sustaining and not subsidized over the long term by pre-existing residents and businesses.		X	Anti-growth tone that fails to recognize significant economic and financial benefits associated with population growth (see multiplier effect), including job creation, increased wages, increased sales tax, increased property taxes, increased income tax, etc. Also, fails to recognize significant impact fees and hook-up fees currently in place to ensure that new residents pay proportionate share of the costs.
4.2 The Tucson Water Department and the Regional Wastewater Reclamation Department should continue managing their water/wastewater infrastructure capital improvement programs in a manner that is consistent with the latest nationally accepted industry best practices and continue to ensure that each year's water/wastewater Financial Plan adequately and demonstrably provides mechanisms so that "growth pays for growth."			No position. However, does seems to suggest that growth does pay for growth through currently adopted impact fees and hook-up fees.
Section B – Respect for the Environment			
1.1 The City and County continue to preserve existing riparian areas to the maximum extent possible through land acquisition, regulatory land use controls that limit encroachment into floodplains and riparian habitat, and education and outreach.		X	Use of "to the maximum extent possible" is too strong and fails to meet sustainability criteria of balancing competing interests and/or tradeoffs. While protection of riparian habitat is appropriate (especially through land acquisition), environmental protection needs to be balanced against economic needs such as increased land utilization in urban areas. City and County floodplain and riparian codes should have different levels protection for areas targeted for urbanization (or that are already urbanized) versus those sensitive environmental areas targeted for protection.
1.2 The City and County should evaluate the effectiveness of programs and policies, within their respective jurisdictional areas and water service areas, regarding the protection of groundwater-dependent and hydro-		X	Focus needs to be on providing cost-effective alternatives to groundwater use for those who are near environmentally sensitive areas (i.e. wheeling agreements or simply providing service).

	riparian areas from groundwater withdrawal and surface water diversions. The city and county should promote changes to state law regarding drilling and pumping of wells within and near shallow groundwater ecosystems.			Environmental benefits are regional in nature and costs should be shared by all beneficiaries, which could mean subsidies or cost-sharing to take users off of groundwater (see use of GO Bonds for reclaimed line extensions).
2.1	The City and County should work with stakeholders to develop a shared regional policy for addressing those regulatory compliance projects that require water for short-term or long-term (permanent or seasonal) establishment.		X	Disagree with linking regional water supplies to Federal Section 10 Permits (HCPs). More cost-effective to purchase open space for mitigation credits than to mitigate by way of riparian restoration that are more costly. Effluent supplies dedicated for environmental restoration and reallocated from municipal providers' portfolio should be replaced and costs should be shared by all beneficiaries through volumetric fees on water and/or wastewater bills.
2.2	The City and County should work with stakeholders to develop a regional collaboration for riparian restoration. This effort should include exploring or continuing to pursue: • Enhancing the value of in-lieu mitigation funds received for compliance with local watercourse protection ordinances to fund restoration activities; • Opportunities to partner with non-governmental entities that operate mitigation banks and/or undertake restoration activities; • Continue to evaluate existing County and City-owned lands for suitability for environmental conservation and restoration; • Opportunities to secure grant funding for environmental restoration; • Partnering with experts to identify long-term water quality implications for restoration areas, such as the impacts of higher salinity of CAP, effluent, and reclaimed water.		X	Local watercourse protection ordinances should not be used to exact resources from projects in growth areas where urbanization is desired. Watercourse and riparian ordinances should be written with varying level of protection/requirements for growth areas versus environmentally sensitive areas.
2.3	The City and County should continue to work with ADEQ to develop water quality standards and designations specifically for habitat restoration.			No position.
3.1	The City and County should pursue cost-effective, multiple-benefit, broad scale public projects that utilize reclaimed water to accomplish			No position.

goals such as aquifer augmentation, riparian restoration, habitat protection, environmental enhancement, turf irrigation, and recreational opportunities in combination with flood control and stormwater management facilities, parks and trails, and water recharge and wastewater disposal activities. For example by: • Incorporating ecosystem restoration adjacent to wastewater treatment facilities; • Exploring ways for recharge facilities to support restoration; • Retrofitting existing large stormwater detention basins to support riparian habitat; • Including environmental restoration opportunities as a component in all new stormwater management projects, so that optimal amounts of stormwater are retained for reuse before being discharged to the respective stormwater conveyance systems; and • Incorporating, where possible, rainwater harvesting and ecological amenities into other public projects. • Development of a joint policy that incorporates rainwater harvesting, stormwater detention, non-potable water use, recreation, and ecological amenities to the extent feasible in Capital Improvement Projects budgets, especially in open space areas.			
3.2 The City and County should identify areas within the existing built environment characterized by an abundance of impervious surfaces and identify opportunities for additional stormwater management. This would have water quality, stormwater management, and environmental benefits. To accomplish this, the City and County would need to develop a plan that identifies site-specific locations and standards for implementing stormwater management projects.			No position.
4.1 The City and County should advocate for changes to state statutes to grant full recharge credits to the Secretary of Interior for effluent used to sustain the flows in the Santa Cruz River and the riparian corridor.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies

			should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.2 The City and County, and other regional partners, should develop a "Lower Santa Cruz River Management Plan" that would identify the most effective and sustainable means for using effluent and other renewable water supplies to support and enhance valuable habitat in the Santa Cruz River corridor.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.3 As part of the Management Plan, and building upon the Regional Flood Control District's current cooperative efforts, the City and County should develop partnerships with other effluent rights holders and stakeholders to use our growing collection of pilot restoration projects to demonstrate their potential to maintain and enhance aquatic and riparian habitat along the Santa Cruz River. The City and County can then identify a portfolio of multi-purpose projects for long term implementation in the context of the Management Plan. For example, the emphasis should be on areas such as the reach between the Rillito and the Canada del Oro confluence, where stormwater flows are more concentrated.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.4 The City and County should incorporate into both in-channel and off-channel recharge facilities features which also use the water to support riparian and/or aquatic habitat.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and

			the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
5.1 The City and County will finalize the IGA for the Conservation Effluent Pool (CEP), which will annually provide up to 10,000 acre feet of effluent for environmental enhancements. This agreement will be delivered to the City Mayor and Council and the County Board of Supervisors for review and approval.		X	Do not finalize CEP until accurate accounting of specific costs and benefits—including opportunity costs—associated with reallocating effluent from municipal providers portfolios for environmental restoration. Also, To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. . Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
5.2 The City and County will work with stakeholders and other resource experts to link water conservation to the protection of future supplies and to environment preservation/restoration by identifying mechanisms to reserve water saved through conservation programs for specific environmental uses/projects. This will allow community members to directly contribute to environmental protection and enhancement as a result of their individual actions to reduce their use of potable water. It would also provide a mechanism to develop a water source, beyond the CEP, that can be dedicated to projects with an environmental benefit.	X		The so-called Conserve to Enhance Program should be used instead of CEP—not in addition to it. Effluent should be reallocated for environmental restoration only once the community understands all costs and benefits and is willing to pay associated replacement and/or opportunity costs in order to enjoy benefits.
Section C – Water Supply			
1.1 As the ADD Water stakeholders' process proceeds, local water providers and users should maximize opportunities to acquire ADD Water Supplies and explore options to finance these additional supplies when they become available.	X		Agree. Consistent with Coalition Principle "Collectively maximize purchase and underground storage of additional surface water and/or imported groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns"
1.2 All Municipal and Industrial priority CAP allocations will be vulnerable in times of severe shortage on the Colorado River. Therefore, Tucson Water should take the necessary steps to have additional, more reliable water resources to reinforce and buttress its CAP water allocation to serve growth in the existing built environment and yet undeveloped	X		Agree. Consistent with Coalition Principle "Collectively maximize purchase and underground storage of additional surface water and/or imported groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns"

	areas of Tucson Water's Obligated Service Area.			
1.3	The City and County should continue to jointly plan for the acquisition of additional supplies to maximize shared system efficiencies and to achieve their respective sustainability goals. These goals should collectively take into account social, economic, and environmental factors to ensure that all costs and benefits are taken into account.	X		Agree. Consistent with Coalition Principle "Collectively maximize purchase and underground storage of additional surface water and/or imported groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns" and Coalition Principle "Support shared use of community infrastructure through cost-effective wheeling agreements…to achieve greater integration, reliability, flexibility, and reliance on renewable supplies throughout the region."
2.1	The City and County should continue to balance the uses of effluent, dedicating it to the reclaimed system, to environmental purposes, and for aquifer augmentation/recharge credits.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
2.2	Continue to implement ROMP improvements as currently planned and budgeted.	X		
2.3	The City and County should remain vigilant about water quality by continuing efforts at source control, maintaining proactive system monitoring, conducting public outreach & education, and staying abreast of research and regulatory developments related to emerging contaminants in water and wastewater systems.			No position.
2.4	The City and County should evaluate the use of reclaimed water for particular sites with the goal of maximizing the community's overall water resource portfolio by matching up the most effective and	X		Support maximization of effluent for Assured Water Supply purposes. Community should consider wheeling agreements and/or subsidies that reduce costs of reclaimed water to reduce groundwater

resource-efficient water source with a particular site and its needs.			dependency/use where there is a public benefit (i.e. recreation and/or environmentally sensitive areas).
2.5 Tucson Water and Pima County Wastewater should continue to assess the potential water supply benefits as well as the adverse consequences of expanded gray water use within their respective service areas.	X		
2.6 The City of Tucson and Pima County will continue encouraging rainwater harvesting on both residential, commercial, and government properties to defray the high costs associated with stormwater management, and to develop a new source of local, renewable water supply.		X	More research and analysis should be performed before broad endorsement of rainwater harvesting at a variety of scales. Recommend understanding the costs of rainwater harvesting as a supply alternative before considering additional benefits of stormwater management. Need to have credible/sound/objective analysis on this subject before and understanding alternatives before jurisdictions either encourage or require.
3.1 Refine policy and regulations governing the accrual of groundwater credits to provide incentives to groundwater turf users proximate to reclaimed lines to convert to reclaimed water in lieu of pumping.	X		
3.2 Develop alternative operational and permitting strategies to achieve a Class A+ or equivalent water supply for the reclaimed system.			No position.
3.3 The City and County should continue to work with ADEQ and ADWR to develop water quality standards, permits and designations specifically for riparian projects.			No position.
4.1 Expand financing options, including considering the use of General Obligation Bonds to pay for extensions to the reclaimed system without relying solely on paying customers and revenue bonds.	X		Use of GO Bonds is appropriate for extensions of reclaimed system, especially where there is a public/regional benefit (i.e. supports regional environmental goals). Allows all beneficiaries to share associated costs.
4.2 Maintain the current policy that a private customer with a revenue source (e.g. golf courses, industrial) who can pay the full costs of reclaimed water should pay; explore options to encourage potential customers who currently have no financial incentive to join the system to join, such as phased-in rates and expanded potable water ratepayer subsidies.	X		Agree. Subsidies that result in public/regional benefit are appropriate and allow all beneficiaries to share associated costs.
4.3 Work to lower the costs of operating the reclaimed system through efficiency improvements.	X		

4.4 Incorporate the consideration and evaluation of the use of reclaimed water in specific developments into the City and County development review processes.		X	Extension of reclaimed system should be initiated by applicant—not City and County review process. Reclaimed usage is primarily appropriate for large turf users or other large volume users. Not appropriate for individual residential users. Better for non-potable supplies with possible health concerns to be managed by landscape and/or irrigation professionals.
4.5 Tucson Water and Pima County will continue to evaluate opportunities to expand reclaimed water and remediated groundwater use to meet both municipal and environmental-enhancement supply needs.			No position. However, support maximization of effluent for Assured Water Supply purposes. Specifically, support regional investment in constructed recharge facility in Santa Cruz to recharge effluent and receive 100% credit for Assured Water Supply. To the extent that effluent is used for environmental restoration and it reduces the supplies available for municipal and industrial use, those supplies should be replaced through acquisition of additional water rights and the costs of acquisition should be shared broadly by all beneficiaries through volumetric fee on water and/or wastewater bills. Use stormwater for restoration projects, which is most cost-effective supply for that purpose.
4.6 The City and County should increase the amount of their effluent allocations used in the reclaimed system			No position. Support maximization of effluent for Assured Water Supply purposes. Community should consider wheeling agreements and/or subsidies that reduce costs of reclaimed water to reduce groundwater dependency/use where there is a public benefit (i.e. recreation and/or environmentally sensitive areas).
4.7 Identify, prioritize and pursue additional reclaimed customers based on the following criteria: • Proximity to existing reclaimed infrastructure • Cost to join the system • Energy, operating and maintenance costs • Potable and groundwater savings • Opportunity to mitigate environmental impacts of existing groundwater pumping • Turf areas that provide greatest public benefit • Availability of other water resource options			No position. Support maximization of effluent for Assured Water Supply purposes. Community should consider wheeling agreements and/or subsidies that reduce costs of reclaimed water to reduce groundwater dependency/use where there is a public benefit (i.e. recreation and/or environmentally sensitive areas).
5.1 Continue multi-pronged planning approach that includes diversification of water supplies, increased demand management, and development and maintenance of necessary infrastructure.	X		Agree. Consistent with several Coalition Principles.

5.2 Use scenario planning as a tool to assess the changing planning environment including the potential for extended drought or permanent climate change, and other types of uncertainties, such as new technology, changing regulations, or altered patterns of development in the Tucson area.	X		Agree. Consistent with Coalition Principle "Concerns regarding evolving and/or uncertain conditions should be addressed through iterative risk assessments and decision-making processes, systematically reevaluating risk according to potential financial impact to the region and probability of occurrence."
Section D – Demand Management			
1.1 The City and County partner with ADWR and other stakeholders in collecting uniform data on existing water use patterns to identify conservation potential and to support development of water efficiency and conservation goals. Measures are communicated through the coordinated information campaigns to ensure widespread public awareness of progress towards goals. Potential water use trend evaluation elements include: • indoor versus outdoor water use, • lot size • persons per household • commercial and industrial accounts • non-potable use vs. potable use	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
1.2 The City of Tucson and Pima County continuously improve the effectiveness of their conservation programming through integrated resource planning techniques, including triple bottom line analysis and evaluation of cost / benefit economic thresholds. Results of evaluations are used to revise programs as needed.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
1.3 In the face of uncertainty related to drought and climate change, the City and County should employ an adaptive planning approach that incorporates the following: • Bringing experts together to brainstorm current and future vulnerabilities under range of scenarios; • Scenario planning as a tool to assess the changing planning environment including the potential for extended drought or permanent climate change;	X		Agree. Consistent with Coalition Principle "Concerns regarding evolving and/or uncertain conditions should be addressed through iterative risk assessments and decision-making processes, systematically reevaluating risk according to potential financial impact to the region and probability of occurrence."

• Periodic review and frequent updates to the Drought Response Plans to incorporate the latest information on drought and climate change; • Integrating climate change impacts over time to re-define "normal conditions" when assessing drought; • Evaluation and consideration of the social and financial impacts of drought on the utilities and their customers and ways to address them; • Employing conservative approaches and a multi-pronged preparedness strategy that includes diversification of water supplies, demand management, and development and maintenance of necessary infrastructure to preserve options or the future.			
2.1 The City of Tucson and Pima County should evaluate options for working with regional stakeholders to establish common, measurable water efficiency* and water conservation goals community-wide. Although the City and County can initiate the dialogue, ultimately this goal needs to be advanced through a regional process. Such a process might be convened by an existing regional entity such as Pima Association of Governments (PAG), Southern Arizona Water Users Association, the University of Arizona Water Resources Research Center, and/or Water CASA.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
2.2 Building from the community-wide water efficiency goals, City of Tucson and Pima County, in cooperation with regional stakeholders, develop a menu of water efficiency and water conservation options such as targeted strategies, policies, actions, regulations, and programs.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
3.1 A joint City/County staff team, working with stakeholders, reviews their existing water conservation regulations for consistency with water efficiency goals. Where appropriate, the team recommends new requirements with a priority focus on landscape requirements that maximize non-potable water sources and water harvesting techniques. The team also evaluates the feasibility and benefits of • Developing joint landscape, building and zoning standards that increase the potential for on-site capture, storage and use of		X	All water conservation and management decisions should be subject to rigorous cost analysis that compares alternatives before finalizing decisions. This recommendation does not appear to be supported by analysis.

	rainwater. Incentives to residents, Home Owners Associations and builders should be considered *(this is further described under Goal 4, Recommendation 4.1)* • Updating standards for high efficiency toilets. • Incorporating the concepts of structured plumbing including trunk, branch twig piping systems, and pipe insulation into the plumbing code. • Developing common green building standards • Continuing to coordinate the review and update drought ordinances • Explore the possibility of requiring new facilities funded by County or City bonds to maximize LEED Silver water conservation credits.			
4.1	The City and County, working in cooperation with regional stakeholders, should gather public input regarding water efficiency measures and goals and consider it in the planning and decision making process. An initial step should be to define a list public opinion survey questions to explore public perceptions of quality of life trade offs associated with water efficiency measures and preferred strategies to achieve shared goals. Methods for gathering public input on these questions should also be explored.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
4.2	The City of Tucson and Pima County should explore the feasibility and benefits of consolidating existing programs and fostering regional approaches and partnerships for advancing water conservation and drought education, communications, pilot projects, and training.	X		Agree. Consistent with Coalition Principle "Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent…"
5.1	The Pima County Regional Flood Control District in cooperation with the City of Tucson and other regional stakeholders develops design guidelines/standards to maximize the potential for use of stormwater at the neighborhood scale. Supporting vegetation using harvested stormwater will eliminate the need for some landscape watering. Stormwater flow paths can be depressed to encourage the potential for infiltration and native vegetation can be planted that will thrive in these depressed flow paths. Such a strategy will have the additional benefit of reducing flood peaks		X	More research and analysis should be performed before broad endorsement of rainwater harvesting at a variety of scales. Recommend understanding the costs of rainwater harvesting as a supply alternative before considering additional benefits of stormwater management. Need to have credible/sound/objective analysis on this subject and understanding of alternatives before jurisdictions either encourage or require.

	and improving stormwater quality. To accomplish this, the City and County will review existing policies and regulations and: • Identify opportunities to increase the incidence of water harvesting in private developments through new or expanded incentives and improved consistency between City and County requirements; • Evaluate how development standards and HOA regulations may need to be modified to accommodate this strategy; • Develop retention/detention standards that allow these areas to be better utilized as mini-restoration sites, including maintenance standards and siting of basins within a development/project; and • Develop restoration standards that encourage the creation of higher-value habitat areas without sacrificing the retention/detention function of the basins.			
5.2	The Pima County Regional Flood Control District, in cooperation with the City of Tucson, continues to conduct research and analysis on estimated volumes of harvested rainwater available at the lot scale and costs and benefits of water harvesting as a source of additional water supply and as a stormwater management tool.	X		More research and analysis should be performed before broad endorsement of rainwater harvesting at a variety of scales. Recommend understanding the costs of rainwater harvesting as a supply alternative before considering additional benefits of stormwater management. Need to have credible/sound/objective analysis on this subject and understanding of alternatives before jurisdictions either encourage or require.

TUCSON REGIONAL WATER COALITION

Arizona Builders Alliance

Alliance of Construction Trades

Marana Chamber of Commerce

Metropolitan Pima Alliance

Northern Pima County Chamber of Commerce

Safe and Sensible Water Committee

Southern Arizona Home Builders Association

Southern Arizona Leadership Council

Tucson Association of Realtors

Tucson Metropolitan Chamber of Commerce

Tucson Utilities Contractors Association

Tucson Hispanic Chamber of Commerce

August 17, 2009

City/County Study Oversight Committee:

Please accept the Tucson Regional Water Coalition's policy paper titled *Water as an Economic Resource*. As the title suggests, we believe that application of economic principles, methods, and instruments will lead to more informed water policy in the Tucson AMA. This paper is the product of the Coalition's yearlong research and interest in the internationally recognized concept of managing water as an economic good. The paper aims to introduce fundamental water economics concepts and highlight their applicability and usefulness in local policy discussions.

Several University of Arizona professors with expertise in the fields of water economics and water markets reviewed the paper and provided comments. Special thanks to George Frisvold, Carl Bauer, and Bruce Billings for their assistance in writing this paper. Similarly, outlines and drafts of the paper were distributed to the Coalition's membership for review and comment throughout the writing process. We have attempted to address all comments and incorporate recommended changes. The final paper is truly a collaborative effort and we hope it is a positive contribution to the Phase II report.

Many of the concepts explained in the paper were first introduced in the Coalition's *Principles of Sustainable Water Resource Management* submitted during Phase I of the City/County Study. We continue to rely on the sustainability principles to guide our efforts as well as our on-going evaluation of the City/County Study. We encourage the Oversight Committee to review those principles as you begin drafting policy language for the Phase II report. We appreciate the opportunity to contribute this policy paper and look forward to hearing its concepts discussed by the Committee.

Thank you,

Tucson Regional Water Coalition

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Water as an Economic Resource

Submitted by the Tucson Regional Water Coalition

ABSTRACT

Few will disagree that fresh water is a relatively scarce resource in many locations throughout the world, meaning supplies are (or will be) insufficient to meet all competing uses. Consequently, government agencies are increasingly looking to economically-minded water policies to achieve efficient use and allocation of available supplies. This is particularly relevant to rapidly growing arid and semi-arid regions with increasing demands across multiple water use sectors—municipal, industrial, agricultural, and environmental. Economically efficient allocation maximizes the general welfare or net benefits enjoyed in utilization of a community's water resources. This is achieved by allocating water to highly valued uses and away from uses that hold less value to the community. This paper will show how economics provides invaluable principles, methods, and instruments to understanding how communities can maximize the net benefits derived from available water supplies. We argue that economics' fundamental concern with allocating scarce resources makes it uniquely qualified to provide water policy debates with baseline facts about all associated costs and benefits of alternative uses, leading to more informed, rational allocation of arguably our most precious resource.

I. Introduction

In 1992, the International Conference on Water and Environment in Dublin, Ireland reached consensus regarding an emerging global water crisis and the need to reform water management in both developed and developing countries alike. Participants adopted a policy statement and principles known as *The Dublin Statement on Water and Sustainable Development* (ICWE, 1992). The globally applicable statement addressed water scarcity, misuse of water, and the rising number of water-related conflicts, and proposed a series of principles and actions to confront these challenges.

The Dublin Statement's most frequently cited recommendation is that water should be treated as an economic good: "Water has an economic value in all its competing uses and should be recognized as an economic good" (ICWE, 1992). Today, treating water as economic good or economic resource (Briscoe, 1996) is a generally accepted principle among the international water world. However, the meaning and intent of this principle has been rigorously debated in the literature and among water professionals over the past decade and a half (Bauer, 2004; Bauer, 2004b; Briscoe, 1996; Briscoe, 1997; Hanemann, 2006; Rogers et al, 1996; Rogers et al 2002; Savenije et al, 2002).

Those that accept the principle of *water as an economic good* generally fall along an ideological spectrum that ranges from a strict or narrow interpretation of the concept to an increasingly broader view (Bauer, 2004). The narrowest interpretation (often held by traditional neoclassical economists) believes efficiency would be best achieved if water rights were traded in well-functioning markets as a purely private commodity, subject only to forces of

supply and demand. However, as one moves along the spectrum, a greater number of economic principles, methods, and instruments are seen as acceptable to understanding how to achieve a more economically efficient use and allocation of water resources. These broader conceptions of water as an economic resource do not necessarily discredit water markets (albeit under optimal conditions), but view the tool box to improve economic efficiency as somewhat larger. A broader conception might be critical of the ability to create truly well-functioning water markets, and yet acknowledge the efficiency gains likely achieved from voluntary "market" transfers where water rights are traded from a low value use such as agriculture to a higher value urban use.

A slightly broader view of acceptable economic instruments might extend to allocation via retail pricing of water. Setting prices according to water's economic value—like well functioning markets or even spot market transfers—will result in reallocation of resources from lower value uses to higher value uses, and thus efficiency or welfare gains (Agthe et al, 2003; Rogers et al, 1996; Rogers et al, 2002). Pricing water according to its economic value shares ideological space and is generally compatible with other quantitative economic analysis methods such as Cost-Benefit Analysis and Cost-Effectiveness Analysis, which serve to inform decision makers of the relative economic efficiency of policy alternatives in administrative allocation processes and other water management decisions. The broadest views are of those in the field of institutional economics that expand acceptable methods to include more interdisciplinary, qualitative analysis, attempting to place economic efficiency in the context of cultural, historical, political, and legal realities (Bauer, 2004).[1] These so-called "broad" views are most compatible with an administrative or legislative allocation system.

We support a broad interpretation of water as an economic resource. However, this paper has a somewhat narrower scope, focusing on the core issues considered and tools used in the analysis of economic efficiency as the primary objective in water resource management and allocation. While we propose use of economic efficiency as the central criterion in water policy debates, pure technocratic economic analysis is not a substitute for integrated, interdisciplinary, deliberative processes where a whole range of hard to quantify and/or monetize social, cultural, political, legal and environmental factors are considered by key stakeholders.

II. Economic Principles, Methods, and Instruments to Improve Efficiency

As water becomes scarcer in any region or basin, efficient allocation among competing users is increasingly important. Economically efficient allocation maximizes the general welfare or net benefits enjoyed in utilization of a community's water resources. In practice, this is achievable by allocating water to highly valued uses and away from uses that hold less value to the community. There are three distinct and widely recognized allocation methods: 1) governmental administrative or legislative processes; 2) retail pricing that includes economic costs such as opportunity cost and externalities; and 3) markets in tradable water rights (Rosegrant and Binswanger, 1994). All three allocation processes can improve economic

[1] For more complete discussion and summary of the different perspectives on what it means to treat water as an economic good see Bauer, 2004, pages 6-30; Hanemann, 2006; Savenije and van der Zaag, 2002.

efficiency or the net benefits derived from available water resources—each may be more or less suitable depending on the context.

The use of markets in tradable water rights to achieve efficient allocation has relatively limited applicability to the City/County Water Study. For the purposes of this study, the description of water markets is primarily included to introduce key concepts such as opportunity cost and transfers of water based on a willingness to pay to accrue future benefits derived from resource utilization. Understanding water markets or market-based transfers also provides good conceptual information for discussions regarding acquisition of additional supplies to meet future demands in the Tucson AMA.

Water Markets as an Allocation Method

Economists have traditionally supported allocation of scarce resources via markets (Rosengrant and Binswanger, 1994). Support is typically predicated on the notion that the property rights over said resources are exclusive, transferable, enforceable (like other commodities) and transaction costs (such as those associated with obtaining necessary legal approvals) are low or preferably zero. In reality, water rights transact relatively infrequently in most places; when they do, it is most often in environments where these conditions are not perfectly in place. Still many economists continue to support policies encouraging markets in tradable water rights, particularly in areas where water is scarce relative to demand, where economic growth is occurring, and lower value uses such as agriculture hold much of the available supply.[2] Even where conditions are not perfect, market-based transactions typically lead to efficiency or welfare gains through voluntary transfers from lower value users to higher value users who demonstrate a "willingness to pay" to accrue future benefits derived from use of the resource. These transfers can occur within and across water use sectors such as municipal, industrial, agricultural, and environmental. The agricultural sector seems to be involved with the greatest number of transfers—between two farmers, between farmers and environmental groups like land and water trusts, from farmers to municipal providers, etc.

Literature on markets in tradable water rights is extensive, outlining a broad range of pros and cons in theory and in practice (Young, 1986; Saliba and Bush, 1987; Smith, 1988; Colby, 1990; Rosegrant and Binswanger, 1994; Bauer, 1997; Agthe et al, 2003; Bauer, 2004; Bauer, 2004b; Brewer et al, 2007; Glennon and Pierce, 2007). Many praise markets in tradable water rights for their ability to force rights holders to face opportunity costs and the fluidity in which markets convey information about supply and demand through price signals (Briscoe, 1996). The most common critique of water markets is the high-degree of market failures, which reduce or negate efficiency/welfare gains. An often-cited market failure is the inability to internalize or capture externalities in a market price.

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[2] For examples of locations where water rights transact regularly see Chile's Los Andes Province (Bauer, 1997) and Colorado's Big Thompson Project. A considerable challenge to facilitating transfers is the availability of infrastructure to physically move water from one place of use to another. The above referenced locations have the necessary canals and/or reservoirs to convey supplies, likely contributing to the number of water rights transactions.

The concept of opportunity cost is critical to an understanding of water as an economic resource and the role of markets in efficient allocation. The relationship between agricultural and urban uses in a basin where scarcity exists illustrates the concept. The value of water to urban users (measured by their collective maximum willingness to pay for the use of the resource) is often an order of magnitude or ten times greater than the value of water in agricultural uses (Briscoe, 1996). If the economic benefits for a farmer to use water in crop production and sale are 'X', and the economic benefits for the same water used to support a multitude of economic activities in a city are '10X', then the farmer will be induced to sell his water rights to a municipal provider or other urban uses such as industrial. The fact that urban users put the water toward uses that produce a significantly greater economic return or benefit is what drives their willingness to pay much more. Briscoe states: "if the user values the water less than it is valued by the market, then the user is induced to sell the water. This is the genius of the water market approach—it ensures that the user will in fact face the appropriate economic incentives" (Briscoe, 1996).

The "economic incentives" Briscoe refers to is the opportunity cost. The farmer (and society) experiences economic loss or opportunity cost, if, under the above conditions the water produces crops instead of going to urban users. The presence of markets or policies that encourage market transfers help water rights holders understand the value of water in alternative uses, realizing the different economic gains from either use or sale to willing buyers. Market-based allocation systems reduce the chance of undervaluation and misallocation between users, leading to welfare gains for the community in aggregate (Rogers et al, 1998).

While markets are praised for their ability to transmit signals regarding opportunity cost, they seldom capture or internalize so-called externalities unless policies are in place to force internalization. Externalities refer to either costs (negative externalities) or benefits (positive externalities) experienced by an entity that is not directly using or benefiting from the water in question. For example, a market transfer between a willing buyer and seller may have so-called "third party" environmental or economic impacts or externalities not accounted for in a market transaction. Failure to internalize these externalities in a water rights transaction reduces the resulting efficiency or welfare gains created by the transfer. Additionally, water is allocated in a manner far removed from the perfectly competitive environment required to achieve well-functioning markets. It is highly regulated and there are considerable institutional barriers to water transfers as well as potential for monopoly by large buyers and sellers. Removal of any one of these so-called distortions and movement toward a market-based allocation, will not necessarily improve welfare (Frisvold, 2009).

Full Cost of Water

Theoretically, a well-functioning water market with policies in place to take care of externalities will match demands with supplies to improve the economic efficiency of allocation over time. However, where use of markets is not applicable, not easily implemented, and/or not desired, pricing water according to its economic or scarcity value should also lead to reallocation to higher value uses and therefore efficiency gains. The paper titled *Water as a Social and Economic Good: How to Put the Principle into Practice,* explains full cost or economic retail pricing of water. It describes how economic or scarcity pricing leads to

allocation to most valuable uses, forcing end users to face opportunity cost and externalities in addition to the traditional "full supply" cost basis for water rates (Rogers et al, 1998). This full cost framework is generally compatible with other economic principles such as "Polluter Pays" and/or "User Pays", where pricing ensures end users pay an amount equal to the benefit they receive and/or the impact their usage has on others (Rogers et al, 2002). This section will focus on components of full cost pricing, but the final section of the paper will show how principles like "polluter pays" can be put into practice.

Full Supply Cost: O&M and Capital Charges

Most water utilities set rates based on the full supply cost, which includes Operation & Maintenance (O&M) and Capital Charges. O&M expenditures include costs associated with the day-to-day operation of a water utility such as labor and energy, etc. O&M costs are the most straightforward and can easily be accounted for in a utility's annual accounting receipts (Agthe et al, 2003). Capital Charges are those costs associated with delivery, storage, and treatment infrastructure, where costs are measured as the combination of all depreciation and the interest paid to service debt. There is some dispute whether Capital Charges should be "backward" or "forward" looking: "Traditional methods use a backward accounting approach and include only the costs associated with repaying the historical investments. Newer approaches use forward-looking accounting and consider the cost of replacement of the physical assets and the potentially increasing costs of new additions to the capacity of supply sources" (Agthe, 2003, p. 48).

Full Economic Cost: Full Supply Cost + Opportunity Cost + Externalities

Full supply cost described above is the foundational component of the full economic cost. However, stopping at full supply cost fails to account for the value of water as an economic resource to many competing uses. It fails to price water according to its relative scarcity, leading to over consumption by so-called lower value uses and economically inefficient allocation or "misallocation". To achieve an economic pricing of water, one must also include opportunity cost and any externalities—to the extent that they exist (Figure 1) (Briscoe, 1996; Briscoe, 1997; Rogers et al 1998; Rogers et al, 2002; Agthe et al, 2003).

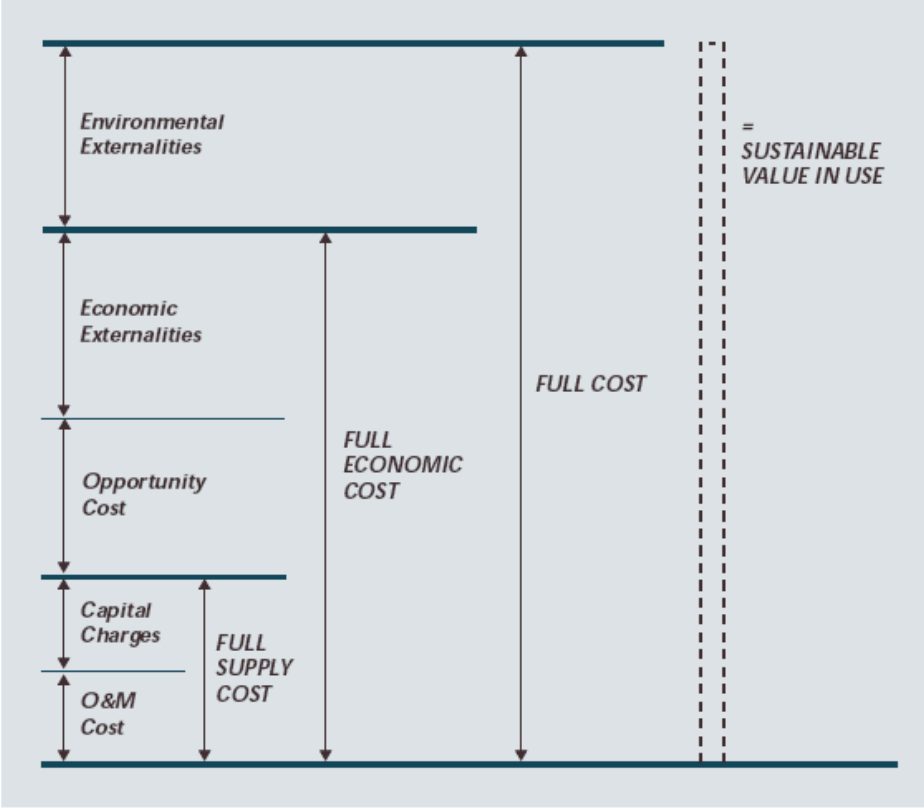
As noted, opportunity cost is an economic concept that describes the fact that if water is in fact scarce—meaning available supplies are insufficient to meet all competing demands—then social welfare losses occur when water is allocated to lower value uses instead of those capable of yielding greater economic returns. Opportunity cost represents the value of water in the best alternative use foregone. Said another way, opportunity cost can be understood within the context of an investment decision. If water is allocated to uses with a lower economic return or net benefit than what could have been achieved in an alternative use, then the community suffers the loss of higher returns that could have been achieved (i.e. benefits foregone). Again, this assumes available supply is insufficient to meet existing demand and the competing uses present are associated with varying economic returns. The fact that opportunity costs are not considered in a municipal provider's rate setting processes may indicate available water supply is believed sufficient to meet all demands.

Briscoe notes markets' ability to transmit information on opportunity costs with a degree of ease and flexibility that is not possible in a pricing or administrative allocation system. While

it is difficult (due to high degree of information required), it is not impossible to incorporate opportunity costs into retail water rates. Moreover, it is necessary to include opportunity costs if a community desires to use pricing to improve the economic efficiency of water allocation. However, two important factors should be reiterated. First, opportunity cost only exists where scarcity exists. That is, if the demands of all uses are met, then there are no potential benefits of an alternative use foregone and therefore no opportunity cost. Second, among urban users in the municipal and industrial sectors, the opportunity costs may be quite low and not worthy of much consideration in retail pricing for an urban water provider's rate structure (Briscoe, 1996).

One way to address externalities in a municipal provider's water rates is by including the cost of wastewater treatment. That is, before discharging wastewater into a stream or recharging into the aquifer, it must be treated to a high enough quality such that it does not degrade other users' water supply. If not treated appropriately, discharges impose costs on downstream users or other groundwater users who must pay more to remediate their degraded water supply. By treating the water before discharging it, users are in fact "internalizing" the externalities associated with their usage. Including wastewater charges in a municipal water providers' volumetric rates (instead of two separate bills for water and wastewater service) takes the concept one step further, sending the appropriate price signal to end users of the true cost of service.

Figure 1 – Full Cost Pricing



Source: Rogers et al, 1998

Cost Analysis Methods

Cost-Benefit and Cost-Effectiveness Analyses are primary economic appraisal tools used to inform decision-makers of the relative efficiency of two or more alternatives. These methods are helpful in administrative allocation processes as well as other water management decisions such as conservation programs, supply augmentation strategies, environmental restoration projects, and countless others. Application of these methods is not a substitute for interdisciplinary, participatory decision-making processes. However, these tools provide invaluable baseline quantitative data to inform and rationalize water policy debates. They can help structure community dialogue around a common language, allowing for expression and comparison of diverse values in the same analytic framework.

Cost-Benefit Analysis

Cost-benefit or C/B Analysis compares the economic efficiency that would result from alternative allocation scenarios or water management policies. All benefits and costs of various alternatives are expressed in the common language of money, including "non-marketed" ecological and/or social costs and benefits that are not typically expressed in monetary terms. Additionally, since costs and benefits occur over different times in the future, a discount rate is applied to evaluate the net present value of costs or benefits in a common time or "day one" of the analysis. Once the discount rate is applied to monetized costs and benefits, the difference between the two represents the alternative's net benefit or net present value. Net present values of one or more alternative policies or scenarios are compared against that of the "no action" or "business as usual" alternative. The alternative with the highest net benefit is deemed the most economically efficient option of those evaluated. Said another way, economic efficiency is based on maximizing the present value of the net benefit stream (AWWA, 2007; AWWA, 2006).

A common critique of C/B Analysis is the challenge of monetizing non-marketed costs and benefits, particularly those associated with the environment. However, great strides have been made in the field of environmental economics to estimate such costs and benefits, including hedonic studies that conclude homes near natural open space have higher sales prices. Another challenge of C/B is to accurately include all the significant groups affected by a project or policy, while also avoiding double-counting of impacts (Frisvold, 2009).

Cost-Effectiveness Analysis

Cost-effectiveness analysis establishes the "least cost" method of accomplishing a clearly defined goal. For example, if a jurisdiction is faced with the need to increase the available water supply, policymakers might identify a number of methods including both conservation measures and possibly water rights acquisitions, hoping to find the so-called least cost option of augmenting their supply portfolio. Under this example, all the options would have a pre-determined acre-feet of water supply needed, but would vary by how much each supply costs. Cost-effectiveness analysis simply indicates which option has the lowest present value of costs to meet the stated goal. The method and idea of cost-effectiveness may help find the best way to employ limited financial resources to achieve a stated objective. For example, given that a community in aggregate has limited finances to commit to a water conservation

program, which measures yield the greatest water savings or net resource gain for the available funds?

III. Examples in Local Water Policy

There are a number of past, current, and future local policy decisions that require comprehensive economic analysis, considering regional (defined as the Tucson AMA) net benefits defined by the inputs of all key stakeholders. Continuing to ignore the aforementioned economic principles, methods, and instruments in local water policy and allocation discussions will have welfare consequences for the Tucson region. We support holistic appraisal of costs and benefits on a regional scale for the purposes of this study and other local water policy decisions. Water policy that includes the values and needs of all Tucson AMA stakeholders in a common analytic framework is required to achieve regional sustainability goals.

This section attempts to put the abstract economic principles, methods, and instruments into the local context. However, the following examples remain conceptual in nature—designed to promote further analysis and debate, underscore the applicability of economic analysis in water policy decisions, as well as reinforce understanding of the methods introduced in the first half of the paper. The analyses in this section are not finalized policy recommendations, but are illustrative and intended to spark community dialogue regarding management of water as an economic resource.

Conservation Effluent Pool

Effluent is increasingly seen throughout the southwestern U.S. as the most reliable component of municipal providers' renewable water supply portfolio. On February 7th, 2000, the City of Tucson and Pima County entered a Supplemental IGA that provided the framework to reallocate up to 10,000 acre-feet of the region's effluent from urban uses to riparian projects (i.e. the Conservation Effluent Pool). The IGA contemplates making effluent available for riparian projects from the Conservation Effluent Pool (CEP) at no cost, but that all costs associated with transportation and reclaimed treatment are paid by what the agreement refers to as the "operator" or "beneficiaries" of the projects. In short, the proposal forces operators or beneficiaries of restoration efforts to pay the "full supply cost" (Figure 1).

The Economic Value of Local Effluent Supplies

The City and County IGA fails to consider the future opportunity costs associated with reallocation of effluent from urban to environmental uses. Opportunity cost addresses the fact that by consuming water, one user is depriving another user of the water. If that other use yields a higher net benefit, then there are some opportunity costs experienced by the region due to this so-called misallocation. When evaluating the full economic cost of water used for environmental restoration, it is necessary to consider all other competing alternative uses and estimate value in the best alternative foregone. The City/County Phase I Report

states that the local economic value of water in urban uses is approximately $160,000 per acre-foot ($1.6 billion to the local economy in this case). This estimate is derived by dividing regional Gross Domestic Product by acre-feet of water used. This measure at best may be thought of as an average value of water, which is not appropriate for allocation decisions and should not be used to accurately represent opportunity cost (Frisvold, 2009).[3] However, a statement that urban uses are the best alternative foregone is defensible.[4] Briscoe notes that the value of water in environmental uses such as maintenance of wetlands, wildlife refuges, and river flows is typically greater than the value of water in agricultural uses, but lower than values in municipal and industrial sectors (Briscoe, 1996).

As previously stated, there is no opportunity cost if scarcity does not exist. One way to overcome scarcity is to augment basin supplies by importing more water to sufficiently meet all demands. Paying the replacement cost may in fact be a less costly alternative than foregoing the future benefits experienced had the water been allocated to municipal or industrial users. The Central Arizona Water Conservation District (CAWCD) is currently coordinating a supply acquisition program known as ADD Water (Acquisition, Development, and Delivery). Water rights belonging to agriculture and Indian communities along the Colorado River are the most likely supplies available for acquisition. The current acquisition price of these water rights is estimated to be $5,000 per acre-foot, translating to a CEP replacement cost of approximately $50,000,000—more when considering annual transportation costs.[5] However, this scenario assumes that sufficient water rights are available for purchase and that CAP will grant access to the Canal to transport supplies to the region. The uncertainties related to these assumptions must be considered before reallocating any volume of locally available effluent. Failure to replace reallocated effluent results in the region suffering considerable opportunity costs in the future due to reduced economic development potential.[6]

Cost-Sharing Among Beneficiaries

Assuming water rights are available to purchase and CAWCD allows use of the Canal, the question quickly moves from what are the associated costs to how do we equitably distribute costs. The current framework prescribed by the IGA would likely lead to new residents paying the replacement cost associated with the CEP. That is, reallocating 10,000 acre-feet from municipal providers' supply portfolio means that providers will need to purchase additional supplies to accommodate growth and maintain their Designations of Assured

[3] See W. Hanemann's *The Economic Conception of Water* (Hanemann, 2006) for thorough discussion of relationship between water and regional economic development.
[4] See Briscoe (1996) *Water as an Economic Good: The Idea and What it Means in Practice* for conceptual discussion regarding value of water in various water sectors.
[5] Note: a discount rate could be applied to future costs associated with annual transportation of new supplies through the CAP Canal (i.e. wheeling charge) in order to understand to present value of all costs associated with that policy alternative. Assuming the wheeling charge is equal to the Excess CAP rate of $133/AF and increases 3% per year, the net present value of annual transportation costs of 10,000 acre-feet over 20 years is approximately $17 million.
[6] Note: Reduced economic development potential is a cost the region would experience at some point in the future when it exhausted the available supply portfolio. This future cost must be discounted back to present day for an apples-to-apples comparison.

Water Supply. Acquisitions will likely be financed by bonds and paid back (partially or completely) by future increased water resource impact fees.

Apportioning costs in this manner is contrary to equity principles such as "polluter pays" and "beneficiary pays." No reasonable argument can be made that future residents caused the historic damage to riparian areas that now require reparation. Also, restoration projects are a regional benefit. Costs sharing for these projects should include all beneficiaries—current and future residents/ratepayers. Yet another way of looking at the issue is to characterize ecological damage caused by historic and current groundwater pumping as an environmental externality. Economic value of ecological damage is typically based on an estimate of remediation costs. In this case, remediation costs are largely paid through reallocation of 10,000 acre-feet of effluent, valued according to water right replacement costs at $50,000,000 (plus annual wheeling costs).

Possible Solution

Reallocation of effluent for environmental restoration projects contributes to a sustainable water management plan. Sustainable water management involves balancing environmental, economic, and equity factors for the greatest net benefit of the region. This could be achieved by: 1) remediation of ecological damage by reallocating some volume of regional effluent to restoration projects; 2) replace all or a portion of water reallocated to environmental uses by acquiring new water rights for urban uses/economic development; and 3) distribute costs associated with water right acquisitions among all regional beneficiaries/polluters.

This could be accomplished by a volumetrically assessed (per Ccf) Environmental Fee on potable water sales, where funds collected are committed to servicing debt related to water rights acquisitions necessitated by reallocating effluent to environmental remediation.[7] Tucson Water uses a similar volumetrically assessed fee concept to support its Conservation Program. The Conservation Program annual budget is approximately $1.5 million. The per Ccf fee is then calculated based on what funds are needed to support the program's annual budget compared to the projected annual potable water sales. In 2008, Tucson Water projected 50,000,000 Ccfs of potable sales and consequently the fee was set at $0.03 per Ccf.

The proposed Environmental Fee could be established in a similar manner—matched to the region's appetite (i.e. willingness to pay) for environmental reparation. If the replacement costs of 10,000 acre feet of effluent are $50,000,000 (does not include annual wheeling costs), the fee would be set based on the annual debt service of $50,000,000. For example, if the associated annual debt service was $5,000,000 and Tucson Water projected 50,000,000 Ccfs in potable sales, then the Environmental Fee would be set at $0.10 per Ccf. The average residential ratepayer uses between 10 and 12 Ccfs per month, translating to a monthly contribution of $1 to $1.20. Moreover, this concept is scalable—structured to allow reallocation of effluent for environmental restoration to whatever volume the region demonstrates a willingness to pay, up to the entire volume of effluent available (if replacement supplies are available).

[7] This example is based on an average cost and pricing scheme. Future analyses should be based on the marginal cost of the new supplies to set rates appropriately signaling scarcity (Frisvold, 2009).

The volumetric fee concept internalizes environmental externalities, distributing those costs directly to the end user/beneficiary/polluter and reinforcing cultural messages urging conservation. The fee enables individual ratepayers to legitimize the value ascribed to the community's ecological assets by demonstrating a willingness to pay for reparation, permanently dedicating the water resources needed without sacrificing future economic development potential.

Conservation or Acquisition

As a water utility's demand approaches full utilization of its supply portfolio, it faces the question of whether it is more cost-effective to invest in conservation or acquisition. It is increasingly popular to argue in favor of conservation investments as a more cost-effective alternative to supply acquisition to augment local supply portfolios. The Pacific Institute's report titled *Waste Not, Want Not: The Potential for Urban Water Conservation in California* states:

> "Since each water-conservation measure is an alternative to new or expanded physical water supply, measures are considered cost-effective when their unit cost—what we call the 'cost of conserved water'—is less than the unit cost of the cheapest alternative for new or expanded water supply. We conclude that in California, it is cheaper to conserve water and encourage efficiency than to build new water supplies or even, in some cases, expand existing ones" (Gleick et al, 2003).

The Pacific Institute's report concludes that conservation is more cost-effective than developing new supplies, but it is not clear whether it is more or less cost-effective than acquiring and transferring already developed supplies.[8] The report's analysis tends to focus on the environmental impacts (costs) associated with additional water supplies developed by building new dams, desalinization plants or taking more water "out of the stream." These environmental externalities weigh heavy in cost analyses, making convincing arguments for conservation investments. However, if a supply is already developed or diverted, then there are no additional environmental costs associated with the transfer (though there may be economic externalities that need to be addressed).

The question we pose is whether conservation is more cost-effective than acquiring and transferring already developed supplies. This analysis is conceptual in nature, intended only to generate discussion. The topic requires rigorous analysis of additional conservation measures and all associated costs, particularly a utility's avoided costs linked to postponed or eliminated capital projects due to conservation measures reducing peak demand. However, the analysis should be helpful to conceptualize a least-cost framework on the subject of conservation versus acquisition in policy discussions.

Toilet Replacement Program

Water utilities often look to toilet replacement or retrofit programs as an effective and cost-effective conservation measure. These programs look to replace older, less efficient toilets

[8] We use the phrase "already developed supplies" to refer to water volumes annually diverted and beneficially used.

(generally 3.3 gallons per flush or greater) with newer models known as ultra-low flow (1.6 gallons per flush) or so-called high-efficiency toilets (1.28 gallons per flush). There is a wide range of costs per toilet depending on the model, quantity purchased, whether additional installation costs are considered, or if the utility rebates a portion of the toilet cost versus outright purchase. For the purposes of this simple analysis, assume that the utility is offering to cover 100% of cost to replace 3.3 gallons per flush toilets with 1.28 gallons per flush toilets at a total cost of $150 per toilet. Assume the water provider's goal is to augment supply by conserving water.

Additional model assumptions include: 1) average house has 2 bathrooms, meaning 2 toilets; 2) average household size of 2.7 people; 3) and each person averages 5 flushes per day.[9] These assumptions mean that a home with two 3.3 gallons per flush toilets, uses approximately 44.5 gallons per day (toilet use only), which translates to 16,260 gallons per year or 0.05 acre-feet per year. If the utility replaced the 3.3 gallons per flush toilets with 1.28 gallons per flush models, the same household uses 17.28 gallons per day—6,307 gallons per year or 0.019 acre-feet per year.

Under these assumptions, the toilet replacement program augments the water supply 0.031 acre-feet per year per household retrofitted with two 1.28 gallons per flush toilets. If each toilet costs $150, then the utility spends $300 to save 0.031 acre-feet per year. This means that to save an acre-foot of water per year, the utility must retrofit approximately 32 houses with 1.28 gallons per flush toilets at a cost of $300 per house or approximately $9,660. This is comparable to purchasing a perpetual water right at a price of $9,660 per acre-foot. Given a goal to augment the supply by 1,000 acre-feet per year, the cost to achieve using a toilet retrofit program is approximately $9,660,000.

Water Rights Acquisition

As noted in the previous section, we estimate a market price of Colorado River water rights at $5,000 per acre-foot. However, this is solely an acquisition cost. There are likely annual costs associated with wheeling the water through the CAP Canal to the Tucson AMA. For the purpose of this analysis, we assume the wheeling rate is the same as the 2010 price of Excess CAP or $133 per acre-foot and that it escalates at 3% each year. The net present value of the wheeling charges on 1,000 acre-feet over a 20-year period is approximately $1.7 million. This adds to the initial acquisition charge for an apples-to-apples comparison. Therefore, the acquisition cost for 1,000 acre-feet is $5,000,000 (at $5,000/acre-foot), and the net present value of annual wheeling charges is $1,700,000. Total cost to acquire 1,000 acre-feet of Colorado River water rights using these assumptions is estimated at $6,700,000 or $6,700 per acre-foot.

It is important to note this simple analysis does not include any environmental externalities from transfer of supplies, because we assume this is an existing/developed supply. That is, the 1,000 acre-feet will be used annually in agriculture or transferred to another user and therefore no new environmental impacts arise with the proposed transfer. We also assume that only the consumptive use component of the water right is transferable. Therefore, any return flows historically contributed back to the river system remain "in the river." For

[9] Source: ADWR Tucson AMA Third Management Plan.

example, the farmer may have rights to 1,500 acre-feet per year, but only 1,000 acre-feet per year are consumed in crop production and the other 500 acre-feet per year are returned to the river. To net 1,000 acre-feet per year, the buyer must actually purchase a 1,500 acre-foot per year right. The acquisition scenario described above accounts for this policy limitation on the proposed transfer. This is an example of internalizing environmental externalities in a water rights transfer policy. There may also be economic externalities experienced by the region from which the water right's use transferred (i.e. basin of origin). The hypothetical market transaction described above does not account for these economic externalities or losses potentially experienced by the agricultural region in question.

Other Considerations

The above analysis indicates that it may be more cost-effective to acquire water rights than to invest in a toilet rebate program. While there a number of other costs and benefits, as well as different analytic methods available, this example demonstrates the usefulness of economic analysis to inform water policy decisions. There are a number of other "non-economic" factors to consider in this debate.

Conservation measures are distinguished by whether or not they target a consumptive or non-consumptive use. For example, water used indoors is sent to a water reclamation facility where it is treated and available for reuse. Indoor water use is a "non-consumptive use." Consequently, water "saved" in a toilet rebate program does not result in a net resource gain or true supply augmentation, because all water used indoors is reusable. This fact may prompt the utility to evaluate conservation measures that target outdoor uses that are in fact consumptive. For example, measures that reduce the amount of outdoor irrigation such as turf-removal programs may be preferred because they reduce consumptive use and achieve net resource gains.

Second, the cost of conservation or efficiency measures goes down over time, while the cost of water rights continues to climb with rising demand across multiple sectors. For example, the cost of high-efficiency toilets and efficient irrigation controls has reduced dramatically in recent years and will likely continue to drop. Assuming water rights will be more expensive over time with rising demand over finite fresh water supplies and conservation measures will become more affordable over the same time horizon, then a utility may want to consider acquiring new supplies now and investing in conservation later.

Third, conservation measures like toilets, cisterns, irrigation controls, etc have a useful life. The useful life of a conservation measure compares to the fact that water rights acquisitions (not lease) are a perpetual entitlement for use of the resource. Similarly, the utility would likely weigh the reliability of the water entitlement, understanding the probability and degree of curtailment in times of shortage due to the right's priority relative to other rights holders.

Finally, the utility may evaluate the difficulty to demonstrate "conserved water" as an acceptable water supply augmentation strategy with applicable regulatory agencies such as ADWR. That is, when water rights are purchased, they are easily added to the provider's supply portfolio in a Modification of Designation of Assured Water Supply. Demonstrating conserved water as a reliable supply may prove more difficult, possibly requiring a multi-year trend with reduced water usage directly resulting from the conservation measure.

IV. Recommendations

1. Recognize water as an economic resource with value in all its competing uses.

2. Establish policy declaring economic efficiency as the central criterion in water management decisions.

3. Establish policy requiring economic analysis methods, principles, and instruments to establish baseline facts that inform decision-makers of the welfare implications or net benefits of various policy alternatives.

4. Structure community dialogue around the common language or numeraire of money to allow expression and comparison of diverse values in the same analytic framework, and rationalize debate.

5. Evaluate past, current, and future policy decisions such as the Conservation Effluent Pool, Conservation Programs, and Water-Related Ordinances using economic analysis methods and principles.

6. Support holistic appraisal of costs and benefits on a regional scale (defined as the Tucson AMA) for the purposes of this study—including the values and needs of all Tucson AMA stakeholders in a common analytic framework is required to achieve regional welfare gains.

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Tucson Regional Water Coalition

Prosperity - Sustainability - Community

TRWC Principles of Sustainable Water Management

Promote Comprehensive Inclusiveness and Transparency.

- Water management must be based on a participatory approach, involving a balance of technical expertise and expression of community values with an emphasis on consensus building between those representing current and future users, planners, and policy-makers at all levels within the region.

Sound Water Resource Management Knows No Jurisdictional Boundaries.

- All water providers, users, and uses in the metropolitan area are connected by reliance on regional groundwater supplies to meet annual demand and provide a buffer against drought. Water planning should be conducted at the basin scale (defined as the Tucson AMA) and should involve all users.

- Support shared use of community infrastructure through cost-effective wheeling agreements for delivery of effluent, surface water, imported groundwater, and/or stored renewable supplies to achieve greater integration, reliability, flexibility and reliance on renewable supplies throughout the region.

- Collectively maximize purchase and underground storage of additional surface water and/or imported groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns.

- All local water supplies—groundwater, CAP, other surface water, and effluent—should be cooperatively used for the maximum economic, social, and environmental net benefit of the region expressed in monetized or quantifiable terms.

- All work products and policies of a local water planning process must be consistent with applicable state laws and policies. In circumstances where local conditions or values conflict with state law and/or policy, the process should seek the appropriate amendments at the state-level.

Recognize Water as an Economic Good with Value to all Competing Uses

- Price signals are an important tool for achieving efficient allocation of water resources. Current retail water rates do not match claims of scarcity and conflict with cultural messages urging conservation.
- Promote policies that facilitate allocation or reallocation of water resources to highest value uses that yield the greatest economic, social, and environmental net benefit for the region expressed in monetized or quantifiable terms.
- Commit to understanding the fundamental relationship between water resources and regional economic development in the form of job retention and creation, and the general prosperity of citizens.

Use Economic Analysis to Evaluate Alternatives & Risk

- Promote non-discriminatory methods, evaluating alternatives objectively and comparing net benefits in monetized or quantifiable terms.
- Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent, focusing policies and finite economic resources on uses/users with the greatest conservation potential.
- Evaluate proven conservation measures as an alternative to supply acquisition, justifying investment decisions on alternatives that yield the greatest economic, social, and environmental net benefit for the region expressed in monetized or quantifiable terms.
- Concerns regarding evolving and/or uncertain conditions should be addressed through iterative risk assessments and decision-making processes, systematically reevaluating risk according to potential financial impact to the region and probability of occurrence.

Create Long-Range Financial Plans and Funding Mechanisms

- A Sustainable Water Resource Management Plan for the region is incomplete without a Budget and Implementation Strategy (Fiscal and Physical). The region must move away from the "plan and pay as we go" approach and develop flexible long-range plans and funding mechanisms to avoid the potential for future crisis management situations.

Tucson Regional Water Coalition

Prosperity - Sustainability - Community

Tucson Regional Water Coalition Review of Phase I Report

Arizona Builders Alliance

Alliance of Construction Trades

Arizona Small Business Association

Marana Chamber of Commerce

Metropolitan Pima Alliance

Northern Pima County Chamber of Commerce

Safe and Sensible Water Committee

Southern Arizona Home Builders Association

Southern Arizona Leadership Council

Tucson Association of Realtors

Tucson Metropolitan Chamber of Commerce

Tucson Utility Contractors Association

Tucson Hispanic Chamber of Commerce

The Tucson Regional Water Coalition is committed to staying engaged in this important process and offers the Committee our feedback on your Phase I report. We have organized our comments using the sustainability principles we presented the Committee with during Phase I. We have noted several places in the document where we agree with or are encouraged by the Committee's work to date. Naturally, there are other notable areas where we remain at odds. We offer these comments on the record to again demonstrate our good faith efforts to positively impact this process for the benefit of the region. We will continue to monitor the Committee's meetings and look forward to joining you and all other regional interests in good-natured debate on this important topic.

Coalition Principle #1

Promote Comprehensive Inclusiveness and Transparency. *Water management must be based on a participatory approach, involving a balance of technical expertise and expression of community values with an emphasis on consensus building between those representing current and future users, planners, and policy-makers at all levels within the region.*

Tucson Regional Water Coalition has been committed to finding meaningful, effective and appropriate ways to engage the process. For the record, the Coalition has submitted written comments on several occasions voicing concerns regarding the limited participation rights granted to impacted parties, including excluded local jurisdictions, Indian tribes, agricultural and mining interests, neighborhood groups, developers, environmentalists, homebuilders, water organizations and agencies, private water utilities, business groups and others who should be meaningfully involved at the foundation of this important effort. The Coalition was encouraged when the Oversight Committee amended the May 2008 Progress Report, demonstrating responsiveness to concerns regarding public participation:

"The Committee recognizes that Phase 2 will be very different than Phase 1, and that based on public input received to date, the Mayor and Council and Board of Supervisors may want to consider restructuring the public process in Phase 2 to include a broader range of interests "at the table". The Committee will be prepared to report back to the Mayor and Council and Board of Supervisors in October with recommendations on public involvement in Phase 2. The Committee proposes to track Phase 1 progress and to apply the public input and lessons learned described below to make recommendations for how Mayor and Council and the Board of Supervisors might wish to organize the public process for Phase 2."

However, it was disappointing when the Progress Report dated 12/2/08 states:

> On a process level, the Committee is recommending that it continue to provide oversight to the study through Phase II as constituted by the Mayor and Council and the Board of Supervisors in the original scope of work. As in Phase I, the Committee will establish an open and inclusive public process with many access points for all interested stakeholders and the public. In a change from Phase I, however, the Committee recommends a more formal stakeholder review process, to provide review and comment on both the information received by the Committee and recommendations considered by the Committee.

The Coalition recognizes staff and the Committee's efforts to design an open and inclusive process with many access points. However, a well-structured process does not substitute for representation at the table, actively engaged in deliberation, and eligible to vote. Until the process is truly open to affected parties, there is no chance of building consensus or dealing with the larger issues this region faces regarding a sustainable model for growth. Moreover, the Coalition believes that the exclusion of key parties from Phases I and II will diminish the chances that this process will lead to an equitable solution that is embraced by the region.

Coalition Principle #2

Sound Water Management Knows No Jurisdictional Boundaries. *All water providers, users (public and private), and uses in the metropolitan area are connected by reliance on regional groundwater supplies to meet annual demand and provide a buffer against drought. Water planning should be conducted at the basin scale (defined as the Tucson AMA) and should involve all users.*

According to the Phase I report, groundwater accounts for approximately 64% of the total supply for the Tucson AMA. Although groundwater use is decreasing as municipal providers become more reliant on renewable water supplies as well as decreasing trends in agricultural groundwater use, groundwater remains—and will remain—central to the region's water portfolio. Groundwater availability is an issue that binds all water users in this region. One entity's use of the groundwater supply impacts all other users in the basin. Given the significance of groundwater to all users' supply portfolios it is critical to establish a process that includes all groundwater users in the Tucson AMA. This necessarily includes a Committee with representatives from the agricultural, industrial, and Indian communities. These 3 groups account for more than half the region's groundwater use – and yet, they have not yet been invited to join the Committee. Additionally, all other local jurisdictions and private water utilities utilize groundwater in varying degrees, but they too have not been asked to join the Committee.

Coalition Principle #3

Sound Water Management Knows No Jurisdictional Boundaries. *Support shared use of community infrastructure through cost-effective wheeling agreements for delivery of effluent, surface water, imported groundwater, and/or stored renewable supplies to achieve greater integration, reliability, flexibility, and reliance on renewable supplies throughout the region.*

The Coalition commends the Committee for addressing this important discussion throughout the document. Specifically, Volume 2: Section 3 (Committee Themes, Values, and Concerns) contains several encouraging statements, where the Committee has highlighted this topic for

policy discussions in Phase II. However, it is again important to note that the Committee's deliberations would be more complete if parties likely to enter into, or support, exchange and/or wheeling agreements [and/or expansion of regional delivery systems] were part of this policy debate. These parties could include all users of groundwater in the Tucson AMA that do not have cost-effective alternatives available to reduce their groundwater utilization, as well as environmental groups that would support reduced groundwater pumping throughout the Tucson AMA. As noted in the document, reducing groundwater dependency is a regional benefit. There are both infrastructure costs and water resource costs associated with the goal to reduce groundwater pumping. Given the regional benefits of reduced groundwater pumping, it is easy to justify the sharing of costs equitably among all beneficiaries.

The Coalition commends the Committee's recognition that the City's interim policy to provide water service only to its obligated service area has environmental, social, and environmental implications. The interim policy is clearly related to the issue of reducing groundwater dependency in our region. The Coalition supports policies that recognize the City's potable and reclaimed recharge and recovery infrastructure as well as extensive delivery systems are an important community asset. Policies that create open and creative use of the City's infrastructure will allow for equitable, cost-effective solutions to further reduce groundwater dependency in our region.

Coalition Principle #4

Sound Water Management Knows No Jurisdictional Boundaries. *Collectively maximize purchase and underground storage of additional surface water and/or impaired groundwater supplies, augmenting local groundwater supplies to further insulate the region from cyclical weather patterns.*

The Coalition is encouraged that the Phase I report identified supply acquisition as an important topic. The Coalition agrees that our region must begin to think about long-term supply needs to support anticipated growth. These new supplies will be expensive and there will likely be considerable competition from local jurisdictions in the Phoenix AMA. As the report notes, the CAWCD's ADD Water Process is the proper venue to engage at this time. This process should help to reduce acquisition costs by establishing a fair process to pay and share new water supplies. The Coalition believes Tucson AMA water users are under-informed and ill-prepared to write sizable checks to secure water entitlements at the conclusion of the ADD Water Process, which will conclude in the next 1-2 years. The Coalition does not feel there has been good coordination between Tucson AMA water entities that might have engaged the ADD Water Process collectively and strategically, and encourages the Committee to make this a priority in Phase II discussions. Other water interests around the state continue to view the Tucson area players as not having their act together. Time is of the essence and the Committee could play an important role in bringing all regional players to the table to strategically engage ADD Water for the betterment of the region.

Still, water rights acquisition is only part of the solution. The full CAP allocations of Tucson AMA Subcontractors should be ordered annually. While the Coalition is sensitive to Tucson Water's financial constraints and understands the solution to reduce 2009-2011 CAP orders,

we believe this raises a larger question about linking the region's long-term water management goals to the fiscal health of a single utility. Maximizing annual purchase and storage of CAP while it is abundant is an essential way to further insulate the region from lengthy droughts and potential shortages. The Coalition continues to advocate that our community study the feasibility of a regional authority with the appropriate financial tools to ensure the constant practice of good water management, and to ensure both costs and benefits are equitably shared by beneficiaries throughout the region.

Coalition Principles #5 & #8

Sound Water Management Knows No Jurisdictional Boundaries. *All local water supplies—groundwater, CAP, other surface water, and effluent—should be cooperatively used for the maximum economic, social, and environmental net benefit of the region expressed in monetized or quantifiable terms.*

Recognize Water as an Economic Good with Value to all Competing Uses. *Promote policies that facilitate allocation or reallocation of water resources to highest value uses that yield the greatest economic, social, and environmental net benefit for the region expressed in monetized or quantifiable terms.*

The Coalition believes these two principles are best understood in the context of the Conservation Effluent Pool. The Committee's 'Theme' section does recognize the need to utilize cost analysis methods as a foundation to sustainable water management. However, the Coalition is disappointed that this type of analysis was not applied initially by the City and County or retroactively in the Committee's deliberations regarding the Conservation Effluent Pool. We recommend that finalization of the Conservation Effluent Pool be postponed until after proper cost analysis is employed and the Committee as well as the community is able to debate the merits of setting aside a pool of water for environmental restoration. We understand that the Conservation Effluent Pool is not part of the formal scope of work given to the Committee, but feel that the Committee should discuss this important policy decision in Phase II. We recommend that we postpone finalizing this concept until cost analytics are employed to assess the wisdom of this decision.

It is often stated but bears repeating that effluent is the only drought-resistant, expanding water supply available to the region. The Coalition believes that effluent will soon become the most vital component of the region's renewable water supply portfolio. Given the critical importance of this water supply, the Coalition asks that the study attempt to understand the economic value of available effluent to all competing uses in the region before allocating any portion. It is premature to finalize the Conservation Effluent Pool before understanding the opportunity costs and ecological benefits of committing 10,000 acre-feet or more to environmental restoration projects. There has been no discussion of whether $50 Million (or $100 Million, or even $220 Million, depending upon one's valuation of water rights) worth of the community's assets should be spent on this activity: during the City/County Study it was estimated that the "next bucket" of water may cost as much as $5,000 to $10,000 per acre foot. Once these costs and benefits are quantified and/or monetized, the Committee and community can compare the value of the existing and proposed restoration projects to understand if the costs match the benefits.

The opportunity costs of committing 10,000 acre-feet to environmental restoration projects are even greater. The City/County Study includes the finding that water committed to urban uses generates $160,000 per acre foot in economic development, meaning the approximate opportunity cost of the CEP is $1.6 billion to the local economy. The Coalition believes an investment decision of this magnitude should receive much more attention from the Committee, not to mention input from the community.

Coalition Principle #6

Sound Water Management Knows No Jurisdictional Boundaries. *All work products and policies of a local water planning process must be consistent with applicable state laws and policies. In circumstances where local conditions or values conflict with state law and/or policy, the process should seek the appropriate amendments at the state-level.*

The Coalition applauds the Committee's restraint regarding issues fully governed by state law. The Coalition cautions the Committee in three important areas: 1) large-scale rainwater harvesting projects aimed at augmenting local supplies using dams and/or recharge projects; 2) comparing investments in conservation versus supply acquisition given the Assured Water Supply rules which make including "conserved" water in portfolios much more difficult than simply acquiring new water entitlements; and 3) local attempts to restrict or regulate groundwater pumping in certain areas of the basin.

Coalition Principle #7

Recognize Water as an Economic Good with Value to all Competing Uses. *Price signals are an important tool for achieving efficient allocation of water resources. Current retail rates do no match claims of scarcity and conflict with cultural messages urging conservation.*

The Coalition is encouraged to see the Committee's support of this principle in the Themes section of the Phase I report. The report also notes that the average water bill is just over $23 per month. This is not sending the proper price signal to the utility's customers. The public cannot be expected to treat water supply as the critical issue it is, when the monthly water bill is less than three tickets to the movies. Retail water rates should be adjusted to ensure the long-term fiscal health of Tucson Water and Pima County Wastewater. The Coalition recommends that Tucson Water and Pima County Wastewater staff and Citizen Advisory groups perform comprehensive reevaluation of existing rate structures.

Coalition Principle #9

Recognize Water as an Economic Good with Value to all Competing Uses. *Commit to understanding the fundamental relationship between water resources and regional economic development in the form of job retention and creation, and the general prosperity of citizens.*

The Coalition agrees with the Committee's explicit statement regarding the importance of water to support our local economy. As noted in the report, Tucson Water's 136,000 acre-feet of water service helps support a local economy with a $22 billion dollar gross domestic

product, representing an economic value of approximately $160,000 per acre-foot. We have said before that the Committee's figure should be considered when understanding the opportunity costs of allocating water to non-urban uses.

Coalition Principle #10

Use Economic Analysis to Evaluate Alternatives & Risk. *Promote non-discriminatory methods, evaluating alternative objectively and comparing net benefits in monetized or quantifiable terms.*

The Coalition recognizes that Phase I was not designed to analyze alternatives or engage in scenario planning. We are encouraged that these concepts were highlighted in the Committee's Themes section, and urge the use of methods such as triple bottom-line analysis will be employed in Phase II. Specifically, we believe cost analysis methods that monetize or quantify costs provide an invaluable service to water management debates, both informing policy discussion and enhancing the transparency of public processes.

Coalition Principles #11 & 12

Use Economic Analysis to Evaluate Alternatives & Risk. *Promote community-wide conservation goals and standards that maximize acre-feet saved per community dollar spent, focusing policies and finite economic resources on uses/users with the greatest conservation potential.*

Use Economic Analysis to Evaluate Alternatives & Risk. *Evaluate proven conservation measures as an alternative to supply acquisition, justifying investment decisions on alternatives that yield the greatest economic, social, and environmental net benefit for the region expressed in monetized or quantifiable terms.*

The Coalition supports the Committee's recognition in the Themes section that "conserved water" should be compared to supply acquisition, understanding the limitations given the Assured Water Supply rules accounting for conserved water in a provider's portfolio. As noted in the report, "water conservation and new water resources are seen as two sides of the same coin." We understand that water conservation standards are to be addressed in Phase II. Tucson Water's Community Conservation Task Force report provides a good framework for rigorous cost analysis, including cost-benefit ratios for both the utility and the impacted customer classes. The Coalition urges the Committee to build on the work of the Community Conservation Task Force. It is important that the community continue to fund conservation investments that offer the most water saved per community dollar spent, and move away from creating "feel good" policies that make good newspaper headlines but have poor cost-benefit ratios.

Coalition Principle #13

Use Economic Analysis to Evaluate Alternatives & Risk. *Concerns regarding evolving and/or uncertain conditions should be addressed through iterative risk assessments and*

decision-making processes, systematically reevaluating risk according to potential impact to the region and probability of occurrence.

The Coalition is encouraged to find that the concept of quantitative risk assessments added to conversations regarding the potential impacts of climate change. The Coalition is concerned that doomsday projections regarding the availability of CAP will lead to costly and irrational policy decisions. The Coalition is concerned that the use of fear to support policy-making or investment decisions could be counter-productive. From our view, it is important to first quantify the financial and/or economic impact of potential worst-case scenarios, then understand the probability that worst-case scenarios might occur. Doomsday scenarios with high fiscal and economic impacts, but extremely low probability of occurrence should be addressed proportionately. Climactic conditions and Colorado River water availability have and will continue to unfold and evolve over time, and jurisdictions throughout the state should continuously monitor climate and water availability factors, and be ready to respond accordingly, in accordance with plans that they have in place to address such changes.

Coalition Principle #14

Create Long-Range Financial Plans and Funding Mechanisms. *A Sustainable Water Resource Management Plan for the region is incomplete without a Budget and Implementation Strategy (Fiscal and Physical). The region must move away from the 'plan and pay as we go" approach and develop flexible long-range plans and funding mechanisms to avoid the potential for future crisis management situations.*

The Coalition supports the Committee's acknowledgement in the Themes section that pertains to the importance of sound financial planning in defining a sustainable water resource management plan. The Coalition recommends that the Committee's efforts in Phase II include research on governance models and financial planning of various regional water authorities in the Southwestern U.S. The Southern Nevada Water Authority, the Albuquerque Bernalillo County Water Utility Authority, and the Metropolitan Water District of Southern California have all engaged the issues that we face, and they all have experiences and lessons that can help the Tucson region address our own challenges.

Tucson Metropolitan Chamber of Commerce
465 W. St. Mary's Road
Tucson, AZ 85702
(520) 792-1212 ▲ FAX (520) 882-5704

February 3, 2010

The Honorable Robert Walkup
Mayor, City of Tucson
255 West Alameda Street
Tucson, AZ 85701

Re: City adoption of the recommended Phase II report of the City/County Joint Water/Wastewater Study

Dear Mayor Walkup:

During these hard times, the Chamber commends you for the leadership and the vision you have provided our community. During your tenure as Mayor, you have worked hard to bring this region together, amid a climate of hostility and protectionism. As we work towards the future, joint committees between jurisdictions will be ever-more present. The City's initiative to extend an olive branch to the County deserves recognition.

Over the past two years we have been actively engaged in the Tucson City/Pima County Joint Water/Wastewater Study. As a member of the Tucson Regional Water Coalition, we have submitted numerous comments on the effort, both applauding the work and striving to ensure that the process was open and inclusive. Unfortunately, it has not been. Water is a regional issue and should be planned for in that manner. I encourage you to consider including surrounding municipalities and water companies into the discussion before adopting any new policies concerning water.

Also contained within the Phase II report before you, is an allocation of reclaimed water to the Conservation Effluent Pool, or CEP. This allocation of reclaimed water has a minimum estimated value of $50 million. Can our city make that decision in the dark, hidden behind the auspice of a simple water/wastewater study? What benefit does the City think it will receive from handing over that water to the County? How many jobs can be created from that nearly 10,000 acre-feet of renewable resource? Once that reclaimed water allocation is allotted to the CEP, it is likely it will be federalized by the County's pursuit of a USFG Section 10 permit and will be lost forever.

Perhaps the most disturbing aspect of the Phase II report is the commentary that is extensively found throughout the report. Rhetoric and editorial opinions by staff and committee members alike does not have a place in a document that will shape the future of water policy in our community. Only the numbered recommendations from the report should be implemented by the City council.

The Tucson Metropolitan Chamber of Commerce asks the City Council to approve a modified Phase II report, which would require that the financial impact of water decisions are considered before implementing new policies, growth decisions are made as a region and ensures the control of Tucson water resources remains solely under the City Council.

Thank you for your consideration.

Sincerely,

Robert Medler
Government Affairs Manager

cc: Members of City Council

Sent: Wednesday, February 03, 2010 2:11 PM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: vasqz78@yahoo.com

Comments/Questions: As a member of the Joint City/County Water Study, I applaud Mayor & Council's recent decision to delay approval of the Phase II Report until the elected leadership and the community have a better understanding of the policy direction provided in the document.

During the final Committee meetings, I consistently voiced concerns about specific areas of Staff's report that I believed (and still believe) needed more attention prior to adoption. I did not vote to support the document as is, but I feel there are several strong policy recommendations in the Phase II Report: 1) working collaboratively as a region to acquire additional water supplies; 2) sharing regional infrastructure through cost-effective wheeling and/or recharge agreements; 3) constructing additional recharge projects to maximize use of effluent for Assured Water Supply purposes; 4) using cost analysis to compare effectiveness of various conservation measures against supply acquisition; and 5) managing risk and addressing uncertainty by investing in additional water supplies, demand management, and critical infrastructure.

Those goals and recommendations that I strongly believe need further deliberation and/or specific clarifying amendments prior to final approval of the Phase 2 Report are detailed below:

* Staff's goals and recommendations include support of cost analysis methods to inform water management decisions, but there are significant policy endorsements regarding rainwater harvesting and reallocating water for the environment that lack such analysis. Prior to final approval of the numerous recommendations and statements in the report associated with these two issues, I recommend adding qualifying language committing: 1) to study the cost-effectiveness and reliability of rainwater harvesting compared to other demand management and supply augmentation alternatives; 2) to study the net benefits associated with reallocating water out of municipal providers' supply portfolios for specific environmental restoration projects and compare to net benefits of use in municipal and industrial sectors prior to finalization of reallocation decisions; 3) to determine which supplies (stormwater, effluent, or potable) are most suitable and cost-effective for environmental restoration projects and how to equitably finance projects

such that costs are shared by all beneficiaries.

* Staff's report includes an unfair characterization of the purpose and role as well as the challenges facing the Central Arizona Groundwater Replenishment District (CAGRD) in the Tucson AMA. Every water provider in the region (including Tucson Water) withdraws water outside the area where recharge occurs. Significant volumes of water are withdrawn from recovery wells outside the "area of impact" in the service areas of water providers with Designations of Assured Water Supply, contributing far more to groundwater declines in the Tucson AMA than CAGRD membership. I recommend deleting those sections of the report that wrongly attribute regional groundwater declines and the so-called "pumping/recharge disconnect" to the CAGRD and its members. See also letter from CAWCD on this issue

* Staff's report and the City of Tucson's Strategic Plan, proposes seven factors to be considered in deciding whether to extend water service. As described in the City Manager's August 10th memorandum to the Council, these seven planning factors are to be considered in a long-range land use planning context. This would entail identifying sub-regional areas that are appropriate to extend service. The Oversight Committee asserted that Staff's analysis of potential expansion areas should be timely, address equity, and be updated periodically. I would like to restate the Committee's position that the Obligated to Serve policy should be revisited immediately, particularly given the current economic/fiscal condition of our community. The City Manager's August 10th memo recommends that Mayor & Council formalize the Water Service Policy in early 2010 following completion of the Phase 2 Report, and that the seven planning factors should be considered in their deliberations. I hope would hope that deliberations focus specifically on near-term economic/fiscal benefits associated with extending service to parcels near existing infrastructure in identified growth areas, particularly those that are part of TREO's efforts to provide "shovel ready" land inventory.

* Staff's section titled "Comprehensive, Integrated Planning" drifts too far into urban form/design for a study centered on water management. Not enough time was spent on these topics to warrant the detailed recommendations found in this report. Issues such as encouraging mixed use development, density, housing diversity, transportation options, access to jobs, etc are important and complex topics that should be fully discussed in the regional land planning process, but eliminated from this report. Finally, recommendations and statements attributing current infrastructure deficits and budget challenges to growth should

be substantiated and/or rewritten with a more balanced tone and understanding of measurable economic/fiscal benefits such as job creation and sales/income/property tax generation, etc.

I appreciate your consideration of these issues during your discussion on February 9th. Thank you.

Sincerely,

Vince Vasquez
CWAC Member
City/County Oversight Committee Member

JOINT CITY/COUNTY MEETING
JANUARY 12, 2010

PHASE II REPORT
BOARD OF SUPERVISORS HEARING ROOM

I attended many of the Phase I meetings and some of the Phase II meetings. I want to thank the members of the joint study committee (volunteers all) for the many, many hours they put into the study process of Phases I and II.

Especially noteworthy are the hundreds of hours committed to the reports/presentations by members of the city and county staff. They performed exceptionally well.

In addition to the comments provided by the Tucson Regional Water Coalition regarding the Phase II report are my comments:

1. If the Pima Association of Governments is provided the opportunity to coordinate the Phase III process, you should ensure that a firm timeline is set so that the process does not get lost in the structural bureaucracy of PAG.
2. A funding mechanism (taxpayer funding) for supporting environmental enhancement is a fine goal. However, in this regard, emphasis should be placed upon providing:
   a. A transparent, regional assessment of opportunities for enhancement;
   b. A mechanism that provides for financial responsibility of the enhancement(s);
   c. A complete cost accounting of the proposed enhancement(s). This project cost information should be provided to the community prior to jurisdictional approval of the enhancement(s).
3. Updating or rewriting land use codes would assist in achieving water/wastewater goals set forth in the report.

Lastly, the Tucson Water ratepayers' investment in piping, infrastructure, and recharge facilities should not be absorbed by a regional process for the common good under the guise of "best management practices". An attempt to combine county wastewater with regional water providers should be resisted.

Thank you,

D Charles (Chuck) Freitas,
Chairman, Safe & Sensible Water Committee
Representing The Alliance of Construction Trades

Tucson Weekly

OPINION » GUEST COMMENTARY February 04, 2010

Guest Opinion

The Tucson City Council needs to support these recommendations to ensure our area's water future

by Jim Barry, Chris Brooks and Bonnie Poulos

This past December, a volunteer citizens' committee, in conjunction with a large, multi-disciplinary array of city and county staff members, wrapped up a 20-month study of the water and wastewater resources of the city and county; the goal was to "develop a common understanding of the basic facts and critical factors related to planning for a sustainable water future."

It was completed in two phases, resulting in two documents—the first, an inventory of water and wastewater resources currently held by the city and county; the second, a set of principles and policies to help us become more sustainable in the management of water.

At a joint meeting of the Pima County Board of Supervisors and the Tucson City Council, on Jan. 12, the supervisors voted 4-1 to adopt the recommendations of the Phase II report. The City Council, however, voted to wait another 30 days because of concerns that they were not given sufficient time to review the report, whether stakeholder input had been sufficient, and about the content of the report.

These concerns were completely unfounded.

The final Phase II report had been available since mid-December, and the report itself was the culmination of 12 public meetings where staff presented technical reports, and the committee drafted its portion of the report. All of those meetings were recorded, with video, audio and written records available to the public. Phases I and II of the study were limited to the jurisdictional areas of Tucson Water and Pima County Wastewater; no other jurisdictions were part of the study, but they were free to provide input at meetings or by submitting written comments, which some did.

This is an important study for the Tucson region because of what it proposes for growth policies. In the past, we have largely reacted to growth as it occurred. As proposed in the Phase II report, proper planning for growth can protect our existing water supplies, limit the need for costly new water supplies and protect the environment.

We are quickly approaching a time in the Southwest when finding sufficient water for new growth is going to get much more difficult. And when water is found, its cost will greatly surpass what we currently pay. On top of this, there is uncertainty about our current water supplies because of factors outside our local control: climate change and increasing demand for water in the Colorado River basin, where most of our water currently comes from. To address this, the report calls for looking further into the use of local, renewable water supplies, i.e., effluent and rainwater, to replace many current uses of potable water, like outdoor irrigation. This allows us to conserve potable water supplies for essential human uses.

We also must allocate water for the environment. Historically, the environment has been viewed more as a supplier of water than a user. But as we have seen nearly all riparian ecosystems in the Tucson basin altered or eliminated by our ever-increasing thirst, the environment has inevitably been sacrificed at the altar of growth. Viewing this as an either-or issue has caused us to miss opportunities to accommodate both the environment and the economy for the overall good of the community. The Phase II report outlines a series of policy changes that can promote allocation of water necessary for the environment without compromising our ability to support continued growth. Our overall quality of life depends on changes like this.

If you believe the city of Tucson should follow through on the recommendations of the Phase II report and pursue more sustainable water policies, please contact the mayor and council prior to Wednesday, Feb. 17, or attend the public hearing at 5:30 p.m., Tuesday, Feb. 9, to encourage the mayor and council to support the recommendations in the Phase II report. Additionally, the council should be encouraged to continue supporting the process they initiated by promoting the creation of a regional body (as called for in the scope for Phase III of the study) to implement a broad, regional stakeholder process that will seek to apply similar principles of sustainable water management throughout our region.

Comments may be submitted to the mayor and council at cms3.tucsonaz.gov/mcc or by going to the water study Web site (where reports can also be downloaded): www.tucsonpimawaterstudy.com.

Jim Barry, Chris Brooks and Bonnie Poulos were members of the citizen's oversight committee on the City/County Water Study.

From: Les Wolf [mailto:admin@lgwolfcompany.com]
Sent: Thursday, February 04, 2010 8:37 AM
To: info@tucsonpimawaterstudy.com
Subject: Fw: Water Report

To whom it may concern;

For nearly two years, the City and the County have contemplated the future of water and wastewater for the region. Did they do this with Marana, Sahuarita, Oro Valley, South Tucson and the Tribal Nations at the table? No. Did they do this with the other private and municipal water providers at the table? No.

During Phase 1 they counted pipes and tried to put a number to how much water is available. During Phase 2 they formed policy recommendations based on the number of pipes and the amount of available water. So what's the result? We have a report that is full of implications that our past residential and commercial growth patterns can no longer continue. Growth should be "directed" and "guided." I would prefer that we recognize not only that our past growth created tens of thousands of jobs and billions in economic investment but that growth is going to go wherever it's the cheapest and least regulated. Regulating growth and driving up costs is what I see this report doing.

I would encourage you think about the impact this Phase 2 report will have on the future of jobs and economic growth in our region before you task staff with implementing it. Know the costs to the City, the taxpayers and implications on local jobs and businesses. I would also encourage you to have a truly regional discussion before making policies that effect the region.

We are in a time where leadership is desperately needed. You have an opportunity before you with this Report to demonstrate the leadership that you are all fully capable of.

Thank you for your consideration;
Les Wolf, Pres.
THE L.G. WOLF COMPANY
DESIGN - BUILD GENERAL CONTRACTORS/CONSTRUCTION MANAGERS
301 E GRANT RD., TUCSON, ARIZONA 85705
PHONE: 520.629.9401 FAX: 520.629.9364 ADMIN@LGWOLFCOMPANY.COM
LICENSE #KB-02-253666

Sent: Thursday, February 04, 2010 6:42 AM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: marshall@magruder.org

Comments/Questions: I am a resident of Santa Cruz County who lives in the Santa Cruz County Active Management Area (SCAMA), adjacent to and south of, the Tucson Active Management Area (TAMA).

SCAMA's southern border is also the US-Mexican border, where the Santa Cruz River flows into our county and AMA. Based on this flow and additional tributaries from the mountains, we are required to ensure that the water outflow from SCAMA to the TAMA is greater than the inflow. We are required to ensure we sustain our water resources. SCAMA is the ONLY AMA in Arizona that is sustaining its water resources.

The SCAMA must sustain its water resources IF the TAMA can have an assured water supply from the Santa Cruz River. No one debates this requirement.

As stated in the "2005 Santa Cruz County Comprehensive Plan" on pages 61 and 62, a population growth of some 31,000 people will put Santa Cruz County at the point where we will not be able to sustain our water resources. This has put a "natural" limit on a sustainable population capacity for this part of Santa Cruz County within the SCAMA boundary, over 90% of the county's population.

This realistic and mandated "limit" is critical for long-term growth planning, in particular for the determination of other infrastructure requirements, such as for development, utilities, transportation, schools and other public services.

I am VERY concerned that our northern neighbor is NOT maintaining its water resources in a responsible manner. The Water Infrastructure, Supply and Planning Study, created by the best team possible, needs to be implemented in a manner that controls water resources, in particular, by setting sustainability limits on growth in both residential and business sectors.

Personally, I have intervened in an ongoing water rate case for the Arizona-American Water Company, the largest water company in our state, before the Corporation Commission. I proposed using a steep, multi-tier

rate schedule with very low rates for the lowest consumers and very high rates for the highest consumers of water with ten rate tiers. The lowest residential rates, for the first 4,000 gallons, is $1.50/1000 gallons, that increases at $0.50/1000 gallons in 4,000 gallon steps, to $6.00/1000 gallons for those who consume over 36,000 gallons. The lowest rate is adequate for low income families, such as those on fixed incomes, while the highest rates will send a clear "price signal" to those who use excessive water. The ten steps permit a consumer to be able to see how to lower their water bill. Similar conservation-oriented schedules must also send price signals to the business community. Water should never be considered as "free".

Furthermore, the largest water consumers should NOT be allowed to use groundwater but have easier access to CAP water, in particular, the local copper mines. They are in business and installation of an infrastructure to permit this should be encouraged, as their pumping of groundwater must cease. In fact, I proposed one Alternative in the ongoing Environmental Impact Statement for the Rosemont Copper Mine to require that mine to use only CAP water for its production activities.

Our groundwater tables must be sustained and used for local consumption; not for large commercial enterprises, it's way to valuable.

We in Santa Cruz County fully support this kind of Study that lays out hard choices about our future. These decisions must be made for long-term planning and not for today's economic benefits.

Thank you for an opportunity to provide an input to your Study, the most important planning mechanism to sustain the wonderful City of Tucson and Pima County.

Sincerely,

Marshall Magruder
PO Box 1267
Tubac, AZ 85646
marshall@magruder.org
520.398.8587

February 5, 2010

Honorable Mayor and Council:

Re.Water Infrastructure and Planning Study, Phase II

Thank you for delaying adoption of the Phase II study so that you can receive additional public comments. I also want to thank the hardworking group of citizens who worked together for 20 months on this project.

I have concerns about adopting a report without any cost benefit analysis of the recommendations. No implementation should be undertaken until you have a full understanding of the costs versus the benefits, ie what's written between the lines??

I recall voting for the preliminary agreement for the Conservation Effluent Pool; however, much has happened since 2000. We are in the midst of a serious drought and there are concerns about the level of renewable supplies available to Tucson via the Colorado River. Your most stable renewable supply is Tucson's effluent.

No agreement should be reached until you are advised of the costs and whether or not this reclaimed water "giveaway" endangers your water supply portfolio. Where will your replacement renewable supplies come from and what is the cost? At the very least, this water agreement should be negotiated on a year to year basis using the above criteria.

Please review the City's Obligation to Serve Policy and make some policy changes that would allow service to areas contiguous to the present service area if there are no extensive capital expenses to do so. Tie extensions to annexation when possible.

When and if you do adopt the Phase II study, please review your Mayor and Council water policies to ensure that they are consistent with recommendations of this study and the Tucson Water Long Range Planning documents.

It is vitally important that we take ALL of our CAP allocation by 2011-2012 and store it, or there is a chance that we could lose access to the unused portion.

There is a total CAP allocation in our region of 260,000 acre feet. The pipelines do not reach far enough to deliver surface water to areas like the State Lands, Green Valley, and other small water companies that have a CAP allocation but no way to get the water. CAP and effluent wheeling agreements through the developed infrastructure should be considered to preserve groundwater. I believe you have reached some agreements with Oro Valley and Metro Water in this regard. Where this is not possible, negotiate with entities who have a CAP allocation to ensure that their CAP water stays in our Tucson Active Management Area.

Tying comprehensive land use planning to water use makes sense. It must be a priority to develop incentives that allow for downtown and infill development. Otherwise development will continue to occur on the fringes of the community, which is not in the best interests of the City. Increased densities can lower costs for housing and commercial development, according to your own studies.

Likewise, it is best to plan before actual population growth occurs. Population growth projections can be used to ensure that there is adequate water and infrastructure to meet future demands. This must be an on-going process.

A study recommendation that merits further investigation is grant funding for environmental restoration. Also, a suggestion to use GO bonds for reclaimed water line extensions may be a problem since Tucson Water is a utility. How would this work? Who would pay for the bonds? Those who benefit would pay?

While water harvesting, water conservation, and use of gray water are important to water resource management in the region, they simply "nibble around the edges" of the need for adequate water supplies. Work with SAWUA and ADD for additional water resources. However, this water will be expensive.

It is time to develop a storm water utility system within the city limits. This may require a vote of the people to implement. Flooding of homes and damage to infrastructure has become a problem, requiring relief for property owners. Studies of regional basins are completed, and the Tucson Department of Transportation has done research on a storm water utility. The program would not supplant the Flood Control District, but would partner with it.

Tucson Water is to be commended for its water resource planning; however, this must continue because of the constant variances in the weather, population growth, need for sustainability, and increases in demand for water.

I urge the Mayor and Council to hold regular meetings related to water and planning issues. It is important to think about the future and the dynamics of the region, not just for today but for the distant future.

The current study must be thoroughly considered with detailed information about costs and implications of specifics in the report. Roles and responsibilities for both entities must be balanced and well thought out. You must decide how this will occur before moving forward with the staff recommendations. You have a responsibility to the community to take the time to think things through.

Carol W. West
9030 E. Waverly St., Tucson 85715

From: tlfinefrock@comcast.net [mailto:tlfinefrock@comcast.net]
Sent: Friday, February 05, 2010 4:32 PM
To: info@tucsonpimawaterstudy.com
Subject: Water Study: Potential Solar Solution to Conserve Water Usage

I am writing to offer a solution that not only promotes water conservation but will also provide many other economic and environmental benefits to our Community.

The current "wet cooling" technology used to generate most of the power in Arizona, and Western States, loses to evaporation about 1/2 to 3/4 gallon of water per kilowatt-hour generated. Tucson Electric Power's(TEP) 2010 generation plan of 9.5 Billion kWh would consume between 5 and 7 BILLION gallons of water, and is budgeted to increase at 1.52% per year.

Solar electric generation using photovoltaic technology requires only enough water to keep surface of the modules clean.

Large multi-megawatt scale Photovoltaic facilities can be established at about 12 cents/kWh, just a cent or two more than the current electric rates which are forecast to increase significantly each year and dramatically if a Federal carbon penalty is implemented.

Pima County and City of Tucson purchase about 100 Million and 200 Million kWh respectively per year from local utilities which is delivered and metered by multiple meters; Pima County alone has about 800 meters.

Current AZ Corporation Commission(ACC) Article 18 'Renewable Energy Standard and Tariff' and Article 23 'Net Metering' rules restrict the scale of Customer established solar facilities to the amount of power used by one Customer meter.

The attached letter regarding Net Metering Rule revisions that would allow "Aggregated Net Metering" , posted at the ACC website Docket # 07-0608, from Pima County has requested that the ACC make changes to the Rules that would allow Local governments to use lands already owned/controlled by them to establish large scale solar facilities that would be funded primarily by existing electricity expense budgets and to credit that Green power to their many meters. California implemented Assembly Bill 2466 in 2008 that supports similar concepts.

Tucson Electric Power has developed and submitted two tariffs to the ACC, docket #09-0340, that would allow Residents to order Green power and for TEP

to aggregate those demands to establish large scale Solar facilities to satisfy those demands. Pima County provided the ACC with a supportive letter provided that some revisions are made which is attached to the ACC docket and this message.

Jointly the Aggregated Net Metering revisions and TEP Community Solar tariffs could provide enormous and diverse benefits to our Community and taxpayers. In addition to conserving an enormous amount of water and displacing Brown power carbon, mercury and air pollution, the facilities would control costs to current rates for the life of the solar facilities, about 30 years, providing $millions of cost/tax avoidance and much needed higher wage jobs. The Green power would also offset and reduce the impact of any carbon penalties implemented on Brown power generation. The sustained and large scale demand will also accelerate solar component cost reduction, reduction in the local ACC Renewable Energy Surcharge on ratepayers, and in concert with recently legislated state incentives would encourage Manufacturers to locate to our community.

Commissioner Newman and the Tucson Regional Economic Opportunity and Development office have both indicated strong support of the Solar initiatives.

Both of these initiatives will be considered by the Arizona Corporation Commission within the next few months; without strong Community advocacy it is probable that other interests will prevail and the actions will be rejected or tabled for further study.

I recommend that the City/County Water Commission aggressively support these initiatives and document that support to the Arizona Corporation Commission.

Should you require additional information, please contact me.

Mr. Terry Finefrock
Long term Tucson area citizen/resident
520-444-9225

COUNTY ADMINISTRATOR'S OFFICE
PIMA COUNTY GOVERNMENTAL CENTER
130 W. CONGRESS, TUCSON, AZ 85701-1317
(520) 740-8661 FAX (520) 740-8171

C.H. HUCKELBERRY
County Administrator

November 5, 2009

The Honorable Commission Chair Kristin Mayes and
The Honorable Commissioners Sandra Kennedy, Paul Newman,
Gary Pierce, and Bob Stump
Arizona Corporation Commission
Commissioners Wing
1200 W. Washington – Second Floor
Phoenix, Arizona 85007

Re: **ACC Docket #E-01933A-09-0340 in the Matter of the Application of Tucson Electric Power Company for Approval of its Renewable Energy Standard and Tariff Implementation Plan**

Dear Commissioners:

I am writing to provide the Arizona Corporation Commission (ACC) with additional information, perspectives and requests that I believe will optimize and provide significant benefits to the ratepayers and taxpayers of the State of Arizona.

The Pima County Board of Supervisors aggressively supports the establishment of cost effective renewable energy solutions. The Board's passage of Resolution 2007-84 (Resolution in Support of New County Sustainability Initiatives) in May 2007 included a 15 percent renewable energy requirement for County facilities, identical to the ACC's goal. Pima County operations staff is actively implementing these requirements as demonstrated by our establishment of a one megawatt (MW) solar electric facility, which should be commissioned in December, and my letter to the ACC in November 2008 requesting assistance in modifying ACC rules to enable Aggregated Net Metering. Pima County has also conducted procurement solicitations for additional solar facilities totaling an additional 3.2 MW.

As a major power user, the County recognizes that as the annual renewable energy generation goals increase, the renewable energy surcharge (RES) amount will increase, creating a significant burden for the County, ratepayers and taxpayers. It is noteworthy

that although the renewable energy generation goal has increased only one half of one percent from 2009 to 2010, the 2010 RES budget requested by TEP has increased 37 percent ($27.1 million to $37.1 million).

We believe that the establishment of sustained and mass demand for solar electric solutions will not only allow the County to stabilize and control operational costs but will provide the basis for significant, long-range stimulation and transformation of our local economy, providing multiple environmental, economic and social benefits. The mass and sustained demand should also accelerate private sector investments and the consequent achievement of solar electric cost parity with current utility retail rates, which would enable the elimination of the RES, since solar projects could be funded by existing energy expense budgets and federal subsidy programs. Ultimately, it will also accelerate the achievement of solar electric cost parity with fossil fuel power generation [eight to nine cents/kilowatt hour (kwh) per US DOE DE-FOA-0000104].

Pima County has received budgetary estimates from a well-respected supplier of solar electric photovoltaic solutions that indicates these benefits are indeed achievable if the region can provide for multiple years orders for 30MW of solar facilities per year. Under this scenario, Power Purchase Agreements (PPA) would start at 15 cents/kwh in 2010 and decline to about 9.5 cents/kwh by 2014. This scale would enable agencies to utilize current utility expense budgets to fund the PPA's and significantly improve the productivity and use of the RES funding. Solar electric projects could be subsidized at only five cents/kwh instead of the typical 15 to 18 cents/kwh: a 300 percent improvement in the amount of renewable energy established per RES dollar. When cost parity with the retail utility rate is achieved, the RES can be eliminated. Diversification of power generation sites within the distribution infrastructure would also provide generation security, reduce transmission loss, relieve infrastructure constraints and avoid the associated costs, and reduce maintenance, depreciation and other transmission infrastructure related costs.

To enable ratepayers and taxpayers to fully achieve these benefits, I am requesting that you consider implementing the following actions:

1. **Proposed TEP *Community Solar* Tariffs**

   The *Community Solar* tariffs if aggressively implemented should promote the provision of the desired mass demand for solar electric facilities and the contemplated significant and diverse benefits. However, the tariffs as proposed do not require that TEP satisfy

all subscription requests, nor do they define any quantifiable and measurable amount of power and rate/schedule for annual implementations.

Pima County supports adoption of the tariffs but strongly recommends that they be modified to require that at minimum, TEP accept and promptly satisfy all subscription requests for power that are equal to or less than the sum of the amount of power TEP does not generate with owned assets, essentially the quantity of power that they purchase or plan to purchase, and any new facilities required to increment or replace power generating facilities. Establishment of local *'green'* power generation should be given preference over remote projects where there are no clearly definable and significant economic consequences that consider 'total" costs and benefits; for example, the proposed Springerville PV expansion versus Tucson area establishment. The avoided transmission loss from Springerville to Tucson should offset any potential climate related power generation difference.

2. Aggregated Net Metering; REC Allocations

Aggregated Net Metering (ANM). In November 2008, I transmitted a letter to the ACC requesting that it modify net metering rules to enable agencies of the State of Arizona and military facilities to establish ANM solar facilities on their public lands remote from actual loads and to credit that power to their multiple meters, which are typically located in urban environments where it is not as cost effective to establish solar electric facilities. ANM facilities would be located within or adjacent to the distribution grid where there existed, or would exist at the time of commissioning, sufficient infrastructure at the distribution grid interconnect point to support the anticipated amount of power generated. To my knowledge, my request has not yet been formally considered.

During the first quarter of this year, TEP presented a conceptual proposal to Pima County called the *"Transport Tariff,"* which would have provided an ANM solution and expanded the ability of public agencies such as Pima County to significantly add to the solar facility portfolio within TEP's service area and promote achievement of the ACC's renewable energy goals. The *"Transport Tariff"* contemplated charging the County a surcharge for use of TEP's distribution infrastructure. This would have enabled the County to conceptually transport solar power from the generation point to the County's multiple meters. In practice, the generated power would likely be used by meters closer to the interconnect point and TEP paid at the retail rate for the meter, which already

provide for the recovery of all generation, distribution, transmission and other costs and profit.

Pima County strongly believes that the "*Transport Tariff*" and the "*Community Solar Tariffs*" should be adopted and implemented together, as they are both innovative ideas that complement one another and together will create the optimal framework for achieving greater renewable energy use and industry growth in Southern Arizona.

If the ACC supports the *Community Solar* tariff without the *Transport* tariff, inordinate control and influence of the development of the regional solar electric market will rest in the hands of the local utility. Pima County would be prevented from acting to optimize, control and reduce significant operational costs on behalf of its taxpayers. The Community Solar solution is not, by itself, capable of optimizing the provision of the diverse and significant economic and environment benefits that would be provided by both utility and agency participation.

Via this letter, and in conjunction with the TEP 2010 REST Plan action, I am requesting that the ACC modify rules to enable the requested ANM functionality and to direct TEP to collaborate with and support as needed the development by the County of a solar electric generating facility of approximately 15MW in capacity.

RES/REC Funding. Pima County supports TEP's request to enable them to utilize RES funds allocated for Residential Solar Electric Up-Front Incentives (UFI) for commercial projects if they do not have residential reservations for those funds at the time that the Commercial reservation request is submitted to TEP. As above, utility and large commercial scale projects require one third or less subsidy; provide more power per RES dollar than residential solar projects; and the *Community Solar* tariff, if approved, will enable residential participants to subscribe to and support *Green* power distributed generation; and to stabilize their power costs at a rate that is similar to their current electric rate and avoid future cost increases.

3. **Ownership of Assets**

I note that TEP makes several requests for use of significant REST funds to establish new solar electric facilities; for example (and may not be all-inclusive), the 1.6MW AzRise/TEP project facility; augmentation of the Springerville facility and the recent RFP for 25-50MW per year of solar facilities. If those actions are supported and funded in

any part by the ratepayer (taxpayer), funds such as and not limited to Federal incentives, RES or Community Solar Subscriptions, and not directly by Shareholder capital, I suggest that it would be appropriate for the ACC to stipulate that those assets be titled as owned and operated on behalf of the ratepayers and not TEP/Unisource shareholders. This will facilitate the future implementation of competition and solicitation for asset management, operating and maintenance services that contain desirable performance, service and cost reduction, based compensation requirements.

In closing, I want to emphasize that we have a great opportunity to provide significant and recurring benefits to our community and that we need to act promptly to initiate the provision of those benefits. I fully understand and am sympathetic to private sector responsibilities to serve their shareholders and am confident that if TEP changes their focus and culture from just cost recovery to cost controls and reductions that both shareholders and ratepayers interests will be served.

Sincerely,

C.H. Huckelberry
County Administrator

CHH/mjk

c: The Honorable Chairman and Members, Pima County Board of Supervisors
Reid Spaulding, Director, Pima County Facilities Management Department
George Widugiris, Director, Pima County Procurement Department
Tedra Fox, Pima County Sustainability Manager
Terry Finefrock, Pima County Chief Contracts and Procurement Manager

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C.H. HUCKELBERRY
County Administrator

November 5, 2009

The Honorable Commission Chair Kristin Mayes **and**
The Honorable Commissioners Sandra Kennedy, Paul Newman,
Gary Pierce, and Bob Stump
Arizona Corporation Commission
Commissioners Wing
1200 W. Washington – Second Floor
Phoenix, Arizona 85007

Re: **ACC Docket RE-00000A-07-0608 – Net Metering Rules**

Dear Commissioners:

I am writing to request that you approve some version of *Aggregated Net Metering* (ANM) at your November 19 or 20, 2009 open meeting on this case.

My letter of October 10, 2008 to the Arizona Corporation Commission (ACC), which is already attached to this docket, documents the diverse benefits that would accrue to ratepayers who are the same persons as taxpayers, and Pima County if rule changes were adopted to enable ANM. In that letter, I generally define ANM as allowing a utility customer like Pima County to interconnect to the grid on the Utility side of our meters and self-generate, or have generated, electricity on land owned by the County and credit that power to their many meters in a net metering manner. The generated power would be actually consumed by other Users and the Utility fully compensated at the base rates and surcharges applicable to those meters.

I understand that the Commission may have concerns regarding potentially unabsorbed fixed utility costs that may result if significant amounts of utility electricity sales were displaced by large Customer self-generated solar electric projects if ANM functionality was approved. When considering how to resolve that concern, I encourage you to consider "total" costs and benefits to ratepayers, not just those associated with the generation and distribution of electricity, and the following observations and circumstances:

First, I understand that several other states have considered and studied the impact of similar ANM rules, found that ANM is net advantageous to ratepayers, and adopted rules supporting ANM.

My October 10, 2008 letter to the ACC proposed that initial ANM rule changes be restricted to State, County and City governments and Federal Military installations and to sites that would support interconnect points within or adjacent to the distribution grid with sufficient existing or future planned distribution capacity required to support the intended amount of *Green* power generation. As an alternative, my letter also proposed that the ACC direct Tucson Electric Power Company (TEP) to work with the County to enable us to establish a 15 megawatt ANM Solar Electric Facility on a suitable parcel of County land.

In addition to the environmental and social benefits, either of these options would:

- Allow time for actual fixed cost absorption and rate data to be developed and impact studies to be performed before the ANM rule availability was expanded;

- Provide direct cost avoidance benefits to ratepayers by offsetting the imminent *Brown* power carbon penalty which would be paid by ratepayers via the fuel surcharge (PPFAC), which would preserve for other use the remainder of the $454 million of TEP Competition Transition Charge over-collections presently being used to pay those costs;

- Significantly reduce the amount of precious local water required to generate *Brown* power; the TEP 2010 generation plan will require from five to seven million gallons of water [1/2 to 3/4 gallon/kilowatt hour (kwh)];

- Limit incremental utility infrastructure costs and provide distribution efficiency benefits as contemplated by the current TEP solicitation for solar facility site locations within the 'distribution" grid;

- Reduce current Utility administrative and engineering costs; larger capacity projects would result in fewer projects and related Utility costs;

- Provide direct cost benefit to ratepayers via significantly more productive use of Renewable Energy Surcharge (RES) funds paid by ratepayers. Typically, commercial scale ratepayers like Pima County utilize our existing Utility expense funds which are based on current Utility rates and surcharges of about 10 to 11 cents/kwh to partially fund solar facilities; a one megawatt facility typically

costs about 25 cents/kwh to establish requiring RES subsidy and funding of about 15 cents/kwh or more. The greater scale enabled by ANM would reduce the gross price/kwh to about 15 cents/kwh, which would reduce the RES subsidy required to only five cents/kwh REC subsidy: a 300 percent productivity improvement in the use of RES funds provided by ratepayers. This will avoid the significant burden that will be placed on ratepayers to fund the RES as achievement of the ACC's Renewable Energy generation goal increases annually to 15 percent.

- Create the mass demand necessary to accelerate the development of cost effective solar solutions by private sector manufacturing and achievement of solar electric cost parity with Utility retail rates and phase-out of the RES and need to subsidize;

- Create higher wage jobs, work, and tax revenues which would enable the County to fund needed services and/or avoid tax increases on taxpayers, who are the same persons as ratepayers;

- Support aggressive achievement of ACC Renewable Energy goals.

Utility Cost Reduction Opportunity. Considering the current economy and other organizations performance, TEP profits are exceptionally strong indicating that a rate increase would not be necessary or appropriate, and they have significant opportunity to reduce and control costs to offset any cost issue that might be created by ANM. The attached first page of a Unisource Energy press release dated August 3, 2009, indicates that they increased their 2Q NET income by 600 percent from $5 million to $31 million over the same period last year; provides primary credit for that performance to their TEP Division's acquisition of the base rate increase and fuel surcharge approved by the ACC effective December 1, 2008. Also attached please find an *Arizona Employment by (Industry) Sector* study prepared by the Arizona Department of Commerce and US Department of Labor that indicates that utilities enjoy the highest average wage in the State of Arizona; much greater than that paid to "Management of Companies," "Professional, Scientific & Technical," and "Manufacturing" or "Construction." It is probable that there are many other areas where cost reduction and control efforts would be productive.

Alternative Efforts to Develop an ANM Solution. During the first half of 2009, Pima County staff organized a project team and met with TEP senior staff with the objective of developing tariffs that would allow the Utility to aggregate and purchase ratepayer demand

for *Green* power and support County establishment of an ANM 15 megawatt solar electric generating facility. The product of those meetings validated and generated the Community Solar Tariffs proposed by TEP as part of the 2010 RES filing, which will fully preserve TEP rates/profits, but TEP was not successful in providing a tariff that would support the establishment of a County ANM Solar electric facility.

In closing, I applaud the ACC's considerable efforts to consider all significant facets regarding Net Metering rulemaking. I do not believe that without action that would allow the development of factual statistics that further discussion would be productive. The available information clearly documents that adoption of rules that support some version of ANM would be provide significant net benefits to ratepayers and would also generate the data needed to quantify, identify and resolve any significant issues.

I would greatly appreciate your consideration of the information I have provided and adoption at your November 2009 meeting of some version of ANM that would allow Pima County to expedite the implementation of our proposed 15 megawatt solar electric project. This is a timely opportunity to provide significant and recurring benefits to our community, ratepayers and taxpayers.

Sincerely,

C.H. Huckelberry
County Administrator

CHH/mjk

Attachments:

Arizona Commerce Department Employment & Average Wage by Sector, 1 page
Unisource Energy August 3, 2009 News Release, 1 page
Unisource Investor Relations Dividend History, July 15, 2009; 1 page

c: The Honorable Chairman and Members, Pima County Board of Supervisors
Reid Spaulding, Director, Pima County Facilities Management Department
George Widugiris, Director, Pima County Procurement Department
Tedra Fox, Pima County Sustainability Manager
Terry Finefrock, Pima County Chief Contracts and Procurement Manager

THE ARIZONA ADVANTAGE

Business is Booming!

- 1st on Expansion Management Magazine's list of Top States for Recruitment & Attraction: Arizona *(May/June 2007)*
- 1st on Expansion Management Magazine's list of Top Large Metros for Recruitment & Attraction: Phoenix-Mesa *(May/June 2007)*
- 1st on Expansion Management Magazine's list of Top Mid-Size Counties for Recruitment & Attraction: Pima *(May/June 2007)*
- 1st in Entrepreneur Magazine's list of the Hot Cities for Entrepreneurs - Phoenix *(September 2006)*
- 2nd ranked in % of High-Impact firms in medium MSAs, Tucson **
- 2nd on *Inc.* Magazine's list of the Hottest Large Cities for Doing Business: Phoenix *(Boomtowns 07, May 2007)*
- 2nd on *Inc.* Magazine's list of the Hottest Small Cities for Doing Business: Yuma *(Boomtowns 07, May)*
- 2nd on Forbes List for top 25 Best Spots for Job Opportunities – Phoenix *(February 2007)*
- 2nd fastest growth rate for majority women-owned firms in US *(Center for Women's Business Research 2006)*
- *3rd in Semiconductor Exports, 4th in Tech Export Concentration in US (AeA, Trade in the Cyberstates: 2008)*
- 3rd ranked in % of High-Impact firms in large MSAs, Phoenix-Mesa **
- 7th nationally for the number high-tech establishments in Arizona *(AeA, Trade in the Cyberstates: 2008)*

** Corporate Research Board, American Corporate Statistical Library (2007)

Arizona is one of the fastest-growing, most dynamic economies in the nation. Phoenix is now the nation's fifth most populous city. Both Fortune 500 and start-up technology companies call Arizona home, reaping the advantages of a competitive business climate and tax structure, a skilled, knowledge-based workforce, and world-class innovation, cultural and scenic resources.

GROWTH INDICATORS

	2000	2008	% CHANGE 2000 – 2008
State Population	5,130,632	6,629,455	29.2%
Gross State Product ($billion)	$158.5	$248.8	57.0%
Personal Income ($ billion)	$132.6	$214.2	61.6%
Per Capita	$25,653	$32,953	28.5%
Retail Sales ($billion)	$37.6	$49.7	32.3%
Value of All Building Permits ($billion)	$11.7	$12.4	6.41%
Total Net Assessed Valuation ($billion)	$31.8	$86.1	171%
Department of Defense Contracts ($billion)	$4.6	$11.2	144%

Sources: Arizona Department of Commerce, U.S. Census, Arizona Department of Revenue, Arizona Real Estate Center - Arizona State University, www.governmentcontractswon.com, Bureau of Economic Analysis.

PRINCIPAL ECONOMIC ACTIVITIES

The major employment sectors in Arizona include aerospace, electronics and semi conductor manufacturing. Tourism, business services and back-office operations are also important sectors. Arizona's original export activities - agriculture and mining - remain significant in many rural parts of the state. Based on sheer size, the real estate and rental industries, the diverse tourism sector, and government are the largest economic sectors in Arizona. Relative to the national average, the construction sector is also unusually large because of the state's rapid growth in most recent years.

ARIZONA EMPLOYMENT BY SECTOR

Quarterly Census of Employment and Wages [QCEW or ES-202]

2008 Q3 Employment & Wages

Industry	Employment	Emp. % Change 07-08	Average Wage
Agriculture & Forestry	17,648	-7.2%	$27,249
Mining	14,109	18.4%	$64,624
Utilities	23,812	2.1%	$76,503
Construction	188,396	-18.2%	$43,722
Manufacturing	172,845	-5.3%	$58,630
Wholesale Trade	106,562	-2.3%	$59,362
Retail Trade	317,880	-4.0%	$27,509
Transportation & Warehousing	84,400	0.1%	$43,837
Information	43,295	-3.5%	$53,717
Finance & Insurance	124,343	-4.7%	$53,691
Real Estate, Rental & Leasing	51,288	-3.6%	$40,743
Professional, Scientific & Technical	131,035	-1.2%	$61,352
Management of Companies	27,582	0.9%	$68,925
Administrative & Support	226,699	-8.2%	$30,504
Educational Services	190,245	2.1%	$36,874
Health Care & Social Assistance	291,359	5.2%	$46,419
Arts, Entertainment & Recreation	53,968	0.3%	$32,708
Accommodation & Food Services	230,214	-1.0%	$16,985
Other (except Public Administration)	73,100	-1.8%	$29,755
Public Administration	161,778	2.8%	$51,725
Unclassified	3,163	43.3%	$41,862
Total	2,535,243	-2.9%	$41,511

Source: Prepared by Arizona Department Commerce, Research Administration, in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics

LABOR FORCE DATA

	2000	2008
Civilian Labor Force	2,505,306	3,132,700
Employed	2,404,916	2,960,200
Unemployed	100,390	172,500
Unemployment Rate	4.0%	5.5%

Source: Special Unemployment Report, Arizona Department of Economic Security, Research Administration, in cooperation with the U.S. Department of Labor, Bureau of Labor Statistics

UniSource Energy NEWS

FOR IMMEDIATE RELEASE
Media Contact: Art McDonald, (520) 884-3628
Financial Analyst Contact: Jo Smith, (520) 884-3650

August 3, 2009

UNISOURCE ENERGY REPORTS SECOND QUARTER 2009 EARNINGS, NARROWS 2009 EARNINGS GUIDANCE RANGE

- UniSource Energy's net income for the second quarter of 2009 was $31 million, or $0.80 per diluted share of common stock, compared with net income of $5 million, or $0.13 per diluted share, in the second quarter of 2008. Earnings for the second-quarter of 2009 also reflect an after-tax gain of $3.6 million, or $0.09 per diluted share on the sale of its equity interest in Carboelectrica Sabinas, S. de R.L. de C.V. (Sabinas), one of UniSource Energy's unregulated energy investments.

- UniSource Energy narrows its 2009 reported GAAP earnings guidance to $2.55 to $2.70 per diluted share from $2.55 to $2.90 per diluted share.

Tucson, Ariz. – UniSource Energy Corporation (NYSE: UNS) today reported second quarter 2009 net income of $31 million, or $0.80 per diluted share of common stock, compared with net income of $5 million, or $0.13 per diluted share, in the same period last year.

UniSource Energy's financial results are driven primarily by Tucson Electric Power (TEP), UniSource Energy's principal subsidiary, which reported net income of $27 million for the second quarter compared with net income of $6 million last year. The increase can be attributed to two key elements: first, a $12 million increase in TEP's retail revenues (excluding renewable energy and demand side management charges) reflecting an average base rate increase of 6% that was effective December 1, 2008 and a Purchased Power and Fuel Adjustment Clause (PPFAC) that allows recovery of actual costs. The new rate structure contributed to a $16 million increase in TEP's utility gross margin (retail and wholesale revenues net of costs and deferrals related to fuel, purchased power and transmission) over the second quarter of last year. The other key element is that during the second quarter of 2008 TEP incurred charges of $22 million, including amortization of a regulatory asset and deferred revenues to be refunded; those charges will not recur in 2009.

Retail revenues were higher even though TEP's second-quarter retail kilowatt-hour (kWh) sales fell 1.9 percent compared with the same period last year due to the struggling economy. The reduction in TEP's second quarter retail sales actually represented a significant improvement over the 4.8 percent year-over-year decrease in the utility's first quarter sales.

"With half of the year behind us and TEP's retail energy sales lagging 3.3 percent behind last year's levels, we're revising our expectations and narrowing our 2009 guidance range to $2.55 - $2.70 per diluted share," said Paul Bonavia, Chairman, President and CEO of UniSource Energy. "Although we're beginning to see signs that economic conditions may be stabilizing, the high end of our previous earnings guidance is likely to remain out of reach.

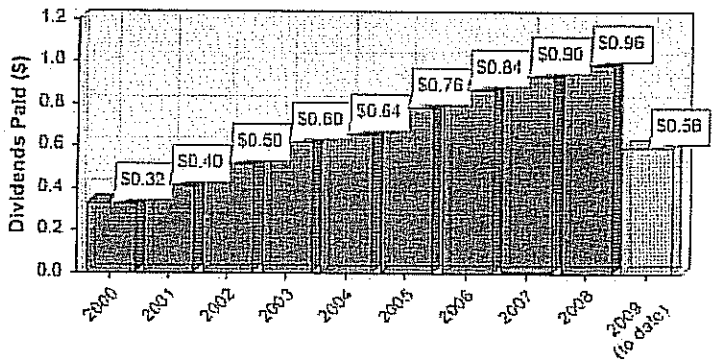
To mitigate the impact of lower sales, the company is taking steps to reduce O&M expenses, Bonavia said. "We're finding ways to cut costs without compromising safety, reliable service for our customers or the long-term health of our company," he said.

UniSource Energy

Investor Relations

Dividend History

Annual Dividends Issued



Most Recent Dividend

Enter number of shares: × 0.29 = Calculate

Dividend Value:

Historical Dividends Issued

Declared	Ex-Date	Record	Payable	Amount	Type
May 7, 2009	May 18, 2009	May 20, 2009	Jun 15, 2009	0.29	U.S. Currency
Feb 13, 2009	Feb 20, 2009	Feb 24, 2009	Mar 9, 2009	0.29	U.S. Currency
Total dividends paid in 2009:				**0.5800**	
Dec 5, 2008	Dec 12, 2008	Dec 16, 2008	Dec 29, 2008	0.24	U.S. Currency
Aug 15, 2008	Aug 21, 2008	Aug 25, 2008	Sep 5, 2008	0.24	U.S. Currency
May 1, 2008	May 9, 2008	May 13, 2008	May 27, 2008	0.24	U.S. Currency
Feb 27, 2008	Mar 6, 2008	Mar 10, 2008	Mar 21, 2008	0.24	U.S. Currency
Total dividends paid in 2008:				**0.9600**	
Dec 7, 2007	Dec 14, 2007	Dec 18, 2007	Dec 28, 2007	0.225	U.S. Currency
Sep 4, 2007	Sep 13, 2007	Sep 17, 2007	Sep 28, 2007	0.225	U.S. Currency
May 11, 2007	May 21, 2007	May 23, 2007	Jun 15, 2007	0.225	U.S. Currency
Feb 9, 2007	Feb 15, 2007	Feb 20, 2007	Mar 14, 2007	0.225	U.S. Currency
Total dividends paid in 2007:				**0.9000**	
Dec 1, 2006	Dec 8, 2006	Dec 12, 2006	Dec 27, 2006	0.21	U.S. Currency
Sep 14, 2006	Sep 21, 2006	Sep 25, 2006	Oct 10, 2006	0.21	U.S. Currency
May 5, 2006	May 15, 2006	May 17, 2006	Jun 9, 2006	0.21	U.S. Currency
Feb 10, 2006	Feb 16, 2006	Feb 21, 2006	Mar 15, 2006	0.21	U.S. Currency
Total dividends paid in 2006:				**0.8400**	
Dec 2, 2005	Dec 9, 2005	Dec 13, 2005	Dec 27, 2005	0.19	U.S. Currency
Sep 9, 2005	Sep 16, 2005	Sep 20, 2005	Oct 3, 2005	0.19	U.S. Currency

Sent: Saturday, February 06, 2010 10:50 AM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: pcattani@cox.net

Comments/Questions: Dear Mayor & City Council:

Please vote to accept the recommendations of the Phase II report of Tucson Water and Pima County Wastewater. It is carefully crafted and has the interest of the population at heart. Don't drag your feet on this any longer; the drought clock is ticking.
P.S. I have no affiliations with either the City of Tucson or the Pima Country Cooperative Project.

Sincerely,

Pat Cattani
4247 E. Blanton Rd.
Tucson, AZ 85712
pcattani@cox.net

Coalition for Sonoran Desert Protection
300 E. University Blvd., Suite 120
Tucson, Arizona 85705
p (520) 388-9925 • f (520) 791-7709
www.sonorandesert.org

February 8, 2010

Mayor Walkup and Councilmembers
City of Tucson
P.O. Box 27210
Tucson, AZ 85726

RE: City/County Water and Wastewater Study Phase II Report

Dear Mayor Walkup and City Council Members:

The Coalition for Sonoran Desert Protection urges you to support the City/County Water and Wastewater Study Phase II Report and direct City staff to proceed, in cooperation with Pima County and other participants, with implementation of the recommendations contained within the report.

We value the thorough and transparent public process undertaken during the development of this report, and the dedication by members of City and County staff over the last 21 months. The 12-member Oversight Committee, appointed by the Tucson Mayor and Council and Pima County Board of Supervisors, gathered testimony from a wide range of community interests during 36 public meetings. The recommendations before you are the result of close to two years of research, study, analysis and public deliberations, which the community has watched and participated in with keen interest.

The need for a "New Paradigm," as expressed by the Joint Committee, is indeed true. Communities throughout the country understand and embrace this, as evidenced by the evolution of "Smart Growth" principles over the last two decades. Locally, the Coalition has worked successfully with local jurisdictions, particularly with Pima County and the Town of Oro Valley, to enact policies that integrate water resource and land use planning. The definition of a sustainable water future, based on the pillars of comprehensive integrated planning, water supply, and respect for the environment, is well thought out and forward-thinking. We appreciate that "Respect for the Environment" is included as a central tenet in this report. The citizens of our region have a long history of supporting the preservation of our natural environment, perhaps most strongly exemplified by the values of the Sonoran Desert Conservation Plan.

Because of our long-standing community value for riparian protection in particular, we were shocked to see the recent coordinated effort by the homebuilding community requesting that the Mayor and Council reject the use of effluent for environmental purposes. In addition, the homebuilding and development interests are asking the City not to enter into an agreement that was already entered into and signed by the City and the County (Mayor Walkup and Chairwoman Bronson, respectively) in February 2000. This agreement was seen by the community as a "watershed event," and outlined a wide range of agreed-upon issues surrounding effluent, including a commitment to reserve a specific

amount of effluent for riparian projects benefiting the entire community. This reserve is known as the Conservation Effluent Pool (CEP).

The Coalition supports the recommendations made regarding riparian habitat, groundwater dependent ecosystems, and the perpetuation of the CEP. The goals and recommendations outlined on pages 29-36 of the report clearly outline a path forward for all participants to prudently and thoughtfully utilize our water supply to protect and encourage riparian habitat and groundwater dependent ecosystems.

The CEP is an essential tool needed to achieve these goals and we encourage the Mayor and Council to direct staff to continue to work on detailing how the CEP will be managed and utilized. This increased specificity will lead to improved management of the CEP, benefiting both the owners of this resource and the riparian habitat that depends on it.

Please reject the recommendation, which is re-stated by multiple members of the development and building industry in their recent comments, that cost-benefit analyses should be completed "before the City and County enter into an agreement committing 10,000 acre-feet of effluent to environmental restoration." First, this agreement, which recharges reclaimed water and allows it to benefit the environment, was already made ten years ago. Secondly, this recommendation is based on misinformation and seems to imply an alternative agenda for using this effluent pool, such as for golf courses or for drinking water, an option our community has expressed grave concerns about due to a current inability to adequately purify effluent to remove pharmaceuticals and other potentially noxious substances.

Finally, the City of Tucson has invested considerable resources into projects such as the development of two Habitat Conservation Plans (HCPs), El Rio Medio, Tres Rios del Norte, the restoration of Atterbury Wash and Arroyo Chico, and policies and ordinances that protect riparian habitat and could count as credit with the HCPs going forward. The Phase II Report serves as an important complement to these projects. As noted on page 64, one of the important successes to already surface as a result of this study is an increased level of cooperation between the City and the County. By supporting the Phase II Report and endorsing its implementation, all of these other projects will also benefit from the resultant shared expertise and increased cooperation.

Thank you for considering our input on this important project.

Sincerely,

Carolyn Campbell
Executive Director

Cc: Mike Letcher, Tucson City Manager
Nicole Ewing-Gavin, City of Tucson
Melaney Seacat, Pima County
CH Huckelberry, Pima County Administrator
Chairman and Members, Pima County Board of Supervisors
James Barry, Chair, City / County Joint Oversight Committee

A Declaration of the Board of Supervisors of Pima County, Arizona to Work Cooperatively with the City of Tucson in Developing the Sonoran Desert Conservation Plan and Carrying Out the Riparian Restoration Projects

WHEREAS, on March 2, 1999, the Board adopted the Sonoran Desert Conservation Plan in concept; and

WHEREAS, the Sonoran Desert Conservation Plan is the largest and most comprehensive regional multi-species conservation plan in the United States; and

WHEREAS, on December 3, 1998 the Board entered into Resolution 1998-250 with the Secretary of the Interior to:

(1) support the underlying purpose of the Endangered Species Act which is to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, and

(2) work with the Department of the Interior to develop the Sonoran Desert Conservation Plan; and

WHEREAS, on February 8, 2000, the Board agreed to enter into a Supplemental Intergovernmental Agreement with the City of Tucson which included provisions relating to effluent or reclaimed water for riparian projects; and

WHEREAS, under the Supplemental Intergovernmental Agreement a Conservation Pool 'is established for riparian projects; and

WHEREAS, under the Sonoran Desert Conservation Plan, 12 habitat types and 20 plant communities are being considered for protection, including riparian habitat which has been substantially degraded

NOW THEREFORE BE IT DECLARED THAT THE BOARD OF SUPERVISORS OF PIMA COUNTY, ARIZONA, as follows:

Pima County by entering into a Supplemental Intergovernmental Agreement on effluent management will work cooperatively with the City of Tucson to develop the Sonoran Desert Conservation Plan Riparian Restoration Element.

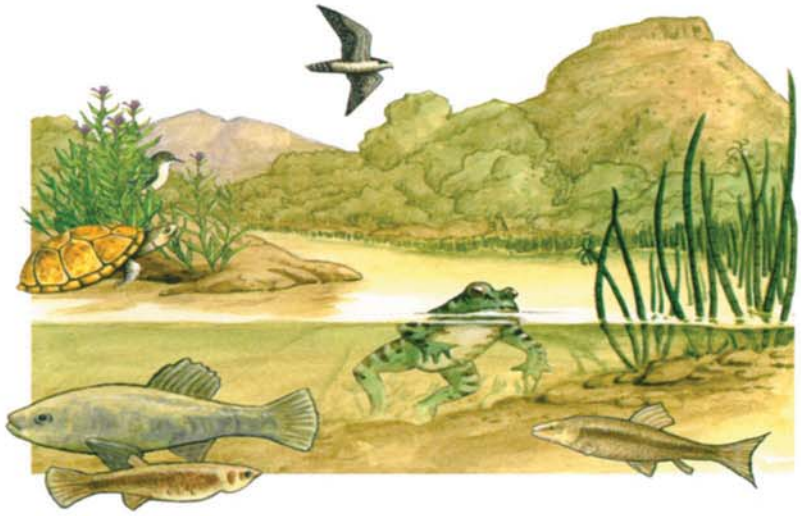
SIGNED THIS 21st day of March, 2000.

PIMA COUNTY BOARD OF SUPERVISORS

Sharon Bronson
Chair of the Board

Secretary of the Interior

Mayor of Tucson



From: greenenchalada@aol.com [mailto:greenenchalada@aol.com]
Sent: Monday, February 08, 2010 11:28 PM
To: info@tucsonpimawaterstudy.com
Subject: Water Use in Tucson and Pima County

Dear Councilman,

Although I am a county resident the issue of the use of water and wastewater in Tucson and Pima County is of extreme interest to me and to my husband. I am a native Tucsonan and I really do not separate Tucson from Pima County in my mind. On the issue of water, it is imperative that that the city and the county cooperate. The City-County Water and Wastewater Study Phase II Report recommends using a portion of the effluent generated for riparian restoration. This is a vital part of the study, and I hope the mayor and all the council will not tamper with the study's findings. To restore wildlife habitat is essential to the quality of life for all our citizens and to wildlife in our area and should be of prime concern to the City of Tucson.

Tucson has a reputation of flip-flopping in its decisions. I hope Mayor Walkup and the current City Council will take the high road and stick to the agreement in place.

Sincerely,
Sandy Elers
6740 N Calle Lomita
Tucson, AZ 85704

Town of Sahuarita
Office of the Town Manager

February 8, 2010

Ms. Melanie Seacat
Tucson Pima Water Study
PO Box 2344
Tucson, Az. 85701

Subject: Tucson Pima Water Study
Phase II Report Additional Comments, City of Tucson Extended Comment Period

Ms. Seacat:

In its December 1, 2009, comments regarding the Tucson Pima Water Study, the Town of Sahuarita agreed that overall the effort approaches water and growth as it relates to the general study area and contemplates additional steps to include a regional dialogue to assure comprehensive water resource and land use planning. However, Phases I and II excluded participation by jurisdictions and water and wastewater providers other than the City of Tucson and Pima County. As such, the Town understands the report recommendations apply only to the City and County and its associated water and wastewater utilities.

While many of the following points were covered in the Town's original correspondence, this letter is intended to emphasize concerns expressed in the Town's earlier comments regarding the need for a regional process.

The Town agrees the goal of a regional dialogue for both water resource and land use planning would achieve greater participation if the effort were convened by a regional entity. However, recent dialogue suggests the Pima Association of Governments (PAG) serve as that regional entity. The Town strongly disagrees and believes PAG would not be the appropriate regional entity in this case due to, among other things, ongoing PAG activities, including the RTA.

While PAG is governed by a nine-member Regional Council with an elected official serving from each member jurisdiction, it does not represent the numerous water and wastewater providers in the region. For example, a single jurisdiction may have many water utilities providing service within the jurisdictional boundaries and, thus, cannot adequately represent the needs or goals

of every utility. Further, competing interests from jurisdictions, providers, environmental concerns or other reasons, are likely to hinder participation and discourage open dialogue. Further, the report recommends working collaboratively to acquire new water supplies for reliability and "maximize opportunities to acquire water supplies through regional cooperation and the "Acquire, Develop and Deliver" (ADD) water process"... (p. 18). The Southern Arizona Water Users Association (SAWUA), whose membership includes, among others, Tucson Water, Pima County Regional Wastewater Reclamation Department and the Town of Sahuarita Wastewater Utility, has been actively participating in the ADD water process. While the process is encouraging, efforts to secure additional water supplies primarily reflect those of water providers, mining industries, SRP, CAP and others to satisfy the respective needs of each. It may be beneficial to organize a committee made up of the various regional jurisdictions whose focus should be that of acquiring additional water supplies for the region.

With respect to the negative impacts from groundwater pumping, disassociated recharge, and the "pumping/recharge disconnect" noted in the Phase II report, the Town agrees the availability of renewable water supplies should be considered in the development process and believes a regional approach is needed to ensure recharge occurs within reasonable proximity to groundwater pumping. Unlike other jurisdictions the Town of Sahuarita owns and operates a wastewater and associated recharge facility within the Town. The Town of Sahuarita incorporated to ensure control of its own destiny, including its reclaimed water resources. While a regional dialogue would be beneficial to water resources management and planning, this should not be construed as a mechanism to establish regional utilities for water and wastewater.

The Town appreciates the opportunity to provide additional comments on the Phase II staff report and looks forward to the opportunity to actively participate in this regional planning effort as the study advances.

Sincerely,

James R. Stahle
Town Manager

February 8, 2010

Mayor Bob Walkup
Tucson City Hall
255 West Alameda Street
Tucson, Arizona 85701

TUCSON AUDUBON SOCIETY

Leaders in conservation and education since 1949

Main Office
300 E. University Blvd., #120
Tucson AZ 85705
TEL 520.622.5622
FAX 520.623.3476

Dr Paul Green
Executive Director
pgreen@tucsonaudubon.org
520.777.9525

Dear Mayor Walkup and Council members:

City-County Water and Wastewater Study Phase II Report

Tucson Audubon represents approximately 4000 member households, located primarily in Tucson and Pima County. We have a vision of communities in southeast Arizona connected to their natural world through birds, and who use our natural resources in a sustainable manner. Since 1949 we have been working with all in the community to conserve natural resources for use and enjoyment by all.

Tucson Audubon asks you to support the City-County Water and Wastewater Study Phase II Report and direct City staff to proceed, in cooperation with Pima County and other participants, to implement the recommendations of the report.

It is our view that the reporting of Phase II of the Water and Wastewater Infrastructure, Supply and Planning Study is a major contribution to water resource planning for the Tucson region.

We have a number of observations as you complete your deliberations and decide on approval of the final Phase II report. The report:

- acknowledges a balance is necessary as we address various needs for water
- includes "Respect for the Environment" as a key part of the report
- supports the need for a permanent water policy
- acknowledges the need for cooperation between City and County

Our comments related to each of these topics are provided below:

Balanced Requirements—Tucson Audubon congratulates the Committee on its recommended adoption of a new paradigm that provides a balance across all requirements for water—people, economics, and environment. This is especially important in light of the potential limited supply of water we will face in the future.

Recognizing these limitations, water conservation is consistent with a recent U.S. Geological Survey report that documents decreasing water use in the West (with the exception of four states), intense disputes, and ecosystem collapse tied to dwindling supplies. There are different techniques that will aid conservation measures, including rainwater harvesting focusing on roof and paved areas (both residential and commercial hardscapes), maximizing use of gray water for residential and commercial applications, and restoration of selective wetlands or washes with native plantings. Open space acquisition will further address the preservation of important conservation areas designated in the Sonoran Desert Conservation Plan.

Respect for the Environment. The citizens of our region have a long history of supporting the preservation of our natural environment, perhaps most strongly and recently exemplified by the values of the Sonoran Desert Conservation Plan. In particular, we support the recommendations made regarding riparian habitat, groundwater dependent ecosystems, and the perpetuation of the Conservation Effluent Pool (CEP). The goals and recommendations outlined on pages 29-36 of the report clearly outline a path forward to utilize prudently and thoughtfully our water supply to protect and encourage riparian habitat and groundwater dependent ecosystems.

The CEP is an essential tool needed to achieve these goals and we encourage the Mayor and Council to quickly finalize and approve the IGA between the City of Tucson and Pima County outlining how this CEP will be managed and utilized to benefit riparian habitat. These efforts could contribute to the recharge of our aquifer as they provide enhanced habitat for the pollinators and other species that comprise the ecosystem we depend on.

The American Bird Conservancy's Top 20 Most Threatened Bird Habitats in the U.S., 2007, (http://www.abcbirds.org/newsandreports/habitatreport.pdf) states that Southwest riparian habitats are the fifth most threatened habitat type in the nation. The Arizona Game and Fish Department (AGFD) stated that 90 percent of the Arizona's riparian habitat had been lost in their November 1988 issue of Wildlife Views (AGFD 1988). Habitats along watercourses are known for their high density and diversity of animal species. Some 80 percent of vertebrate species in the region are dependent on riparian areas for at least part of their life cycle; over half of these cannot survive without access to riparian areas (Noss and Peters 1995). Arizona and New Mexico have lost 90 percent of pre-settlement riparian ecosystems (Fig 3e) (Noss et al. 1995). In Arizona and New Mexico, more than 100 federally and state listed species are associated with cottonwood-willow bosques (Noss and Peters 1995). The regional decline of 36 of the 82 breeding bird species, which formerly used riparian woodlands, is a case in point (Nabhan and Holdsworth 1998, p. 2, State of the Desert Biome). Implementation of the recommendations of the Committee's report will provide opportunities for credit with the Habitat Conservation Plans (HCPs) being developed by both the City and County.

In March 2000, the City and County entered into a Supplemental IGA relating to effluent. Section V of this IGA described the CEP, with the City and County making up to 5,000 acre-feet of effluent available for riparian projects during the first five years and up to 10,000 acre-feet of effluent per year available thereafter. The City, Pima County, the Town of Oro Valley, and the Metropolitan Domestic Water Improvement District currently contribute to the CEP for the use of riparian projects. The new IGA currently being finalized is an important addendum to the 2000 IGA in that it more clearly outlines how the CEP will be managed and distributed to specific riparian projects. This increased specificity regarding implementation will lead to improved management of the CEP, benefiting both the owners of this resource and the riparian habitat on which it depends.

Permanent Water Policy—The City of Tucson has an interim water policy that was developed by Councilwoman Regina Romero and endorsed by the Council. Both the Council and Pima County need to adopt permanent water policies. We believe the Committee's Phase 2 Report, especially with regard to Goal 2 (Direct Growth to Suitable Areas) and Goal 3 (Integrate Land Use Planning and Water Resources Planning), provide a sound framework to consider the key elements for a water policy.

Cooperation---City of Tucson has invested considerable resources into projects such as the development of two Habitat Conservation Plans, El Rio Medio, Tres Rios del Norte, the restoration of Arroyo Chico and the Atterbury Wash, and policies and ordinances that protect riparian habitat. The Phase II Report serves as an important complement to these projects. As noted on page 64, one of the important successes to already surface as a result of this study is an increased level of cooperation between the City and the County. By supporting the Phase II Report and endorsing its implementation, all of these other projects will also benefit from the resultant shared expertise and increased cooperation.

At the public hearing on January 11, some expressed concern with the "broad philosophical statements" and potential cost implications of the Phase II Report. To Tucson Audubon, it is clear from a review of the Technical Papers that the Committee's recommendations are supported by the scientific and technical data presented by staff. We commend the Oversight Committee and the City and County staff for their excellent professional work.

Thank you for your consideration of our suggestions as you shape the future of the Tucson area through water resources planning. We strongly recommend that Mayor and Council adopt a joint resolution with the Pima County Board of Supervisors approving the recommendations described in the Phase II Report, and direct city and county staff to report back to their respective governing body with a detailed action plan and schedules for translating the action plan into ordinances, resolutions, and intergovernmental agreements.

Sincerely,

Dr Paul Green
Executive Director
Tucson Audubon

Christina McVie
Conservation Chair
Tucson Audubon

cc: **Ward 1 Council Member Regina Romero**
Ward 2 Vice Mayor Rodney Glassman
Ward 3 Council Member Karin Uhlich
Ward 4 Council Member Shirley Scott
Ward 5 Council Member Richard Fimbres
Ward 6 Council Member Steve Kozachik

Ramón Valadez, Chairman, Pima County Board of Supervisors

-----Original Message-----
From: noreply@tucsonpimawaterstudy.com
[mailto:noreply@tucsonpimawaterstudy.com]
Sent: Friday, February 12, 2010 7:57 AM
To: info@tucsonpimawaterstudy.com
Subject: E-mail from TucsonPimaWaterStudy.com - Comments

Email Address: pjnuts@gocougs.wsu.edu

Comments/Questions: To the Tucson City Council:
Our state government is in a sorry mess and our reputation in areas such
as education, employment and business recruitment is in the tank. It makes me wonder why I moved here. But a shining beacon has been our regional approach to conservation. We can be so proud that we have established the best regional multi-species Habitat Conservation Plan, the Sonoran Desert Conservation Plan, in the nation.

I personally believe that water will be the key issue affecting the future of our community and region. Thus I was so encouraged that the City of Tucson and Pima County established a joint committee to study water and wastewater. What a positive and progressive step!

But now, when the two government bodies were so close to adopting the recommendations in the Phase II Report, the lobbying of self-serving groups may jeopardize the future of one of the keys to nurturing what is
left of our riparian habitat.

I urge you to join your progressive colleagues on the Board of Supervisors and keep the the future of our community, and the Public's interest in mind when you make decisions on the recommendations in this report. Please do not dim the light of our beacon by undoing this regional project.

Hyatt Simpson
Pima County Resident

Do you wish to receive emails and posted mail information from the Water Infrastructure, Supply and Planning Study?

No

Water and Wastewater: Infrastructure, Supply and Planning Study,
Phase I, Final Report, May 2009

Comments from Priscilla Robinson, February, 2010.

This report has many strengths and some outstanding weaknesses.

The sections describing the infrastructure and systems are very clear and easy to follow. The engaged reader should have no trouble grasping them. Particularly outstanding is the population section. The multiple possibilities and the forces that drive them are made very clear to the reader. The reader is helped to understand that predictions are difficult. Especially about the future.

The section on the water portfolio brings the reader face to face with the primary flaw in the entire report. The decision to limit the discussion to the City and County seems to have been, unfortunately, extended to pretending the water use data and water portfolios of other entities is irrelevant to long term planning for the region. While Pima County Wastewater is a regional entity, Tucson Water is not. Nowhere in the document is this made clear.

While it is absolutely true Tucson Water has done a very good job, quite possibly the best in the State, of planning for future supply including planning to take and either use or store, ALL of its CAP allocation as fast as possible. Equally impressive is a realistic plan to pay for this huge project. Nevertheless it is not the only entity in the region. Tucson Water cannot balance the regional water budget by itself.

The uninformed reader is lead to believe, at least by inference, that Tucson Water's CAP allocation of 144,000 AF represents either the entire allocation to the Tucson AMA or at least the great majority. The actual total of CAP allocations for the Tucson AMA, which doesn't seem to appear anywhere in this report, is 262,490 AF. Tucson's share is about 55%. The remaining 45% is held by fourteen entities, including municipal providers, towns, the State Land Department (14,000AF) and the San Xavier District and the Schuk Toak District., who together hold 66,000AF. Much of this is not currently being taken by the holders of these allocations.

It is not possible to achieve anything close to balancing the water budget in the Tucson AMA without using this water. Every acre foot of CAP water that we do not take means that an acre foot of irreplaceable ground water is used instead.

There seems to be belief that the remaining water entities will be happy sign on to a plan developed by a committee from which they were intentionally excluded. Time will tell.

Citizen committees need to understand that the holders of these allocations have been paying annual fees for years whether or not they take any water. This is essentially a property right which can be sold or leased. Since this 262,000 AF represents our entire renewable supply, it will be impossible to consider anything remotely resembling

regional water planning unless the owners of these allocations are all at the table. They will be making the decisions about how to use their allocations, just Tucson Water has made decisions about how to use its allocation.

Not until page 31 does the report acknowledge Tucson Water dependence on decisions by CAWCD, DWR, and the other basin states.

As you move into the next phase, I would suggest that you involve the staff of the Tucson office of DWR more directly. This organization has a statutory duty to maintain accurate data and information on water within the Tucson AMA. Staff of the Tucson AMA has recently completed an analysis of the prospects that the AMA will be able to meet the statutorily mandated goal of safe yield by 2025. It is a veritable gold mine of information about water resources and use within the AMA. The Tucson AMA staff is the first of the 5 AMA's to complete this legally required report.

In a final note, I would suggest you consider dropping the term "conservation" and substituting "efficiency." Conservation programs evoke voluntary programs designed to appeal to the public's better nature. Conservation suggests that something of value is protected and kept as it is – art, landscapes, endangered species, rare plants, historic sites, rare books. Efficiency suggests using something to maximize the benefit from what is expended, but acknowledges that it is used. It is achieved by engineering and economics, not good intentions. The problem with appealing to peoples better nature is that people with better natures will comply – at least in the short term – but bad natured people won't. The beauty of efficiency, say a low flow shower head, is that it saves the same amount of water regardless of the conscience of the person taking the shower. It does not involve any sacrifice, since the bather gets a perfectly good shower. It also keeps on saving water long after everyone has forgotten why they even bought the thing.

From years of experience, we know that gradual price increases are the secret to increases in efficiency. When the price of water charged to a mall reaches a certain point, the mall will be motivated to replace plumbing fixtures, check for leaks, redesign landscaping, investigate improvements in air conditioning and a lot of other stuff only the mall managers understand. It also works a lot better than trying to regulate how the mall uses water. Yes, they should get an award, but it is the bottom line that does the job. We know this works.

There is always a lot of concern about the impact of price increases on household budgets. However, every household still has the potential to use water more efficiently and thereby control costs. The growing interest in rainwater capture and gray water reuse for landscaping, both in their infancy, have great potential for impacting the pie chart on page 10 of the report. Gradual increase in cost of water will make these systems economically viable.

Public information programs urging wise use of scarce resources are also important, but their primary benefit is to help the thinking segment of the public understand the reasons for the regulatory and fiscal policies that do the real work.

WATER AND WASTEWATER : Infrastructure, Supply and Planning Study. Phase 2, Final Report, December 2009

Comments from Priscilla Robinson, February, 2010.

The introduction to the Phase 2 Report sets forth the purposes as a "new paradigm" for water planning. With the exception of the environmental statements, the focus on sustainability, supply, and demand and provision of water for the long term future closely track the purposes of the 1980 Groundwater Management Act of 1980. Although the GMA is the central fact of water management in this AMA, it is hardly mentioned.

Much of the state adopted a new paradigm for water in 1980. Amounts of water that can be pumped have been in effect for 30 years. In place of "take whatever you can grab before someone else does" the law today is "take whatever the law allows". And no more.

General Comments:

The focus on environmental concerns as adopted policy is new, significant and possibly a landmark decision among local jurisdictions. The 1980 law does not and was not intended to provide any protection for the environment . Such a law could not have been passed in 1980. Or in 2010 for that matter. Region wide adoption of measures to protect the environment in water planning would be a remarkable accomplishment.

The second, and equally important, new idea is the general theme throughout the document that extension of water service, wastewater planning, and other factors should all be considered together in design of urban form. This is an important step away from the haphazard, reactive, piecemeal, wasteful approach that has dominated our urban development. It is significant that this is tied together with water efficiency as well as cost controls. If this new approach can actually be translated into action, even if only piecemeal by the City and County, it will be a significant achievement.

The Next Step

As the two jurisdictions begin the process of involving the rest of the region, it is important to understand the differences between the concerns and priorities of Tucson Water and Pima County and the regional water community. With its fat water portfolio, developed infrastructure and adequate revenue stream, Tucson Water can afford to take on other issues. The situation in the Tucson AMA as a whole is quite different. No such plans exist for most of the 118,000 AF of CAP allocation held by a dozen other entities, including municipal providers, towns the State Land Department and the San Xavier and Schuk Toak Districts.

It will not be possible to achieve anything close to balancing the AMA water budget without using this water. Taking and using this 100,000 plus AF of available water is

arguably the most important water issue in the region. However, nothing in this very interesting and extensively detailed study addresses this issue or anything related to it.

Other major issues include, reaching safe yield, and planning for shortages. The CAP's ADD Water project, management of the Arizona Water Bank, relations with other Colorado water users and the proper role of the CAGRD are all part of the regional agenda. Numerous other agencies are involved, including the Arizona Water Bank, CAP and its subsidiary, CAGRD, as well as the TAMA office of DWR. The planning document makes scant reference to any of these critical agencies, except for an expression of dislike for CAGRD. I was opposed to CAGRD 20 years ago when the law was passed, but it is now part of the landscape.

Recent budget cuts have curtailed but not eliminated, the ability of DWR to continue to play lead role in water management decision making, although the recently completed anaylsis of progress toward the goal of Safe Yield by 2025 would contradict that conclusion. The Tucson AMA office continues to be the primary source for water facts of all kinds and information from that source should be used to substitute for the Tucson Water service area-specific data, clearing up that confusion. Everyone is entitled to their own opinions, but not their own facts.

CAP is unaffected by the state's budget woes and has been recently building and strengthening its senior policy staff. It will increasingly play a lead role in future decisions of all kinds, particularly in interstate matters.

It appears from the document that the drafters anticipate reaching out to other jurisdictions. This is a good idea, but the numerous agencies and venues are equally important. The issues in this report will be moving onto an already rather crowded agenda.

Specifics

It would be well to review the document to identify potential barriers to regional cooperation that may have inadvertently appeared

One of these, Item 4 in the recommendations from the Oversight Committee for adoption by the Mayor and Council and Board of Supervisors, is somewhat troubling. The recommendation appears to ask the two bodies to sign on to this report as their official position in any regional discussion prior to commencement of any regional talks. This suggests that the City and County have already determined the outcome of any regional dialogue and will not be swayed by any concerns from other entities. Hopefully, this is not the case. Perhaps this recommendation could be rephrased.

Back in the 80's the City took a similar position with regard to what was hoped to be a regional water committee. The City was adamant that it be given a majority of the voting power. The only lasting consequence of that entire endeavor was that Santa Cruz County and the City of Nogales succeeded in getting the legislature to create a separate

Santa Cruz AMA in order to avoid having the City of Tucson control its water future. The Santa Cruz AMA was then and remains at safe yield, while the Tucson AMA lost significant water resources. Beware the unintended consequences of overreaching.

It would be helpful if the term "sustainability" could be compared to the statutorily mandated and defined term, "safe yield." Do they differ, and if so how? Since much existing data is compared to the statutory bench mark, it would facilitate moving from a Tucson Water centered plan to a regional plan..

The suggestion on page 28 that the city investigate the possibility of wheeling CAP water through the City's potable water system to Metro/Hub to facilitate use of their CAP allocation is exactly the kind of useful cooperative project that is needed.

Many members of the committee seemed concerned about the need to find additional water supplies because we are "running out water." (page 7) We have hardly begun to make efficient use of the water we already have. As long as we are letting over 100,000AF go by the board, we probably should not being making a public fuss about acquiring additional supplies. Increased efficiency is the cheapest source of new water. This cannot be repeated too often.

Full disclosure: I was employed by Tucson Water on three separate occasions, the earliest being in l974 to assist in lobbying and community relations for an aborted project to introduce a new water law for Arizona. A few parts of it survived to 1980. The second time was in the 80's when my organization conducted the community participation program on location and design of the CAP treatment plant. The final time was as a consultant to TW during the turbulent times in the 90's.

I represented Santa Cruz County at the legislature in obtaining the separate Santa Cruz AMA. Hugh Holub represented the City of Nogales. We were a tandem act.

Priscilla Robinson

In response to your request, I offer these brief comments on the Phase 2 Final Report, Water & Wastewater Infrastructure, Supply and Planning Study (Phase 2 Report).

I serve as Director of the Water Resources Research Center at the University of Arizona. My research, teaching and outreach focus on water policy and management. As you know from my presentations to the committee, I authored the 2006 study "Water Resource Availability for the Tucson Metropolitan Area" and co-authored the 2008 study entitled "Tucson Regional Water Planning Perspectives Study."

The Phase 2 Report represents an impressive collaborative effort and provides an important foundation for regional cooperation. What is extremely important at this juncture is to regionalize the effort to include representatives from other jurisdictions, water providers, communities and businesses. Sound water management is a regional priority for public and private sector entities and individuals throughout the region.

The Water Resources Research Center at the University of Arizona looks forward to hosting a presentation on the study this Spring. I also look forward to continued dialogue regarding the recommendations and the broader regional effort. Please let me know if the Water Resources Research Center can be of assistance.

Respectfully submitted,
Sharon B. Megdal, Ph.D.
Director, Water Resources Research Center
smegdal@cals.arizona.edu

SKY ISLAND ALLIANCE
Protecting our Mountain Islands and Desert Seas

Mayor Walkup and Council members
City of Tucson
P.O. Box 27210
Tucson, AZ 85726

RE: City/County Water and Wastewater Study Phase II Report

Dear Mayor Walkup and City Council Members:

Sky Island Alliance urges you to support the City/County Water and Wastewater Study Phase II Report and direct City staff to proceed, in cooperation with Pima County and other participants, with implementation of the recommendations contained within the report.

Sky Island Alliance is a grassroots organization dedicated to the protection and restoration of the rich natural heritage of native species and habitats in the Sky Island region of the southwestern United States and northwestern Mexico. We work with volunteers, scientists, land owners, public officials, and government agencies to establish protected areas, restore healthy landscapes, and promote public appreciation of the region's unique biological diversity.

We appreciate the public process undertaken during the development of this report. The recommendations before you are the result of close to two years of research, study, analysis and public deliberations, which the community has watched and participated in. In addition Sky Island Alliance has been involved in riparian restoration activities throughout the county and has developed expertise that we shared with study committee.

Because of our long-standing commitment to riparian protection and restoration, we were dismayed to learn of the recent effort by the homebuilding community requesting that the City reject the use of effluent for environmental purposes. In addition, the homebuilding and development interests are asking the City not to enter into an agreement that was already signed by the City and the County (Mayor Walkup and Chairwoman Bronson, respectively) in February 2000. This outlined a wide range of agreed-upon issues surrounding effluent, including a commitment to reserve a specific amount of effluent for riparian projects benefiting the entire community. This reserve is known as the Conservation Effluent Pool (CEP).

Sky Island Alliance supports the recommendations made regarding riparian habitat, groundwater dependent ecosystems, and the perpetuation of the CEP. The goals and recommendations outlined on pages 29-36 of the report clearly outline a path forward for all participants to prudently and thoughtfully utilize our water supply to protect and encourage riparian habitat and groundwater dependent ecosystems.

The CEP is an essential tool needed to achieve these goals and we encourage the Mayor and Council to direct staff to continue to work on detailing how the CEP will be managed and utilized. This increased specificity will lead to improved management of the CEP, benefiting both the owners of this resource and the riparian habitat that depends on it.

Thank you for considering our input on this important project.

Sincerely,

Melanie Emerson
Executive Director

Cc: Ward 1 Council Member Regina Romero
Ward 2 Vice Mayor Rodney Glassman
Ward 3 Council Member Karin Uhlich
Ward 4 Council Member Shirley Scott
Ward 5 Council Member Richard Fimbres
Ward 6 Council Member Steve Kozachik
Mike Letcher, Tucson City Manager
Ramón Valadez, Chairman, Pima County Board of Supervisors

Coalition for
Sonoran Desert Protection
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Tucson, Arizona 85705
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www.sonorandesert.org

cc copy
1. Nicole F
2. Kathy C
3 Melanie S.

April 12, 2010
fyi – 4/14/10

Honorable Mayor and Councilmembers
City of Tucson
P.O. Box 27210
Tucson, Arizona 85726

RE: Mayor and Council Study Session Discussion of Refinements to Water Service Area

Dear Mayor Walkup and Councilmembers:

Staff and representatives from the Coalition for Sonoran Desert Protection recently met with staff members from Tucson Water and the City Manager's office regarding a proposal on the Mayor and Council Study Session agenda tomorrow, Tuesday, April 13, 2010. We would like to offer a few comments on this issue.

First and foremost, the Committee that developed the City/County Water and Wastewater Phase II Report strongly supported the current interim water policy. The Committee voted overwhelmingly 9-1 to recommend that any refinement be based on a comprehensive water resource planning effort developed in partnership with Pima County that addressed all water resources, along with an in-depth cost analysis. (*Note: The committee recommendations on this issue are attached, with a lone dissenting vote due to "non-support of the current interim policy."*) The Coalition is in agreement with the Committee's position supporting the interim water policy.

The Coalition recommends that any refinements to the obligated service area be done as part of a comprehensive water resource planning effort, in conjunction with Pima County, as per the Phase II Report recommendation.

The staff recommendation that there should be a 30-day comment period for public input on the proposed water service area does not address the need for a comprehensive effort, and therefore is insufficient.

Page 2 of the staff report states, "The Phase II Report recommends that the City maintain a water service area boundary but consider expansions to the current obligated area based on a set of economic and environmental factors described below." This statement summarizes Recommendation 3.2 in the Phase II Report (attached). However, the staff report neglects to mention Recommendation 3.1 (also attached), which states in part, "Outside of the Tucson Water Obligated Service Area in unincorporated Pima County, the City and County should work together to conduct comprehensive water resource planning in order to identify sustainable water resources to serve these areas." This planning should then inform any proposed expansion of the obligated service area.

The proposal presented bypasses Recommendation 3.1 and instead proposes to implement only Recommendation 3.2. We encourage the City to follow all of the recommendations of the

Phase II Report and conduct a comprehensive water resource planning effort with Pima County first.

When this comprehensive water resource planning effort occurs in partnership with Pima County, we encourage the inclusion of decision points and assumptions in any resulting reports, along with a more detailed analysis that clearly defines resources, cost, demands, and trade-offs. A transparent description of the decision-making process will assist community stakeholders in evaluating decisions and providing valuable feedback.

In general, the Coalition supports the guiding principles of fiscal responsibility to current Tucson Water customers, exercising restraint on any expansion of the current Tucson Water footprint, protecting our most valuable natural resource, and encouraging infill.

To reiterate, the Coalition does not support refinements to the current legally-obligated service area, and recommends that any refinements to the obligated service area be done as part of a comprehensive water resource planning effort, *in conjunction with Pima County*, as per the Phase II Report recommendation.

Thank you for your consideration of our comments. We look forward to working with the City and the County, as well as other water providers and local jurisdictions, to better map out our region's water future and sustainable growth.

Sincerely,

Carolyn Campbell

Carolyn Campbell
Executive Director

Attachment

Recommendations

3.1 Outside of the Tucson Water Obligated Service Area in unincorporated Pima County, the City and County should work together to conduct comprehensive water resource planning in order to identify sustainable water resources to serve these areas. Water resources should be looked at in a comprehensive manner with the goal of making efficient use of water and matching up sources with needs. This planning effort should address the use of potable, reclaimed, effluent, stormwater, rainwater, and greywater. The City and County should evaluate the life-cycle cost and triple bottom line of decentralized wastewater treatment versus centralized systems in light of energy demands and efficiencies, and integration with recharge and reclaimed water systems. As an example, the City and County should work cooperatively to explore the development and operation of reclaimed water systems and recharge facilities at the County's subregional wastewater reclamation facilities.

3.2 The above described planning effort should help inform future City considerations for extending the obligated service area. Expansion decisions should be done on a sub-regional basis (rather than a parcel-by-parcel basis) in advance of specific water service requests. Any decision to expand the obligated service area should be formalized through Mayor and Council policy. The following factors should be taken into account in making policy decisions regarding expansion of the obligated service area within specific sub-regions:

- Suitability of growth area
- Effect of extensions on future water-resource needs for the City's existing obligated service area
- Fiscal sustainability of development and potential for future annexation
- Appropriateness of timing/phasing of development
- Economic impact/benefits
- Quality and sustainability of urban form
- Environmental implications of development
- Environmental implications of not providing water service
- Social equity and social-justice considerations.

3.3 In addition to the comprehensive, long range planning efforts described above, the City and County should continue to assess and track the impact of individual developments on water resources:

- The County should continue to implement the recent amendment to the Water element of the Comprehensive Plan, providing the Board of Supervisors with the necessary water resource information concerning individual development requests.
- The City should continue to implement the "water checkbook" method of tracking and communicating to the Mayor and Council how much renewable water Tucson Water has available to support proposed new developments or businesses.

3.4 The City should continue to pursue discussions with other water providers regarding potential for wheeling and/or recharge agreements. As an example, Tucson Water and Metro Water/Hub should discuss the potential for wheeling of a portion of metro's CAP allocation to Metro/Hub through Tucson Water's integrated potable water distribution system at a cost of service price, in order to reduce Metro/Hub's groundwater pumping in the immediate area.

3.5 The City and County should work together with other jurisdictions to support regional solutions to address the hydrological disconnect between where water is being pumped and where it is being replenished.

3 Dissenting vote due to non- support continuation of current interim policy

Note: a discussion of the obligated service area policy was specifically undertaken by the Committee, and by vote of 9-1, The Committee supports the current interim water policy to not extend water services beyond the current obligated service area, and thinks it should remain in place, while further study and analysis contained in recommendations 3.1 and 3.2 take place. The analysis and further study should be timely, address equity, and be updated periodically.

Agenda available on-line at 5:10 p.m., 4/8/10

MAYOR & COUNCIL MEETING NOTICE & AGENDA

STUDY SESSION

TUESDAY, APRIL 13, 2010 – 1:00 P.M.

MAYOR AND COUNCIL CHAMBERS – CITY HALL

255 W. ALAMEDA, TUCSON, AZ

ESTIMATED DURATION		TOPICS
15 min.	1.	28th Annual Tucson International Mariachi Conference (City-Wide) SS/APR13-10-136
30 min.	2.	Discussion of Refinements to Water Service Area (City-Wide and Outside City) SS/APR13-10-135 CITY MANAGER
45 min.	3.	Update on Access Tucson/Channel 12: Possible Reconsideration of March 9, 2010 Direction (City-Wide) SS/APR13-10-137 CITY MANAGER
20 min.	4.	Tucson Fire Department's Strategic Work Plan Projects (City-Wide) SS/APR13-10-132 FIRE
30 min.	5.	Mayor and Council: Procedures and Direction on Filling Council Member Vacancy (City-Wide) SS/APR13-10-134 CITY ATTORNEY
20 min.	6.	Clean City Task Force (Continued from the meeting of April 6, 2010) (City-Wide) SS/APR13-10-133 CITY MANAGER
15 min.	7.	Intergovernmental Relations: Update of 2010 State and Federal Legislation Affecting the City of Tucson (City-Wide) SS/APR13-10-130 INTERGOVERNMENTAL RELATIONS

The Mayor and Council may discuss, propose or take action on all items listed on this agenda. If you require an accommodation or materials in accessible format or require a foreign language interpreter or materials in a language other than English for this event, call City Clerk's Office at 791-4213, at least five business days in advance.

MAYOR & COUNCIL MEMORANDUM

April 13, 2010

Subject: **Discussion of Refinements to Water Service Area (City-Wide and Outside City)**

Issue – At the Mayor and Council meeting of February 17, 2010, the Council directed staff to return within 45 days with a discussion of formalizing and refining Tucson Water's service area as recommended in the City/County Water and Wastewater Phase II Report. Time has been set aside at today's Study Session to discuss refinements to the Tucson Water service area.

City Manager's Office Recommendation – It is recommended that the Mayor and Council provide feedback to staff on the Tucson Water service area as depicted in the attached "Proposed Tucson Water Service Area" map. As a next step, staff recommends a 30-day comment period on the proposed water service area to allow time for additional public input. Once a water service area map is agreed upon by the Mayor and Council, a resolution will be brought forward to formalize the Tucson Water service area.

Background – Prior to 2007, the City did not have a water service area policy in place and Tucson Water extended water service based on customer requests throughout the region. There were many downsides to this approach including:

- growth in unincorporated areas which means fewer revenues to fund public services for the community,
- a disconnect between water planning and land use/infrastructure planning,
- water boundaries not matching jurisdictional boundaries leading to governance issues,
- challenges of planning effectively for future water needs in such an extensive boundary, and
- impacts on existing water customers from growth, whether in upward pressure on water rates or increased competition for additional water supplies.

In December 2007, recognizing this water service approach may not be sustainable, an interim policy was established retracting the Tucson Water service area to that which was legally obligated. Legal opinions from Marvin Cohen and Chris Avery serve to define the Tucson Water Obligated Service Area, which includes: 1) the Tucson city limits, plus 2) areas where the City is contractually obligated to serve such as Continental Ranch, Dove Mountain and Corona de Tucson, plus 3) infill within the existing water service area. The Obligated Area is depicted in blue on the attached "Proposed Tucson Water Service Area" map.

The City Manager directed staff to work with stakeholders and ensure the interim policy was being implemented clearly, consistently, and as efficiently as possible. Tucson Water developed a water service decision flow chart and infill guidance graphics to make the decision process transparent and predictable. A formal appeals board was established to review cases where customers disagree with a water service decision. Staff has reached out to stakeholders in the development community to make sure they understand how the interim policy is being

implemented and to solicit comments that can help streamline and improve the review and appeal processes.

Since 2007 when the interim Obligated Service Area policy was put in place, Tucson Water has denied requests for water service approximately 100 times, and the City has entered into several pre-annexation and development agreements (PADAs) with property owners who were located outside of the obligated area but who agreed to future annexation to allow for water service extension.

The Obligated Service Area policy was established as an *interim* policy at the same time that the City/County Water and Wastewater Study was initiated. One of the goals in the Study was to help inform future water service area expansion decisions. Phase II of the Study is now complete and was adopted by the Mayor and Council in February 2010. The Phase II Report recommends that the City maintain a water service area boundary but consider expansions to the current obligated area based on a set of economic and environmental factors described below.

Water Service Area Expansion: Considerations – The City/County Water and Wastewater Study recommends water service area expansion decisions be done on a sub-regional basis (vs. a parcel-by-parcel basis) in advance of specific water service requests, and take into account the following factors:

- *Suitability of Growth Area* – Suitable growth areas are those areas closer to infrastructure and the existing built environment, and where development creates the fewest negative environmental impacts.
- *Appropriateness of Timing/Phasing of Development* – "Leapfrog" development and development further away from the existing built environment is more costly to serve from an infrastructure and public service perspective compared with infill development and development taking place closer to the existing built environment.
- *Impacts on Water Resources* – Extending water service creates additional demand for water resources and has an impact on Tucson Water's water portfolio and the need to acquire or develop additional water supplies.
- *Fiscal Sustainability of Development and Potential for Future Annexation* – When development occurs adjacent to but outside City limits, the region doesn't receive the full range of revenues needed to pay for the public services the new development will require. Forgone revenues from development in unincorporated areas include sales tax, construction sales tax, additional state shared revenue and additional property tax.
- *Economic Impact/Benefits* – The I-10 Corridor through southern Tucson is a focus for economic development efforts and is identified as a future jobs center. Ensuring the availability of water resources to support industry, good jobs, and a diversified economy is critical to the future economic health of our community.
- *Quality and Sustainability of Urban Form* – New development that is designed from a "smart growth" perspective provides many benefits to the community including such things as reduced car passenger miles, lower water and energy consumption per household, more housing and transportation choices, and more efficient/lower cost delivery of public services. Our water policy can help support smart growth goals.

- *Environmental Implications of Development* – Water service should be directed to areas where development will have fewer negative environmental impacts.
- *Environmental Implications of Not Providing Water Service* – A potential result of Tucson Water limiting its water service area is the drilling of wells and less use of renewable water supplies in the area outside of this boundary.
- *Social equity and social justice considerations* – The impact of water service extension decisions to City residents and Tucson Water ratepayers, particularly those with lower incomes should be considered.

Water Service Area Expansion: Staff Recommendations – A staff team from the City Manager's Office, Tucson Water, Housing and Community Development, Annexation, and Conservation and Sustainable Development has been meeting over the past 2 months to develop water service area expansion recommendations based on the above factors.

In summary, the areas recommended for *water service expansion* include those areas where:

- The City of Tucson has the potential to annex in the future
- Jobs, employment, industry, and future growth will be located
- Tucson Water is clearly the water provider and there are not other service options, and
- Failure to provide service could lead to drilling of wells in environmentally sensitive areas

The areas *not recommended for water service expansion* include areas where:

- The City of Tucson is unlikely to ever annex
- They are closer to or within another jurisdiction and/or there are other water service providers in the area

The attached "Proposed Tucson Water Service Area" map depicts staff's recommendations for water service expansion by sub-region surrounding the Tucson Water Obligated Service Area. The areas currently served by Tucson Water (dark blue) and those undeveloped areas the utility is required by contract or law to serve (light blue, blue hatch) are collectively referred to as the existing Obligated Service Area, which covers a total of about 410 square miles and includes approximately 770,000 customers.

As further described below, recommendations for water service extension *outside* of the Obligated Service Area are shown in four colors on the map: (1- pink) water service with required annexation (or pre-annexation) to the City, (2- pink stripe) water service with annexation reviewed on a case by case basis per the merits of such annexation, (3 - yellow) areas where water service would not be extended in unincorporated Pima County, and (4- grey) areas belonging to other municipalities, private water companies, and tribal lands.

1. ***Proposed Service Area – Annexation Required (map color - pink)***
   In these areas, water service would be provided by Tucson Water and annexation or a pre-annexation development agreement (PADA) would be *required.* In general, property adjacent to and near City limits is colored pink because it is a likely candidate for annexation

and falls within the existing built environment, which is a high priority for growth. The Southlands also has a significant amount of "pink" because it is an identified growth area in the City's General Plan and in the City/County Water and Wastewater Study. This area is suitable for growth due to fewer environmental constraints and because it is closer to existing infrastructure and the built environment. The I-10 corridor is a prime location for commercial and industrial development and will continue to grow as a job centers. This area is a desirable and likely candidate for future annexation because it is surrounded by City limits and includes vacant land.

2. Proposed Service Area – Annexation Requirement to be Reviewed (map color - pink stripe)

In these areas, water service would be provided by Tucson Water and the requirement of annexation or a PADA would be *reviewed by City staff on a case-by-case basis*. Those properties that would be *more* likely to be required to annex or sign a PADA would be adjacent to or near City limits, and would be commercial or residential subdivision. Those properties that would be *less* likely to be required to annex or sign a PADA are those that are far from City limits with built-out residential areas in between, and are being built at existing low density zoning.

In these areas, Tucson Water has infrastructure in place and is the clear water service provider – few or no other water service options exist for property owners. In areas closer to washes and riparian habitat (such as the Tanque Verde valley), there would be negative environmental impacts if property owners in these areas drill wells (which is allowed by state law) rather than utilizing renewable supplies through Tucson Water. Build-out in these area is limited and will be at low densities, or clustered, so serving new customers in these areas will have a minimal impact on Tucson Water's water supplies. Development in these areas will be required to comply with the County development regulations, helping to ensure that the development Tucson Water is serving occurs in an environmentally compatible manner.

3. Proposed No Water Service (map color – yellow)

In these areas, water service would not be provided by Tucson Water at this time, subject to reconsideration by the Mayor and Council in the future if circumstances change. In the areas where no water service extension is recommended, but Tucson Water has existing water service in place (such as in the northwest and the southwest), Tucson Water would be willing to partner with other water providers in those areas with consideration given to "wheeling" agreements and future infrastructure sale and transfers.

The areas identified for no service are located in unincorporated Pima County. Some of these areas such as in the southwest are planned to be growth areas with significant density. A downside to this type of growth in unincorporated areas is less revenues generated to pay for public services. As a result these areas end up being subsidized by the rest of the community and/or are developed with sub-standard infrastructure and public services in place. The areas identified in yellow are not ever likely to be within the City of Tucson because of their distance from City limits and the existence of built-out areas in between. In

many cases, these areas are closer to another jurisdiction or private water provider who could provide water service.

4. Other Municipalities, Private Water Companies, and Tribal Lands (map color – grey) Tucson Water currently provides water in Marana and in limited areas in Oro Valley. Typically, these services were established prior to annexation into the towns. It is proposed that any new extensions of water service within other jurisdictions by Tucson Water be neutral to the City of Tucson's Assured Water Supply. Other municipalities should be responsible for water supply and water service within their jurisdiction. In cases where Tucson Water already has built out water infrastructure and is providing service in other jurisdictions, Tucson Water is willing to enter into agreements with those jurisdictions to facilitate water service using Tucson Water delivery infrastructure and other jurisdictions' resources. Ultimately, transferring assets through the sale of water infrastructure to better line up water service and jurisdictional boundaries would benefit the region.

Impacts of the Proposed Policy – The Water Policy Decision Making Framework that was adopted by the Council along with the City/County Water and Wastewater Study on February 17, 2010 is used below to evaluate the impacts of the proposed Tucson Water Service Area policy. It is important to note that staff has done their best to analyze the impacts of these proposed water service extensions, however given the 45 day turnaround and resources available, these assessments are more qualitative than quantitative and are based on currently available data.

- Financial Costs – Limiting the Tucson Water service area geographically, and focusing water resources on the highest priority growth areas for the City of Tucson will maintain lower rates for Tucson Water's ratepayers over time because less new (expensive) water will need to be acquired and infrastructure extensions will be more limited. A clear service area provides more certainty for developers, which saves time and money in the development process. Encouraging growth in incorporated areas benefits City taxpayers and the community as a whole financially because more revenues are available in the region to pay for public services. On the flip side, this policy may increase the cost for water to those outside the Tucson Water service area and could decrease land values in those areas.

- Economic Impacts – This policy dedicates affordable, renewable, high quality water resources to the I-10 corridor in the south and southeast (dubbed the "Tucson Tech Corridor") which is planned to be the major economic and job center in our region in the future. It encourages annexation which brings more revenue to the community to invest in roads and other public infrastructure and services. This is identified in the TREO Blueprint as an essential aspect of improving Tucson's image and business climate.

- Environmental Impacts – This policy brings renewable supplies to environmentally sensitive areas where Tucson Water is the only available water provider and private wells might otherwise be sunk, such as in the northeast. This policy encourages growth in a more

compact form away from environmentally sensitive areas as defined in the County's Sonoran Desert Conservation Plan (see Map #2 attached).

- Impact on Tucson Water's Resources – The impacts this policy would have on water resources were estimated by Tucson Water staff based on the planning parameters and data modeled for the 2008 update to the Tucson Water 2050 Plan. Based on assumptions of lower water usage patterns over the past decade, conservative planning factors, new water conservation ordinances, and estimated build out density of the area in "pink" on the map, the current capacity in Tucson Water's water resource portfolio would be adequate to serve the areas of proposed service extension. It is important to note that this is a not an exact science, and issues such as how and when future growth areas will build out, how much water will be required in the future in the obligated area related to infill, and how water conservation and usage trends will change over time are unknown today and will have an impact on water supplies in the future.

- Effect on Drought/Climate Change Preparedness – Limiting Tucson Water's service area helps protect supplies which allows for water storage underground for use during times of future drought. It also provides flexibility for Tucson to be able to increase water use in the future to mitigate climate change impacts, for example by allocating water for more trees to provide shade.

- Impact on Public Infrastructure, Services, and Fiscal Sustainability – This policy encourages growth closer to the existing built environment and to existing infrastructure which is more fiscally sustainable for the community and efficient in terms of land use and the provision of public services.

- Impact on Location of Growth, Urban Form, and Land Use – This policy helps encourage growth in those areas identified as most suitable for development including infill into the existing built environment, the southeast area, and the southlands.

- Energy Costs –Limiting Tucson Water's service area geographically means there will not be significant increases in energy needed to move water long distances. Area higher up in the Tucson Mountains that would require significant energy to lift water are recommended for no service.

- Opportunity Costs – None identified.

- Social Equity Considerations/Community's Ability to Pay – Limiting the Tucson Water service area geographically will help maintain lower rates for Tucson Water's ratepayers over time.

Input from Stakeholders – Staff met with the Citizen's Water Advisory Committee, members of the Tucson Regional Water Coalition (a business group), an environmental coalition convened

by Ward 2, and staff from Pima County to share the recommended service area expansion map and solicit feedback. Below is a summary of comments received from these groups:

- *Citizen Water Advisory Committee* – Comments by CWAC members included the need to make sure the PADA process is streamlined and that issues that may hold up annexation or a PADA (such as agreement with the County on use of impact fees) be addressed ahead of specific developments coming forward. Support was expressed for the concept of wheeling agreements in areas where Tucson Water will not be providing service and for annexation and/or incorporation of urban development in the Tucson area. CWAC members asked about the impact water service extensions would have on water resources; staff responded that we would be gathering more precise data over the next 30 days.

- *Tucson Regional Water Coalition* – Members expressed support for the recommended expansions to the Tucson Water service area particularly the dedication of water to the areas along I-10 targeted for economic growth in the region and the fact that a water service area boundary provides greater certainty for property owners. A member expressed concern about the annexation requirement and indicated that there may be cases where it is not in the interest of a particular development to be located within the City limits.

- *Environmental Coalition* – A general sentiment expressed by this group was that more data is needed before decisions on water service extension are made, particularly related to how water resources will be affected by service extensions. Members of this group expressed support for service extensions that help protect riparian areas, such as in the northeast. Members were concerned that environmentally sensitive lands in the Tucson Mountains were recommended for water service.

- *Pima County Staff* – County staff expressed support for the fact that renewable supplies will be provided to development in riparian areas in the northeast, that this service area encourages growth closer to existing infrastructure and a more compressed urban form, and that the proposed water service area is generally consistent with where the County's Conservation Land System directs growth. Concerns expressed by County staff include the fact that water service will not be provided in the Southwest area (particularly east of the CAP canal) which is a County growth area, and that some environmentally sensitive lands in the Tucson Mountains are recommended for water service. County staff expressed interest in moving forward with comprehensive water resource planning in those areas that fall outside the Tucson Water service area as recommended in the City/County Water and Wastewater Study.

Overall, the following recommendations generally seemed to receive support from all groups:
- Water service extension to the foothills and the northeast (Tanque Verde valley area)
- Water service extension to areas in the southlands along I-10 where land is planned for commercial and industrial

- No water service extension in the northwest where Marana, Oro Valley or Metro Water are the more appropriate water provider
- No water service extension west of the CAP canal in the southwest area

Water Service Area Policy: Implementation – Upon adoption of a resolution formalizing the Tucson Water Service Area, Tucson Water staff would make determinations of water service based on the language in the resolution and the conceptual map. The map that gets adopted will not be color-coded to the parcel level; therefore Tucson Water staff would use the map and supporting text to make the appropriate determination of water service.

- For water service requests in areas colored pink on the map, Tucson Water would respond with a letter outlining the steps to be taken to gain water assurance and would refer these customers to annexation staff to process an annexation or PADA.
- For water service requests in the pink stripe, annexation staff would review the requirement for annexation, and then advise Tucson Water regarding whether a PADA would be a requirement of water service.
- In areas where blue abuts yellow on the map, Tucson Water staff would continue to use the infill decision graphics (e.g. 3 sides, 20 acre threshold) that are in place now to determine areas of legal obligation.
- The existing appeals board (consisting of a representative of the City Manager's Office, the City Attorney, and the Director of Housing and Community Development) would continue to function to hear appeals from property owners who feel Tucson Water made an incorrect determination.
- Finally, staff will ensure that the Mayor and Council receives timely information about proposed projects that might provide a large-scale economic opportunity for the region but that lie *outside* of the Water Service Area, so that the Council could authorize exceptions to the adopted Water Service Area policy and provide water service if they so choose.

It is recommended that the Water Service Area be reviewed each year by the Mayor and Council at the same time the City's water checkbook is brought forward. The water checkbook is a mechanism by which Tucson Water reports annually to the Governing Body the quantity of renewable water supplies; currently utilized by existing customers, reserved for development plans in progress and available for future development. The water utilized by current customers is determined by the total water deliveries to customers in the prior calendar year. The reserved renewable water supplies for development is found by taking the acreage of all developments which have been issued a water assurance letter in the prior year and applying planning factors for likely consumption based on parcel zoning. Each year in June, an updated balance of the water checkbook is provided to gauge the total remaining renewable water supplies in the checkbook available for future development. Available water resources would be one factor, among others – including growth patterns, economic trends, water usage trends, environmental concerns, stakeholder input, etc. – that the Mayor and Council might take into consideration in modifying the Water Service Area.

Next Steps –

1. Staff recommends that a 30-day comment period be provided to allow stakeholders time to review and comment on the map and recommendations.

2. During this 30-day period, staff, where feasible, will pull together additional quantitative data related to the impacts of the recommended water service area extensions.

3. Staff will be prepared to bring this item back for Mayor and Council consideration in late May or early June. Once Council endorses a defined water service area map, staff will prepare a resolution for adoption that formalizes the Tucson Water Service Area policy.

4. Upon adoption of the Tucson Water Service Area policy, an appropriate next step for the jurisdictions and water providers in areas that fall *outside* of the service area would be to come together to address water planning in these sub-regions. Tucson Water is committed to being a partner in this planning effort and is willing to work with other entities where Tucson Water has infrastructure capacity that can be used to "wheel" renewable water resources to these areas. The City/County Water and Wastewater Study includes a recommendation describing this water planning effort.

5. Another next step staff recommends following the adoption of a Water Service Area policy is that discussions with the County begin on how the City and County can work together in a collaborative fashion in areas where the City is proposing to pursue annexation. In the past, the City and County have had disagreements over specific annexations including such issues as which jurisdiction will review development plans, how public services and infrastructure should be provided, and how impact fees will be used. Staff recommends these issues should ideally be discussed and addressed in an agreement between the City and County ahead of specific annexations and development pressure. This is consistent with the recommendations for sustainable growth as set forth in the City/County Water and Wastewater Study.

Respectfully submitted,

Mike Letcher
City Manager

ML:NEG

Attachments:
Map #1 – Proposed Tucson Water Service Area
Map #2 – Conservation Land System with Obligated Water Service Area Overlay

SS/APR13-10-135

Tucson Mountains
ASSOCIATION
SINCE 1934

PO BOX 86117 • TUCSON, AZ 85754-6117

May 3, 2010

Honorable Mayor Bob Walkup and Council Members
City of Tucson
P.O. Box 27210
Tucson, Arizona 85726

SUBJECT: Proposed Tucson Water Service Area Policy

Dear Mayor Walkup and Council Members:

We want to commend you for the leadership you have demonstrated related to the management of water resources. In concert with Pima County, you appointed the Joint Water and Wastewater Committee, approved an interim water policy, and subsequently adopted the reports completed by the Joint Committee as a guideline for future water policy. You are now moving forward with formalization of a water service area policy, which will define the geographic footprint where Tucson Water will extend water service. These are all commendable steps as you manage the critical water supply for our future.

We offer the following comments and suggestions for your consideration as you review and finalize the draft policy:

1) Land Use and Water Resources Planning--City staff indicated there was no time to work with land use counterparts in other jurisdictions. These two activities need to be coordinated to formulate a robust water policy. One of the goals in the Joint Committee's Phase 2 Report outlines how important this linkage is for sound results. We know the planning staff has been reduced, and there are 10 jurisdictions involved, but it is imperative to have some effort in this direction.

2) Partnership with Pima County--It is important that the City and County work together to conduct comprehensive water resource planning in order to identify sustainable water resources to serve the Tucson area. The initial 45 days for City staff to submit a proposal to the Council for review, and the following 30 day period for public comment, does not address the need for a more comprehensive effort to ensure the best results. The results have been described as qualitative and not quantitative. The outcome likely will change if both sides of this equation are addressed and the County staff is included in this process.

3) Areas of Growth--The proposed water footprint outlines areas for water service that are outside the four areas recommended in the Phase 2 Report. There is not much logic for some of the pink and pink/cross hatched areas outside the City boundaries and Tucson Water's current service area. Exceptions might be in the Northeast area where so many residents are on wells and Tucson Water completely surrounds the properties, and the four designated growth areas. Comparatively, there are several areas in the foothills of the Tucson Mountains on the west side that will extend into environmentally sensitive

ecosystems. Pima County objected to inclusion of these areas on the draft "Proposed Tucson Water Service Area" map we were provided for review. We recommend that these areas be deleted from the geographic footprint to ensure planning consistency, since they impact: 1) important riparian areas, 2) wildlife corridors, 3) open space that provides a community-wide view shed, and 4) tourism on the key designated scenic routes to Tucson Mountains Park, Saguaro National Park, and the Desert Museum.

4) Adjacent Infrastructure--If the City uses adjacent infrastructure as a primary decision factor, Tucson Water will be forever expanding into the outer reaches of the Tucson metropolitan area. The focus needs to be on the 1.1 million people who can be served with some reserve if the City is denied future allocations of water. We were told by City staff that adjacent infrastructure is the reason for expansion into the areas on the west side mentioned above. This is inconsistent if you give equal weight to other decision criteria adopted by the Council, especially land that is environmentally sensitive, and when the citizenry wants it protected from development.

5) Water Harvesting and Other Technologies--It was puzzling to review the memorandum from the City Manager entitled "Discussion of Refinements to Water Service Area" and not locate any mention of water harvesting or other technologies that can help residents access renewable supplies of water (e.g., Watershed Management's curb-cut project south of the UofA campus). If we do not emphasize alternative water supplies that are more neutral to the environment, there will be a large carbon footprint related to tapping aquifers elsewhere in Arizona. This will dramatically increase the cost of water. These implications were not addressed under financial costs or economic impacts in the memorandum. The focus seems to be on more revenue, which is very critical, but not necessarily the best reason for expanding the water service area. Again, environmental impacts need to be considered, especially in light of the County's Sonoran Desert Conservation Plan.

6) New Paradigm--The paradigm outlined in the Joint Committee's Phase 2 report offers a balanced approach to water resources planning and management. It clearly states sustainability is related to economics, social vibrancy, and environmental viability. This should be the guiding principle that will help as you move forward with modifying and adopting a water policy. We hope you will continue to use it as a foundation for your decision process.

From an overall perspective, the Tucson Mountains Association believes in the need for fiscal responsibility related to the customers of Tucson Water, while ensuring protection of our natural resources. A sound and comprehensive foundation will be possible if you partner with Pima County to ensure integration of water resources and land use planning. Encouraging infill and growth in the four areas recommended by the Joint Committee will go a long way in accomplishing this objective. We strongly support the adoption of a water service area policy to provide a blueprint for Tucson Water, but urge the Council to make some modifications as noted above before the draft is finalized.

Sincerely,

Dr. Edwin A. Verburg
President

Brenda Garcia

From: Dan T [tcmtucson@yahoo.com]
Sent: Tuesday, May 04, 2010 2:48 AM
To: Nicole.ewing-gavin@tucsonaz.gov
Subject: City water for Tucson Mountains Development -NO

Good day,

Please consider my comments regarding providing city water to the proposed Tucson Mountains Development.

As a native of Tucson and a concerned citizen I say absolutely NO.

The environmental impact and energy costs are too high and serve the needs and financial desires of a few while negatively impacting many.

Thank you,

DT
==
Dan Taylor, L.Ac.

Madeline Kiser
2834 E. Croyden St.
Tucson, AZ 85716

May 4, 2010

Honorable Mayor and Council Members
City of Tucson
P.O. Box 27210
Tucson, Arizona 85726

Dear Mayor and Council Members:

As one of many community members who over two years attended meetings of the Water and Wastewater Infrastructure, Supply and Planning Study Oversight Committee, and read many of the Committee's guiding water documents, I'm writing to you about the proposed Refinements to the Water Service Area.

At center of the Committee's Phase II Final Report – the spirit of the report – is an attempt to shift dialogue about how water is used in our area of the state, away from engineered solutions, where sources of water are secured to provide for human needs without fully understanding the costs to society and nature, towards a new water paradigm. This paradigm, known internationally by varying terms – holistic water management, and Integrated Water Resources Management (IWRM), among others – requires that the full social, economic and environmental costs and benefits of altering any aquatic system be measured *before* change takes place. Also, that there be open, transparent dialogue about the costs and benefits of prospective alterations.

In a time of climate change, when the Colorado River, one of our main sources of water, is showing notable and documented signs of stress, I feel it's unwise to set into place (and without time for adequate study, and transparent feedback from experts and the public) the precedent of extending service without fully understanding how the river's shifting condition could alter its ability to serve as our provider. There are parallels here to our unhealthy economy: before buying, we need to know what we can afford.

If the precedent to continue adding adjacent areas that are dependent on a river showing signs of stress is cemented, without comprehensive integrated land and water planning in our region (and most likely at the state level), we will remain distant from one of the main tenets of IWRM: educating the public, with honesty, about the fact that we live in

new times. In these times, significant uncertainty about our water supplies is the context in which business, citizens, industry and civilization will necessarily exist. (See McKinsey & Company, *Charting Our Water Future: Economic Frameworks to Inform Decision-Making*.) Perhaps above all in these times, it's critical that the public come to understand that these *are* new times, requiring a fundamental re-imagining of our shared life as a desert community.

Instead of moving forward, therefore, to extend Tucson Water's service area, with little time for thorough analysis, and when there's considerable doubt about our water sources in a time of climate change, it's vital that hard-to-ask questions about the Colorado's ability to continue providing be asked openly. Questions also need to be asked about any proposed new supplies for our area, including importing water from distant aquifers, re-used water, cloud seeding, desalination, and others. Taking needed time to openly ask and analyze these questions would set an important precedent, and would honor and be a continuation of the example of careful labor and transparency of the Committee, instead of a departure from it.

Perhaps the venue and vehicle for asking these questions and for a more thorough, transparent conversation about extending service areas might be PAG, as it prepares to follow up with the Phase II Report. Questions about the health of the Colorado and the feasibility of and appropriate methodology for extending service could be incorporated into this process, together with other critical conversations, such as the role of rainwater harvesting and other conservation measures. Waiting until the PAG process is set into place in the next month or so would leave room for adequate feedback from experts and the public, and decision-making informed by sound science and best-practices in IWRM.

It can, of course, be costly to put on hold the development of new industries and neighborhoods that are waiting for the approval of this extended area of service, but in the long run, it's costlier to set into place a fragile system, dependent on water that may bring with it major challenges for future generations. Another real cost of extending service without measured consideration is the growing public confusion that exists as the Southwest continues to make headlines for being one of the planet's most vulnerable sites, while our water policies de facto give the impression we can basically continue as we have: providing water to new areas little by little, without connecting the dots.

I thank you for whatever consideration you might give to these concerns.

Sincerely,

Madeline Kiser
Member, Sustainable Tucson