
WHO SAID WHAT?

Chapter Six

Individual Stakeholders

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SYNOPSIS

Individual Stakeholders are those participants not claiming an affiliation when identifying themselves on sign-in sheets or when submitting comments. Even though many of these individuals are well connected and active in the community, if they did not claim an affiliation none was assumed for them.

Nancy Freeman claimed affiliation with the Groundwater Awareness League. She is included in this chapter, however, because the Groundwater Awareness League did not readily fit into any of the other stakeholder categories.

Seventy participants appear as Individual Stakeholders. Thirty-four participants made one hundred and two comments (sixty-six oral and thirty-six written comments). Five individuals made oral comments (one each) at meetings for which no documentary record exists. Therefore, this chapter documents comments from twenty-nine individuals, who submitted ninety-seven comments.

This chapter identifies seven major themes discernable in comments from Individual Stakeholders. “Individual Stakeholders” as a category does not assume a commonality of perspective and interest among the participants so designated. Individuals categorized under Local Water Utilities and Jurisdictions, Business Stakeholder, Environmental Stakeholders, and Neighborhood Stakeholders were expected to, and were found to, express similar opinions.

Individual Stakeholders expressed a diversity of opinions and sometimes there was not a majority, or even plurality, of Individual Stakeholders who expressed opinions as described under each theme. For example, only two individuals called for a regional dialogue to address issues such as underutilization of CAP entitlements. Similarly, one individual concentrated almost exclusively on water quality, an issue that only two other individuals addressed to any degree. Community outreach, distrust of government, and the energy/water nexus also were issues only a handful of Individual Stakeholders addressed.

Individual Stakeholders more frequently and uniformly expressed opinions on other issues that focused on living within our means, and that emphasized rainwater harvesting, stormwater capture, and conservation as critical tools for water resource management.

6.1 PROFILE OF PARTICIPANTS

Exhibit 6- 1 below identified seventy-seven Individual Stakeholders who engaged with the Joint Study. Thirty-five Individual Stakeholders submitted ninety-eight comments: two presentations, fifty-one oral comments, and forty-five written comments.

Sixty-two individuals attended one or more meetings during Phases I and II. Forty-two individuals attended meetings, but did not submit any comments. Fifteen individuals submitted written comments, but did not attend any meetings.

Several individuals were the most active in this category. Charles Cole attended twenty-four meetings, made one presentation, and submitted thirteen oral and written comments. Clyde Stagner attended seven meetings and submitted eighteen comments. Nancy Freeman attended twelve meetings, made one presentation, and submitted eight oral and written comments.

Margot Garcia and Dale Keyes were active. Ms. Garcia attended twelve meetings and submitted eleven comments. Mr. Keyes attended eight meetings and submitted four comments. At the request of staff and the committee, Ms. Garcia and Mr. Keyes monitored and recorded the two community sustainability discussions on October 22 and 29, 2008 and submitted a report documenting the comments received, which is part of the record for Phase I of the Joint Study.

Others who were active include Alice Roe (attended fifteen meetings and submitted three comments); Arlene Scadron (attended fifteen meetings and submitted one comment); Bill and Denise DuPont (attended ten meetings and submitted one comment); and Gail Gordy (attended nine meetings and submitted one comment).

Exhibit 6 - 1 Profile of Participants

Individual	Make Comments			Attend Meetings
	Make Presentations	Oral Comments	Written Comments	
Beryl Baker		2	1	9
Charles J. Cole	1	9	4	24
Debbie Collazo		2	1	3
Jane Evans		1	1	1
Nancy Freeman	1	5	3	12

Individual Stakeholders

Exhibit 6 – 1 continued

Individual	Make Comments			Attend Meetings	
	Make Presentations	Oral Comments	Written Comments		
Margot Garcia		9	2	11	12
Dale Keyes		3	1	4	8
Priscilla Robinson			1	1	1
Alice Roe		2	1	3	15
Clyde Stagner		7	11	18	7
Carol West		1	2	3	2
Cindy Brewer		1		1	2
Gail Cordy		1		1	9
Bill Crouse		1		1	1
Bill DuPont		2		2	10
John Kai				0	1
John Kromko		1		1	4
Dave Ludwig				0	2
Michael Newman		1		1	1
Mike Nicksic		2		2	2
Kerri Jean Ormerod				0	3
Barney Popkin				0	1
Scott Ryburn				0	1
Arlene Scadron			1	1	15
Michael Toney		1		1	1
Jeanne Bruckner			1	1	
Pat Cattani			1	1	
Leona Davis			1	1	
Terry Finefrock			2	2	
Diane Luetz			1	1	
Marshall Magruder			1	1	

Individual Stakeholders

Exhibit 6 – 1 continued

Individual	Make Comments			Attend Meetings	
	Make Presentations	Oral Comments	Written Comments		
Hyatt Simpson			1	1	
S.M. Wronko			1	1	
Katrina Ziegweid			1	1	
Unidentified # 1			1	1	
Unidentified # 2			1	1	
Unidentified # 3			1	1	
Unidentified # 4			1	1	
Unidentified # 5			1	1	
Unidentified # 6			1	1	
Dave Berry				0	1
Dysan Boqunoric				0	1
Andrea Borlizzi				0	1
Mary J. Bustamante				0	1
Bob Canthorn				0	1
Chris Choi				0	1
Dave Devine				0	1
Denise DuPont				0	10
Julie Fabre				0	4
Christina Farnsworth				0	2
William Fire				0	1
Vania Fletcher				0	1
Athena Garcia				0	16
Dick Gelphe				0	1
David Graham				0	3
Cris Hamilton				0	1
Amy Harbaugh				0	1

Individual Stakeholders

Exhibit 6 – 1 continued

	Make Comments				
	Make Presentations	Oral Comments	Written Comments		
Individual					
Ernesto Ibarra				0	1
Steven Kelling				0	1
Monica Kids				0	1
Samuel Leplus				0	1
Dyer Lytle				0	1
Jimmy Mc Firoy				0	1
Irene Ogata				0	2
Brittany Orkney				0	1
David Pfordt				0	1
Megan Rodgers				0	1
Justin Searle				0	1
Ted Sedden				0	1
Wathalie Sevaux				0	1
Cindy Shimokusu				0	1
Natanya Siegel				0	1
Matt Somers				0	1
John Strobeoll				0	1
Barbara Watten				0	1
Andrea Woodard				0	1
Lauren Zimira				0	1
Total	2	51	45	98	

6.2 SUMMARY OF MAJOR THEMES

Individual Stakeholders submitted one hundred and thirteen comments, collected under seven major themes:

- A. Live within our means
- B. Emphasize rainwater harvesting, stormwater control, and conservation;
- C. Address Tucson AMA regional perspectives;
- D. Protect Water quality;
- E. Recommendations on community outreach;
- F. Distrust of government; and,
- G. Address the Energy/water nexus.

A. Live Within Our Means

Several Individual Stakeholders called for an ethic of learning to live within our means, of acknowledging and adapting to limits, as an alternative to simply growing bigger and wider. Jane Evans, decrying “uncontrolled growth,” declared, “a growth-based economy is not sustainable in the Sonoran Desert.” Charles Cole defined sustainability as avoiding “temporary overexpansion of human population beyond the carrying capacity of the environment, only to be followed by a “Catastrophic Collapse” as has occurred with past civilizations.” Mr. Cole called for a “new paradigm that does not rely on perpetual growth.” Mr. Cole urged us to “balance resource availability and use.”

Diane Luety noted, “we have a limited water resource, live in a desert, and also cannot economically continue to use our money and labor resource to extend infrastructure beyond our current limits. We need to spend whatever resource we have to maintain our current water and sewer infrastructure.”

Nancy Freeman defined sustainability as “living with our local resources.” Ms. Freeman argued that the 1980 Groundwater Management Act and the 1995 creation of the Central Arizona Groundwater Replenishment District set up “a system that makes sustainability impossible in municipalities.”

Many individual commentators challenged claims of an “assured water supply,” dismissing compliance by Tucson Water and other water utilities with the rules for obtaining that designation. Clyde Stagner questioned whether assured water supply calculations deduct losses to evaporation, which he maintains could be significant. A number of Individual Stakeholders questioned the reliability of Colorado River water as a local supply. Mr. Cole spoke of “uncertainties about future supplies” and “limits of present supplies.” Mr. Cole said growth in Tucson Water’s current obligated to serve area would require “more water than is available today,” and that extending the service area “will intensify the problem of insufficient water.”

Dale Keyes and others asserted that climate change and long-term drought would limit assured water supplies in the future. Mr. Keyes argued, “there is a consensus among climatologists that the

southwest will be drier and warmer.” Mr. Keyes, therefore, argued, “rather than calling climate change an uncertainty, the likely trends should be acknowledged.”

Alice Roe, using the logic of investments as an analogy, argued, “our principal, as a community, is our water supplies that we are drawing down below replenishment.” Ms. Roe noted, “without a well-maintained system of (water and wastewater) delivery... we, as a community, will falter.” Ms. Roe said sustainability involved “choice and tradeoffs we can or wish to live with.” For Ms. Roe, in going forward, “we need to take care that the older inner city will not be destroyed.” Ms. Roe called for management of our water and wastewater infrastructure so that we maintain “a sense of place ... of the old center of our city ... and all of our natural areas...” Margot Garcia worried about the destruction of neighborhoods.

Mr. Keyes stated, “how much growth we can support remains a critical question.” Mr. Cole asked, “if growth cannot be perpetual and yet you cannot plan to stop growth, then how does one envision that growth will stop?”

Carol West argued that state law and the legislature do not allow us to “control our water by limiting growth.” Ms. West said, “a major issue for us is the massive sprawl in this region,” and that it would be “better to grow up than out.” Ms. West called for a policy on Tucson Water’s obligated service area that would “allow service to contiguous areas not requiring capital expenditures and service should be tied to annexation.”

B. Emphasize Rainwater Harvesting, Stormwater Capture, Conservation

Charles Cole placed a heavy emphasis on rainwater harvesting, while Nancy Freeman placed an equally heavy emphasis on stormwater capture as important tools of water resource management. Several individual commentators promoted conservation as a critical tool for water resource management, but none with the special emphasis Mr. Cole and Ms. Freeman brought to their subjects.

Rainwater Harvesting

Mr. Cole defined one water sustainability principle as being a system that “functions essentially without significant consumption of nonrenewable resources.” Mr. Cole claimed that he and his wife have a rainwater harvesting system that allows them to “live off the grid,” while providing them with 100 percent of their water needs.

At the September 10, 2008 meeting, at the request of staff and committee, Mr. Cole made a presentation on his rainwater harvesting system. Mr. Cole and his wife live in the Tucson Mountains, on the east slope of Tower Peak. Mr. Cole noted that when they were designing their new home, they became aware of the fact that many people in their area had dug wells that either produced no water or went dry within one year. As an alternative, they decided to harvest rainwater as their water source.

Mr. Cole described their system, which uses gutters all around the roof that captures the rain fall and directs it to downspouts that take the water into pipes underground and then to a 26,000 gallon underground cistern. Mr. Cole described a system of filtration that produces water for indoor uses such

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as showering, flushing the toilet, washing, the dishwasher and clothes washer. For drinking water, they have a small reverse osmosis system under the kitchen sink.

Mr. Cole noted that they were entirely independent; that they had a seven-month supply of water in the cistern and were looking forward to the winter rains. (The Coles did drill a well, but have not needed it in three years.)

Mr. Cole noted that, while “as a national average 61% of rainfall almost immediately returns to the atmosphere through evapotranspiration,” his system captures that 61% and puts it to use. Mr. Cole argued that, based on the evapotranspiration rates, capturing rainwater would not have negative impacts on aquifer recharge.

Mr. Cole said the City’s rainwater harvesting ordinance was a step in the right direction, but did not go far enough. Mr. Cole said he believed rainwater harvesting systems can be installed on larger scales than his single residence and could be tied into larger solar energy projects.

Cindy Brewer and Bill Crouse made comments in support of rainwater harvesting.

Stormwater Capture

At the October 15, 2008 meeting, Nancy Freeman made a technical presentation on stormwater recharge, at the invitation of the committee and staff. Ms. Freeman started by noting that ADWR claims there is a 40,000 acre-foot water deficit per year in the Green Valley/Sahuarita Area. Ms. Freeman showed slides of stormwater runoff damages in the area. Ms. Freeman noted she is not talking “about rainwater harvesting. This is serious stormwater and flooding.” and argued that if we decide to treat stormwater as an asset rather than simply as a problem to be solved, then, as one of her slides said – “You want water – We’ve got water!”

Many of Ms. Freeman’s examples involve multi-purpose stormwater retention/detention basins that provide attenuation of flood flows, but can also serve to recharge stormwater and provide recreational opportunities when it is not flooding. Ms. Freeman’s examples were from Colorado, California, New Mexico, and in Arizona from Chandler and Tucson (Kino Environmental Restoration Project), as well as from Australia, which Ms. Freeman said was in the forefront of stormwater recharge.

Ms. Freeman told the committee that Chandler has 3,763 dry wells, at a cost of between \$10,000 and \$15,000 each that are producing 3,600 – 4,600 acre-feet of recharge per year.

Ms. Freeman recommended that we treat stormwater” as an asset ...and ...use (it) as recharge in some areas, and recharge the water where it is instead of moving it around, and paying for a lot of infrastructure.”

At the May 21, 2009 meeting, Ms. Freeman stated, “I simply do not agree with” the statement that “There is too much water,” as a response to a question of “why stormwater could not be managed upstream.” Ms. Freeman noted, “many cities, including Phoenix and Denver, have reservoirs on every

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side of town, which serve as wonderful recreation facilities.” Furthermore, the “insinuation that there is not enough money does not hold up since the Flood Control District never spends its entire budget even though it has money for contracts with consultants for studies that are never followed up on.” Furthermore, Ms. Freeman noted “the preponderance of Flood Control studies and projects (are) within the Tucson City limits.”

Ms. Freeman took issue with policies for directing growth to suitable growth areas. She said, “I challenge the suitability of the Houghton corridor and proposed development along Sahuarita Rd. unless extensive infrastructure is completed to capture the stormwater and put it to some good use, such as dry wells to assist it to augment groundwater levels, restoring and creating riparian areas, or slowing it for use on existing plant life. To put in the flood control facilities and infrastructure first is an absolute necessity.” Ms. Freeman argued, “New water supplies will be extremely expensive” (perhaps at a cost beyond the means of some), but “rainwater and stormwater harvesting might not be so expensive.”

Conservation

One Unidentified individual commentator urged Mayor and Council to support that Phase II Report because our “shining beacon has been our regional approach to conservation.”

Clyde Stagner presented ideas for increasing water efficiency in the house by shortening the pipe between the showerhead and hot water heater and lowering the preset temperature on hot water heaters. Mr. Stagner recommended programs to decrease evaporation losses as a strategy for increasing the water efficiency of outdoor uses.

Four individual commentators urged raising water rates high enough to send a price signal on the value of conservation – Leona Davis, Jeanne Bruckner, Marshall Magruder, and Priscilla Robinson. , Leona Davis wrote, “I would propose that creating a highly-tiered usage rate would drive an even more dramatic increase in water use efficiency.” Jeanne Bruckner wrote, “water rates should be a reflection of usage. The more you use, the more you pay.” Marshall Magruder proposed 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.” Ms. Robinson promoted price signals as a good way of achieving efficiency in water use. Acknowledging “the impacts of higher prices on those with low incomes,” Ms. Robinson maintained, “every household still has the potential to use water more efficiently and thereby control costs.”

Four individual commentators raised cautions about conservation.

Ms. Davis defined conservation education programs as “largely ineffective.”

Carol West pointed to a tension between (a) not being able to “scientifically tell how much groundwater we have,” which leads to needing “stronger conservation and water harvesting programs” versus (b) “with less water usage, utilities sell less water and that does affect their bottom line.” To Ms. West, water harvesting, conservation, and gray water use “only nibble around the edges,” preferring instead that Tucson work with SAWUA and ADD Water to acquire additional water resources as a higher

priority. Ms. West believed that acquiring grant funding for environmental restoration and using GO bonds to extend reclaimed lines merit further consideration.

Priscilla Robinson would replace the term “conservation” with the term “efficiency,” which she preferred because it “suggests using something to maximize the benefit from what is expended, but acknowledges that it is being used,” which Ms. Robinson sees as more productive than “appealing to people’s better natures.”

One Unidentified individual suggested that “for the goal of ‘lower water consumption per household,’ be sure that implementation is confined to voluntary methods with positive incentives, rather than punitive command and control regulations.”

C. Address Tucson AMA Regional Perspectives

Seven individual commentators addressed the regional perspective. Six Individual Stakeholders addressed regionalism from the municipal perspective of other jurisdictions and water utilities. Nancy Freeman focused on the water needs of rural areas.

Other Jurisdictions and Water Utilities

Carol West and Priscilla Robinson commented extensively on regionalism, from the perspective of other jurisdictions and water utilities. Ms. West said, “water is a regional issue,” while Ms. Robinson saw “the central flaw in the entire report” as “the decision to limit the discussion to the City and the County...” Both Ms. West and Robinson argued the Phase II Report was not accounting for all of the water in the Tucson Active Management Area. Ms. West said, “we often fail to recognize that this region has CAP allocations totaling about 260,000 acre-feet,” Ms. Robinson used the figure of 262,400 acre-feet.

For both Ms. West and Robinson, a central water problem in the Tucson AMA is that the holders of these allocations are not taking their full allocation. Ms. West said, “progress on this is urgent,” and noted, “we are paying for water we are not using and allowing others in the state – and yes, throughout the west - to use it.” For Ms. West “supply problems will dominate this region,” and “planning for the future is essential: that involves working with the entire region.”

Ms. Robinson calculated that CAP allocation holders in the Tucson AMA were not taking 118,490 acre-feet of the region’s CAP allocation. Ms. Robinson argued it is “not possible to achieve anything close to balancing the water budget in the TAMA without using that water. Every acre-foot of CAP water that we do not take means that irreplaceable groundwater is being used instead.”

Ms. Robinson criticized the Joint Study for two additional, but related, shortcomings. First, a regional discussion will highlight differences in interest between Tucson Water and other water utilities. Ms. Robinson said that the other local water utilities did not enjoy “Tucson Water’s fat water portfolio, developed infrastructure, and adequate revenue stream.” Ms. Robinson predicted that the other water utilities, having paid a long time for rights to water they cannot yet use, would be unwilling “to sign on

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to a plan developed by a committee from which they were intentionally excluded.” Ms. Robinson declared there would be “no regional planning unless the owners of those allocations are at the table.”

Second, Ms. Robinson saw in the Joint Study a danger of preemptive action, as if “the City and County have already determined the outcome of any regional dialogue and will not be swayed by any concern from the other entities.”

Marshall Magruder, a resident within the Santa Cruz Active Management Area (SCAMA) noted SCAMA faces a “‘natural’ limit on a sustainable population,” which he estimates to be an additional 31,000 people, at which point “we will not be able to sustain our water resources.” Mr. Magruder stated that he is “very concerned that our neighbor to the north is not maintaining its water resources in a responsible manner.”

Mike Nicksic argued that the “Committee vastly rethink the scope of the study.” For example, Mr. Nicksic asked whether the Joint Study would develop an inventory of water users that included institutions like the University of Arizona, Davis-Monthan Air Force Base, and various hospitals and nursing homes with grandfathered groundwater rights. Mr. Nicksic requested more information about the University’s plans for “mega expansion for Kino Boulevard, with a potential of 15,000 to 20,000 water users.” Mr. Nicksic stated the committee needed to consider Nogales, Sonora and its relationships to the Joint Study.

Unidentified Individual 3 commented, “we live in a desert with dwindling water resources. A regional body to deal with water issues makes the most sense.” Specifically, this individual recommended “a Regional Government Water Authority (with) the power and/or resources to enforce retrofit for all individual living quarters (in multi-family structures) with individual water meters.”

Unidentified Individual 5 wrote that they were “puzzled about why this effort appears to be focused entirely on the City of Tucson and Pima County.” The writer asked why other municipalities and private water companies were not involved, arguing, “it is premature to begin making any recommendation on developing a plan until the regional stakeholders are involved ...”

Water Needs of Rural Areas

Nancy Freeman requested the Joint Study to expand the study area to be inclusive of all watersheds in the region. Ms. Freeman viewed the 1980 Groundwater Management Act as beneficial to agricultural and mining interests and creation of the Central Arizona Groundwater Replenishment District as beneficial to developers, but saw neither as protective of groundwater supplies and safe yield in general or the adequacy of water supplies in rural area in particular. Ms. Freeman related that in 2006 and 2007, a group of fifty people from around Arizona committed their time to study rural water needs that resulted in proposed legislation to secure adequate water supplies in rural area. Ms. Freeman noted the legislature failed to pass any such legislation.

As an example of her concern, Ms. Freeman claimed there is a 40,000 acre-foot per year water deficit in the Sahuarita/Green Valley area.

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Ms. Freeman criticized Tucson Water and Pima County Regional Wastewater Reclamation for being more focused on the central urban core and less focused on the outlying areas of the metropolitan area. For example, Mr. Freeman characterized Tucson Water service delivery to the Kolb Road-Sahuarita Road region as “further encroachments into the rural residents.”

Ms. Freeman disputed Tucson Water data showing rising groundwater levels. Ms. Freeman conceded the information may be true, but applied only in the Avra Valley basin and the central well field, but not to “a number of Tucson Water wells that are in outlying areas and not connected to the central system at all.” Ms. Freeman said of Tucson Water “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?”

Ms. Freeman supported using reclaimed water for turf irrigation, but argued that wastewater customers in outlying areas do not have access to reclaimed water. Ms. Freeman argued for “satellite wastewater treatment plants, placed where there are customers for effluent.” For Ms. Freeman, satellite treatment plants would solve the problem of it being “too expensive to pump the effluent up from Roger or Ina Road treatment plants to the places where it can be used.” Ms. Freeman cited the “Vail region, which for years has been piping its wastewater over to Roger Road, never to be seen again by the Vail resident,” highlighting that there is “no recharge availability for groundwater pumping in the Vail region at all.”

D. Protect Water Quality

Clyde Stagner submitted several oral and written comments during Phase 1.2, Technical Presentations, focusing on water quality, primarily from a human health perspective.

Mr. Stagner particularly focused on accusations that “the Tucson Water department is presently serving the citizens of Tucson tertiary treated recharged water from Las Vegas and Lake Mead.” Mr. Stagner argued that treated wastewater from Las Vegas/Henderson Nevada is returned to Lake Mead, from where it is discharged into the Colorado River, shipped via the Central Arizona Project and then on to Tucson. Mr. Stagner stated, “Tucson does not drink pure Las Vegas waste (but) Tucson’s CAP contains their wastewater (diluted) and Tucson Water’s CAP blend contains their waste water (further diluted).” Mr. Stagner claimed that the daily intake of perchlorate in Tucson exceeds certain standards.

Mr. Stagner referenced problems associated with salt in CAP water, which he said reduces the life of household appliances. Mr. Stagner claimed the CAP in 1997 delivered 1.1 million tons of salt with 1.4 million acre-feet of water. Mr. Stagner estimated we import 116,116 tons of salt with 148.2 million acre-feet of CAP water.

Mr. Stagner opposed the City’s Graywater reuse ordinance. Mr. Stagner cited data from a World Health Organization report (*Overview of Graywater Management: Health Considerations*) that he said, “demonstrate that graywater could pose a potential health risk to people coming into contact with it ... although there are no recorded incidents of serious effects on human health from the use of

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graywater.” Mr. Stagner argued, “The present flow of gray water goes to Pima County Wastewater Management where it can be converted to irrigational effluent. Why deviate from this proven workable system and its infrastructure?”

Mr. Stagner complained about a “lack of standards for total dissolved solids and the contaminants of emerging concern (pharmaceuticals and endocrine inhibitors.” Mr. Stagner recommended a program to monitor for these pollutants.

Mr. Stagner argued, “a sustainability of total annual input water to Tucson Water providing for growth must consider the fate of” the contaminants TDS, perchlorate and the contaminants of emerging concern.

Charles Cole recommended as one principal of water sustainability that “it is essentially pollution-free in all aspects of its operation and has no negative impacts on the environment.” Later, Mr. Cole asked whether “new treatment systems for water and wastewater will eliminate pharmaceuticals and herbicides.”

Unidentified Individual 2 worried about “the elephant in the room that the committee has failed to address (which) is the issue of CAP water and salt.” Reviewing data on the volume of salt transported in Tucson Water’s full CAP allocation, this individual complained, “no one has been willing to publicly address this issue,” which “gets swept under the rug.” For this individual, salt in CAP water was “a pay now issue (build a desalinization plant) or a pay later issue (health and/or home repairs).”

E. Recommendations on Community Outreach

During Phase 1.1, Getting Started, Margot Garcia and Dale Keyes made detailed recommendations about conducting community outreach (At the request of the oversight committee, Ms. Garcia and Mr. Keyes contracted to produce a report on the sustainability discussions.

Ms. Garcia focused on the mechanics of how to “negotiate the political and technical issues of regional water planning.” Ms. Garcia said a “key to balancing widely opposing views was the use of professional organizations” (who were able to use) “knowledge and professional expertise to keep the many different viewpoints from making extreme statements.” Ms. Garcia recommended use of “a professional facilitator when there was intense negotiation.” Ms. Garcia made recommendations for increasing the committee’s accessibility during meetings, such as sitting at a V-shaped table and placing visible nameplates to identify members. Ms. Garcia also recommended that the committee adopt rules of operation for itself. Ms. Garcia objected to evening meetings.

Dale Keyes told the committee there was a spectrum to community input, from information through consultation to collaboration. Mr. Keyes noted the committee had seniors, males and Anglos, and suggested broadening the committee to include “other representative parts of the community.” Mr. Keyes recommended the committee adopt a public involvement plan and follow through on it; hold meetings at convenient times and locations; keep meetings structured but also be flexible with agendas; and avoid “process fatigue” in the larger community.

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Debbie Collazo requested that the Joint Study post all written information provided at committee meetings on its website. Ms. Collazo commented that, since the Joint Study “is not seeking a pre-determined outcome,” that (1) “information should be provided in a balanced, objective fashion,” (2) “presentations should be educational rather than public relations,” and (3) “if studies or research are made available funded by government or special interest groups ... citation should be included.”

William DuPont noted he was grateful there would not be subcommittees and that he hoped the committee would hold its meetings at night.

Mike Nicksic spoke to how the process could be “open and public.” He suggested an on-line archive of all study documents, a list of meeting attendees, and a record of who spoke at meetings. He suggested electronic recording of meetings be available for download.

F. Distrust of Government

Nancy Freeman and Clyde Stagner expressed strong distrust of government.

Ms. Freeman blamed the state legislature for passing a Groundwater Management Act that makes it impossible to achieve water sustainability in municipalities and for refusing to act on the rural water needs legislation. Ms. Freeman criticized the Central Arizona Groundwater Replenishment District as a tool of developers and a hindrance to protecting groundwater supplies. Ms. Freeman wrote, “So, the first step of living within our means with the limitations imposed on us by importing CAP would be to eliminate the Groundwater Replenishment District, which was created by and for the sake of new development

Ms. Freeman complained about “misleading” information she believes Tucson Water disseminated regarding rising groundwater levels and about the utility’s desire “to be the water company of the world.”

Ms. Freeman complained about County wastewater, which she argued “creates disconnects” between customers and the availability of effluent resources. Rather than constructing satellite treatment plants, Ms. Freeman maintained County wastewater would rather “build the biggest treatment plants possible,” while enabling the “proliferation of small private water companies that ship their wastewater to Roger and Ina Road for treatment.”

Ms. Freeman challenged the validity of studies done by the Flood Control, suggesting this money might be better spent on actual structural project. Ms. Freeman noted the District only identifies “four infrastructure projects, either in process or completed,” but “no timeline is given as is done in the studies page.” Ms. Freeman presented the “Avis Acres region, which has a horrific sheet flow” as an example of “the stories and the hardships caused by Pima County Development Services and Pima County Flood Control” by allowing developments and not providing adequate stormwater management. Ms. Freeman stated, “The County is betraying its citizens, many of whom are living on family property bought in the 1970s, with permitting of properties in these flood zones with no flood abatement

infrastructure at all.” Ms. Freeman noted that Pima County Transportation also contributes to these flooding problems.

Regarding the City’s Graywater reuse ordinance, Mr. Stagner characterized the ordinance as “the elected leaders of Tucson (claiming) to know what the dictatorial best is for the disorganized citizens of Tucson.”

Mr. Stagner repeatedly recommended creation of an independent water quality department, independent of both Tucson Water and County wastewater. Mr. Stagner claimed Tucson Water was not doing an adequate job of water quality monitoring and testing. In one comment, he asked who the “science caregivers” in Tucson are. Regarding contaminants of emerging concern, Mr. Stagner asked, “What has Tucson Water done about these pollutants? Is ‘There are no MCLs’ an answer? Is ‘AZDEQ’s responsibility’ an answer when Tucson Water is responsible for the potable water for Tucson citizens?” Mr. Stagner requested more transparency from both utilities, arguing that both needed a new mindset that valued more data and an adaptive management strategy.

G. Address the Energy/Water Nexus

Terry Finefrock submitted two written comments largely focused on water and energy. In a November 11, 2009 comments, Mr. Finefrock said he “did not see and would strongly suggest that the study identify and discuss the connection between existing Brown electricity generation and water usage: ½ to ¾ gallons of water now used to generate one kilowatt-hour of electricity.” Mr. Finefrock stated, “Solutions for water and environmental and cost issues involved with the generation of electricity will create many undesirable conflicts and seemingly mutually exclusive choices and significantly burden the capacity for the local economy to find the solutions.”

Mr. Finefrock suggested that the Joint Study develop and support a project “to design/construct a Hybrid Solar and Natural Gas generating plant with solar thermal storage utilizing Dry-Cooling (Heller) technology of sufficient size to provide most of Tucson/TEP electricity requirement.” In a February 5, 2010 e-mail, Mr. Finefrock provided further arguments in favor of using “solar electric generation using photovoltaic technology” as a “solution that not only promotes water conservation but will also provide many other economic and environmental benefits to our community.”

6.3 COMMENTS BY PARTICIPANTS

Thirty-five individual stakeholders submitted comments that were documented. This section identifies one hundred and nine comments, sixty-six oral and forty-three written comments. The Individual Stakeholders and their comments are presented in the following order.

6.3.1	Charles Cole	6.3.13	Mike Newman	6.3.25	Leona Davis
6.3.2	Nancy Freeman	6.3.14	Jane Evans	6.3.26	Gail Cordy
6.3.3	Clyde Stagner	6.3.15	John Kromko	6.3.27	Hyatt Simpson
6.3.4	Margot Garcia	6.3.16	Jeanne Bruckner	6.3.28	Katrina Ziegweid
6.3.5	Dale Keyes	6.3.17	Cindy Brewer	6.3.29	Pat Cattani
6.3.6	Carol West	6.3.18	Bill Crouse	6.3.30	Unidentified # 1
6.3.7	Alice Roe	6.3.19	Diane Luety	6.3.31	Unidentified # 2
6.3.8	Beryl Baker	6.3.20	Michael Toney	6.3.32	Unidentified # 3
6.3.9	Priscilla Robinson	6.3.21	Terry Finefrock	6.3.33	Unidentified # 4
6.3.10	Debbie Collazo	6.3.22	Steve Wronko	6.3.34	Unidentified # 5
6.3.11	William DuPont	6.3.23	Marshall Magruder	6.3.35	Unidentified # 6
6.3.12	Mike Nicksic	6.3.24	Arlene Scadron		

The first four individuals (Charles Cole, Nancy Freeman, Clyde Stagner, and Margot Garcia) were most active among the Individual Stakeholders, between them submitting almost one-half of all comments submitted by these stakeholders.

6.3.1 Charles Cole

Mr. Cole attended twenty-four meetings and submitted fifteen comments, twelve oral and three written. Mr. Cole focused most intensely on rainwater harvesting, but also advocated for new ways of thinking about water resource management. At the request of staff and committee, Mr. Cole made a technical presentation on the rainwater harvesting system he installed at his home.

Phase 1.1 Getting Started

At the **June 16, 2008** meeting, Mr. Cole noted that he was completely off the water grid, using rainwater to fill at 26,000-gallon cistern that can provide one hundred percent of his water needs. Mr. Cole invited people out to see his system. At the **July 23, 2008** meeting, Mr. Cole followed up his comments with reference to rainwater harvesting and referred staff and the committee to a publication titled “Rainwater Collection Systems.”

Phase 1.2 Technical Presentations

At the **September 3, 2008** meeting, Mr. Cole asked, “If growth cannot be perpetual, and if you cannot plan to stop it, how do you envision that it will stop? How will it end?”

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Over the next three meetings, Mr. Cole returned to the rainwater-harvesting theme. At the **September 10, 2008** meeting, at the request of staff and committee, Mr. Cole made a presentation on his rainwater harvesting system. Mr. Cole and his wife live in the Tucson Mountains, on the east slope of Tower Peak. Mr. Cole noted that when they were designing their new home, they became aware that many people in their area had dug wells, either that produced no water or went dry within one year. As an alternative, the Coles decided to harvest rainwater as their water source.

Mr. Cole described their system, which uses gutters all around the roof to capture rain fall and direct it through downspouts into pipes underground and then to a 26,000 gallon underground cistern. Mr. Cole described a system of filtration that produces water for indoor uses such as showering, flushing, washing, and running the dishwasher and clothes washer. The Coles use a small reverse osmosis system under the kitchen sink to provide their drinking water.

Mr. Cole noted, “we’re entirely independent now. For three years we haven’t had to use the well because of the rate at which the water goes in, and our rate of use from the cistern, and we have a seven-month supply of water in the cistern right now.” (The Coles did drill a well, but have not needed it in three years.)

Mr. Cole rejected any argument that rainwater harvesting would negatively affect aquifer recharge. Mr. Cole noted that, as a national average, sixty-one percent of rainfall almost immediately returns to the atmosphere through evapotranspiration, a figure that Mr. Cole suggested was probably higher in Tucson where it is warmer and drier than average. Mr. Cole claimed that his system, which collected and used one hundred percent of the rainfall, captured water that would have returned to the atmosphere not water that would have recharged the aquifer.

Asked about the City of Tucson rainwater harvesting ordinance, Mr. Cole answered, “Well, it is definitely a step in the right direction but, as you say, it doesn’t go far enough. Why think of water usage only for outside use when, in fact, it doesn’t take much to clean it up and use it for human consumption; in fact, that water’s pretty darn clean to begin with. So, I wouldn’t draw the line in outdoor usage by any means, and they certainly don’t in Australia and elsewhere.”

Asked about the costs of his system, Mr. Cole answered, “Our builder estimates that we had to add \$35,000 to the cost of our construction loan and mortgage to pay for this. And, when you look at the locality where we are, that turns out to be a good deal. A recent estimate to pipe water up into Camino del Cerro nearby was that they were going to assess every homeowner \$50,000 to \$60,000, and they voted it down. Other people in our neighborhood whose well has given out on them pay \$7,000 a year to haul water, which means our system has paid for itself already. So, it’s more expensive than an in-town water system would be, but for off-site and out-of-grid, it’s economical. Maybe \$70 a month to change all the filters; they’re easy to get at and easy to change. One of the expenses is the ultraviolet light bulb which gets changed every year, and there are a lot of filters involved. It’s really difficult for me to get a precise figure on the filters because our well water goes through those filters, too, and it’s awful

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stuff, so it requires them to be changed far more frequently than they would be if we went 100% on the - on the cistern.”

Mr. Cole said he believed that rainwater harvesting systems could be installed on larger scales and could be tied into larger solar energy projects.

At the **September 17, 2008** meeting, Mr. Cole again stated that we need a way to capture the sixty-one percent of rainfall that evaporates away and put it to use.

At the **October 15, 2008** meeting, Mr. Cole objected to what he labeled “some misleading information on cost of rainwater harvesting (that) was presented” by Tucson Water staff. Mr. Cole stated, “In answering a question from the audience on October 2nd , Mr. Avery (of Tucson Water) compared the cost of our residential rainwater harvesting system to the \$20 or \$25 average household’s monthly water bill. He was essentially comparing the cost of apples and oranges because ... One, our system was built in a remote, semi-remote location, with no other development occurring at the time. So, we had no options for cost sharing ... Two, mortgage estimates for our costs were based on year 2003 costs, but the Tucson Water infrastructure was priced decades ago ... (three) the monthly water bill stated for Tucsonans does not does not accurately reflect what citizens are paying for their water.”

Mr. Cole argued that, “For our system, the reasonable comparison would be with the estimated costs the Pima County Board of Supervisors obtained a year or so ago for possibly extending water service up Camino Del Cerro, the next canyon to the north of us. If the Board had not voted that down, they would have assessed each household at least \$50,000 to \$60,000, plus a connection fee, plus a monthly water fee. This cost would have been far more expensive than our system, and ours provides outstanding water quality.”

Mr. Cole further argued, “In addition, Mr. Avery’s use of the \$20 to \$25 average water bill per month in Tucson does not reflect properly what people are actually paying for water.” Mr. Cole related information from Tucson Water staff on “how much people are paying for bottled water,” which revealed that “a survey was conducted about two years ago and, if he recalled correctly, people were paying \$28 to \$30 a month for bottled water. This would bring the average monthly water cost to \$50 per household, if accurate, not \$20 or \$25.”

Mr. Cole closed with, “In considering such things as untapped water sources, innovative planning, and extending new water service to areas that will include shared costs among many water users, futuristic planning should include thinking out of the box, being entirely objective without bias, and costs analyses for possible alternative systems must include appropriate comparisons, not the apples versus oranges phenomenon.”

Phase 1.3 ***Sustainability Discussions***

At the **October 29, 2008** meeting, Mr. Cole stated that “a water delivery system ... is sustainable if the following six criteria apply: **“One**, it functions essentially without significant consumption of nonrenewable resources; **two**, it is essentially pollution-free in all aspects of its operations and has no significant negative impacts on the environment; **three**, it is affordable by those who must pay for it without risk of bankrupting anybody or forcing anyone out of their home, including our less-fortunate citizens; **four**, it fulfills all of its intended purposes, including all quality control parameters; **five**, it works efficiently and cost-effectively for its intended lifetime, without significant unanticipated maintenance problems or cost overruns; and, **six**, it does not allow for temporary over-expansion of human population beyond the carrying capacity of the environment, only to be followed by a "Catastrophic Collapse" as has occurred with past civilizations as discussed by Jared Diamond in his book of that title.”

Mr. Cole closed with an analogy of the “history of life” on “planet earth” as occurring within one 24-hour day. “Planet Earth has existed for more than 4.6 billion years. Life, in one form or another, has been evolving for more than 3-1/2 billion years. To set this to a timescale to which we can relate, consider the 3-1/2 billion year history of life, as occurring within one 24-hour day. The first living cells appeared at a fraction of a second after midnight. The first terrestrial animals with a backbone appeared about 360 million years ago, or about 9:32 p.m. The clock has ticked away past noon and dinnertime, and people aren’t here yet. These are simple biological and geological facts. On this timescale, a dinosaur, of one kind or another, existed for over an hour of life’s history, between 10:28 and 11:31 p.m. Our species, human beings, have been here for only the last 12.4 seconds before midnight. And the industrial revolution, with all its consequences for the global environment has raced through the last 1/200th of a second. If high-quality human life is going to be sustainable for the first hour after this new midnight, we must get our act together, and this is your opportunity to influence the process.”

Phase 2.1 ***Technical Presentations***

At the **June 25, 2009** meeting, Mr. Cole asked about the number of people our current water supplies would support; stating that we do not want to go beyond our means; and argued we need to use less than our supplies would support to provide a buffer for climate change. Mr. Cole raised concern about solid waste, how will we dispose of it, and whether it will contaminate groundwater. Mr. Cole urged the committee to interact with landfill design experts.

At the **August 20, 2009** meeting, Mr. Cole raised concerns about whether new treatment systems for water and wastewater will eliminate pharmaceuticals and herbicides.

Phase 2.2 ***Report Writing***

Mr. Cole submitted two written comments during Phase 2.2. In **an undated e-mail**, Mr. Cole said that we need “a new paradigm that does not rely on perpetual growth,” and that after the new paradigm is accomplished “then future citizens can reconsider the value of additional growth.” Mr. Cole identified two “important parameters” of water sustainability, that water is available at “a reasonable cost” and with due recognition of “the uncertainty of the future sustainability of that supply.” Mr. Coles argued that these two parameters require that a “sustainable population size, or somewhat less to allow

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for uncertainties and errors, should be treated as a level beyond which we cannot expect to expand successfully. With the time we have between now and that future date when the carrying capacity is reached, we should plan to revise our economy, laws and mind-sets to the realities of the future.” Mr. Cole worried that this last point “is lost in the massiveness of the report.”

In written comments dated **November 19, 2009**, Mr. Cole identified two important subjects that he did not see in the draft report:

1. The report contained no recommendations on making permanent the interim policy of not extending new water service outside of the current obligated to serve area. Mr. Cole argued, “with the huge obligated to serve area yet to be developed; uncertainties of future supplies; limits of present supply; and the upcoming Phase III including other cities and towns with growth plans coming into the picture, the current restrictions make sense.” On this subject, Mr. Cole objected to Recommendation 3.2 under Goal 3 as being “entirely biased towards extending the ‘obligated service area’ as if there is no other alternative.”

2. Mr. Cole faulted the final report not adequately addressing “water quality, testing and treating, considering emerging contaminants.” Mr. Cole argued that Tucson Water should employ “personnel responsible for staying abreast of the issues, new pollutants, especially locally ... and be ready to make recommendations.” Mr. Cole worried that if we wait for USEPA to set standards, “considerable damage can already be done.”

Phase 2.3 Public Hearings

On **January 29, 2010**, Mr. Cole wrote to Mayor and Council urging them to “accept that Phase II report and move forward with implementation.” Mr. Cole predicted that “if we delay implementation of some of the items in the report for fifteen 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 occur.” Mr. Cole Tucson faced a choice of being either “another example of a city that collapsed or it could be seen as an outstanding example of appropriate planning with vision.”

Mr. Cole identified four “science-backed points in the report’ as 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.”

6.3.2 Nancy Freeman, Groundwater Awareness League

Nancy Freeman attended twelve public meetings and submitted ten comments, seven oral and three written. At the request of staff and committee, Ms. Freeman made a technical presentation on stormwater capture.

Phase 1.2 – Technical Presentations

At the **June 25, 2008** presentations by ADWR and CAP, Ms. Freeman asked about Augusta Resources getting permits for additional water for the Rosemont Mine; about the grade of reclaimed water being used for golf course, schools, and parks; and about Tucson’s share of Arizona Water Bank Authority supplies.

At the **September 10, 2008** meeting, Ms Freeman urged expansion of the study area for the Joint Study to look at the larger region, inclusive of all of the watersheds in the region.

At the **October 15, 2008** public meeting, Ms. Freeman voiced concerns about the Central Arizona Water Replenishment District (CAGR) issuing 100-year certificates of water supply for twenty years of supply. Ms. Freeman asked whether CAGR had a cap on the price customers would pay for its water.

At the October 15, 2008 meeting, Ms. Freeman also made a technical presentation on stormwater recharge, at the invitation of the committee and staff. Ms. Freeman noted ADWR’s claim of a 40,000 acre-foot water deficit per year in the Green Valley/Sahuarita Area. Ms. Freeman showed slides of stormwater runoff damages in the area, emphasizing she was not talking “about rainwater harvesting. This is serious stormwater and flooding.” and argued that if we decide to treat stormwater as an asset rather than simply as a problem to be solved, then, as one of her slides said – “You want water – We’ve got water!”

Ms. Freeman presented examples of multi-purpose stormwater retention/detention basins that provide attenuation of flood flows well as recharge stormwater and recreational opportunities when it is not flooding. Ms. Freeman presented examples from Colorado, California, New Mexico, and in Arizona from Chandler and Tucson (Kino Environmental Restoration Project), and from Australia (who Ms. Freeman said “got there before we did when it came to low water supplies”).

Ms. Freeman told the committee that Chandler has 3,763 dry wells, at a cost of between \$10,000 and \$15,000 each, that are producing 3,600 to 4,600 acre-feet (of recharge per year), and this is what they call "incidental."

Ms. Freeman pointed out leaving floodplains natural can provide the same benefits as retention/detention basins. She quoted approvingly from the Douglas County Colorado Storm Water Management website that “nature has claimed a prescriptive easement for floods *via* its floodplains,” (which) provide many benefits to the citizens of the County, including natural attenuation of flood peaks, water quality enhancement, groundwater recharge, wildlife habitat, and movement corridors for wildlife, and opportunities for recreation.”

Ms. Freeman recommended, “So, I want to think of this storm water as an asset and that we can use as recharge in some areas, and recharge the water where it is instead of moving it around and paying for a lot of infrastructure.

Phase 1.3 October 29, 2008 Sustainability Discussion

Ms. Freeman submitted written comments that she delivered orally at the **October 29, 2008** sustainability discussion. Ms. Freeman defined sustainability as “living with our local resources. It means thinking of others. It means thinking of the future. It means thinking of the environment. In fact, it means thinking.”

Ms. Freeman argued that with the 1980 Groundwater Management Act, “our Arizona legislators set up a system that makes sustainability impossible in municipalities,” advancing two arguments to support her assertion.

1. The 1980 act “grandfathered a 2.5 million acre foot in groundwater pumping in central Arizona,” benefitting only “the cotton growers, the alfalfa growers and the mining companies,” while forcing municipalities to seek imported Central Arizona Project water. Ms. Freeman maintained that, contrary to the original promotion the Central Arizona, “the billion dollar CAP system was meant for municipal use, under the guise of agriculture use.” For Ms. Freeman, the CAP was “paid for by American taxpayers and repaid by Arizona taxpayers,” who are getting a bad deal because many “will never receive any benefit. As a matter of fact, it will be detrimental to those living on the river to see it disappear. Just think, Yuma used to be a sea port.”

In the meantime, agriculture and mining have enjoyed access to “that 2.5 million acre foot deficit,” which cumulates to “70 million acre feet of water” (28 years since 1980 X 2.5 million acre feet/year) or “enough to water the present population and agriculture use of Tucson, using 300,000 acre feet for 233 years.”

2. In 1995, the legislature “created the Groundwater Replenishment District and put it under CAP authority.” To Ms. Freeman, the Legislature created GRD because “developers pressured them to subsidize development.” Ms. Freeman related, “The Groundwater Code stipulated that there had to be replenishment ... but the CAP pipeline was not available to replenish in many regions, it was crippling building in certain areas, especially those without water.” The GRD was to handle those situations, but to Ms. Freeman the outcome has been “now builders could build in south Pima County and replenish in north Pima County with an unknown supply of water.”

Ms. Freeman argued GRD “are the ones who need to desalinate water in the Sea of Cortex with total disregard to what a desalinization plant will do to the sustainability of that region.” Ms. Freeman set the cost of a desalinization plant at \$1 billion and asked, “Who will pay for the price?” Ms. Freeman predicted those paying not be “new water users,” but instead “all the water users in the water provider district will pay,” and will “affectively be subsidizing new growth.”

Ms. Freeman recommended, “So, the first step of living within our means with the limitations imposed on us by importing CAP would be to eliminate the Groundwater Replenishment District, which was created by and for the sake of new development. The second step would be to capture our stormwater.”

Phase 1.4 Report Writing

At the **December 13, 2008** meeting, Ms. Freeman commented that there is a lot of water ruining public property in Pima County and that recharge basins need to be considered.

Phase 2.1 Technical Presentations

At the **May 21, 2009** meeting, Mr. Freeman commented, “Now what I thought was missing in the report was a comparison of how much water is commercial, apartment; to break that out because we do know a majority of the water does go for outdoor use, and so how much of that does go to commercial and business? Because, from my eyesight, I see it is a lot of the commercial that have the lawn; that have the spraying and the sprinklers. I was at a resort and I swear they were sprinkling the grass every day. I was just, you know, obviously shocked so - because that’s not necessary. ... ADWR has a very good chart; they have how much water usage each plant uses; it’s already all figured out and so you just have to stop the sales at the nursery; that these high-water-use plants are not to be sold. “

Later in the meeting, Ms. Freeman asked, “I want to question the Flood Control (District), when they are going to stop permitting new development in Pima County in sheet floodplains without any stormwater management facilities, and absolutely no study or concerns for impacts downstream, and also the permitting of roads. For example, in Davidson Canyon without any impact, hydrological impact as far as flooding at all. And I was going to mention the Sahuarita Highlands and the San Pedro Estates and the Tierra Linda Nueva Subdivisions all permitted after 2002 in sheet floodplains and Tierra Linda Nueva has a corner of FEMA on it and absolutely no stormwater management facility whatsoever and it’s - it is definitely causing some problems.”

Phase 2.2 Report Writing

Ms. Freeman submitted written comments by e-mail on **December 1, 2009**. In her submittal, Ms Freeman made four comments.

1. Sustainable water supply for the region

Ms. Freeman raised concerns about “misleading” information she believes Tucson Water is disseminating about rising groundwater levels. Ms. Freeman accepted that recharge of CAP water in the Avra Valley basin causes rising groundwater levels, but noted that, since the Avra Valley and Tucson basins are not connected and act independently of each other, recharge in the former “will never balance out any pumping or overdraft” in the latter. Ms. Freeman rejected Tucson Water’s claims of replacing “all of their groundwater pumping with direct delivery from the Avra Valley recharge basin ... because a number of the Tucson Water wells that are in outlying areas and not connected to the central system at all.”

Ms. Freeman claimed, “the numbers you have given in your report are not the current numbers, but future goals. When will those goals be reached? In the meantime, what is the amount of groundwater being pumped now through 2025 in the Tucson basin? How many acre-feet will continue to be pumped outside the central region? How many Tucson Water wells are not connected to the central pipeline, therefore will always be dependent on groundwater? How long will the Tucson Basin sustain this overdraft?” Ms. Freeman noted, “Houghton/southlands region is being considered for future development, yet there are no renewable supplies in that region at all.”

Referring to the goal in the report about “growth paying for itself,” Ms. Freeman argued, “The CAGR and the ADD water project make this goal totally impossible.” One problem Ms. Freeman identified is that “the CAGR through ADD (Water Program) is looking at very expensive ways to get more water.” Ms. Freeman noted that CAGR has a low priority to CAP water and that in 2009 “for the first time all excess CAP water was taken, making the CAGR water supply precarious. They are projecting they will have CAP water for 20 years, but only have been guaranteed excess water for 5 years. At the present time, the fee for CAP excess water is \$133 per acre foot,” but “the cost of water projected for the proposed ADD projects is some \$2,000 per acre foot,” (so that) “the price of water will be going up and it will be paid for by the current water users.”

A second ADD Water concern for Ms. Freeman was “the idea ... to pump out three aquifers: Butler Valley, Harquahala and McMullen Valley for ‘new’ water for the CAP pipeline. I have no information on the habitat of plant, bird and animal life these aquifers are supporting,” so “This study needs to be done before these aquifers are ‘mined’ dry to serve water in Tucson.”

Finally, Ms. Freeman questioned assertions in the report about “the large unincorporated area in Pima County that does not generate the revenue that incorporated areas do.” Ms. Freeman disputed claims in the report such as, “A sustainable water future is one in which we move beyond annexation debates and instead focus on fiscal sustainability for our entire community.” Ms. Freeman questioned the claim that “fiscal sustainability ... addresses the adequacy of revenues collected to provide necessary public services, fairness and equity related to who pays for services, who receives services, and the level of investment we are making throughout the community.” Ms. Freeman said, “This scenario is not necessarily the case,” noting that while “Green Valley property owners pay in some \$32 to 34 million in

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Pima County property taxes each year,” it is “impossible to get any numbers out of the county as to a dollar amount of services Green Valley is getting for their money.” Ms. Freeman argued that “the money often goes to a pool that can finance projects within Tucson City limits,” and that “the rift between where County taxes are collected and where the money is spent is worth looking into.” Ms. Freeman noted, “Flood Control District monies do not go to Green Valley, or any of the regions in the southeast that are troubled with horrific flooding.”

2. Effective use of recycled water on turf

Referring to the goal to “increase the use of reclaimed or recycled water on turf irrigation to substitute for groundwater use,” Ms. Freeman argued, “there should be satellite wastewater treatment plants, placed where there are customers for effluent.” Ms. Freeman argued that satellite treatment facilities would solve the problem “that it is too expensive to pump the effluent up from Roger or Ina Road treatment plants to the places where it can be used.”

Ms. Freeman cited the “Vail region, which for years has been piping its wastewater over to Roger Rd., never to be seen again by the Vail residents,” a “particularly egregious (practice) when noted that there is no recharge available for groundwater pumping in the Vail region at all.” Ms. Freeman maintained while it was “appropriate” to “collect all the wastewater downhill at Roger Road and Ina Road,” when Tucson was smaller, since “Tucson has expanded ... Pima County Wastewater has not kept up with the times and insists on doing things the way they always have.”

Ms. Freeman noted that “only 17 of the 63 golf courses in Pima County were using effluent in 2009,” which she declared unacceptable. Ms. Freeman rejected arguments that there is not the money to retrofit pipes and construct new conveyance facilities, but the county has \$750 million to spend “for new multi-million treatment dollar treatment plants” and on a “pipeline ... to move excess effluent from one plant to another.” Ms. Freeman saw the need for “reorganizing priorities according to new realities.”

Ms. Freeman related a history of the Green Valley Wastewater Treatment Plant, when it was out of compliance with ADEQ specifications.

“Instead of providing funds for repairing the plant, Pima County negotiated a deal with the Quail Creek (in incorporated Sahuarita) developer to bring the plant up to standard in exchange for the wastewater. This deal was made in spite of the fact that there is a sizeable population in Green Valley that had been paying wastewater fees for years, and Pima County property taxes and has eight golf courses on which the effluent could be used.

“Pima County did not even require that Quail Creek use the wastewater directly, so Quail Creek created recharge basins at the Green Valley treatment plant, and continues to pump groundwater for their extensive golf greens, and landscaping that includes turf and water features.”

3. Stormwater management

Ms. Freedman asserted, “I simply do not agree with” the statement that “There is too much water,” as a response to a question of “why stormwater could not be managed upstream.” Ms. Freeman noted, “many cities, including Phoenix and Denver, have reservoirs on every side of town, which serve as wonderful recreation facilities.” Furthermore, the “insinuation that there is not enough money does not hold up since the Flood Control District never spends its entire budget even though it has money for contracts with consultants for studies that are never followed up on. Furthermore, note the preponderance of Flood Control studies and projects (are) within the Tucson City limits.”

Ms. Freeman took issue with directing growth to suitable growth areas. She said, “I challenge the suitability of the Houghton corridor and proposed development along Sahuarita Rd. unless extensive infrastructure is completed to capture the stormwater and put it to some good use, such as dry wells to assist it to augment groundwater levels, restoring and creating riparian areas, or slowing it for use on existing plant life. To put in the flood control facilities and infrastructure first is an absolute necessity.”

Ms. Freeman questioned the validity of the many studies done by the Flood Control District, suggesting the District spend this money on actual structural project. Ms. Freeman noted the District only identified “four infrastructure projects, either in process or completed,” but “no timeline is given as is done in the studies page.”

Ms. Freeman cited the “Avis Acres region, which has a horrific sheet flow” as an example of “the stories and the hardships caused by Pima County Development Services and Pima County Flood Control” by allowing developments and not providing adequate stormwater management. Ms. Freeman stated, “The County is betraying its citizens, many of whom are living on family property bought in the 1970s, with permitting of properties in these flood zones with no flood abatement infrastructure at all.” Ms. Freeman noted that Pima County Transportation also contributes to these flooding problems.

4. Placement of new growth

Ms. Freeman maintained, “The citizens were misled on water issues when the Comprehensive Plan was formulated.” “Using the Kolb Rd – Sahuarita Rd. region as an example,” Ms. Freeman asserted that when “residents were told that Tucson Water was going to provide water,” they were not told that Tucson Water would “pump from a supply well on-half miles away, and if that well wasn’t enough, Tucson Water would drill another one.” Ms. Freeman argued that in this region Tucson Water service “would be a further encroachment into the rural residents, since there is a new state statute that if there is a water company to hook on to the residents are obliged to do so.” Ms. Freeman argued that “the south and southeast regions do not have any renewable supplies available,” and that “Flood Control insists that capturing the stormwater will not augment groundwater levels, but they have no figures to show this to be a fact.” Finally, Ms. Freeman referred to the “2006 ADWR Report Regional Groundwater Flow Model of the Tucson Active Management Area,” which showed that “groundwater levels are predicted to decline considerably in the ‘southlands’ and surrounding areas.”

Phase 2.3 Public Hearings

On **February 3, 2010**, Ms. Freeman sent an e-mail that she described as a “summary of the key points” from her December 1, 2009 comments. Ms. Freeman identified what she saw as shortcomings in the Phase II report.

1. “Pima County Wastewater creates disconnects.” Pima County development practices result in the proliferation of small private water companies that ship their wastewater to Roger Road and Ina Road for treatment, but the effluent is not available to the people who produced it. Ms. Freeman acknowledges the County faces a mandate to upgrade treatment, but argued that no one mandated that the County “build the biggest treatment plants possible.”

2. “Flood Control refuses to conserve and use stormwater.” Ms. Freeman notes that Riverside County has been conserving and using stormwater “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 water for beneficial use.’”

3. “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?” Ms. Freeman noted that Tucson Water’s claims of rising groundwater water levels apply only “in central Tucson where they stopped pumping and in Avra Valley where they are recharging CAP water. ... 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?”

4. “Corporation Commission – Obstacle to sound water management in Pima County.” Ms. Freeman asserted that Arizona Corporation Commission “rules mandate that they cannot allow a private water company to collect funds for needed infrastructure.” Ms. Freeman saw these policies as prohibiting two Green Valley water companies that bought CAP allocations in 1985 from charging a fee to build a pipe to convey the CAP water to the area.

5. “New development pays Impact Fees in Maricopa County.” Ms. Freeman asserted that municipalities in Maricopa County assess “water resources acquisition fees” of “up to \$3,000 per home, but not to exceed 1% of the value of the home.” Ms. Freeman stated, “This practice could help the realistic concern among Tucsonans for paying for new development.”

6.3.3 Clyde Stagner

Mr. Stagner engaged heavily with the Joint Study, primarily during Phase 1.2 – Technical Presentation, between mid-June and the third week of September 2008. Mr. Stagner attended seven public meetings and submitted eighteen comments, seven oral and eleven written. Mr. Stagner focused primarily on water quality issues.

Phase 1.2 Technical Presentations

Mr. Stagner submitted written comments on **June 11, 2008**. Mr. Stagner quoted definitions of the word “sustain” from Webster’s 2000 edition, such as “bear the weight of, bear a burden, and endure without yielding.” Whatever the definition used, Mr. Stagner asks “For Whom?” is sustainability sought and suggested “an answer other than a citizen, or citizens of Tucson ... represent vested interests anticipating profit from growth.”

Mr. Stagner complained about Tucson’s new gray water ordinance, which he criticized as the “elected leaders of Tucson (claiming) to know what the dictatorial best is for the disorganized citizens of Tucson.” Mr. Stagner argued that gray water systems should be required to have a “T” connection, giving citizens a choice, a choice that affects “body and clothing, decontamination in the case of radioactivity from an accident or terrorist activity.” Mr. Stagner stated, “The present flow of gray water goes to Pima County Wastewater Management where it can be converted to irrigational effluent. Why deviate from this proven workable system and its infrastructure?”

In comments on **June 25, 2008**, Mr. Stagner made two recommendations for achieving greater water efficiency for in-house use: (1) shorten the pipe between the showerhead and the hot water tank; and (2) lower the preset temperature on hot water heaters to 104 degrees.

Mr. Stagner’s **June 30, 2008** comment raised three issues with “Wasted Bottled Water”:

1. Mr. Stagner noted that Tucson Water estimates 60% to 65% of its customers do not drink the tap water and asks “Why” they do so.
2. Mr. Stagner stated, “Twice as much water is used in the production of a bottle of water than the bottle contains.” Assuming this ratio of water used to water bottled and estimates of per capita consumption of bottled water in 2005, Mr. Stagner calculated that 83.26 acre-feet of water was wasted to provide Tucson residents with bottled water in that year.
3. Mr. Stagner argued that degrading water quality can cause consumers to install reverse osmosis systems, which “recover only 5 to 15% of the water entering the system; the remainder is discharged as wastewater. An RO unit delivering 5 gallons of treated water per day may discharge 40 to 90 gallons of wastewater per day.”

In comments submitted on **July 2, 2008**, Mr. Stagner raised two water quality issues:

1. Mr. Stagner noted that EPA set a “Secondary Maximum Level” standard of 500mg/L for total dissolved solids (TDS). Mr. Stagner pointed out that 2006 water quality sampling data shows 663 mg/L at the San Xavier pumping plant and noted five monthly readings exceeded 700 mg/L. Mr. Stagner claimed that “Water safety and water quality reports from Phoenix to its citizens included incorrect or misleading data – or emitted it entirely(Ref: National Resources Defense Council www.tapintoquality.com).” Mr. Stagner wrote, “Designation of maximum allowable concentrations of

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TDS in public drinking water is the responsibility of elected authorities. Since the State of Arizona has not acted, the responsibility lies with the Tucson City Council to designate by city code a maximum allowable concentration of TDS in the potable water processed by the Tucson Water Department.

2. Mr. Stagner pointed to the salt in CAP water, writing “Salt water reduces life of household appliances such as a water heater, evaporative cooler, faucets, garbage disposal, dishwasher and clothes washer. In 1997, the Colorado River water brought 1.1 million tons of salt with the estimated 1.4 million acre feet of Colorado River water imported into Central Arizona. For Tucson Water’s annual CAP import of 148,420 acre feet, a total of 116,616 tons of salt would accompany the water into Tucson.”

On **July 21, 2008**, Mr. Stagner addressed gray water. Mr. Stagner cited data in a World Health Organization report (*Overview of Graywater Management: Health Considerations*), which he argued, “demonstrate that graywater could pose a potential health risk to people coming into contact with it ... although there are no recorded incidents of serious effects on human health from the use of graywater.” Mr. Stagner presents a list of “risk minimization” strategies for graywater systems:

1. No direct contact with vegetables or other edible plants; irrigation of fruit permitted if there is no direct contact;
2. Post warnings that graywater is being used and warn against contact;
3. No storage of graywater without treatment and disinfection;
4. Avoid leeching of the graywater into sandy soil or gravel;
5. Require manufactures of graywater systems to demonstrate long-term operation without blockage (study the impacts of washing machine lint and TDS);
6. Limit graywater use to quantities that would be taken up by plants and the soil, with no flow to groundwater;
7. Maintain at least 6 feet separation between a Graywater system and any pedestrian path or recreation area; and,
8. Limit use of graywater irrigation of ornamental fruit trees or fodder crops by the following tests and frequencies:

Biological Oxygen Demand (5)	<= 240 mg/L	Monthly
Total Dissolved Solids	<= 140 mg/L	Monthly
Fecal Coliform cfu 100	<= 1000 mL	Twice Monthly

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At the **July 23, 2008** meeting, Mr. Stagner requested, “that Tucson Water determine the quality of the water that you are going to be distributing that would go into all of this magnitude of spending ... The World Health Organization manual for gray water cites 141 maximum milligrams per liter for TDS, (but Tucson Water’s) water average, the last month to everybody in this city was 377. You haven’t come up with a TDS in milligrams per liter. You are distributing water which exceeds the MCLG for radon by the United States Protective Agency, as established by the National Academy of Sciences. Tucson Water System is ignoring the radon. You are not measuring the radioactivity in the Colorado River. In short, you don’t know how much water you’re going to be able to put out when things come down a few years from now, until you come up with some standards and pass some laws here in the Codes of the City of Tucson.”

On **August 3, 2008**, Mr. Stagner discussed the effects of evaporation and potential effects of graywater use on Tucson Water’s assured water supply. Mr. Stagner noted that Tucson Water’s annual water availability is 218,500 acre-feet and suggested that Tucson Water adopt as policy that “sustainability involves keeping the 218,500 acre-feet per year available for use.” Judged against this standard, Mr. Stagner argued, “Evaporation is the primary concern effecting the increase or decrease of” that quantity of available water.

Mr. Stagner highlighted conflicting objectives between policies that promote rainwater harvesting and graywater use. Mr. Stagner observed, “rainwater harvesting and collected water can increase the total acre-feet per year.” Mr. Stagner observed, however, “Graywater use will reduce the total available acre-feet per year.” Mr. Stagner estimated that Tucson’s graywater ordinance endorsed a “possible maximum graywater production” that would result in water losses through evapotranspiration of 28,890 acre-feet in 2008 and 32,230 acre-feet in 2050.

Mr. Stagner argued that the available water supply of 218,500 acre-feet was a constant and any losses of useable available water due to graywater systems as limitations on the population using such systems. Mr. Stagner asked, “There are mitigating solutions other than plumbing involving responsibility and accountability. What scientific evidence does the City of Town and Pima County have for the avoidance of all known best method disinfection technology for wastewater prior to discharge, which San Diego and Los Angeles are considering?”

On **August 4, 2008**, Mr. Stagner described a path of wastewater flow that started in Las Vegas and Henderson, Nevada, returning to Lake Mead, from where it flows into the Colorado River, enters the Central Arizona Project and eventually reaches Tucson. Mr. Stagner acknowledged, “Tucson does not drink pure Las Vegas waste,”, but asserted that, nonetheless, “Tucson’s CAP contains their waste water (diluted) and Tucson Water’s CAP blend contains their waste water (further diluted).”

Mr. Stagner warned perchlorate levels in Lake Mead, referring to a “CAP Canal Water Quality report for the San Xavier pumping Plant 2006 (that) cites a May monitoring result of 2.3 ug/L of Perchlorate. In Lake Mead female fish are becoming male due to perchlorate.” monitoring showing

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perchlorate in Henderson's wastewater and a CAP water quality report showing perchlorate levels in May 2006 at the San Xavier pumping plant of 2.3 ug/L.

At the **August 13, 2008** meeting, Mr. Stagner made three comments:

1. Mr. Stagner asked why did Pima County pay for ISO certification and suggested that the county look into the company providing certification.
2. Advocating for balancing population and water supply, Mr. Stagner recommended that policy makers calculate and add together volumes of water lost to evaporation and volumes of water allocated for critical needs and subtract the resulting sum of water from our existing water portfolio to determine a sustainable water plan; and,
3. Mr. Stagner repeated his call for an independent water quality department.

During the week of **August 25, 2008**, Mr. Stagner submitted five emails. Mr. Stagner argued that "a sustainability of total annual input water to Tucson Water providing for growth must consider the ultimate fate of two contaminants: total dissolved solids and perchlorate (pharmaceuticals and endocrine disrupters are being evaluated.)"

Mr. Stagner described "a flow path of perchlorate" from Las Vegas to Tucson, as described above. Wastewater from Las Vegas and Henderson is returned to Lake Mead, from where it is included in the water discharged into the Lower Colorado River and thence to the CAP canal, to Tucson, to the county wastewater treatment plant, to the Santa Cruz River and then to the groundwater.

Mr. Stagner asserted, "the Tucson Water department is presently serving the citizens of Tucson diluted tertiary treated recharged water from Las Vegas and Lake Mead." Mr. Stagner argued for "the Avra Valley blended water" that, "Perchlorate monitoring data is needed to determine: (1) whether Tucson Water is within the USEPA reference dose of 0.7 ug/L and (2) for design and treatment requirements for removal of perchlorate from tertiary treated, recharged, potable water from Pima County wastewater effluent." Mr. Stagner argued that an independent water quality lab should conduct this monitoring.

Mr. Stagner presented data to support four conclusions:

1. "Perchlorate is flowing into Tucson's drinking water via the CAP water recharge blend at Avra Valley. The Tucson Water Dept's remediation consists only of blending with Avra Valley with groundwater. Tucson Water Dept has stated that it will increase the % of CAP water in the blend which will increase the perchlorate level in Tucson drinking water.
2. "With a continuation of the discharge of 45 million gallons of effluent, as presently treated, into the Santa Cruz River, the County Waste Water Treatment Plant effluent flow "shall eventually contaminate the Ak-Chin reservation with perchlorate – an invasion."

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3. “In Tucson, the 2001 daily intake of perchlorate in Tucson exceeds the RfD standards for infants and six year olds exceeds the ESEPA RfD. The 2008 Las Vegas Water Quality Report perchlorate level causes the infant dose to exceed the USEPA RfD. The citizens of Tucson are drinking diluted waste water from Las Vegas, Nevada.”

4. “An independent Tucson Water Quality Department (or a combined Tucson Water/County Regional Wastewater Reclamation Department) responsible for drinking water (and waste water) monitoring, sampling, measuring, reporting, publishing, analysis and assessment separated from the quantity operator is indicated.”

In his comments during this week, Mr. Stagner disagreed with how Tucson Water estimated assured water supply. For example, Mr. Stagner objected that Tucson Water did not subtract effluent discharged into the Santa Cruz River or lost to evaporation and to other causes before measuring water supplies available for future use. Mr. Stagner faulted Tucson Water for an absence of data necessary to accurately calculate annual credits and debits in a sustainability analysis. Mr. Stagner asked for data for 2007 on potable water and wastewater effluent, in gallons, supplied by Tucson Water to commercial customers, industrial customers, government customers, and other customers.

Mr. Stagner raised again the magnitude of evaporation losses, asking how Tucson Water accounted for these losses in determining Tucson Water’s annual water availability. Mr. Stagner asked for data on annual evaporative losses from recharge basins, open water storage areas, recreational ponds and lakes, and other “wetted” areas.

At the **September 3, 2008** meeting, Mr. Stagner stated that, while there are psychological benefits for people living together, Tucson should not rely on high rises and gave negative examples of high densities such as the Tokyo fire bombing, the Warsaw ghetto, and the London bombing.

In comments dated **September 6, 2008**, Mr. Stagner raised objections to comments from the June 11, 2008 meeting stating, “contaminants in surface water are eliminated in the recharge process.” Mr. Stagner argued that this statement is not true of TDS and perchlorate. Mr. Stagner again advocated for an independent water quality department.

At the **September 10, 2008** meeting, Mr. Stagner made three points:

1. Mr. Stagner thanked the U.S. Geological Service for the data and reports they make available and then asked why there were no pipes to capture the water that drips from his air conditioner;
2. Mr. Stagner noted that there were effeminate fish in Lake Mead and questioned contaminants in our effluent; and,
3. Mr. Stagner noted we are drinking polluted Las Vegas water and asked who are the “science caregivers” in Tucson.

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On **September 12, 2008**, Mr. Stagner raised concerns about pharmaceuticals in drinking water. Mr. Stagner cited USEPA regulations that he maintains “requires watershed pollutants to be monitored in the absence of a USEPA established MCL standard.” Mr. Stagner cited the Clean Colorado River Alliance, which researched Colorado River water quality and found the “following pollutants of concern”:

1. Nutrients (nitrogen, nitrates, ammonia, phosphorus);
2. Metals (chromium, uranium, copper, mercury, arsenic);
3. Endocrine disrupters;
4. Perchlorate;
5. Bacteria/pathogens;
6. Salinity/total dissolved solids; and,
7. Sediment/turbidity

Mr. Stagner asked, “What has Tucson Water Department done about these pollutants? Is ‘There are no MCLs’ an answer? Is ‘AZDEQ’s responsibility’ an answer when Tucson Water is responsible for the potable water for Tucson citizens?”

Referring to contaminants not completely removed from Los Vegas wastewater returned to Lake Mead, Mr. Stagner asked, “Why doesn’t Tucson Water monitor the Avra Valley groundwater-CAP drinking water for these contaminants? Does CAWCD’s monitoring requirements ... replace any monitoring deemed necessary by Tucson Water?”

Mr. Stagner advocated for an independent water quality department.

In a **September 17, 2008** comment, Mr. Stagner again claimed that we “are drinking diluted pollutant contaminated Las Vegas wastewater ... Monitoring is necessary... Bottled water is not the answer.”

In comments dated **September 20, 2008**, Mr. Stagner presented arguments in favor of the use of “atmospheric water generators”.

At the **September 24, 2008** meeting, Mr. Stagner requested more transparency from Tucson Water and Pima County Regional Wastewater Reclamation and argued that both needed a new mindset that valued more data and an adaptive management strategy.

Phase 2.1 Technical Presentations

On **May 14, 2009**, Mr. Stagner commented on a contract Southern Arizona Painting had for “pressure washing with potable water the exterior surfaces (of) 108 townhomes prior to painting each townhome.” Mr. Stagner saw this method of pressure washing as wasteful of potable water and, with the level of TDS in the local water, suggested it “may increase exterior surface contamination rather than remove it.” If pressure washing is required, Mr. Stagner recommended, “a means for using Class A effluent should be engineered and required for use.” Mr. Stagner said a “better alternative would be the development of an alternative engineering means for cleansing exterior vertical surfaces.” Finally, Mr. Stagner pointed to one townhome in the area that “has been repainted twice without prepainting pressure washing – the last time over ten years ago.”

6.3.4 Margot Garcia

Ms. Garcia engaged extensively with the Joint Study, attending twelve public meetings and submitting eleven comments, nine oral and two written. Ms. Garcia focused on process issues (managing public input, linking facts and assumptions) and supporting the Draft Phase II Report.

(In addition to this personal engagement, at the request of staff and the committee, Ms. Garcia, and Dale Keyes, monitored and wrote a report on the community sustainability discussions of October 22 and October 29, 2008

Phase 1.1 Getting Started

On **April 22, 2008**, Ms. Garcia noted that she had “participated in a number of different studies and collaborative efforts (that have) some important lessons that would help your process of trying to negotiate the political and technical issues of regional water planning.” Using *Water Quality 2000* as an example of an “organizational structure that permitted a consensus report (from) some 100 organizations that participated,” Ms. Garcia shared two lessons from her experience:

1. “The key to balancing widely opposing views was the use of professional organizations (American Planning Association, American Institute of Chemical Engineers, etc.)” (who were able to use) “Knowledge and professional expertise to keep the many different viewpoints from making extreme statements. The people representing professional organizations could say that an extreme viewpoint was just that, not the current state of knowledge in the profession. Such balance kept the discussion positive, and allowed for the frank exchange of views, making the assumption explicit that all sides used.”

2. Ms. Garcia noted that *Water Quality 2000* used a “professional facilitator for the discussions when there was intense negotiation.” Ms. Garcia argued that using a facilitator “has a number of benefits ... One it allows all parties to speak and does not silence the chair ... Another ... a good facilitator can listen closely to the discussion and sort out the issues in a way that people involved in the discussion usually cannot.”

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In a second e-mail dated **April 24, 2008**, Ms. Garcia suggested process improvements to enhance public participation at the meetings:

1. “Please put the tables in a V shape. The U shape means that for the audience we see just five heads – one on the end of each leg of the U and the three at the head of the table. It is impossible to see who is speaking.
2. “Please ask that the chair do a roll call of people present with the positions that have been selected to fill – i.e. County Planning and Zoning. Many of us do not know the people who are on the committee and do not know what group they represent. Alternatively, print the names and group being represented on the agenda.
3. “Please make the name plates BIG – say with four-inch letters so they can be read from the back. The current ones are hopeless.
4. “The chair is beginning to make the process a dialogue. In other words, he is feeling an obligation to comment on every statement made by a committee member. This becomes unfair to the committee members. No one else gets to comment on every statement.
5. “I know many of the people on the committee know each other and have worked together before. But the chumminess of the proceedings begins to feel like an ‘in-group’ and is very off-putting to the public who feels completely cut out.
6. “I hate 6 o’clock meetings for a number of reasons ... (a) people are at their low sugar ebb and therefore tend to be cranky and less serene ... (b) people are tired and less able to concentrate on the intellectual part of the meeting ... (c) this is the family dinner hour and so this is very anti-family ... (d) There were about half of the number of people at the 6 o’clock meeting than at the 8 o’clock Friday morning meeting. ... There is no perfect time. That is why alternating times are better.
7. “You need to take some time to establish process covenants – rules of operating, etc. The group should not assume everyone knows what they are. One of the committee members even asked for this. All professional facilitators I know would insist on beginning a process like this with at least ½ hour of time given to how the group will operate.”

At the **May 12, 2008** meeting, Ms. Garcia discussed the importance of laying out assumptions behind the facts presented to the committee, pointing that when you look at the underlying assumptions between seemingly divergent views you often find agreement.

Phase 1.2 Technical Presentations

At the **June 11, 2008** meeting, Ms. Garcia recalled an organization with the acronym M.U.M. (Metropolitan Utilities Management) and asked about its history.¹

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At the **June 25, 2008** meeting, Ms. Garcia made two comments:

1. Ms. Garcia asked the ADWR staff presenting about the proposed Rosemont Mine, what projections of water use were there and where that water might come from; and,
2. Ms. Garcia asked Regional Wastewater Reclamation staff to comment on the recent Superior Court decision declaring that the Town of Marana owns all of its own wastewater.

At the **September 3, 2008** meeting, Ms. Garcia asked whether anyone had studied what kind of economic growth would be most appropriate in Tucson, and asked for information about water use by different sectors.

Phase 2.1 Technical Presentations

At the **April 23, 2009** meeting, Ms. Garcia requested that committee alternate its meetings between morning and evenings, and that it hold meetings at a more neutral place than the Tucson Association of Realtors.

At the **June 25, 2009** meeting, Ms. Garcia said she appreciated the tremendous amount of work that went into the growth scenario modeling presented by Stantec. Ms. Garcia stated that we learn from modeling and it is very interesting to acknowledge the constraints that the Conservation land System places on us. In future modeling the impacts of other constraints should be modeled, such as a ban on how far water lines can be extended; what about the destruction of neighborhoods. Ms. Garcia noted there was a natural evolution in thinking: models give us ideas and raise questions. If we just continue with *status quo* thinking, then other people make the decisions for us.

At the **August 20, 2009** meeting, Ms. Garcia renewed her request for a change in the time and location of committee meetings.

Phase 2.3 Public Hearings

On **January 22, 2010**, Ms. Garcia wrote to the Mayor and Council, expressing her disappointment that they “failed to adopt the Phase II Report ... at its January 12, 2010 joint meeting with the Board of Supervisors.” Ms. Garcia urged Mayor and Council “to applaud the hard work of your committee, the city and county staff, and to vote to approve the report and move forward to the next phase.”

Ms. Garcia rebutted claims that the “the report of Phase II was short on facts.” Ms. Garcia noted that the Phase I report “was filled with technical information, facts about the systems as well as the regional context,” while “Phase II was an inventory of policies and values – what is important to the citizens of the Tucson basin.”

Ms. Garcia emphasized “that the oversight committee and staff went to extraordinary lengths to make the information presented and the deliberations open and transparent,” noting the use of call to the audience, videotaping of meetings, and posting of all information on the Joint Study’s web site.

Ms. Garcia stated her definition of a “sustainable community (as) one that has a vibrant economy that is sustained in the context of the natural resources that exist in the region and is ongoing for generations.” Further, “Providing sustainable supplies of water to the community into the future is a complex issue requiring balancing of human and environmental needs,” and is not “a tradeoff between the environment and humans.” Ms. Garcia noted, “How our community grows and develops influences the cost of that development,” and that “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.”

6.3.5 Dale Keyes

Mr. Keyes attended eight meetings and submitted four comments, three oral and one written. Mr. Keyes stressed process issues related to maximizing public outreach and posed questions about whether the Joint Study would incorporate issues related to drought, climate change, and limits on population growth.

(Mr. Keyes collaborated with Margot Garcia on the sustainability discussion report.)

Phase 1.1 Getting Started

At the **April 18, 2008** meeting, Mr. Keyes identified general principles of public involvement.

1. There is a spectrum of engagement, from information to consultation to collaboration. At the information end of the spectrum, one puts out information for the public to digest; solicits feedback and new ideas; and informs the public about how their input was used. Mr. Keyes noted the oversight committee has seniors, males and Anglos and suggested the committee consider adding other representative parts of the community to the committee;
2. Make a public involvement plan and continue with it through the duration of the Joint Study;
3. Hold meetings at convenient times and at locations other than downtown and to think of a variety of forums for the meetings;
4. Keep meetings structured around specific questions and issues, but be prepared for items that are not on the agenda; and,
5. Keep in mind that the public suffers from “process fatigue” from a whole series of special study groups and governmental meetings, so be prepared to explain to the public how our outreach program is different.

Phase 1.2 Technical Presentations

At the **June 25, 2008** meeting, Mr. Keyes raised two issues with ADWR staff:

1. Mr. Keyes asked, “I’m looking at your bar chart for 2025. The overdraft numbers are still significant. Is this an admission that it’s not possible to reach Safe-Yield by 2025?”
2. Later in the meeting, Ms. Keyes asked, “To what extent do your projections take into account the continuation of long-term drought, perhaps very significant drought in the southwest, and the very real possibility that the Arizona’s allocation from the Colorado River can be cut back significantly? So, would the next plan include some anticipation of droughts, or at least some uncertainty about it?”

Phase 1.4 Report Writing

Mr. Keyes submitted comments during **Phase 1.4**, Report Writing, but the date of the e-mail is unknown. In his comments, Mr. Keyes addressed six general issues relative to the Executive Summary.

1. “How much growth can we can support remains a critical question and the committee’s embrace of adaptive management is probably the best overarching response. But, you have to better address the numbers that underlie the analysis – analysis shows 1.1 million people with known supplies, but what percent of all of Pima County’s residents are served by Tucson Water and when you look at population projections in Pima County of 1.4 million to 1.7 million people “these numbers do not imply a lot of room for growth.”
2. “A second and related issue involves rainfall trends associated with climate change. The consensus among climatologists is that the SW will be getting drier as well as warmer. Rather than just calling this climate uncertainty, the likely trends should be acknowledged.
3. “A third issue involves water for environmental/ecological purposes. This is discussed generally on p. 22, but the reader isn’t provided much information on what these water demands are quantitatively. Specifically, some discussion of the degree to which current and future groundwater pumping is depleting water needed for environmental/ecological purposes would be helpful.
4. “A fourth issue is the treatment of sustainability. The report does an admirable job of capturing the public’s input and I look forward to Phase II where sustainability concepts will be brought to bear in developing policy recommendations.
5. “A fifth issue is the lack of estimates of sewage treatment capacity in terms of the number of people who can be served once the Ina and Roger plants are expanded (at least I didn’t see any numbers).
6. “Finally, I recognize that this is a Tucson/Pima County endeavor, but the study is truly regional and acknowledging the other jurisdictions and service providers is critical, even their roles are not analyzed.”

(Mr. Keyes also identified “some specific comments, mostly of an editorial nature.”)

6.3.6 Carol West

Ms. West submitted written comments in Phase 1.1; submitted oral at the October 29, 2008 Community Sustainability meeting; and made oral comments at the February 9, 2010 Mayor and Council Public Hearing, for which no documentation is available. Ms. West called for an open and transparent process and stressed the immediate need for a regional dialogue. Ms. West emphasized the region's stake in securing all of its CAP entitlements.

Phase 1.1 **Getting Started**

On **April 16, 2008**, Ms. West submitted an e-mail, in which she commented, "I am amused at the idea of 'input' to make the study process open, inclusive and transparent. Thus far it has been anything but!" Ms. West raised one question and made two suggestions:

1. Regarding the committee, Ms. West asked, "I wonder how the members of this citizen group were selected? Was there an open process where people applied, or were they selected based on any specific criteria? What is their role? Will they be objective? How will you safeguard against the subjective input from the special interests?"
2. Ms. West wrote, "The public should be aware of every meeting. And these must be posted. And the public should be welcome to attend any and all meetings. A call to the audience should be part of every session."
3. Ms. West asked, "Will there be minutes of meetings? How would the public access those? Will they be reviewed by anyone in administration or will they be allowed to stand as presented? Every meeting should be tape recorded or videoed as the true record of the meeting notices."

Ms. West closed with the admonition, "Trust, accountability and accuracy will be important components of this study. Focus should begin on how this will be achieved. It should be reviewed again and again by the citizens group to ensure that all findings are accounted for and accurately presented." The Joint Study should focus on how it will achieve these goals and review the procedures "to ensure that all findings are accounted for and accurately presented."

Phase 1.3 **Sustainability Discussion**

At the **October 29, 2008** meeting, Ms. West presented her views on sustainability. Ms. West began with a quotation from Ben Franklin ("When the well runs dry, we know the worth of water") and concluded, "that is probably where we are today." Ms. West identified a tension between (a) not being able to "scientifically tell how much groundwater we have," which leads to needing "stronger conservation and water harvesting programs" versus (b) "with less water usage, utilities sell less water and that does affect their bottom line."

Ms. West advocated for firming up and fully using our CAP allocation and other supplies, arguing, "We must import or purchase the right to use our CAP water and other supplies that are not being used. And it is equally important that we ensure that no CAP allocations in our AMA are sold to

others outside this AMA.” Ms. West noted the state drought planning requirements are dependent “upon the water supplies that a utility has and the sources of these supplies.” Applauding Tucson’s decision to take its entire CAP allocation by 2011, Ms. West said, “it is vitally important that all of that water be recharged and stored for the future.”

Ms. West stressed water is a regional issue. Ms. West said, “Instead of bickering over regional issues, we must begin to consider all water resources in the region.” Ms. West lamented, “We often fail to recognize that this region has CAP allocations totaling about 260,000 acre-feet, and that “some of this is not in use because of the lack of infrastructure; progress on this is urgent.” Ms. West complained, “we are paying for water we are not using and allowing others in the state – and yes, throughout the west – to use it.” Ms. West stated, “Supply problems will dominate the region,” and advocated we address questions about “where water is located in our region? How can it become more accessible for needed uses? What about water quality?” Ms. West observed, “planning for the future is essential; that involves working with the entire region.”

Ms. West briefly addressed population growth and sprawl. Ms. West wrote, “Some would like to control our water use limiting growth. State laws will work against that. And the present Legislature is not going to change that any time soon. Witness their refusal to deal with wildcat subdivisions as an example. A major issue for us is the massive sprawl we are seeing. That is happening because of a lack of planning and foresight. It would much better to grow UP rather than OUT. This would help not only with more frugal water use but on transportation issues as well.”

Phase 2.3 Public Hearings

Ms. West submitted written comments for Mayor and Council to consider at their **February 9, 2010** public hearing. Ms. West’s comments first urged a delay in approving the Draft Phase II Report and second recommended actions after the Mayor and Council had accepted the report.

Arguments for Delaying Acceptance of the Draft Phase II Report

Ms. West thanked Mayor and Council “for delaying adoption of the Phase II study so that you can receive additional public comments. 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.”

Ms. West advanced three arguments favor a delay in adoption of the Phase II report.

1. “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, i.e. what’s written between the lines?”

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2. “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.”

3. “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.”

Recommendations for After Adoption of the Draft Phase II Report

Ms. West made seven recommendations for actions the city should take after Mayor and Council accepted the draft report.

1. “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.”

2. “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.”

3. “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.”

4. “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?”

5. “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.”

6. “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.”

7. “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.”

6.3.7 Alice Roe

Alice Roe commented at the **October 29, 2008** Community Sustainability meeting. Ms. Roe identified herself as arriving in Tucson in 1975 “to put down roots, raise my family, to be a part of the community, to make this community my own.” Ms. Roe noted that she moved into a “neighborhood that was built out pretty much by 1960,” and which “is anchored by the Arizona Inn,” which she said Ms. Greenway located where it is “because she wanted to be on City Water.”

Ms. Roe defined sustainability as “living within my means. In investment terms this means that I am spending the income rather than spending down the principal.” Ms. Roe described sustainability as “not robbing from the future of the community to maintain and expand the present.” In terms of water, Ms. Roe stated, “our principal, as a community, is our water supplies that we are drawing down below replenishment.” Ms. Roe noted, “without a well-maintained system of (water and wastewater) delivery... we, as a community, will falter.”

Ms. Roe suggested that sustainability “in a greater sense, means that we must look at where we live, how we live, and the choices and tradeoffs we can or wish to live with.” Ms. Roe wanted to ensure that, as we go forward, “we need to take care that the older inner city will not be destroyed,” including the neighborhoods that we live in now.

Ms. Roe said, “we, as a community, suffer from the churn of transiency and snowbirds,” which leads people who do not expect they or their children to live here to actions that say “we should mine the water until it is all gone.” For Ms. Roe, sustainability discussions must “include a sense of place ... of the old center of the city and the sense of place of all our natural areas and this sense of place depends upon the maintenance of our water and wastewater infrastructure.”

6.3.8 Beryl Baker

Ms. Baker attended nine meetings and submitted three comments, two oral and one written.

Phase 1.3 Sustainability Discussions

At the Community Sustainability meeting of **October 29, 2008**, Ms. Baker noted that she had been working on water issues as a volunteer for twenty years. She said she was pleased the Joint Study would “take a comprehensive look at needs of the community as it relates to water” and that the committee had been “presented with a rich array of the many sides to be considered” about water.

On the other hand, Ms. Baker noted, “the worldwide urgency in the matter of water and mankind’s increasing pressure to desertify his habitat.” Ms. Baker urged the committee “Please don’t study this to death for another twenty years. Make learned haste to make strong recommendations that think in terms of hundreds of years, not decade’s of man’s stay here. Plan for the future as well as for the silent voiceless animals and plants that man’s soul would be the lesser for without their presence.”

Phase 2.1 Technical Presentations

At the May 21, 2009 meeting, Ms. Baker cautioned, “we don’t regulate people out of being able to own their own water.” Later in the meeting, Ms. Baker noted the presence of phosphorous in our wastewater, which she argued could be profitably mined.

6.3.9 Priscilla Robinson

Ms. Robinson submitted two written comments, one in December 2009 and the second in February 2010, on the Draft Phase II Final Report, identifying both strengths and weaknesses. Ms. Robinson identified four strengths of the report:

1. “The sections describing the infrastructure systems are very clear and easy to follow”;
2. “Particularly outstanding is the population section,” which clearly identifies “the multiple possibilities and forces that drive them”;
3. “The focus on environmental concerns as adopted policy is new, significant and possibly a landmark decision among local jurisdictions,” noting that the 1980 Groundwater Management Act “was not intended to provide any protection for the environment”; and,
4. “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 the design of urban form.”

Ms. Robinson discussed three weaknesses in the draft report, one primary and two secondary. For Ms. Robinson, “the primary flaw in the entire report” was “the decision to limit the discussion to the City and the County,” the decision to downplay a regional approach. Ms. Robinson detailed four aspects of the failure of a regional perspective.

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1. The Joint Study does not account for all the water in the Tucson Active Management Area (TAMA). The draft report accurately shows Tucson Water's CAP allocation of 144,000 acre-feet, but there "doesn't seem to appear anywhere in this report" reference to the fact "the total CAP allocation for the Tucson AMA" is 262,490 acre-feet. Ms. Robinson noted that much of the "extra" water (118,490 acre-feet) "is not currently being taken by the holders of those allocations," and that it is "not possible to achieve anything close to balancing the water budget in the TAMA without using that water. Every acre-foot of CAP water that we do not take means that irreplaceable groundwater is being used instead." Ms. Robinson wrote, "Tucson Water cannot balance the regional water budget by itself."

2. Ms. Robinson noted that if "the rest of the region" were involved in the discussion, differences between Tucson Water and the other providers would be apparent. Ms. Robinson wrote, "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 acre-feet of CAP allocation held by a dozen other entities." Ms. Robinson noted that "the holders of these allocations have been paying annual fees for years whether or not they take any water," and they defined these water rights as "property rights which can be sold or leased." Ms. Robinson predicted these stakeholders would be unwilling "to sign on to a plan developed by a committee from which they were intentionally excluded." Ms. Robinson concluded, "it will be impossible to anything remotely resembling regional water planning unless the owners of those allocations are all at the table."

3. Mr. Robinson feared that the Joint Study, its two report and recommendations, were preemptive strikes, as if "the City and County have already determined the outcome of any regional dialogue and will not be swayed by any concern from the other entities." Ms. Robinson recounted the fate of a regional water committee during the 1980, during which "The City was adamant that it be given a majority of the voting power." Ms. Robinson concluded, "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."

4. Ms. Robinson stressed the need to engage with the Central Arizona Project and Arizona Department of Water Resources.

As a second weakness, Ms. Robinson recommended replacing the term "conservation" with the term "efficiency," which she prefers because the term "suggests using something to maximize the benefit from what is expended, but acknowledges that it is being used." Ms. Robinson deemed this utilitarian exhortation as more productive than "appealing to people's better natures." Ms. Robinson deemed prices signals as an effective approach for achieving efficiency in water use. While acknowledging higher prices will impact those with low incomes," Ms. Robinson nevertheless maintained, "every household still has the potential to use water more efficiently and thereby control costs."

As a third weakness, Ms. Robinson noted that the draft report's call for "a new paradigm ... closely tracks the purposes of the 1980 Groundwater Management Act ... (which act) is hardly mentioned" in the Report.

6.3.10 Debbie Collazo

At the **April 18, 2008** meeting, Ms. Collazo requested that the Joint Study post all written information provided at committee meetings on its website. Ms. Collazo commented that, since the Joint Study "is not seeking a pre-determined outcome," that (1) "information should be provided in a balanced, objective fashion," (2) "presentations should be educational rather than public relations," and (3) "if studies or research are made available funded by government or special interest groups ... citation should be included."

6.3.11 William DuPont

At the **April 23, 2008** meeting, Mr. DuPont noted he was grateful the committee decided against using subcommittees and that he hoped the committee would hold its meetings at night.

6.3.12 Mike Nicksic

At the **April 18, 2008** meeting, Mr. Nicksic spoke to how the process could be "open and public." He suggested an on-line archive of all study documents, a list of meeting attendees, and a record of who spoke at meetings. He suggested electronic recording of meetings be available for download.

At the **April 23, 2008** meeting, Mr. Nicksic raised the following issues:

1. Would the inventory of water users include institutions like the University of Arizona, Davis-Monthan Air Force Base, and various hospitals and nursing homes with grandfathered groundwater rights;
2. If the Joint Study was considering wastewater as a resource, Mr. Nicksic wanted more information about the University's plans for "mega expansion for Kino Boulevard, with a potential of 15,000 to 20,000 water users." The University's site is "going to be a biochemical and biophysical research facility (with the tenants) using all kinds of chemicals, some of which they are going to invent." Mr. Nicksic asked where these chemicals are going to go, and what our plans were for getting the chemicals out of the water before drinking it.
3. Mr. Nicksic stated we need to consider Nogales, Sonora and its relationships to the Joint Study and recommended that the "Committee vastly rethink the scope of the study."

6.3.13 Mike Newman

At the April 23, 2008 meeting, Mr. Newman asked for a definition of the terms “region.”

6.3.14 Jane Evans

Ms. Evans submitted both oral and written comments for the **April 23, 2008** meeting. Ms. Evans basic concern was with “uncontrolled growth” and her feeling that “a growth-based economy is not sustainable in the Sonoran Desert.” Ms. Evans remembered the 1980s here when she “believed that Tucson was on the right path. Lawn consumption was down, beautiful plants from deserts around the world could be seen growing throughout the city.” Then came the “90s when developers flooded our beautiful valley and pretended there was no water shortage here.” Ms. Evans stated, “a sustainable community ... must have water to live and thrive in a pleasant environment.” Ms. Evans noted that she and others will not “give up their gardens or swimming pools, or do conservation, or drink effluent so that more people can move here.”

Ms. Evans said, “The public must be made to feel that the water manager decision makers know what they are doing and are operating in the interest of the entire public not just the public that pushes money in their direction. This comfort and trust is going to be hard to gain. Our policy makers have been living under the illusion that water will just be found to solve our problems. Who is going to have the guts it takes to stand up to our officials in denial, SAHBA and the Tucson Realtors Association?”

Ms. Evans argued that people “choosing to live here should actually pay the true cost of their move.” Ms. Evans stated, “Developers gobble up land anywhere they find willing municipalities that offer enough incentives to fill their pockets. When the land is gone, they move on. These same municipalities are left holding the bag just as Tucson and the surrounding area is today.” Ms. Evans said, “Someone has to have the guts to say this is not sustainable in the Sonoran Desert.”

6.3.15 John Kromko

Mr. Kromko made oral comments at the **April 23, 2008 meeting**, and at the public hearings of January 12, 2010 and February 9, 2010. There is no documentation of his comments at the public hearings. At the April 23, 2008 meeting, Mr. Kromko raised a possibility of conflict of interests on the committee and stated that anyone with a conflict should resign from the committee. Mr. Kromko then spoke to Proposition 200, criticizing a City of Tucson brochure for misrepresenting the facts on several issues, especially about the possibility of direct delivery of reclaimed water. Mr. Kromko challenged whether Tucson Water has an assured water supply “given the issue of wet water versus paper water. We are not in danger of losing access to its CAP allocation ... we just might not have any water.”

6.3.16 Jeanne Bruckner

On **July 15, 2008**, Ms. Bruckner wrote, “water rates should be a reflection of usage. The more you use, the more you pay. Corporations and businesses using grass landscape should have a higher water rate, encouraging plants native to Arizona. The water waste is ridiculous.” Ms. Bruckner noted she conserves water by doing rainwater harvesting to water outside plants and keeping a cover on her swimming pool to prevent evaporation.

6.3.17 Cindy Brewer

At the **October 2, 2008** meeting, Ms. Brewer asked why she was not hearing more about the role of rainwater harvesting (as Charles Cole suggested) and not hearing much about water conservation on a personal level.

6.3.18 Bill Crouse

At the **October 15, 2008** meeting, Mr. Crouse stated that what the committee decides will directly affect city growth and the quality of life. The city needs to do more to capture rainwater and to dig wells in washes and riverbeds to recharge it to the aquifer. We should not think of floodwater simply as a danger, but should acknowledge its potential benefits.

6.3.19 Diane Luety

During Phase 1.4, Ms. Luety noted, “we have a limited water resource, live in a desert, and also cannot economically continue to use our money and labor resource to extend infrastructure beyond our current limits. We need to spend whatever resources we have to maintain our current water and sewer infrastructure.”

6.3.20 Michael Toney

At the **April 23, 2009** meeting, Mr. Toney noted that snow pack is dropping, which influences how much water we receive here. Mr. Toney predicted that the breakup of large ice sheets will cause a further reduction in snow pack in the future.

6.3.21 Terry Finefrock

Mr. Finefrock submitted two written comments largely focused on water and energy. In a **November 11, 2009** comments, Mr. Finefrock said he “did not see and would strongly suggest that the study identify and discuss the connection between existing Brown electricity generation and water usage: ½ to ¾ gallons of water now used to generate one kilowatt-hour of electricity.” Mr. Finefrock stated, “Solutions for water and environmental and cost issues involved with the generation of electricity will create many undesirable conflicts and seemingly mutually exclusive choices and significantly burden the capacity for the local economy to find the solutions.”

Mr. Finefrock recommended that the Joint Study develop and support a project “to design/construct a Hybrid Solar and Natural Gas generating plant with solar thermal storage utilizing Dry-Cooling (Heller) technology of sufficient size to provide most of Tucson/TEP electricity requirement.”

In a **February 5, 2010** e-mail, Mr. Finefrock advanced further arguments in favor of using “solar electric generation using photovoltaic technology” as a “solution that not only promotes water conservation but will also provide many other economic and environmental benefits to our community.”

6.3.22 S.M. Wronko

During Phase 2.3, Mr. Wilko wrote to complain, “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 outside landscaping that requires water.” Mr. Wilko wanted to know to whom he could “file a more formal and detailed complaint.”

6.3.23 Marshall Magruder

On **February 4, 2010**, Marshall Magruder submitted an e-mail comment. Mr. Magruder is a resident within the Santa Cruz Active Management Area (SCAMA), which “includes over 90% of the county’s population.” Mr. Magruder noted that SCAMA faces a “‘natural’ limit on a sustainable population,” which he estimated to be an additional 31,000 people, at which point “we will not be able to sustain our water resources.” Mr. Magruder stated his concern that “our neighbor to the north is not maintaining its water resources in a responsible manner.”

Mr. Magruder proposed a “steep, multi-tier rate schedule with very low rates for the lowest consumers and very high raters for the highest consumers of water with ten rate tiers.” In addition, Mr. Magruder would prohibit the largest water consumers from using groundwater, but would provide them with easy access to CAP water. Mr. Magruder argued, “our groundwater tables must be sustained and used for local consumption, not for large commercial enterprises.”

6.3.24 Arlene Scadron

On **February 8, 2010**, Ms. Scadron wrote to urge Mayor and Council to vote “Yes” on the resolution they continued from the January 12, 2010 joint public hearing. Ms. Scadron reported that she had “attended at least half of the public meetings conducted by the oversight committee” (and) ... learned a great deal, especially about how much I still do not know and need to study. I was impressed, as were other commentators, with the high quality professional and technical expertise, total dedication and simply incredible work by volunteers on the oversight committee and the city/county staff members assigned to producing the Phase 1 and Phase 2 reports.”

Referring to comments at the January 12, 2010 joint hearing, Ms. Scadron wrote, “Particularly mystifying were comments that the report was more philosophical than scientific in light of all the information produced by the Phase 1 report and the 14 technical papers appended to the Phase 2 report (in light of the fact that) all of the work by the oversight committee have been on the WISP website for months, and the Phase 2 report, at least since mid-December.”

Ms. Scadron argued that, “the call for cost-benefit analysis prior to adoption is nonsensical. You can't do such analytical work without specific projects in mind that can be measured and compared” (which was not) “the purpose of the Phase 2 report which focused on values, paradigms, and producing a more comprehensive approach to our water needs and problems.”

Ms. Scadron wrote, “I believe it would be a travesty and dereliction of responsibility to this community if this council does not adopt Phase 2 and allow the process to move forward with staff directives and possibly a wider regional approach for Phase 3. The council is not being asked at this time to approve specific projects with a price tag attached. That will come later, nor will the council's authority to approve specifics step-by-step be vitiated by adoption of Phase 2.”

6.3.25 Leona Davis

During **Phase 2.3**, Ms. Davis wrote about altering Tucson Water’s rate structure. “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.”

6.3.26 Gail Cordy

Ms. Cordy submitted oral comments at the **September 24, 2008** meeting. Ms. Cordy said, “I was happy to hear that you’re not limiting the scope of your study. I’m a hydrologist and, as we all know, hydrology doesn’t stop at any man-made border or boundary. And, so I am encouraged to see this Committee consider, not only the current areas for Tucson water delivery, but the future areas, as well as the entirety of Pima County and beyond. I think that it is really important not to limit your boundaries, because your hydrologic answers may come from within and outside.”

6.3.27 Hyatt Simpson

Mr. Simpson delivered an e-mail message to Mayor and Council on **February 12, 2010**. Mr. Simpson wrote, “Our state government is in a sorry mess and our reputation in areas such as education, employment and business recruitment is in the tank...But a shining beacon has been pour 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.”

Mr. Simpson believes “water will be the key issue affecting the future of our community and region,” the reason why Mr. Simpson “was so encouraged that the City of Tucson and Pima County established a joint committee to study water and wastewater.” Mr. Simpson fears that, “the lobbying of self-serving groups may jeopardize the future of one of the keys to nurturing what is left of our riparian habitat.”

Mr. Simpson wrote, “I urge you to join your progressive colleagues on the Board of Supervisors and keep 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.”

6.3.28 Katrina Ziegweid

Ms. Ziegweid submitted an e-mail message on **May 13, 2009**. Ms. Ziegweid wrote, “I read with great interest the topic of using stormwater, and the recommendation of using it at the lot level. What a great idea! Let’s turn a problem (management of stormwater) with costs into a SOLUTION that costs little.” Ms. Ziegweid follows with, “OOPS! Well, if you know the cost of curb cuts for local homeowners, you would realize that the city MANDATE that curb cuts be done with a concrete saw, and the cost of each curb cut starts at \$350 – yes, \$350.00, which is NOT affordable for your average homeowner.” (Emphasis in the original)

Ms. Ziegweid notes that tree-lined streets “can reduce temperatures in the neighborhoods by 5 -15 degrees F.” Ms. Ziegweid sees the curb cutting requirements as working against individual homeowners cutting curbs to provide stormwater irrigation for trees. Ms. Ziegweid recommends actions the city could take to resolve this conflict: “Can the city purchase a concrete saw and loan it out to neighborhood groups? I know funding is tight – what if there was some sort of Curb Cutting Co-op (CCC-yeah! Let’s bring back The CCC!) in which homeowners could chip in a small amount and then get curb cuts at a reduced cost?”

6.3.29 Pat Cattani

On February 6, 2010, Mr. Cattani submitted an e-mail in which he wrote, “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.”

6.3.30 Unnamed Individual 1

During **Phase 1.4**, this commentator applauded the draft report for “recognizing the need for future unpredictable variable solutions is the path to viable workable solutions,” and that there is a need

for “planning for worst case scenarios.” This individual asked, “Is not water quality of a higher priority for the human population ... than the other viable organisms, which also need to be considered?”

6.3.31 Unnamed Individual 2

This individual submitted an e-mail during **Phase 1.4**, writing, “The expansion of the Reclaimed Water System is an important element of the future of water-use planning and policy in the City of Tucson and Pima County. At the present time, the restrictions for homeowner use of the system are burdensome and expensive, requiring additional equipment to be installed in the existing domestic water system to prevent the intrusion into and contamination of existing potable water. These requirements and restrictions are a deterrent to the use of the reclaimed water residential use system for potential customers. I recommend that Tucson Water redesign the requirements for residences as can be found on the Tucson Water website/Reclaimed Water. Many of the requirements can be eliminated with the proper education, inspections and fines for misuse, which would encourage the use of this valuable and necessary resource.”

6.3.32 Unnamed Individual 3

On **December 2, 2009**, this individual wrote about “the elephant in the room that the committee has failed to address (which) is the issue of CAP water and salt.” This individual, reviewing data on the volume of salt in Tucson Water’s full CAP allocation, complained, “no one has been willing to publicly address this issue,” which “gets swept under the rug.” For this individual, desalinization was “a pay now issue (build a desalinization plant) or a pay later issue (health and/or home repairs).”

6.3.33 Unnamed Individual 4

On **January 11, 2010**, this individual commented, “we live in a desert with dwindling water resources. A regional body to deal with water issues makes the most sense.” Specifically, this individual recommended “a Regional Government Water Authority (with) the power and/or resources to enforce retrofit for all individual living quarters (in multi-family structures) with individual water meters.”

6.3.34 Unnamed Individual 5

On **January 13, 2010**, this individual suggested that “for the goal of ‘lower water consumption per household,’ be sure that implementation is confined to voluntary methods with positive incentives, rather than punitive command and control regulations.” This individual argued the benefit of lowering greenhouse gas emissions “is not supported by scientific evidence.” The individual expressed concern about downzoning and the need to preserve private wells and stressed the need to ensure that riparian preservation “does not diminish water availability to residential users. Put people first!” The writer noted other competing uses for riparian areas “such as the mining of sand and gravel.” Finally, the writer urged “exploration drilling and studies to explore possible resources below the currently used groundwater reserves.”

6.3.35 Unnamed Individual 6

On **February 2, 2010**, this individual wrote that they were “puzzled about why this effort appears to be focused entirely on the City of Tucson and Pima County.” The writer asked why other

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municipalities and private water companies were not involved, arguing, “it is premature to begin making any recommendation on developing a plan until the regional stakeholders are involved ...”

END NOTE

¹ At the July 11, 2008 meeting, Tucson Water staff provided the following information: “MUM is an acronym for Metropolitan Utilities Management which began in the mid-1970s and was a cooperative effort for joint operations of City and County water and wastewater utilities. It terminated in 1979 with the City/County Inter-Governmental Agreement that turned the entire wastewater operation over to Pima County and in return gave the City of Tucson entitlement to the effluent produced from the wastewater treatment plants. One of the primary driving forces behind the consolidation of the wastewater systems was EPA (Environmental Protection Agency) requirements related to receiving federal funding. Amendments have been made to the 1979 IGA over time including the establishment of the Conservation Effluent Pool.”