

TRANSCRIPT OF OCTOBER 8, 2008

List of Presenters:

- 1. Melaney Seacat, Regional Wastewater Reclamation Department*
- 2. Dennis Rule, Strategic Planning Administrator*
- 3. Mitch Basefsky, Public Information Officer*

**Presenter #1:
Melaney Seacat, Regional
Wastewater Reclamation
Department: City/County Water
Conservation Efforts**

CHAIRMAN JIM BARRY: All right. Let's move on to presentations. We're going to concentrate on Conservation Efforts. We don't have anybody from the County, but Melaney is going to give a brief overview of the County, and then we will - we will turn it over to the City.

MS. SEACAT: Thank you, and good evening, Committee and members of the public. I do apologize that we don't have a water conservation expert from the County. There was a last-minute change in our designated speaker for tonight.

I did speak to a number of County experts and gathered up some information for the Committee. A one-page Summary Sheet that highlights the key areas of emphasis and water conservation in the County is out on the table for the public and is here on your table for the Committee along with a packet of information with some handouts that give you a little bit more information.

I'm just going to go over this real briefly. Although I was a Water Conservation Specialist in a previous life for Tucson Water, I have not worked in water conservation in the County. So, I am not the expert. If you have questions, or you'd like to have additional presentation from any of the people that I talked to, we can certainly arrange that.

So, although the County does not supply domestic water to the general public, we do promote water conservation in many ways, and the handout really covers several different ways in which we promote water conservation. One of them being in the policy area, and I'll talk about the sustainability resolution; another is through regulations; and another is through projects, demonstration projects, recharge projects, and also partnerships within the community.

Speaking to the Pima County Resolution on Sustainability, this was adopted in May of 2007, unanimously, by the Board of Supervisors, and it establishes a series of far-reaching sustainability initiatives, and many of them address water conservation. They cover a variety of issues: Green building, renewable energy, alternative fuels, waste reduction. But, specifically, relative to water conservation and management, it calls for reducing water use in all County facilities, 15% by 2025; it calls for doubling the number of County parks served by reclaimed water by 2018, so in ten years; and, thirdly, maximizing County water resource assets, including groundwater rights, surface water rights, and effluent to sustain and protect natural environments.

To implement the Resolution, the County formed teams made up of representatives from a range of disciplines and departments and prepared a Sustainable Action Plan for County operations. This was completed in 2008 and it includes something, like, 30 separate actions to promote water conservation and protect natural resources. I do know that the Action Plan is focused primarily on County facilities; it includes guiding principles, and it includes a number of success indicators, which are precise measurable objectives for achieving the water conservation goals. And you can go to www.pima.gov for both the Resolution and the Action Plan.

Moving on then to the Water Conservation Regulations, the statutory requirements. Back in 2000, as many of you know, Growing Smarter Plus legislation was passed that requires jurisdictions above a certain size, which includes the County, to have a water resource element that consider water resource impacts when approving land use plans. So, this was kind of a seminal piece of legislation.

And, in 2007, the Pima County Board of Supervisors adopted an updated water resource element to the Regional Comprehensive Plan Policy. This is online, so I'm not going to go into detail, but this is a pretty progressive piece of policy that integrates land use and water resource planning by requiring Comprehensive Plan Amendments that are greater than four acres and rezoning applications to include a water demand and supply assessment, and also water conservation measures; it allows the Board of Supervisors and Pima County Planning and Zoning Commission to fully consider the water resource impacts of new development before major land use changes are approved.

And then, in 2007, the Board also adopted a Drought Response Plan and Water Wasting Ordinance. I want to mention the Staff people in the County that helped identify all of these. Kathy Chavez worked on the Drought Response Plan, and she 's a

point person for that, and Tedra Fox is the Sustainability Manager, and she did the work on the Sustainability Action Plan.

Then, in 2006, drilling into the actual Codes, the Landscape Code and the Plumbing and Residential Codes were all amended to include a variety of water conservation measures, including new construction to have separate reclaimed-ready irrigation and plumbing and irrigation with seasonal adjustment to rain sensors, restrictions on water fountains and water features, allowing turf only for functional purposes, use of waterless urinals and automatic faucets in commercial buildings, sub-water meters in multifamily construction, pool covers et cetera. Websites where you can find those Codes are listed in your handout.

And, in 2006, the Board also adopted a change to the Golf Course Zone Ordinance prohibiting use of groundwater on new golf courses.

Moving on to the project arena, Pima County has statutory authority for floodplain management under the Regional Flood Control District and, in that role, they can build large-scale urban water harvesting projects to capture storm water. An example of one of these is the Kino Environmental Restoration Project, which is a 120-acre flood control basin that captures urban storm water and uses it to support riparian habitat, and it also is used to irrigate the Kino Sports Complex. They also work with other jurisdictions to improve smaller-scale water harvesting opportunities to decrease the need for irrigation, and they also have a Recharge Program, and that includes construction of Recharge Facilities for CAP and effluent.

And, last but not least, we are involved with Water Casa and Tucson Water, and a variety of community outreach partnerships. We participate in events, Project Wet, Earth Day, et cetera, et cetera. We also fund research. Staff participates on Tucson Water's Community Task Force and they participate on ours. So, there's a lot of collaboration in the area of water conservation, and that's essentially it. Thank you.

CHAIRMAN JIM BARRY: Questions?

MEMBER JOHN CARLSON: Yeah. Under your third - or second white bullet, 2007, first dark bullet at the end, this allows the BOS and PC Planning, et cetera, to fully consider water resource impacts of new development before major land use changes are approved.

Are there any quantifying things that allows them to deny it? Well, I mean, what's the criteria?

MS. SEACAT: That's attached in your packet, the specifics are attached, and I would prefer to defer to the technical experts. There is a water demand calculator.

Basically, I'll tell you in a nutshell that the requirements for the Comprehensive Plan Amendments are more general than for the rezoning and, in the Comp Plan Amendment, they're looking at five different issues, they're looking at depth-to-groundwater and groundwater trend data. They're looking at renewable supplies in water service. They're looking at proximity to subsidence areas, and proximity to groundwater dependent ecosystems, and things of that nature.

And then, when you get into the rezoning, if there's a site analysis required, there's a much more specific calculation that's required: Water use studies and assessments, hydrologic impact analysis, those kinds of things, and there is a demand calculator at ADWR that is being used for this. The actual implementation of this - the standards for implementing this - are under development, and Pima County Development Services, Carla Blackwell is the point person for that.

MEMBER JOHN CARLSON: Well, I, obviously, approve and think they should be looking into these thing but I'm wondering, from a legal standpoint, what authority they have, at what point to deny, or to require, et cetera, et cetera?

MEMBER BRUCE GUNGLE: Whenever they feel like it.

MEMBER JOHN CARLSON: Yeah, well, that gets pre-arbitrary and capricious, and that's -

MS. SEACAT: This is a tool to raise awareness about water resource impacts that decision-makers can then consider in their decision, essentially.

MEMBER BRUCE GUNGLE: They can approve or deny on rezoning on anything they want.

MEMBER JOHN CARLSON: Well, then you have no recourse to the Courts?

MEMBER BRUCE GUNGLE: If it is arbitrary and capricious you do, but that's pretty difficult (inaudible).

MEMBER JOHN CARLSON: Not in my mind, but I'm sure the Judge's mind can be . . .

MEMBER BONNIE POULOS: Melaney?

CHAIRMAN JIM BARRY: Bonnie?

MEMBER BONNIE POULOS: Just a point of clarification, since I'm on the Planning and Zoning Commission. It seems to me, although information is gathered and things are being worked on right now, to my understanding, the resolution that was passed really doesn't have any concrete paths for politicians or decision-makers to follow if certain criteria are met; is that correct?

MS. SEACAT: I'll need to defer that, yeah.

MEMBER BRUCE GUNGLE: What this does is it requires that the people who want to develop the parcel or change the rezoning or Comp Plan designation to do these studies so that this information's available; previously, this information was not available. So, it's basically filling a data gap; it's not necessarily a method for decision-making, ultimate decision-making.

CHAIRMAN JIM BARRY: As we get into Phase II, it strikes me as that's an issue that we ought to address then. If there are changes that we want to recommend to these Plans, and whatnot, I envision getting much more information about this for Phase II.

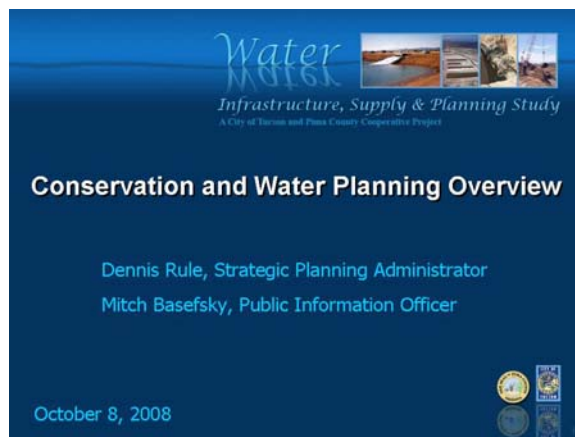
Any other questions for Melaney? Anybody from the audience?

(No response.)

**Presenter #2:
DENNIS RULE, STRATEGIC
PLANNING ADMINISTRATOR:
CITY/COUNTY WATER CONSERVATION
EFFORTS**

CHAIRMAN JIM BARRY: Okay. Let's move to the City. And we've got Dennis Rule, and is Mitch here, too? Mitch Basefsky? Okay. Dennis? Thank you, Melaney.

MR. RULE: Thank you. My name is Dennis Rule, and I do strategic planning for Tucson Water. I haven't had the pleasure of addressing this group before. So, just to let you know, I'm involved in a lot of the water resources management issues for the utility, a lot of the water rights issues, the regulatory issues with the Department of Water Resources. I spend a great deal of my time interacting with the Department of Water Resources, the Central Arizona Project, the Arizona Water Banking Authority, and the Central Arizona Groundwater Replenishment District on behalf of Tucson Water. So, on any given week, you know, there's a high probability that I spend at least half of my time in Phoenix, and then on about half of your Committee meetings about this



time, I'm somewhere around Casa Grande on my way back home, so I'm pleased to be here tonight.

So, I'm going to talk about the water conservation issues that we look at in kind of broad, general planning concept as we look at the kinds of program that we want to target and that we want to implement, and what they mean within the context of our Service Area, and Mitch will come in after me and will talk more specifically about the programs that we do have in place.

But, first, just to kind of set the background a little bit, and I think you heard this at the very first meeting, Tucson Water has been involved in water conservation efforts for a very long time. In fact, in 1912, Tucson had a \$50 fine for water waste, which, again, in 2000-dollar equivalents is the equivalent of \$1,000. I'd like to see us try to implement that kind of a fine for water waste today. I think it would be a very interesting process.

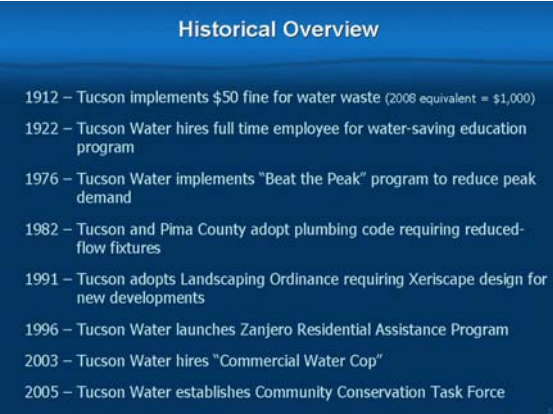
In 1922 was when the utility hired it's first full-time water conservation person. And we're just going to hit some of the highlights here, obviously, these are not all of the aspects of our water conservation history.

In 1976, we implemented the infamous "Beat the Peak" Program, which was really a Peak Management Program. What really drove that program to begin with was problems in meeting peak demand during the summertime in infrastructure delivery capacity problems. But, it was a very successful program, and it actually resulted in significant reductions in our overall gallons per-capita-per-day usage within our Service Area.

In 1982, both Tucson and Pima County adopted low-flow plumbing ordinances that required installation of low-flow fixtures in new construction. This is over a decade prior to the Federal Government implementing these kinds of Plumbing Codes throughout the country.

In 1991, we adopted the Xeriscape Landscape Ordinance.

In 1996, we launched the Zanjero Residential Assistance Program, which is a group of employees that will go out to residences and do water audits; will inspect irrigation systems; will look for leaks on the systems; will give residents tips on how to reduce water usage; it's been a very, very well-received popular program.



Historical Overview	
1912	Tucson implements \$50 fine for water waste (2008 equivalent = \$1,000)
1922	Tucson Water hires full time employee for water-saving education program
1976	Tucson Water implements "Beat the Peak" program to reduce peak demand
1982	Tucson and Pima County adopt plumbing code requiring reduced-flow fixtures
1991	Tucson adopts Landscaping Ordinance requiring Xeriscape design for new developments
1996	Tucson Water launches Zanjero Residential Assistance Program
2003	Tucson Water hires "Commercial Water Cop"
2005	Tucson Water establishes Community Conservation Task Force

In 2003, we hired our first commercial water cop. This isn't the first water cop that we had, but this was our second one that then allowed this individual to focus specifically on commercial properties. And we'll talk a little bit more about the characteristics of our Service Area in that regard.

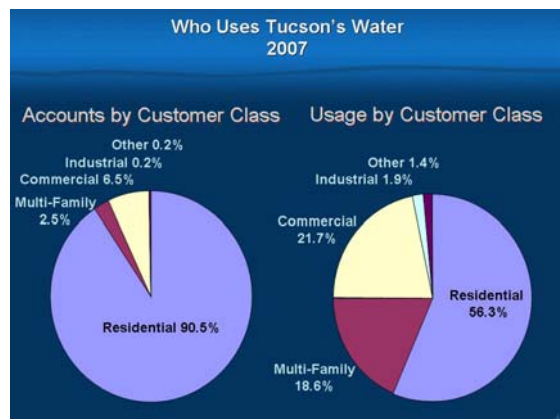
And, in 2005, we established the Community Conservation Task Force and Mitch will discuss that in much more detail later.

But, just in general, as far as planning for our Conservation Programs, in the broad perspective of how we look at these things, some of the factors that we look at, basically, across the industry, as well as specifically within Tucson Water, are issues of local



climate. I think we're all familiar with Tucson's local climate, you know, very high summer temperature, with very high water demand peaks in the summertime. But, our climate also means that we have, essentially, a year-round growing season. So, compared to a lot of other communities in higher, cooler elevations, where they see their outdoor water demand going to practically zero, or practically zero in the wintertime, Tucson still has a fairly significant outdoor water demand even in the middle of the winter. So, these are some of the kinds of things that we look at that other utilities look at as those, you know, the impact of the climate and on the pattern of use.

You know, again, here the summer monsoon, this past summer, we saw very significant reductions in our water demand.



In the wintertime, we can see actually very significant increases in our water demand during the winter if it is a warm, dry winter, as opposed to some of the cooler, wetter winters that we can have in this region.

We look at our Service Area characteristics, questions of how much industrial use that you have within the utility. You could have a very small Service Area, with a very large industrial use, an economic use of water within that Service Area, and that's going to change your calculations of gallons per-capita-per-day usage within the area.

You look at issues of how much residential; how much commercial. What's the age of the housing stock? Do you have a lot of older houses that have higher-flow fixtures? A lot of newer houses that have lower-flow fixtures? - those kinds of characteristics for the Service Area.

We look at the water supply characteristics. You know, some communities in Colorado, say, in particular, what they have, as far as the water supply, is they have a snow-melt-driven system so that when the spring runoff occurs, all the water that they're going to get that season goes into the reservoirs, and that's what they have to last them until the next runoff season.

In Tucson, we have something like that with the use of the CAP water, Colorado River Water, we're attached to the runoff, and the flows in the Colorado River, but we also have a system where there's up to 60 million acre-feet of storage behind two very large dams in this system. Within the CAP itself, we also have lower-priority users of CAP water that get reduced in their water usage in - in - in conditions of shortage before the City's and the Native American communities get reduced. So, all of these kinds of issues of, you know, how does the water come?

We also have an advantage now that we've constructed our recharge facilities, and we have excess capacity for storing water in those recharge facilities. We also have the capacity to be able to take extra water, when it is available to us, and store it underground and then be able to recover it in the future. And, again those kinds of considerations are some of the things that we look at as we look at targeting our Conservation Programs and what kind of effect and what kind of emphasis that we want to put on that.

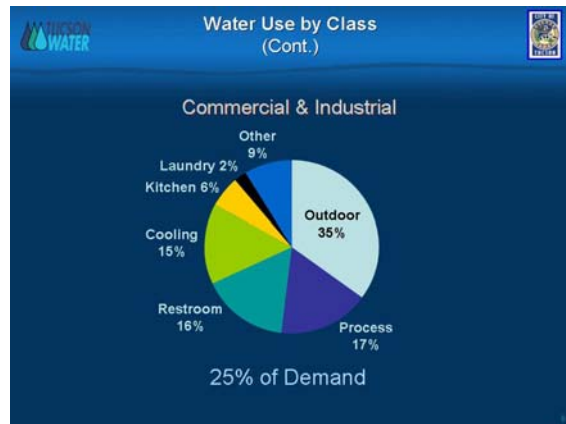
One of the issues that you have to look at is customer response, you know. How likely is it that the customers are actually going to respond and implement these programs? That's where hard-wired-type programs, where you're actually putting in low-flow fixtures, where you're not depending upon the customer to remember to change their irrigation timer, or to turn the faucet off when they're brushing their teeth but, you know, based on their action, they're actually reducing their consumption no matter what they do.

And then also we have to look at regulatory requirements. And, in 1980, the State of Arizona implemented the Groundwater Management Act and, within the Tucson AMA, they began programs for conservation requirements for water utilities within the AMA, including at least starting off with a total gallon per-capita-per-day program, which is now converted to what's really referred to as a "Best Management Practices

Program" that we're required to comply with and implement. In actuality, our current water usage of about 150 gallons per-capita-per-day, total potable usage, or less than 100 gallons per-capita-per-day for indoor single-family residential, or single-family residential usage, is much lower than any of the total gallon per-capita-per-day requirements that the State of Arizona might implement for our Service Area, so we're very proud of where we are.

Again, going a little bit further, you've seen these before, looking at the Service Area characteristics, we really pay attention to the fact that 90% of our customers are residential customers, and 56% of our total water use is within the residential sector. So, looking at this, obviously, the residential sector is where you can target a lot of your programs, because you've got a lot of use in those areas.

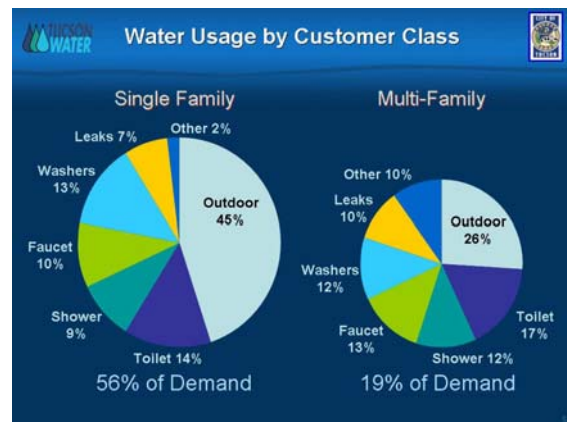
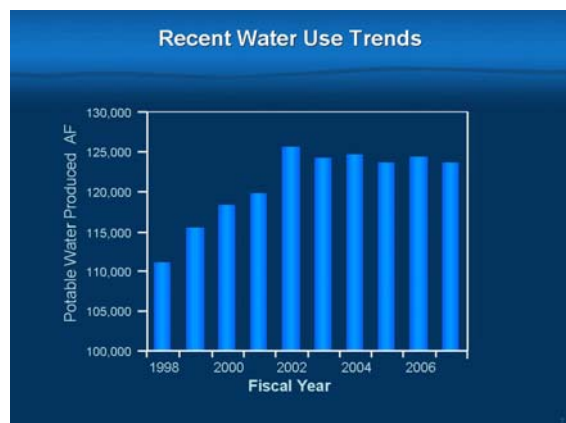
Looking a little further in it, in single-family residential, 56% of the total demand, 45% of that is outdoor.



In multifamily, 26% of that is outdoor. And then even in commercial and industrial, 35% of that is outdoor usage. In each of these, bathroom usage is, perhaps, the next highest so, again, looking at programs where you're implementing low-flow toilet replacement, that kind of program, that's where we can really see some real effective use of our

conservation programs.

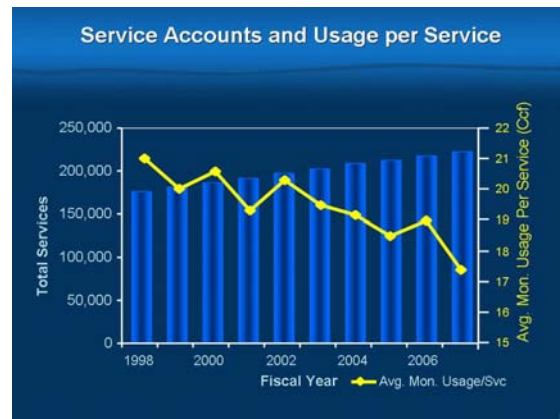
And then, again, I think this is a slide that you've seen. What we have seen in



particular over the last several years is we've seen a real flattening off, or a tapering off, of our total water usage within our Service Area, in spite of the fact that we are continuing to add customer accounts. Thank you. Part of this is, obviously,

because of drought awareness within our customers. You'll see that the tapering off begins around 2002, which was the really severe drought year in the west. I think part of it is also due to new housing stock going in. If you look at the new subdivisions that are going in, the lots are much smaller, there are virtually no lots that have grass in the backyard and, essentially, you get a stick in the front yard that doesn't use very much water. So, we're seeing this very significant trend right now of a flattening of our demand, in spite of an increase in customer accounts.

Again, this chart shows that we do have an increase in service accounts but, again, what we've seen over about the last decade is we've seen a very significant reduction in the average monthly usage per account within our Service Area. And what you're seeing here on the right-hand side is a measurement in Ccf, which is a 100 cubic feet of water. Each Ccf is about 700 gallons of water. You're seeing more than a four Ccf reduction over this time period. So, this represents approximately 3,000 gallons per month reduction per connection within our Service Area over this time.



So, Mitch is going to talk a little bit more specifically about the programs that we have that have accomplished this kind of reduction. Thank you.

Presenter #3:
MITCH BASEFSKY, PUBLIC INFORMATION
OFFICER: CITY/COUNTY WATER
CONSERVATION EFFORTS

Current Conservation Programs		
Level 1	General Public Information	Beat the Peak, bill inserts, general advertising/promotion
Level 2	Education and Training	WaterSmart Workshops, SmartScape Professionals, Classroom Programs
Level 3	Direct Assistance	Zanjero Program, Commercial Audits
Level 4	Incentives	Rebate Programs, Rate Structure
Level 5	Ordinances	Water Waste, Plumbing Codes, Xeriscape Landscaping, Mandatory Conservation, Rainwater Harvesting, Greywater Stub-outs, Drought Response

MR. BASEFSKY: Thank you very much for the opportunity to (inaudible) the Conservation Programs that we're very proud of at Tucson Water. As Dennis has given you the impacts of our Conservation Programs, I'm going to take you through some of the Conservation Programs that we currently have, and then also looking out into the future.

We tend to look at Conservation Programs - first of all, the philosophy behind our Conservation Programs is that we would have Conservation Programs that the people who pay for those programs, the ratepayers, the classes that pay for those programs, would derive benefit from those programs. So, we try and have both broad programs that reach the general public, reach our residential customers - as Dennis mentioned about 90% of our customer base - but, also targeted programs that specifically benefit certain areas, certain business, businesses, commercial properties, multifamily, those kind of things.

And we kind of have a hierarchy of how we look at conservation. Level 1, general public information. You can think of this as we ask you to conserve. Tucson Water asks you to conserve. And these are the kind of public information programs, like Beat the Peak, like the Conservation Corner that we always have in our monthly bill inserts, general advertisings and promotions. We do different types of promotions different times a year. But, these are what we're out in the community - giving people information, asking them to conserve.

Level 2, the next level up, is where we actually train you or we teach you how to conserve, and these are more formalized programs for the most part. The WaterSmart Workshops are a monthly workshop that we sponsor through the Cooperative Extension Service where people can go in and actually get hands-on training in terms of doing outdoor landscaping; it gives you a way to pick your plant pallets; it gives you a way to design and maintain efficient irrigation systems; how to use a irrigation timer. And we are instituting a class in rainwater harvesting as well.

So, the SmartScape Program is the same kind of thing on the professional level. This is really for the green industry, the landscape industry, where we have people go through - it's a very intensive - nine classes - that when people - when professionals come out of that, they are certified both by us, and they're well on their way to getting certified by the American Landscaper Association, and some other types of associations in that field, to be professionals in terms of designing and maintaining Xeriscapes or desert-adapted landscaping.

And then we have Classroom Programs. These are our schoolroom programs primarily where we have grade-appropriate and age-appropriate activities that we take into the classrooms. They are set up to be an adjunct to the Arizona State Education Standards in Environmental Education; in fact, we work very closely with the teachers and the science coordinators for a variety of the districts within Tucson Water's Service Area.

And those programs, essentially, start at kindergarten, first grade and move all the way up through high school where students are really learning about the importance of not just water conservation, but other water-related aspects, water cycle, water quality, environmental uses of water, those kind of things.

Level 3, that's where we help you to conserve. So, we have asked you to conserve; we've taught you how to conserve; and now we're helping you to conserve. And the Zanjero Program, which Dennis mentioned, is probably our most popular program; it's been around since '96. And when we look at the water use in these homes, there is a reduction in the water use in the homes that have been visited by a Zanjero. Now, depending on what the nature of the home was and what kind of problems they had, that water use savings can be significant. We've seen, in some cases, that water use savings as much as 80 gallons a day from after a Zanjero visit.

So, on the other hand, sometimes we go into houses and people are doing a great job as it is, and maybe all they need is a low-flow fixture, or somebody to help them learn how to maintain their toilet more properly.

And we do the same thing on the commercial side where we will go in and help commercial properties and multifamily properties look at their water-use patterns, look at their irrigation systems, look at their indoor opportunities for greater efficiency.

Then Level 4, we pay you to conserve. Rebate Programs - we had a Toilet Rebate Program back in the late 1980s, early 1990s, primarily driving towards getting people to switch out their old standard toilets. The standard that was set in the '80s - that Dennis mentioned - was for three-and-half gallons per flush or less. The technology evolved, we could get 1.6 gallons per flush or less, and so our Rebate Program back then was primarily designed to convince people who were otherwise getting a toilet to get a low-flow toilet rather than a standard toilet, or to accelerate their changeover from a standard toilet to a low-flow. Now, we have Rebate Programs - 1.6 was made the standard back in 1991, and our Rebate Programs - which I'll talk a little bit more about - are dedicated to those toilets, changing out those - even those 3.5 toilets for something a little bit more efficient than even the 1.6.

And then, of course, our biggest incentive, the biggest payment, the biggest bang for the buck that people get from saving water is the Water Rate Structure, both for commercial/industrial side, and then also on the residential side, we have a conservation overlay on our cost of service. Our rates, like many other utilities, are set by cost of

service. We go out and figure out how much it costs, and then we calculate out how to apportion that, and then an overlay on that is the conservation Rate Structure, which says, "We could charge everybody \$2.50 per Ccf and that would collect all of our revenue that we needed. Instead, if you're conservative and you're a resident and you use less than 12,000 gallons a month, or 15 Ccf, you will pay about \$1.25 per Ccf. On the other hand, if you're a very high user and you're using more than 45 Ccf, you're paying \$9.00 per unit for each of those units. So, it's a very steeply-inclining rate block structure.

On the commercial/industrial side, we have a summer surcharge; it's a tiered charge. They pay a base rate all year round and then, during the summer months, anything they use over that base usage, that winter average, there's an additional charge imposed, a tiered surcharge imposed.

And, finally, ordinances. We make you conserve. We tell you that you need to conserve. The Water Waste Ordinance, we have the water cops that Dennis mentioned. It's illegal to allow water to flow off property or into non-irrigated areas, or to have a controllable leak that you allowed it to extend on.

We also have the Plumbing Codes, which Dennis mentioned, the Xeriscape Landscaping, Mandatory Conservation. We have a Mandatory Conservation Ordinance, Emergency Conservation Ordinance. We've never had to impose that, but it was established in 1994. Just in case we got into a situation where the supplies could not keep up with demand, Mayor and Council would have the authority to declare an emergency and actually prohibit or restrict non-essential water uses.

More recently we have Rainwater Harvesting and Gray Water Stub-Out Ordinances. And then we have the Drought Response Plan - and I do want to spend a little bit of time on that - because that, as a State mandate, all municipalities had to create a Drought Response and Mitigation Plan.

**City of Tucson
Drought Response Plan Stages**

STAGE 1 – Regional Drought

City Actions

- Public Information
- Mandatory Water Audits of City Facilities

Community Actions

- Voluntary Reductions
- Incentives for Efficiency Improvements

August 2009 Long Term Drought Status
See through July 2009
Arizona Drought Preparedness Plan
Monitoring Technical Committee

**City of Tucson
Drought Response Plan**

PLAN ASSUMPTIONS:

- Leadership from City of Tucson
- Address Non-Essential Uses of Water and Identify Efficiency Improvements
- Minimize Impacts to Community
- Work with Large Customers in Advance of Curtailments
- Proactively Educate Customers
- Consider Health and Safety Concerns

Tucson Water and the City of Tucson and others, in partnership with Pima County later on, we came up with a

Drought Response Plan that's, essentially, unique to our Service Area. We have service characteristics, as Dennis was saying, you really have to look at what your Service Area is; what your characteristics are; what your supplies are. So, our Drought Response Plan is driven in a way that's very much different than the Drought Response Plans for, say, Pima County or Oro Valley or Metro Water, because we are directly using Colorado River Water as part of our supply. We're much more aware, and have to be much more aware, of what's going on in the Colorado River Watershed, because if we were to lose access to that it would have a significant effect on us. So, drought on the Colorado River Watershed is important to us.

So, we made some assumptions as went into this planning process. Essentially, we wanted to say that the City of Tucson was going to be the leadership by example. We're going to be the ones that go out there. A lot of times when we're promoting conservation, we get a lot of calls in our office saying, "How come you're asking me to conserve? I've seen the parks doing this, or the police officers doing that, or the Water Department doing the other thing, and you're asking me to conserve?" We really want to have leadership by the City of Tucson, so a lot of the steps that we go through in the Drought Response Plan, the City of Tucson tends to do those steps at one stage earlier than we're asking the general public to do that.

We wanted to address non-essential uses. We really want to preserve that water that we need for essential uses, but there are some efficiency improvements that can happen on both sides. So, we do address some of the efficiency improvements that can happen on the essential uses as well, but we really want our cutbacks to come in the non-essential areas.

We want to minimize the impacts to the community. Obviously, drought's important, but we want to make sure that we're protecting our citizens as best as possible. We work with large customers in advance of curtailments. We have multifamily and commercial customers who use an awful lot of water. As Dennis mentioned, they use about 25% of the water in, say, the commercial area, and they're less than 10% of our customer base, and so we want to work with them in advance, so give them an opportunity to do some voluntary things before we actually mandate them.

We want to proactively educate customers; that's something that we do in all of what we do at Tucson Water. We are into proactive communication. And we want to consider health and safety concerns so that any drought mitigation that we do, or restrictions that we do, we want to ensure that we're protecting water uses for health and safety.

So, Stage 1, that's where we are now. That's, essentially, a recognition that we're in a regional drought; that we've been in a long-term drought. This map on the side - you've probably seen it before -- it's put out by the State of Arizona and the University of Arizona and CLEMAS and, essentially, looks at short and long-term drought conditions in the State of Arizona. And we want to be aware that we're in a drought, and so there are things that are appropriate, and one of the most appropriate things is to let people know, "We're in a drought," and not only us but the Colorado River Watershed is in a drought. We've had some good snowfall this year, and fortunately for us, Lake Mead and Lake Powell have gone up slightly because of that, but we're still in a long-term drought and the climatologists continue to tell us that we're probably in a long-term drought. And so one of the things we want to do is let people know that so they can take appropriate voluntary action.

And then we're developing a program to do mandatory water audits of all City facilities. What these water audits do is it's basically a very thorough look at how water is used both indoor and outdoor at all the City-owned properties, and then identifying those areas where efficiencies could be found, and then programming those efficiencies into future budgets. So, it's not just enough to go out and say, "Boy, you know, we should really have no water use - waterless urinals in TCC;" it's another thing to say, "Now the City is going to start budgeting those kinds of things in future years." On the community side, again, awareness of drought should call for voluntary reductions and incentives for efficiency improvements, and I'll get into those incentives.

Stage 2 would be triggered for us, primarily by a declaration of shortage on the Colorado River. You're probably all aware the Colorado River was allocated out to the different states at a time of historic high flows; it's over-allocated. There is a potential over the next few years, if we continue in this long-term drought, that Lake Mead will fall far enough that the water master of the river, in this case the Secretary of the Interior, would declare a drought or a shortage on the Colorado. If that happens, a shortage is declared, it would not immediately impact our ability to import Colorado River Water. What would happen is the lower-priority

**City of Tucson
Drought Response Plan Stages**

STAGE 2 - Declaration of Shortage on the River

City Actions

- Water Use Restrictions
- COT Implementation of measures found during audits

Community Actions

- Mandatory Audits for MF, C/I Facilities
- Irrigation Restrictions for MF, C/I Facilities

**Opportunity: WaterSmart
Businesses may obtain
waivers**

users on the CAP system would be impacted first (municipal users are very high on the priority list for CAP water). And any excess water in the system, water that's not already allocated and used by somebody who has a contract with the CAP, would be cut first. It's one of the reasons why we've accelerated our use of Colorado River Water and we're going to be using our entire allocation of 47 billion gallons, because we want to be in a position if a cutback does come, we don't want any of our water to be considered excess water. We want to be using it actively so that it remains as part of our allocation during a time of shortage.

So, what would we do to address that? Well, there would be water use restrictions facing the City facilities. We would change the way we operate some things. There might be some restrictions in terms of swimming pools, in terms of some of the parks' uses, those kind of things. Then we would start implementing those things found in our water audits. So, if went to Stage 2, we would basically be mandating that those improvements be budgeted for, and accelerated, into the budget process.

On the community side, this is where mandatory audits would be required for multifamily and commercial/industrial properties. You can see on the side over here where it says "Opportunity," those businesses who are doing it voluntarily now, who do it voluntarily before we go to Stage 2 could obtain waivers or some kind, or not have to do the kinds of restrictions that are facing those businesses, commercial properties and apartment complexes, that don't do it voluntarily ahead of time.

And then there would be some irrigation restrictions, probably in the form of setting some kind of water budget, or some restrictions or scheduling of irrigation. So, you can only water based on your, you know, every other day, or every third day, or something like that, based on your address, or whatever it happened to be.

City of Tucson
Drought Response Plan Stages

STAGE 3 - Cutback of Tucson's Colorado River Water Allocation

City Actions

- Restriction on Outdoor Non-Essential Uses
- Mandatory Reductions on All Potable Use

Community Actions

- Restrictions on Outdoor Non-Essential Uses
- Plumbing Retrofit on Resale for All Customer Classes

Stage 3, that's where the cutback on the Colorado and on the CAP system actually hits Tucson, say, a 5% cutback, a 10% cutback. So, we're actually losing water that we import. We're losing the access to our allocation to import that. So, it - obviously, that's much more important to us because then - depending on how much we're actually using of the Colorado, at

the very least, it cuts our ability to store excess Colorado River Water today for use in the future. And, quite possibly, if it happens at a time when we're actively using our entire allocation, it could actually cut back on our ability to use that water for delivery. So, there would be a restriction on all outdoor non-essential uses on the City side, no fountains, swimming pools would be an issue, those kind of things.

Mandatory reductions on potable use, those would be the kinds of things that, again, if you're using potable use to wash off sidewalks, if we're washing cars, if we're doing those kind of things as a City, those kind of things would be restricted, or reduced, or prohibited.

And, finally, on the community side, there would be restrictions, again, on non-essential uses. This might be irrigation schedules even for residential customers, and Plumbing Retrofit on Resale for all customer classes. A Retrofit on Resale Ordinance would be passed, and what that means is that when you sell a property, you're required to bring it up to the current Plumbing Codes with low-flow fixtures. Then other kinds of things that we would require in terms of outdoor irrigation upgrades, smart timers, those kind of things. But, certainly, this would hit a lot of people in the pocketbook. So, again, it's pretty drastic once we get up to Stage 3.

And, finally, Stage 4, this is where we're really losing the ability to serve. We're really getting to the point where the amount of water that we have available to us is starting to bump up against the amount of water that we actually need on a daily basis to meet peak demand or throughout the year. And this would be, essentially, an implementation of that Emergency Conservation Ordinance. We would prohibit outdoor non-essential uses. We would mandate reductions on potable use.

On the community side, we would enforce those provisions, no filling pools, no fountains, no washing sidewalks. There are a number of different aspects of this that are some stages that you can go through. You can, again, do restrictions. We don't want to kill all of our landscapes, but there would be very severe restrictions during this, because this is really when our water supplies - our ability to supply water becomes a threat to public health and safety. So, that's what we're doing; that's our plans.

**City of Tucson
Drought Response Plan Stages**


STAGE 4 – Additional Cutbacks of CAP, Deteriorating Local Conditions

City Actions

- Prohibit Outdoor Non-Essential Uses
- Mandatory Reductions on Potable Use

Community Actions

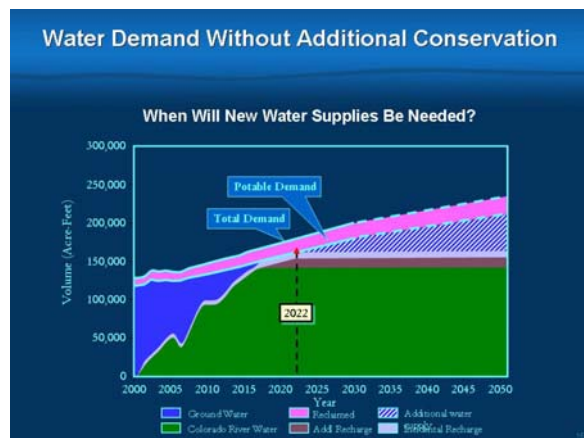
- Enforce Provisions of Emergency Conservation Ordinance



Now, how do we address the future? How do we get to the future? And what are our plans for enhancing our Conservation Program? You've seen this chart before; it's a representation of how we plan to meet water demand in the future. The green here is Colorado River Water, the blue is groundwater, and you can see as we ramp up our use of Colorado River Water, we're ramping down our use of groundwater. The pink or magenta is reclaimed water, and then there's some other recharged water that we have available to us.

If we just stay where we are today, if we were not to implement any new conservation efforts, we were to stay at the gallons per-capita that we use today - and, in fact, we were very conservative in plotting this out in the future - we're using the gallons per-capita that - we know we're lower than that. Our 150 gallons per-capita on the residential side, our 16 gallons per-capita on the reclaimed side, so a total of about 166 gallons per-capita. This curve is actually based on a 177 gallons per-capita-per-day. So, we're planning in a very deliberate manner and using very conservative figures to calculate how much water demand we're going to have.

But, based on this, if we were not to do any more conservation, then we would need to find the next bucket of water in around 15 years. That bucket of water could be a variety of things; it could be additional CAP water; it could be leases from the Native America Nations; it could be additional groundwater importations; it could be effluent that's treated to potable standards and indirectly used through recharge and recovery. There's a variety of different things that we could fill that bucket with. And, in fact, we have some resources that are not represented here that we could use as well, but that next bucket does appear.



If we were to, on the other hand, increase conservation, increase efficiency in the community by about 10% (And we think that's possible) we think that's a very feasible figure. Part of it is going to come from what we do as a utility in becoming more efficient in how we use water in doing the kinds of things with infrastructure replacement and rehabilitation

that allow us to reduce the water that we lose in the system as it flows through the system before it goes through people's meters.

And then on the side of people doing more, our customers doing more, becoming more efficient, new technologies, we think a 10% reduction in demand. And, if we do that, we think we can stretch that need for the next bucket of water an additional ten years into the future. So, this is really kind of the crux of how conservation impacts your water resource planning. Conservation lowers the curve of demand and as you lower the curve of demand, you increase the flexibility of the system. You delay the need for new resources and, in fact, new capital expenditures associated with those resources. So, you actually also prevent having rate shock where you have to have big capital improvements very quickly. You can spread them out over time, and have those future customers pay a higher portion of the cost of those.

How do we get there? Well, Dennis mentioned the Community Conservation Task Force; this was established in 2005. They worked through 2006. We reviewed with them 123 conservation strategies. We consider it the Universe of Conservation Strategies. It's strategies that some other place uses and it's successful somewhere in the world; this is this universe. So, it could be anything from low-flow toilets, to cash for grass programs, to mandated rainwater harvesting, whatever it happens to be.

And we looked at those and we took out of those strategies the ones that would actually have measurable water use reduction. They're primarily technology driven because, if you put in a low-flow toilet, you replace a 3.5 gallon toilet with a 1.3 gallon toilet, you know you're saving 2.2 gallons per flush. You can count on that, nothing can change that, as opposed to education programs, as opposed to demonstration programs where you can see the awareness, we can measure awareness, but we can't actually attribute a gallons-per-capita reduction to awareness programs directly. And so we wanted them to be driven by reductions that could be monitored and measured.

And the Task Force selected 48 strategies for further evaluation; that evaluation, essentially, a cost-benefit analysis; that was done by a consultant that is an expert, an acknowledged expert, by the American Waterworks Association and others, who looks at evaluating the cost of the program, a Rebate Program has a certain cost. Who pays the cost? And what proportion do you pay? Let's use a Toilet Rebate Program. If

Enhancing Water Conservation

- Community Conservation Task Force
 - Reviewed 123 Potential Conservation Strategies
 - Strategies Must Reduce Water Use
 - Selected 48 Strategies for Further Investigation
- Cost/Benefit Analysis
 - Evaluate the Cost, Who Pays, Potential Water Savings
- Task Force Recommended 22 Strategies
 - Approved by Mayor and Council Feb 2008

we're rebating half the cost of a toilet, then our customers are paying for half the cost of that toilet, plus the administrative costs. The participant is paying the other half of that cost and the installation costs. So, who pays is important to figure out, and then the potential water savings for each of those. And it wasn't just done in an individual basis. Here's the potential water savings for our Toilet Rebate Program, and here's the potential water savings for an irrigation upgrade.

What was done is putting these - and they patterned them and linked them together to get the synergies, because some programs will mitigate the effect of other programs and some will enhance the effect of other programs. So, we wanted to pick programs that enhanced each other's effect. So, as you add programs over time you're also improving the efficiency, or improving the ability for the initial programs to work even better in the future.

And, ultimately, the Task Force recommended 22 different strategies, 19 technologically-driven strategies, and three demonstration projects, that were approved by Mayor and Council early this year. So, what were they? The primary ones that we're implementing this year are Toilet Rebate Programs. One of the things that we looked at, initially, was ultra-low-flush toilets, or 1.6 gallons per flush. In concert with the Mayor and Council, we determined that it would be better for us to rebate high-efficiency, or HET toilets, which use 1.28 gallons - about 20% less - 1.28 gallons or less. The reason for that is because, one, by increasing demand, we can increase the number of those kind of toilets and the - and the number of brands that are carried in Tucson so we can, a little bit, drive the market towards making those more available and getting some more competition so we can drive the cost down a little bit, but also 1.6 gallons are standard today.

We would like to - just as we did back in the late 1980s - driving a new standard, we want to see what we can towards driving a new standard. And we know Tucson Water is working in partnership with the Alliance for Conservation, and a number of other partners that are working with manufacturers of toilets and appliances, water-using appliances, to drive more deliberate and more stringent standards, both on the water and the energy side.

We also have commercial/industrial high-efficiency toilet rebate, and

Programs for 2008-09

- Single Family targeted HET toilet rebate
 - ½ the cost of a new toilet up to \$120 (\$200 max/home)
- Commercial/Industrial HET toilet rebate
 - ½ the cost up to \$100/unit
- Low Income HET replacement program
 - Selected senior homes and City-owned multi-family complexes



then a Low-Income, High-Efficiency Replacement Program. There are a lot of people in Tucson who would never be able to take advantage of a Rebate Program because they simply can't afford the up-front cost for half the toilet and the installation. So, Tucson Water is working in concert with the Community Services Department, the Pima County Community Action Agency, and with the Pima Council on Aging to determine a number of selected homes of low-income seniors and a couple of City-owned multifamily apartment complexes that are run by community agencies as low-income housing and, essentially, paying the cost of replacing those - those standard toilets with high-efficiency toilets. That benefits - that kind of has a double bang for the buck. It not only helps out those people who could not otherwise take advantage of this, but because those people are often being supported by public monies through other programs, this cuts down their water bills, and so that takes some of the pain off of the other support that they might need. So, it's kind of got a double bang for the buck.

An Irrigation System Upgrade Rebate. One the things that our water cops have found out in the commercial and multifamily side is that most of these systems that were designed, particularly in the '60s and '70s, are poorly designed. They have things like grass on a slope, a very steep slope. There is no way you can keep the grass up here and the grass down here green without having runoff; you just get over-watering down here and you get runoff. So, they're poorly designed, they're poorly maintained, a lot of them. We know that we can establish a lot of savings, a lot of efficiency on that side. So, this Rebate Program would provide one-third of the cost of an audit prior to what's going on.

The properties that would be eligible for this have a distribution efficiency or, essentially, an irrigation efficiency of less than 45%. What that means is that less than 45% of the water they put on the ground is actually being adequately used; it's actually supporting a landscape; 55% is kind of over-watering; it's watering too much in one area and not enough in another; it doesn't distribute the water evenly. And so those that have a pre-audit and are low enough then can be eligible for one-third the cost of sub-metering their irrigation system so that they can know exactly how much they're using on the outside, as opposed to the inside, and a Smart

Programs for 2008-09

Irrigation system upgrade rebate

- 1/3 cost of pre- and post- audit
- 1/3 cost of indoor/outdoor sub- meters
- 1/3 cost of smart irrigation timers

Up to \$5,000 per property

Irrigation Timer. And then on a case-by-case basis, we'll work with these customers up to \$5,000 per property.

And so this is - this is a way of getting after those multifamily properties that really have a big problem. They're continually being visited by the water cops. They've actually - a lot of them have gone to Court with citations, but they simply don't want to make that initially investment. This is a way, again, for them to do it and let's us help them out, as opposed to waiting until drought Stage 2, and they would be mandated to do it and not get any help from us at that point.

Those of you who are involved with kitchens, commercial kitchens of any kind, know that one of the highest water users is the pre-rinse spray valve. This is the rinser that you take all the food off the plates before you put them in the dishwasher so that your dishwasher filter doesn't get clogged too quickly. That valve uses a lot of water; it's one of the primary users of water in the kitchen, in a commercial kitchen.

So, we had a program established where we actually went in and piloted this with a lot of the Tucson original

Programs for 2008-09

Pre-rinse Spray Valve Replacement Program



- Spray valves account for the greatest use of water for most commercial kitchens
- Valve uses 50% less water
- Valve and installation totally free to the customer
- Partnership with State and Southwest Gas as part of water/energy reduction program

restaurants and they loved it; it cut their water use; it also cuts energy use. And, serendipitously, the State and Southwest Gas started up a program in the Phoenix area to, essentially, provide these at no charge, because they were both water saving and gas saving or energy saving. And so Tucson Water entered in a partnership into that partnership - Rinse Smart Partnership - and now Southwest Gas is paying for the

- the valves themselves, and Tucson Water is covering the cost of installation and - but, we're also getting a lot of good data out of that. Tucson Water's participation in that is allowing us to track the water savings so we can really see that this is working, and whether or not it's worth continuing in the future.

And, finally, there are two Ordinances, the Gray Water Ordinance, which just was recently passed by the Mayor and Council; it 's effective on new residences built in 2010, or

Programs for 2008-09


Greywater Reuse Ordinance

- Effective 2010
- New Residential properties
- Provide 'Stub-outs' for future use



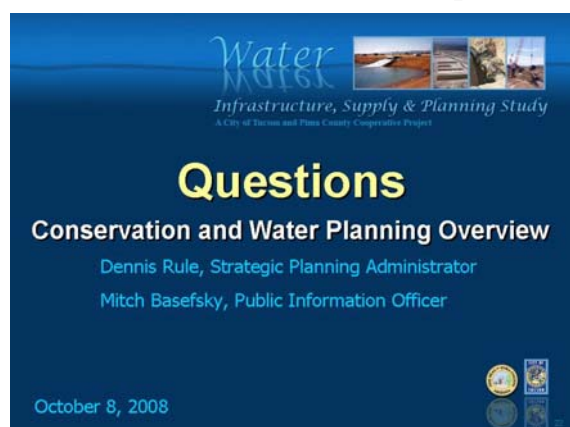
Rainwater Harvesting Ordinance

- Under development
- New Commercial & Multi-Family facilities
- Reduce Potable Use by 50%



thereafter. And, essentially, it requires builders to put in stub-outs to take gray water from the bathtub and the bathroom sinks and the shower and the clothes washer and plumb it - put in the interior plumbing that allows it to be stubbed-out outside the home so that then the homeowner could choose to use that gray water resource for irrigation.

And the Rainwater Harvesting Ordinance, which is under development now, but Mayor and Council, I believe, are voting on this next week, or they discussed it, and they'll be voting on it next week, probably is going to require new commercial and multifamily properties to make up at least 50% of their irrigation needs with rainwater, and that's a process that will go forward. I'm not really sure what the implementation date on that will be; it might also be 2010. But, certainly, those are two different ways that we're moving forward on becoming more efficient as a community.



And that's our Conservation Program, so Dennis or I would be happy to take any questions at this point.

CHAIRMAN JIM BARRY:

John first, and then Bruce.

MEMBER JOHN CARLSON: I was pleased to hear you talk about educating school children clear down kindergarten. It must've been a year and a half, two years ago at a meeting of the - I'm on

the Wastewater County - and they said that - that kids, you can really get 'em fired up and they go home and really nag the parents and, of course, wastewater, they don't want you putting fat in the toilet and - and you'd have a little different orientation now.

MR. BASEFSKY: Grease monster.

MEMBER JOHN CARLSON: Yeah. Now, switching to low-flow, I've heard that there's problems where the slope of the sewer line isn't big enough to carry what you have, and all this brings to mind is you got to work with the County, and I wonder - you didn't mention that, or how close you are or have a person in their office, or do they have a person in your office, because we've often heard of an idea that it ought to be one utility district, both the water and the sewer, but -

MR. BASEFSKY: Yeah, as Melaney mentioned, we work very closely together with Kathy Chavez, and some of the other people who are working Water Resources, and so we sit on their Conservation Committee, we sit on their Drought Response Committee, the local Drought Implementation Group, and then they

also are involved. Kathy Chavez was actually in the Conservation Community Conservation Task Force. So we do work together. And keep in mind for the lower-flow on these ordinances, for the gray water in particular, it's going to be in newer areas, new developments, and so Pima County, being aware of that, will be designing sewers that have the capacity - the potential to carry that in a low-flow situation.

MEMBER JOHN CARLSON: Yeah, yeah. Okay.

CHAIRMAN JIM BARRY: Bruce?

MEMBER BRUCE GUNGLE: I'm sure you've been asked this before, but it's still boggles my mind somewhat. If it's against the law in Tucson for any water to run off of your property, or onto an impervious surface - is that right? Did I get that right?

MR. BASEFSKY: Yes, this is - we primarily look at the commercial or multifamily side.

MEMBER BRUCE GUNGLE: Sure. Then why are commercial entities - the one that strikes me the most is the Marshall Foundation near the U of A - allowed every morning to power wash their sidewalks?

MR. BASEFSKY: Well, the U of A is a special case because the U of A is a different water - what do you call it? A different water -

MR. RULE: Special water provider.

MR. BASEFSKY: so we don't actually have the authority to go onto the U of A campus -

MEMBER BRUCE GUNGLE: Yeah, it is the -

MR. BASEFSKY: - the campus buildings -

MEMBER BRUCE GUNGLE: - Marshall Foundation, though, on -

MR. BASEFSKY: - which is on the north side of Speedway -

MEMBER BRUCE GUNGLE: - it's -

MR. BASEFSKY: - that one?

MEMBER BRUCE GUNGLE: - where - south side of Speedway, actually. But, the Marshall Foundation property, in particular I 'm thinking of, is along University between Euclid and Park -

MR. BASEFSKY: Uh-huh.

MEMBER BRUCE GUNGLE: They power wash those sidewalks every morning.

MR. BASEFSKY: Again, if we could enforce that, it would not be something that we would - power washing - let me put it another way: You can power wash if you're using a high-pressure, low-flow power washing device. We allow that. We encourage that. And for a lot of the restaurants and the other kinds of commercial properties, we do encourage them if

they're going to wash their sidewalks to do power washing. So, that is a useful - and, in some cases, public health and safety kind of thing - but we do try and work with those customers because if they don't need to be washing their sidewalks at all, then they shouldn't be washing their sidewalks. If they can do it with a broom that's, obviously, you know, be a lot better.

But, the University really - University-owned buildings are kind of a special case and we often get calls about them, and we really don't have the authority to enforce the Water Waste Enforcement.

MEMBER BRUCE GUNGLE: This is not University property. This is the Marshall Foundation.

MR. BASEFSKY: I - I - if they're using - if they're a Tucson Water customer, we can certainly go out and check it again. But, again, power - we would much rather have them power washing with appropriate equipment than doing it in a less-efficient way.

MEMBER BRUCE GUNGLE: What you're implying then is that it is legal to power wash, even though it . . .

MR. BASEFSKY: What we're really talking about with the Water Waste Enforcement Ordinance is water that's not being used for its intended purpose, so it's irrigation water that's pouring off property; that's what we're really concerned about. And if somebody's washing down a sidewalk with a hose, we've been very successful in getting people to change to a high-pressure washer that uses much less water. But, again, we're not in a position of prohibiting power washing for appropriate purposes. So, we're trying to get them to use water efficiently and use it for what it's intended.

CHAIRMAN JIM BARRY: Marcelino's next, then Bonnie.

MEMBER MARCELINO FLORES: I have a couple questions. I think with the Drought Response Plan, the notion of non-essential use is introduced. Are there definitions at the various stages that can be elaborated upon? What basically is a non-essential use?

MR. BASEFSKY: It's probably easier to define an essential use. An essential use would be for public health and safety. It would be sanitary water; it would be drinking and cooking water; it would be water for, say, evaporative coolers during the summer when there's homes or other facilities don't have refrigerated air. So, it's really probably easier to define what an essential use is, and it's an essential use is really if you don't have that use, then there are public health and safety consequences to it. So, non-essential use is, essentially, everything else.

MEMBER MARCELINO FLORES: So, if there were to be a public benefit or health benefit for maintaining a riparian

area, or some sort that wouldn't constitute the definition or the - is there an arbitrator of the definition? Is there an appeal process that exists?

MR. BASEFSKY: There is an appeal process, and there are actually set up in that Emergency Conservation Ordinance. It's at the discretion of the Mayor and Council and the City Manager as to how those restrictions are applied. So, if somebody can demonstrate that there's a public health and safety aspect to a riparian project, then that would be considered as part of a case-by-case study. But, certainly, what's intended by this is the water that flows into your home that you actually need for cooking, washing, sanitation, you know, those kind of things.

MEMBER MARCELINO FLORES: And you also had defined a little bit of an appropriate use; is that also another terminology that is defined?

MR. BASEFSKY: Appropriate - well, appropriate use, I'm not sure if there's a definition. There may be, Chris. I don't think there's a specific definition laid out in the Ordinance. Again, it was laid out to broadly cover these kind of uses that are not used as intended, or that would be considered a lower priority than public health and safety.

CHAIRMAN JIM BARRY: Marcelino

MEMBER MARCELINO FLORES: Okay.

CHAIRMAN JIM BARRY: May I interrupt one second?

MEMBER MARCELINO FLORES: Sure. Yep.

CHAIRMAN JIM BARRY: You used the term "outdoor non-essential uses," and I was thinking, well, maybe there are outdoor essential uses and outdoor non-essential, but that's one term, outdoor uses are all, by definition, non-essential, or -

MR. BASEFSKY: No.

CHAIRMAN JIM BARRY: Are there essential outdoor uses?

MR. BASEFSKY: There are essential outdoor uses.

CHAIRMAN JIM BARRY: Like what?

MR. BASEFSKY: For instance, a Fire Department washing off their equipment - washing off, you know, blood off their fire truck, and things like that; that would be an essential outdoor use. Fighting fires would be an essential -

CHAIRMAN JIM BARRY: Well, I'm sorry I asked.

MR. BASEFSKY: Fighting fires would be an essential outdoor use, washing off in front of an Emergency Room or taking an oil slick off of a public walk- - a public way - might be considered an essential use, yeah.

CHAIRMAN JIM BARRY: Marcelino, continue.

MEMBER MARCELINO FLORES: Okay.

CHAIRMAN JIM BARRY: Thank you.

MEMBER MARCELINO FLORES: In the stage planning, or - or even within the conservation planning, does the reliability of CAP delivery come into play in the scenarios? Is the CAP a reliable source of water and..

MR. BASEFSKY: I can probably let Dennis talk a little bit more about that but, absolutely, in terms of our conservation planning, in terms of the Drought Response Plan, we're very aware of the importance of the Colorado River and, therefore, a lot of our plans. You can see as our stages are really driven by what happens more along the Colorado River, than what happens locally, although local conditions can impact what stage of Drought Response we're in, we're primarily concerned with what happens along the Colorado because it is such an important supply for us.

So, yes, we do take the Colorado River Water in terms of our long-range plan, in terms of maintaining flexibility, we're doing a lot right now, we're storing excess Colorado River Water, we're working with the State, we're looking at ways to add additional water, acquire, and deliver additional water through the CAP system, so in a lot of things.

MEMBER MARCELINO FLORES: What I'm referring to is the statement that I believe Larry Dozier had made at one of the previous presentations, that is, you know, we are at the end of the line, and we're uphill quite a ways as well.

MR. BASEFSKY: Yeah. Well, obviously, we're more vulnerable to losing Colorado River Water than somebody who lives along the Colorado, but there are a number of different aspects we're taking. I think I will let Dennis talk about this.

MR. RULE: Yeah. Thank you. Marcelino, if you're talking about the operational reliability of the canal. Yeah, obviously, that's something that we're concerned about. But the Central Arizona Project, you know, is kind of like other water utilities where they have spare parts, they have emergency plans in place to deal with any kind of malfunction that they may have in their pumps, canal lining failure. In many cases, you know, bluntly what they've said is if they have a major failure in the canal lining, they'll dig a ditch around it and continue to deliver water, maybe at a reduced capacity, but they'll continue to deliver water until they can repair that.

So, you know, again, not to say that there are no issues, there are no concerns, but most of these kinds of repairs, they're confident that they can take care of in a relatively short period of time, and either get back to full delivery, or at least partial delivery; again, pretty much like any water provider, any water utility.

MEMBER MARCELINO FLORES: Okay. Just the last question, and I guess this is kind of related to CAP. CAP does not do water quality. Do you, the City of Tucson, Public Information Office, receive many calls or any issues, concerns about water quality?

MR. BASEFSKY: Yes, we do hear about water quality. We test the Colorado River Water that we get, and the other municipalities that are further up the line test the quality of the CAP water, the raw CAP water, before they treat it and then after they treat it, and we test it before it goes into our recharge basins and then after it comes back up.

So, we're very fortunate in Tucson that we have a State EPA-certified laboratory that actually is part of Tucson Water and so we're very able to monitor the water supplies, and we're very confident that if there are any problems with CAP water quality that, one, we'll know it before it gets here and be able to take steps; and, two, we'll be able to address it if we need to.

CHAIRMAN JIM BARRY: Bonnie?

MEMBER BONNIE POULOS: Couple of questions for Mitch and then a question for Dennis. Mitch, you talk a lot about the City has been concerned a lot about high-efficiency toilets, but there are a lot of other uses of water, such as running water so that it's hot in your house and there are on-demand water heaters that are used all over the world, high technology. There are also showerheads that have very low-flow and they run air along with the water, and then there are a lot of surfactants that are very low-sudsing, so they require a lot less rinsing.

Does Tucson Water have a shopping list of these kinds of methods and the kinds or amounts of water that you would save by being able to install these on a massive scale within the City?

MR. BASEFSKY: That's a great question. We do. We actually do showerhead replacement. Part of the Zanjero Program is they go in and they measure the flow of the shower and, if it's not a low-flow fixture, we actually provide a low-flow fixture to that customer. Part of the education program is the same thing. The kids in junior high go home and do a water audit and they measure the flow, and they come back and if they have a standard fixture, then they get to take home a showerhead, a low-flow showerhead.

So, I kind of gave you the high view, and so there are a lot of programs like that. And, in fact, the three demonstration projects that were recommended by the Task Force I talked about the technologically-driven ones, but one of the three demonstration projects was a hot-water recirculation or

instant hot water, essentially, not rebating it at this point, or anything, but showing that that technology exists.

And the Conservation Program works very closely with a lot of the vendors. We have a very good relationship with Kohler and with Rainbird and with the stores, the Home Depots and Lowe's, and those kind of places. So, we do participate in kind of promotional activities for those kind of things. A lot of them are either technology that wouldn't be cost-effective for us to actually rebate or provide, because the savings is either not measurable savings, or there's not enough of a rebate that we could give that would actually impact the usage of that, 'cause they tend to be expensive. Instant hot water heaters tend to be \$1,000, \$1,200, as opposed to a standard hot water heater of \$300 or \$400, and so for us to rebate on that kind of level, you'd still have to have a huge chunk of change in your pocket to participate,

And our homeowners' guide - our website has a lot of conservation information - and the homeowners' guide to using water wisely, we actually look at and have a chart, a table, that says if you change to a low-flow fixture you'll save this much water. If you change to a low-flow toilet, you'll save this much water. If you don't - if you use a broom instead of a hose, you'll save this much water. So, we do give out all that kind of information.

MEMBER BONNIE POULOS: And one more question. If Tucson Water is economically dependent on their customers' use of water, how do you foresee the future in terms of remaining solvent as a water provider?

MR. BASEFSKY: Well, another great question. And, essentially, for each of these programs that we implement, part of that analysis that we do is: How much water savings is there likely to be? And then we program that into the budget process. So, as we look at the financial plan for the future, for 2010, as we're looking for building the budget for fiscal year 2010, we're actually saying, "If these programs are implemented as we're intending to implement them, we may cut our water use by 230 acre-feet this year." If that happens, we're going to sell 230 less acre-feet. So, what does that do to our budget? And so it's part of our financial planning, part of our budgeting process to address the fact that, as we promote conservation and it's successful, we are going to sell less water.

So, there's a certain truth to say that if we don't sell as much water as we anticipate, that puts upward pressure on rates, but there's a hierarchy of our response to that, too. If we don't sell; if we have a really good storm season like we did this year, and so far this year just as a ballpark figure, we've sold about a billion gallons less than we sold to date

last year, and some of that was programmed in, some of that we knew would happen, but some of that we didn't know would happen, and so our hierarchy of responses are, first, find efficiencies, find further efficiencies. Second, where can we cut back? What programs can we not do? Maybe we don't do that home show. Maybe we - you know, or maybe, on a larger aspect, maybe we delay that capital improvement project by a year, or something like that. So, we cut back on our budget.

And then, ultimately, we have to account for - it's a cost of service utility - we have to account for what we sell. But, primarily, conservation is not a driver of rates in terms of increasing rates; it can have an effect if there's unexpected low use. But, for the most, part we're trying to program in what we anticipate, and our models tend to be pretty good.

MEMBER BONNIE POULOS: Thank you. I have one more question for Dennis. One of the big issues with the CAP and other similar types of water conveyance systems is the issue of evaporation. When you have a shallow body of water and it's constantly exposed to high temperatures and sunlight, how do you measure the amount of evaporation off the CAP? And what plans are in place to try and reduce that as a way of recovering or keeping some of the water that's being taken out of the Colorado for this purpose?

MR. RULE: Again, that's an excellent question. I know it's one that a lot of people are concerned about. We don't operate the CAP canal, so I can't really speak to you in real in-depth. But, it's interesting, the canal itself is actually fairly narrow and fairly deep and it flows fairly quickly. I think that they estimate that they get about a two to 3% loss of quantity from the take out at the river to delivery all the way to Tucson; I mean, it's fairly minimal in that context.

Now, when you have a standing body of water, like a reservoir in this kind of environment, then you do get up to six, seven, eight feet per year of evaporation off of that standing body, but just because of the way that the canal is constructed and with the flow, they actually don't get as much evaporation as you might expect, or as you might reasonably expect, but that's something that we could actually ask them directly. I'm not clear on exactly what it is, but I know it's not nearly what you might expect, given the circumstances.

CHAIRMAN JIM BARRY: Tina? John, do you have a question then? Okay. Then Sean. Okay.

TINA LEE: I'm not sure if this is better answered by ADWR, but it's clear that, you know, the Drought Response, in terms of the shortage called on the river mandates certain conservation measures levels, towards sustainable yield, does ADWR anticipate sort of mandating various additional

conservation measures if we're not making progress towards sustainable yield?

MR. BASEFSKY: Well, I can address that, partially at least. ADWR has gone kind of back and forth in terms of conservation mandates. In the 1980s and '90s they set GPCD targets and, in fact, Tucson was unfortunate enough to have done a lot of stuff before those targets were set, and so we were kind of ratched down farther, and we'd already taken care of some of the long - low-hanging fruit.

Then the ADWR established a non-GPCD program where you weren't mandated to reach a specific target, but you had to do best practices. The latest iteration of the ADWR deliberations, as I understand them, is closer to that best practice. They're not actually mandating GPCD targets at this point; it's closer to a best practice. So - and Tucson is very far below what GPCD targets might be set for us at that stage. So, we're not anticipating that they're going to impact us. Now, how ADWR impacts some of the other water users in the State or in the other Active Management Areas, that's a different story..

TINA LEE: Okay.

CHAIRMAN JIM BARRY: John?

MEMBER JOHN CARLSON: Yeah, very quickly. You mentioned 100-and-some-odd strategies that you dug up from around the world and the universe, and you ended up with 23 or 32 adopted by the City?

MR. BASEFSKY: Twenty-two that were recommended and adopted by the Mayor and Council.

MEMBER JOHN CARLSON: I just wonder, Mr. Leader, whether we'd be interested in a short list of those; I mean, just as cogitative background as we think and make decisions.

MR. BASEFSKY: We can certainly provide you with the entire 123 strategies and the list of 22 strategies. They're on our Website, but we'll be happy to provide them to you in hard copy.

CHAIRMAN JIM BARRY: Yes. Sean?

MEMBER SEAN SULLIVAN: Got three quick questions. First, could you provide us with a diagram of your current Rate Structures?

MR. BASEFSKY: Yes, we can do that.

MEMBER SEAN SULLIVAN: And then on Stage 1 of the Drought Planning, you've got mandatory water audits of City Facilities and then, in Stage 2, you've got implementation of those measures found; that leads me to believe that implementation of those measures wouldn't take place until -

MR. BASEFSKY: Not -

MEMBER SEAN SULLIVAN: - Stage 2 occurred - is that the case?

MR. BASEFSKY: No. I'm sorry if I left that impression.

MEMBER SEAN SULLIVAN: Okay.

MR. BASEFSKY: The intent is that they do the water audits and they start programming them into their budgets immediately. What Stage 2 would say is, "You're required to do them very quickly"

MEMBER SEAN SULLIVAN: Okay.

MR. BASEFSKY: - as opposed to programming them in over time.

MEMBER SEAN SULLIVAN: Understood. Stage 3, in community actions, you have Plumbing Retrofit on Resale of All Customer Classes when a house is sold, commercial sold, and you said that would be an ordinance that the Town Council - that the City Council would have to pass; it's not currently on the books; is that correct?

MR. BASEFSKY: That's correct. We don't have a Retrofit on Resale Ordinance. Now - the Council, as part of the package that they they passed earlier this year, there are Retrofit on Resale Ordinances that they've already approved in principle, but the actual Ordinances would have to be developed,

MEMBER SEAN SULLIVAN: So, they do not have an Ordinance that gives them authority once Stage 3 is reached to move forward with that, so there would be a lag time, 'cause I'm sure you would get push back on an Ordinance such as that.

MR. BASEFSKY: Because of the difference between Stage 2 and Stage 3, none of this is going to happen overnight. Stage 2, when a shortage is declared, Stage 3, when we actually have our allocation cut, because Lake Mead continues to fall, we're going to have time between these stages. We're not anticipating - and I'm not aware of anybody anticipates - that there would be less than a year or two, or three, between these stages, because everybody's watching the Colorado, and so if it looks like it's going to continue to fall, we would have the time, the lead time available, to get those kind of things developed and passed.

MEMBER SEAN SULLIVAN: Thanks.

CHAIRMAN JIM BARRY: Dan?

MEMBER DAN SULLIVAN: I'm going to ask a non-excellent question. If - particularly the new programs that are projected, 2010, or whatever, obviously have economic impact, what has been the basic response of the developer and building community?

MR. BASEFSKY: Well, on the Conservation Task Force, we had a broad swath of the community, including building owners and managers, including development community, including landscapers, including realtors, so they were part of this process, to develop this set of recommendations; and, in fact,

the recommendations were brought forward. There were 13 people who actually ended up at the end of this 18-month process still on the Task Force and, of those, it was passed 12-to-one, and the one that voted against it was primarily concerned about the mix of programs, not about the programs themselves. They felt that there was too heavy an emphasis on one segment of the community, as opposed to other segments of the community.

MEMBER DAN SULLIVAN: And those 12 still have jobs?

MR. BASEFSKY: Yes, they do. And we're talking about people who represent the homebuilders' community, who represent multifamily. We had somebody from the multifamily organization, we had people, realtors - the people who - when we went into this process - let me just digress for a second - when we went into the Conservation Task Force process, we made it very clear to the Task Force members that when we come through this process, we allowed them to decide how they were going to choose these. Was it going to be by acclamation? Was it going to be unanimous only? Was it going to be with a majority, and then a minority opinion? They set the rules. They determined what strategies they wanted to go forward with. And so we're very confident that those organizations that were represented, again, including development community, as well as current residents and everybody was going to kind of have the opportunity to have their ox gore and/or to have benefits, and so we're pretty confident that they'll be supported. And that was one of the purposes of doing the Conservation Task Force so that as we brought forth strategic opportunities for Mayor and Council's consideration, that it would have community behind it, so . . .

MEMBER DAN SULLIVAN: Thank you.

CHAIRMAN JIM BARRY: Let's go to the audience. Tracy had her hand up first.

TRACY WILLIAMS: Thank you, Mr. Chair. My name is Tracy Williams, lifetime resident. Couple of things here tonight. When we look at the Conservation Programs, especially in terms of the Ordinances, I'm wondering where the WASH Ordinance went and the Storm Water Management, i.e., the Detection/Retention Basin Manual, because rainwater runoff is going to be part of - I would hope - the water portfolio of using reuse and recharge. So, why aren't those Ordinances up on your list?

MR. BASEFSKY: Well, primarily because those are not Water Department driven Ordinances; those Ordinances - the Water Department participates in the discussion of development standards of these kind of things, but we don't maintain, we don't manage storm water, we're not the Flood Water Department, and so we're aware of those kind of things, but they're not part

of the Tucson Water Programs. So, I really can't answer your question as to where they are in the process

TRACY WILLIAMS: Well, I think - as an inclusive and comprehensive issue, they ought to be up there.

CHAIRMAN JIM BARRY: They will be, Tracy.

TRACY WILLIAMS: Thank you. Next, looking at unintended consequences in connecting the dots. When we see new subdivisions going up and the low-flow toilets, that means there's less water going down the Pima County sewer system. So, with that less water, what we're witnessing as neighbors are fire trucks injecting huge amounts of water through the system and that doesn't seem to be like conservation.

And what my question is - and Melaney, we'd like this one up on the board, please - does the 4.9 million gallons of potable water that we have to put through the sewer system each year - and that's a fact, that's a fact, that's been proven here - 4.9 million gallons, does that include the amount of water that the fire trucks also put into the system to keep it clear?

MR. BASEFSKY: Well, what I can address is the fact that we're using reclaimed water for that. The County has trucks that hook up to our Reclaimed System and they're using reclaimed water to flush those sewers. So, in the past, they would've been using potable water but, currently, they're using reclaimed water to flush the sewers; correct?

MR. RULE: Yeah, where they can access it.

MR. BASEFSKY: Yeah, where they can access reclaimed water.

TRACY WILLIAMS: That's good. Thank you. And one last point to make. The Feldman's Neighborhood, which is very midtown, north of Speedway, Stone and Euclid, so they're right there by the University. Now, there's a neighbor that's very concerned right now and frustrated because they don't know who to call regarding a sink hole that's developing on their private property, and they're calling DSD, they're calling the Water Department, they're calling me, and they're saying, you know, nobody is interested, and I'm sitting here thinking about the sink hole that happened on Speedway by ASDB, and all the neighbors that were up in arms when that sink hole was developing in their backyard, but nobody paid attention until Speedway actually sank.

And so I'd like to know from you all who can I refer this neighbor to because - and I'm glad to have a Ward 3 representative here - nobody in the City is coming to the attention of this neighbor's problem.

MR. BASEFSKY: Chris wants to answer.

TRACY WILLIAMS: Hi, Chris.

MR. AVERY: Tracy, I think I got an email on this yesterday afternoon, and it looks like Tucson Water has taken care of it, and I will forward you what I've got to make sure that it's the right person.

TRACY WILLIAMS: Thank you. Hey, we're all on the same page here, aren't we?

MR. RULE: Actually, Tracy, I have to apologize. I gave Mitch incorrect information. The County has been using potable water off of our system in the past. What we're doing now is we're making access points for the Reclaim System available to the County so that they can use reclaimed water instead of potable water when they have to flush.

And, you know, again, we've been aware that this is an issue in the older part of town. As Mitch indicated, in the new subdivisions the County is aware and they have changed the gradients on the interceptors and so that shouldn't be an issue, but we're working with the County to make the reclaimed water available to the County for flushing those interceptors so that they're not using potable water anymore.

TRACY WILLIAMS: Well, just from a neighbor's point of view, it does seem a bit deceptive to say, "We're saving all this water with low-flow toilets," when actually you're not. And when you're using water to flush the sewer system, you're actually not saving potable water, and that you need to be clear about because we want messages that are truthful, not skewed to what you guys want us to believe.

CHAIRMAN JIM BARRY: Bob?

MR. RULE: That's a very good point.

CHAIRMAN JIM BARRY: Bob, do you have a question?

ALTERNATE MEMBER BOB COOK: Hello. Thank you. My first question really was related to the mismatch between conservation goals and the problem of fixed costs versus variable costs in the Tucson Water budget. And I hope as we move forward that we can come up with a better alignment so that the Tucson Water can actually profit by conservation, because it seems to me that as we move into this - continue to move into this slower growth period we may be looking at conservation, rainwater harvesting as probably the lowest-hanging fruit in terms of additional water supply, and also shifting back to our deferred maintenance, sort of catching up with that after decades of letting that go. So, there may be some opportunities to actually ramp-up conservation as we move into this slower-growth period.

I know that the City Manager several years ago instituted a Sustainability Budget Plan, which really depended upon a minimum of 2% growth in the City's revenues and tax base and, as we know now, that assumption may no longer hold as we

move forward, and I think we're going to have to recalibrate, and I'm very encouraged by really all of the thinking that 's gone into this conservation component. And I know that a lot of it only deals with new development but, in fact, in the future, we actually may be looking at redevelopment as the biggest opportunity here. Thanks.

CHAIRMAN JIM BARRY: Any other questions? Anybody want to do Call to the Audience?

UNIDENTIFIED SPEAKER: I think you just did.

CHAIRMAN JIM BARRY: Yes, that's true.

UNIDENTIFIED SPEAKER: (Inaudible) tell the difference.

CHAIRMAN JIM BARRY: All right. Anybody want -

TRACY WILLIAMS: I'd like to give a round of applause to our speakers.

CHAIRMAN JIM BARRY: Well, I would suggest - very good.

(Applause.)

CHAIRMAN JIM BARRY: Thank you. Once again, I forgot. All right. Anybody want to adjourn? So done. All right. Thank you.

MEMBER JOHN CARLSON: Oh, if we have to.
(Conclusion of meeting.)

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CERTIFICATE

I hereby certify that, to the best of my ability, the foregoing is a true and accurate transcription of the audio recording of (Presentations, and Questions and Answers with Presenters) of the City/County Water & Wastewater Study Oversight Committee Meeting held on October 8, 2008.

Transcription completed: October 18, 2008.

DANIELLE L. KRASSOW-TISDALE