

CHAIRMAN JIM BARRY: Bonnie, do you know if Bruce is coming?
Okay. Bob, Bruce is not here yet if you want to sit at the table. All right. So we'll
call this meeting to order at 5:07. The Staff or Committee have any
announcements?

(No response.)

CHAIRMAN JIM BARRY: Okay. Approval of the July 16th, 2009,
meeting minutes. Do I hear a motion?

BONNIE POULOS: Move to approve. Move to approve.

CHAIRMAN JIM BARRY: Okay. Rob, go ahead.

ROB KULAKOFSKY: The amendment is on page three; it states that .
. . . okay, more CAP water equals - equals more salinity which affects the quality of
plant life. Where was that? Damn, I don't even know now.

BONNIE POULOS: You read it so long ago.

ROB KULAKOFSKY: Yeah, right. Well, basically, I was - I was
referring to ir- - using CAP water as irrigation and that's where this . . .

CHAIRMAN JIM BARRY: Okay.

ROB KULAKOFSKY: - okay?

CHAIRMAN JIM BARRY: You accept that amendment?

BONNIE POULOS: Yes.

CHAIRMAN JIM BARRY: Do we have a second?

City/County Water & Wastewater Study Oversight Committee
_Committee Meeting Held on August 20, 2009 - Phase 2

JOHN CARLSON: I'll third it.

CHAIRMAN JIM BARRY: Okay. We have a third, but no second.

Anybody opposed?

(No response.)

CHAIRMAN JIM BARRY: Okay. I should've announced under announcements that Thomas Sayler-Brown has submitted his resignation; said he just didn't have the time to do it. And I talked with Nicole and we're not, at this late date, going to try to fill that position, so we will be one short.

All right. Call to the Audience? The first one, anybody want to say anything? Oh, sure, Margot.

MARGOT GARCIA: Margot Garcia. As you know, for some time I've been concerned about the meeting place and the meeting time, and I just would like to bring my comments up again.

I believe when you first started this Committee some months ago down at the Manning House, I talked about what happens when you meet over 5:00 o'clock; people are tired; people are grumpy; they've had a hot day. The food certainly helps, and we're thankful for the very fine variety of food that's been provided, and that certainly gets us part - through some of that low blood sugar time.

But the meetings that I've attended I notice one - none of them stay until 9:00, so people get really tired about 8:30 and are really winding down, and you have yet - at least the meetings I've come to - started at 5:00. So I would even suggest 5:30 as a - as a change in the meeting time to give people a little bit of a breath to get here.

And the second thing is the meeting place. One of the parts, in theory, about citizen participation has to do with the meeting place. How do you get people to come to a meeting? And usually it's considered best if it's in a neutral place. So, for instance, federal buildings, which are associated with taxes, are never good places to meet. Churches are questionable because somebody will object to something about that particular religion where you choose to meet. Schools are usually considered a pretty positive place. Parks and recreation buildings are usually considered fairly positive places.

I personally have an objection to meeting here in the realty - Tucson Realtors. I don't feel it's a value-neutral place. I think it's making a statement about the . . . position that the realtors have taken in the long run, and it certainly makes suggestions, for those of us who've been on the environmental side for a long time, about where this Committee might be heading.

I recognize it's a very fine meeting place; it's got wonderful carpeting;

it's probably very easy for the people who are recording; it's got a great screen; and it's centrally located, so there are a lot of positive aspects. But I suggest the values that it is - that it is not a value-neutral place. Thank you.

CHAIRMAN JIM BARRY: Thank you. Anybody else?

(No response.)

CHAIRMAN JIM BARRY: Okay. Nicole Ewing-Gavin, follow-up on Integrating Land Use and Water Resources Planning Report.

NICOLE EWING-GAVIN: So I'm passing around the follow-up document for the paper that we talked about last time, Integrating Land Use Planning With Water Resources and Infrastructure; it's fairly short; it kinda captures, again, the key follow-up items and themes that came out of the Committee discussion.

Just to remind you, the Meeting Summaries capture more detail on the discussion, and then the transcript really captures everything that was discussed. But, if you have any suggested changes and you feel like there were other themes that came out or follow-up items, please let me know.

CHAIRMAN JIM BARRY: Any - Marcelino?

MARCELINO FLORES: Nicole, can you briefly describe the presentation for the Planning Directors at PAG?

NICOLE EWING-GAVIN: Sure. We were asked by PAG to come to speak to the Regional Planning Directors Group, so all of the jurisdictions and Pima County get together regularly at PAG, and we presented the first growth paper, the Urban Form and Infrastructure paper that we did in June. I think it was a really good discussion - Marcelino was there and Melaney -and I think positive feedback that this was, you know, an important step to take and that it would be useful for the region to do such an undertaking. Any other . . . sorry.

CHAIRMAN JIM BARRY: Don't talk with your mouth -

MARCELINO FLORES: My only comment is - is two hours was a bit long and I think it's going to go to the Management Committee from there with, perhaps, some more comments from the jurisdictions.

CHAIRMAN JIM BARRY: Is it possible, Marcelino, that we could get those comments submitted to us in time to consider them in our report writing?

MARCELINO FLORES: That's one of the comments that I had made is - is, you know, the jurisdictions' involvement early on - there was some consternation - and so, you know, at this point I - I kind of opened up the invitation for their participation, for their comments to be submitted, but it didn't seem like there was going to be a galvanization of comments, you know, at this point. I think the Management Committee level, perhaps, they might be inclined to - to do so, but I - I

don't know how officially . . .

CHAIRMAN JIM BARRY: Do you - do you know when that's going to be before the Management Committee?

MARCELINO FLORES: The second Wednesday in September; that'll be the Management Committee meeting.

CHAIRMAN JIM BARRY: Okay. Now that paper was paid for by the City and the County, so it's technically your paper, but it was presented to us. And, if people are out there commenting on it, I feel some slight ownership interest in finding out what other people are saying about it. So I may show up to that meeting and make that comment.

Anybody else want to comment on - on Nicole's very brief follow-up?

VINCE VASQUEZ: Just that it says the CGRD will be providing comments. Have they - have they submitted anything yet? I talked to one of 'em, they said that they were working on something and one of 'em had thought that they'd already been submitted.

CHAIRMAN JIM BARRY: I haven't seen anything; it's not been sent to me.

VINCE VASQUEZ: Huh, all right.

CHAIRMAN JIM BARRY: Anything else?

(No response.)

CHAIRMAN JIM BARRY: All right.

BOB COOK: Could I - could I -

CHAIRMAN JIM BARRY: Yes -

BOB COOK: - excuse me.

CHAIRMAN JIM BARRY: - Bob.

BOB COOK: Thank you. There's one - in the - number one, the comment, Recommendation Themes, there was the general statement that we already have General and Comprehensive Plan policies that we don't implement.

Specifically, the City of Tucson's General Plan, we work very hard to - to . . . to - to place a very strong statement in the implementation component of that Plan; that a complete total cost of growth analysis be done within the first two years of implementing that plan; that's a - that's a key piece for the City of Tucson to move forward in terms of making good Smart Growth policies, in general, and in water infrastructure in particular.

So I would really suggest that we - we actually identify that one policy that we haven't implemented because - and underline it because I think that's going to be part of the - the politics moving forward is really making sure that if - if we're talking about doing good cost benefit analysis or analyzing water as an economic

resource, that we really do a total cost of growth analysis.

CHAIRMAN JIM BARRY: Anybody else?

(No response.)

CHAIRMAN JIM BARRY: All right. Item number 6, Phase 2 Report Writing Discussion. Marcelino and I have been talking about this. We believe that - that the November deadline that we negotiated with extension with Mayor and Council and Board of Supervisors ought to be considered firm, and that we need to - to work backwards from there.

I - I think that we can set a schedule where we - where we have a final meeting to approve a report sometime the week before Thanksgiving week, because we're not going to get a meeting during Thanksgiving week, and then maybe the report has to be finalized and - and sent out early December. But I don't think that we should be looking to ask for another extension, so we got to work backwards from there is - is our opinion. So we're bringing this to the - to the Committee.

And I think it's also clear that Phase 2 final report has got to be our report, not a Staff report, which means we got to write it, which I think means that I'm going to end up drafting it. I think I got snookered on this somehow. But, that being said, I think we need to figure out a scope and a process that allows us to work fast and smart on how we do that, and so we brought a proposal on - on - on how we

might be able to accomplish that.

We sent - we sent out two reports - at least Marcelino and I sent out one report and then I sent out a second report, but we're talking about this is kind of a draft outline. And I - I noticed, by the way, that this is not an action item, so we can only discuss it and - and maybe get some sense of how we're going to proceed. So, obviously, we're going to be thinking about an Executive Summary. But we're looking at the possibility of - of four sections to a report. One is just an introduction. What did the scope require? How did - how do we proceed in Phase 2? What's the organization of the report?

Then a section two, which is like what we did with the Executive Summary in Phase 1, what's the - what are our - what's our big picture view of what happened in Phase 2? What are we really suggesting goes forward from here? And we'll talk more about that.

Section three is to go through each of the issue areas and then the White Papers, and we're making a recommendation that we identify the major themes in those papers and all of the recommendations that were made and grade 'em, see - see how we collectively grade 'em, you know, kind of A through - through F, because everybody's knowledgeable, everybody understands the grading thing.

And then section four, strategic plan for next steps would grow out of

that. Now I'm thinking that that section four could be part of the big picture report, but that's kind of what we were thinking about, Marcelino and I, about the - kind of an outline for the report.

So my - our first question is: What - what's your first reaction to that outline? Does it look workable as a starting point? Bonnie?

BONNIE POULOS: Were you reading my mind?

CHAIRMAN JIM BARRY: No, I just saw you reaching for the microphone.

BONNIE POULOS: I think - I think it makes sense, but I did have a lot of problems trying to use the grading system -

CHAIRMAN JIM BARRY: Okay.

BONNIE POULOS: - that we were presented -

CHAIRMAN JIM BARRY: Okay.

BONNIE POULOS: - so I think we need to discuss that if that's going to be the basis for what we do. But I do think you're correct, we're going to have to consolidate this down into topics that we can actually assimilate in the next eight weeks.

CHAIRMAN JIM BARRY: Okay.

JOHN CARLSON: You said the grading system?

City/County Water & Wastewater Study Oversight Committee
_Committee Meeting Held on August 20, 2009 - Phase 2

CHAIRMAN JIM BARRY: We'll get to that. We'll get to that.

JOHN CARLSON: What is that?

BONNIE POULOS: All these sheets -

CHAIRMAN JIM BARRY: We're going to get to it.

BONNIE POULOS: - that you got -

CHAIRMAN JIM BARRY: Yeah, that -

BONNIE POULOS: - these worksheets?

CHAIRMAN JIM BARRY: We're going to talk about that.

Any- - anybody else want to talk about the - at least the outline? Is - is the outline, as a starting point, workable? Vince?

VINCE VASQUEZ: Yeah, looks good to me.

CHAIRMAN JIM BARRY: Joseph, what do you think?

JOSEPH MAHER: What's your drop-dead date?

CHAIRMAN JIM BARRY: November 20th.

JOSEPH MAHER: And you're going to try and write that? Is this a series of Executive Summaries or recommendations of what's in - what's in the body of some of these items?

CHAIRMAN JIM BARRY: Well, we'll - we'll - I'm prepared to talk more detail about that -

JOSEPH MAHER: The detail later?

CHAIRMAN JIM BARRY: Right. So we'll talk about that. But you're right, that - that's got to be decided. I just want to get a sense if this kind of flow is - is what the Committee is - is looking at. Rob, did you have something? No. You're just passing the microphone to be helpful. Vince?

VINCE VASQUEZ: I was just going - it's following up on what was just said I guess. Are we going to delay it till - till after the presentations to talk about it; is that we're saying?

CHAIRMAN JIM BARRY: No, no, we want to talk about it in this action item and that's going to come up. We've got ideas about section two and section three that we'll talk about.

VINCE VASQUEZ: Oh, okay. I just - when I was looking at three I was looking, you know, do you see it as something where we - we kind of do like an issue identification to start off to kind of encapsulate some of the key concepts that we're grappling with in that topic? And then from - what flows from that is a series of policy recommendations or policy language that are in line with that kind of issue identification?

CHAIRMAN JIM BARRY: I - I see it as - as - first of all, an analysis of what we got from Staff and - and from outside presenters, and then our kind of

hierarchy of - of what we think were the - were the key recommendations that ought to be followed up now. What do we think needs more thought and - and direction? What do we think is just a dumb idea and - and why? That's what we're thinking about.

BOB COOK: Mr. Chairman?

CHAIRMAN JIM BARRY: Yes, Bob.

BOB COOK: Thank you. I just want to make a point that I've made many times and that is: That I think we're . . . we're - we're missing an opportunity to - to - to develop some key responses here having to do with different scenarios that may unfold.

I can't - I can't say enough how - how dramatic the - the changes that we've had in the last 12 months in our economy. Fifty trillion dollars has disappeared from our economy in the last 12 months; this is an unprecedented situation. We - we need to move forward very carefully and identify various scenarios given various assumptions. We can't just make single assumptions about the future and plan accordingly, because we're in a very different chapter in our history. And I - and I think there hasn't been really an appreciation yet about that and so I don't see the - so the language of - of the way this report is developing, which takes into consideration that - that - that our - that our ability to predict the

future, and our ability to plan for the future, is highly constrained by the way this economic crisis is -

CHAIRMAN JIM BARRY: Okay.

BOB COOK: - going to unfold.

CHAIRMAN JIM BARRY: Bob, I think - I think you're going to find out that I'm going to rec- - Marcelino and I are going to recommend that we do exactly that.

BOB COOK: Okay.

CHAIRMAN JIM BARRY: Be patient. So, in - in general, this is kind of an out- - outline subject to revision. Okay.

BONNIE POULOS: Jim?

CHAIRMAN JIM BARRY: Yes, Bonnie.

BONNIE POULOS: Did we receive a copy of this? I've tried to read everything and I don't remember -

CHAIRMAN JIM BARRY: Yes, it was -

BONNIE POULOS: - receiving it.

CHAIRMAN JIM BARRY: - sent out - a memo . . .

BONNIE POULOS: I'm trying to figure out which memo.

CHAIRMAN JIM BARRY: It was August 12th. No, it was - Brenda sent

out something August 5th. The following is on behalf of Chairman Barry and Vice-Chairman Flores.

BONNIE POULOS: Is that what had the grading system?

CHAIRMAN JIM BARRY: Yeah, that was some thoughts on our -

BONNIE POULOS: Okay.

CHAIRMAN JIM BARRY: - Phase 2 report dated August 5th.

BONNIE POULOS: So it should be at the end of that?

CHAIRMAN JIM BARRY: And then I sent out another one that's dated August 5th, but it went out later than that, called, "Some Thoughts on our Phase -

BONNIE POULOS: Okay.

CHAIRMAN JIM BARRY: - 2 Report, the Big Picture."

BONNIE POULOS: Oh, I see it; it's on page eight of that memorandum.

CHAIRMAN JIM BARRY: Yes. Okay. Nicole? So what I want to talk about next is some ideas that we have about that chapter two called "The Big Picture," and it seems to me that - that we want to suggest at least two parts to that. One is we ought to bite the bullet and come up with a definition of a sustainable water future; and, second, we ought to talk about planning scenarios, what Bob was talking about.

And so I just put down my ideas to you as one member to give some idea of what we might be talking about. I - I think that - that if we're going to have a goal of water sustainability, there are four defining realities to keep in mind. Now, we - we may all throw these out, but this is just what I have in mind: Water is scarce because we live in the desert; the droughts make it scarce and global climate is going to make it scarcer even still. We've grown a lot and we've been able to grow because we have been willing to overdraft the aquifer and we have been able to import outside water. Three, we should commit ourselves to ensuring that adequate water's available for the environment; and, four, that even though it's scarce, we have consistently undervalued it, paying only for the costs of service. We ought to think about paying full cost.

And then I suggest the definition of water sustainability: To have water in sufficient quantities of sufficient quality and at appropriate costs to meet - to fully meet the current and future essential needs of people, the environment and the economy with all potable water acquired and delivered from reliable sources and renewable sources that are replenished on an annual basis. And then we would have sections that - that - that kind of break - de-construct that definition and talk about that.

Now, that may not be what - what you all wanted - want to say, but I

think we ought to try something like that to set a context for ourselves. What - what is the defining - how does this all hold together? What - what - after all of this time, what do we really think is - is the - is the background, the major assumptions that we think have to be taken in - into account as - as the County and - and the City and the other jurisdictions and a regional dialogue go forward? And these would be my ideas.

But, obviously, what we would do - what - what I'm suggesting - and I think Marcelino agrees with me - is that people start thinking about this kind of statement for yourselves and - and, rather than waiting until everything is over, maybe start submitting it to Brenda and - and let's start getting people's ideas on - on the context and a definition of a sustainable water future and start sharing it, so that in that sense we can start writing the report now. So that would be one part of what - what Marcelino and I would see as the chapter on the Big Picture. So what do you all think? John?

JOHN CARLSON: Well, I think it's a heck of a good idea that you've gone this far and would continue to go and lead and lay something out and then we can all shoot darts at it 'cause - and - and I sense that you're looking for unanimity here -

CHAIRMAN JIM BARRY: No.

JOHN CARLSON: - and I would hope that - that in the con- - what is printed we have a good consensus for most of us, but that there are - an ability to put little blurbs in there with - with people that disagree with the specific thrust or a bold statement.

Now, sustainability is at odds with the fact that population changes and the drought affects changes, so how you handle that has to be very, very open and comprehensive and - and introduce this idea that maybe we need total birth control or something.

We - we cannot continue to grow in this area as we have in the past is my considered opinion, and - and whether we want to be part of that message or not, it's just - is it sustainable for the present population for how long? It has to be continually re-examined, whether on a five-year or a ten-year basis, to decide about what water's where and where it can come from, and then the big pie is let's desalinate and go for Mexico and ship it up here, which is not even comprehensible or feasible today, but when I'm gone for 50 years it might be good, you know.

I - I just - so I - and as you put this out, whether we break up into little groups with disparated interests in those groups and come back with - with considered judgments, we go off and study on our own, I don't - I don't know.

I'm overwhelmed by the amount of stuff we have and I haven't read it

all. I've got a list here. What the hell's this? And I can't produce it all off of my - so there's a thing of grabbing this information - and I love the disparated voices in here where we can go back and forth, but maybe in small groups and come back and give suggestions to your bold design. But, anyway, excuse me for going on so long, but it sure felt good.

CHAIRMAN JIM BARRY: Well, we accomplished something after almost two years - or a year and a half.

Anybody else have any - Marcelino?

MARCELINO FLORES: Mr. Chair, members of the Committee. One - one of the things, you know, it's just - Jim worked on this statement and, as I was looking at it, I was trying to find the voice that I had lent to it and, you know, my statement - sustainability statement had to do with the continuation of work; and I saw that, you know, there - if you revisit this on an annual basis, then my statement is, to an extent, embedded in there.

So I was going to - when I saw this, I thought of going back - I still feel we have a great amount of information when the sustainability statements were submitted, and I believe that they can be relayed, or at least some of these elements can be further defined, through those statements, through the work that was previously done. So that's one of the efforts that I was proposing to do as a next

phase is to show these - by my interpretation, how this statement connects to the other sustainability statements, and anyone who's willing to help or help interpret that would be very welcome as well, so . . .

CHAIRMAN JIM BARRY: Okay. Well, the thunder of silence is not very helpful here.

MARK STRATTON: Jim?

CHAIRMAN JIM BARRY: Yeah, Mark.

MARK STRATTON: I - I think what you're proposing, I think it really is setting things in the right tone from the standpoint that - getting that big picture out there, what - what really the issues are, and then going through the - the outline of the individual components of that really sets the tone of - of what's out there and then how this Committee is proposing to make the recommendations regarding that. So, that being said, I think your approach here really is the right direction.

CHAIRMAN JIM BARRY: Okay. That being said, is everybody willing to try to - to - to offer their alternatives to what - this is - I'm throwing out just to spark, to be - or to be the target for the darts as somebody said; it's always - I found it's easier to put something on paper to get people to react to than - than to ask 'em to start from the beginning.

JOHN CARLSON: You're the perfect one to do it if you don't mind me

saying.

CHAIRMAN JIM BARRY: Oh, gosh. Do we have agreement from the Committee that you will think about this and - and rather than wait later, do it sooner, and start submitting it through Brenda? Rob?

ROB KULAKOFSKY: Do you mind if I - anything I send to Brenda I CC to you? It seems that when I send things to Brenda, they never get - information to go out to the Committee, it never ends up going out to the Committee, and I don't know why or whatever, but I'd like to at least have a backup so . . .

CHAIRMAN JIM BARRY: Sure.

ROB KULAKOFSKY: Okay. Thank you.

CHAIRMAN JIM BARRY: The backup you can send to me, but don't send to the whole Committee.

ROB KULAKOFSKY: No, no, no -

CHAIRMAN JIM BARRY: Okay.

ROB KULAKOFSKY: - I'll send it to you and Brenda, but -

CHAIRMAN JIM BARRY: Okay.

ROB KULAKOFSKY: - I've sent information to Brenda to send out to the Committee and it isn't sent out to the Committee and I don't know why, a technical problem or whatever, but - yeah.

CHAIRMAN JIM BARRY: It's personal to you, Rob.

ROB KULAKOFSKY: Well, I thought so, yeah. I was trying to make -
yeah. Do you have a comment?

CHAIRMAN JIM BARRY: All right. Yeah, that - that should not be
happening.

JOHN CARLSON: But there's got to be a gatekeeper. We got too
damn much (inaudible) -

CHAIRMAN JIM BARRY: Well, we have to go -

ROB KULAKOFSKY: I sent it to everybody except for John.

CHAIRMAN JIM BARRY: That's right. The rules we were given by the
Clerk's Offices was that we can - we can't broad-base email to ourselves.

ROB KULAKOFSKY: Absolutely not.

CHAIRMAN JIM BARRY: We have to go through a Staff person. But
if it's not working - what you're sending through Brenda - then we've got to fix that.

ROB KULAKOFSKY: Thank you.

CHAIRMAN JIM BARRY: And we'll do that.

So one part of what Marcelino and I are thinking about for this Big
Picture is just sustainability has got to be the kind of irrevocable first principle that we
work from, and then what do we mean by that?

MARCELINO FLORES: Yeah.

CHAIRMAN JIM BARRY: Okay.

MARCELINO FLORES: And just to clarify -

CHAIRMAN JIM BARRY: Yeah.

MARCELINO FLORES: - if I need to work or not on - on trying to say the previous sustainability statements works with this statement or doesn't, is that something that would merit some effort on my part or . . .

CHAIRMAN JIM BARRY: Yes. I mean, I think that we did a lot of work in Phase 1, particularly on sustainability, and we ought to see how Phase 2 relates to that, absolutely. If you're willing to do that, that would be wonderful.

The second part of the Big Picture - and - and this is not the only parts, it's just what we're recommending to discuss tonight - is what - what we call "Building Water Resource Planning Scenarios for the Future."

Now, we've - we've got kind of four issue areas, if you remember, and then these are a series of White Papers, and this is my computer graphic skills at - at their highest, so this is not real good. The point is that they're all - if you look at 'em - they're all kind of interrelated; that - that we - what we say about population growth and conservation can have an awful lot to say about how much new water we might need, vice-versa.

JOHN CARLSON: Oh, absolutely.

CHAIRMAN JIM BARRY: And what Marcelino and I were thinking is that one of the things we could do in this Big Picture thing is ask people to - to view this as kind of a menu of issues that relate to water resource planning, and how do you prioritize those - those elements? How do you link 'em together? How do you see how they - they act - interact together?

And that what we could do as part of this Big Picture is have a - go ahead - oh . . . what I'm talking about is two dimensions seem to me to be important for water resource planning here and everywhere. One is - is how constrained or unconstrained we are, and what level of certainty or uncertainty do we apply to all of the assumptions that we have?

And - and I went on my own and paraphrased - Bob Cook - that's scenario one where you think we're very constrained and that the constraints have a great deal of certainty to 'em. And - and you - you were very clear about this - and this is putting words in your mouth - that - that there were supply factors and demand factors that you think significantly constrain the future of Pima County and that our population is going to grow no more than 1.2 or 1.3 million; that's what you said last time. Now that's subject to - to more conversation, but that's one kind of scenario that you could come up with looking at all of those elements.

Another one is scenario two - which I see as Vince's - which is relatively unconstrained. We've - we've got the water we need, we're buffered, we - we should let the market determine how water is allocated, what - whether we go for new water, how - how it's allocated, and - and that we don't re- - we don't really - we're not constrained by water in terms of how much we can grow. You threw off the figure - and I'm sure it was off the top of your head - of 2.5 million. But, you - you would be different than - than Bob is, you look at unconstrained, but you don't think there's a whole lot of - you're not as concerned about uncertainty in the system as some of the others, like me, are.

And then scenario three is just what I put together for sake of conversation. We think that - that there is some limit to the population growth, but we don't know what it is; that's uncertain. We do think that the population estimates through 2030 are probably pretty good; that would take us up to 1.4. We - we think that - that our water situation, water resources look pretty good, but there are major uncertainties in that.

There's some of us - I'm putting my words in your mouth - that think that conservation and urban form are - are the crucial independent variables that we can work with, and that they will set the context of how much new water we need, but we're going to have to diversify our - our portfolio.

So we could think about - and there's a dozen others, I'm sure - but we could have conversations about how we take those - those elements from the previous graph and put 'em together into scenarios where we think is the direction that the water resource planning ought to go. And *apropos* with John's point, I think that - that we could have - the Committee could produce different scenarios with - with different people backing those and we ought to present all of 'em, but we ought to see if there's a plurality for one, we ought to say that -

JOHN CARLSON: Yeah, absolutely.

CHAIRMAN JIM BARRY: - and whatnot.

But this seems to me to be an efficient way of kind of summarizing a lot of what we've been hearing in Phase 2 and giving direction for the future. What - what are - what do we see as the best scenarios on - under which water resource planning for the future ought to take place? So - Bob?

BOB COOK: Thank you for those kind words, but I - my - my population projection was the least of - the least important thing I said. I have no idea and I haven't done the, you know, the econometrics, the - the linear regressions to - to demonstrate that.

But I think what I was trying to get at - I'm - I'm certain about the factors, I'm not certain about how the factors play in. My point is that I think if you

look at the U of A, PAG, City of Tucson population projections, they're making a lot of assumptions in those projections that they're not coming clean on; they're not stating what their assumptions are, except for the fact that the future will look like the past, and I think that's something that really we need to question at this point. So I would actually put my scenario one more down in the south, you know, this left - lower left corner so we have tic-tac-toe.

CHAIRMAN JIM BARRY: Well, we don't need to argue about the scenarios, what I want to argue about is the approach - and I - and I did take liberties - because you and Vince have been forthright in - in - in your - your ideas on some of these things.

But, the idea of this approach and this kind of a graphic and the description of it, does that make sense? And it seems to me it's something that we could discuss in - in relatively efficient manner and - and write it up in a relatively efficient manner. Bonnie?

BONNIE POULOS: On the surface it looks good, but I - I have to agree, I had the same thought about Bob Cook's statements in terms of where I would put it on the graph.

CHAIRMAN JIM BARRY: Agreed.

BONNIE POULOS: So I think we might want to approach it with that

idea in mind, but whether or not this graphic is really going to suffice for that when we get our scenarios out.

CHAIRMAN JIM BARRY: Right.

BONNIE POULOS: We might have to modify -

CHAIRMAN JIM BARRY: Agreed.

BONNIE POULOS: - how we look at that.

CHAIRMAN JIM BARRY: Agreed.

UNIDENTIFIED MALE SPEAKER: Jim, just go back to colored dots.

CHAIRMAN JIM BARRY: No, I'm going to make an executive decision, no colored dots and (inaudible) voting, 'cause all you and I did was try to cancel each other's votes. Joseph?

JOSEPH MAHER: Can we go back to the previous slide -

CHAIRMAN JIM BARRY: Yes -

JOSEPH MAHER: - your other graph?

CHAIRMAN JIM BARRY: - I think.

JOSEPH MAHER: So, yeah -

CHAIRMAN JIM BARRY: Yeah.

JOSEPH MAHER: - Johnny-Come-Lately to the - to the Committee, forgive me, but . . . so will there be a hierarchy of the various things listed here? And

which ones are we pos- - is it possible for us to control or even influence at this - this late date? I mean, we just finally did RTA after 40 years, I mean, so I'm curious if there's one of these items that really stands out that we can really em- - really emphasize and go after.

And I do like the previous page where you had your - your statements. I am curious. And it's a once-in-a-lifetime to do that CIP stuff, especially when we had both sides of the aisle supporting it; that was an unusual thing. I don't - I'd be curious if there's a major water source in our future. And, with all due respect to John, Florida's already got three plants that bring ocean water up; I believe California, Governor Arnold's planning about five. So maybe that's our - some future water that might even us out because from your major statement before, it appears that you're trying to go equal it out, somehow what we take out we replenish 100% and that's - that's going to be a tough - that's going to be tough to meet. So that's why I ask: What are - which one of these are really standing out? Which one can we really control? And, hopefully, writing the report you can emphasize which ones take - take the lead. Thank you.

CHAIRMAN JIM BARRY: Agreed. I mean, that's what I was trying to say; that we - we - we can do that by how we talk about the interrelationships and how we rank these and - and which ones we think are most important, and - and

that's what we ought to do and that's how we ought to come up with these different scenarios. Marcelino?

MARCELINO FLORES: My math is kind of rusty, but you might be able to correct me on this. If - if I'm - I - I think there's a potential for like 120 relationships between each of these titles; is that kind of what statistically would play out? And then - and then how do we begin to make those connections? I think some of the Phase 1 and 2 reports began to make that connection but, you know, to really have some direction or - or some strong connection on - on, yes, this is a connection between urban form and habitat restoration, is that even worth looking at, you know? And I don't know if we want to limit some - some of those relationships at some point.

CHAIRMAN JIM BARRY: Vince?

VINCE VASQUEZ: I just think we - we - it's, you know, not to over-think it and I think what we're - what we're capable of doing is - I know for me at least as I went - you know, as I go through all those topics - and I know the White Papers and what they talked about, there was - of any given White Paper, maybe two or three take-aways that kind of frame up what I would call like an issue identification type thing that we can all, you know, hammer through what we declare to be those kind of, you know, seminal points of any given topic.

And then I think from that we're also very capable of kind of expressing our viewpoints; we've definitely established that. And - and just to - to go through and hammer out policy language, you know, with some kind of maximum number that we're going - you know, we're not going to overload, but there's some agreement that, you know, we're going to strive for - of the - of the issue identification, maybe a flow-out of a certain number of policies from that. But, if we get too conceptual with our approach and everything, I worry that, you know, the reality of implementing it is going to be, you know, not easy. So my take on it would be that, so . . .

CHAIRMAN JIM BARRY: Go to the last . . . this is one of the - what - what Marcelino and I were proposing - every White Paper - Staff and - and outside people went through a lot of trouble to - to try to frame the issue and then come up with - with recommendations.

And . . . Marcelino, I was thinking that if you look at the scope for Phase 2, the Board and the Mayor and Council were looking for - for a couple things: Water sustainability, agreement between the City and the County. I think they were looking for - for action on items, rather than just simple vague statements, and I think they were looking for recommendations that were forward-looking, not just saying we've done great in the past, let's rest on our laurels.

So what we were thinking as a possible way of proceeding is to take - and this is just drought management, there were the White Paper themes and then there was a series of recommendations, and that lists all of the recommendations - and asking us to grade 'em on those four evaluation criteria. So the way this thing is set up is if Staff found that actual consolidation, blah, blah, if you - if you put in - if you thought it was an A; that that was - that was A in terms of achieving water sustainability you'll put in a 5. You - if you thought it was a B, a 4, C, 3, D, 2, and if you think it was an F, failing, you would put in a 1, and that would sum across, so that for - for - Staff found that actual consolidation, you would have a sum - you would be giving an average grade for that theme. And then go - if you go to the next . . .

JOHN CARLSON: What's those four categories by the way?

CHAIRMAN JIM BARRY: One is - is - is it - the recommendation - the theme of the recommendation, how do we think it relates to achieving water sustainability? And then one is: Does it further agreement between the City and the County? The third one would be: Is it a specific action that was identified that could be taken? And the fourth was: Is it forward-looking, i.e., does it move us beyond where we are today? Those are four categories that we came up with. Now, obviously, the evaluation criteria could be reduced or it could be changed.

But we - we thought that rather than just saying, "What do we think about this paper?" and - and getting a couple of sentences, if we had some more specifics, and then we - each one of the recommendations would get graded and then we would sum it up across all of the Committee members, and then you could rank recommendations by how well we ranked 'em. You could have a chart that shows recommendation 1, 2, 3 and - and those that were As and then those that were Bs, and you would have a chart. You would be able to visually see the recommendations and what kind of support we gave.

VINCE VASQUEZ: Jim, didn't we - when we did that - I remember in Phase 1 we did kind of the ranking system and then -

CHAIRMAN JIM BARRY: That was the dots.

VINCE VASQUEZ: - we got the results - we got the results from the ranking system and we didn't like it and so we ended up kind of arguing it; it just - it - it kind of produced a good conversation, but the conversation was really one that ended up being what our statements on - on the issue were.

I think that, you know, sucking out the themes or the concepts is - is good, but I think, you know, that's a good starting place for a conversation that, in a much more fluid way, we can kind of collectively determine what's important, what's not important, and assign values in the process - in a group process rather than kind

of a more programmatic approach like this.

CHAIRMAN JIM BARRY: Bonnie, did you want to say something?

BONNIE POULOS: I kind of - I kind of agree with Vince in that I - when I was trying to grade these - and I didn't really understand what your - what your topics were. I didn't understand what you meant by water sustainability. Did that mean did it achieve that? What was agreement? Did I agree with it? Did the Committee agree with it? Now you've explained those things. So I think those columns titles need to be more specific, so give it more space and state exactly what we're looking for when we rank them.

But I also noticed that if there was a White Paper whose recommendations and point of view I agreed with, they were getting much higher grades than White Papers and things I didn't agree with, and so that bias is going to show up in that grading system for each individual area. And I think - I think Vince is right: It's a good exercise; it's a good way to look at the areas where we may have agreement and be able to focus on the ones where we don't have agreement, but I'm - I'm a little concerned that it's going to be as easy as it makes it look by filling out this spreadsheet.

CHAIRMAN JIM BARRY: Well, I do think it will take work on the Committee's part to do that, and there's like 14 or 15 papers.

Let me just respond to Vince's point. What Marcelino and I are concerned about is Staff is not going to be available to write this report. We've got to come up with a system of getting our ideas that - that allows us to work fast and smart. This is why we thought this was a good starting point, and then we would - we - they're suggesting - Staff is suggesting that in October/November we have bi-weekly meetings where we can talk about that in more detail.

But if we can - if the Committee is willing to do the effort to get this, this would be a great start on - on finding out how we are - are ranking stuff. And, of course, you're going to rank stuff that you agree with higher than what you don't, and - and me too. And - and we can then - we can also see how far apart - I mean, do - if - if - if a White Paper gets a grade of B in total, was that because there was a bunch of people that gave it an F and a bunch of people that gave it an A? You know, how - what - what level of agreement do we have among ourselves? I think those would be useful things that we could cull out of doing this and it would also provide us with some graphics that would help us explain what we were getting at.

I'm - I'm just worried - I'm sorry, Bonnie - let me just finish and then - I'm just worried we had three meetings of six hours in Phase 1? How long were those meetings?

BONNIE POULOS: Uh-huh, half a day.

CHAIRMAN JIM BARRY: And we had Staff writing reports and drafting beforehand. We don't have the luxury of doing that; that's why I - Marcelino and I were thinking that we need something like this to get started. Bonnie?

BONNIE POULOS: So two other things: One, what if you believe it doesn't apply? Do you give it an F? Do you give it a 0?

UNIDENTIFIED MALE SPEAKER: N/A.

BONNIE POULOS: And, I mean, does a 0 mean it's not applicable and, therefore, the grade is going to be lower?

CHAIRMAN JIM BARRY: Well, our - our grading system was - was A to F, so we would -

BONNIE POULOS: So you didn't -

CHAIRMAN JIM BARRY: - say give it an F -

BONNIE POULOS: Okay. It didn't apply.

CHAIRMAN JIM BARRY: - a failure would be 1.

BONNIE POULOS: And then I also had another idea. Could you go back two slides, Nicole? Yeah. What I was wondering is maybe for each one of us to do this little exercise is to make a grid of those 14 topics across the top and down the side, the exact same topics, and then you could go through and say, okay, how does conservation affect the riparian environment? Do you believe that achieving

good conservation - and give that a grade and go through a grid such as that, in addition to the other grading system, so that that might give us more information that we may not agree with some of the specific recommendations, but there are concepts that would come out of that, that would show where we think there are important relationships.

CHAIRMAN JIM BARRY: Let me see if I understand what you're saying. You would have - the columns would be all of the papers, the rows would be all -

BONNIE POULOS: That's right.

CHAIRMAN JIM BARRY: - of the papers so then you could - yes, I think - I was trying to think of some way of doing that, and if the Committee's willing to do that I think that would be a helpful thing to do.

But the point is that we got to start doing it now and - and we'll get that together because we don't have a lot of time. The 17th of September is - we're going to still be getting White Paper and then we've only got two months to try to do this and we've got to write the report. Staff is not available. We can't ask Staff to grade themselves.

Now we got Vince and then Tina. No, we got Tina and then Vince.

TINA LEE: Okay. I appreciate the need to do something now, and -

and the complexity of this is mind-boggling if you start really dwelling on it.

I tend to agree with Vince, I think sometimes just a broader discussion, because I was having trouble doing the matrix myself, kinda feeling like, one, I wasn't sure whether those papers were written with those criteria in mind so, you know, to achieve an A or an F seemed a little strange. And then I found that not all those criteria seemed to match themes; maybe more applicable to some of the recommendations. So I was having trouble with trying to fit things and understand really what I was trying to grade. So that's where - I'm liking Bonnie's idea as well, but I - I still hesitate on that, the grading.

CHAIRMAN JIM BARRY: I think Vince and then Marcelino, or were you before Vince?

MARCELINO FLORES: No.

VINCE VASQUEZ: I just - I just wanted to recommend - I think we talked about it before - but that we consult the - the Arizona Town Hall process and how they - I mean, they do a tremendous amount of work in a weekend or three days or something like that, and it's facilitated but - and - but pretty much everybody's participating in the writing of it; it's very intensive and they pretty much hole up for a week together, but it's all - it's a deliberative legislative-type process that I think is, you know, very suitable for - for us and for this kind of process that

we're doing.

And I would just recommend that before we make a decision on one way or another in terms of process that we at least consult it because, given the time constraints and given the style of the document that we're intending to produce, a policy document, that it's really - it's applicable.

CHAIRMAN JIM BARRY: Bonnie?

BONNIE POULOS: Well, if we do go with this - with this grading system, one thing that might be useful is not just to show a final grade, but to show like a total number of points, or whatever you want to call it, that each topic got with regard to each of the other topics so that it may jump out at us, those areas where we really do have a lot of agreement, we can put those aside. We know that those will be easy to write. And then that may help us focus on the areas that we really need to have a bigger discussion about.

CHAIRMAN JIM BARRY: Let me just argue with Vince. We - we don't have a week to get everybody together for a week. We don't have Staff to do it. I mean, nobody but me and John can put aside a week. We're the only retired people here. You all work. You don't have a week to give this. We don't have - I don't think we can do that. Maybe it's a good process.

But, again, Marcelino and I are arguing we've got to come up with a

way that we can start the process now. We can start - and - and I don't think we thought that these grades were the end-all; it was a way of getting some idea of how we're looking at it and then we would discuss it. And - and so I'm agreeing that we need to discuss it, I'm just saying that we can go further if we have a system like this grading thing that we agree on and people do it, and we can start getting, you know, like if we got everybody on - on drought management, we could get kind of a report out saying this is what - this is the distribution of scores and whatnot. Then we could start - and then the next paper conservation by Val Little and next by - by Staff, we could start getting those out and preparing for those October/November meetings. Marcelino?

MARCELINO FLORES: Well, I just wanted to - to say in terms of, you know, surveying I think poetry's one of the best ways to survey what people are actually feeling and thinking. Second to that, you know, open-ended questions then come into mind. In - in this case, the open-ended question would be, you know, what two or three things did you take home and - from - from the White Papers? You have 14 White Papers and so, I mean, you can calculate just how many different responses you'll get. That's why - and, you know, usually I am - would - would go the route of the discussions, the, you know, everybody just kinda have their - their input up front like that but, in the absence of time and resources, I think

this grading is just really going to help us out and so that we can come and focus on - on those discussions that really do need to happen.

CHAIRMAN JIM BARRY: Mark?

MARK STRATTON: Yeah, I - I tend to agree with what Bonnie was saying with - with the matrix system. Instead of a total point for a category, the individual components themselves really do bring out where our consensus really is on those items and it really shows where the strength of - of a particular area is focused on, and I think that really is -is the starting point. Don't look at the total points or average for that one item, but look at the individual components within it and see how that all interrelates.

CHAIRMAN JIM BARRY: Are you talking about the recommendations?

MARK STRATTON: Yes.

CHAIRMAN JIM BARRY: Okay. Go to that - how about we do this: We drop out the White Paper themes in the grading and just grade the recommendations? Because I do think that - that - that those were important elements of what all of these papers gave us. I mean, they went to great trouble to make recommendations and I think the Mayor, Council and the Board want to have some sort of a strategic plan or action agenda. So how about if we just grade the

water - White Paper recommendations, but then do what Marcelino suggests for each paper: What are the one or two or three things that you most took out of it? If you'll submit those, then we have a way of - of putting those together and - and making them available for conversation. How - how would that work as a - as another approach? We can't vote on this, but we have to have some sense of how we're going to go, and people have to be willing to start now in doing this. Bonnie?

BONNIE POULOS: I - I think that makes more sense because when I was trying to use these to grade, the themes were the hardest thing -

CHAIRMAN JIM BARRY: I agree.

BONNIE POULOS: - to rank. But you might want to leave the themes there and ask if there's a comment that the individual person has in terms of: Do you agree that this was a theme that addressed the issue? Do you agree - or do you think that this is not the approach to take? And leave them in there, but not as a grade, more as a comment.

CHAIRMAN JIM BARRY: All right. And - and then put together your matrix of - of - and what you're talking about is just each individual paper, not all the recommendations underneath it?

BONNIE POULOS: Right. So - so -

CHAIRMAN JIM BARRY: Right.

BONNIE POULOS: - on your - two previous slides back -

CHAIRMAN JIM BARRY: Right.

BONNIE POULOS: - each of those topics in the same order would be listed across the top -

CHAIRMAN JIM BARRY: And on the -

BONNIE POULOS: - and then listed across down, so there'd be a whole stretch of them where there would be nothing because -

CHAIRMAN JIM BARRY: Right.

BONNIE POULOS: - conservation and conservation -

CHAIRMAN JIM BARRY: Right.

BONNIE POULOS: - but I think it really kind of lets you, in your own mind, see whether or not you think these two things are linked and whether or not they have an impact; it may be a negative impact; but, if they impact each other, then you know right there that, well, these things are connected and then that might help in the grading system by just kind of looking at that initially and . . .

CHAIRMAN JIM BARRY: Marcelino, let me ask: How would you have people fill in the cells? I mean, if - go ahead.

BONNIE POULOS: You could grade it the same way. You could use the same grading system but you could say, for example: Do you believe that you

can have conservation in a situation where there's unconstrained population growth?

And you might look at that and say, well, I think that's a really negative relationship, I'm going to give that a 1. Or - or you look at something and you say, yeah, you know, those two things really go together; if we could achieve these two things, we'd have a positive result and - and rank that as a 5. I'm not sure it's going to be that simple because I just thought of it when we were talking, but in some ways I think it might be just an exercise for ourselves -

CHAIRMAN JIM BARRY: Yes.

BONNIE POULOS: - to see where we think these things tie together and how important they are to each other.

CHAIRMAN JIM BARRY: Marcelino?

MARCELINO FLORES: Yeah, as you had mentioned that I remembered - I think it's called a "parietal chart" or there's - there's a tool such as that that begins to - to - like you - like you said, say how strong a relationship there is and it need only go out to three; but I'll bring that forward and then see if that can be used and it's just - it's - it's - it's the same pyramid thing - it's more like on its side basically - but I'll - I'll send that forward. I think it's a good tool to try and show how strong the relationships are between any one pair, so . . .

CHAIRMAN JIM BARRY: Bonnie?

BONNIE POULOS: Or you could even say there is a relationship, I'm not sure, and there's definitely a negative relationship and rank them that way using, you know, a system, but . . .

TINA LEE: Maybe simplify -

CHAIRMAN JIM BARRY: Tina?

TINA LEE: - it by just looking at that relationship between any two of these elements in relationship to sustainability and whether the relationship between those elements is positive or negative.

BONNIE POULOS: That would be good.

UNIDENTIFIED MALE SPEAKER: Or neutral.

TINA LEE: Or neutral.

BONNIE POULOS: Or neutral.

UNIDENTIFIED MALE SPEAKER: So there's the three.

CHAIRMAN JIM BARRY: Okay. John?

JOHN CARLSON: Jim, I'm concerned about myself being able to discern and make a decision 'cause I - we've got these papers all over the place, I've read a lot of 'em, I've heard some of 'em discussed, but I don't have some because they're on the computer and I will not reproduce a 27-page thing, and then a chart like that doesn't come through on my computer printout very clearly. So I

would like to think that we should make a list of papers that are applicable for discernment before one makes up their mind about what they like and they don't - don't like.

And I really love it when it goes back and forth between two people here and I find myself disagreeing completely or agreeing completely with the other person or halfway in between; it really helps me. But, otherwise, it's just a stab and I've been around water and water problems all my life and studies and I have a Master's Degree in groundwater, but I - I - the specifics here I've gotten lost. The drought paper I couldn't find.

And - and Staff's very good when I call and say I can't get it off my damn computer, can you send it to me? But can we have a list of things that we should be looking at as we make up our minds on this stuff?

CHAIRMAN JIM BARRY: Well, I - I hope that's what we're doing but, I mean . . . I'll try to just figure out what you're saying and accommodate that.

JOHN CARLSON: Yeah, yeah, I guess what -

BONNIE POULOS: John, did you -

JOHN CARLSON: I told Melaney I'm going to come to her office and go through every damn paper I have and let her tell me what I can throw away so I can at least (inaudible).

UNIDENTIFIED MALE SPEAKER: Recycle.

BONNIE POULOS: John, but I do think - I do think that these spreadsheets that were sent to us - and I don't know if you were able to - to print them out - but I think it does exactly that: It summarizes what the theme of each paper was and then it summarizes what the recommendations were. And even if you don't remember all the details -

JOHN CARLSON: Yeah.

BONNIE POULOS: - it seems to me that when you've read the paper - this is kind of a thing to jog your memory about - well, do I agree that that advances sustainability or is that -

JOHN CARLSON: I believe you, so I want a list of those things and I want a printed copy or tell me where it is - if somebody -

CHAIRMAN JIM BARRY: We'll do that.

JOHN CARLSON: - wants to go through this huge mound and - so I can make a learned decision.

CHAIRMAN JIM BARRY: We'll do that. Marcelino?

MARCELINO FLORES: Well, incidentally, I think I may have been the only guinea pig that tried to grade or submit the grades to Brenda; is that correct?

CHAIRMAN JIM BARRY: Yes.

MARCELINO FLORES: Yeah. Overall, I think I gave a C. There was a couple of areas where I grade it a little bit higher and lower. But one of the things - the comments, I think the drought paper completely missed recognition of the environment, 'cause I thought - while we're talking about drought, well, at what point do you say, hey, no more water for the environment?

I looked into the appendix and until the environment is recognized within the supply plan, it won't be eligible for, you know, a level of drought consideration. So - but, in that regard, it was a completely, you know, different subject that - or - or what I took out of the drought paper, but I think there should be a way to - I think like we were talking about introducing the comment section -

CHAIRMAN JIM BARRY: Uh-huh.

MARCELINO FLORES: - that might help say what - what that paper may have missed or - I know we're going to be bringing up the water for the environment in the future, but

...

CHAIRMAN JIM BARRY: Right.

JOHN CARLSON: He triggered my mind, it's anecdotal, and I don't know how much it contributes to this, but I think it was yesterday's *Wall Street Journal*, an incredible rendering of what's happening in California. I've built dams

over there. I've built pumping plans. I've built canals. I've built reservoirs and things that helped the environment. But they are directed by federal law to discharge every day millions of gallons into the delta up there for the smelt. A smelt is a three-inch fish that they use for bait. And after five years they have no proof that it's helped the dumb smelt; but, meanwhile, there's tens of thousands of acres of artichokes and trees and other goods - and it's one of those "M's" - Mendota, Merced - has 40% unemployment; it's devastating and everything's turned to dust.

Now, is it going to happen here? We don't have quite the agriculture intensity, but I'm just saying it's incredible what - I couldn't believe what I said (sic) - and I lived in California four times when things were good.

UNIDENTIFIED MALE SPEAKER: (Inaudible; not speaking into a microphone) groundwater.

JOHN CARLSON: Yeah, I did that - well, surface water so we could keep the groundwater.

CHAIRMAN JIM BARRY: All right.

MARCELINO FLORES: Hopefully, that'll enrich -

CHAIRMAN JIM BARRY: Let me - Vince -

MARCELINO FLORES: - the - the conversation.

CHAIRMAN JIM BARRY: - did you want to say something?

VINCE VASQUEZ: I was just going to say - I know we have some presenters who -

CHAIRMAN JIM BARRY: Yeah, right.

VINCE VASQUEZ: - may have time constraints, so. . .

CHAIRMAN JIM BARRY: Right. One thing I - I was wanting to say is it's become clear to me that after the amount of work that we've done and Staff has done, we've - we have to acknowledge that we've barely scratched the surface on all of these issues, and we are not going to write the final document. I think we have to - to understand the limits of what we can get done, which is another reason why I think this is a way to get started. I think we also have to - to recognize that - that Staff has worked enormously hard and, like legislation and sausage, I don't think we want to know everything that went in to the making of all these papers. I - I believe that it's safe to say that it was not all Kumbaya moments involved in this. They worked very, very hard.

But, I've written enough papers that I know the difference between a first draft and a final draft, and what we've got is first drafts and - and we should - we should evaluate them as first drafts. And what - what we're going to present to the Mayor and Council we have to recognize is going to be our first - it's going to be our last draft, but it's only a first draft, and that we have to keep in mind how really, really

complicated the subject is that we bit off; that the Mayor and Council and the Board dropped in our laps and dropped in Staff's laps; I mean, it's just - just an amazing amount of work.

So I think that we have some agreement here. Let me try to write it up and - and - tomorrow or by Monday and have Brenda send it out and see whether we're in agreement. But I - I do think that we're agreed and - and, Chris, you're agreed . . . that we need to - we need to figure out a way to get this done and to work smart and fast, and - and I think we have some ideas on how to do that.

Just very quickly and then we - as Vince says - we got other presenters. Staff has an idea on - on a schedule with very many colors in here, but go ahead.

MELANEY SEACAT: Mr. Chair, members of the Committee. We took a stab at putting together a more-detailed schedule for the completion of Phase 2. Here we are at the top with the meeting together. The colors in yellow show the scheduled Committee meetings. The next scheduled Committee meeting is on the 17th, and that would be the meeting to discuss the final three technical papers. In between in the white are the grading deadlines. And we worked backwards from - the request was to have the final Committee meeting and the final report approved by the Committee before Thanksgiving, and Jim had talked about that at the

previous meeting. And so working backwards from that and working into a compressed grading schedule, we came up with a potential of four additional meetings to do the report writing and that - those would begin after you've completed your grading.

And since Jim has volunteered graciously to assemble the draft report, he would be on the hook then to prepare a draft and have the Committee come back together in early October. I have it scheduled for October 1st, the first meeting to discuss the grading results and conclusions; and then following that Jim would distribute a first draft report to the Committee the following week. And then coming back on the 15th potentially to meet and review and discuss the first draft report. And then there would be a public comment period starting in - October 23rd and going through the 5th, a two-week public comment period. And then coming back to review the public comments and looking at a third draft report; potentially two additional meetings then to finalize the report.

So the four potential additional meetings are something that we want to propose to you. We would suggest that at least three of them are necessary, and the fourth is an optional.

CHAIRMAN JIM BARRY: This is something that I think we need to put on the next agenda as an action item. But what - what are your thoughts about this

schedule?

JOHN CARLSON: Well, we got Staff, so it's probably a good idea, but can we have a printout of that so we can absorb it?

UNIDENTIFIED MALE SPEAKER: Right here.

JOHN CARLSON: Oh, my God.

UNIDENTIFIED MALE SPEAKER: Boy -

CHAIRMAN JIM BARRY: How's that for service?

UNIDENTIFIED MALE SPEAKER: - are they efficient or what?

CHAIRMAN JIM BARRY: Don't lose it.

UNIDENTIFIED MALE SPEAKER: Now you can really see the colors.

JOHN CARLSON: Yeah.

CHAIRMAN JIM BARRY: Any other immediate responses to this or . .

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UNIDENTIFIED MALE SPEAKER: Is there another packet of papers?

I (inaudible; not speaking into a microphone). Well, that's 'cause . . .

CHAIRMAN JIM BARRY: That's 'cause you were late.

UNIDENTIFIED MALE SPEAKER: Did someone steal it?

UNIDENTIFIED MALE SPEAKER: First come, first served.

CHAIRMAN JIM BARRY: All right. Let's move on. Number

7, presentation, Economic Need for Water is kind of a misnomer. Ron, you want to go up there? I guess we're expecting you to sit up here.

RON SHOOPMAN: Well, we're coming up there and we'll bring -

CHAIRMAN JIM BARRY: Okay.

RON SHOOPMAN: - (inaudible; not speaking into a microphone).

CHAIRMAN JIM BARRY: Sure.

RON SHOOPMAN: It's always good - it's always good to come on when it's break time so you can say your piece while everybody's getting a cookie.

I have to compliment the Committee; it's been many, many months since I visited with you and I've noticed that you're still laughing with one another and talking to each other, unlike our legislature who, in eight short months, have managed to not talk to themselves - among themselves at all. So this is tough work, so my compliments to you keeping your sense of humor through this and - and your intent to do the right thing in this process.

Someone once said that may you live in interesting times. I think that probably characterizes us to a "T." There's probably no time in our history where we have reached the point where the - the financial needs of the infrastructure of our community and our nation, and the financial availability of funds to take care of all those needs, are further apart than they are today.

Truly we face a very, very difficult time in making tough decisions with limited resources; none are probably more important than water. Water, of course, as we all know, is the life blood of the desert; it is a very, very important resource to every segment of our population. So how is it that we develop effective policy? How is it that we take the actions necessary to do the absolute best with the limited resources we have to serve all the needs of our diverse community?

I'm pleased to stand before you today to introduce this paper and a panel of experts who can interpret it for you, because I think it provides an opportunity for us as a community to look at water through a different lens. The ability to look at it through an economic lense, one that will assign a value that no matter what decision we make, at least as a community, we understand where we're making investments, what those investments mean to us.

I'm standing before you as - I'm Ron Shoopman by the way, I'm the President of the Southern Arizona Leadership Council - but I stand before you as a member of one dozen different organizations that make up the Tucson Regional Water Coalition.

The coalition was formed about two years ago. We formed because the members that are part of this coalition provide about 250,000 jobs in this region, and there is deep concern for the future of Tucson and for our economic well-being

and the quality of life that we all love and enjoy here. Water plays a major role in that. So we have a stake in this just - in many, many ways, but for pure wealth generation; to provide the resources we need to - to fix the problems; to repair the infrastructure; to have a high quality of life for our children and our grandchildren.

So we hope that this paper will provide for all of you, perhaps, a different way to think about water; a way to evaluate the decisions that we make in a productive way that keeps our eyes open to what we're really doing as we move forward.

During Phase 1, we pro- - we provided for you a copy of who we are as a coalition and I have some copies of this. I'll leave them down here for any of you who are interested in seeing who's part of these 12 business groups. But, in this paper we presented, we provided principles of water sustainability from our point of view. Two of those principles talked about valuing water as an economic good and using that economic value as a methodology to assess risk and to assess viability of the decisions that we make.

So this paper has definitely been written based on our principles as a coalition, and I have to say that we're a business - a group of business organizations; we are not economists; therefore, this was heavily researched. We went back and used fact-based research upon which we could build the paper that

you see; in order that we could use it as a baseline from which the discussions can move forward.

In the paper there are a number of interesting things. We make some recommendations that essentially can be encapsulated by saying, "Use economics as a methodology to make solid decisions on water." We also provide some examples of how using this model might be applied to local issues.

I will say that part of the paper - as clearly stated in there - is it's a place to begin the discussion; they are not end-all recommendations; but, certainly, when anybody reads them, it sparks debate and we start thinking about, well, what is the real value of the steps that we're taking? And that's our hope today.

All the members of the coalition played a role in developing this; it's been quite a process. A small subcommittee did the majority of the work. And, in the interests of full disclosure, I'll tell you that we did reach out to Vince and ask him for some of his expertise in this process.

We also reached out to some people who know a lot more about it than we do: George Frisvold and Carl Bauer, two of our panelists, U of A economists - who will be available to talk to you shortly - provided peer review and a lot of very important input. The coalition as a whole provided the edits and, what you see in the paper, is a result of that work.

We're pleased to introduce the concept of water economics into this debate. I remind all of you, though, that as business leaders we have the same concerns. Everybody in this room wants a safe, reliable and a sustainable water system for a vibrant future for our region. So we're in this together, and I invite you to look at this paper and embrace the parts of it that you feel can be helpful as we together move forward to try to find the best solutions for our region.

Now, it's my pleasure to introduce our panelists. I'm going to start with George Frisvold. Talk about some impressive folks at the table in front of you. George is a Ph.D. from the University of California Berkeley. He joined the faculty at the University of Arizona in 1997. He's a visiting scholar at the National Institute of Rural Development in Hyderabad, India, a lecturer at John Hopkins, and a Chief of Resource and Environmental Policy Branch of the USDA's Economic Research Service.

Carl Bauer is another gentleman who is joining us. He's an Associate Professor of the School of Geography and Development. He has worked on water policies at the intersection of law, geography and political economy. His research has focused on water rights in the western states, and he has done work, not only in the United States, but down into Latin America as well where he has particularly invested a lot of time in Chile. He's worked on these issues to solve - helping to

solve water conflicts in governance and environmental concerns as well.

Te final member of our panel I think is a very important addition to the - to the other two gentlemen, and that's Thomas - Tom Arnold who's a Senior Management Analyst for Tucson Water; brings the local concerns and the local viewpoints to the table, and we really appreciate him being willing to stand up here and express his views on how this paper might impact the future work that we'll do together.

So I think we will start first with - is it Carl who's going to go first on this?

CARL BAUER: Sure.

RON SHOOPMAN: All right, Carl. If you'll come forward. Thank you everyone and I hope that this is a productive session for you, and I'd like to thank all three of our panelists and I will sit down and let them talk.

CARL BAUER: I'd be happy to sit here if that's okay if anyone can me and . . . okay. Thanks very much for the invitation to share something with you all. In the interests of full disclosure, I'm have to say I'm actually not an economist; some people think that's what makes me worth listening to and other people think the reverse because I tend to opine about economic things, but actually I would say that the - the take-home message of all my comments about the role of economics are to

careful about it, rather than to assume that there's some sort of established objective analysis that leads to the right decisions.

I, myself, have more training in the legal institutional political aspects of markets; in particular, water markets. If you're wondering what I'm doing here talking to you about them, I've been working for about 20 years in doing research on water markets; first in the western U.S., mostly California; secondly, in Chile; and then, thirdly, basically trying to relate the model in Chile, which had become an internationally famous model of a certain approach to water markets. I did a lot of work relating that model to conversations going on in other countries that were thinking about adopting water markets in some form.

And one of the things that I already knew and - and learned a lot better in the process of doing some of that work - much of which was actually as - as an independent consultant where I was hired precisely for being a non-economist talking about economics - it's a small niche, but some of us had - one of the things I learned through that is that people think about very different things when they throw words around like "markets," unlike economics, and we all need to be extremely careful about that.

I'm by no means anti-market or anti-economics, but I have been sometimes considered to be such just because I'm always saying, whoa, whoa,

whoa, whoa, whoa, you got to look at the institutional arrangements and the legal framework that underlies them in order to talk about them, rather than assume that everybody means the same thing when they use words like “markets,” whether it’s about water or about anything else.

I’ve also done some work in Spain and, in a lot of ways, the most strong comparisons that I’ve seen in recent years have been between the problems - water problems faced in the western U.S., especially the southwestern U.S., and problems faced in Spain, which has very similar kind of climatic conditions in a lot of places, and faces some very similar sorts of water scarcity, challenges - water scarcity in relation to increasing kinds of water demands - in a similar way to the U.S. because Spain is also a basically fairly wealthy developed country in the middle of Europe. So there’s a degree of comparison that’s possible and obvious to people, which isn’t always the case when you’re comparing Latin America to the United States.

Now, I don’t want to comment much in particular on the paper, on the draft. I did read a draft. In particular, I - what I want to use the paper as an opportunity to say is that I think the paper is an attempt to talk the language of economics to economists, or to try to explain the language or orthodox economics to people who are not econom- - who are not economists.

And there's - this is sometimes explained as - as all wrapped up in the question of: What does it mean to consider water an economic good? And here I just - in the interest of saving time, I just want to boil down, you know, what I think is the key point here: Water is obviously an economic good. What that means is that it's scarce; that does not mean that we have to apply markets to it; that's a completely different question, okay? I happen to believe that we do need to apply some market instruments, but it's because we need to face the fact of reallocating scarce resources in the face of growing demands. Markets are only one way to do that; they can be a powerful way to do it, but they don't do it all by themselves. And I think we need to spend a lot more time looking at the legal and institutional framework that either is already in place to deal with how markets work, or that we need to put in place in order to have markets to work.

So, as I like to say, I consider that I'm doing my job if people are criticizing me both from the right and from the left, and that's usually what happens. Some people consider that I'm a market apologist because I consider that market instruments are too powerful not to use, and other people consider me an anti-market critic because I don't think that markets will solve all our problems. Now, this - for those of you who have any experience in Latin America you know that markets have tended to be less regulated and more problematic in Latin America probably

than here, so some of my criticisms come from my work there more than my work in the U.S.

Let me just finish by taking one shot at the paper. I think that one area where I really disagree - and Vince and I have already talked about this, so this is no surprise - one - one area that I don't share the argument of the paper is to claim or to argue that economic efficiency ought to be the main standard for making future decisions. This is a common - I'm going to say "mistake" - I mean, obviously, we can have different views in whether it's a mistake - in my view, it's a mistake; I think that that's - I think it's - it's an overly-narrow understanding of what economic efficiency actually means. I'm going to be willing to take the risk of saying that even though on my right here I have people who know more about economic efficiency than I do.

But, from the point of view of an institutional economist or of a - sort of law - lawyer economist, which is what I am - although I teach in the geography department - from the point of view of institutional economics, the point about economic efficiency is that you have to hold the distribution of wealth and income constant and you have to assume the institutional arrangements as given.

Now, in my mind, those are exactly the problems that make - those are what make things policy problems; is that the institutional arrangements are up in the

air, or ought to be up in the air, and that's what we're talking about when we're talking about policy reform. And, if we're going to assume that the distribution of wealth and income is already fixed and we're not going to touch it, then obviously our hands are pretty tied about what we do in the future.

So, both of those things are the assumptions - both of those things meaning institutional arrangements or institutional context, or whatever you want to call it, and the - and the preexisting distribution of wealth and income, if you're holding those constant to talk about then choosing which of the different alternatives might be more efficient, to me that's too-limited a conversation to really have in the policy arena. So I'll try to say that with - with the kid gloves off and hope that that makes some difference. And that's about all the time I want to take from you today. Obviously, depending on the kind of interactions that you have, I'm happy to respond to any comments or questions.

GEORGE FRISVOLD: Well I'm happy to be here. I wouldn't have dressed like a lawyer but because I thought it was at the - this - this place, I thought I would have to actually dress like a real person, yes.

CARL BAUER: That's because you're a college professor.

GEORGE FRISVOLD: The - I thought the White Paper when it was kind of setting the tone, generally, was asking the question: How do you allocate

resources between different competing demands that are all important? And - and one of the things I think it was trying to do well was actually introduce some of these institutional things where it was talking - basically, the way I read it was: There's this goal of we want to maximum the benefits - you know, there's competing benefits; there's - there's environmental benefits; urban development benefits - so how can we have both, the most of both, but also realizing the institutional restrictions that you have to have full cost recovery; these things have to be paid for?

So, kind of just in general, the way I think of efficiency is: How do you make the pie as big as possible? You know, we would like more environmental benefits. We would like more economic development. Tucson Water would like to recover all its costs. So that's - that's kind of a goal. And so I think laying that out was very important and I think it did talk a little bit about, you know, the - the institutional realities.

Now, a thing I also liked about it was it was talking about the role of price to signal scarcity; that's one very important thing that it does do or can do if it's set right. And, again, the pricing structure can help us - tell us which - which values we're giving up and which are a little more costly.

Now, pricing also affects distribution and you see in water it's very con-
- controversial on how it's priced because some uses of water are absolutely

essential, and some people don't have very much money. So, as soon as you start talking about pricing water, you're talking about distribution. And if you're talking about investments in new water, it's a critical issue of how do you finance that? And the pricing of water is the mechanism used to finance it. So you have two separate issues: What can you do that's efficient? How do you make the pie as big as possible? But your pricing structure is also going to affect who pays how much, and those are distributional issues.

And Carl's quite right that when economists talk about economic efficiency - now the broader term of economic efficiency isn't just profit maximization. You want to consider things like environmental sustainability and benefits. But usually the idea is that we can put dollar values on all the benefits, add them up and the biggest one is the best. Usually the concept of efficiency says - says nothing about distribution. And I think a good thing I liked about the White Paper was that it was saying, "Well, no, distribution matters," and we have to actually, you know, kind of ask that question, have a debate about who pays how much.

Other things I liked about it is it introduced the notion of opportunity costs, which is really fundamental, but it's very hard to teach people. The idea of an opportunity cost is, basically, if you're using a resource for one thing, you can't use it for other things. If I weren't here, I would working out at the Y. So my opportunity

cost of being here is - is getting flabbier than I already am. So - but it also says if you - if you put water one place, you have to give something up and it says - you know, and the idea is like, well, how do you measure that? And that's a key concept.

Now, where I have problems with the paper is when it starts to get to specifics, and I think one of the problems - and it's a - it's a classic problem to the point where, you know, it shows up in textbooks - this is what's called the "average versus marginal fallacy." When we want to - first, if you're looking at the values of things, if you try to look at the average value of something, it's very different from the marginal value. The marginal value is how much you would pay for, like, the next unit or the next small amount of something. And when economists try to balance, you know, allocation of scarce resources between different activities, you want to look at the marginal values.

The average value could be something very, very - several orders of magnitude higher than that marginal value for essential things. So, for example, I think the Phase 1 study report is kicking out this number \$160,000.00 per acre- foot as a value for water. Well, there's problems with how - how that's calculated but, more fundamentally, that's an average value.

And what - the thing is if you take a good that essential uses, its value

is really, really high, and so then you divide it by something and you get a very, very large number. And the problem with that is that all essential uses have really, really high value. It's like, okay, the total value of all economic activity in Pima County is really, really large. So the value of wa- - the average value of water going to that is very large. Well, the total value - but that kind of calculation is kind of assuming if you had - if you had Pima County and then you didn't have Pima County, you completely got rid of the economy, so having no economy has a huge cost, but that's not the average value of water in urban development. Likewise, food is essential. If we didn't have food, right, you know, everybody would die. So the average value of water for food is infinite. Well, if you didn't have a functioning ecosystem, we'd all die, so the average value of - of ecosystems is infinite.

So if you're working off of, you know, average values, you know, you're going to get in a room where, you know, one group is saying, well, the total value of having a thriving, you know, developed economy is really, really big. Well, the value of being able to eat is really, really big. The value of having a functioning ecosystem is really, really big. Okay. But that doesn't help you choose between which one.

So the marginal values are basically if you were going to have a little bit - a little bit more, or a little bit less, not completely eliminating things at the margin, how would you trade things off? Now, at the margin I have - I've yet to meet

anybody who would pay \$160K for an acre-foot of effluent, but - I'd start pumping water out of my tap if I found somebody like that.

Now, if you look at marginal values, they're much closer to what people are willing to pay for something. How much people are actually paying for something is a lower bound for marginal values. And if you look - you know, economists have done studies of the marginal value of water in agriculture versus urban uses. And there's a host of studies that show because of institutional restrictions, the marginal value in ag is a lot higher - a lot lower, sorry - than a lot of other urban uses. With environmental things it's a little bit hard to tell depending on which - which area you're looking at. But I'd like to just, you know, point out that that average value in that . . . in the Phase 1 report is not something that any economist is going to say is a useful number.

Another thing in terms of the average marginal cost problem is average versus marginal costs. Again, the average cost is how much is this, you know, operating, like how much does it cost for you to operate, divide it by the amount of water you're providing, that's the average cost. Marginal cost is the cost of going out and getting more or doing, you know, of cutting back.

Now, if water supplies are getting scarce to the point where going out and getting more water is more expensive, then that marginal cost is going to be

higher than average cost. And one of the things the White Paper talks about is average cost pricing which economists are all going to agree is inefficient; that, you know, if you're going to talk about economic efficiency, that's - the average cost is not adequately signaling how scarce water is, and it's to the point where - this is something from a undergraduate textbook, let's see, everyone agrees that the price should never be set below short-run marginal costs, and there's other ones I won't bore you with. But economists wouldn't say average cost pricing is the way to go and this is how you should structure something.

Now, having said that, you wouldn't want everybody in Tucson to pay the very, very high cost of the very - new water supplies, basically because you would make a huge profit, the City Council would get all voted out, and so this is why you have things like tiered pricing. And so some of the things that Tucson Water does, like tier pricing, is much closer to something like a - a - you know, marginal cost pricing system. And so the average cost pricing recommendation here is probably calling for a price that's too low.

And so to deal with these efficient - efficiency issues, price for some people - not for all uses, but for some uses would probably - would have to be higher than just the average price, and then you would have to build in concerns about who pays what, but you could have different kinds of block rate structure to deal with that

sort of thing, and so that's a way to get it. You try to - block pricing is historically been a way to try to get it, both this efficiency and equity issue.

Now, having said that, what an economist will say in a textbook, you know, is the ideal pricing structure and what to do is very, very different than actually trying to go out and implement something, and there's issues of equity besides efficiency.

There's also issues of simplicity, because trying to develop the most efficient pricing structure often requires a lot of information that's very hard and expensive to get. And so then the question is: If you have - it's - it's a lot easier to develop approximations; it's like, well, this is inefficient, but if it's 90% efficient and everybody understands it and they think it's fair, that's probably better than trying to construct something that's very, very complex and it looks good, you know, on a blackboard but can't get implemented in real life.

And - but kind of in closing I think what I liked about the White Paper was, you know, trying to kind of balance some of the institutional realities with kind of the textbook case, but I think in two places it makes this average versus marginal error in terms of defining values and also in terms of - of which cost you want to base prices on. But I think it's - it's a good place to start. I mean, I think some of the numbers are coming with - you know, some of the numbers are like lower-bound,

some of them are upper-bound. I would say that you're kind of using the right map, you may not be on the right place in the map, but it's a good place to start.

And I think a thing I really liked about it - it was - it was - I thought it was really asking all the right questions. That's it.

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(Transcriber's Note: Mr. Arnold speaks extremely fast and is difficult to understand at times.)

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TOM ARNOLD: I guess what I - what I bring to - to the - to the table here is - is really it's not so much the theoretical, I don't really think anybody's arguing creation of markets because markets may not serve the Tucson area very well. We may not be able to compete in an open market, say, for new water off the Colorado River. Our economic power is not sufficient or comparable, say, to Las Vegas or Phoenix. So, I don't think anybody's really arguing for creation. I think it's an interesting concept, but creation of markets and - in this context generally would not work.

And also there's sort of interesting things for Tucson is that we get - we get a screaming deal on Colorado River water and we talk about efficiencies and cross-subsidies, we are - we are subsidized by our fellow, you know, Arizonans and

stuff like that. So, when we start on that slippery slope towards these - these ideas of efficiency and markets and - and we start looking at the benefits of not having an allocated system and sub- - cross-subsidies, suddenly it's like, well, you know, in that case we don't necessarily want it.

But what - what I - what I - I have primarily worked on over the last several years - and we can - it seems like for years now we've been working on it - is the Community Conservation Task Force. And what we tried to do is - and this is to sort of address some of the issues that were in the paper regarding the tradeoffs. Should I spend money on reducing demand or should I consider acquiring other water resources for that same amount of money? Within the context of conservation itself, we - we're always struggling with the tradeoff: Well, where do you - we want to spend our conservation dollars wisely and so there's at a point - a breakpoint at which I will do this project versus this project, and some say it might be a toilet rebate program versus water harvesting and there's - there's - we've always struggled with that. And so it's more efficient to find that - do a economic analysis, determine whether or not that project is more efficient an expenditure of water conservation dollars than on another project.

And - and, of course, we - we did, though, we considered that and we also considered issues regarded to - to the issues of acquisition because we knew

we were - we're building up towards our utilization of CAP water and that there was a point in time where there may be another bucket of water. And this goes - sort of this question that was raised in the paper about should we be buying water now while water's available and postponing - postponing the purchase of - of investments in conservation?

And, of course, what we - what we considered in the - in the benefit cost analysis was - was that we - we thought, well, would we not - and really what - primarily what we're talking about is delaying the acquisition because given growth, you're going to still need that additional resource. You may have a lower per-capita but you're still going to reach a threshold of - of - of demand that's going to exceed your supply and you may not be able to avoid it.

So we - what we assumed was - is that what we might avoid is the delivery charge, but we might choose to buy water, so you could secure the resource so we couldn't delay. So - but what you could avoid is the delay of the delivery, so the valuation in terms of the conservation program was, yes, we'll probably buy it because it's a resource that we need to have and we would - for the economic analysis, we would avoid the delivery charges.

So, it's not - so the conser- - you know, sort of this question do you trade off conservation for water resources is absolutely something I think probably

needs to be considered because sometimes conservation water is quite expensive and - and it may not be always reliable. So part of getting this idea of where do you - where do you make those tradeoffs and, of course, now they created sort of a strawman here and you start looking at it; it's 5,000 acre-feet for this and so on and so forth. What we would've considered is, well, we can avoid 5,000 acre-foot acquisition of water, we can avoid the delivery charges, we can avoid the pumping charges in - in the system, we can avoid all these things and you begin to lower the price of a toilet down to something more approximate to the acquisition of water. But the fact is you're going to need to buy the water; I mean, you're not going to be able to avoid it; it's just you may be able to delay the delivery of it. So if somebody offered you a reasonable price on - on - on a - on an acre-foot of, you know, Colorado River water, it may be prudent to buy it because you may not have another bite at the apple later on.

So, in some cases, these are not necessarily tradeoffs, you know, you don't have the opportunity to tradeoff. So - so the paper's absolutely right, I mean, we - I - I think we've - we've - we've tried to consider, you know, economic - we - we attempted to do an economic analysis and - when we did the water resources planning. We - we - we consider the economic tradeoffs. So it's not like it doesn't exist out there, but I think nobody's applying it because we have applied it in water

resources planning - to some water resource planning, considered the economic - you know, the tradeoffs were developed to this supply or that supply. And - and, of course, you always have - have these issues, so I think this idea that, you know, there's no consideration to it is probably a little - a little extreme.

I think within - within some areas of the - of the, say, within the conservation or - or through this debate between acquiring water resources or spending on - on - on, you know, on conservation this is probably a legitimate debate and we - when we did the conservation, you know, cost benefit analysis, the time frame for acquisition was so far out, so it wasn't really necessarily something that came into play.

In terms of water pricing in, say, in the Water Department we have, you know, this - we have an unusually aggressive water conservation block rate structures to get to this (inaudible) of marginal price, but we have no idea of what - what the meaning of, you know - it's really more of a community standard; it's not really a strong, you know, you know, economic and, you know, it's not on the margin- - it's based on something - what we think the, you know, the mar- - the market will better - but to do that we had to - we had to subsidize everybody else, I mean.

So the average - the average price is, say, two bucks, we charge most

of our customers a buck twenty-three so you end up, again, by trying to create these - these - these refined, you know, price signals you end up within the institutional constraint of cost recovery and you end up moving - moving the price signals around, and what we ended up doing was lowering the prices on the majority of our - our users.

And so then you create, you know, to charge one a high marginal rate, you ended up having to charge - charge everybody a below-cost rate. What's the net effect of that? And, of course, is it efficient - was it an efficient way to do it? Well, it's hard to say because we ended up with essentially a zero price effect because they just - they tended to wash themselves out on - on - on an average price - price basis.

So I guess - I think the main point is we - we - we - the Tucson - the City of Tucson Water Department has - has incorporated - I think we - we have made these attempts. I think it's absolutely a legitimate paper to make an argument that we should incorporate this kind of information into the decision-making process. We do have limited resources; it's not a particularly wealthy town and we have to spend our money wisely and either within, say, the conservation program or as water conservation as a - as a - as an efficient way to - to expand your water resources supply and I think we have done that. That's it.

UNIDENTIFIED MALE SPEAKER: I think this was exactly what we -
(inaudible; not speaking into a microphone).

CHAIRMAN JIM BARRY: Committee?

CARL BAUER: Can I make a quick comment first?

CHAIRMAN JIM BARRY: Yes.

CARL BAUER: Just a comment to Tom. Yeah, sure. I thought everything Tom said was really interesting and reasonable, but let me just point out that he also confirmed my lead-in comment which was when people talk about markets they're not always talking about the same thing. His first comment was: There's no way there's going to be a market here. We could never do it; it won't be feasible. And at the end of his talk he was saying, "We're going to have to buy water somewhere, obviously, there's no alternative." Which of those two pictures is true? I mean, what do we - what do we call a market? We have to get into that conversation next about, well, I thought - that sounds like a market when you say we have to go buy water. You're getting it from somewhere.

TOM ARNOLD: Right, but I'm saying we probably don't want to be a position to be bidding.

CARL BAUER: Okay. Well - and this - this - this sort of underlines my - my - my institutional point which is that we don't want to make the mistake of

thinking the economic value means what markets tell us, because markets are telling us things, according to the legal and political decisions that we as societies have already made about how they're going to work, including whether we care about environmental restoration or protection. If we care about it, we're going to make some political and legal decision; that's going to be reflected in its economic value or in the way - including even market institutions will respond to it. So don't make the mistake of thinking that economic value is somehow a neutral product of the way markets work. Markets are products of the way institutions works.

BONNIE POULOS: I'd just like to ask the panelists if they have any specific comments about the last page where they actually make recommendations.

CARL BAUER: I don't think I got that draft.

BONNIE POULOS: It's page 14, and it's item number 4, Recommendations, and it lists six of them.

CARL BAUER: Okay. I didn't get that draft, so I have no comment. These guys may.

TOM ARNOLD: I - I generally agree that these are things you - (inaudible; not speaking into a microphone) - I - I didn't have any problems with most of those; I mean, it's - I mean, it - the case - the case was made, you know - and essentially there's a really simple argument: Oh, lookit, here's a toilet, it costs nine

thousand bucks, you know, per acre-foot and \$5,000.00 for this and - and - and the problem is - is that every case has to be, you know, fully flushed out. And so what happens is you create this case and it's actually - doesn't really support the argument for full, you know, economic analysis; it's sort of like here's something and, well, lookit, there's a big difference; then, of course, when you get into the details of it you have to consider all the full costs and benefits.

If the - if the argument is simply that we should consider the full cost and benefits of our decision-making so that we can make best use of our water resources and our money, I don't think anybody would disagree with that. And - and, given all the institutional constraints about markets, I mean, these are all sort of high-faluting ideas, but the fact is nobody really wants to have a statewide market or, you know, a western water market or even - even - maybe even a market, you know, in the metropolitan area in terms of people competing for a limited resource. We're going to approach this from an institutional allocation kind of approach.

But, now - now, yes, conservation measures do have a useful life and they do - they do wear out. If you buy a right, it - it's - certainly is related - it's a Colorado River water right, the availability of water and its position on the river. So which of these two is a better and more - you know, better and more reliable water resource? Well, those are the kinds of things, presumably, maybe this group would

consider or, you know, the - the - the water institutions, you know, the water departments around the city or around the metropolitan area.

There is a - probably is an upwardly - upward, you know, price trend for water rights relative to - which is the argument for considering acquiring rights now versus later, because you can - lots of times you can - you can invest fairly quickly, possibly in reducing demand and make, you know, and have a fairly immediate effect, plus there's some things about the market that leads to more efficient fixtures over time, so there's sort of a natural process of efficiency that also - also builds in which might argue for moving water money to the acquisition of resources versus more investment in water conservation.

GEORGE FRISVOLD: Looking at it, this is kind of - you know, as an economist, it's like - it's like, whoa, I would never think, you know, this would - this would come out of a public document.

Having said that, I'm actually going to be a little bit, you know, critical of - well, not critical, but I think kind of to raise issues having to do with point 4, which is, you know, the idea we're - let's - we're going to put everything in a money metric, right? And then add everything up and figure out what the most efficient thing to do is. You know, in textbook economics, that's what you do and there's - there's - there's a reason for doing that.

Now, practically speaking, when economists actually try to do that, they get things thrown at them and the reason is that a lot of these values don't show up in market prices. So if you're saying, well, here's something that has a market price and then something else doesn't have a market price, well, we get in trouble two ways. Environmental economics has made huge strides in terms of trying to, you know, evaluate, you know, non-market benefits.

For example, I've done a study looking at, you know, being next to riparian vegetation in Rio Rico increases the property value 6%, which everybody thought, oh, that's small; that doesn't matter, until all house prices fell 2% and then 6% sounds like a lot of money.

And so you get in trouble if you - if you don't try to put a dollar value on environmental benefits. People yell at you. If you do, people say, well, how can you do that? You know, this is - this is the environment, you can't value it. But there's - in this discussion, if something doesn't get valued, it literally doesn't count.

And so a lot of strides have been made in environmental economics to try to put non-market values and any full-cost benefit analysis would try to do that. Now, having said that, you know, in applied work, when that happens, people get mad at you sometimes because you're trying to put a dollar value on things.

And to give you an example in a - in a former incarnation in

Washington, DC, I was criticizing certain USDA conservation easement programs, and I was being attacked by the person at EPA because I said, well, this program's a good program, but it's spending too much money, and I was attacked for, "Well, don't you believe in, you know, soil conservation and duck benefits and things like that?" And I said, "Yes, but if you're spending too much money, that's coming out of the WICK program." So you're literally taking money - you're taking food away from WICK babies for duck habitat. So, you know - so suddenly then I wasn't the bad guy economist. The other person was the bad guy taking money, you know - so, you know, taking food out of the mouth of babes, literally, for ducks.

And so sometimes in - for policy, it's - it's nice if you can try to have common metrics and add them all up, but sometimes people can't wrap their heads around a dollar value for certain environmental things. And so, you know, you might say something like, "Well, do you really want to give up, you know, such-and-such development potential for this species or for this habitat?" Let people see what it is physically and let them make the choice. So, actually, sometimes, you know, rhetorically, if you try to put everything into a dollar value, you just offend people.

But, no - but I think it's important to let people know that, well, you know, if you have more of these non-market things you are giving something up, but - but I think, you know, practically speaking, just adding everything up is - is hard to

do.

CHAIRMAN JIM BARRY: (Inaudible; not speaking into a microphone.)

CARL BAUER: Sure. The first one - I already disagreed with number 2, right, on economic efficiency and I - and I appreciate what George just said about number 4.

I agree with number 1; it's a piece of international rhetoric that lots of people have signed onto. Let me just point out that it says two things. You got to take two messages out of number 1, which says that water is economic resource with a value on all its competing uses. I think that's a direct quote from Dublin, right?

UNIDENTIFIED MALE SPEAKER: Uh-huh.

CARL BAUER: There are two things to get out of that: Number one is that water is a scarce resource and tradeoff is the key word in thinking about how to respond to its scarcity. We have to make tradeoffs, whether or not we do it with fancy pricing systems. But the competing uses part I think is really key. I think that we have to understand the contribution of thinking economically and thinking about markets as a way to potentially defuse conflict because that's what, you know, what's driving the increase of - and demand for water is lots of increases of demand for water; lots of different ones.

So we don't just need to think that economic value is going to sort that

out. We have to understand that we're going to need to rely on our political and legal system to help resolve conflicts as part of that picture, and economic analysis has to be a player in that arena in my view, rather than thought of as what's going to save us from our conflicts.

BONNIE POULOS: I was actually going to ask him what he thought of number 2. I was actually going to ask George what he thought of number 2 because . . .

GEORGE FRISVOLD: Number 2. Well, I think, again, when people think about economic efficiency, I think there's kind of a misnomer about how economists do that. People say, well, I teach - what do you teach at the U of A? And I say, "Environmental economics." And they say, "Isn't that an oxymoron, right?" So that - they think that - that ec- - a lot of people think economic efficiency is like short-run profit maximization. Well, even in the business community, short-run profit maximization isn't the ideal. You'll want to take a broader perspective. And so economic efficiency is important but it's not going to be the only consideration. And, you know, there's this whole distributional aspect to it, too, and, you know, that that - that's just a political reality. People care about distribution, you know, they care about not just the size of the pie but whose, you know, relative slices, you know, that's going to be and who's going to give something up?

So, I mean, I would say “a” instead of “the” central I think. But I think it’s important, right, having, you know, if we could have more of everything, wouldn’t that be great? You know, that’s kind of an ideal. But, again, there’s this idea of tradeoffs and there’s this idea of, you know, there’s some uses of water that, you know, are absolutely essential. There’s - some people have limited capacity and so you want to be protective of them. And so I think - I think, you know, distributional issues - I think a thing we haven’t really talked about is, you know, the idea of risk; I mean, it’s stuff that, you know, there’s supply uncertainty and things like that; that’s another thing you’d like, you know, to protect against; there’s certain insurance functions that - that are also important. So I would say, you know, things like distribution and issues of risk are also important.

CHAIRMAN JIM BARRY: Rob?

ROB KULAKOFSKY: Well, I don’t really know where to begin here, but it was . . .

CHAIRMAN JIM BARRY: (Inaudible; not speaking into a microphone).

ROB KULAKOFSKY: - yeah, it’s not going to be . . . no. When it says in our - in our agenda that we’re going to hear about the economic needs for water, I thought that we were going to be getting a presentation on - on what different needs were for water, like, you know, certain industries may need lots of water and they

create less economic good than another industry that uses a moderate amount of water and creates a lot of so-called economic good job - you know, good jobs, that kinda stuff, for the community.

And so when I saw this paper, which is a whole different title, "Water as an Economic Resource," I was really kinda thrown for a loop, and then I saw who wrote this and I really wondered who asked the Tucson Regional Water Coalition to present a White Paper to us. I didn't know that was going to happen.

But, having said all of that, the Tucson Regional Water Coalition is basically a - a development industry front group and this is the most self-serving document I have seen. And, as you can see, every page has yellow, no, no, no, the final page on the back here, number 14, big "arggg" on it. I mean, you know, this - this was such an outrage where - the talk about having - bringing in more water, all right, whatever. But then saying that that new water is going to be used for environmental restoration and calling it an environmental fee on your water bill. Well, no, what it is it's a sprawl subsidization fee on your water bill or a developer corporate welfare fee. And everything in this thing is so outrageous where they're talking about, you know, the polluter pays. Well, the development industry is the polluter in this case and they should pay. This - this paper wants existing users to pay for new water resources. Well - and then we're going to hear Wastewater and

Tucson Water talk about how new users pay for new infrastructure. Well, by golly, they should be paying for new water too. And as far as I'm concerned this whole paper should be stricken from the record. I am outraged. I mean, just outraged, and I could go on and on, but I won't.

JOHN CARLSON: Thank you.

CHAIRMAN JIM BARRY: Just for the record, I asked them to make this presentation.

JOHN CARLSON: You want to get rid of -

CHAIRMAN JIM BARRY: Yes.

JOHN CARLSON: - him, too?

BONNIE POULOS: I guess I have a couple of items that I'd like to hear from the panel for because I had some of the similar reactions when I first read this paper, and I appreciate the panelists' view of what was presented because I think they took some of the real economic story out of what was written here. But I have really two questions of this panel that I'd like to know if you would address: One, if you're going to place a value on competing uses for water, who and how is that value decided?

The second question is: One of the things that I see being promoted here in this paper is the consolidation of water/wastewater for the entire region, and I

view that consolidation as not a consolidation to make it more efficient, but really a consolidation of power. And I'd like to use the example of what if we said we wanted a single supplier of all the food that comes into Pima County, how would that affect the price of food; the quality of the food; your ability to influence the kind of food that comes here? And I'd just like to have your comments, if you have any, about those two questions.

GEORGE FRISVOLD: I'm going to punt on the second. I will let Carl deal with that. On the first one, what you would do is, you know, instead of taking like the average value of, you know, whatever that - that humongous number comes from and saying, well, that's - that's what you're giving up. No, really what you're giving up is, say, what's the lowest value - if you take 10,000 acre-feet of effluent, what's the lowest value that's applied to? That's what you're giving up at the margin. So if you're going to say, well, you know, this is - you know, this has really high value relative to other things, it's - it's that - basically it would - like you kind of rank them by, like, a step function, the lowest to the highest uses and taking it out of, you know, conservation that - so its lowest other alternative uses of effluent. I don't know what people would, you know, you put it on, you know, parks or schools or golf courses generally, but whatever the lowest value uses, that would be what you're giving up.

CARL BAUER: Tom?

TOM ARNOLD: I think, you know (inaudible) aside of the effluent conservation - well, I mean, my - I mean, I'm not - sometimes I'm speaking for the City of Tucson - my - my general opinion is - is that's - that's essentially the - the mitigation for past abuses of the riparian habitat, right? And so how - but the question then really is as you bump up against your water resource portfolio and you see that water being used for that purpose, that's when - that's when the market will - a valuation will become known, essentially. What are you going to do when that time comes? You've made - made this decision now to replace that water, which is essentially what I think it - the paper was essentially saying, well, what do you do? Do - do you replace that water? And - and what does it cost to replace that water? And that begins - begins to give you an idea as to tradeoffs - you find those tradeoffs and valuation for that particular pot of water. We've taken off the table - now the question of whether or not, if it isn't surplus, if it remains in surplus, you know, and I think those are - are - are legitimate questions is whether it will remain - remain so. (Inaudible) you say, well, what are (inaudible) of growth and - and - and per-capita demand over time and - and - and whether or not that will eventually be the next scarce resource, the remaining effluent. There - it's not hard to imagine that the

effluent does grow at a rate that's pretty relatively rapidly so you have to be thinking about using it as a potable water supply. So before - because there's not enough demand for the reclaimed water because there's a lot of small users contributing; it's too expensive basically to redistribute it back out to everybody. So it will remain in surplus so long as - so long as we don't treat it as a potable water supply, and only to that point will I think we begin to know, because right now I would not say we're constrained from a resource perspective by putting that water - leaving the water in the river. Moving it around I have issues with. I think it's a good place to leave it right there in the river, but . . . I forget what your first question was. Are we punting?

GEORGE FRISVOLD: It's actually a hard one. Yes. No, we did the first one. Carl's going to do the hard one.

CARL BAUER: No, no, I'm going to do them both really fast. I - actually, I already answered your first question, at least I gave you my answer. I mean, I think that it's through politics and law that we - that societies decide values; that doesn't make it simple. Often that means that politicians or government pass some kind of law, which is some sort of declaration of what we want, right? Or how we're going to play by the rules or that kind of stuff, and then we only find out when there's a conflict and then there's a court decision; then we find out, oh, what did that actually mean? What did that value really count for? And, of course, I'm not an

economist, so I'm focusing on laws and politics, you know, take that with a grain of salt.

The second one, I'd actually - I know so little about local water politics that I'm just not going to touch any real piece of the (inaudible) with a ten-foot pole. But, for sure, it sounds like there's some monopoly potential; this is something that all kinds of orthodox economists have written tons of books about for a long time about; it's called a "natural monopoly," there - it would need to be regulated in a pretty serious way if it was going to make any claim to being economically efficient.

Let me just say that one thing that I think is surprisingly absent from a lot of the talking and - and what I read in here at least is that people are not really factoring in the energy part of all this stock about water alternatives. And I think at this point, and from here on for the rest of the lifetimes of anybody in this room, that's going to be such an ever more critical piece of the calculation of what the water price ought to be and how we're comparing different alternatives; that that needs to be - I mean, I'm not technically capable of doing it myself, but I can sure recognize it in policy terms; how important that has become and will become.

GEORGE FRISVOLD: In - in - yeah, in - in California, 20% of its electricity is used to move water from one place to another.

TOM ARNOLD: Yeah, yeah, Chris said it or somebody said we spend

about \$16 million a year on energy; it takes a lot of energy to move water around.

CHAIRMAN JIM BARRY: Let me say something. At the moment, I think Professor Bauer is right, that it's politics and it means that it's this governor and this legislature that is enabled to make water decisions among competing interests. I don't know that that's any better than markets. Just as a point.

MARCELINO FLORES: I wanted to reflect on - on the - Figure 1 if - I don't know if you gentlemen have access to that - but you have there the full cost pricing of water, page 6 of 16, and - and in this graph, in this diagram, I've actually - have seen other di- - graphs, diagrams, that show differences between where you draw the lines of full cost recovery, full economic costs and - well, specifically, I think rate-wise we might not be quite at the full supply cost price. Is - is that something that I understand now from like the low average . . . ?

GEORGE FRISVOLD: Yeah, yeah, I mean, and that's - that's -

MARCELINO FLORES: Okay.

GEORGE FRISVOLD: - we're not playing - we're not even paying probably up to the . . . the opportunity -

CARL BAUER: Up to it now, not -

MARCELINO FLORES: Right.

GEORGE FRISVOLD: Not even doing that. You would kind of -

MARCELINO FLORES: I'm trying to teach my daughter to appreciate, you know, scale and if this were to-scale, then the price would be significantly higher to try and achieve the sustainable value of use, or is that - I mean . . . ?

GEORGE FRISVOLD: I don't think it's meant to be drawn to-scale, but

-

MARCELINO FLORES: Yeah.

GEORGE FRISVOLD: - a notion that it's going to be considerably higher is accurate.

CARL BAUER: Yeah, these factors that you take into account in calculating what has this value, the higher - if you're going to then measure that by a price, that price is going to start getting pretty big.

MARCELINO FLORES: Okay.

CARL BAUER: That's what you want, right? That's the signal you want to send; the thing is really value -

GEORGE FRISVOLD: And if -

MARCELINO FLORES: Right. If you value something just within a small region and you're competing with something like you said in Vegas, then this would just not - you know, for us to charge ourselves this phenomenal rate would be, you know, pushing everyone off to Pinal County or something; right?

GEORGE FRISVOLD: Well -

CARL BAUER: But if you don't -

GEORGE FRISVOLD: Yeah. Well, at some point it's like, yeah, it's - it's going to constrain growth. At such-and-such a price people aren't going to get it, but if you get to the point where, okay, this amount of - this amount of water isn't worth it to me for how much it costs, well, then that's kind of telling you that you don't, you know, don't get it. It's like you don't buy - you don't go to the store and buy things; it's like, well, I don't want that; it's not - it's not worth that price.

And so what you want price to do is to actually reflect what you're giving up, and that's - that's why you have these environmental externalities in market prices; those don't show up. And so if you just look at the market you're not getting - you know, you're not getting the whole price.

CARL BAUER: I always agree with George, actually. George is just the right kind of economist, and I've worked with some who weren't.

This graph comes from a paper, a publication that was trying to explain what - what it means to think of water economically, so it's basically making an argument that you got to include a bunch more stuff. However you guys want to define sustainability, if you don't - you may or might not want to define the definition that you put up there earlier, but you're talking about moving up toward the top of

that graph, or you're not talking about anything; right? I think.

MARCELINO FLORES: Okay. Well, and again, you know, kind of the jump between the - the full supply costs and then looking at some of the opportunity costs, we've been presented with the NESI curve and that's basically deferred - maintenance deferred improvements, so that, to me, is an opportunity cost. And I would still see that as, you know, if we're going to be considering the supply costs, I think it includes some of those opportunity costs. So - and that kind of also begins to lead into a discussion of the time frames that we're considering, so . . .

VINCE VASQUEZ: I think - and correct me if I'm wrong - the NESI curve which - I don't know if you're familiar with you, guys - it's the - it's basically that we have these big - these big infrastructure bills that are pending because we haven't really maintained our infrastructure very well, or that it's just aging in general and, you know, it's coming due in the next 20, 30 years and there's this curve - we have this ramp-up of infrastructure costs.

But I think that would be better addressed in a full supply costs in a - in a forward - I think the paper talks about a forward-looking view on capital charges versus a backward-looking, just paying for your historical - what you have historically invested in the system, which is what I believe the current rates are based on . . . but . . .

MARCELINO FLORES: Well, anyway, so some of the appendix documents, they - they do kind of talk a little bit more about the interrelations here between, you know, like you had mentioned already the environmental kind of benefits of being next to a riparian area. I think these lines are not as clear-cut and I think there's probably some - some discussion to be had on, you know, how - how they relate to one another. There has to be some sort of scale at some point to try to really nail it down.

But one of the other things - in one of the appendix papers that I had reviewed, they had showed that, yes, you know, most people don't pay the supply costs, but they show the distribution between residential, industry and agriculture. And residential, even though they were still less than the full supply costs, they were significantly higher than - than agricultural, and even higher still than industrial uses for water. Are there any comments on kind of what that might implicate?

GEORGE FRISVOLD: Well, the marginal - the marginal value in - in urban uses over and over again - and it's been estimated usually to be higher than - than agricultural marginal values; that's why you've been seeing, you know, deal for waters being transferred from - from agricultural to other uses.

I forget, what was the second part of your, you know . . . ?

MARCELINO FLORES: I mean, if - if we're saying what the economic

benefits are of - of - of the use of water, and if industrial and agriculture are still seeing like a lower price or paying a lower price, are they somehow - I mean. . . ?

GEORGE FRISVOLD: Oh, well -

UNIDENTIFIED MALE SPEAKER: Prices . . .

GEORGE FRISVOLD: - yeah, I mean - and in agriculture you've got, you know, in some cases where people are being charged per acre, not per acre-foot, so they're not seeing, you know - and - and it's kind of a "use it or lose it" situation. So the pricing structure in a lot of irrigation districts are not set so that you're actually seeing the full scarcity value of water.

MARCELINO FLORES: You would have - your model would have to consider the different uses among . . .

GEORGE FRISVOLD: Yeah, I mean, and . . .

MARCELINO FLORES: And, again, I would ask just another variable -

GEORGE FRISVOLD: Yeah.

MARCELINO FLORES: - or some other -

GEORGE FRISVOLD: Uh-huh.

MARCELINO FLORES: - you know, price value of the system on top of what

GEORGE FRISVOLD: Right. But if - like but for urban uses, if you're

going to - ideally, if you're going - if it costs a lot more to go out and get new stuff, some - some users or some uses should see that extra cost; it should show up in a - in a price or a bill that they see.

Now, everybody might not - you know, you may do some kind of block structure or up to a certain point water is relatively cheap and if you use, you know, above a certain rate then it really kicks up, and if - if water's getting really expensive to go out and get, then, you know, people have to see that or they're not going to really see that things are getting scarcer.

MARCELINO FLORES: Well, and I guess one - one comment or question I would have is - is then, you know, kind of if you look at coal-fired plants and what they're paying for water as compared to, you know, they - it - it would not - for expressing or investing in renewable projects, you know, they don't equate the playing field in that way, you know, they don't see that a solar project would take less water, you know, past its - its creation and it still, you know - I - I just see that I'm probably going to have to get some more comments in writing and prepare them as - as I don't - I think it just gets really complicated once we start talking about different uses -

GEORGE FRISVOLD: Right -

MARCELINO FLORES: - for the water.

GEORGE FRISVOLD: - they're - they're not paying - water -

CHAIRMAN JIM BARRY: Chris?

GEORGE FRISVOLD: - just costs for the water.

CHRIS BROOKS: Yeah, I don't want to cut off this discussion, but I just wanted to make kind of a general comment about the - the paper. You know, I think when I read through the examples they put in there, I probably had a fairly similar reaction to Rob, maybe not as strong 'cause I didn't write any exclamatory remarks across the page. You know, I might be willing to accept that the first example was meant to be illustrative of a - of an idea or a concept and not really meant to be pointing to economics as a justification for getting current water users to pay for growth, which is kind of what it sounded like.

With that said, I mean, the overall purpose of the paper that economics should be a part of the discussion in creating policy, I - I fully support. I - I think - I've always believed that good policy should be - especially in the water arena - should be a combination of good science, economics and good law. So it definitely needs to be a part of the discussion. I don't agree that it should be the central criterion in - in water management decisions, but economics has - has a place at the table and it's definitely important to consider.

CHAIRMAN JIM BARRY: I - I just wanted to say that - this may come

as a surprise - but I disagree with Rob. I - I don't like to do *ad hominem* arguments against something just because the Southern Arizona Leadership and the Regional Water Coalition did it and they have acknowledged interest is not sufficient grounds for criticizing it. I think it was a provocative paper, I don't agree with everything, but I think it asks some real questions and I think - as Chris says - it should be on the table. And I - I really thought your comments were - were unfair and - and kind of insulting to - to our guests, but that doesn't mean you don't have the right to have 'em and - and you certainly have the right to say 'em. But I - I just wanted to - to say that I, personally, thought it was much more valuable a paper than that, though. I really appreciate the - the context that you guys gave it because it is what it is; it's not the end-all-be-all, but it certainly asks a lot of questions that I think ought to be there.

And on markets I just brought this because I just reading Robert Glennon's new book and he makes a very strong argument for markets and the value of markets in - in a scarce water situations, including here. So, I - I think that it's an intellectually honest and credible argument that they - that they make, and I just wanted to make that point.

ROB KULAKOFSKY: Okay. Well, I just -

CHAIRMAN JIM BARRY: Disagree.

ROB KULAKOFSKY: - and I'll respectfully disagree. But - but really I was - I was personally offended by this paper, so be that as it may - as it may be.

I do have another comment, more specific than my general -

CHAIRMAN JIM BARRY: Inflammatory or . . .

ROB KULAKOFSKY: - and - and that is one of the suppositions in here is that conservation has a cost to the provider, like, talking about the toilet exchange program; it - it doesn't necessarily have to cost the provider; that can be taken care of by ordinance over a - as I suggested, I think three meetings ago or whatever, that maybe we have an ordinance that requires low-flush toilets anytime a building is sold, and that you have a certain amount of years - and everybody has to have a low-flush toilet. And it would be heck of a lot cheaper to hire a couple inspectors to go through the Tucson area over the 15 years, or whatever, to see what's going on as far as low-flush toilets than to acquire a whole lot of new water. It's one of those things where you have, you know, it's not either or.

And, you know, once again, yeah, farming takes a lot of water; it has to be inexpensive for them to survive economically, but there - you know, what is the value of open space? What is the value of locally-grown food? What is the value of a diversified economy? So those are all factors that have to be brought into this picture and that - and - and I didn't see that.

No mention of mining. I mean, my goodness, a huge amount of water and they have to get it real cheap. You know, what's the value? Yeah, there's some economic value, but then you have, you know, heavy pollution, you know, there's so many variables that just to assign an economic value to water is very - as the panelists said - it's very difficult, there's so many externalities. And - and so, yeah, we have to think of what is - what is our cost in dollars, but what is our cost in - in our quality of life, environment, et cetera, and - and our overall economy?

CHAIRMAN JIM BARRY: I agree.

JOHN CARLSON: Can I say something against him?

CHAIRMAN JIM BARRY: Oh, God. Okay.

ROB KULAKOFSKY: Not - not that guy.

JOHN CARLSON: Well, you know, 'cause I said it this morning about low-cost - or low-flow toilets is - is the gradient in some areas will not permit it to take you-know-what down to that - that treatment station and they're having that extra cost of coming up and so forth. They been using potable water.

Now, on the other hand, I think there's a new City ordinance that says any houses built after ten has to have a gray water recapture to be used in the - in the environment, the yard. And I think there's so many little things that we should try to do and, in the end, the market will make it where people will say, "I can't afford it

anymore,” and I’m going move out of Tucson. I mean, that’s way beyond my lifetime but, I mean, eventually I think what it comes down to - if you want to solve all these problems about water shortage and earth warming - you better get on birth control; that’s the real key; let’s get rid of ‘em . . .

CHAIRMAN JIM BARRY: Retroactive abortion is my. . .

BONNIE POULOS: Mr. Chair?

CHAIRMAN JIM BARRY: Bonnie?

BONNIE POULOS: Is it appropriate to allow the audience to question

or -

CHAIRMAN JIM BARRY: Yes.

BONNIE POULOS: - submit a comment -

CHAIRMAN JIM BARRY: I was going to do that. Thanks.

BONNIE POULOS: - to the panel?

CHAIRMAN JIM BARRY: Is there anybody in the audience - now, let me just - yes, Staff can do it - it’s 7:30, so we ought to end this in the next, say, 15 minutes. Before I get to Chris, is there anybody who’s a non-Staff member in the audience that would like to say something? Okay. Colette?

BOB COOK: Thank you.

CHAIRMAN JIM BARRY: No, Colette. Colette. Bob, Bob, Colette. Is

there anybody in the audience who's not an alternate member or Staff member?

Colette?

COLETTE ALTAFFER: Okay. It's very easy to get distracted when we're talking solely economics. One thing that is also missing in this discussion is salt, and we're almost relying exclusively on Colorado River water. We know we're going to have a salt problem and we know it is exorbitantly expensive to deal with it, and we haven't even addressed that here.

So we sort of forget in this paper that it is the environment that makes everything possible; that the environment is the foundation that supports everything, and if you don't have a healthy environment, you don't have an economy, you don't have life.

So I'd like to propose an alternative way of looking at it, and that is the typical Mastercard commercial, and we've all seen that where they assign a price to something, and it could go something like this: Agriculture, \$43.50; manufacturer of widgets, \$51.64; environment, priceless.

CHAIRMAN JIM BARRY: All right. Anybody other than an alternate member or Staff first?

(No response.)

CHAIRMAN JIM BARRY: Okay. Alternate member. Get the

microphone, please.

BOB COOK: Yeah, this - actually, this - this comment actually starts out - this question actually starts out with, you know, the overarching goal of this phase of our study. And, in one of my earlier presentations on sustainability, I really questioned the - the limited concept of water sustainability because I don't think you really can talk about water sustainability without talking about overall sustainability.

And I think that the subtext - even in Ron's introductory remarks - is that what we all agree on probably - I'm just projecting here - but I think most of us would agree that - that the real purpose of this is to come up with a plan for our water and wastewater infrastructure that fits into all the other infrastructure decisions that we need to make toward the goal of a sustainable economy. And I think some of the comments from the panel actually pointed toward that in terms of talking about opportunity cost and talking about the political environment.

You know, we're really searching for a new vision for our future economy here and the problem about - talking about competing uses of water is this very aspect of, well, how do we really optimize our - all of our resources here toward creating a sustainable future economy where we can actually fully employ everyone that's here? And - and I don't think that we have that framework yet; I mean, we don't really - you know, we can come up and optimize, you know, water availability,

but the opportunity costs, the tradeoffs, I mean, are that we preclude ourselves from making better economic development decisions in industries that would be much more efficient for sort of the conditions that we're going to live in, in the future.

The problem with some of these concepts - shifting from average to - to marginal values - if you look at marginal costs as well, production functions in infrastructure are usually step functions, and that's a problem because we can't continuously sort of add marginal amounts of water capacity. These things - these wastewater systems that were - you know, this is - the - the - the ROMP Plan is a huge step function in - in - in investment, and - and that complicates a lot of the analysis here - is that some of these things are huge numbers and you just can't make them small, incremental, continuous additions, so I add that.

But I think the real issue is we - we don't really have a framework yet to - to talk about what we could all probably converge on which is that: How do we take this situation where - where, you know, under some conditions we - we may actually be able to sustain a million people here, to situations where, you know, maybe we could actually improve our quality of life at an additional 25% population. But what does the industrial sort of mix look like for that scenario? And from that we really can talk about what the tradeoffs are.

We - we don't know what we're trading off right now and I think that's an important

point.

CHAIRMAN JIM BARRY: Okay. Chris? Come up and talk into the microphone, please.

CHRIS AVERY: I want - I want to make two points first -

CHAIRMAN JIM BARRY: Let me interrupt a second. Let me -

CHRIS AVERY: Yeah.

CHAIRMAN JIM BARRY: Will you write up those comments and . . .?
Okay. Go ahead.

CHRIS AVERY: Professor Frisvold, as sort of the originator of the \$160,000.00 per-acre-foot idea, I want to defend myself just briefly and I want to do so in a way that doesn't dishonor my economics professor at Utah State.

What we tried to do in that particular case is not say that the value of water is \$160,000.00 an acre-foot, but to say that an acre-foot of water in the Tucson economy supports \$160,000.00 worth of economic . . . return or activity in the Tucson Basin; whereas, if you look at the state as a whole in the municipal industrial sector, that same acre-foot supports about \$100,000.00 worth of economic total activity. And, in the farm economy, either in Tucson - in Arizona as a whole or in the Central Imperial Valley of California, that same acre-foot of water supports less than \$1,000.00 worth of economic activity.

I think then if you take that marginal cost, an average cost discussion that you emphasize later in your paper, I think the point is sort of the same, in that whether it's an average cost or a marginal cost, the value of water to a municipal economy on a per-acre-foot basis is probably an order of magnitude, or several orders of magnitude, higher than the marginal economic cost of water in an agricultural economy, at least using today's prices. And that was sort of the point that we were trying to make is that an acre-foot of water in the Tucson economy supports a large amount of economic activity; it supports a lesser amount of economic activity in other sectors.

GEORGE FRISVOLD: For cer- - it depends on which urban economic activities you're talking about and which agriculture or which environmental ones you're talking about. The problem with doing the average, you know, it's saying, oh, well, like, what's - what would happen if you - if you nuke Tucson; right? That's the cost. And then you're taking that cost, dividing it by the amount of water you have. Well, you could do the same thing with agriculture. What if you had no agriculture? Okay. We'd all starve; that's a big cost, too. So, the average value is just not the way to think about it because you're back to the point where food is essential; economic, you know, activity is essential; and the ecosystem is essential. Okay. That's all true, but then where do you go?

Now, it's also true - what you're saying is that when - you have to be careful that in a lot of cases the marginal value - so, you know, if water were, let's say, to move from agriculture to certain agricultural activities, to certain urban activities, you could - you could increase values; it doesn't mean - but you have to be careful when you're talking about average, really what you're talking about is like what's the value - if, you know, hypothetically, if you took it all, and - and that's - and I think you're - I mean, it's - it's a big number and it captures attention, but I've seen a big number pretty much actually about exactly the same number about the value of Colorado River water, you know, for the Colorado delta estuary.

So, if - if you go that route you're going to have like the - the battle of colossal numbers that no one really believes, and so it's better to kinda look at the marginal values. And you could say, well, okay, for a particular, you know, farming activities, okay, what's the value of it, you know, versus, you know, what's the value in - in - in, you know, urban economic development? That's why - you know, that's why a lot of the water transfers now are from ag to urban. You don't see a lot of urban to ag transfers.

CHRIS AVERY: Right.

GEORGE FRISVOLD: So I think you'd be better served to try to get a handle on those marginal values than to come up with the - a humongous number.

CHRIS AVERY: The humongous number, though, is a lot easier to calculate.

GEORGE FRISVOLD: Oh, yeah, sure, sure.

CHRIS AVERY: And as a lawyer I'm really challenged on the math part, so . . .

GEORGE FRISVOLD: Yeah, yeah. But, I mean, it's like - but you can go both ways. It was like there was a thing in, what, that came out, what, last year about when will Lake Mead go dry; right? And you can - you can come up with, you know, again with big scenarios, but at the end of the day, it's like, you know, people want to live in houses, they want to eat food and they want a ecosystem, and to try to say that, you know, when you're doing averages you're kind of taking, you know . . .

UNIDENTIFIED MALE SPEAKER: (Inaudible; not speaking into a microphone).

GEORGE FRISVOLD: Well, but you're saying - it's like you're trading off - eliminating one 100% versus the other 100% and really that's not what we're doing, we're doing tradeoffs at the margin.

CHRIS AVERY: Yeah, and that's what I said, I really appreciate the point about the marginal utility versus -

GEORGE FRISVOLD: Yeah.

CHRIS AVERY: - and agriculture, as well as the margin utility in the -

GEORGE FRISVOLD: Yeah, and there's - there's -

CHRIS AVERY: - municipal industrial . . .

GEORGE FRISVOLD: - I mean, there's scads of studies doing that kinda comparison, you know, and the numbers aren't as dramatic, but they're going - they're - you know, in some, you know - you know, and there's obviously some urban activities that have incredibly low values. I mean, once upon a time in Sacramento when there was no metering, it's like, okay, is washing your sidewalk more valuable than producing, you know, vegetables? Okay. Those are two uses; right? And so it's - you know, you have to look at the margin. If water's going to go from one activity to another activity, when it's going away from that one activity, what are you giving up? That's the opportunity cost. Then you have to say, okay, well what are you getting for that small movement? So if you're taking water from producing vegetables and having it go to washing sidewalks, then that probably isn't, you know, so you have to be careful.

CHAIRMAN JIM BARRY: Okay. Ron and then that's - we'll call it quits on this one. Go ahead.

RON SHOOPMAN: Well, thank you. I want to thank you for taking the

time. I hope that this discussion that was stimulated here is valuable for you. I think it's exactly what we hoped. This is a first draft paper; it's by no means perfect; it has been heavily researched as you can tell. We - we found some of the people who made up some of the numbers in the graphs and the charts, but it's not perfect, but it introduces a concept that I think is important.

I think as a group, and as a region of individuals who care about this, we have to be careful to not try to vilify one group over another for the legitimate opinions that are held by a legitimate portion of this community.

As far as being a front group, I have to tell you that less than 10% of SALC are developers. All four of your hospitals, the Community Foundation, CODAC Behavioral Health, and I could go on and on of the people that stand behind the work that we do. We try very hard to be fact-based. We try very hard to be reasonable, and we try to respect the opinions of everyone here, and we'll continue to do that as we seek to be partners with everyone in solving the problems that we face. So thank you for allowing us to present this. I hope that it serves as a basis for further discussion. By no means is it intended to be the answer to it all.

JOHN CARLSON: Well, thank you for doing it, too.

(Applause.)

CHAIRMAN JIM BARRY: Yeah, I want to say - I want to thank Ron,

you and your group for doing the paper, and I want to thank you guys for - for your discussion; it was very, very helpful. All right. Let's take a ten-minute break.

* * * * *

(Recess taken at this time.)

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CHAIRMAN JIM BARRY: Let's get started, please. Melaney? Okay. I'm sure we have another presentation here in which Rob and I are going to be in total agreement. All right. Presentation, Utility Cost of Growth, and in this instance I guarantee that the - the subject - the subject of the - the substance of the report pretty much is in keeping with the title of the report.

So you tell me how you guys are going to do it. Just you two guys? Oh, and Curley too? Okay. You're having him do the technical background? Oh, geez, we'll never get out of here. All right. Hit it you guys. Use the microphone, please.

ED CURLEY: Good evening, Mr. Chairman and members of the Committee. It's nice to see you all again. I'm Ed Curley, as Jim referenced, and you have Chris Avery from Tucson Water, and Jeff Nichols who are going to work on this presentation with me.

This presentation came out of the presentations we made almost

exactly one year ago today to this group, August 13th, 2008 - you guys have a lot of stamina - in which we were talking about the financial best practices for utilities and we're talking about the financing and funding of the O&M and capital projects for the water and wastewater systems.

At that time, the - those discussions afterwards led to the Committee asking for some additional information on the specifics of funding mechanisms for growth. So we're looking at this paper and this presentation as a supplement to those earlier presentations last August.

In trying to bridge that gap, we're going to divide this into three sections. I'm going to review the concepts that were presented at that meeting by our outside industry financial consultant, Raftelis Financial; Harold Smith, who's done a lot of work in Arizona, particularly with Pima County. Then Jeff is going to discuss how those financing mechanisms apply to wastewater funding and our operating capital improvement program; and Chris doing the same for Tucson Water. Jeff and Chris and I were the main authors to this paper, but I should mention Belinda Oden from Tucson Water who put a lot of work into it, and is not able to be with us this evening.

So, if you look at the financial best practices that Raftelis talks about, they gave you three main concepts, management goals for dealing with water and

wastewater rate setting. The first of 'em was that you should recover - the utility should recover all the costs through the rate structure. Those costs involve operations and maintenance, pay-as-you-go capital, debt service, indirect costs. Then that rate structure itself should be consistent with pricing objectives, and those pricing objectives would be: Revenue sufficiency, conservation and demand management, affordability, growth paying for growth - which is the topic that we're going to zero in on - rate stability and legality.

The other key management goal is to have the financial plan and rate structure for the utility reviewed and looked at on an annual basis. So if you keep those in mind as we go through this, these are the best practices they've identified, and so what we're going to try and be - try and talk about is: How those best practices are reflected in what we do - two independent programs for Tucson Water and Wastewater - but you'll see a lot of commonality in those. Commonalities like where structured and operated as enterprise funds; that has very special meaning. These are separate funds. These are not put into the general fund of the County, nor do we take out of the general fund of the County or the City.

We have policies and guidelines for sound financial management. We are required to recover the costs, and we've got mechanisms established to do that. One of the things that Raftelis talked about was the significant progress both

ourselves and Tucson Water have made in the last ten years in recovering costs appropriately. Okay. We haven't always been at the stage that we are now, and I think it's important that sometimes people think because something happened in the past that it's continuing, and it's a very different world now than it was ten or 20 years ago.

We utilize contributions to developer-funded infrastructure, and we have a financial planning process. And, in both our cases, that financial planning process involves department, outside consultants; it involves citizens' committees, the Water Advisory Committee, and wastewater committee that many of you sit on and then, finally, the elected officials.

So, let's turn it over to Jeff to start with and talk about the wastewater side, then Chris will come on with the water side, then we'll have a chance for questions. Thank you.

JEFF NICHOLS: Thank you, Ed, and good evening to everyone. Thank you for sticking around.

The one thing that makes this difficult for us on the wastewater side at Pima County is Resolution 1991-138 and, as the number implies, it's been effect since 1991; it was an action taken by the Board of Supervisors at that time that determined how we were to spend our revenues.

And so as you can see all revenues of the Wastewater Department come into the revenue fund and that's a requirement, so you mix up all the cash so you really don't know: Is it a dollar that comes from a connection fee? Is it a dollar that comes from a user fee? Is it interest earned? Is it for reviewing plans? Whatever it is, they all go into one pot. And out of that then we're required that the first expenses that we can do are in the operation and maintenance fund; the next, it goes down to the bond fund where we pay principal and interest on our indebtedness; and it goes on down the line through this little waterfall until we get to what we call "system development funds," and that's our pay-as-you-go funds for Capital Improvement Projects.

And we're required - this - this set up, this resolution is referred to in every single bond covenant that we have outstanding. So we're required by our bonds to follow this practice. I think we're in agreement in - in central finance that the only way we could do away with this is if the County retired all of its wastewater debt, could get rid of this ordinance that we operate under and then issue new debt. But, until we do that, we're pretty much stuck with continuing to deal with this on an ongoing basis.

The revenues for the County this past fiscal year, '08/'09, as you can see the user fees make up the majority of the revenue. Connection fees were down

sharply. And, at the peak of the housing boom, our - our peak year, we had taken in \$42 million in connection fees, and you can tell they've drastically dropped off, and we have responded to that - those one-time revenue losses - by pushing back one-time projects. Fortunately, we didn't have to build the capacity into the system that we thought we would have if - if housing had continued, so we were able to throttle back on that.

Capital contributions are just that: It's developer-funded infrastructure that they then donate to the County and we accept that into the County and we operate and maintain it, so it can either be onsite within the development or offsite improvements, but the bottom line is: It's - it's hard infrastructure; it's capital. You can't spend it, but we have to count it as revenue. And then we have some other miscellaneous fees that we collect.

On our O&M side, our expenses, as you can see, supplies and services make up the majority of those; it would include things like energy; it would include professional services. Salaries and wages I think are self-descriptive; they're about one-third of our cost within the department. We're a service-oriented department. And our debt service this past year was approximately \$24 million. And you'll see later in this slide our debt service is going to continue to increase as we deliver - I heard a gentleman in here refer to our ROMP Plan - which is really

reg- - a regulatory-driven plan. So, as we move forward, these will change and debt service will certainly overshadow the supplies and services and the salaries and wages.

And, again, it was referred to earlier - I think what's happening is we're having to reinvest in our systems. We had some assets in the ground; they're out of sight, out of mind; it's easy to let those - those assets decrease in value and deteriorate and - and we didn't set aside money to replace them, so that's what ROMP is doing in large part like at Roger Road; that's an old plant; it's a tired plant; and there's a lot better technology out there for taking in influent and producing better effluent and we're going towards that direction.

So, when we talk about a capital improvement program, the things that we do address in looking at growth: Capacity is growth-related. We either have to put in conveyance systems or treatment systems. But we also have - the ROMP, as I said, is driven by regulatory requirements. Denitrifying our effluent from our - our two treatment plants at Ina Road and Roger Road. And then also Roger Road can be looked at reg- - regulatory-driven, but it's also rehabilitation. The plant's old. A lot of people don't know it, that trickling-filter technology that we use at Roger Road, that is the oldest existing trickling-filter plant in the world. No plant has lasted that long. So -

UNIDENTIFIED MALE SPEAKER: (Inaudible; not speaking into a microphone.)

JEFF NICHOLS: No, I think - I think it's good for people to know. It's probably the desert environment that has a lot to do with that and the reason it's still operating; it operates very well, and the people that run that plant do a fantastic job; they really do. If you ever get a chance, we'd give you a tour out there. They're top-notch people and it continues to win awards for its operations, but it is tired and - and it needs to be replaced and we need to start thinking about that.

So those are the driving forces: Capacity, regulatory, rehabilitation. And capacity has been the principal driver over the past ten years and our - and our bond programs, and we'll show you that, and - and less on the regulatory, and even less on the rehabilitation side.

Regulatory is driven - driving the future development and - and by that we mean we have to denitrify. We have to take the toxicity out of the effluent that we discharge into the Santa Cruz River; it's the right thing to do; and, not only that, but if you noticed there was an article recently in the paper a few weeks ago about the new plant in Rio Rico and they had started using some of the same technologies that we're going to be delivering, and they're talking about aquatic life coming back now; that, you know, some of the fish, the minnows and the different things are

actually surviving in that effluent.

So it's a good thing to do for the environment, and it's also a good thing to do because we talk about reuse and right now our reuse is through Tucson Water's system, but there's only a finite amount of water in the world and it's all been recycled and it will continue to be recycled, and so whether nature takes care of that recycling through the form of, you know, going up into the clouds and coming down as - as clean rain and trickling through the - the earth, or we do it through a biological process, the water's going to be reused either - either for landscaping, to replace certain things or actual reuse for consumption.

Rehabilitation, ongoing as infrastructure ages. We have some very old systems. For those who were around in 2002 when we had the Speedway sinkhole, that was aging infrastructure. We have since instituted a program - two programs, actually, where we CCTV all our main lines now - any - any 15-inch in diameter and greater - and we determine them - we grade them on a scale of one to five and we determine when they need to be replaced. Five meaning we need to replace 'em now. We need to plan for it and get it done because they could fail. And so as we - as we continue to move through the system, we're moving down to the smaller-diameter pipe. As I said, we've done everything 15 inches and greater, and that's - that's a large-capacity pipe, but we need to get down to the pipe that also runs

through residential neighborhoods and stuff, the eight-inch pipe, and determine what needs to be replaced there.

So, we - we've thought - it's a - it's a requirement in our CMOM program, capacity, maintenance, management and operations, and we're estimating somewhere between \$6 to \$10 million dollars on average every year for the next ten years to - to take care of the system needs, and that's just in our conveyance system.

Here's a chart on the CI- - CIP expenses. As you can see in '02/'03 up about \$58.6 million; some of that was in response to the Speedway incident, but it was also in response to building the Randolph Park Water Reclamation Facility that was finished in '03/'04, but it was also about the time that the department actually had a negative cash balance at the end of a fiscal year and they had to throttle back on not only their - their CIP, but their operations and maintenance budget and repay \$13 million to the general fund.

So in '04/'05, when you put this in perspective, at that point in time we probably had assets that were valued at about \$400 to \$500 million and we only put \$4.7 million dollars, or probably less than 1%, back into that system, and so very negligible amounts.

Our capital program, it's like a ship on the water; it's like a locomotive

on the rails; hard to get it going; hard to get it stopped. As you can see, once we got it stopped to ramp in up in '05/'06, '06/'07, and to get to the point we're at today where we're at \$68 - \$68 million and moving forward, will be greater - that took a lot of effort by our planning and engineering department and those Staff that deliver those projects. As I said, you put the brakes on something, you finally get it to stop and then someone says, okay, you can start now. Well, it's not - it's not a - it's not a Ferrari, you know; it's a locomotive and it just takes a lot of time to get the stuff in the works, go through the procurement processes, get the contracts let and then manage those contracts, and you have to build the staff up to do that, so it was a - it was a big effort for the department to get where we are today.

Our debt service, this - as you can see, it's fluctuated a little bit during that time; it started going down, you see there in '03/'04 and '04/'05, but then has - has consistently raised up. We started delivering the 2004 bond program that was approved by the voters, the \$150 million, we really didn't start delivering that program until 2006/2007; that's when we sold our first 2004 bonds.

Now, to give you guys an idea when the department was planning for that bond issuance, they were projecting - actually, it was a capital improvement group was projecting that this was a ten-year bond program. So much has changed for the department that we sold the last issuance of those bonds this year. So we've

delivered that program in - in about three years in what was said to be a ten-year program.

And for those of you who have been, again, following the papers, we wanted to go out in 2008 for another bond issuance, and that was delayed because of the economy. So we said, okay, we can wait until 2009 and, well, things didn't improve so they said, can you wait until 2010? And we're like, well, that's - that's probably about the end of it. If we - if we don't go forward in 2010, or we don't find an alternative funding source with some type of bonds, it will inhibit our ability to deliver the ROMP in a timely manner, which is a regulated time of 2014 at Ina Road and 2015 at Roger.

So our Regional Optimization Master Plan - this was over a year and a half planning effort - and, again, we're looking at not only the current requirements that we have to meet, the regulations, but future - maybe phosphorous removal from it - we have to meet those deadlines at Ina Road. Those improvements need to be in place and the plant needs to be operating according to permit by 2014.

We have to build a brand-new 32-MGD water reclamation plant at Roger Road, just north of the current Roger Road facility, and that has to be up and running and producing effluent that meets the permit requirements by 2015. These improvements at this plant, the vast majority are regulatory. Through those two

projects, we're only going to add approximately 3.5 MGD of capacity within that plant, so growth. But we still project that with the Randolph Park, Ina Road, Roger Road and the plant interconnect, that those capacity needs will be there - will meet the capacity needs of the re- - the area through the year 2030.

We're upgrading and rehabilitating our aging infrastructure; and, again, that's the conveyance system that delivers the effluent to those plants; it's using state-of-the-art. We're using SCADA for both plants. Roger Road is - is pretty MUCH a manual plant. I mean, when you want to change something at Roger Road, you send one of the operators out and he adjusts a valve and then you take some measurements and - and you take samples to the lab and you say, okay, did we - did we increase the oxygen enough? No, need a little bit more. And he goes out there and adjusts a blower, you know, so they're constantly doing this manual process and that's all going to be computerized and it'll be real time and these instruments will be taking these readings on a constant basis and analyzing the biological process of the plant; and, because of that, we're looking at - like at Roger Road right now, we have approximately 45 staff - when we go to our - our need Roger Road Water Reclamation Facility, we - we estimate the staff would be somewhere between 15 to 25 people, so we'll probably cut that staff in half because of the automation of the plant itself.

We - we want to ensure when we - I kinda laugh because we've been dealing with odors ever since I got here - community friendly facilities and we don't want our facilities to smell, but as Mr. Gritzuk would remind us all the time, we don't own all the odors in Pima County. There's other people that produce odors in Pima County. There's a lot of like restaurants with grease traps. There's a lot of other noxious odors. There's some private systems within our sanitary sewer system, some private developments that have pump stations. They operate those systems and they maintain 'em, although when someone smells a sewer odor for them, we do get the call and so we try and go and assist with that, but we don't own all the odors and - and he'd like to add, we don't own all the roaches in the - in the facility - or in Pima County either. There's actually roaches that actually breed and occur outside of our sewer system, so . . .

CHAIRMAN JIM BARRY: Can you wrap this up in five minutes?

JEFF NICHOLS: Sure, sure.

CHAIRMAN JIM BARRY: We ought to give Chris -

JEFF NICHOLS: Sure.

CHAIRMAN JIM BARRY: - 35 seconds or so.

JEFF NICHOLS: So what we're look- - looking to do is obtain the community acceptance and fund the program via substantial rate increases. And

those increases, as I said, are mostly on the user side; they're replacement of system and rehabilitation of the system; they don't increase capacity.

So our five-year projections, as you can see over the next few years, they - they go up significantly; it's going to be a challenge for the department to deliver over \$200 million of improvements, but we - we are getting some of the best contractors, not only in the United States, but internationally that are bidding on these projects and have the capacity to deliver these projects.

Our debt service projections, as I said, are going up significantly. As you can see right now we're at about \$29.5 million; and, by the time we have this project delivered, we'll - we'll be paying nearly \$100 million just in debt service.

So it is a substantial investment in the community, but you have to remember these improvements that we're making will more than likely last for 30 to 50 years. So we're basically replacing the whole - the whole system.

We use user fees to pay for the regulatory and the rehabilitation; that's what it should be. The current users pay the current - for the current system. Future users pay for capacity increases.

And the - the financial model contains all this data that we put inboard, but we can assure you that right now our position is that connection fees are paying for capacity within the system. They are paying their fair share for both the debt

service requirements going forward and the pay-as-you-go capacity increases that we're building into the system today.

Here's a history of our user fee revenue. As you can see, back in 1999 we're bringing in approximately \$42 million. This year we're bringing in approximately \$86.3 million. When we started our series of rate increases in - '04/'05 is when we really started increasing them - Pima County was one of the lowest sewer rate fees in the nation. I mean, as I recall, I think it was - the average user paid \$13.71 a month for their sewer user fees and that was using ten CcF of water per month.

Here's the connection fee revenue history. As I said, you can see these are much more elastic. You can't depend on these. We - we told the Board in February when they asked if we could actually increase the fees. We said you can increase the fees if you want. The model doesn't state that it needs it, but what do you get if you increase, you know, a fee by 10% and you're bringing in zero anyway? You know, so you're not going to get any increased revenues, but you will have an increased fee.

The '97 bond program, as we noted, you see the capacity at 86% was capacity-related; very little towards rehab and regulatory. The 2004 program got a little bit more where it was a 50/50 split. And, as we move forward in ROMP, nearly

all of the ROMP program which, as you can see, when we planned it, \$536 inflated it and average to the median of the delivery was \$720 million, and with bonding it'll be over a \$1 billion program for the community, and most of that is driven by regulatory and rehabilitation.

So here's the history of connection fee increases that - that we've seen within the County for both commercial and residential. As you can see, they - they have increased, but if there's no building activity, you're not going to derive revenue from these increases.

And here's our history of typical user fee charges. So, we have gone up in that area significantly and, if you see the top portion of that, we have increased the base charge significantly to be in line with other utilities.

So some typ- - examples of typical connection fees listed here from single family at \$5,100 to a large apartment complex. We just had U of A - they're building two new units on campus and they're going to be contributing about \$800,000 to \$900,000 in connection fees for those two facilities.

Contributed capital is the other way. So developers pay not only connection fees, but they contribute capital to our system, as I said, hard infrastructure and these are their contributions over the past ten years and they've been pretty significant.

And, with that, I will turn it over to Chris Avery.

CHRIS AVERY: Good evening. I'd like to point out that it was about a year ago when we did this presentation, or some variation of this presentation for the first time and a lot has changed since last year, which makes this discussion I think an interesting one.

What I'd like to do in this presentation is not so much recap the paper, but try to explain briefly some of the differences in Tucson Water's financial plan between the information that you're being provided this summer and the information you were provided last summer. And also talk about, on a theoretical level, as well as with some illustrations, this question of how you allocate costs of growth.

Generally, I'd like to reiterate the point that Pima County Wastewater and Tucson Water do a lot of the same methodologies in terms of calculating user fees, in terms of bond covenants, in terms of bonding obligations and debt service obligations, so that what you've heard so far from Ed and Jeff applies in equal measure to Tucson Water in almost every instance.

And one significant difference is that Tucson Water has spent much of its capital over the last couple of years, and will be again expending some more capital in the next few years, on our version of a ROMP project, which is the recharge and recovery facilities in Avra Valley, and those facilities have dominated

our Capital Improvement Project budget over the last few years; the way that ROMP will dominate the County's wastewater project budget for the next few years.

As a - as a basic reminder, Tucson Water has, essentially, four kinds of revenue that come into the system on an annual basis. The bulk of the revenue that comes into the department is water sales revenue and, to the extent that, on a theoretical basis, I think I'd like to pause at the - the idea that most of this revenue is from existing customers. You might make the argument that some of it is growth-related revenue in that during a previous year we may have acquired 1% of additional customers; and, in that case, 1% of the revenues - or a couple of the years back - some percentage of the revenues that come in from water customers are related to growth, but I think it's a lot easier to just conceive this as existing revenue from existing customers.

The next point that - again, it's subject to the same idea, but I think it's better to consider it as existing customers paying for existing services - is 5% of the other revenues that come in, the largest source of that revenue, for example, is a joint billing arrangement with Pima County by which we both save substantial - we gain some money that we would otherwise - for services we would otherwise expend, and Pima County saves some money in expending services by doing joint billing of our - of our billing statements. Again, I would consider that revenue to be

essentially not growth-related revenue, but existing customer-related revenue.

The next category I'd like to talk about is this 4.6% of our budget that is miscellaneous fee revenue. We typically don't think of that as growth-related revenue, but if you tease that sector apart, you'll see that quite a substantial amount of it is. The miscellaneous fees of Tucson Water are generally for the provision of services that we can allocate on a cost-of-service basis. If a set of plans comes into our new development section, we try to charge the - the manpower hours that it takes to review those plans. If we have to install a new meter, we try to charge the costs that it takes us to install a new meter. If we have to dig up a section of pavement in order to install a new tap to a main, we try to make that appropriate charge.

By and large, most of the revenues that come in in this particular category are related to growth. There is some existing - again, remodel kinda work, meter rehabilitation kinda work, redevelopment, perhaps, kinda work - but much of this revenue that we don't typically think of as growth-related revenue, in fact, comes in from growth-related projects: new meters, new plans, new installations.

And, finally, there's 6% of our budget that is unquestionably growth-related revenue, and those are the monies that come into the department from the system equity fee, which is a backward-looking connection fee for infrastructure, and

the Colorado River water resource fee which is a way of apportioning out a slice of Tucson Water's resource and - and divvying that amount of water up to new customers. So, from a revenue point of view, you can make an argument that somewhere between 8% to 10% of our revenue on an annual basis comes in from growth-related projects.

Where does the money go? Generally, when we talked about this last summer, I think there was some good questions that came from the audience about the O&M budget and what percentage of the O&M budget is related to growth. And, again, there's probably some conceptual difficulties with this but, by and large - although we do have some staffing costs - some of the - the cost of that staffing is paid for by the miscellaneous fee revenue that comes in, construction inspectors, plan reviewers, et cetera, that are growth-related.

But I think it's fair to say that most of these costs in the O&M budget are existing-customer-base related. The cost for CAP water is essentially the same whether we have new customers or not. Cost of power is essentially the same; it's all based on existing customer base. Administrative service charge from the City, some of the other miscellaneous other operating expenses, and debt service which we'll talk about in a minute. Some portion of the Capital Improvement Project budget that's funded by bonds goes to growth, and some portion of it is for existing

customers, so we'll talk about that next.

One thing I would like to point out is that this fiscal year 210 adopted - 2010 adopted budget is about \$3 million less than the 2009 O&M budget that I presented last summer, and it's about \$11 million less than the fiscal year 2010 budget that we had anticipated when I made this presentation a year ago. So we've cut \$11 million out of our own budget in the last year for the same reasons that Pima County has done some of the same things.

In our Capital Improvement Project budget - there's a little typo - our - our fiscal year 2010 to 2014 CIP is \$27.4 million. And commas are always important, but in this particular case, it's just a typo. I wish.

There - you see some differences from last year's presentation in that what we tried to do is - is categorize the projects a little bit more generally and to try to follow - use some common language between us and Pima County in characterizing these expenses. So you'll see the costs of rehabilitation, transmission lines, general plant security, reclaimed water growth, source development and storage.

When you looked at the budget a year ago - and there were some good questions about our estimate a year ago that 10% of our CIP budget then was related to growth, I made the statement that that excludes the costs of the

Clearwater Program. What we tried to do in this presentation today is include some of the costs of the Clearwater Program, not as a specific category, but included within these general costs. And one of the ways that we've tried to calculate the costs of the CIP is to allocate the percentages of the Clearwater Program between new growth and existing customer base.

And I'd like to also point out that the methodology that we're using to do this is by using the marginal cost basis, not the proportional cost basis, and that's because - and you can get a different number if you want to use the proportional cost basis - but it's the simple fact that when we install a water main, there's a certain amount of costs that we incur no matter what size the pipe is. There's permitting costs, design costs, trenching costs, those costs stay relatively the same whether you're putting in a small-diameter pipe or a large-diameter pipe and, because of what I like to call the "power of pi," it's much more cost-effective to put in a large-diameter pipe that may have two or three times the capacity of a smaller-diameter pipe, and the pipe itself does not cost two or three times the cost. Costs in water infrastructure are not proportional and it's all related to the sizing of pipe and its available capacity. So, on a marginal cost basis, we've allocated about 15% of the costs of the Clearwater Program to new growth, and 85% of the costs of that program to existing customer base.

We've assumed that the reclaim projects, essentially, are all designed to meet our - our capacity needs, and we see limited connections to the reclaimed system on a growth-related basis over the next few years.

Finally, a couple of projects are considered 100% new demand; that would be fire services, new water services, developer-financed projects and developer extensions.

So you see our Capital Improvement Project budget over the next five years has - about 14% of those projects will be growth-related projects; that means somewhere around \$40 million in the next five years will be related to the costs of growth. And, if you look at that 6% number in the earlier slide, that 6% number translates into about \$8 to \$10 million a year. So, again, we're going to spend about \$40 million over the next couple years on growth-related projects. We're going to take in about \$40 to \$50 million just in development-related fees over the next few years for those same projects.

I would also like to point out some differences in the slide. Last year I presented our five-year Capital Improvement Project budget; it was \$352 million. We've cut \$80 million out of our CIP in the year since we last talked about this issue; again, because of the economic reasons that we've talked about earlier, and we've also eliminated a substantial number of projects that were unquestionably growth-

related a year ago, such as the southeast area transmission main.

If you look at our 2010 to 2014 CIP budget, you see that our expenditures over the next five years are in the \$50 to \$60 million a year range, not \$75 to \$80 million a year range that they were a year ago.

Finally, one other cost of growth that we need to include in any discussion - and you've already seen a slide similar to this from Pima County - in addition to paying impact fees and resource fees and some percentage of miscellaneous fees, developers also contribute infrastructure to Tucson Water's system. And you can see over the last decade developers have contributed about \$10 million a year worth of additional assets; that's pipelines that are constructed by developers and dedicated to the City upon completion; those are costs of growth that are entirely paid for by the development community, and these are projects that are - for which the City incurs essentially no costs. The cost of reviewing the fees are paid for by developers. The cost of the staff time to inspect the project are paid for by developers, and the projects themselves are contributed by developers.

Jeff talked a little bit about the fact that Pima County's updated the way it charges fees and so have we. If we were having this discussion 30 years ago, we would be paying for these projects. Thirty years ago the utility built water main extensions for customers out of revenue. We did not charge plan review fees. We

did not charge construction inspection review fees. So there's been a C change in the way charges for new growth have been assessed in the department over the last 30 years, and the most recent change was the adoption of system equity fee and Colorado River resource fees since 2001.

And, finally, one of the reasons that we've been able to maintain some revenue stability in the department is not only the adoption of these fees, but the adoption of a block rate in our largest customer base, which is the residential group. And this slide essentially shows that over the last ten years our highest-use customers have averaged rate increases of 10%. Our average users have seen revenue increases or cost increases of about 2%. So these growth-related fees and miscellaneous fees have allowed to shift some portion of our budget that used to be paid for by water rates to miscellaneous fees and charges.

I'd also like to point out just here briefly the same issue that Jeff mentioned, which is when you - when you base a substantial portion of your budget on miscellaneous fees and charges, or development impact fees, you not only have to accurately calculate those fees, but you have to accurately predict the amount of revenue that's going to come in for those fees. And, over the last few years, that's proven to be a very challenging exercise, indeed.

Our rates have declined, the revenues that we've obtained from water

sales have declined between 6% and 8%, the amount of money that we've collected from impact fees has declined depending on which prediction you look at.

Sometimes if you look at, for example, the amount that we had originally predicted to collect this last fiscal year in the fall of 2008, and the amount of money we actually collected last fiscal year, we were 75% off. We had projected collecting somewhere around \$8 million in development-related fees, and we actually collected \$2 million in those kinds of development-related fees. So things change rapidly and predictions on those fees have to be much more precise.

With that, I'll conclude and take questions. Oh, this is a follow-up then.

The recommendations in the paper are that we should continue to manage our CIP and infrastructure projects using accepted industry best practices, and continue to implement the changes in the financial plan that both departments have implemented over the last decade to include some of these development-related fees. And if there are any questions, I'll be happy to take 'em or -

CHAIRMAN JIM BARRY: Rob?

CHRIS AVERY: - pass 'em off as necessary.

ROB KULAKOFSKY: Yeah, Chris, in - in this history of bill impacts on customers -

CHRIS AVERY: Yeah.

ROB KULAKOFSKY: - the final column where -

JOHN CARLSON: What page?

ROB KULAKOFSKY: - number 19, the bottom, on the righthand
column where it says "increase" -

CHRIS AVERY: Yeah.

ROB KULAKOFSKY: - that's -

CHRIS AVERY: That's the annual -

ROB KULAKOFSKY: - an average . . .

CHRIS AVERY: That's an average annual increase over ten years.

ROB KULAKOFSKY: Okay. All right. Because I was - like on the
bottom when I added 10.48% each year and it didn't calculate, so -

CHRIS AVERY: Yeah.

ROB KULAKOFSKY: - I get it.

CHRIS AVERY: Yeah, it's an average annual increase over the ten-
year period.

UNIDENTIFIED MALE SPEAKER: Is that all customers?

CHRIS AVERY: That's on residential. One of the things that I - I
talked about was CWAC and I find really interesting and I wanted to ask the
economists, but I used up all my time, was that we have three different rate

structures at Tucson Water. We have this residential rate structure that has a very high block rate and a very high conservation incentive. We have a multi-family rate that has no conservation incentive whatsoever; it's entirely flat. And we have a commercial rate that's a very simple tiered rate; it has a small - relatively small summer surcharge.

During the last few years, though, our per-capita usage across all three of those rates has declined precipitously; and, in fact, the per-capita usage on the flat rate and the block rate declined about the same and commercial hung on for a little while, and then it too started to drop dramatically. So I find it interesting that in real life one would think that the per-capita usage on the block rate would increase first; the per-capita usage on the smaller tiered rate would decrease second; and that only the flat rate would be last and that didn't happen in practice so, again, getting an economics education as we speak.

CHAIRMAN JIM BARRY: John?

JOHN CARLSON: Page 19, developer-contributed assets, page 18, your pie chart says growth is 14%.

CHRIS AVERY: Yeah.

JOHN CARLSON: Are the developer-contributed assets part of that 14%?

CHRIS AVERY: No, they're not because we don't - we don't expend department funds for those developer-contributed assets.

JOHN CARLSON: What -

CHRIS AVERY: Those are -

JOHN CARLSON: They contribute - oh, they give you the pipes and stuff.

UNIDENTIFIED MALE SPEAKER: Yeah, they install it.

JOHN CARLSON: Now I understand.

CHAIRMAN JIM BARRY: Rob?

ROB KULAKOFSKY: Another question -

CHAIRMAN JIM BARRY: Oh, wait, did you want to say something?
Go ahead, Rob.

ROB KULAKOFSKY: On a - on a chart on page 21 on the bottom, the developer-contributed assets, the last - excuse me - from fis- - fiscal year 2007 through '09, it grows slowly, but if you compare that to, say, page 6 for the sewer connections, that goes down. What am I missing?

CHRIS AVERY: I think that in - in our particular case, you're probably looking at some differences between where growth occurred. Generally, in the new developments that are going to occur in the Tucson Water Obligated Service Area,

you're going to have a proportional relationship between wastewater infrastructure that's contributed by developers and the same development as water infrastructure that's contributed in that same development, but we don't capture all of the growth that's happening in the area. There are some places in Oro Valley, for example, and other places in the area that - where you've got development happening, but there - where sewer infrastructure is being contributed but not Tucson Water infrastructure.

ROB KULAKOFSKY: All right. Thank you.

CHRIS AVERY: And I haven't look at it close enough, but that would be my first - or at least hypothesis that I'd want to - want to entertain.

ROB KULAKOFSKY: Okay. Then one other thing on page 17, on - on the bottom - I'm always on the bottom - on the development growth-related fees -

CHRIS AVERY: Yeah.

ROB KULAKOFSKY: - you mention the Diamond Bell isolated water system fee, the -

CHRIS AVERY: Yeah.

ROB KULAKOFSKY: - Santa Rita - can you - can you tell me what those two are and how they came about? I mean, Diamond Bell's from way back; right?

CHRIS AVERY: Yeah, in - in both of those - one - I'll - I'll try to do this

pretty quickly - one of the difficulties with growth-related fees is that it's sometimes difficult to calculate them based on - on a large system.

In the case of the Corona de Tucson area and the Diamond Bell area, though, that issue does present itself because those are relatively small, what we call "isolated systems." So you can basically measure the entire amount of the asset base that's being constructed in those areas, and then calculate a fee in order to have our costs repaid for that infrastructure 'cause you know almost to the - to the connection how many connections that infrastructure will hold. So that when you - in an isolated area when you install a tank and a well and a piece of pipe, you know that it will serve 50 customers, for example, you divide the cost by 50 and that becomes your impact fee for those particular areas.

In the larger system, we don't calculate the system equity fee that way. What we do is take the entire value of the assets that we have in the system and divide by the available capacity. But it - it doesn't pencil out as much in the area where we have 225,000 customers or so as it does in those isolated areas where there are 300, 500 customer blocks.

ROB KULAKOFSKY: Okay. Thanks.

CHAIRMAN JIM BARRY: John?

JOHN CARLSON: Let's give him a break and get Jeff here.

CHRIS AVERY: Yeah, I second that.

JOHN CARLSON: You stated that - that most all of this new capital improvement is because of ROMP and, yet, if ROMP never came along you would've had to make certain major capital improvements because the damn thing's wearing out. Have you ever tried to calculate how much that would be compared to what you got to spend now?

JEFF NICHOLS: We did - if you refer to the slide that shows the five-year CIP projections, we looked at -

JOHN CARLSON: What page?

JEFF NICHOLS: - we - well, for me it would be page 10 . . . and we show the breakout between the ROMP in the blue and the non-ROMP in the tan.

JOHN CARLSON: Yeah, yeah.

JEFF NICHOLS: The one thing that you're getting at, though, John, that we did not do is - you're - you're correct - I mean, even if we didn't have the regulatory requirement -

JOHN CARLSON: Yeah.

JEFF NICHOLS: - related to the ROMP, we would have had the rehabilitation requirement related to replacing the - the plant at Roger Road.

JOHN CARLSON: Okay.

JEFF NICHOLS: There was no way we - in - in our study when we looked at that, there was no way that we were going to try and - and upgrade that current Roger Road plant and - and rehabilitate that plant and keep it running. We decided that there was just too much risk involved in that, so we wanted to go to a Greenfield site and -

JOHN CARLSON: Well, hooray for ROMP, that gave you an excuse to get it right; right?

JEFF NICHOLS: I hope.

JOHN CARLSON: Now, listen, the other question is: Current connection fee charges that's on our page 15, and there's variance among the units, can you tell me a little bit what the rationale or the figures are to make 'em different for an apartment house versus a small complex versus a drug store versus a mid-size hotel?

JEFF NICHOLS: And really we only have two connection fees on the basis that we use. On the residential connection fee right now, we - we do everything based on fixture unit equivalents.

JOHN CARLSON: Yeah, that's . . .

JEFF NICHOLS: So if you're - you're going to put in a low-flow toilet - I don't know the exact number - but that's equivalent to, let's say, two fixture-unit

equivalents -

JOHN CARLSON: Uh-huh.

JEFF NICHOLS: - and so for a residential unit you're charge \$200.00 - I believe the charge right now is \$233.00 approximately per fixture-unit equivalent. But if it's commercial and - it's just residential or commercial, that same fixture-unit equivalent costs you \$467.

JOHN CARLSON: What's the difference? 'Cause it gets used more?

ED CURLEY: Because, John, what we do is we look at the approximate demand on system capacity.

JOHN CARLSON: How much water -

ED CURLEY: If you have a restroom in a restaurant, that's going to be used by people all day long -

JOHN CARLSON: Yeah.

ED CURLEY: - versus - so the capacity (inaudible) are much greater in a restaurant than a restroom in your home.

JOHN CARLSON: Yeah, I wouldn't argue, but then there's the small apartment complexes that would - dwelling units versus the single-family homes.

JEFF NICHOLS: Well - and - and just so you're aware, if it was a small apartment complex, that would still be considered a residential use; it wouldn't

be a commercial use -

JOHN CARLSON: You add up the - the . . .

JEFF NICHOLS: - so it'd be at the lower rate.

JOHN CARLSON: Okay. Excuse me. Thank you.

JEFF NICHOLS: That's all right.

JOHN CARLSON: I'll give somebody else a chance.

CHAIRMAN JIM BARRY: Let me do Joseph and then suggest that we ask the audience if there's a couple questions and then - go ahead, wrap this up.

JOSEPH MAHER: Is this on? Okay. So the ROMP, does it include a new plant?

JEFF NICHOLS: Yes, the ROMP - the ROMP includes a new plant, a 30 -

JOSEPH MAHER: In Vail?

JEFF NICHOLS: In Vail? No.

JOSEPH MAHER: Where's it going to be?

JEFF NICHOLS: The area we would have to determine. There's - there's two thought processes within the department, but it's on the planning side. I'll let Ed handle it.

ED CURLEY: The ROMP includes two plants; one at Roger and one

at Ina. We have under discussion a sub-regional facility for the southeast area that would be somewhere between Davis-Monthan and Vail, you know; however, that area is being served now by two interceptors which go to Roger Road and Ina area. So we don't really have a need for a plant at this time. What we're trying to decide (inaudible) eventual need. We also have sub-regional plants at Green Valley, Avra Valley, Marana.

JOSEPH MAHER: Okay. So now I'm confused. So is there cash in here for the new plant or not?

JEFF NICHOLS: Yes, there is.

CHAIRMAN JIM BARRY: In Vail?

JEFF NICHOLS: And -

JOSEPH MAHER: For the billion dollars?

JEFF NICHOLS: And - and the option would be - when Ed talked about what we're looking at is in conjunction with Tucson Water's reclaimed system and that's - would it be more efficient to build a plant out towards the Vail area and scalp that water off for reuse out in that area, or do we continue to convey it to a larger plant in our regional facility? Which would be Roger Road from that area.

JOSEPH MAHER: Can you revamp the two plants without having a new one?

JEFF NICHOLS: We - we -

JOSEPH MAHER: Can they still be operational?

JEFF NICHOLS: There . . . if - you're talking about revamping the current Roger Road plant?

JOSEPH MAHER: That's what I'm saying, you have to close 'em down to revamp 'em so we're down one plant?

JEFF NICHOLS: We - we - to keep the Roger Road plant running, and to try and do a rehabilitation of that current technology and - and trying to pothole all the utilities that are in the ground at that plant, we thought that the risk was so high that we could end up shutting that plant down - and there's no alternative, the sewage doesn't stop flowing - so if for some reason we killed that biological process at that plant, we had nowhere to treat that sewage. We didn't have the capacity at Ina Road. If we had sufficient capacity at Ina Road to transfer all of the sewage from the Roger Road ser- - service area, which currently is about 36 MGD a day, if we could transfer and convey all that sewage to Ina Road, treat it there and totally dry up that plant and rehab it, that might've been a possibility, but we didn't have that option. If we would've rehabbed Roger Road, we would've had to keep that plant running at the same time. So, to me it'd be like trying to tune your car up going 30 miles an hour and I really wouldn't recommend that. But maybe John could talk -

JOHN CARLSON: Well -

JEFF NICHOLS: - some engineering -

JOHN CARLSON: - let me bust in here - and I'm going to take credit for - for making a consternation during a meeting about a year ago - 'cause my logic is: Why take it all those miles down and treat it and you're more and more going to have treated water flowing back in the system? Why not put it upstream so that you don't have all the conveyance problems and sizes and you don't have all the pumping problems clear back to Vail or from here to Vail? And they looked at me like I was crazy, came back a week later and said I was, now they're starting to think about it again. So I'm glad to hear it.

CHAIRMAN JIM BARRY: Let me - it's almost time to clap. Do we have anybody in the audience? We can take one or two quick questions. Quick and a question, not a statement, a question.

BOB COOK: (Inaudible; not speaking into a microphone.)

JEFF NICHOLS: It's - it's both proportional to the water consumption, but it's also propor- - it's - it's based on the biological oxygen demand of what - and the total suspended solids that you're putting back in the system. So the baseline, the 1.0, would be for residential and then we calculate based on that if you're a commercial establishment, like a restaurant and you're adding a lot of total

suspended solids and biological oxygen demand, you get charged for that because that costs more to treat that, that flow.

BOB COOK: (Inaudible; not speaking into a microphone.)

JEFF NICHOLS: Well - and - and it has - and I think Chris would tell you that - that -

BOB COOK: Shift the cost -

CHAIRMAN JIM BARRY: Okay.

JEFF NICHOLS: Well, but that - that dynamic is - is really hard in our industry because we build hard systems and we have a certain operating cost and it's hard to tell people that if you conserve water, your per-unit price that you pay for that is going to go up, but that's the bottom line. We have a fixed cost with our infrastructure and so the more flows we get, the less the marginal cost that we can charge. When the flows decrease, the - the marginal costs for the flows that we're getting actually go up.

CHAIRMAN JIM BARRY: Anybody else got a question? Just a question, not a statement, a question for these guys.

CHARLES COLE: (Inaudible; not speaking into a microphone.)

JEFF NICHOLS: That - that is not a permit requirement right now and - and, actually, I know we've heard a lot about pharmaceuticals but, to the best of my

knowledge, there's only a couple laboratories in the whole United States that can test the effluent from wastewater treatment plants and actually detect the - the level of pharmaceuticals that are within that water. A lot of the endocrine disruptors and the different - the - the hormones that you're saying are from plant life; it's not actually from a pharmaceutical. But, to answer your question, no, it's not.

But what we see on the future - the next issue that we see in the future is phosphorous removal and the processes that we're putting in place will be able to remove phosphorous from the system. So we think we'll be compliant before it's actually regulated. When and if pharmaceuticals are - are regulated in the wastewater stream is anyone's guess, and - and the biological processes that will be needed to do those, I - I'm not sure that they exist right now, but maybe . . .

ED CURLEY: We're also going to be covering this issue at the September meeting in a paper on water quality and emerging contaminants, 'cause you've asked a pretty complicated question for one minute tonight and I think it would be better to discuss it in that context.

CHAIRMAN JIM BARRY: Okay. Marcelino, last question then we're going to move on.

JOHN CARLSON: Then you get to come to that meeting.

MARCELINO FLORES: All right. To Chris, the - I brought up in the

earlier presentation kind of this - this idea: Are we - or is Tucson Water getting back the full supply costs considerations based on that chart?

CHRIS AVERY: If you look at Figure 1 in the economic need for water paper, our rates are set at basically a cost recovery basis, which is the lowest here of that figure.

We - we set rates by adding up our capital costs and our operation and maintenance costs in any given year, and we try to set a revenue target that will cover those costs. We don't cover some of the other factors that are listed in Figure 1, including the value of the resource.

CHAIRMAN JIM BARRY: All right. Ed, Jeff, Chris, thank you very much.

(Applause.)

CHAIRMAN JIM BARRY: Staff want to talk about agenda for next meeting?

MELANEY SEACAT: We have on the agenda for next meeting three papers: One on water quality, one on environmental restoration and one on new water, and do you want to return to the topic of the report writing and the schedule? Okay. Is there anything else?

CHAIRMAN JIM BARRY: Okay. Call to the Audience. Colette, quick.

Speak into the microphone.

COLETTE ALTAFFER: Just real quick and it's about the White Paper and the fact that the environment was kind of given short shrift and it would be nice if we had an opportunity to invite Jonathan Overpeck to comment on the environment as a counterpoint to the U of A experts that we had tonight.

CHAIRMAN JIM BARRY: If we can get the Nobel Prize winner here, I would be more than happy. All right.

Anybody want to move for adjournment?

JOHN CARLSON: I did.

CHAIRMAN JIM BARRY: Oh, does anybody want to second it?

MARK STRATTON: Second.

CHAIRMAN JIM BARRY: All in favor?

(Affirmative responses.)

CHAIRMAN JIM BARRY: Thank you all.

(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 the City/County Water & Wastewater Study Oversight Committee Meeting held on August 20, 2009.

Transcription completed: September 15, 2009.

DANIELLE L. KRASSOW-TISDALE