

CHAIRMAN JIM BARRY: That's right. Anything else? Anybody else?

NICOLE EWING-GAVIN: I just wanted to mention that Sabrina Cotta, who's been an intern in our office for the last year, who's been helping with the study, who's over at the food table, this is her last meeting. She's decided she's had it with the real world, she's going back to graduate school, so she is very sad that this is her last meeting. But, thank you, Sabrina. (Applause.)

CHAIRMAN JIM BARRY: Marcelino and I want to bring up something; we've been talking about this. Mayor and Council and the Board of Supervisors gave us until the end of November to finish Phase 2, and Marcelino and I believe that we've got to hold to that, which - which really means the last week in - in November is Thanksgiving week and it's also a week that my wife and I, after a long trip through a medical 12-month (inaudible) are going to Matzalan with our children for Thanksgiving.

So, really, the last effective date we have to vote on the report is November 20<sup>th</sup>; that's the Friday before that - that Thanksgiving week starts. We've got presentations and discussions through - through a September meeting, which leaves us October - August, we got from now until then to try to get a report written.

Marcelino and I have an idea on how we can proceed, and we will be sending out, through Brenda Garcia, with a proposal early next week. We'll ask everybody to comment on it and maybe there's a way that we can start writing now by kind of filling out grading systems on recommendations and presentations and all that, because we don't really have a whole lot of time and I don't - I don't think we want to go back to the - to the - the jurisdictions and ask for more time. I think we're all ready to get this over with.

So, we will get something out to you the beginning of next week. Right, Marcelino? Okay. And - and we will strongly urge you to - to respond to it as quickly as possible, and we may even follow up with phone calls and talk to people so we can get a - we can get an idea in place and then we'll bring it back for the August meeting also for - for discussion, all right? John?

JOHN CARLSON: Yeah, what do you expect to happen to this August group after November?

CHAIRMAN JIM BARRY: I believe that - we're going to make a proposal -

JOHN CARLSON: Yeah.

CHAIRMAN JIM BARRY: - Marcelino and I, that the Citizens' Water Advisory Committee, the Regional Water Reclamation Advisory Committee and the two P&Z Committees agree to continue to monitor whatever we propose; that those four groups that really are the background for this Committee, continue to monitor what - what happens subsequent to what we suggest, and that we maybe report annually on what progress has been made; what

things we would think would be different; nut, other than that, I think this Committee ends.

JOHN CARLSON: As individual - the four individual Committees make their comments to the appropriate elected officials or to who?

CHAIRMAN JIM BARRY: To the Mayor and Council and the Board of Supervisors and the public at large, yeah.

JOHN CARLSON: But it would be as - as the four. . .

CHAIRMAN JIM BARRY: No, I would like to see us - the four groups make a consolidated annual report.

JOHN CARLSON: I have no problem with that, but you said if we disappear, how do we do that?

CHAIRMAN JIM BARRY: We would disappear, CWAC as a whole body, Regional Wastewater Advisory Committee as a whole body -

JOHN CARLSON: Yeah.

CHAIRMAN JIM BARRY: P&Z, P&Z, all four of those groups would - would comment annually.

JOHN CARLSON: They would comment and come into a room and hash it out or what?

CHAIRMAN JIM BARRY: I don't - I don't know the answer to that one.

JOHN CARLSON: Okay. You can't see that far in the future.

CHAIRMAN JIM BARRY: No.

JOHN CARLSON: All right.

CHAIRMAN JIM BARRY: I can hardly see you, John. Marcelino?

MARCELINO FLORES: John, as you know, CWAC and the RWAC Committees have got, you know, members exchanged as well, so we've also got the - the respective directors of the departments also cross- -

JOHN CARLSON: Oh, yeah.

MARCELINO FLORES: - -pollinated there - pollinated - and, perhaps, we may evaluate in proposing the P&Z becoming involved in those, the CWAC and RWAC -

JOHN CARLSON: Okay.

MARCELINO FLORES: - those two make the land use connection with the structure, so - but, again, that's still something we would want to see developed, so . . .

JOHN CARLSON: Okay. I'll stand by.

CHAIRMAN JIM BARRY: Any other comments on that? All right. No other announcements?

Approval of the June 25<sup>th</sup>, 2009, Meeting Summaries. Apparently, some people say they didn't get it.

BOB COOK: I'd like to make a change. I was actually present rather than absent. And just to show that I was present, I'm going to give you a summary of every - of everything I said.

CHAIRMAN JIM BARRY: You're not going to read this to us.

BOB COOK: No, I'll pass it out.

CHAIRMAN JIM BARRY: Okay.

BOB COOK: I'd love to read it . . .

CHAIRMAN JIM BARRY: Yeah, I know, but . . .

BOB COOK: These are the five points I believe that I made in the remarks during the meeting regarding the White Paper, because we're going to have a discussion of that White Paper, I believe, et cetera.

CHAIRMAN JIM BARRY: There's follow-up on the - on the - the last White Paper and also on -

BOB COOK: I'd like to -

CHAIRMAN JIM BARRY: - population -

BOB COOK: - I'd like to enter this into the record. I'd like this to be incorporated into the minutes as my summary -

CHAIRMAN JIM BARRY: Okay.

BOB COOK: - so . . .

CHAIRMAN JIM BARRY: Will do. Is there a motion to approve the Minutes with - with Bob's change? Does anybody else have any changes? Anybody want to make that motion? Okay. I'll move it. Any second? Well, in the absence of a second, we can't approve those Minutes.

MARCELINO FLORES: But, we all haven't seen Bob's comments, or are they here or . . .

CHAIRMAN JIM BARRY: They're being passed around.

BOB COOK: It's just a summary of what I said.

CHAIRMAN JIM BARRY: All right. We had a motion that failed for a second.

BOB COOK: I'll second.

CHAIRMAN JIM BARRY: Okay. Any discussion? Any opposition to it? Passed.

Call to the Audience.

(No response.)

CHAIRMAN JIM BARRY: That was quick. Okay. Follow-up on Growth and Urban Form paper.

Nicole?

NICOLE EWING-GAVIN: So in your packet there you should have a handout, two pages that looks like this; it says Location of Growth, Urban Form and Cost of Infrastructure Technical Paper Follow-up.

And, as you recall, we've been doing these documents for each of the papers so far, and they're meant to really do two things: One is respond to questions that came up at the meeting, and then the second thing is to provide sort of a high-level summary of comments and themes, and we're really looking for commonality across comments that Committee members have made.

So there's this version of a summary. There's the Meeting Summary, which we just approved, and then the most-detailed summary is the transcripts that we're doing from all the meetings. So those are kind of the three levels of ways that we're summarizing these papers and these meetings.

One of the follow-up items was that Bruce Gungle had asked for a set of maps showing the difference between the four growth scenarios, and we've handed those around; they're orange-and-white. And Nicole Fyffe is going to just briefly talk about what our GIS person did here.

NICOLE FYFFE: (Inaudible; not speaking into a microphone) - maps, so what we did is we compared the three non-status-quo maps to the status quo. So remember these are the hypothetical scenarios for a population of two million. We weren't saying that there would be a population of two million, but it was just a hypothetical scenario if there were two million.

This was - the first map you have is the status quo, and so orange is the projected build-out areas. The second map is comparing the habitat model to the status quo. And so when you look at the second map if you look down in the lefthand - lower, lefthand corner that's where the key is, so orange means there - those are areas that are common to both the status quo map and the habitat map; meaning they're projected to build out under both scenarios. Red means they would just project - they would just be projected to build out in the status quo scenario, and blue means only projected to build out in the habitat protection model.

The second map - or third map is the taxpayer savings or infrastructure efficient model compared to the status quo; and, again, you'll see orange is where there's commonality between the status quo and that model, and red is where build out is not projected in the efficient model but it is in the status quo model.

And if you go to the fourth map, same situation, we're dealing with the transit-orientated development growth model. So, again, orange is the area of commonality between the status quo and the transit model, and orange - and red is where the transit model is not expected to build out, but status quo would. And we will post these to the

study website.

CHAIRMAN JIM BARRY: Any questions of Nicole?

(No response.)

CHAIRMAN JIM BARRY: Okay. Are you done?

NICOLE FYFFE: Yeah.

CHAIRMAN JIM BARRY: Okay.

MARCELINO FLORES: Mr. Chair, sorry. From this model, can we then begin to assign a number of acres in terms of each of the status quo and only status quo areas as just kind of a - I think we might - be useful to have those number of acres if we started doing some sort of . . .

NICOLE FYFFE: We have acreages in the reports. I'm trying to remember whether we actually showed just the acreages of differences, but we can certainly give that to you on a spreadsheet.

MARCELINO FLORES: Okay.

NICOLE FYFFE: Okay.

CHAIRMAN JIM BARRY: Any other thing for Nicole?

BOB COOK: I just want to - just make the observation, again, that if you look at these maps, particularly the - the - the taxpayer savings efficiency scenario and the transit-oriented development, they're almost identical, and they're almost identical because their underlying assumptions are the same

And the point that I made the last - last meeting is that the three scenarios are actually complementary; they all actually fit together; they're actually just one scenario called "Smart Growth," and so . . . you know, this - this is an interesting exercise in learning about the separate impacts of these various factors, but in - in reality, if you wanted to do more open space, you would increase density somewhere. And, of course, they're - they're not - they're not necessarily complementary. You don't have to have transit-oriented development; but, since one of the charges of the - this Committee is to actually look at a balanced sustainable infrastructure across all public functions, then - then by - by definition all of these Smart Growth factors would - would - would be - would be, you know, part of the solution.

So, I guess - I guess what - maybe this - this is going to be developed in the next step, but we really need to have a good comparison, cost benefit comparison between the business-as-usual scenario and the Smart Growth scenario; those - that's the critical information that the community needs to make decisions to move forward.

CHAIRMAN JIM BARRY: Anybody else want to comment on that? (Inaudible) do you want to - it's

fine?. Okay. All right.

Let's move on to Item 6, Dynamics of Population Growth and Projections. I looked more closely at the scope for Phase 2 and that first one talks about agreement on population growth urban form, and it talks about the - the population growth increments through 2050.

And I was thinking we - we had one meeting where we got some presentations on - on population growth, meaning the numbers of people, not form, not location, just the numbers; that was August 27<sup>th</sup>, I believe, and it just occurred to me that we need to revisit that, in part because it was - there was kind of an underlying unease I thought with - with the presentation the last time that was caused in part by unease with just accepting the two million - two-million-person estimate.

So I wanted to take some time today to give my own view of - of how population change, meaning the number of people could be discussed; this is not meant to - to be the definitive answer. Hopefully, what - what's going to happen is it'll spark conversation and somebody's going to tell me I'm nuts and somebody going to say I agree, and somebody's going to say we ought to go this way. We won't answer everything today.

And after a poll of Bob point, I'm noticing - I was thinking about the paper last time and, in fact, all of Phase 2, this is the beginning; this is not going to be the end of this discussion, so we ought to make as good a beginning as possible.

So what I wanted to do - and I - I sent out by e-mail - Brenda sent it out for me - just a kind of my own memo as a way of raising some issues and asking some questions. And I - and I put in - in the report, but I don't have it here, a depiction of the Roman God Janus looking in two directions. Chuck Huckleberry called it "Jim Barry's Goofy God."

But, we - the Committee - the community clearly looks at population growth - some of us lament it, some of us celebrate it - and - and we ought to talk about it seriously. This is just growth from 1900 - from now and you can that both the people who lament growth and celebrate it are looking at the same thing: We've grown fast, particularly since in the - in the post-World War II period.

But if you go to the next slide -

VINCE VASQUEZ: Jim?

CHAIRMAN JIM BARRY: Yeah.

VINCE VASQUEZ: If you go back - I just want to clarify is that on - on census data, so every - every ten years?

CHAIRMAN JIM BARRY: Yes.

VINCE VASQUEZ: I just want to point out - so it kinda skews that - that two-year gap - I mean, if you - if it was a year-by-year, like those last two are -

CHAIRMAN JIM BARRY: Yes.

VINCE VASQUEZ: - there would be certain period of times where it would be flat.

CHAIRMAN JIM BARRY: Yes, and we'll see -

VINCE VASQUEZ: I - I just wanted . . .

CHAIRMAN JIM BARRY: That's right. Though I do think that we're going to find that we - that because of the downturn, we may not grow as much in this decade as we did. So - so that's - we got kind of that straight line growth that - that many lament and many celebrate. But if you look at - at year-by-year changes, and we're going to get that . . . what's - what's called Figure 3 is just the annual population growth increment in absolute - in real numbers for every year. And I just want to point out two things: Just how variable it is from year to year, but the trend line is that the increment by decade has gone up. So there's the annual increment in the - in the - in this decade; it's been about 20,000. Before - the decade before, I think it was about 17.

But if you look at it in terms of percentage changes, you see the same variability, extreme variability, and particularly in the - in the immediate post-war period, but in terms of the size of the increment to the population, it's been going down relatively since - over time - since - since the first decade of the 1900s. So my only point in these three charts is to say it's a complicated subject.

So the first thing I wanted to - to have us think about is: Do we have some sense of how we're going to grow in the future? If you - if you look at population demography and population extras, they talk about two growth curves, the J-curve and an S-curve. And if you remember Dave Taylor gave us some indications of American cities that had the S-curve. So this is just representational; some numbers of people sometime in the future; the bottom line is just that - to say this is where we got to 2008. There's an increment - we're going to talk about what happens between now and 2050.

But my question is to the Committee and to Staff: Which line do we think most accurately represents what's going to happen in the future? Is it going to be the J-curve, just straight up, two million, three million, four million, no stopping? Or at some point are there going to be a combination of factors that cause that to level out and sometimes it'll go and sometimes it'll drop? And one of the things you're going to see here is my inabilities as a computer graphic person. But, you know, the - the S-curve is not going to be a straight line; it'll grow and maybe

decline; grow and maybe decline. So my question to the Committee first and then the Staff is: Which do we think is going to happen? Bonnie?

BONNIE POULOS: Well, I think it's in Figure 3 where you looked at annual population. First of all, I'd like to say I thank you very much for this memo. I - I think that this is a very difficult topic to discuss without getting heated and passionate, and I think that your memo did a good job of trying to focus on some of the things that we might actually be able to discuss and agree on or agree to disagree about, but I wanted to thank you very much for all the effort that you went to.

But when I looked at this curve and looked at your question, if you look at Figure 3 where you're looking at the annual population growth increment over about 100-year period, it seems to me that it much more closely follows an S-curve than it does a J-curve, and I think if you make the correction on your graphic that shows an increase in population that's more gradual than what you're showing in your J-curve, I think an S-curve is probably what's more real because, in the past, we had things like the mines, so there were times when we brought a lot of people in to work and then the mines crashed and a lot of people moved out and found jobs other where - other ways, and I think that's where you see a lot of that fluctuation.

But I also think is today's economy, you're going to see a lot more movement of people trying to go places where there are jobs, and so for me an S-curve is much more close to reality than a J-curve is.

CHAIRMAN JIM BARRY: John?

JOHN CARLSON: Well, what bothers me about population projections is, sure, give it your best shot, but we've got - we've got two probable variables. I mean, we have a fast one and a slow one, whether you call 'em "J" or "S." As far as looking at it from the water standpoint, we should be aware and then, like I said in - in my written opinion, that, you know, every five to seven years you got to look at it again. But there's no question in my mind that water's going to severely - eventually, whether it's 20 years from now or 72 years from now, limit the increase in population annually in Pima - in the Pima environs.

So, as we approach it, I - I think we got a fast curve and a slow curve as our best guess or deduction over the - whatever period we're talking about.

CHAIRMAN JIM BARRY: But it sounds to me like you're suggesting that at some point there will be limiting factors and - and we will start more to resemble the S-curve than the J-curve; that the -

JOHN CARLSON: I wouldn't doubt it.

CHAIRMAN JIM BARRY: - water will be a limiting factor.

JOHN CARLSON: Absolutely, yeah.

CHAIRMAN JIM BARRY: Bob?

BOB COOK: Except for the incomprehensible field of astrophysics, almost all curves in nature are S-curves, and - and if you notice that - if you look at an "S," it peaks and then starts going down; that's called "overshoot." And, typically, in biological systems you've got overshoot, you know, you generally don't plan for when that nutrient supply is no longer available and you die off a little bit.

So I think the J-curve is actually just a part of a cycle and it doesn't represent any - any long-term reality. I think that in the context of our lives, you know, since World War II everything's gone up, almost everything, and for - for a while everything got cheaper. So I think we tended to think it was a J-curve world but, in fact, we're being - you know, forced to actually - as others have said - forced to look at the real constraints on - on what we call our local population dynamics.

So, I - I think that it's pretty clear that we're going to see a change and we're going to probably see an S-curve, and maybe we'll have some boom and bust cycles, but I think the long-term is going to be constrained growth.

CHAIRMAN JIM BARRY: Marcelino?

MARCELINO FLORES: Mr. Chair, members of the Committee. I believe more along the lines of John in terms of we might have some rapid growth in the short term. In the long term, an S-curve I think is more probable, more likely, with an upper limit.

But the reason I would say that in the short term we might see a J-curve is because of the factors why people move, and specifically housing is a big factor for considering inter- - moves among states. I'm pretty sure in this area - I've seen so many vacancies and there's so many homes that are partially - and we had a glut of housing with the foreclosures, people losing their housing, I think rents are going to come down, so cost of living is going to be a little bit more amenable to other populations, such as California and other areas. So I think we're going to get a significant in-migration because of the housing factors and - and the cost of living that is, you know, not to mention the great weather and if we get some recreation, but I - I really feel that, you know, we might be looking at the short term, a J-curve; and long term, S-curve.

CHAIRMAN JIM BARRY: Vince?

VINCE VASQUEZ: My position on it is in terms of the two million number, or whatever the number we - we come to, is - is that the best statistics we have available are the ones that we've - we've been using throughout the entire study and that all the jurisdictions base their, you know, planning horizons on, and they all continue to tick up for

some time and then, of course, we'll probably have some kind of natural resource limitations, but even those, if water is the one limitation and not another one, such as some kind of environmental constraints, you know, those can be overcome, either with supply importation, be it water transfers from various users in the Colorado River and/or a desalinization importation and/or ground water importation and/or just greater efficiency with the supplies we do have.

And so to - to - yes, it's true at some point it'll - we'll start to bump up against that ceiling, but we're nowhere near the ceiling, and particularly for most planning horizons, they're in a 20-year type - type horizon, and I definitely think in that time period we'll have these kind of flat years, but we'll probably see three or four more business cycles in that 20 - 20-year period and we'll have these times where we question whether or not we're continuing to increase population.

But, ultimately, like the first graph showed, we will continue to kinda trend upward; and, again, it won't be at the same - it won't be a - a doubling, basically, of the same percentage every year, 'cause the amount will still - as referenced in 1990 - the 1990s, it was 17,000 people per year, and in the 2000s it's 20,000 people per year. So the number of people - not necessarily the percentage of growth, but the number of people continues to go up. The percent- - because the whole population is bigger, that shows it was a smaller percentage, but that just seems kinda like a silly - from - from my, you know, looking at it - comparison to look at. So I think if we're really concerned about the next 20 years, we should assume a pretty consistent growth pattern.

CHAIRMAN JIM BARRY: Well - and I do have a black line in there for the discussion of population projections between now and 2050. I just want to get a sense of whether we think there is going to be, at some point in the future, a limiting factor. Rob?

ROB KULAKOFSKY: Yeah, I do think that the S-curve, long term definitely is where we're going to go. There - there's so many factors nobody can really take a crystal ball and know what the future's going to hold, but we do know that resources are limited and the quality of our resources will have a major effect as our - as we start using more and more CAP water, we're going to find more salinity in our water system. As we're irrigating outside, we'll find that some plants will no longer live in that kind of saline environment.

So, also, if we start recycling our wastewater into potable water, we're going to have a salinity issue again. So it all depends.

If - if we start thinking smarter and start using more rainwater harvesting for irrigation, then we - we might have a desert environment that still can support some nice vegetation; but, otherwise, long term we have some really major problems. So who knows? But long term, probably the S-curve.

CHAIRMAN JIM BARRY: Tina, what do you think?

TINA LEE: Well, as Bob points out, you know, biological systems will meet a carrying capacity and you'll eventually get that flattening out. So I think it's not so much a question of which curve most realistically represents the future; it's when does that turn flatten? And that's where, you know, later on in your paper you talk about what does the Committee and Staff believe that Mayor and Council and Board of Supervisors is willing and able to do to control that or to instigate that? So, you know, I would agree with most people here that I think it's the S-curve; it's just a matter of at what point that turn flat - towards the flat will occur.

CHAIRMAN JIM BARRY: Joseph, you want to say anything about this? No comment? John, did you want to say another thing?

JOHN CARLSON: I reserve the right to break in later.

CHAIRMAN JIM BARRY: Okay. Well, for what it's worth, I also think that the S-curve is what's going to happen.

Now, let me ask Staff: What do you guys think? Arlan?

ARLAN COLTON: Mr. Chairman, members of the Committee. We've - I've scrawled all over this memo. Relative to the - to the question at hand, I think Staff's perspective - and I think I'm talking for everyone - is that, in effect, if - we've always assumed that population projections is in an S-curve. One might argue as to what, you know, year something is going to happen and we, you know, that - that's why you do population projects on a regular basis. But, not only is it an S-curve, but that if you follow what you would refer to as the "J-curve" or (inaudible) this - J-curve coming up, we've been there. We believe that we are on the - we're still growing, but we're starting to - the rate of growth, which is reflected in your figure, is actually declining.

So - so, while we're continuing to grow, we are on that - we're past that point where we start to go this way, and we're already there. And so now the question is: How - how much does that S-curve flatten out? When does it do it? Or is it just such a gradual change that it may happen many, many, many years in the future?

Whether or not we decline in population from a systems base concept that Bob was mentioning, that might happen. We turn into a rust - the functioning equivalent of a rust belt city, a rust belt community. We're way, way, way down the road from even contemplating. We don't know what might cause that to occur, if it ever occurs, but at the bottom minimum we know that we flatten out and we flatten out because of water, but we also flatten out because of the ability to deliver infrastructure before we, perhaps, even run out of water.

CHAIRMAN JIM BARRY: Does anybody from the City want to disagree with that?

ALBERT ELIAS: No, I - (inaudible; not speaking into a microphone). I'll just add my (inaudible) . . .

CHAIRMAN JIM BARRY: Okay.

ALBERT ELIAS: Actually, I agree with what Arlan's saying, but it's an interesting question because you can look at it in the context of our own systems here locally and I think there's a lot to be learned from that, but I think you also have to look at it in a national and international perspective as well. I think the bottom line is Tucson is going to continue to be attractive, in the short term at least, for people to come here. And I think that's kinda what you were getting at, Marcelino.

How long can we maintain that? That's a critical question, and it kinda underpins a lot of the issues that the Committee's trying to get at. What kind of things can we do, should we do, to deal with that relatively short-term period of time where we know there's still going to be people coming here? And what's attractive in Tucson to people from, say, the west may be very different than how things are in the midwest or in other places in the community.

So I - I agree, though, it's definitely more of an S-curve. I think the S-curve has already begun. I - I think we're going to be - continue to be challenged during certain parts of the near term with regard to dealing with growth and - and kind of all the - the conglomeration of issues that are coming before the Committee, not only water but how do we pay for things. I personally agree with Arlan, I think we're going to run out of money first, but that's just my opinion. Thanks.

CHAIRMAN JIM BARRY: Bonnie?

BONNIE POULOS: Albert, I have a question. I understand the viewpoint of, you know, in the short term we're probably going to grow and we're very attractive to growing to other people who are from other places, but with the exception of cheap housing and cheap land, and lots of sunshine, it seems to me that there are a lot of things about Arizona that have caused us to fall to the very bottom of the list, whether it's healthcare, whether it's infrastructure, whether it's jobs that are there, the wages that we pay, the schools that we have. And so it seems to me that to say that we're attractive in the short term is - is, I think, open to as much question as what we think we're going to see in the next 20 years.

MARCELINO FLORES: I believe, yeah, there are certainly those quality of life issues that are taken into consideration and that's probably why there's such a large proportion of out-migration as well, but that's, you know, from the paper here that it shows, you know, there's just about as many coming in as there are going out and - and that's just kind of also at the heart of a lot of problems why we don't invest in those infrastructure. Why we don't invest

in our schools. Why we don't invest in - in our pay, you know. And so I think, you know, I - I believe people are going to be coming here for the short term, kind of a little pit stop in their lives and, you know, that number might increase, but they'll find soon after that, you know, and that's the reason why they leave as well.

ALBERT ELIAS: That was exactly what I was going to say. I think the out-migration issues bloom large for our community in terms of being able to educate the population about the systems we do have to invest in, all the ones you just rattled off, Bonnie. But, because people don't have roots here or because they - it's only a pit stop, like Marcelino says, they never really have a chance to fully grasp the nature of what's needed for our community and they don't find the investment worthwhile, and they choose to make their decision by moving on or, worse yet, they choose to make their decision by not investing in education or social needs of our community or, you know, infrastructure, whatever it is, you know, they decide we don't want to do that.

And I think that's - that's been a challenge for our community probably since the post-war-boom era, where we've had a lot of the out-migration, and it's a fascinating issue because I think our out-migration is, perhaps, a little bit greater than what I've seen in other communities and I think it exacerbates a lot of the problem.

CHAIRMAN JIM BARRY: Did I see a question over here? Bob?

BOB COOK: Yeah, I think I'll just wait till the next -

CHAIRMAN JIM BARRY: Okay.

BOB COOK: - section because we're actually getting into . . .

CHAIRMAN JIM BARRY: Okay. Yeah. Chris, did you want to say something? And come up to the microphone so we can make sure we get it, please.

CHRIS AVERY: I just want to say that from a water perspective two things: First of all is that in the past we've sort of always under-predicted future demand for water, and so whether we're on a J-curve or an S-curve - in - in the last 50 years most of the long-range plans that Tucson Water's developed and that other folks in the region have developed, they've consistently under-predicted growth, because I think it's always been hard for people to envision that that much growth was going to happen in Tucson until it actually did. So I think that's something we have to keep in mind going forward.

The other thing that I think we should keep in mind - at least until we get an answer to the question - I have yet to get a good answer to this question, but it is: If we live in a world that's going to be heavily carbon taxed and where global warming is a concern, no one yet has answered the question for me: Are we better off living in Buffalo where we have lots of water but we have to heat our houses nine months a year, or are we better off living in Tucson

where the energy costs are significantly lower, sunshine, but we don't have abundant water supplies? I haven't yet heard an answer to that question, but it may be likely - it appears likely that in a global warming world you would want more people living in a place like Tucson where the energy costs are relatively low compared to a place like Buffalo where the energy costs are high.

CHAIRMAN JIM BARRY: I lived in Buffalo and I want to say it's a goddamn nice city.

UNIDENTIFIED FEMALE: Cold in the winter.

CHAIRMAN JIM BARRY: It's very cold in the wintertime.

VINCE VASQUEZ: I think just to balance it and to add I think to Chris' other - kinda presenting the other side of it is - is that, you know, we think about the push/pull factors and there are tremendous push/pull factors coming up from Mexico, and that's a huge piece of population migration that we don't necessarily consider a lot of times, so that's - I think it's a big part of the overall population projections that we see.

And the other thing is just comparatively to the midwest in terms of economic push/pull factors and various things kinda that Bonnie was mentioning, is that economically it is deteriorating in the - in the rust belt, the upper midwest, and - and comparatively we are better, and you can add those things to the - kind of the other concepts that Chris was throwing out with - with, you know, abundant sunshine and less energy costs, I think that you can really balance the argument of we're - we're likely to see continued growth, you know.

There's going to be definitely push/pull factors and other places are going to grow faster and other places are going to grow less, but I think it does - if - if that - if the - the lines that we've been given get us to 1.5 million by 2030, I mean, use a sensitively analysis of 25% either - one way or the other, but that - that's - those are the models, what they've produced, you know, of the people who do that for a living and do it better than any of us; that's what they've produced. So, I think in terms of our actual planning and our assumptions for a 20-year horizon, I would - I would hope it would stick to that - that trend line and . . .

CHAIRMAN JIM BARRY: Well, that's something we're going to talk about. I just thought it was worthwhile to get some sense of whether we live in a world of great fear or in a world of reasonable expectations.

And I would also say that when we talk about sustainability and living today so that the future generations aren't negatively affected, if and when the S-curve starts really leveling out, the people who are going to be alive then are going to be facing very different conversations than we are today, and we should be aware of that also.

Anybody else from the audience want to say something about J-curve versus S-curve? Margot?

MARGOT GARCIA: I forget how tall Chris is. I have to bring down the mic. I just want to say that the

J-curve is theoretically impossible, strictly speaking, because otherwise you'll have the whole population of the world in Tucson; it isn't going to happen. I mean, that shows infinity, going forever. And, also, the S-curve, you know, is synodic; it doesn't just flatten out; it always slightly grows because we never know what the final level is going to be.

And I think if we were sitting in Detroit or Cleveland at the turn of the century and having this conversation, you know, we would be saying, "Well, of course, we're always going to grow. We have tremendous manufacturing here." I mean, if you've ever been to Cleveland and looked at the infrastructure, the symphony, the halls, the money that has poured into that area, I mean, they expect it to be a grand city forever. And you look at them today, Buffalo, for instance, is way overbuilt in terms of infrastructure compared to the number of people that are there.

So, I think it's really dangerous to project this - this population that's going to be incredibly large, incredibly wealthy. I mean, we only have to look around and we see all kinds of places where we have, in fact, not had an S-curve, but we've had - I don't know - a hump, you know, it goes up high and starts coming back down again. So, I - I think, you know, even to the S-curve I'd add one other, which goes and comes down.

CHAIRMAN JIM BARRY: Well, that's what I tried to very ineffectively . . .

MARGOT GARCIA: Well, you've got some little wiggles in there. And I think we need to think about that, and I think Chris is asking an important question: What are the factors that could send this city into a decline? I mean, as I say, the turn of the century if you'd been in Detroit or Cleveland or Buffalo, there was no dream, no thought they would ever be in the situation they are today, and it's not just those cities, there are a lot of other ones, too.

The midwest, you just study the - the population demographics of the midwest, it's - in fact, has the highest average age over Florida, over Cal- - over Arizona, any of those places, and it's not because more older people are there, it's because all the young people have left -

CHAIRMAN JIM BARRY: Right.

MARGOT GARCIA: - and all that's left are the elderly. So, these things are very, very fluid and I think, you know, we need to have a lot of respect for this kind of change that can happen even with the best people protecting what's going to happen.

CHAIRMAN JIM BARRY: Thanks. John?

JOHN CARLSON: Yeah, I had a Buffalo experience on July 4<sup>th</sup>, 1951 -

CHAIRMAN JIM BARRY: Yes, you told me this.

JOHN CARLSON: - went to the town twice, yeah.

I hope this is the last time I hear a J- and S-curve. We are going to - we should enlist the help of

capable - of professionals that deal with these things besides our own thoughts that will come up with a maximum/minimum or a medium/gradient over whatever years we - we tell 'em to and then, like I say, in eight years you got to do it again. And I understand what we're - we're saying here.

Incidentally, I just spent five hours interviewing candidates for the City Council, both sexes, both parties and -

CHAIRMAN JIM BARRY: Party doesn't count anymore.

JOHN CARLSON: Yeah, yeah, every one of 'em - it was - one of the questions was: What about water? And this Committee came up. And all of 'em are open to looking at a region-wide pact between water and waster. Some of 'em just said water and we said what about - oh, yeah, I'm glad you reminded me. But I'm just saying whether it's us or just the times, it's - we're really penetrating the body politic out there to where more and more people are stopping and thinking about these things. But, again, I just say I hope I never hear the word S- or J-curve in this August body anymore.

CHAIRMAN JIM BARRY: J-curve, S-curve, J-curve, S-curve.

BONNIE POULOS: Jim?

CHAIRMAN JIM BARRY: Bonnie?

JOHN CARLSON: You filled your quota.

BONNIE POULOS: But - but just a thought, I mean, if you look at the J-curve and what Margot said is true, it would be completely unsustainable.

But even if you look at the S-curve and you look at how population - especially here where you have 25 or 30% of the population shifting every six months, every year, whatever it is - is that the real question when you look at that kind of population dynamic is: How do you provide a community with the resources that you need to provide for when there are increases in growth, but where you are not harmed by the decrease in growth and the loss of jobs or the loss of housing that goes along with it? And I think those are really the questions that surround this kind of population dynamic, not - not how it looks. But, really, how can we - how can we make the best of when we're growing and how can we make sure that when we're not growing, we're not going to be hurting economically and otherwise.

The way we're seeing now with the - for example, the construction industry that was so hurt in the last couple of years is that that's just devastated so many other things and - and can we as a community try and hedge our bets against having that happen again?

CHAIRMAN JIM BARRY: Let's move on to the next. I want to have us talk about whether the

components of population change - meaning the number of people who are here today and in the future - Dave Taylor said it was not migration - in migration, in-migrants, minus out-migrants, plus natural change, which net natural change should be over - more over - births minus deaths equals new residents.

And Bob Cook, in your presentation, you gave us those numbers for 2001 to 2002 for net migration and net natural change, with a population change for that year of 19,996.

The net migration was about 75% in that year and the net natural change was the remainder. In Figure 7 from - it just shows how that's gone from the 1930s up until now; it narrowed in the '60s where it was about 50 - 59% net migration; and it narrowed again in the '80s down to about 64% net migration, but it's gone back up, in - in - in this - in this decade, it's about 77%. So net migration has been the - the major driver for population change. Next, please.

BOB COOK: I'd like to just - just say -

CHAIRMAN JIM BARRY: Yeah.

BOB COOK: - that -

CHAIRMAN JIM BARRY: Go back, yeah, stay there.

BOB COOK: - that the - that those numbers for 2001, 2002 are fairly average as the chart shows, and what that means - that approximately 100,000 people change their status every year in this community. So - so 1/10th of the population is either coming or going every year, and so that's why I titled my - my - my slide "Population Turn -

CHAIRMAN JIM BARRY: Chris? Chris? Right there at the table.

BOB COOK: - Quality Growth?" because it's really - is that the kind of growth we want to have?

CHAIRMAN JIM BARRY: Well, that's a different - all I want to talk about is - now is - is what does population change here and everywhere else really consist of? And I think it's - it's - it is the balance of net migration versus net natural change.

BOB COOK: And I'd also like to emphasize the point that was made earlier that - that we talk a lot about, you know, the attractive factors that bring people here, and 50,000 new people every year is a lot of people, but a lot of people leave every year, 35,000 -

CHAIRMAN JIM BARRY: Understand. That's -

BOB COOK: - and we don't analyze that. We don't really spend a lot of time really seeing why people are leaving.

CHAIRMAN JIM BARRY: All I'm doing here was looking at the 19- - at the 2000 census for the people who lived in Arizona in 2000, how many of 'em were born in Arizona, and it's 34.7. There's only two states that had a

smaller percentage of its 2000 population that were born in the state. The average for - for the country was 60%.

And Figure 9 is taken from the American Community Survey 2005 to 2007. Percent of people living in a different house than - than a year ago, and in Pima County it was about 20%, almost a quarter of the City of Tucson.

Next.

And if you look at the American Community Survey for the United States, 50 - 60%, as we said, were born in the state of their residence between 2005, 2007; Arizona, 35; Pima County, 37; City of Tucson, 40. So large percentages of the people who are living here were not born in the state; they were born out of the state; they were born out of the country in another state in the United States. Go ahead.

And the only reason that's important is because there - there seems to be a correlation between the distance people move and why they're moving. And the Census Bureau as of 2001 report - in which it says the distance of the move is related to whether the move is motivated by employment or housing regions, and inter-regional - which is inter-County by - by their definition. Moves are more likely to be job-related, while inter-urban moves are more likely to be housing-related. Next.

And then they had these four reasons: family-related, work-related, other reasons and housing-related reasons. Go ahead. So most moves nationally are for housing-related reasons, 51%. Work-related is 16%. But if you compare inter-County - somebody who moves within Pima County - as compared to somebody who moves into Pima County or who moves out of Pima County, job-related, work-related, family-related and housing-related become kind of equal.

And the - go ahead - the reason why I bring that up is because we're talking about - I'm going to - my second point is I'm assuming we don't want to deal with births minus deaths. We don't want to get into what policies the Mayor and Council and Board of Supervisors is going to have to reduce births or increase deaths.

Though I - I will point out that in Pittsburgh they have net minus natural change. There are more deaths than births in Pittsburgh now, and that's true of Europe; that the net natural change is negative numbers, so that could happen, but I presume we don't want to deal with that.

So we're talking about: Why do people move in and why do people move out? And that's why I - I - 'cause we're talking by definition people who are moving into the County from somewhere else or moving out of the County to somewhere else.

The first issue is: Do we agree that these are the major components? Just talking about the number of people who are going to be here next year. Are those the major components or are we missing something here?

JOHN CARLSON: Point of confusion: You're still going to have births minus deaths as an estimated figure; right?

CHAIRMAN JIM BARRY: Yes.

JOHN CARLSON: But we're just not going to argue a lot about it?

CHAIRMAN JIM BARRY: We're not going to ask what the Mayor and Council could do about increasing -

JOHN CARLSON: Yeah, yeah.

CHAIRMAN JIM BARRY: - the number of people who die.

JOHN CARLSON: But, on the other hand, in-migrants and out-migrants is large and there's a lot of reasons to talk about that.

CHAIRMAN JIM BARRY: It's 75% of it; right.

JOHN CARLSON: Yeah.

CHAIRMAN JIM BARRY: Right.

JOHN CARLSON: Okay.

BOB COOK: I think by definition it - it - it -

CHAIRMAN JIM BARRY: Okay.

BOB COOK: - (inaudible) everything, so -

CHAIRMAN JIM BARRY: Okay.

BOB COOK: - there's no debate about that.

What's really debatable is the reasons why people move, and I think it's - the problem with the statistics that you have cited is that they were - those surveys were done in years where there wasn't any significant change in - in the landscape in terms of social and economic and - and other factors.

And if you look at the - at the years where we had those big swings, like '89/'90, '90 was fairly flat, pretty much out-migration equaled in-migration. And if you look at the last year, you're actually seeing much more out-migration than in-migration. So I think that if you took those surveys during the times where you saw big swings in out-migration, you would find that the economic reasons were paramount.

The other problem with looking at this housing factor is that a lot of the immobility in the United States right now is due to the fact that people can't sell their house and move, and that's locking it up all over, you know. People can't move here, 'cause they can't sell their house. They can't leave here, or they just foreclose, they abandon

'em.

CHAIRMAN JIM BARRY: I'm - I'm not - John?

JOHN CARLSON: This is a flash. We haven't talked about illegal migration either, immigration and ex-migration and it seems to be coming to a head these next few political years.

CHAIRMAN JIM BARRY: Dave Taylor, when he -

JOHN CARLSON: But maybe it's not significant. I don't know.

CHAIRMAN JIM BARRY: Dave Taylor told us he - we don't know - and I'll ask Arlan and Albert - we don't know how many illegals are living in Pima County. We don't know how long they're staying, if they're staying here or they're just way-stationed to go somewhere. I don't know how to - I don't know how to document that, so I didn't - I didn't include it in there. Marcelino?

MARCELINO FLORES: If I could just ask the population experts if they can - know the difference between the population in Nogales, Sonora, versus Nogales, Arizona, isn't there a real distinct - I mean, big number?

CHAIRMAN JIM BARRY: Sonora is much larger -

MARCELINO FLORES: It's much larger.

CHAIRMAN JIM BARRY: - like a factor of three or four -

MARCELINO FLORES: Like - like -

CHAIRMAN JIM BARRY: - right?

MARCELINO FLORES: - three or four?

CHAIRMAN JIM BARRY: Ten? Tenfold? Okay. Bonnie?

BONNIE POULOS: Jim, when - when I look at this equation that you have up here, it's very simple and it makes a lot of sense, but when I was reading this section the thing that kept hitting me was we always ask why people move, but we haven't asked why they stay where they are, and I think that if you really want to address sustainability, if you really want to address commitment to a community, you have to figure out both sides of that equation, and you have to figure out why people stay where they are, as opposed to moving, and try to and capitalize on the positive aspects of both why people move and why people stay. But I think if you only ask why people move, that you don't have a full picture and you can't make a balanced equation by asking only one question.

CHAIRMAN JIM BARRY: Okay. Let me - let me get back to Bob's point. So could you go back to the previous slide, please? What percent - are there reasons that you think people move that are not included in the categories?

BOB COOK: Yeah, I mean, I think that if you look at those critical years where you saw major out-migration, it's clearly housing- and work-related and I would say more work-related. If you don't have a job and there's no prospect of - of - of being rehired anywhere at an adequate salary, you will - you will migrate and that's just the law of the land.

CHAIRMAN JIM BARRY: But that's a work-related reason, isn't it?

BOB COOK: Yeah, but it's a - it's a - it's a small -

CHAIRMAN JIM BARRY: Well, you don't - you don't - I'm asking -

BOB COOK: I'm saying - I'm saying those statistics probably under-represent the - the employment-related factor; that's what I'm saying.

CHAIRMAN JIM BARRY: Okay. You don't disagree with the categories, you -

BOB COOK: No, no.

CHAIRMAN JIM BARRY: - disagree with the percentages?

BOB COOK: Just - just the - the message.

CHAIRMAN JIM BARRY: And that's from - that's from '99/2000 numbers though, so they aren't reflecting what's happening.

BOB COOK: Yeah, that was before the - the real bust in 2000/2001.

CHAIRMAN JIM BARRY: Marcelino?

MARCELINO FLORES: Mr. Chair, members of the Committee. One of the things that I noted in this paper is that two-thirds of the population - or the movers there are inner- - inner-County movers; is that correct? On page 12 it says that the intra-County migrants are about two-thirds and it's for housing. But -

CHAIRMAN JIM BARRY: Yeah.

MARCELINO FLORES: - just - just in the - back to the four - or the - the components of migration, that tells me that the in-migration and out-migration, what does it look like when you talk about the sun corridor? I mean, is it within still the sun corridor that we're experiencing this - this migration and - and, you know, so that kind of the question is that what - what is the scope of - what area you're talking about particularly. In this case, I don't know, if it's the County numbers or is it - you know what I mean? The scale, again, kind of affects . . .

CHAIRMAN JIM BARRY: The Census Bureau would - would define inner-County movers as somebody who moved into Pima County from somewhere else or moved from Pima County to somewhere else; that's an inner-County move. The intra-County is somebody who moved from - from Tucson to Oro Valley.

MARCELINO FLORES: Okay. Well - and I guess that in - in that bottom chart, Figure 12, I - I - I don't know which - which is more than all move -

CHAIRMAN JIM BARRY: Oh, no.

MARCELINO FLORES: - the intra- -

CHAIRMAN JIM BARRY: I'm sorry.

MARCELINO FLORES: - or inner-.

CHAIRMAN JIM BARRY: Of - of all of the intra-County movers, two-thirds of them moved for - for housing reasons -

MARCELINO FLORES: Okay.

CHAIRMAN JIM BARRY: - that's not two-thirds of all of the people in the sample or all of the movers; just those who moved in Pima County only, two-thirds of them would've moved for family reasons, you know, they - they - their - their family got too big for the house they - they have or there was a divorce or - or somebody died or they got more money and could move up.

MARCELINO FLORES: Okay. So, within the County, within Pima County, two-thirds is moving because of housing?

CHAIRMAN JIM BARRY: Yes, that's what that says.

MARCELINO FLORES: And then between the Counties it's kind of an even split between all the reasons?

CHAIRMAN JIM BARRY: Right.

MARCELINO FLORES: Okay. But we're still - the - the other Counties I guess is where I'm asking if it's within the sun corridor; I mean, are they moving to Nogales? Are they moving to Phoenix? Are they moving east and westward or

...

CHAIRMAN JIM BARRY: Okay. That's something that - that the Census Bureau report did not ask: Where they were going. They just want to know: Did they stay in the County or - or did they leave the County?

So, we - we've got agreement that - that the general categories cover it? Yes or no? We have disagreement from Bob, he thinks that - that, at least in the last couple years, there's been much more movement because of job-related or housing-related issues.

BOB COOK: Just a - just an anecdote. I've been curious about the Bashas' Chapter 11

reorganization, and I was in Food City yesterday and I asked the manager, you know, "Is there any word on whether this store's going to be closed?" And they said none of the Tucson stores are closing; they're all in Phoenix because Prop 200 affected Phoenix much more than it did Tucson. And so you're seeing a lot of businesses related to that undocumented population that are going under.

CHAIRMAN JIM BARRY: Okay. Well, the question that I really wanted to do was number four: If we - if we assume we're talking about net migration, people moving in or people moving out, and whatever the reasons are, what powers the Mayor and Council and Board of Supervisors now have or should they have in the future to influence in whatever direction the magnitude of in-migration and out-migration. What can we do as elected officials to increase the number of people moving out? Decrease the number of people moving in? Somehow balance it out? What - what can the elected officials do about that?

JOHN CARLSON: Raise the cost of water.

BONNIE POULOS: I guess - I guess I'm not sure that's the right question -

CHAIRMAN JIM BARRY: Okay. That's good.

BONNIE POULOS: - to ask.

CHAIRMAN JIM BARRY: That's fine.

BONNIE POULOS: When I looked at it, I thought about it long and hard, and there were so many issues related to that about - okay - you think of in-migration, you think of more jobs, more taxes, more people to do the work that you need. You think of decreasing that and you think of communities that have lost big employers, you think of a very negative thing. And I don't think that's necessarily true. So maybe the question should be: Is if the Mayor and Council or the Board of Supervisors take certain actions, what effect will that have on migration?

CHAIRMAN JIM BARRY: Okay. But what would be examples of the actions that they might take to have - have effects?

BONNIE POULOS: Well, for example, if you decided that you weren't going to supply water outside of a certain area and you were able to effect a change so that you didn't have to allow groundwater pumping where you felt it was inadequate, how would that affect migration? Would you, essentially, form a growth boundary around your community or not? What would be the impact of that?

If you diversified your employment base so that you weren't simply based primarily on construction and tourism but, instead, you invested in things that were directly related to living in the desert southwest; for example, things that improved people's ability to use alternative energy sources, or their abilities to travel outside of a motorized

vehicle because the weather permits it. Those sorts of things might have an impact on whether or not people move here and whether or not they stay here or desire to leave.

CHAIRMAN JIM BARRY: Vince?

VINCE VASQUEZ: I think - I just, you know, Bonnie's - Bonnie's statement kind of on the idea if you implemented policy to where you didn't serve water outside this area, I - I think that's - that's the kind of misinformed growth management that is going to occur to where it distorts urban form; it - the same amount of people come, they just come and they go to Sahuarita and Oro Valley and Marana, or Pinal County or Cochise County, and so you have these distortions of urban form that actually, you know, spread out pretty much the same - the same macro population numbers are going to be coming here, more or less, within some kind of sensitivity analysis, and policies over time and culture over time will affect that one way or the other.

But, as a - as a general trend line, the - the kind of macro factors that we're talking about are stronger than some of these - some of these more micro-level factors. I think that's - that's - the - the distortion of policies that try to - of growth management policies that try to put a shield over - over top of a certain area, I think, will have more distorted, you know, problems with 'em.

BONNIE POULOS: I wasn't implying that that was necessarily a good policy or bad policy, but what I'm trying to point out is that it's very difficult, I think, to - to make a decision at - at - by an elected official that, in reality, is going to influence net migration one way or the other.

I think what you need to look at is, instead, what are the policies that are in place or what are we proposing to put in place, and how do we think that will affect it? Because I think to assume that we have the ability to influence whether people want to stay here or leave, I think that that is well beyond the power of an ordinance or a single action by an elected body.

And I - and I really think that that - question number four, we really need to relook at because, to me, it - it assumes that we have a lot of power to influence that, and I'm not sure that we have all that much power to influence migration.

CHAIRMAN JIM BARRY: Does anybody else on the Committee want to say something? Marcelino, and then I'm going to let Arlan get up.

MARCELINO FLORES: Okay. One of the things is I'd hope that decisions would be made that make sense, and for me that begins with planning at the watershed level, not necessarily looking at jurisdictional limits and considering things that affect, you know, at - at the watershed. And - and so that, you know, the difference is that we

have the Avra Valley watershed where all the water's being put into and transported into the Tucson Basin, so there's - there's an imbalance there.

And I think when we looked at the water infrastructure we saw that there was kind of a vulnerability there with the water being put over the mountain; that kind of makes us a little bit vulnerable in that respect. So, I just would encourage, you know, things that make sense and - and - beginning with the watershed level.

CHAIRMAN JIM BARRY: Arlan?

ARLAN COLTON: I forgot how tall Margot was. Like Margot, but - but me just as a part-timer, I - I teach growth management occasionally at the University of Arizona and the School of Planning, and the question bothered me because there are things, actually, that local government could do to, perhaps, affect the magnitude of in-migration and out-migration, but they are not necessarily land-use-based or infrastructure-based items; they tend to be social or economic. Don't do any economic development, do a lot of economic development, do provide services for certain types of people who would move here or don't provide services for certain types of people who would move here, and - and - by that I mean cohorts, the - the elderly. How do you deal with services necessary for - for kids? What's the level of social services that you do? All of those sorts of things, to the extent that the elected officials and the community as a whole can deal with those things, you might be able to affect the magnitude of in-migration or out-migration positively or negatively.

Really what the - the input that you can have affects more not so much the numbers, but the urban form as we talked about the last time. And, depending on the policies, if you - if you have a strong growth management schema, you can direct population certain places by only allowing building to occur in certain places on a large enough scale that's really going to affect that - that quotient. You can change densities; you can increase them, you can decrease them, you can spread them out, you can do all those sorts of things.

You can also affect the nature of who that population is, the - the cohorts of that population. You can make it a mecca for younger people by providing a vibrant lifestyle downtown, for example. You can make it a mecca for older people by providing the services that the older people need at a - at a level that will actually draw even more people, and - and do the opposite things as well.

You can also change the pace of growth in - if you're willing to go to very Draconian things. For example, the - you know, limiting building permits per year. Now you'll do real interesting things to the cost of housing if you do that, which will create some other extra (inaudible), but that's not necessarily going to affect the magnitude of in-migration and out-migration; it will do - which is something Vince kind of alluded to - it will change the form; it will

change the - the components of who it is and how they live, but it won't necessarily change the numbers.

People choose to move in or out of an area - while it's easy to summarize it in those four categories, the fourth being "other" - they make decisions based on rather personal needs; it very well may be that - as in the case of many people I know - somebody comes, they move into an area, whether it's here or Phoenix, they establish a beach head; within 15 years the whole family has moved from Chicago based on that instance. And then other people leave because their - it's not - whatever the area is, it's not meeting their needs or they find they can't stand the heat or whatever it happens to be.

But, the question at hand I think is - is not so much the magnitude, but it's where they live, who they are and that's based primarily on growth management techniques for urban form, and - and who they are and where in the community they live by the level of social sustainability you're willing to handle; it's just an overall comment.

The - the last point I want to make - and it ties back to something that was said before, too - there's been more studies done on the Phoenix metropolitan area. We know that in the Phoenix metropolitan area, for every three people that move in, two people move out. Sonoran Institute did a really - and Lincoln Institute did a really good study on that, and there's a film that you can - we can all see if you want to look at that. But - but I think all of this, whatever we talk about, is in context.

Over the next 25, 30 years, there will be 100 million new Americans. If there's going to be - and that's - you know, we tend to think of people moving from one part of the country to another part of the country and it's just a net increase or decrease in those areas. We're going to have a 100 million new people, births over deaths, plus migrant population coming from other places. Mostly births over deaths. And those people are going to live somewhere in the country.

If, indeed, the - the theory of megapolitan areas is true - and there are a dozen megapolitan areas in the country of which the sun corridor is one - it is reasonable to assume that a significant percentage of those people will likely be drawn to this area, in the same sense it may be different people, but drawn here in the same sense they're going to be drawn to Charlotte or Seattle or the New York/Boston corridor or Tampa, St. P.

We are going to get a share of that in the sun corridor. The question is - is that - then: Whatever that share is, how are we going to wind up dividing it up between ourselves and primarily Maricopa and Pinal Counties?

I think we've kind of come to the conclusion that if you were to do it on a fair-share basis, Pima County will not take its fair share - if you just proportionalized it out - of population over - over whatever's going to come into the

sun corridor over a period of time, and that is because we are more resource constrained and we recognize that we're more resource constrained in a lot of respects, financially and water and other things, than they are in Maricopa County and Pinal County, and some lesser extent the other - the other counties that make up the sun corridor, but it doesn't mean that we're not going to continue to grow.

At the end of the cycle, whenever that is, there are so many things that could conceivably happen through technology, through birth control, through things we can't even imagine, go down a laundry list, whether or not we colonize space or whatever, that conceivably could make complete mincemeat out of whatever we do here.

So, going back to something that Bonnie said, which struck a chord with me, well, how do we make sure that whatever happens with that growth curve that we're not over-building the infrastructure, not over-building what we need to serve whatever population's going to come? And that's simply, you know, tying - tying infrastructure improvements and directing infrastructure improvements to where the expectation is and where you want the growth to occur, so you're ready for the growth to occur when it occurs and where it occurs, but you're not necessarily just building willy-nilly all over the valley in the hopes that, you know, somebody's bright idea that they're going to do something in some areas, despite whatever the overall government and public policy is, that - that it makes more sense to direct it. I think that's the more significant thing - and sorry for the long speech - but I think that's everything. Thank you.

CHAIRMAN JIM BARRY: Bob?

BOB COOK: Yeah, I'd just like to say - this sort of gets into the next section - but I think it's the rate of growth that's really the critical uncertainty right now, and it's especially an uncertainty for this particular study because we're talking about, as a community, making major investments in our water and wastewater infrastructure. And whether we grow at a half percent or one percent or two percent, that makes an enormous difference in when - when that actual demand comes online, and - and it changes our strategies with respect to implementation because, you know, if we're going to build a wastewater plant that's going to provide capacity for an additional 500,000 or 750,000 people, that's a very different sort of project than - than an adjustment to our system that would bring in smaller increments over time. So, you know, this population issue is important because it's going to affect the way we actually make our plans and make our investments.

CHAIRMAN JIM BARRY: Okay. Marcelino?

MARCELINO FLORES: One of the things I wanted to add was kind of sparked by Arlan's comments in terms of developing or - or - how do you say? - attracting certain cohorts. I would caution against that and actually look

for more diversity because I don't believe any one cohort can be sustained over time, whether it's elderly, whether it's the young, they - they - their needs would eventually change and so it wouldn't sustainable.

By the same respect, again, diversity in - in our economic structure becomes important as well so that we're not dependent on growth-related firms and their - but, again, it's kind of the diversity of an economic portfolio would - would come - I mean, that's how you would invest as well, you know, you look for diversity. So, I guess - and in addition to being more holistic or - or I guess regional in your planning, also consider diversity along the way.

CHAIRMAN JIM BARRY: Let's go on.

ARLAN COLTON: For the record, I want (inaudible; not speaking into a microphone).

CHAIRMAN JIM BARRY: John?

JOHN CARLSON: This is all quite enlightening to me in seeing the perspectives and the different slants across the room, but there was a lot of talk today about, you know, we have - tourism and construction was the big component of people working here relative to the next place and I don't think that's going to continue at that percentage. And you've heard all kinds of people in the community the last five years, we got to increase the quality of the jobs, the demand for more education or more sophistication. And God forbid that we were ever overbuild our infrastructure. We can't even keep up with what we got now, everything's falling apart.

And as far as what they can do to limit the in-migration is building permits, raise the hell - I mean, they can raise the price of - of coming here by the government and that has to have an effect, and maybe we can use some of that on the infrastructure. I'm just saying there are all these currents out there and how they're going to come out, God knows, and maybe we know pretty well for the next three years, but in two years we better re-estimate it.

CHAIRMAN JIM BARRY: This is the chart - this is the last slide - this is the chart that Dave Taylor showed us that shows the difference - some different perspect-- projections on - on population through 2050. There's agreement kind of through 2015 and then the DES goes down and the U of A and Tucson Planning go up. And my only question is: What do we think about those projections? Bob?

BOB COOK: Well, I think this is where we have a really big disconnect between the presentations that we have heard through the last year. We've had a number of local scientists in academics talk about water shortage potentials, climate change, a number of issues, grassification of our Sonoran Desert, Julio Betancourt's presentation, the possibility that we would actually lose the character of our - of our beautiful Sonoran Desert in a matter of a decade or so because of this uncontrollable grassification that's occurring in all American deserts right now, fire dangers, change in employment and so on.

What I would like to ask - and this is why I call it "population projections on steroids" - is that there is no demand to ask: What are the assumptions underlying these projections? I did population projections back in 1990 at a time that was very interesting because we're seeing dynamic changes in our economy. And the way people do population projections is they run linear projections on time series, so it's all based on the past.

This is a structural issue. The uncertainties that we're facing are unprecedented. They haven't been here. We've had cheap water, cheap energy, and these factors are emerging as dominant factors in the future and time series data doesn't have anything to do with those factors. So these things are based upon just simply an extrapolation of the past.

CHAIRMAN JIM BARRY: How far off do you think they are, Bob?

BOB COOK: I - I think - you know, I think the problem really is - the scenario that we really need to be worried about is: How do we sustain the existing population of this region in a - in a - in a way that maintains or enhances our quality of life? I think that is the - the - the basic issue here.

CHAIRMAN JIM BARRY: What population projections do you expect to see in the future?

BOB COOK: Well . . . I don't think -

CHAIRMAN JIM BARRY: I'm not disagreeing with you necessarily. I just -

BOB COOK: I don't - I don't - I . . .

CHAIRMAN JIM BARRY: - I think we - if you don't like those - those lines -

BOB COOK: I don't think -

CHAIRMAN JIM BARRY: - tell me how you'd replace 'em.

BOB COOK: - we'll ever get over 12, 13 or 1.2 or 1.3 million. I don't think we'll ever get over that.

CHAIRMAN JIM BARRY: Okay. What do other people think? Don't everybody jump at once. Vince disagrees?

VINCE VASQUEZ: I think we're - we're running the risk of just looking like a bunch of crazy dilutants who have - I mean, we have - we're - we're basing - none of our conversation - it's been intellectually, you know, interesting, but I don't think any planning organization in - in any one of the jurisdictions or any of the - is going to change off of kind of the numbers that we're getting from DES and in the same models that - that the University of Arizona and Tucson Planning - I'm sure they're all using relatively similar models. For the purpose of our study, I - I mean, this is what we have. I mean, we can argue, yes, that there - there are going to be different factors off of this just baseline - this base trend line, but I think we're - I mean, we've wasted a lot of time - not wasted, I take that back -

we've spent -

CHAIRMAN JIM BARRY: Thank you.

VINCE VASQUEZ: - a lot of time on an issue that is really, again, very interesting but a little beyond our scope and definitely beyond our capabilities.

CHAIRMAN JIM BARRY: Well, Vince, I'm going to disagree with you. I think it is central to our scope and I think it's been a very good conversation. I don't necessarily disagree; I mean, I think that we have to live with those projections myself, but that doesn't mean that those projections aren't going to change in five years as - as we check the -

UNIDENTIFIED MALE: Absolutely.

CHAIRMAN JIM BARRY: - the assumptions.

UNIDENTIFIED MALE: Absolutely.

CHAIRMAN JIM BARRY: But let me check something with Staff. Does Staff have a preference on those - those lines? I mean, is it - is it safe to say that there is no agreement between the City and the County on what we're going to be at in 2050?

UNIDENTIFIED MALE: I think it's safe to say, yeah, there's no agreement and I think the farther we go out - (inaudible; not speaking into a microphone) -

CHAIRMAN JIM BARRY: Well, of course.

UNIDENTIFIED MALE: - (inaudible).

CHAIRMAN JIM BARRY: Well, how about between now and, say, 2030?

UNIDENTIFIED MALE: (Inaudible).

CHAIRMAN JIM BARRY: Arlan?

ARLAN COLTON: You know, one of my - I - I asked one of my planners who serves on the Population Technical Advisory Committee to review the information, to look at that chart, and he said to me, he said, "You know, really what you're looking at on those is a difference of whether - you know, because this happens over time - you have population, it breeds more population; people tend to breed at a certain age." Present company excluded, but -

CHAIRMAN JIM BARRY: I told you we weren't going to go into the births -

ARLAN COLTON: I know -

CHAIRMAN JIM BARRY: - and death -

ARLAN COLTON: - I know.

CHAIRMAN JIM BARRY: - stuff, okay?

ARLAN COLTON: But the bottom line was he said, you know, "You're looking at a difference of whether you're talking, let's say, 20,000 people net increase over - and that's births, deaths and migration - over the course of an annual increase for 25,000." So you're really talking about a difference of 5,000 people per year between those two numbers.

CHAIRMAN JIM BARRY: Uh-huh.

ARLAN COLTON: I did not check that out, but I'm taking him at his word for it.

So really, you know, I guess - I think Albert and I are saying the same thing - is that beyond a certain point the one thing we can tell you is that they're wrong, and the second thing is that they will change on a - every - however often we do these, you know, we look at them every year but they change every five years or ten years. So your - your projections are as good as they can be.

If, over the long term, we wind up with something that is cataclysmically different than what's occurred in the past that - yeah, Bob's right, maybe - maybe things rather dramatically change - but if you go back to the first slide you showed, the one that was zig-zagging over all the place, we're in one of those horribly down - attractively or horribly down spots, depending on how you look at it -

CHAIRMAN JIM BARRY: (Inaudible).

ARLAN COLTON: - but the bottom line is, is that the line is - is - has been historically good and that line, you know, we can - we can take that line and go out and have at least a reasonable place to start from. One can argue it'll be above that line or below that line a little bit, but it's - that line is still reasonable to assume. Lacking the ability to foretell cataclysmic events, positive or negative in the future, that - that occur that's what we have.

CHAIRMAN JIM BARRY: But you're most comfortable, City and County, with say out to 2030 with the project- - with those population projections? Less comfortable beyond that?

ARLAN COLTON: Yeah, you know, beyond a certain point is - is a guess, you know, in all fairness; it's not that you don't - you have to do that for certain - to meet certain requirements of certain agencies, federally and state, but - but I don't think any of us are going to bet a ranch that those are accurate.

CHAIRMAN JIM BARRY: Bonnie, did you have something?

BONNIE POULOS: Well, I think Dave Taylor made kind of an artificial distinction between a forecast and a projection, and - and the way it was described, basically, all three of the methods are working on information that they don't have in hand right now.

And when I went through all this and I looked at your questions on that last page, it seemed to me not whether or not you would accept one estimate over another, but it pointed out the importance to me that you look at the model very regularly and tweak it based on the information that you have.

And, granted, a ten-year census is a good indication of whether or not your predictions were accurate, but you can't wait for those census data to come out in order to make decisions. And I think in some ways we haven't wanted to look at that data on a yearly basis or on a really regular basis as a community, and I think that's one of the things that we need to do is assess, okay, we made this a growth area. What happened in that area?

And I can't tell you the number of times people have talked about, "Well, we're going to redo the General Plan next year." Well, nobody used the first General Plan. I don't understand why we're going to redo it because none of the things that were in there, none of the benchmarks that we had or - or the things that we were going to look at to examine how well we've done have we done. I - I don't see a point in it.

So I think looking at the things on a regular basis, and changing the direction that we're doing things based on what that information is telling us is more important than which model we want.

CHAIRMAN JIM BARRY: Marcelino and then Bob.

MARCELINO FLORES: One of the things that I'm just now remembering when I was in these planning classes is that the population has got these bell curves that has males and females and the age distribution, and I think that's more telling of what you want to plan for. And as we perhaps annually assess and agree, or look at these numbers in areas that we're interested in, we also do that bell-shaped curve. I don't know if it was part of this - this process, to look at that.

One of the things I remember - I think a friend of mine chose the University of Arizona because the female-to-male ratio was three-to-one or something like that, you know, so that might be, you know, again, other motivators or - or factors for migration there and different needs of a community, more - more along the bell-shaped curved area, so

...

CHAIRMAN JIM BARRY: Bob?

BOB COOK: Yeah, a little more on this disconnect. Two - two - two areas, one, let's talk about climate change and I'm glad that Chris brought up that - his question about the carbon tax. The consensus of climate scientists say that by 2050 we're going to have to reduce our carbon footprint by 80 to 100%; that means that - no more coal burning for producing electricity that we use here and a drastically-changed transportation system where we don't burn

fossil fuels; this is all going to happen in the next 40 years; that's going to have an enormous impact on - on - on this situation.

Eighty percent of experts say that peak oil is going to arrive between 2005 and 2020. A hundred percent say by 2030 or '40, so we're going to be already in an era of extremely expensive petroleum. Sure, there's oil in the shale and there's - there's oil in the tar sands in Canada, but it's very expensive and environmentally damaging to pull it out.

Those two areas, just - just themselves, we are highly dependent upon importing goods and very car dependent and truck dependent in this area. Any major increases in the price of petroleum is going to have an enormous impact on the business model for this region.

CHAIRMAN JIM BARRY: Chris, did you want to talk still?

CHRIS AVERY: (Inaudible; not speaking into a microphone).

BOB COOK: Sure, you . . .

CHRIS AVERY: (Inaudible; not speaking into a microphone).

CHAIRMAN JIM BARRY: I've done that too when the pipes froze.

BOB COOK: That - that's true with - with heating, you can insulate houses, super-insulate houses and I'm sure we'll do it. Buffalo's going to, by the way, get warmer as - as the decades progress.

CHAIRMAN JIM BARRY: Well, Bob, you've made your point. I - I understand. And - and we got something from you that I don't think we can get from anybody else. You think that we're going to hit 1.2, 1.3 and that's where the S-curve is going to -

BOB COOK: That would be -

CHAIRMAN JIM BARRY: - level us off.

BOB COOK: - optimistic.

CHAIRMAN JIM BARRY: Does anybody else agree with that?

VINCE VASQUEZ: I'll go 2.5.

CHAIRMAN JIM BARRY: 2.5. John?

JOHN CARLSON: Yeah, more or less as Bonnie says - and I've been preaching for eight months now - is you got to look at this again and again -

CHAIRMAN JIM BARRY: Of course.

JOHN CARLSON: - periodically. There's no question in my mind. But, you know, how we go forward from here, we just have to reexamine again each time and make decisions that we have to live with. Thank you.

CHAIRMAN JIM BARRY: Agreed.

MARCELINO FLORES: Mr. Chair?

CHAIRMAN JIM BARRY: Go ahead.

MARCELINO FLORES: To that end, Rob had mentioned, you know, where we could find agreement - perhaps this is one of those first points where we revisit population projections or population estimates, whatever they are, and perhaps this is a point where we can check and see if we all are in agreement truly.

So I would move if that's something that the community - the Committee would like to consider that as a recommendation we look at and revisit these population numbers at least on an annual basis; whether the responsibility falls on the CWAC or the RWAC, I think somewhere we could find a place for that recommendation.

JOHN CARLSON: Excuse me. I agree, whether it's annually or bi-annually; put a big asterisk by that; that this is our - our recommendation if you don't mind, yeah.

CHAIRMAN JIM BARRY: All right.

JOHN CARLSON: You know, the other thing I wonder if we've had the two - the two governmental - or three up there, I'd love to know internally, from the lowest guy to the big chief that got up here and just talked, do they have different opinions on their own curve, you know.

CHAIRMAN JIM BARRY: Probably. Claire, go ahead.

CLAIRE: Yeah. I'm with Pima Association of Government (inaudible) and we did these population projections, or some of them, and I just wanted to point out a couple of things.

First of all, these population projections are done for the whole region; they're not just for the City of Tucson or Pima County, for the whole region, and so that's something to consider. And I think that that's one of the things that you need to think about when you're thinking about these numbers.

And, also, they're really for very broad time spans and very broad areas; they're not very good for specific areas. So when you're thinking about how you're going to change your infrastructure and where you're going to put things and how you're going to do your capital investments, these numbers aren't going to tell you where the growth is going to occur, so I wanted to add that.

JOHN CARLSON: Point of confusion: This is not Pima County?

CHAIRMAN JIM BARRY: Yes, it is Pima County.

CLAIRE: (Inaudible; speaking over one another) - Pima County, but it includes the whole area; it includes Marana; it includes (inaudible) so we need to - when you're looking at -

JOHN CARLSON: Oh, that part I understand.

CLAIRE: When you're looking at particular areas and where the capital -

JOHN CARLSON: That's fine.

CLAIRE: - investments are going to go, then these numbers -

JOHN CARLSON: No question.

CLAIRE: - are pretty broad (inaudible).

JOHN CARLSON: Right on.

MARCELINO FLORES: Well - sorry - I guess in coming back then - and perhaps maybe the bi-annually makes more sense in that case because it sounds like it would be looking at more-detailed data which would mean more information to be analyzed than perhaps - there might be some cost prohibitions. So I guess I would challenge Staff to see what the cost would be of - of looking at more precise areas and population projections and see what cost is associated with doing that annually versus bi-annually.

CHAIRMAN JIM BARRY: Val?

VAL LITTLE: PAG is actually in the - in the process right now of compiling a land-use-base population model, and we've been doing that for - for about six years now we've had this model; it hasn't gone anywhere as of yet because we haven't had the Staff and the sort of connections with the jurisdictions to bring in all the information, but we've recently got a push going on with coordination with all the different jurisdictions and we're bringing a lot more land-use information to sit the model on, to - to understand things better, and we should have our next model run in the fall, so October.

Now that one will be our first start. We have to look at a lot of - a lot of the equations that go into the model to account for the kind of growth that we expect in our area. So that's just a first - a first start, but let you know that.

CHAIRMAN JIM BARRY: Bob, make it quick, please.

BOB COOK: Yeah. Because there is so much uncertainty about these new factors that will affect population growth, why aren't we doing multiple scenarios? Why aren't we planning for - for different futures and - so that we're prepared when - when things change?

Now, I agree with Bonnie, I think we need to go slow here. I think the next couple years is going to tell us a lot about what's going to happen to the American economy, which is up in - in dire straits right now if you haven't been paying attention every day. We're in an unprecedented situation with regard to asset devaluation and a whole

number of economic challenges that will affect population and our ability to - to - to plan for the future.

But I think we ought to go slow in terms of making any final determinations about what - what population is going to happen, but I do - I do caution - I do recommend that, you know, if we don't start planning multiple scenarios, a slower growth scenario than this suggests, I think we're - we're foolish because I think there's a lot going against this scenario.

CHAIRMAN JIM BARRY: Okay. Well, we've -

BONNIE POULOS: What's your opinion, Jim? No, seriously, you - you wrote these questions with something in mind and I just would like to hear . . .

CHAIRMAN JIM BARRY: No, I didn't. I wrote it with - with in mind what happened here; that we talked about it.

BONNIE POULOS: No, I agree. But I'd like to -

CHAIRMAN JIM BARRY: I think that I would be comfortable with those kind of ideas through 2025, 2030. I - I think that we are going to grow substantially. I disagree with Bob on this.

BONNIE POULOS: And do you think that there are policies or things that the elected officials can do that would influence that?

CHAIRMAN JIM BARRY: No, I do not.

BONNIE POULOS: Okay.

CHAIRMAN JIM BARRY: And I think the Committee kind of - and the Staff kind of said that also; that - I phrased that question because the charge of the Committee is - is to work with Staff to get agreement between the City and the County on what they can do, and I think there's very little that they can do directly, or that we want them to have the power to do directly to affect - to affect why people move in or why people move out, and that was one of the points I wanted to get.

But I think that we got an awful lot of good conversation about how we have to talk about population growth, and so I was very pleased with the discussion. And I did not have an end point that I wanted to get to, other than to talk about it in a serious way.

BONNIE POULOS: No, I didn't mean you did. I just meant -

CHAIRMAN JIM BARRY: No.

BONNIE POULOS: - that you had a thought process when you were writing this down and I was wondering what it was because you've heard from all of us.

CHAIRMAN JIM BARRY: I - I think there's very little -

BONNIE POULOS: I didn't mean to put you on the spot.

CHAIRMAN JIM BARRY: I think there was nothing that Mayor and Council or the Board of Supervisors did to affect why I moved here and - and Don Diamond never called me and said he had a house for me; in fact, I've never lived in a new house in Tucson since I've been here. So - you know, and I've lived in Buffalo and I've lived in Chicago and I've seen cities in decline, and so I was looking at it from that perspective also.

But I was thinking it's important. I think the J-curve and the S-curve is important because we've had a tendency to - to assume the worst or the best; that it was just going to go on and on and on and was going to be unstoppable or it should be unstoppable. And I think that we've reached a point where we - when we all agree, Staff and this Committee, that - that there is some S-curve function to it; that that's a major departure from the way population issues have been discussed in the past.

We don't agree on where the S-curve is going to come and that's important, but I think agreeing that there is an S-curve, that there is some limit, inherent limit to how - how much we will grow, is an important contribution to the discussion in the future. Marcelino?

MARCELINO FLORES: This is kind of related to Bonnie's point that she brought up earlier, but what reasons would you have for staying in Tucson?

CHAIRMAN JIM BARRY: Oh, it's been - it's been great for me; it's been - I - I've lived here longer than I've lived in any other city. I've moved a fair amount. In fact, pretty soon I will have lived in this house longer than I've lived in any other city. I've invested a lot in the community; it's been very good for me. Though I don't have family - as I mentioned at one time when - when my wife and I pass, our line is gone, our kids are gone, they're never going to come back, you know. So we all have different histories and ties to this community and there's a million reasons why we come and stay. But it's been a very good community to me.

All right. Well, I thought that was a good conversation. I'm very pleased we had that. And I want somebody to put a population plot on the wall downtown somewhere and the minute it goes over 1.3 million, we're going to call up Bob.

BOB COOK: What if it goes under a million, what are you going to do?

CHAIRMAN JIM BARRY: All right. We have - on to number seven, which we - oh, yeah, we'll take a quick break - but I think we're not going to be able to do 150 minutes in the time. I don't - I think we took a lot more on my 30 minutes than we planned on.

So let's take a five-minute break.

\* \* \* \* \*

(Recess taken at this time.)

\* \* \* \* \*

CHAIRMAN JIM BARRY: Okay. We have four presenters, I believe, and they've told me that their - their total presentation time is 30 minutes, and I'm going to suggest that we have them make their presentations and then have questions, all right? But that being said, I'm going to hold the presenters to - to doing it in a reasonable amount of time. You got 30 minutes to get it all done. So, hit it. You're not Nicole Ewing-Gavin.

ALBERT ELIAS: No, I'm not.

CHAIRMAN JIM BARRY: You're out of order as usual, Albert.

ALBERT ELIAS: Well, thank you, Mr. Chair, members of the Committee. This Technical Paper really focuses on what I believe is probably one of the central issues facing the Committee, and that's the goal of integrating land use - land-use planning and water resources and infrastructure planning for the City and the County.

And there's a joint team of City and County Staff members who - who - from a number of different departments who participated in preparing the program; several of them are going to be involved in the presentation tonight; myself and Nicole Ewing-Gavin from the City Manager's Office; Chris Avery from Tucson Water is also going to be available for questions; and then Suzanne shields from the Pima County Flood Control District; and Arlan Colton from Pima County are also going to be involved in the presentation. Carla Blackwell's also here to answer questions.

So, we assembled a crack team for you, and let me tell you we need it because this is really a very challenging issue. I wish we could just simplify it and make it very easy to consume. Unfortunately, that's difficult to do and we'll go into the whys and wherefores of that.

But, let me just start by saying this is a little bit difficult to - to make heads or tails out for some - some of us, but please bear with us and, as we go through the presentation, I think there's a few key messages that are going to pop out of this that will be pretty clear to you.

My portion of the presentation tonight is going to focus on these points, and it'll include a real quick overview of the scope and the content of the Technical Paper, and also comments about the nature of the disconnect between land-use planning and water resources and infrastructure planning and the City and the County.

I might also add this is not unique to Tucson; this is something that we've found elsewhere in Arizona,

and you actually find this similar situation in other parts of the country, so it's clear that - to me at least - that the historical nature of the decisions that we've made, perhaps, have not led us to the most sustainable future that we would want. And this is a dilemma that's pretty significant and I don't want to under-emphasize it.

But, knowing this, over the last few years, the City and the County have both taken actions to address this disconnect between land-use planning decisions and water resources and infrastructure planning, and these are important steps we've taken these last few years. The Technical Paper is going to identify several other recommendations to help address this dilemma. I do want to point out that these recommendations go beyond what is currently being done by either the City and the County, so I do think they're significant in that respect.

Just kind of quickly, you all know that the Phase 2 of the study focuses on specific key issues that relate to water sustainability and try to make recommendations in areas where the City and the County need to work together and/or adopt some consistent policies and standards. So the Technical Paper addresses the specific issues of the region's inability, really, to fully integrate land-use planning and water resources and infrastructure planning, both inside and outside growth areas. So, this dilemma, as I mentioned, is complex and it's a public policy challenge and it's really a challenge to the entire region.

Within the Tucson Water Obligated Service Area, land-use planning and development authority rests with the City of Tucson, the City of South Tucson, the Town of Marana, the Town of Oro Valley, and unincorporated Pima County. The Technical Paper discusses the actions and policies that the City have put in place to try to better link land use and water resources.

Outside the Tucson Water Obligated Service Area, Pima County has sole land use decision-making authority, but much of Pima County is not within a Service Area of a water service provider. While this may be helpful in some ways in terms of developing consistent land use plans and regulations, the Technical Paper reviews some of Pima County's efforts to integrate water management in its land use decisions. There's also a few case studies that the paper looks at that illustrate the successes and some shortcomings of these efforts.

So, the Technical Paper presents a series of specific recommendations, and several of these will require pretty much unprecedented City and County cooperation to implement, as well as cooperation from other agencies and entities in the region.

The Technical Paper really drives this key message: Our past decision-making has not been as successful as it must be in considering water and land-use planning; certainly not successful enough to achieve long-term sustainability; that's the message here.

We've - we've experienced decades of over-pumping in the Tucson area aquifers that resulted in significant water level declines. And, although, the rate of groundwater use has - has recently declined, as the use of Tucson Water's renewable supplies increase, other local groundwater users will also need to ensure that these regional aquifers provide a sustainable supply. And this problem is being compounded by, frankly, some organizational jurisdictional issues, because every jurisdiction is making their own respective land use decisions and water resources and infrastructure decisions. And, while each of these decision-makers strives to act rationally and in their own best interests, the bottom line is: We lack specific goals or an adopted policy framework that is shared throughout the region that can be applied when we have these various land use decision-makers and water service providers making decisions.

And I would be remiss if I didn't mention that the Central Arizona Groundwater Replenishment District further exacerbates some of the decision-making disconnect that we've been talking about. We're going to talk about more - talk about that later in tonight's presentation.

I want to also mention at this point that this lack of integration between water and land use considerations is really an opportune time to touch on some of the concepts that we presented in the last White Paper, the Location of Growth, Urban Form and Cost of Infrastructure. The City and the County should be able to achieve a higher level of integration in water and land use decisions if our respective elected officials and the community can agree on some key policy goals.

So, let's focus on what makes an area suitable as a growth area. Well, in the White Paper, we looked at factors and constraints. We identified them and some GIS modeling was applied to determine areas that, perhaps, are more suitable for future development. Now, these considerations certainly form a part of a sustainability analysis for designated growth areas that needs to be used in conjunction with the water resources and infrastructure policy tools that were discussed in this Technical Paper. So, in designated growth areas, consideration of both land use and water factors is necessary to fully evaluate the plans for future development.

In addition to these more obvious challenges, there's some interesting similarities and differences in how land use and water decisions are made in the City and the County, respectively. So let's take a look at that real quickly.

Inside the Tucson Water Obligated Service Area, there are multiple jurisdictions making land use decisions, but one water service provider, Tucson Water. Maybe a more simplistic way to say this is that the City of Tucson is relegated to trying to manage certain land use decisions in the Tucson Water Obligated Service Area being

via water policy.

Outside the Tucson Water Obligated Service Area, there's one jurisdiction, Pima County, making the land use decisions, but multiple water service providers. A simplistic way of looking at this may be that the County attempts to manage water decisions outside of the Tucson Water Obligated Service Area via its land use policies.

I think the - this governance dilemma confirms that wastewater infrastructure availability is the primary determining factor in our urban form. Is that what we want? So I think we need to focus in on this. Historically, I think our governance approaches have yielded results that aren't consistently sustainable and, frankly, somewhat unpredictable as well.

So the paper, the Technical Paper, offers some specific approaches that address these structural factors that underpin this disconnect between land-use planning and water resources and infrastructure planning. And I'm going to try to focus on this first recommendation in the Technical Paper, and it really starts with the City and the County identifying agreed-upon growth areas and policies for those growth areas. And there are a number of ways to do that, but I think certainly there's an opportunity to try to do that in the upcoming update to both the City General Plan and the County Comprehensive Plan.

Another - another key part of this is establishing fiscal environmental and urban form sustainability goals that create a kind of framework for analysis. While planning occurs at - presently occurs at development entitlement stage, coordinated advance land-use planning is necessary in these designated growth areas before individual projects come in and development decisions are made.

Likewise, water resources planning that considers the availability of potable, reclaimed, wastewater and stormwater infrastructure is needed in all these designated growth areas. Other public facility infrastructure and services also needs to be considered, and financial planning in phasing is also necessary and this all needs to occur before development happens and before pressure is exerted for individuals projects to move forward through the entitlement process.

The last aspect of this recommendation is to acknowledge that for infill growth areas, we must plan for and identify funding for investments and improvements needed to make and address the impacts associated with redevelopment and potentially greater population density. So, the nature of the challenge in infill areas is slightly different than the nature of the challenge in - in the more green fill areas.

So now I'm going to turn it over to Nicole and she will talk a little bit about the issues and challenges within the Tucson Water Obligated Service Area.

NICOLE EWING-GAVIN: Good evening. So I know most of you've seen this Obligated Service Area map before; we had it in our Phase 1 report, but the Obligated Service Area is the light and blue areas - I'm sorry - light blue and dark blue areas on the map combined, which includes the Tucson city limits and the built-out areas of the Tucson Water system in terms of the built-out pipe - pipes in the ground.

And, within the Tucson Water Service Area, the issues are really different than outside of it and so the paper may have seemed disjointed to you, and it's really because the City and the perspective from inside this area is - is different from the County's, and so really from an environmental perspective there are few impacts from the water services provided within the Obligated Area, and this is because Tucson Water has moved to renewable supplies, is currently delivering about two-thirds of its supply from CAP, and over time is decreasing its reliance on groundwater. So that's really not the issue within the Obligated Area.

Land use, however, is an issue and that's why Albert and I are here presenting and Chris isn't because Water's kind of got their act together and our land-use planning has not, so we're in the hot seat here. And there's a couple of interesting things. The Tucson city limits and the Tucson Water Service Area have never lined up, which is kind of odd. In most - in most cities they provide service and its within their city boundaries, so this is unique.

And then, as Albert said, there's five different entities making land use decisions within the Tucson Water Service Area, so this provides some challenges. But the City of Tucson is clearly the largest land use authority within this area, so if the City of Tucson could at least line up its land-use planning with water resource planning and infrastructure planning, we - we'd make a step - step forward, anyway.

But this is - these maps show kind of one of the reasons why we haven't. The red area is - shows Tucson city limits over time and the blue area shows planned - platted subdivisions. And really the history of the city is that we've annexed areas that have been already developed in the County. Really the first chance that we have to do advance planning of a large land area is the Houghton area, and so in the past we've really just been annexing development that's already happened, development that already has water service, and so we haven't really ever gotten ahead of it in terms of doing really good advance planning.

It's interesting, one of the highlights of the study for me so far has been when we had City Planning Staff, County Planning Staff, Tucson Water Planning Staff and Pima County Wastewater Planning Staff in the room talking about this issue and realizing we'd never done this before and a lot of people didn't even know each other, so just doing the study we've made some progress.

So, what are we doing about this disconnect between land-use planning and water resource planning?

There's a few steps that we've taken recently. The first is the Interim Water Service Policy. Tucson Water also has a checkbook system, which I'll talk about, and then the update to the General Plan - although I agree with Bonnie that our current General Plan has done very little - possibly updating it, we might have a chance to think about how could we make it more effective.

So the Interim Water Service Policy has been in place since December, 2007. The policy states that the City will not extend water service beyond the Obligated Area until further guidance is provided by this study, this Committee, and then the Mayor and Council deliberating on that. So, really, it's this paper; it's the discussion from the Committee; it's the final report that comes out of this study that will help inform whether or not we extend water service and in what cases we would do so.

But this paper does propose factors to consider in extending service. And, really, as Albert alluded to, they're meant to be considered in a long-range planning scenario. You wouldn't be making these decisions as each individual development came in. Ideally, you would be - the City and County would be sitting down ahead of growth, looking at these desired growth areas and saying, "Where should growth go and where should water service come from for these areas?"

Just so you know, I mean, these - thinking about current development that's outside of the Tucson Water Service Area and thinking about these factors, there's nowhere that we would probably extend service right now. So these - these factors are pretty strong and tough to meet.

So I'm going to talk about each one of them. The first suitable growth area is - is this area in a suitable growth area? And the four suitable growth areas identified in the last paper fall both in and out of the City limits and in and out of the Tucson Water Service Area. So that would be sort of a first thing to consider: Is it even in an area where we want growth to go?

Secondly, how will this - how will extending water service affect our water resources? The Phase 1 report calculated an estimated population that could be supported with Tucson Water's current resources of about 1.1 million people. And this is kind of like the population estimate, we could debate this forever; it's - some would say it's conservative and low because we used a very high GPCD number; others would say it's very high because we were overestimating the reliability of our water supplies. But this is - this is important to think about in terms of, you know, how much water do we have and how many people can we serve?

The last paper on growth included a build-out range for the Obligated Area of one to 1.3 million people, depending on the scenarios, the status quo up to the transit-oriented development. So, in some cases, we might have

enough to serve; in some cases we might not. This isn't going to be a deciding factor, but it's just something that we would want to consider.

And the way that Tucson Water does this right now is through their checkbook. This is the most recent results that came out comparing the 2007 checkbook balance to the 2008 checkbook balance. And what it does is Tucson Water tracks every time they provide a will-serve letter to a development and calculate how much water's going to be served, they deduct that from their checkbook balance. So this kind of shows in the red how much is still available, and then in the blue what the current demand is, and it actually dropped from last year due to conservation and little development happening, yeah.

So, the third consideration is fiscal sustainability. And we used to use the "A" word for this and now we're switching to the "F" word. The "A" word was "annexation," and the "F" word is "fiscal" sustainability.

In the past, the City and County have not - have really had kind of an adversarial relationship about annexation; it seemed like a power grab on the City's side trying to annex people; and the County kind of resisting that. And I think all of us at Staff see this as not productive and are looking at how we can move forward in a different way.

So what is annexation really about? It's - it's not, you know, a popularity contest: Who's the best jurisdiction? It's - really comes down to fiscal sustainability and making sure that we're collecting the revenues to provide the needed public services and that they're being fairly allocated.

So, one of the issues in unincorporated areas is they don't generate the same revenues that can be collected in the City. So the ones listed on the left, sales tax, the additional property tax that the City gets, and then additional State shared revenue don't come in, in unincorporated areas. And then in unincorporated areas, public services still need to be provided: police, parks maintenance, street maintenance, so these are all services on the right that as a City resident you're paying for both for the City to provide and the County to provide in unincorporated areas.

So how can we create - how can we ensure that where growth is happening is fiscally sustainable and not dependent on other residents to subsidize that growth? And often we talk about impact fees to pay for infrastructure, but what our current City budget crisis is really teaching us is it's more about the long term and how do we fund public services. These - these services on the right are the exact things that we can't fund right now as a city fully because we don't have the revenues. We didn't - when we grew - as we grew as a city we didn't put in place the revenues to do these things in a sustainable way. So, going forward, how can we do it more sustainably?

And I think we've talked about - City and County Staff has, you know, how can we make it really seamless between the City and County so that developers aren't sort of playing one off the other; that if you're in the

County you're getting great service; if you're in the City you're getting great service; and both jurisdictions have the appropriate revenues to serve urban development.

So this is the Sonoran Desert Leapfrog which relates to the timing and phasing of development, and really the message here is: Is this development appropriately phased, realizing that development happening closer to the existing built environment is going to be more efficient to serve? And so we need to be looking at that as a factor as well.

Jobs and economic opportunity, we have a paper coming up on this, but we obviously need to allocate water for economic purposes and we need to be looking at this when we're making water service decisions.

Smart Growth and Sustainable Urban Form; this was covered in the last paper as you know, but we need to be looking at is this new development that we're building sustainable from all perspectives; not just a water perspective? You know, transit-oriented, walkable, mixed-used, all the things that we've talked about.

And then, finally, on the flip side, what are the implications of not extending service? We don't want to be - you know, bury our heads in the sand and pretend that, oh, well, there's no, you know, problem that's going to come out of this. And so we want to mainly look at environmental implications of no service, and working with the County to figure out what - what are solutions in areas where development may go, Tucson Water may not serve and - and how can we do it in a sustainable way from a water perspective?

The paper mentions "wheeling agreements," which means that Tucson Water infrastructure could be used to deliver renewable supplies to areas; it wouldn't use Tucson Water's supplies, but use other providers' supplies, and then recharge in outlying areas could be ways to deal with this issue.

And just to conclude my section, you know, what's kind of going - where do we go forward with this Water Service Policy? And this is sort of how I see it: We cannot continue the past demand-based approach to water service. We must consider future water service decisions from a holistic point of view, ensuring new development is truly sustainable from all perspectives.

With that, I'll turn it over to Suzanne who's going to talk about the County outside the Obligated Area perspective.

CHAIRMAN JIM BARRY: You got 15 minutes left for this.

SUZANNE SHIELDS: That's okay. Okay, Arlan, you're going to have to adjust this one too. I don't know. In the - in the interests of time, I'm going to be trying to explain to you Pima County's perspective which is very, very different. Think of us as the - managing 9,000 acres for land use. We take up everything else. And I'm going to

deal with some of the opportunities, so I'm going to just skip down to some of the challenges that we face.

Nicole was talking about having five different land use folks that they have to deal with. We also have another mix when we're talking about Pima County. We have the Pascua Yaqui tribe and the Tohono-O'odham Nation, and what they do on their lands or how they change their lands and, yes, they do buy additional lands and expand or put in - whether its agricultural or commercial, like their - their casinos, it has a direct impact on what we do. Unlike the City, we do have to consider agricultural uses as well as mining, and mining is a huge factor for us.

Vacant land is all - almost all outside of a Service Area. A Service Area is set up by when somebody is giving service; that's a little bit different and it's part of the governing gap with water. It's one thing to go to the Arizona Corporation Commission and form a water company and you have a Designated Service Area; it's another thing for ADWR to say you're a water provider.

Ruby Star Ranch, a wildcat development in Pima County, they are considered a water service provider and they got that because they were trucking in water. They are not a corporation.

The other gap is with the Arizona Department of Environmental Quality; they look at water providers totally differently in terms of public water services. Are you supplying public water to more than 15 hookups or more than 25 people, more than 65 - 60 days out of a year? Kind of a strange thing; but, based on that, there are 200 public water service providers in Pima County.

We also have a problem with the level of control on development. Pima County, the area outside of this urban area, if you will, the zoning is primarily GR-1, which is one home per acre, or RH, which is one home per four acres, and these people have a right; it's administrative, whether we issue a permit; it's not legislative. So when we're talking about - what we're talking about with land use, we're really talking about when somebody comes in, wants to change the land use, and we're making a legislative change through the Board of Supervisors.

If you didn't agree with his populations, the 1960 Land Use Plan would have provided for a total of ten million. Pretty amazing. We really have made some changes and, yes, our General Plans have changed. We wanted to know where was the best places to do growth. We start looking at this in the 1990s. And, while most people just think about this in terms of our environmental study for the Sonoran Desert Conservation Plan, we also did some economic analysis. And, basically, areas that are developed and low density costs us so much to serve, both in terms of social services, maintenance, Sheriffs, all these things. So growth and the environment, instead of looking at - as they did in 1960 - let's put a house on every available acre there is out there - we looked at where should growth go, where should it not, try to define our urban edge, and most recently looked at our water resource element.

For me - and I am a native of Tucson - and I've worked in land use, water resources my whole professional life, land ownership thrives where development occurs. And when you look at this map you can see why we have leapfrogging.

The other thing that this map doesn't really show, but the land use goes along with it - by the way, the white is the privately-held lands - you also have the lands that are the mountains and geographic conditions and topography also drive where we grow.

Our conservation land system, if they have a water bank, you could think about us as having a land bank. Part of the conservation service is - is, as we develop, what do we put aside for mitigation to offset our development and our impact? This is not just a biological map; in more detail, it was used for our Comprehensive Plan to show where were potential growth areas.

Again, spatial segmentation, and when you think of the Tucson Active Management Area, don't forget Pinal County. And don't forget, as we're looking at these, we have a lot of localized areas in Pima County where there's high use of groundwater for mining and agricultural, most notably is the Green Valley area; that area - currently it's not being served by potable water - I mean, by renewable water for - for potable purposes. We want to get it down there. The County would love to have renewable down there, but right now the driving force to get additional CAP down there is the Rosemont Mine. So, we have a quandary in trying to help with water resources; at the same time realizing water resources may not go for that kind of growth.

In the (inaudible) valleys, Avra Valley at one time, when we were playing for ten million people, was supposed to look like Tucson; it doesn't; it's an area now where a lot of the recharge occurs. Since the early '70s, Tucson Water has been pumping groundwater out of there and so it has become, if you will, the sink where you draw out your water.

On this map - in this - in this light it doesn't show very well and I apologize for that - this is our dilemma when it comes to subdivisions in terms of CAP recharge and the way that subdivisions can meet their 100-year Assured Water Supply. The pink areas are where the - the recharge occurs for the Central Arizona Groundwater Replenishment District. The green areas are City of Tucson recharge; these are co-located at Pima Mine; this is Avra Valley, lower Santa Cruz Replenishment, Central Avra Valley and a proposed Southern Avra Valley Replenishment. The City of Tucson's Clearwater Program is the only one that ties the recharge to recovery.

The blue area includes both City of Tucson - Tucson Water I mean - as well as the other water utilities that have assured water supplies, and they have those assured water supplies by contracting with - with the CAGR

for recharge of CAP; that doesn't mean that they're delivering it; it's just that they have a contract.

For those water providers that are outside, a subdivision has to buy into an obligate their subdivision to pay for recharge in these areas. So you can see in the Green Valley area, even though that looks close, it's downstream. You have the Pinal County area, you have the areas over in Vail; that's what we're talking about when we say there's a disconnect with CAGR with the way we do Assured Water Supply because these people, while they have it and there is being recharge, it's not being recharged where the wells are removing groundwater.

Just real simple, we gave some examples on our - how we're trying to do our new water resources element. The purpose is to give enough review at the Comprehensive Plan stage that our decision-makers can decide is this a good idea or not, or just at least have the knowledge. We're working on new information that would go into our site analysis so that you do - at that - at a zoning stage you would do a more-detailed assessment of the water needs and I think - and impacts - but I think just as importantly is to come up with a Preliminary Integrated Water Management Plan. Unfortunately, nicknamed "PIMP." We're hoping that this will make people think about how they can lay out their subdivision to conserve water. What might they do in terms of their buildings. What might they do in terms of their layout so we have low impact developments. So this makes people think about their development and plan what their future development's going to look at.

Later, as we move into the subdivision, will be our implementation phase where we can really monitor and - and see that what they promised at the rezoning, that they have delivered on those - those elements.

One thing of interest, we are the regional water - wastewater infrastructure provider and for urban development, and I don't mean anybody can in the County sink a well, put in a septic system if they have an acre or more and build their building, but if you're looking at urban form, if you're looking at two homes per acre or denser, if you're looking at apartments, townhomes, if you're looking at businesses, industry, you must have water/wastewater infrastructure, and water/wastewater is different than water because we rely on gravity.

The red stars are where we having outlying facilities. In the metropolitan area, we have our major sewer interceptors. This is a map from PAG that shows building permits, and over time - over the last several years, what you see is outlying facilities is where we have the densest - it's the orange, the brown - the densest population of building permits. Other areas, such as here or in here, those are areas where - are tied to our sewer interceptors. So, wastewater does, in a sense, is an infrastructure that drives what we - what - where we will get urbanization.

The other thing is it gives us - because you can't just continually pump reclaimed water further and further and further upstream, these - these outlying facilities provide future opportunities for reclaim systems and, as

these areas grow, they provide opportunities for us to recharge the treated - treated wastewater, so they - they're also an asset for us.

And I'm briefly going to go over these growth areas, very briefly, Jim. But, in terms of - if you look at the southwest area, what - what we have is when we were designing it and looking in and doing our study - and the dark lines like in here are the sewer lines, our wastewater treatment plant, the proposed Southern Avra Valley Recharge Replenishment is slightly off - off the map - we have infrastructure in place that can support potential development.

We also have quite a bit of - in this lighter - these are lots - quite a bit of area that's been developed either as wildcat subdivisions or, in the case up in this area, it's the Veteran's Tract, and there is where the federal government put aside land for the veterans after World War II. It's interesting. And, quite frankly, I don't know that they'll even - ever be able to redevelop that area because of some restrictions, but we could grow there.

And, as we're working through this, the water policy adds a big question mark. Most of these places with sewer service are part of the Tucson Water Service Area, but the area over in here will have to either contract and become part of the Diablo Water Company, but it's unknown what - what these people will use for the water. So we have the opportunities of water and reclaimed, but we have the question of what will we do for water service?

The Southlands is interesting. Right now there's not much in the Southlands. There is the Corona de Tucson Wastewater Treatment plant about in there. Both water - water, wastewater and the Flood Control District with the other communities have been looking at this, and this is kind of a different way of looking at things. We're looking at water resources first. This is primarily State land; there's very little private land; it gives us an opportunity to get ahead of the curve. You've got the Pima Mine recharge area that's just north of the blue of Sahuarita so that there is water there.

We're looking at the watershed in terms of how would this area best development both for the environment, groundwater harvesting, roads. There will need to be - and this is the basin line - keeping in mind that wastewater is gravity-fed, there's going to have to be some wastewater treatment facilities if this area grows. And so locating those things and deciding where the infrastructure can help us direct how growth occurs in this area.

This area right about there is a development called "Verano" and, just to let you know, this - this is - it's gone through a specific plan in Pima County; it's five square miles. The City of Tucson's on this side, this side and on the east side. They're looking at a water reclamation plant. They would have to do it. There's a question of where will they get their water; it will be a - the Red Rock Water Company, which is a corporation, will have to site wells and come

up with distribution, but their wastewater system is looking at - it's really a reclamation plant. They're looking at a reclaim system. They're looking at recharging of the effluent and, of course, we will be interested in making sure that there's flow through.

A little bit different layout than you might be expecting, and this reflects the type of flood plains in that area. So this is an area where the developer was going to have to come in, size and create the infrastructure, and we're working very closely with them so that it can set the stage for what will happen next in the Southlands.

Houghton Road area - and I just happened - this is one of three concepts of State land - but this is one of the questions we have. This is different than the southwest area; it's in the Tucson Water Service Area so, of course, it's got water, but this area's always been challenged for wastewater treatment. You've got Davis-Monthan, there is the interceptors that come up through here, but it's separated by - by Pantano Wash. We're going to have to site a new wastewater facility. Wastewater's been looking at that, but the question is: Where do you put it? Where is the best location to serve? Davis-Monthan, if you want to think - is a block for bringing in any additional sewer lines.

Other factors are State trust land, Davis-Monthan Air Force Base, they do have special study areas. And the Houghton Road area is primarily within the City and primarily State trust land which is a question. In my lifetime, I don't expect State land to develop. So there's my answer on - on densities.

The other thing, why is Flood Control up here? I finally get to talk about flooding. One of the things that we have to look as we do urban infill is what wasn't built when Tucson was developing, and the biggest lack is storm drains, channels and flood controls.

We've been working with the City of Tucson. As I mentioned before, we've got detention basins for Arroyo Chico. We just finished Cherryfield. South of town, we just finished a large detention basin that will protect the - the Park/36th Street area. You have places like along Columbus. There's many places where the only thing that the ward offices want to know is: When are we going to do something about the flooding? It'll be an essential element.

What we would like to be able to do, as we bring in some of these, also look at what other kind of amenities need to be so that if we build a detention basin it is also a park. But it'll be something that will be needed to look at; again, even the existing water and wastewater structures, infrastructure needs to be maintained and upgraded.

And I'll turn this over to Arlan.

CHAIRMAN JIM BARRY: Thirteen seconds.

ARLAN COLTON: I'm just going to surgically move my mouth to my forehead, there's plenty of space. That's not going to stay there, is it?. There, I think I got it, yeah.

In the interest of time . . . what do I hit? Perfect. You got it. That's pretty much my main slide. And, you know, frankly, and it's - it's a truism and none of you would be here probably if - if this were the case. I've got two slides of formal recommendations. You have that in your Staff report, you have it in the report, and you have it in the slides in front of you, and I'm going to make an assumption in the interest of time that everybody can read. So, I'm not going to go through the formal recommendations, but we identified on here in shorthand what the recommendations are from Staff in the White Paper. And I want to just get straight to two slides.

One is I want to talk about long-range planning relative to land use and water, all types of water, and then the second I want to talk about our challenges for the future and I think that that's significant stuff. If we're going to do long-range planning and we're going to deal with land use and infrastructure, we're just going to have to pick an urban form and make it happen, and I think this is the carryover from the paper you had last month.

Regardless of what scenario it is, if we're going to successfully manage growth in the community and - and plan, not necessarily build, but plan the infrastructure along with the land use that we - we have and then build it as it's needed, then we're talking about - we've got to figure out where it's going to be and that's the importance of urban form.

More specifically, to effect the disconnect between land use and water and wastewater is - and, frankly, all the infrastructure agencies, possibly with the exception of Transportation, that infrastructure agencies need to participate in and embrace either the General Plan or the Comprehensive Plan, and I will tell you this is an administrative issue, but it affects what we do.

Historically, what has occurred is, for various reasons, land use has been the domain of the planners, and infrastructure has been the domain of the engineers, and planners and engineers tend not to speak prior to this process, and that's significant. And in many cases even - even if invited into the planning process, not participating because we have our own plans, and so it wasn't that important. So everybody's got to participate and embrace.

Secondly, land use agencies, we, the planners, need to start to learn how to speak infrastructure because, historically, most of us have not been able to, and - and that's significant. We learned our lesson I think with - good and bad - with the southwest infrastructure plan; that was a learning curve for a lot of people.

Third, we've got to - whenever we're dealing with long-range planning, the one constant - because everything else conceivably can change - but what are our over-arching goals, define those over-arching goals, what are the most important things? Don't deviate from those and we can conceivably make that happen.

Implementation, there's got to be an implementation element of our planning processes and it's got to

be realistic and it's got to be time-based and personnel-based and money-based, and I will tell you that neither the City General Plan or the County Comprehensive Plan today have an effective implementation tool, and I've heard Bonnie muttering in the corner about this and she's absolutely right. She and I worked together on - on the City General Plan, on an aspect of it way back when, and we're going to work together on the update of the County Comprehensive Plan and we've learned a lot for what to do and - based on it in the past.

But, in terms of implementation, we've got to be realistic to what's already entitled on the ground. And, in Suzanne's talk in the County, she pointed out a lot of those things that's there, whether it's built or is entitled, it's - it's there, we've got to work around those areas, and those are areas where growth has already occurred or will occur. What happens around them? Do they become attractors for further growth or do they become islands?

Secondly, minimum intensities have got to be established when changing land use. We have historically in this community said if you're going to build lower density - even though the plan says higher density - that's a good thing; that is wrong from an infrastructure standpoint, both from a planning and implementation and financing standpoint. We've got to talk about minimum intensities and stick to them.

Capital improvement plans and annual budgets must be linked to the plans; they are not today; they never have been; and that's - if I achieve anything before I retire, I'm hoping that that's it, then I can just go in peace.

Plan - plan infill and expansion where it's cost-effective to enhance in the case of infill or provide infrastructure in the case of expansion; that's - it seems to be an obvious truism, but that's not historically what we've done, and if we're going to tie this together it has to be done. We've got to be able to limit infrastructure expansion outside the identified growth areas, but please understand that just because it's one of those circles up there, you know, it says growth area, there are areas of growth not included in those areas where, because of what's already occurred, whole communities have occurred, some of which predate zoning, predate the 1950s. We would expect that there will be some things happening out there, but infrastructure is tied specifically to that if it's in the growth areas.

The second main point relative to long-range planning is that the land use and water - and by "water" in this case, I'm talking about fresh water, reclaimed water, stormwater and effluent water - and I'm looking at Chris, I've probably missed some - but that relationship has got to be prioritized as we debate where things get put.

We've got to also - having said that - recognize that there are - other public policy decisions may govern; most of those are either economic development or they are social policy, and there may or may not be a conflict in terms of land - urban form with that, but it exists.

Just to conclude, I wanted to identify - one of the things Nicole asked me to do, apparently because I'm

- I don't know - the oldest planner here - is deal with the sage advice, and so there's a lot of it dealing with this, and these are what I refer to as the "wild cards" in this issue.

First is State land. All that blue that you saw on the map that Suzanne had done earlier, all of the places where we're likely to grow, the only place where we have significant land holdings of size are owned by the State Land Department. The private sectors lands, while there's private sector lands, you don't have large parcels. Verano was about it and the rest of them are entitled some way, or in some form of entitlement today; that is a blessing and a curse.

Suzanne believes that none of that State land will develop. I would probably say some of that State land will develop. Some of that State land needs to develop if we're going to actually grow successfully, but most of it probably won't and doesn't need to because we don't have the infrastructure and the service ability to make that happen.

But, the key question is - well, it's a blessing because we've got all of this land that we can do something with; it's been held in large - large holdings so that when it does come online we have the ability to plan a little more comprehensively than ten acres here, 15 acres there and 20 acres over there. But - but what - what State land - and you - I think everyone's had the - the discussion about what State land is and how it's managed - but State land reform is going to have to happen if this is going to work successfully for us, and I've already talked about the end of large private holdings, which is where we are today in eastern Pima County.

Secondly - and this is a point that I've dwelled upon and I've come to the realization that this is one of those changes I think we're going to see - we have historically, particularly in the County, but throughout most of the jurisdictions of Pima County, utilized the individual land use change, the individual rezoning to make policy and to implement our Comprehensive Plans and our infrastructure plans when we - now that we think about those things. The reality is, is that we have made a land use change process that is much less than certain. People are wary of entering into that system unless they think that they have kind of a sure bet on the other end of it.

Secondly, the - the cost of doing that has become very expensive; and third is we, frankly, when we looked at our Comprehensive Plan we have very little. Unless we change that plan to allow areas where additional density can be provided, we're going to have very little opportunity to do that. Well, why is this important? Well, for one reason is - is that we can't - we can't put conditions on anything, we can't get additional infrastructure beyond what is basically necessary to service that development, number one.

Number two is we can't even implement the Conservation Land System because the - the

Conservation Land System is a policy. We need rezoning and we need to be able to encourage rezoning in conformance with our plans that allow us to meet our environmental goals, our infrastructure goals and, ultimately, our social service goals.

A third major point is we've talked about the need to tweak the Groundwater Replenishment District legislation, particularly where we've got hydrological disconnects, and particularly where we're concerned about environmental areas that otherwise are going to get sucked dry and we won't have provided for our environmental needs, let alone our - our population needs. So somehow that's going to happen; that is not an easy process that is beyond our immediate control because it's a statewide issue.

The fourth is another statewide issue: lot splitting. We've talked about lot splitting, wildcat subdivisions here. The - the facts are this: State land may not develop in Suzanne's lifetime. I'm pretty sure in my lifetime the State legislature is never ever, ever going to address lot splitting. Never ever, ever going to give counties the abilities to control this. So we have to live with this and the bottom line is that we have to recognize that if we are not going to develop in an urban concept, and we are unable - if we are unable to transfer development rights or development densities from areas that would otherwise be lot split into areas that we want to see urbanized, we're screwed in terms of our ex-urban area. Now how much we're screwed depends on which scenario you like the most in that urban form paper from last time, but it will become an issue.

Next, what tradeoffs are we willing to accept as a community? All development decisions, land use, water, social services, environmental, no matter how sustainable we want to be, all of them are tradeoffs; there are cost tradeoffs; there are service delivery tradeoffs; there's viewed tradeoffs, all kinds of things. And if - if the issue of how we provide our water service (inaudible) water and land use together is more significant than everything else, then we probably have to accept some other tradeoffs in other areas, perhaps housing costs, which might go up.

The concept of a regional utility, a regional water/wastewater utility was - was brought up a number of times tonight and in the past, and on the surface that may be a fine thing, but I will tell you that if you got a utility that is separated and now has - it's like a special district, not tied to either one of the governments, and that's what it does, maybe there's two of them, what have you, we will create an even further disconnect between land-use planning, which is the responsibility of local government, and this new utility unless we structure it in such a way where that doesn't happen, and that's going to be very difficult to do, but that's important.

The last two points: Can we think and act regionally? I know that we're talking about the City and the County here, but in order for any of this stuff to work ultimately when we get into the next phases, it's - it's not

necessarily think globally, act locally, it's for us, think and act regionally, and that includes Pinal County to one degree or another and that's my last pitch to you.

I'm not so concerned about the amount of development that will occur in Cochise County, in Santa Cruz County, I am a little bit concerned about the amount of development that could conceivably occur in - in Sonora and pulled up, but - but the most significant place where development will likely occur and might throw all of our efforts to - to provide for land use and water proactively is what happens in Pinal County. They're almost ready to adopt their Comprehensive Plan; it does add for - add significant amounts of development, both in the I-10 corridor and the Oracle corridor; it responsibly is looking at in- - infrastructure in terms of employment infrastructure, but they are not where we are today in terms of even having these kinds of conversations. Pinal County, like Pima County is not a water provider.

So those are the points that I wanted to make up to wrap up the conversation. On behalf of the group, we thank you very much. Happy to entertain questions if there's time.

(Applause.)

CHAIRMAN JIM BARRY: Committee? Bonnie?

BONNIE POULOS: Well, I just - my comments about the General Plan, and even to some extent the Comprehensive Plan, is it's great to have a plan if its used, and the problem with the General Plan was not what was in it or how it was written, but the fact that it was never utilized and it was never really taken seriously. I don't think you can say the same about the County's Comprehensive Plan. I think they've done a good job and I think they've been very responsive to changes. But I don't see what the point is of putting all that effort into a General Plan if there really isn't a commitment to use the General Plan.

CHAIRMAN JIM BARRY: I got a couple points I wanted to make. On page two of the report there is an opening - water and growth are linked in a chicken-or-egg relationship - and I think Mr. Cole you answered that for us last time - though I would say that there is a somewhat well-known *New Yorker* cartoon that comes to an entirely different answer to that question.

Let me ask a couple questions. In the Tucson Water Obligated Service Area, I understand that you're obligated to - to provide that water, are you obligated to provide it in whatever urban form they want it? Whatever gallons-per-capita-per-day; I mean, is there any way that you can restrict how that water is - structure how that water is provided?

CHRIS AVERY: The answer to your question is we're not really sure because the case law in Arizona on the requirement of a city to provide water in an Obligated Area is about 30 years old at this point. But I think it's fair

to say that - that the City's ability to make those kind of decisions with respect to the provision of water service in the Obligated Area are enhanced if those kinds of decisions were to be referenced in the General Plan that's approved by voters, and that - though, the ability to make those kind of decisions is probably decreased if it's not in a General Plan and not approved by voters; other than that, I don't really - I don't think there's any clear answer to that question.

BOB COOK: Where does the obligation comes from? 'Cause I noticed that we have some Obligated Areas that aren't being served.

CHRIS AVERY: The obligated - the obligation comes from a couple of different particular factors. The most important factor, both in terms of size and potential future demand is the City limits and, essentially, by holding itself as a water provider in the City limits, the City's obligated to provide water on a more or less equal basis to others within the City as long as it has water available.

The other obligation, probably the second most important obligation out there is - in the obligation are particular contracts or agreements that the City signed in the past; some of those obligations, for example, in the Dove Mountain area still continue today, even though since that original agreement was signed that area was annexed by another town, there's still a remaining obligation on the part of the City to provide water service within that contracted area.

Then the third area where there is an obligation that arises is just by providing water service on - on a - to a more or less developed area, the City retains an obligation to continue to provide new service within that developed area so that - a real easy example, if you have a street or a subdivision, such as the Catalina Foothills where the City provides water service today and there are a few vacant lots scattered throughout the Catalina Foothills, it's my opinion that the City's obligated to provide service to those isolated lots within the Catalina Foothills because of the fact that you're holding yourself out as a water provider within that area.

The City doesn't have a certificate of convenience and necessity from the Corporation Commission that essentially obligates the City to provide water service within specified defined boundaries under terms approved by the Corporation Commission, but in those areas in unincorporated Pima County or in other jurisdictions where the City provides water service to most of a developed area, it's my opinion and the opinion of some other folks who looked over my opinion, that - that we're obligated to provide service within those developed areas.

ALBERT ELIAS: Jim, I might add one more point to build out what Chris is saying. If we have . . .

CHRIS AVERY: Yeah, come on up.

CHAIRMAN JIM BARRY: Stay there, Chris. I got another question.

ALBERT ELIAS: If we have urban form goals that we are trying to achieve and those are linked to our water service goals, then I think we - we stand a much stronger case of being able to say, "Yes, we're going to serve you water in this - in this area, but you need to provide an urban form that matches up to goals we have for the use of our water resources," and I think linking the two is a really key point. So I think the question that you ask is really more than a legal question; it - it speaks directly to whether or not we can implement urban form objectives and goals, and - and we can link that to water, in my opinion. But, Chris is right, we're going to stand a much better chance of doing that if we have policy in place, both on the water side and on the land use side that kinda links urban form to our ability - or our desire to fulfill our service obligation to you.

CHAIRMAN JIM BARRY: When you talk about the - the Interim Policy, when you get outside of the City limits that - that boundary gets a little fuzzy; I mean, you could have a house right across the street and - and so that's not a real definitive - I mean, that's kind of porous -

CHRIS AVERY: There's some -

CHAIRMAN JIM BARRY: - the further - the closer you get to the boundary.

CHRIS AVERY: Yeah, there are some very difficult case-by-case fact-specific decisions that have to be made in terms of where the Obligated Area starts and stops, and those decisions are not easy in any environment where you have the City provided 233 - 230-something-odd-thousand services, that there's not going to be regular geometry throughout the entire system; those cases are difficult.

CHAIRMAN JIM BARRY: When Tucson was getting its CAP allocation - I'm just asking a little bit of history 'cause I have some vague remembrance of it - that there was some representation of regional - that CAP water was going to be a regional commodity. I mean, is there anything - anybody make an argument that - that Tucson Water's CAP allocation has some regional application?

CHRIS AVERY: We looked at that question at the same time that the Interim Water Service Policy was developed. I wrote a memo on the Obligated Area and Marvin Cohen wrote a memo on the connection between the CAP obli- - CAP allocation the City obtained and the obligation to provide service. I think copies of both of those memorandum are - are available online already at the website; if they're not, I'll make sure that they -

UNIDENTIFIED MALE: They are.

CHRIS AVERY: - are available to be posted.

CHAIRMAN JIM BARRY: I'll go look.

CHRIS AVERY: Marvin concluded that the City's CAP allocation did not come appurtenant to any

particular land area or jurisdiction and, in fact, there was some political circumstances surrounding the award of that allocation that meant that - that it was never sufficient to supply the entire area, even the area that - that Tucson Water had applied for.

So, I agree with Marvin's conclusion on that and - and I - I think that - that the CAP allocation that the City obtained is for the City's Service Area, but that that service area wasn't defined to a particular location or to the region as a whole.

MARCELINO FLORES: Jim?

CHAIRMAN JIM BARRY: Yeah, go ahead, Marcelino.

MARCELINO FLORES: Kind of a question along the lines of the Obligated Area. It's my understanding that it's essentially at the City level; it's the City obligation; and - and then in that - with that in mind, how does the City's jurisdiction rank in - in the hierarchy of law? Specifically, you know, does ADWR, if they were to have in their Fourth Active Management Plan, if it ever happened, if they were to establish a GPCD goal for the Active Management Area, would the City be obligated to comply with that? And that could be, you know, either enhance or - or go against what the - the recommended land use and water goals are, but how - would that be a place where . . . ?

CHRIS AVERY: As an assured water provider, we - we are obligated to follow DWR's regulations and there are some - depending on which conservation program we join and how we join it, there are some conservation targets that are set by the department.

I would say that it's easier for the City to greatly exceed those targets, which we're currently doing today, than - in terms of having a GPCD that's significantly lower than the targets. So if the urban form that's selected results in a lower GPC, I don't think that ends up being an issue. Having an urban form that raises the GPCD, that, obviously, poses some problems.

At this point, given the - the decline in water uses that we're seeing today, I think it's a while; it will - it will take some dramatic changes in water use patterns in the Tucson area before we would have an issue with that. Our - our gallons-per-capita-per-day usage in the Tucson Water Service Area has declined dramatically in the last two and a half or three years, and there's nothing that's happened in the last couple of months that appears to change that.

CHAIRMAN JIM BARRY: Is there any reason to assume that that GPCD decline that we see in Tucson Water is happening in the other water providers in Pima County?

CHRIS AVERY: I'll - I'm not going to speak for Mike, but . . .

CHAIRMAN JIM BARRY: Mike? Yes or no?

MIKE LIST: Yes, same situation.

CHRIS AVERY: And Dorothy?

DOROTHY: (Inaudible; not speaking into a microphone.)

CHRIS AVERY: It seems to be - and we're looking at that issue particularly, but it seems to be happening throughout the western United States.

CHAIRMAN JIM BARRY: But there isn't a lot of explanation for why it might be happening, other than people might just be taking the conservation measures to heart?

CHRIS AVERY: My answer for why it's happening is a long one, but I'll - I'll try to do it quickly, and that is - I spent some time - and I think we as a department spent some time trying to find the single magic factor, and after a while we realized that without looking at any particular magic factor, there - we couldn't identify any single factor other than the weather that leads people to increase their gallons-per-capita-per-day usage.

So whether it's drought awareness, conservation programs, the economy, the price of water, the fact that we live in a desert, et cetera, all of those factors lead people to reduce their water consumption. The fact that people - newer homes are developed in - on smaller lots, they use more efficient water fixtures, whatever the factors are, that confluence of factors altogether, virtually every single one 'em, except the weather, which we haven't figured out how to control yet, leads to diminished per-capita usage and that - I think that's the answer; that there is no - I can't think of any counter-veiling factor, other than temporary weather anomalies that would lead to increased consumption of water.

CHAIRMAN JIM BARRY: Let me do one other thing. On page five you have Figure 2 - and this is something that we saw in the Phase 1 report - Tucson's Assured Water Supply -

CHRIS AVERY: Yeah.

CHAIRMAN JIM BARRY: - talking about 184 acre-feet per year, and then if you'll remember in the Executive Summary and in the slide that Nicole showed, we show 217.4 acre-feet, and then on page nine, the water checkbook we're talking about 162,000 acre-feet. I think we got to come up with - with a number that we think it is and stick with it. I mean, it's just - it's too confusing; it's - the amount of water we have is so critical to the whole discussion we're having, that I think we need to have one number.

CHRIS AVERY: Well, I can explain the numbers pretty quickly and explain the difference. The checkbook was a - is generated in response to a request from the Mayor and Council to look at our renewable water supplies only, without any reliance on groundwater or groundwater credits or the same kinds of resources that can be used in an Assured Water Supply scenario, so that - that's the reason the checkbook is the smallest number.

The Assured Water Supply application that's on file with the Arizona Department of Water Resources is the one you're seeing on page five. And, again, the portfolio of supplies that you can use in an Assured Water Supply application are limited by statute and regulation, and so that's the number that's used for Assured Water Supply purposes.

The - the number that's used in terms of the overall population projection is the number that's based on a combination of the Assured Water Supply, plus effluent that's not currently used today, plus some long-term assumptions in terms of future growth that will result in - as we start to generate - as we start to deliver more water to our customers will also increase the amount of effluent that we have available. So those numbers kind of all track similarly, you're just looking at different components.

And, finally, I would say that there really isn't a magic number, Jim, in terms of water supply. The amount of water that we have available to us really depends on how much we're willing to spend to get it; and the more we're willing to spend, the more water we have.

CHAIRMAN JIM BARRY: I - I don't disagree with that. I just have a problem with one document produced by Staff that says 184,000 acre-feet and another document produced where Staff helped that the Committee put out that says 217.4, and we ought to have one number. If want to go with 184, that's fine.

But, I mean, I think what we did to try to - to determine what the resource portfolio was and then to say how that could be affected by gallons-per-capita-per-day, I think that is a critical methodology, but we got to have agreement on the numbers is the only point I'm making. And - and I'd like to tie that into something that - that's from this University of Montana study that - talking about the disconnection. And they said something that I thought was implied in the Staff paper, but not said directly enough. Land-use planning should be mindful of water supply constraints and should prior- - prioritize development that is most consistent with maintaining water quality and ensuring sustainable supplies. So I think that's why how much water we think we have is important.

And I just want to point out something that was - that Jonathan Overpeck (ph.) from the University, a Pulitzer Prize winner, said, "Everything - absolutely everything points to less water, substantially less water in the southwest unless we get climate change under control." So I think there are huge uncertainties that - that aren't reflected in this paper that I think the Committee feels a need to - to comment on. So I thought it was a good paper, but I did have that problem. We got to have some sense of what our water is and then how uncertain that it; that's all I had.

JOHN CARLSON: Jim, I don't have a - (inaudible; not speaking into a microphone) - you want a number and then define what that consists of or what limits it and use it. There's two numbers, 184 (inaudible) or

whatever, and there's different criteria to get one number or the other, or list one of 'em and tell 'em the difference, at least that's a basis to go forward on -

VINCE VASQUEZ: Well, the - the -

JOHN CARLSON: - (inaudible).

VINCE VASQUEZ: - the number that's most firm is the designation of Assured Water Supply; that's - that is our true number. The - the other number is if we put greater constraints than the State puts on us, that - the water checkbook number, the 144, we don't have to go that low. If we - if we chose to only - to only use that much, then that's our own choosing, and then the higher number is what we could do. But the real number that we should all have in our heads, I think, is the one that the regulatory agency that sits over Tucson Water says and it's 184,000 acre-feet a year.

CHAIRMAN JIM BARRY: Okay. Well, I'm - I'm going to take that, Vince, and I'm going to Table 9 from our Executive Summary and I'm going to put 184,000 in there and I'm going to see what the population is that we can support, but it's going to be less than 1.1 million people.

CHRIS AVERY: Well, again, one constraint with the Assured Water Supply number is that it doesn't fully consider Tucson's effluent allocation.

CHAIRMAN JIM BARRY: Right, and that could explain the difference.

CHRIS AVERY: And - and the reason for that is that the Assured Water Supply number really only requires you to project your demand for a ten-year period. So our Assured Water Supply demand projects to 2017; that's it. The scope of the study goes beyond 2017, so the problem with using the Assured Water Supply number is there's some resources that Tucson - if - if we were required to show an Assured Water Supply to 2027, there's some additional resources that could probably put on that chart. So, again, it's - I know that there are different numbers, I know it's difficult, but I think there's some ready explanations for those differences.

CHAIRMAN JIM BARRY: Well . . .

MARCELINO FLORES: Mr. Chair?

CHAIRMAN JIM BARRY: Marcelino?

MARCELINO FLORES: Before - before you do the calculations for the population using that number, if that's what you're going to choose to do, I still had - get caught on this GPCD and I hope that you can - Chris, if you're possible - to explain the difference between some of the resources that are available in Maricopa and the - and the GPCD rate there. And then I guess, you know, that can help inform some of the decisions about whether we should

expand, perhaps, the CAP in our area, so . . .

CHRIS AVERY: Well, the most important resource they have in Maricopa County is the Salt River and - and it's - it's very inexpensive and there are still places in the Salt - in the Salt River Service Area or Irrigation District that have - that look like they're urban, they look like they're developed and they still have rights of basically to receive irrigation water, so that explains a lot of what's going on in Phoenix.

MARCELINO FLORES: But if - if you were to say a ratio between the CAP and Salt River serving that - the - Maricopa?

CHRIS AVERY: Salt River - well, the - the majority of the current development in Maricopa County is still supplied by the Salt River Project that supplies water to the metropolitan area, water treatment plants in the Phoenix area, and if you - it's - that's the case in what we think of as Phoenix, unless you've been out to the West Valley lately, and the West Valley's - a lot of development's on the CAGR, but - and what I think of Phoenix, you know, what used to be Phoenix when I drove down from Flagstaff as a kid, it's - almost all of it is on the Salt River Project.

MARCELINO FLORES: Okay. So we couldn't get a river down here necessarily?

CHRIS AVERY: One of the - I think one of the early presentations last year I showed the plans for the Sabino Canyon Dam, and that's about as far as we've ever gone.

MARCELINO FLORES: And does - because the availability of the resource, does that affect directly the - the GPCD? I mean, is that why everybody has a pool; is that why everyone has a lawn?

CHRIS AVERY: Well, having irrigation water from the Salt River Project - I don't know what the cost is today - it's - it's a hundredth - it probably costs someone who's on Salt River Project water one-one-hundredth the amount per acre-foot that it costs a Tucson Water customer, maybe - maybe one-fiftieth. So, again, you make a resource available for a low price, and people use it.

CHAIRMAN JIM BARRY: Vince?

VINCE VASQUEZ: You know, the - the most interesting I guess discussion here that I kinda heard in all of the different topics was just this concept of physical access to renewable supply, and that really gets into kind of our larger infrastructure questions and the funding of those and what kind of creative solutions we can use within the framework we have and on and on.

But one thing - how that conversation got teased out in regard to the GRD I thought was a little bit unfair, simply because really the - the basis of - of the ability to recharge and recover in different areas is - is exploited

by every water provider in the State, practically, Tucson Water included and to a great extent, I mean, there - there are - the last I saw in terms of the - the annual reports put out by Tucson Water for, you know, their well sites - and - and as indicated in the report - their well sites throughout the entire service area listed as recovery wells that, you know, the paper says will continue to be used to serve peak demand and there's going to be a consistent use of groundwater, even though there's this ramp up to increase the amount of renewable supply you're using. And so the - and that - that total number of groundwater usage in 2007 was - was it a third I think or close -

CHRIS AVERY: About a third.

VINCE VASQUEZ: - about a third was, quote, unquote, recovered outside the area of impact? Or is that even a bigger number?

CHRIS AVERY: I think it's about a third.

VINCE VASQUEZ: So - so, I mean, a third of 120,000, it's 40,000 acre-feet or something or . . .

CHRIS AVERY: Yeah, actually, you know, I think it's probably a fourth. I think it's really easy to account for 90 to 95,000 acre-feet a year of renewable supply coming into Tucson.

VINCE VASQUEZ: When - when you count - when you count Pima Mine Road?

CHRIS AVERY: Count Pima Mine Road and the Clearwater Project.

VINCE VASQUEZ: So, I - but it's a big - it's a big number and when you add that - that re- - recovery outside the area of impact number of 30, 40,000, whatever it is, and you add up all the other GRD pumpage, the GRD pumpage is really dwarfed by that - that 30 or 40,000, and that - that concept doesn't really come across in this paper; it comes across as we're the good guys, we're doing responsible water management to the T, and we've got a plan in place to do even better, and they really don't.

And I understand, you know, the issues on - on - with both sides, but I just - I think there's a little bit of an unfair characterization. I hope that we can - we can kind of address that in our - in our Committee paper; to talk a little bit more about the - what the recharge and recovery statutes say in terms of the allowance, the ability to do that.

CHRIS AVERY: I'd like to -

CHAIRMAN JIM BARRY: Ken, do you want to talk?

CHRIS AVERY: - make a point on that if I could.

CHAIRMAN JIM BARRY: Okay. Then I'm going to ask Ken Seasholes -

CHRIS AVERY: Yeah.

CHAIRMAN JIM BARRY: - to come up and talk.

CHRIS AVERY: The point I'd like to make on that is that the CAGR D is what it is. Some folks who are on the CAGR D, like Marana, are located very close to recharge; some folks on the CAGR D are not and that's - that's the way it works.

One of the concepts that's in this paper that you didn't comment on, and I think needs to be pointed out, though, because I think it helps - maybe not on a statewide basis, but at least on a - on a regional basis here - is the idea that one of the - the ideas going forward - and it's probably a Phase 3 issue, Phase 4 issue - is the concept of using existing infrastructure to wheel. I'll pick on Vail Water Company 'cause I don't see anybody from Vail in the room here.

But for - Vail's located a long ways away from any possible conceivable CAP recharge site down in the Pantano Wash area southeast of Tucson. For the first time this year we were able to do an agreement with Vail Water Company to transfer them some long-term storage credits, and that I think leads to the possibility that at some point we'll be able to wheel water from areas where recharge is occurring to areas where current groundwater pumping is occurring, and that provides us in the Tucson region an out to the problem of disconnecting CAGR D recharge from CAGR D usage. If you can do that so that there's an actual ability to bring water around through kind of a regional water distribution system for a cost of service price, then I think you really have an opportunity to make some headway; that's - in large measure that's going to be a Phase 3 or Phase 4 discussion. But, with that, I think you can eliminate some of the detrimental effects of the CAGR D and use the CAGR D to bring in additional renewable supplies to the Tucson area that aren't available to the region today.

If you can't, though, the fact is that Verano and Vail Water Company and some of these other folks that are located a long ways away from CAGR D recharge are really pumping groundwater, and the water that they import into the Tucson AMA is going to be delivered somewhere else; that's going to be a long-term problem, and I don't think as a state we've really thought about that issue very well. And I don't see with the current - just like lot splitting - I don't see that the current legislature - legislature, or any conceivable future edition of the legislature, is going to do much to address the issue.

CHAIRMAN JIM BARRY: Ken, come on up. And remind everybody who you are, please.

KEN SEASHOLES: Ken Seasholes with the Central Arizona Project. And, at the risk of potentially agreeing a little bit with - with Vince, I think the paper - though it does an excellent job of laying out the central issues associated with the spatial disconnect, and I actually believe that is one of the central water management challenges both for this region and, particularly, for the - the central part of the state - its emphasis in portions of the paper,

particularly on page 11 and some - some other sections, on the GRD I think loses sight of what's happening within the service area, the Active Management Area as a whole. And really the emphasis I think - or the de-emphasis by - by extension on the Assured Water Supply rules is - is unfortunate because there's an opportunity to really address this - the spatial disconnect issue in a more extensive way.

The - the first piece that I - that I'd toss in - and GRD Staff, CAP Staff are working on an extensive set of comments that we'll provide to the Committee - but just to follow on on the idea about wheeling, the issue that we have in the near term related to the renewable supply utilization is the under-utilization and direct utilization of the CAP subcontracts; that there is a connection in terms of member service areas to the GRD, but it's really an issue separate and apart from GRD membership and the growth of member lands. If you look at the growth of the CAGRDR enrollment, particularly on the member lands side in the entire three-county service area of CAP, this is a really Phoenix dominated, West Valley dominated phenomenon, and the local resource impacts are much more confined and they really are directly tied to areas where we don't have the renewable infrastructure in place. So, the issue is the right issue; it's an issue that needs more attention; it'll be looked at more specifically.

One of the - one of the statements in here talked about the localized overdraft in the Green Valley/Sahuarita area and characterizes that as a CAGRDR issue; that's a - that's actually incorrect, but also misses the point that there are opportunities to use infrastructure, new infrastructure, or existing infrastructure to extend the supplies that this region is fortunate to have.

But we will be providing a set of more extensive comments on the - on the Technical Paper and, hopefully, it'll lay out a little bit broader framework, the connection between the Assured Water Supply requirements, and the CAGRDR.

One other thing, and it's sort of a personal pet peeve related to my - my - my former life as the Area Director for Tucson, was that the physical supply for - physical 100-year supply for the Assured Water Supply requirements for CAGRDR members is the local groundwater supply. The CAGRDR performs a function; in this case, it meets the consistency with a management goal, which is Safe Yield for the whole region; it performs one part of the Assured Water Supply provisions; it's not the 100-year supply; it's not the consistency with the management plan, the financial capability or the continuous legal availability; it's part of a larger framework.

CHAIRMAN JIM BARRY: Do you have a question of Ken or . . .

BOB COOK: Not -

CHAIRMAN JIM BARRY: No?

BOB COOK: - directly.

CHAIRMAN JIM BARRY: Okay. Ken, you can go. Thank you very much, and we'll look forward to that paper. Go ahead.

BOB COOK: Yeah, there's a couple things. One on the - on this term "renewable supply infrastructure." You know, I - I think that we - we - we need to start including stormwater infrastructure and rainwater harvesting infrastructure in that category of renewable supply infrastructure, because we're going to need to start really talking about what the costs of these infrastructures are and see which one is the most appropriate.

There's no reason why we can't use stormwater infrastructure and rainwater harvesting infrastructure to - to actually meet our recharge needs where we're not getting it. And I don't see any - any enthusiasm here for really doing an apples-to-apples comparison and bringing those other - the stormwater and the rainwater into the - into the analysis.

VINCE VASQUEZ: I think there's - there's legal constraints on that in terms of being able to - for one, use that stormwater as part of your Assured Water Supply rules, so you can't add that to your portfolio at least easily; and then the other thing is being able to actually appropriate that water and call it your own which you'll have problems with, too. I don't know, but . . .

BOB COOK: Hey, we're going to change the 1897 Mining Law pretty soon, so there's no reason we can't change that law.

VINCE VASQUEZ: You got to - you got to dream big, you're right. You got to dream big.

CHRIS AVERY: I'd like to respond. I think that stormwater, from Tucson Water's perspective - and I explained this a little bit last summer - from Tucson Water's perspective, we support rainwater and stormwater use of water; it's not necessarily something we provide to customers; it's something in a large measure that our customers can provide for themselves to supplement or replace what we provide.

But the other thing about stormwater and rainwater is that there is a recent ordinance from the City of Tucson that for the first time in this area requires the use of stormwater harvesting for commercial landscape and provides a readily-available option for people to harvest rainwater.

In addition, there - you're seeing across the country a movement toward looking at rainwater and stormwater harvesting in ways that are - it's been around a long time. There was a lot of old buildings in the western United States that have rainwater cisterns, but there's kind of a renaissance of rainwater and stormwater harvesting thought out there.

Just a couple of weeks ago Colorado made it legal to - to harvest rainwater in certain areas for the first time. So you're seeing some changes in rainwater harvesting and stormwater harvesting throughout the country. I think - we don't have a full idea of what the implications are but, from a salinity management standpoint, from a sustainability standpoint, from a lot of different perspectives, harvesting rainwater and stormwater is appropriate and make good sense and they're good ideas, and I think as those ideas mature we'll be able to stand up here as a department, as planning Staff, as Wastewater Department, et cetera, and be more fully conversant with all the implications. To pretend that we're fully conversant with all the implications of these resources today is faulty on our part.

JOHN CARLSON: How about gray water?

CHRIS AVERY: I think there's another resource that we need to be conversant with and it's just starting today.

BOB COOK: Jim, I just had another aspect to talk about, too.

CHAIRMAN JIM BARRY: Yeah.

BOB COOK: And, first of all, I'd like to say that, you know, this is - this is a step forward. I think that the - what this study has - has initiated to get the jurisdictions to begin talking about joint planning is really an unprecedented thing here and I'm - I'm encouraged by it.

What I didn't hear in the presentation, because urban form issues have risen to the top as being important determinants and - and Arlan's suggestion that we really need to pick an urban form and go with it - is the - is the way transportation infrastructure not only affects, but determines urban form and land uses. When you put in a rail line, land use changes and we've seen that, especially in redevelopment cases throughout the west. I could talk about Portland.

But we need to integrate the three of these things because transportation infrastructure is so expensive, it weighs heavily on our - on our budgets because of the cost of operating our transportation systems, our vehicles and so on; that if we can integrate how we're going to serve mobility regionally. And, unfortunately, during the RTA planning process, we didn't talk about urban form, we talked about filling deficiencies, and I think we need to take that conversation to the next step and really talk about transportation infrastructure, water and land use; those are the three big ones.

CHAIRMAN JIM BARRY: Okay. Marcelino?

MARCELINO FLORES: If that's not enough, also we had talked about how the energy plays into the

water and there's a real strong connection, and I think that also - the electrical or energy infrastructure, to an extent, drives growth or where growth will come and now we're looking at, you know, the - the possibility of, you know, State and federal lands converting or - or becoming, you know, solar generators, solar energy generators. So, you know, that there's - there's perhaps some other - other additional components to consider there.

And one of the things is - is that, you know, in the K grid it talks about how the - the home foreclosures might affect the costs and - and the like, and I think something that had been connected in another forum was - was the connection between transportation costs and - and the - the home, so I guess the affordability of homes had never considered before the transportation costs, but they're both significant and - and exacerbated the foreclosure rate. So - and, you know, kind of when you talk about - or - or look at the process for making these decisions, certainly energy and transportation and housing costs would come into play.

CHAIRMAN JIM BARRY: Okay. I'm going to turn it over to the audience; it's not Call to the Audience, so if you raise a question we can answer it. Anybody from the audience want to make a point or raise a question? Oh, surprise, surprise, Colette. If you bring up a butterfly in Indonesia affecting all of this, I'm going to kick you out of here.

COLETTE ALTAFFER: No, actually, you know, you talked about birth and death and didn't want to discuss that, I guess you didn't hear about Soylent Green.

CHAIRMAN JIM BARRY: Yes.

COLETTE ALTAFFER: Anyway, just as we're talking about growth, growth areas, I think it's really crucial that we talk about cost of growth and ensuring that growth is actually paying for itself. Certainly the SWIPP plan clearly illustrated how expensive it is to put infrastructure in to just raw land, but we never talk about how expensive it is to replace infrastructure that's already there. And we talk about infill, we talk about lower impact fees because the infrastructure's there, but nobody talks about the fact that most of it's already 50 years old or older and it's going to have to be replaced and it's hugely disruptive and very expensive to replace. So I think we need to include that as we're discussing this whole thing about growth, infill and density.

CHAIRMAN JIM BARRY: Okay. Anybody else?

(No response.)

CHAIRMAN JIM BARRY: Okay. Agenda for next meeting. The next meeting is August 20<sup>th</sup> and it's here and we've got Water, Wastewater, Cost of Growth Assessment, Economic Needs for Water and begin the discussion of additional water resources. Does anybody else want anything else on that agenda or is that enough for four hours?

I'd like to make a suggestion - I'll work with Staff on it - that we ought to just revisit, not discuss, but just have in paper in front of us, revisit what Sharon Megdal said about projecting the water resources availability and what Tucson Water's 2050 plan says about that and what we said about it, just so we have some background on - on what amount of water we may or may not be talking about. All right.

Call to the Audience.

JOHN CARLSON: Jim, I'd like to make an ending statement if I could. I want to thank -

CHAIRMAN JIM BARRY: Ending statement?

JOHN CARLSON: - Staff for going to the great trouble to dig up out of the *Wall Street Journal* these two blurbs on California running out of water and getting desperate about desalinization and expand their water supply from up north and so forth.

And, again, yesterday in the *Wall Street Journal*, Dallas is in a critical situation, besides wiping out their fisheries and their parks and everything else, they've been going - they try to go to Oklahoma and buy some water and the Oakies told 'em to get out of there.

So what I'm saying is we've got to keep in mind that we might very well be dealing with a lesser water supply as times goes on, and these periodic reviews should always keep that in mind. But thanks again, Staff, for going into the trouble on all this.

CHAIRMAN JIM BARRY: Okay. Does anybody want to adjourn? Anybody not want to adjourn? All right. 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 July 16, 2009.

Transcription completed: August 10, 2009.

DANIELLE L. KRASSOW-TISDALE