



**SANTA FE WATER CONSERVATION COMMITTEE MEETING  
SANTA FE COMMUNITY CONVENTION CENTER – 201 MARCY STREET  
CORONADO ROOM (amended for location)**

March 13, 2018  
4:00 PM TO 6:00 PM

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF CONSENT AGENDA
5. APPROVAL OF MINUTES FROM THE FEBRUARY 13, 2018 MEETING

**CONSENT AGENDA:**

6. WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR FEBRUARY 2018 (Christine Chavez)
7. UPDATES TO REBATE PROGRAM (Christine Chavez)
8. UPDATE ON CURRENT WATER SUPPLY STATUS (Christine Chavez)

**INFORMATIONAL ITEMS:**

9. WATER 2120: SECURING OUR WATER FUTURE, ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY (Katherine Yuhas, Christine Chavez)
10. RESULTS BASED ACCOUNTABILITY DISCUSSION (Bob Coombe, Stephen Wiman, Tim Michael, Ken Kirk, Christine Chavez)
11. GPCD DRAFT REVIEW (Christine Chavez, Patricio Pacheco)
12. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE WORKING GROUPS
  - A. GROUP 1 – IRRIGATION SUBCOMMITTEE (Doug Pushard, Christine Chavez)
  - B. GROUP 2 – GENERAL EDUCATION PROGRAM/ GRANTS (no update)
  - C. GROUP 3 – SCORECARD SUBCOMMITTEE (Stephen Wiman, Christine Chavez)
  - D. GROUP 4 – WATER CONSERVATION CODES / ORDINANCES / REGULATION (Doug Pushard, Christine Chavez)

**MATTERS FROM PUBLIC:**

**MATTERS FROM STAFF:**

**MATTERS FROM COMMITTEE:**

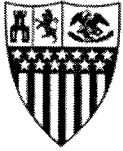
**NEXT MEETING – (Councilor's Conference Room): TUESDAY, APRIL 10, 2018**

**CAPTIONS:** due by 3:00 pm, Monday, March 26, 2018

**PACKET MATERIAL:** due by 3:00 pm, Wednesday, March 28, 2018

**ADJOURN.**

Persons with disabilities in need of accommodations, contact the City Clerk's office at 955-6520, five (5) working days prior to meeting date.



Agenda

DATE 3/5/18 TIME 4:29 PM

SERVED BY Christine Chavez

RECEIVED BY [Signature]

**SANTA FE WATER CONSERVATION COMMITTEE MEETING**

**CITY HALL – 200 LINCOLN AVE.**

**CITY COUNCILORS' CONFERENCE ROOM**

March 13, 2018

4:00 PM TO 6:00 PM

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF CONSENT AGENDA
5. APPROVAL OF MINUTES FROM THE FEBRUARY 13, 2018 MEETING

**CONSENT AGENDA:**

6. WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR FEBRUARY 2018 (Christine Chavez)
7. UPDATES TO REBATE PROGRAM (Christine Chavez)

**INFORMATIONAL ITEMS:**

8. WATER 2120: SECURING OUR WATER FUTURE, ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY (Katherine Yuhas, Christine Chavez)
9. RESULTS BASED ACCOUNTABILITY DISCUSSION (Bob Coombe, Stephen Wiman, Tim Michael, Ken Kirk, Christine Chavez)
10. GPCD DRAFT REVIEW (Christine Chavez, Patricio Pacheco)
11. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE WORKING GROUPS
  - A. GROUP 1 – IRRIGATION SUBCOMMITTEE (Doug Pushard, Christine Chavez)
  - B. GROUP 2 – GENERAL EDUCATION PROGRAM/ GRANTS (no update)
  - C. GROUP 3 – SCORECARD SUBCOMMITTEE (Stephen Wiman, Christine Chavez)
  - D. GROUP 4 – WATER CONSERVATION CODES / ORDINANCES / REGULATION (Doug Pushard, Christine Chavez)

**MATTERS FROM PUBLIC:**

**MATTERS FROM STAFF:**

**MATTERS FROM COMMITTEE:**

**NEXT MEETING – (Councilor's Conference Room):** TUESDAY, APRIL 10, 2018

**CAPTIONS:** due by 3:00 pm, Monday, March 26, 2018

**PACKET MATERIAL:** due by 3:00 pm, Wednesday, March 28, 2018

**ADJOURN.**

Persons with disabilities in need of accommodations, contact the City Clerk's office at 955-6520, five (5) working days prior to meeting date.

**SUMMARY OF ACTION  
SANTA FE WATER CONSERVATION COMMITTEE MEETING  
SANTA FE COMMUNITY CONVENTION CENTER - CORONADO ROOM  
201 MARCY STREET  
TUESDAY, MARCH 13, 2018, 4:00 PM**

<b><u>ITEM</u></b>	<b><u>ACTION</u></b>	<b><u>PAGE</u></b>
CALL TO ORDER		1
ROLL CALL	QUORUM	1
APPROVAL OF AGENDA	APPROVED	1-2
APPROVAL OF CONSENT AGENDA	APPROVED	2
APPROVAL OF MINUTES FEBRUARY 13, 2018	APPROVED	2
<b><u>CONSENT AGENDA</u></b>		
WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR FEBRUARY 2018	APPROVED	2
UPDATES TO REBATE PROGRAM	APPROVED	2
UPDATE ON CURRENT WATER SUPPLY STATUS	APPROVED	2
<b><u>INFORMATIONAL ITEMS</u></b>		
WATER 2120: SECURING OUR WATER FUTURE, ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY	INFORMATION/DISCUSSION	2-7
RESULTS BASED ACCOUNTABILITY DISCUSSION	INFORMATION/DISCUSSION	7-11
GPCD DRAFT REVIEW	INFORMATION/DISCUSSION	11-12

**GROUP REPORTS FROM WATER  
CONSERVATION COMMITTEE  
WORKING GROUPS**

**INFORMATION/DISCUSSION 12**

**MATTERS FROM THE PUBLIC**

**NONE 12**

**MATTERS FROM STAFF**

**NONE 13**

**MATTERS FROM COMMITTEE**

**INFORMATION/DISCUSSION 13**

**NEXT MEETING**

**APRIL 10, 2018 13**

**ADJOURN**

**ADJOURNED 13**

**SANTA FE WATER CONSERVATION COMMITTEE MEETING  
SANTA FE COMMUNITY CONVENTION CENTER - CORONADO ROOM  
201 MARCY STREET  
TUESDAY, MARCH 13, 2018, 4:00 PM**

**1. CALL TO ORDER**

The meeting of the Santa Fe Water Conservation Committee was called to order by Lisa Randall, Chair, at 4:00 pm on Tuesday, March 13, 2018 at the Santa Fe Convention Center, Coronado Room, 201 Marcy Street , Santa Fe, New Mexico.

**2. ROLL CALL**

**MEMBERS PRESENT**

Lisa Randall, Co-Chair  
Aaron Kauffman  
Tim Michael  
Stephen K. Wiman  
Doug Pushard  
Scott Bunton  
Justin Lyon  
Ken Kirk  
Bill Roth  
Robert Coombe

**MEMBERS ABSENT**

Councilor Peter Ives, Chair, Excused

**OTHERS PRESENT**

Christine Chavez, City of Santa Fe, Water Conservation Manager  
Caryn Grosse, Water Conservation  
Patricio Pacheco, Water Conservation  
Katherine Yuhas, Albuquerque, Bernalillo County Water Utility Authority  
Andrew Erdman, Water Division  
Rick Carpenter, Director, Water Department  
Elizabeth Martin, Stenographer

**3. APPROVAL OF AGENDA**

**MOTION** A motion was made by Mr. Coombe, seconded by Mr. Roth, to approve the agenda as presented.

**VOTE** The motion passed unanimously by voice vote.

**4. APPROVAL OF CONSENT AGENDA**

**MOTION** A motion was made by Mr. Roth, seconded by Mr. Coombe, to approve the consent agenda.

**VOTE** The motion passed unanimously by voice vote.

**5. APPROVAL OF MINUTES  
FEBRUARY 13, 2018**

Mr. Michaels said on page 2 the 1<sup>st</sup> paragraph, it should say thinks and on page 10 it is Mr. Lyons.

**MOTION** A motion was made by Mr. Wiman, seconded by Mr. Roth, to approve the minutes as amended.

**VOTE** The motion passed unanimously by voice vote.

**6. CONSENT AGENDA**

**A. WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR  
FEBRUARY 2018**

**B. UPDATES TO REBATE PROGRAM**

**C. UPDATE ON CURRENT WATER SUPPLY STATUS**

**7. INFORMATIONAL ITEMS**

**A. WATER 2120: SECURING OUR WATER FUTURE, ALBUQUERQUE  
BERNALILLO COUNTY WATER UTILITY AUTHORITY**

Ms. Yuhas passed out a presentation that is attached herewith to these minutes as Exhibit "1". She reviewed the presentation.

Mr. Bunton asked what is the source of the surface water.

Ms. Yuhas said it is San Juan/Chama water.

Mr. Pushard asked the GPCD on this, is this the old calculation.

Ms. Yuhas said we switched over to the OEC model 7 years ago.

Mr. Roth asked how does the water use dropping effect the overall financial health of Albuquerque water.

Ms. Yuhas said you are asking how do we fund all the projects we need to do that will increase conservation while encouraging our customers to lower water use. We have increased rates 7 times since she has been there. Albuquerque still has very inexpensive water.

Mr. Coombe asked what is the sense of the drivers for the reduction in DPCD.

Ms. Yuhas said a lot of public education. 22 years of an aggressive conservation water program. There are customers who take a lot of pride in their efforts toward conservation. The rebates effect the numbers as well.

Mr. Wiman asked the surface water is all San Juan/ Chama. There are no native water rights.

Ms. Yuhas said we have them, but do not use them. We have a big diversion. We have an inflatable dam that is moveable.

Mr. Roth asked have any of the wells suffered from the ground water plume.

Mr. Yuhas said some in the southern part of the City in the path of the plume of Kirkland AFB. One well is impacted by the digital site.

Mr. Coombe said it seems remarkable that the curves in the chart are so smooth. Is there no effect from drought.

Ms. Yuhas said there is a bit of up and down on this. Seasonal pumping causes more variation than drought.

Mr. Lyon asked does extraction from underneath the Rio Grande count for surface water.

Ms. Yuhas said yes, but it is a separate permit.

Mr. Wiman asked in doing the pilot project what was done to see if the aquifer was suitable to do this.

Ms. Yuhas said for 2 years, 2008 and 2009, we did pilot studies. We put in a lot of instrumentation to see that the water made it to the water table. It is a super location. We operate in the winter. We are injecting the rest of the non potable San Juan/ Chama water. We operate every other winter starting in October. It is 400 acre feet a

year.

Mr. Erdman said regarding the diversion, is that to avoid the sediment you would bring in.

Ms. Yuhas said yes.

Mr. Bunton asked is the water potable.

Ms. Yuhas said yes, it is a mile long. The constraint on it is there is a golf course. They don't want us to overflow the golf cart crossing.

Mr. Pushard asked why the 100 year plan.

Ms. Yuhas said it is to help us set out what sort of projects we should put in place now. That is what we were thinking of. Also what will climate change do to Albuquerque. What do we need to get the population ready for. It is setting the stage to look out that far.

Mr. Erdman said for population projections we use the state standard from UNM to plan. It looks like you did a range.

Ms. Yuhas said we also compared that to Beaver/UNM and the Council of Governments number so we were not planning for some crazy outlier. We found what we were looking at encompassed all of their numbers.

Mr. Roth asked you have x amount of acre feet from San Juan/ Chama, what percentage of that are you using. If you are getting the same amount would it cover you in 50 years.

Ms. Yuhas said we set a management level in the aquifer that we want to maintain. The projection is we will continue to rise for a decade then depending on use and climate change we will see where we are and then it will start to drop. We identified 40 different alternatives for what we could do for water supply.

Mr. Roth asked are there any long range plans to treat affluent as drinking water.

Mr. Pushard said this is best case scenario. The question is he is assuming that then the likely scenario is upper middle. Is that the case.

Ms. Yuhas said we thought of 40 different alternatives and ranked them in terms of implement ability, acceptance by the public and things like that. We narrowed them down to 3 portfolios that would all fill in that gap. We decided on number 1 to start working on. A description of that is in your hand out.



Ms. Yuhas said we are looking at treating affluent water.

Mr. Roth asked what about using it to offset your native rights.

Mr. Carpenter said we are still looking at alternatives such as putting back in the other water. There are other alternatives as well.

Ms. Yuhas said we already get credit for it. The impact we have on the river in 10 to 12 years will be less. Letting it go would be losing water that belongs to the customers.

Mr. Erdman said Albuquerque operates a bit different from us. They are able to divert and use San Juan/Chama water with 10 diverted and 5 returned. We end up returning 7. It takes more from us than them. We are looking at opportunities.

Ms. Yuhas said yes, we can take out twice as much as we return.

Mr. Pushard asked the 40% reduction on the GPCD, did you chart out some programs to help you get there.

Ms. Yuhas said yes. We have identified where we want to get that reduction. We are looking at our commercial and institutional customers to have that big reduction over time. We are also looking at more outdoor program with efficient irrigation systems and xeriscaping.

Mr. Roth asked are you pushing grey water use.

Ms. Yuhas said no. We want to treat it and use it ourselves. We are not incentivising it. We can treat it and reuse it in bulk.

Mr. Roth asked what are you looking at in terms of stormwater capture.

Ms. Yuhas said we are talking about recharging the aquifer with stormwater. We have increased the amount of storm flow by growing and increasing the surface cover. It will be a long and difficult process.

Mr. Pushard asked where will the thinning be on the San Juan.

Ms. Yuhas said the Chama Peak Land Alliance is doing the work.

Mr. Pushard asked do you have an emergency water plan

Ms. Yuhas said for drought, yes. It is triggered by us as soon as the majority of Bernalillo County is in severe drought. Then we also look at where we are in terms of ground water pumping and GPCD for the year to decide if other measures are needed.

We do have a written plan.

Mr. Lyons asked does the lawsuit Texas brought against New Mexico mess with this plan.

Ms. Yuhas said she does not think so. We meet all of our obligations of the compact.

Mr. Roth asked what accounts for the difference of the higher usage in Albuquerque than Santa Fe.

Ms. Yuhas said we are 2,000 feet lower and 10 degrees hotter. We also spent a lot of time telling people to put in grass. Here you plant native plants. It is 60% indoor usage and 40% outdoor usage.

Mr. Pushard said thank you for all your advertising.

Mr. Roth asked how does Rio Rancho compare to Albuquerque.

Ms. Yuhas said they have a few less programs and their funding is less. Their water price is higher.

Mr. Pushard asked did you produce this document in house.

Ms. Yuhas said we worked with anyone we could find to help us. We built a model and can manipulate it ourselves, but most of the time CH2m does it for us.

Mr. Coombe said if you are getting to 110 through community conservation you should be able to get below 110.

Ms. Yuhas said yes, we can.

Mr. Wiman asked what is the low hanging fruit for conservation.

Ms. Yuhas said multi family is an opportunity for us. Commercial properties definitely. Those are the biggest opportunities.

Mr. Roth asked how have you dealt with the Federal installations in Albuquerque.

Ms. Yuhas said they have their own wells. For the most part their water use does not effect us in numbers. It effects the aquifer. Kirkland has their own water conservation program. There was a large fuel spill there. The water table has risen above the plume. That makes it harder to clean up.

Mr. Roth asked are they 100% ground water.

Ms. Yuhas said yes.

Ms. Chavez asked Ms. Yuhas to speak about her education program for 4<sup>th</sup> graders.

Ms. Yuhas said we have won 2 national awards for it. We take every 4<sup>th</sup> grader in Albuquerque on a trip to the river. We pay for everything. They hike to the river and look at artifacts and talk about how animals use water. We talk about the watersheds and fire. We want every 4<sup>th</sup> grader to do that. In 5<sup>th</sup> grade all of the 5<sup>th</sup> graders go on a trip to the mountains. We talk about the mountains and they reflect on the river. We do puppet shows for K - 2<sup>nd</sup> grade. There are tours of water reclamation plant. We also go out to classrooms and do experiments in class. We do 300 classrooms a year.

Ms. Chavez said we are putting a small piece of the 4<sup>th</sup> graders on our Passport Program.

Ms. Yuhas said we take about 20,000 students to the river. It costs about \$150,000 a year. That pays for educators, buses and a staff person.

Mr. Roth asked how big are the groups.

Ms. Yuhas said we take 2 classes at a time. The whole 4<sup>th</sup> grade of a school at a time. Maybe we reach 20,000 people a year. It is a lot of kids.

Ms. Yuhas said anyone is welcome to come join us. Thank you for your time.

Chair Randall said thanks for coming up and for the great work you do.

## **B. RESULTS BASED ACCOUNTABILITY DISCUSSION**

Ms. Chavez passed out a handout which is herewith incorporated into these minutes as Exhibit "2".

Ms. Chavez said there is a lot of discussion now about how we approach our 5 year goals and align that with results based accountability. We all met and one of the first things we started to do was to figure out what our boundaries are. What can be addresses within our plan and what will have to be addressed outside of the plan.

Mr. Wiman reviewed the handout and said the big eyeopener was making a list of the things we cannot control. Wells are certainly one of them. We think we need to get a handle on what that draw down is. Thanks to Andrew we have more information than we ever have had. The problem is we that only have recent data on 25 or so. The

other issue was regionalization and working with the County. The Living River and quality of life issues were brought up as well. Are we going to have the amount of water the City has agreed to put into the Living River. There are watershed issues. During drought what is the effect of the recharge of the aquifer and what do we do with water reuse in the city. These are things we cannot control.

Ms. Chavez said this was hard. The Committee is very passionate about these other issues. We can address them, but not in the 5 year plan. Maybe we can address them in a sit down or a document to the Mayor.

Mr. Roth asked can a goal of the 5 year plan be more coordination with the County.

Ms. Chavez said it has to start with the goals of the City. She feels like that needs to be revisited, but at a higher level. Then we can support it.

Mr. Pushard said there are a lot of things we do control. For example outreach and education programs. Why does this list look like it does.

Mr. Wiman said a lot of things are in the scorecard. We shifted them to the larger plan.

Mr. Pushard said they will also be in the 5 year plan.

Ms. Chavez said in the left column are new things that we have not worked on yet and are not identified in the plan. This was a brainstorming discussion.

Mr. Roth asked has new construction been discussed.

Ms. Chavez said yes, but we don't incentivize anything in that area.

Mr. Pushard said we are not touching 90% of the homes. Going after a whole house conservation program is what he would add. We are piecemealing it now. Over a 5 year period of time we could figure out how to do that.

Ms. Chavez said we could.

Mr. Roth said there already is an incentive. It is a big deal to show you are using less water. You can save on the permit using that program.

Mr. Pushard said he agrees, but the other one we do not have on the list is multi family. We have not touched that.

Ms. Chavez said we could give an extra incentive.

Mr. Roth said the discussion has started to put together a proposal for a density increase for an opportunity to increase the density of your project. You would have more efficient homes in the project. There is going to be a push for it. The idea is we will put benchmarks in the program. We will arbitrarily determine the target WERS score for a multi family home. It will be based on reasonable use.

Ms. Chavez said within 5 years, all those things are reasonable for us to look at.

Ms. Chavez said we looking at grey water, stormwater, commercial rebates and programs and outdoor irrigation. One huge partner we have not worked with is Parks. There is so much opportunity for us to work with Parks. If we are going to ask people to not have yards we need to give them a place to enjoy that. In other cities they give Parks a better deal in the price of water. She is establishing a good relationship with Parks management now. They want to do creative, great things. Lets help them. It was a hard discussion to keep it within the boundary of this 5 year plan. Everyone is so passionate.

Mr. Lyons said alternative water sources include Sewer Scalping. Has that been discussed at all.

Ms. Chavez said she has never heard that term. We talked about the concept. She doesn't know where that resides. It could be Land Use or another department. We don't know what the County does for offsets. She thinks that is another one where she doesn't know if it would be within the Water Conservation Program and plan or that we could implement here.

Mr. Roth asked can't we try to instigate a joint meeting with Water Conservation at the County so we are updating each other.

Mr. Kirk said at the County Water Advisory Committee the issue of Conservation came up. He learned there is an agreement with the City and County that goes back many years and is part of a settlement. It says regarding conservation the County must follow all directives of the City. If the City implements measures the County must do so as well.

Mr. Roth said they do not have the same day to day restrictions that we do. He thinks it would be interesting to have more coordination with the County.

Ms. Chavez said it is important to have those discussions.

Ms. Chavez said the regionalization part we did discuss. We should be more organized in presenting these ideas with the new Mayor and let him decide how those conversations come about. She does think there is an opportunity with the new Administration for this Committee to write a position paper on some of the big issues as opposed to a discussion in a public input forum. A position paper and a meeting with

the Mayor to discuss it with him would be a positive direction to take.

Ms. Chavez said back to the 5 year plan. She wants everyone to think about this more and let her know of anything else you can think of for the subcommittee and these lists. We have also decided on a process for the plan. After the Committee is in agreement and has voted on the left and right hand columns, we will take this to public input sessions. We want to make it a very integrated process. She has been meeting with Jeff Gopal on consensus processes. He was part of our conference. He is helping her develop focused questions that will give the public a chance to address the issues. Will have to train all of us on this process. After public input, we will develop the 5 year goals for the plan and short term goals. Then we want to get our 5 year plan to be approved in the fall of 2019. We need to move quickly on starting this process.

Mr. Michael said he is not sure who said this, but his understanding was that this 5 year plan is a programmatic plan for the Water Conservation Office. You are not in charge of drought management. Is he right in saying this. That it is a 5 year programmatic plan for Water Conservation Office.

Ms. Chavez said Tim helped us stay organized. She should have just called it the 5 year plan on this handout. It is the programmatic planning document for the Water Conservation Office.

Mr. Michael said it is about what you can do with a program within a limited time frame and budget. We can figure out the scope of what this plan can encompass.

Ms. Chavez said we should have started out with that. He is correct.

Mr. Michael said we as the Water Conservation Committee, with the support of the Water Conservation Office, should and will address those issues. For the plan, they need to figure out what they can actually influence as a matter of focusing this work. It is up to this Committee to help the office focus their efforts.

Mr. Bunton asked would he be correct in suggesting that with the 5 year work plan that the Committee not only has that as an obligation, but can take the opportunity to look more broadly and come up with a more aggressive, expansive approach to water conservation that extends beyond the plan to figure out what to recommend to the City to move forward.

Mr. Coombe said it begs the question that the results should be in terms of how much water is saved, not activities, by each of these things that may be part of the plan. What is the plan of the City. Albuquerque has a number. We don't. It is hard to build a plan without clarity of that objective. That is what we don't have. We need to find a way to engage the other elements of the City in order to develop that sort of qualitative, objective for the work we do.

Mr. Kirk asked is there a reason why we could not do that.

Ms. Chavez said we pulled 5 studies and were going to decide what Water Conservation could support. We are looking at recommendations that could be made. The long range water supply plan is something of use as well for a bigger picture. We have made an aggressive timeline.

Mr. Bunton said the language used in the Basin Study, we could use that.

Coordination with the Sustainability Santa Fe Plan and the Parks Plan was mentioned.

Mr. Pushard said this Committee has requested a copy of that plan. He requested the plan and we requested participation, but we never got the plan and were not able to participate. We wanted to be proactive with that plan.

Ms. Chavez said we have been given the opportunity to participate from a City staffing level. We are hoping for input.

Mr. Coombe asked can the Committee make a request that the City develop a comprehensive water plan that informs the need for conservation.

Ms. Chavez said the Sustainability Plan does not include anything against anything we do.

Mr. Roth said the input for the plan came from concerned citizens only.

Chair Randall said understood and heard.

Ms. Chavez asked if you have any ideas for the columns let her know. She has put some feelers out to the new Mayor to meet with him.

Mr. Roth said a lot of the stuff Albuquerque has done gives us a good template for going forward. She is a great resource.

### **C. GPCD DRAFT REVIEW**

Ms. Chavez said Patricio is here today. He is working on the GPCD and has done a really great job. Thank you for taking this on.

Mr. Michael handed out his spreadsheet which is incorporated herewith into these minutes as Exhibit "3".

Mr. Michael said the real point is the amount of water available to customers.

Less water was produced last year. There is a problem though. We were going to base the new GPCD on population estimates and they are not out yet. He reviewed the chart. Sometime soon there will be a new population estimate. He expects the final GPCD will be the same as last year.

Ms. Chavez said she wanted to call the Committee's attention to last the row on the bottom. In 2016 the GPCD was 86 without population adjustment. In 2017 it was 86.11 with no adjustment. When we adjust the population it will go up to 89 or 90. It will be much more accurate. This is a great start. Our goal for this is April 1<sup>st</sup>. That is our deadline to present this to the State Engineer. She and Patricio are going to go through every entry and double check them and have someone double check us.

Mr. Michael said there is a thing called non revenue which is leaks. When more is used than produced it is a problem. There is about 100 acre feet there.

Ms. Chavez said the AWA audit will help us look at that. We wanted to update you on the progress.

**D. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE WORKING GROUPS**

**1. IRRIGATION SUBCOMMITTEE**

Ms. Chavez said she and Doug went through all the outdoor irrigation rebate materials. The final design will be pushing out in April. We will bring the finals to you to look at for the next meeting.

**2. GENERAL EDUCATION PROGRAM GRANTS**

No report.

**3. SCORECARD SUBCOMMITTEE**

This was previously discussed.

**4. WATER CONSERVATION CODES/ORDINANCES/REGULATION**

No report.

**8. MATTERS FROM THE PUBLIC**

None.



**9. MATTERS FROM STAFF**

None.

**10. MATTERS FROM COMMITTEE**

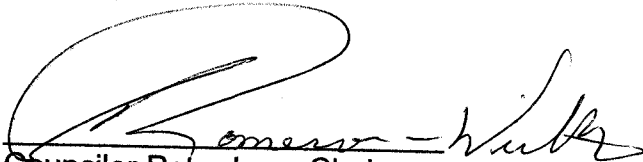
Mr. Roth asked that staff put out an invite on email.

Ms. Chavez said we will do that as a reminder.

**11. NEXT MEETING  
APRIL 10, 2018**

**12. ADJOURN**

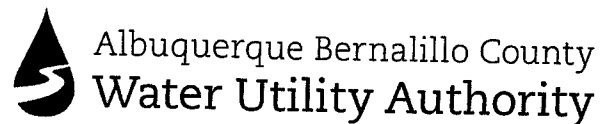
There being no further business before the Committee the meeting adjourned at 6:00 pm.



Councilor Peter Ives, Chair



Elizabeth Martin, Stenographer



# Water 2120: Securing Our Water Future

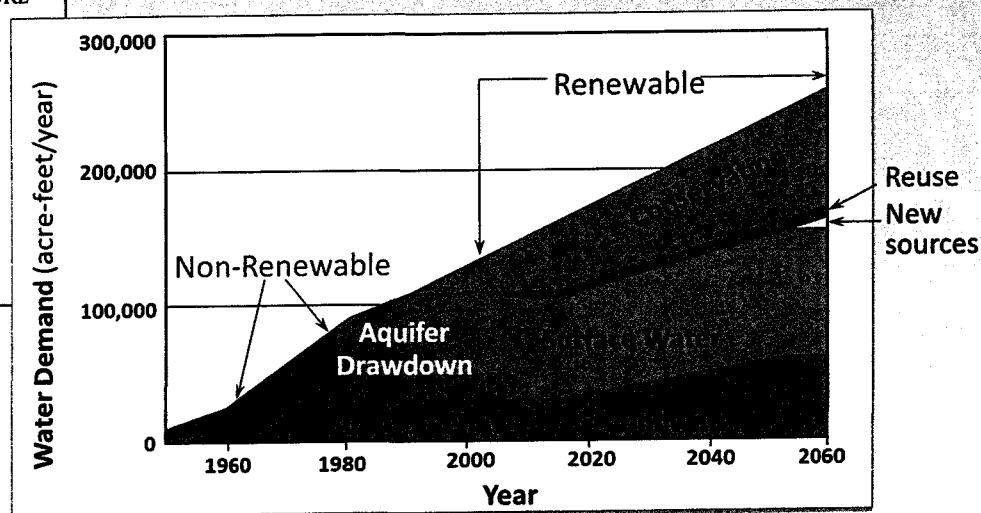
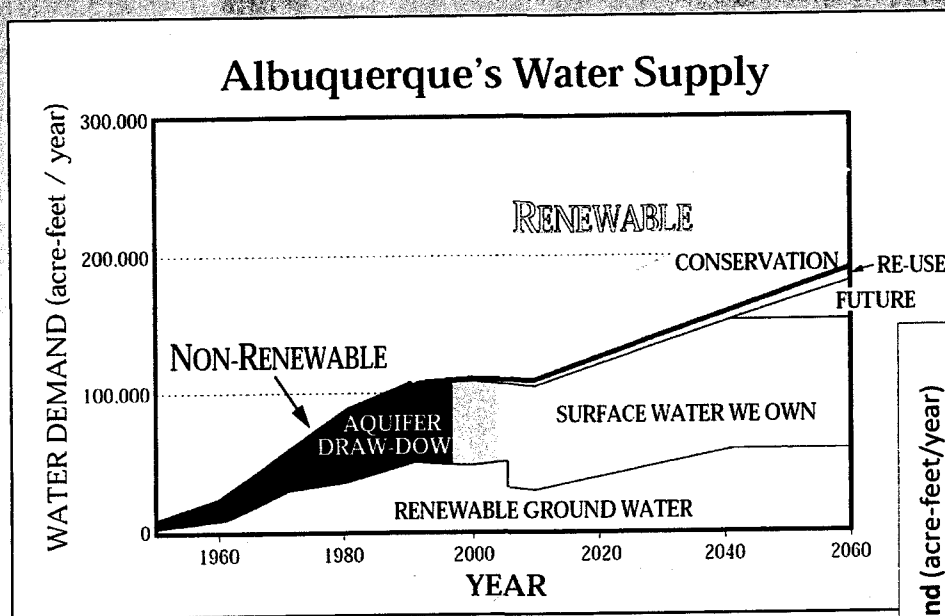
Katherine Yuhas, Water Resources Division Manager  
[kyuhas@abcwua.org](mailto:kyuhas@abcwua.org) (505) 289-3056

2004


# Builds on Successes of 1997 and 2007 WRMS

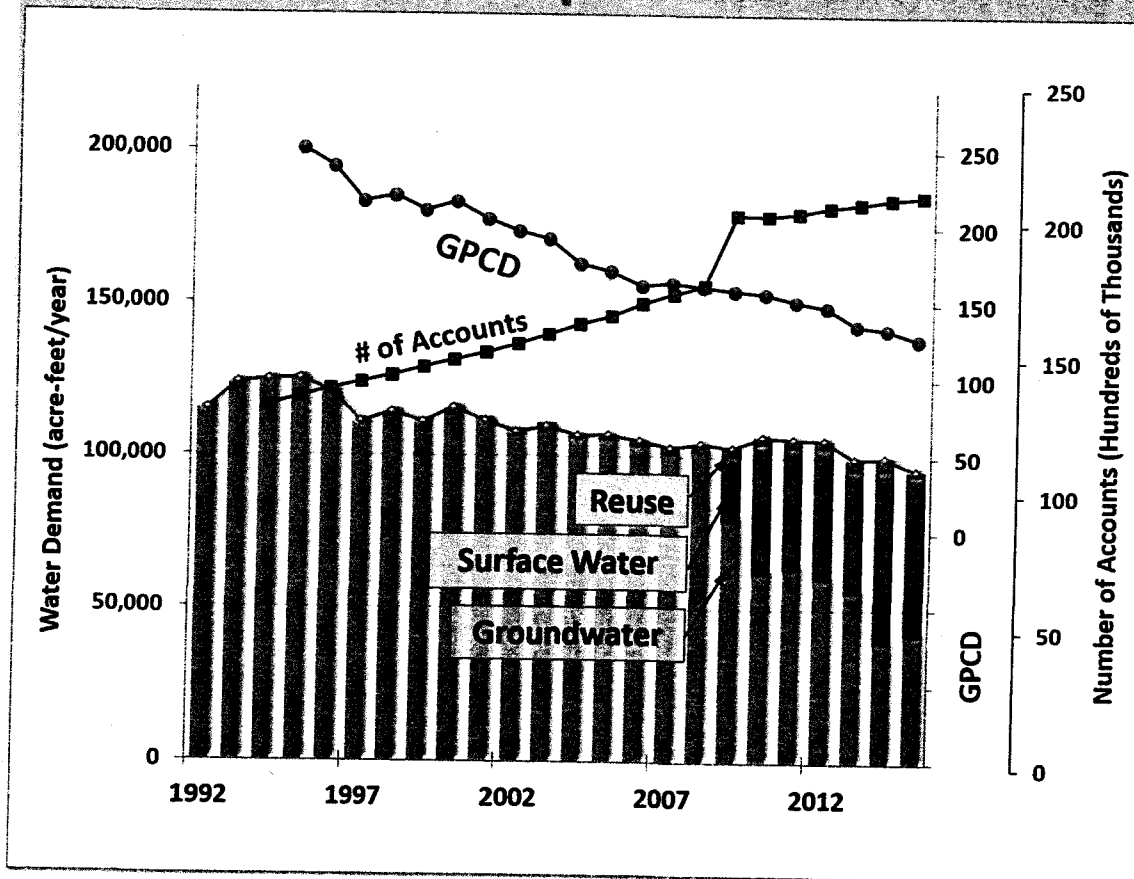


- Additional conservation
- Surface water as primary source
- Groundwater Reserve
- Previously gaps were left – this Plan fills the future supply gap

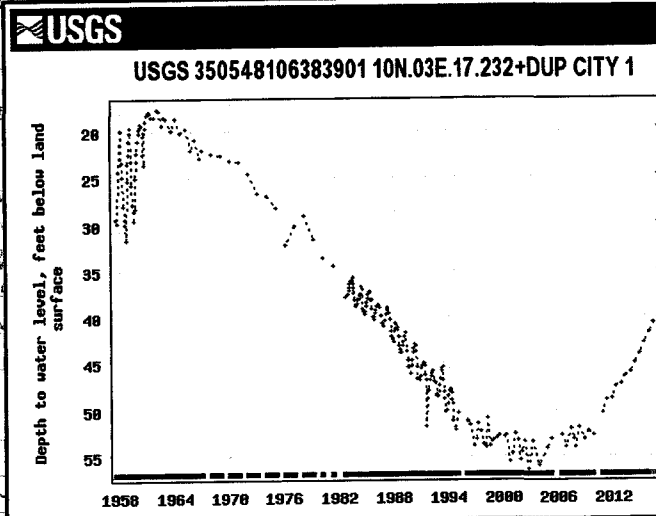
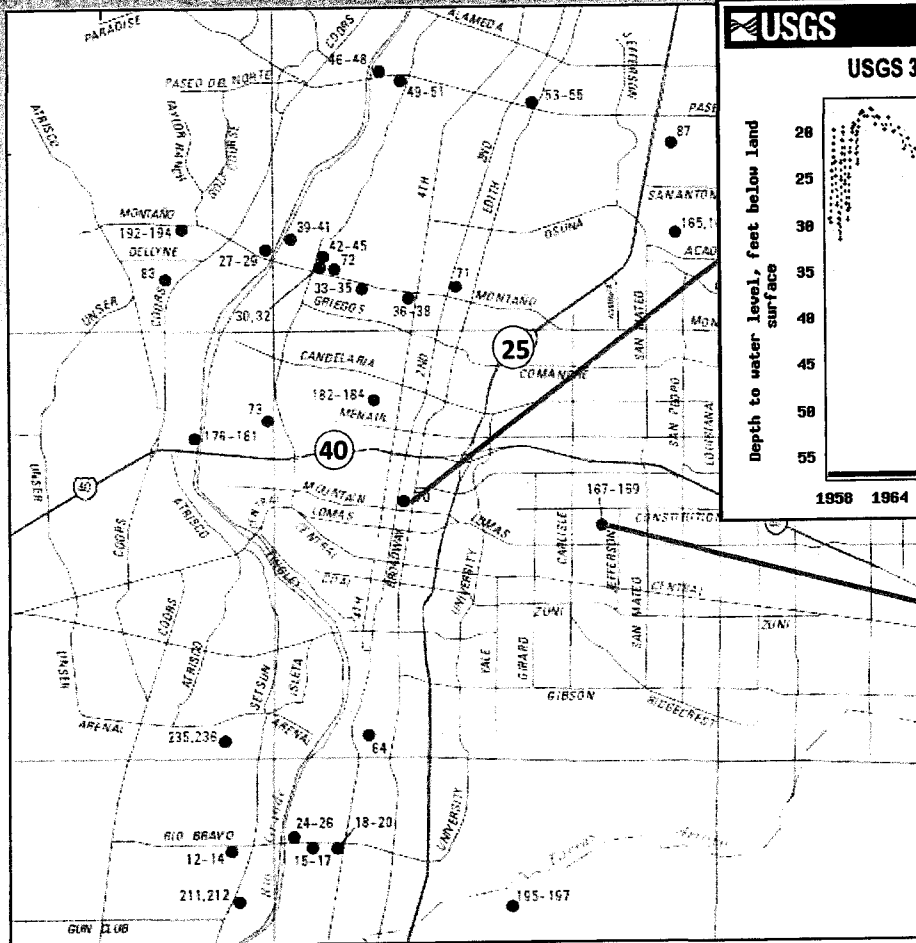
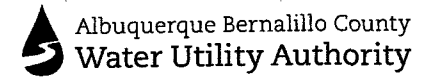


# Demand is Decreasing even as Population Grows

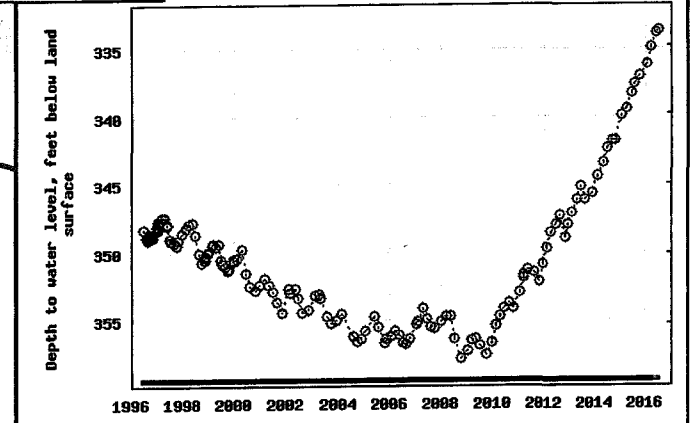
 Albuquerque Bernalillo County  
Water Utility Authority




# The Aquifer is Rising



350534106354703 10N.03E.14.324B DEL SOL DIVIDER



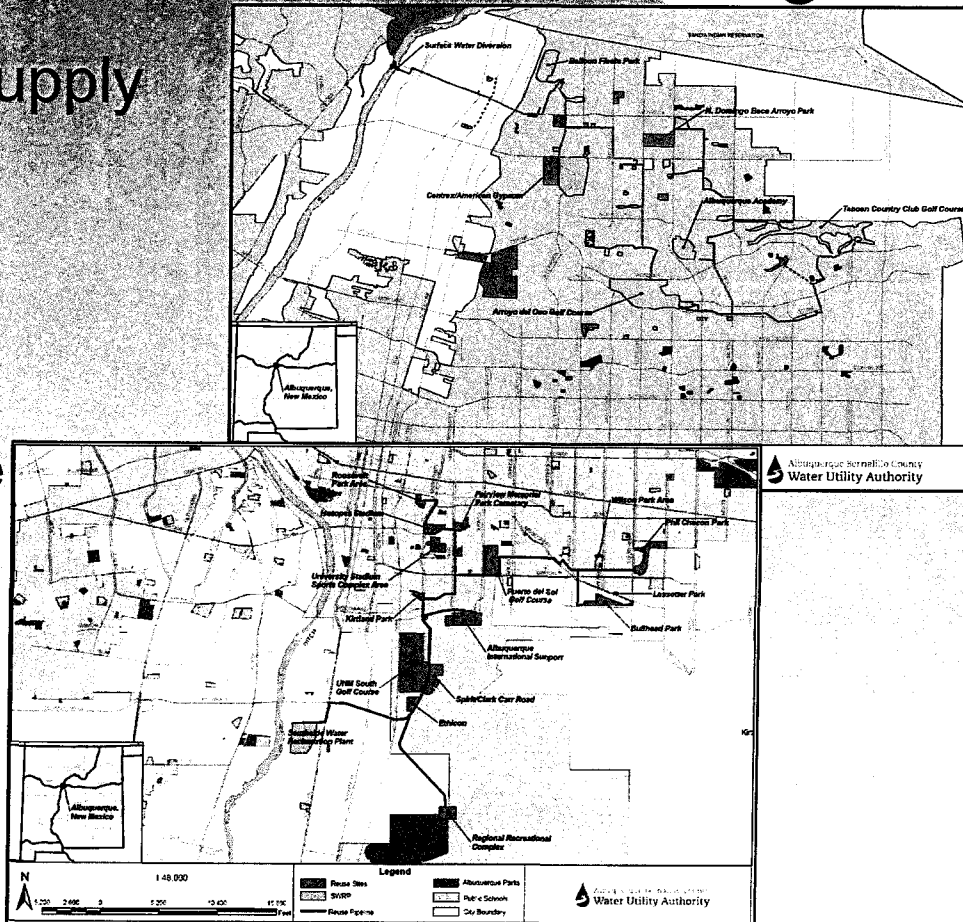
# Reuse/Non-Potable



Albuquerque Bernalillo County  
Water Utility Authority

## Current projects and supply

- Industrial recycling  
**~30 ac-ft/yr**
- North I-25 non-potable  
project ~ **2,600 ac-ft/yr**
- Southside effluent reuse  
**~1,300 ac-ft/yr**

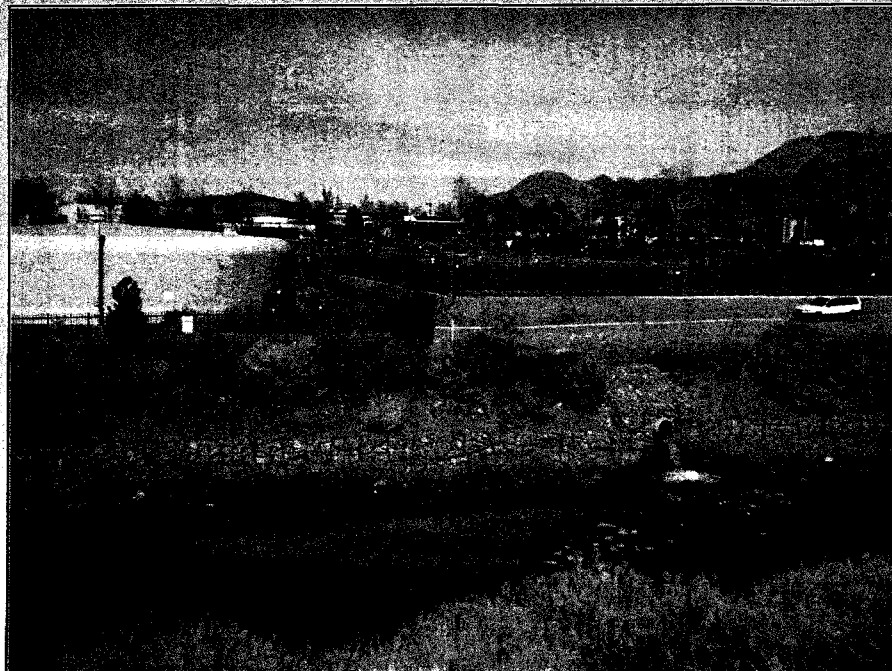
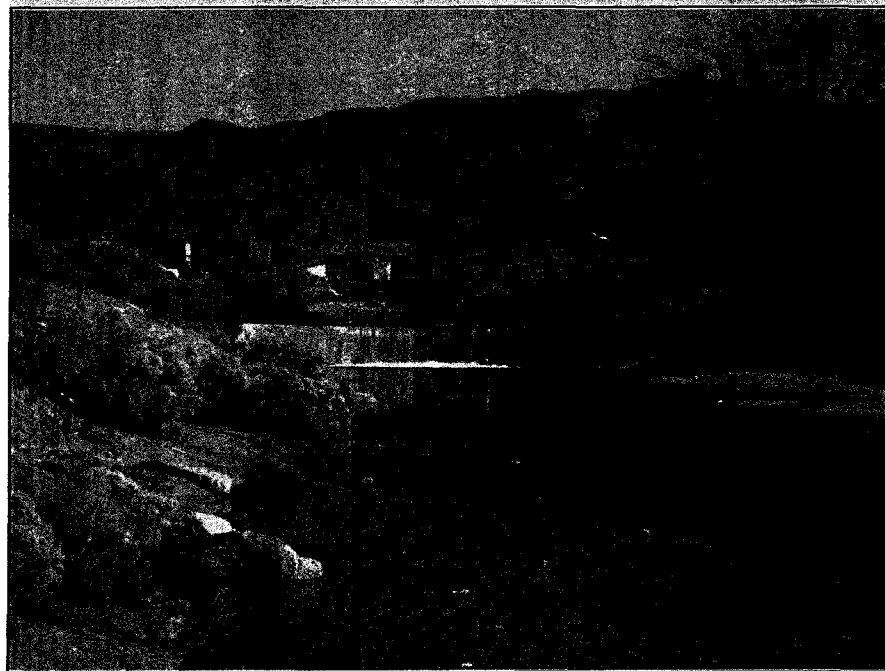
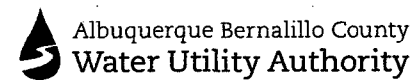




## Bear Canyon ASR

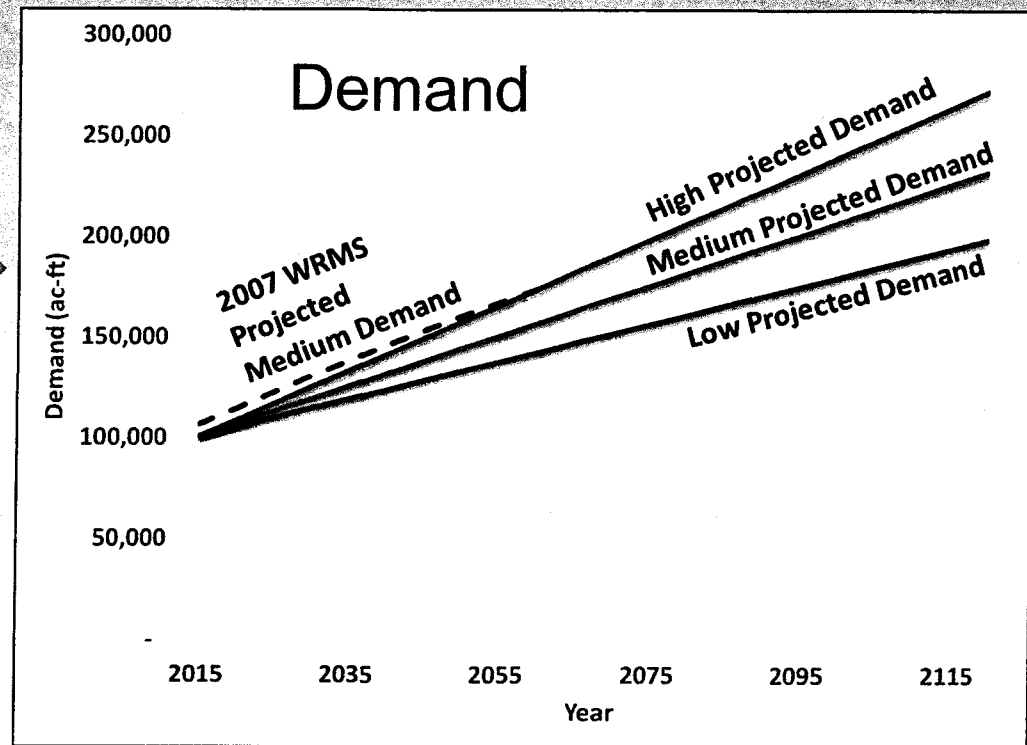
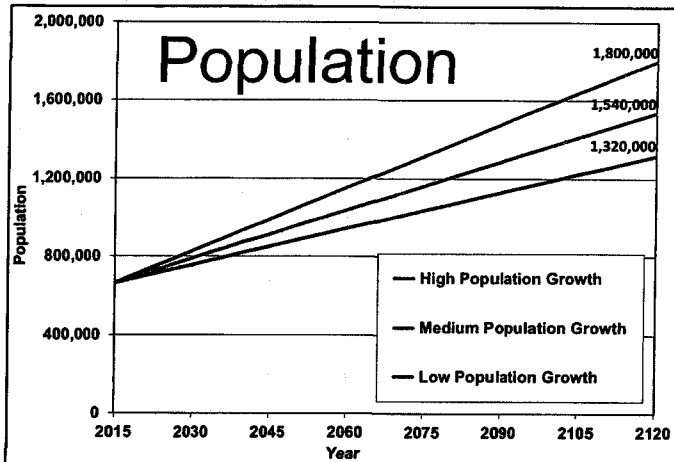
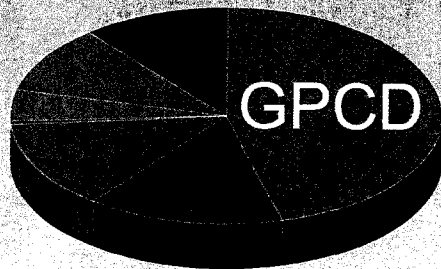
~300 AF recharged each year

1,037 AF currently in storage



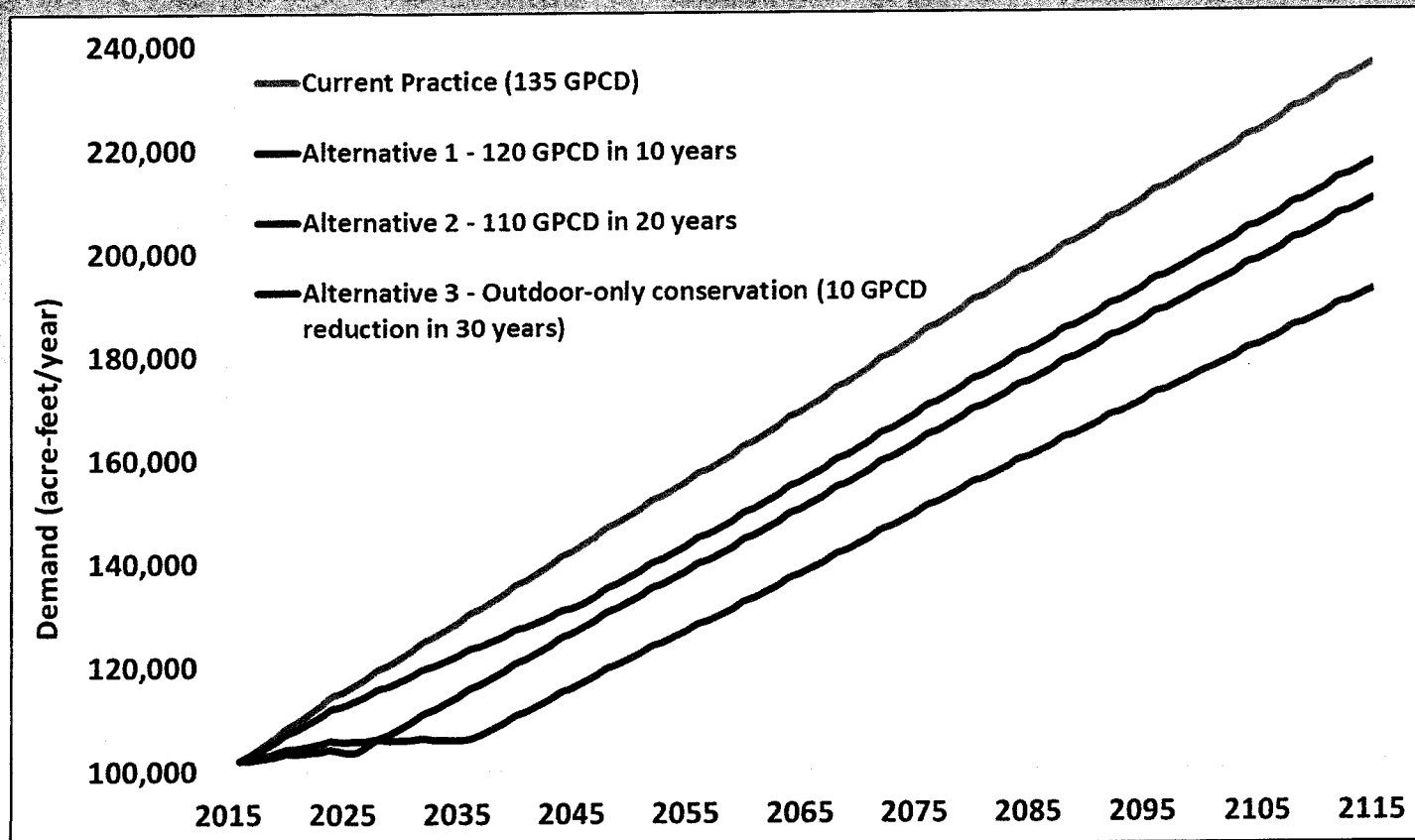
# Demand Projections

## Low, Medium, High





# Demand Under Different Conservation Alternatives



# Climate Change Data

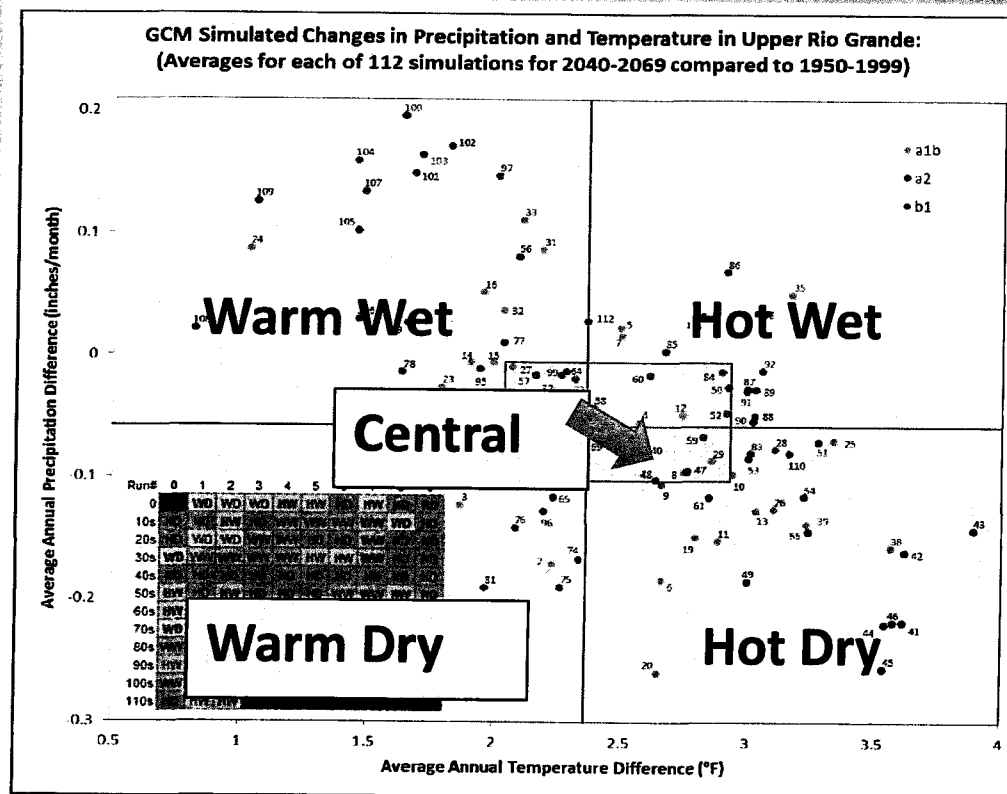

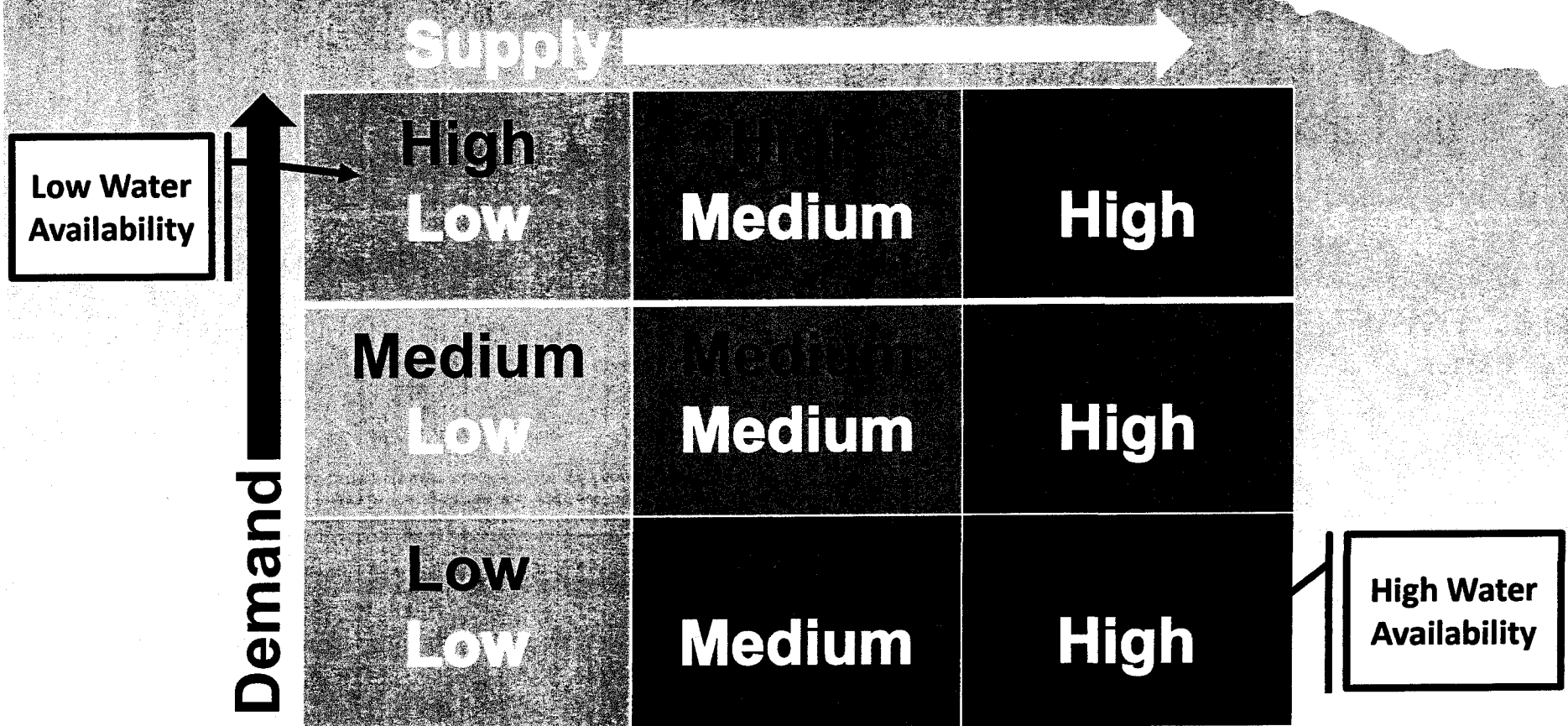


Figure 2: Plotting the temperature delta (X axis) against the precipitation delta (Y axis) to group the 112 GCMs into ensembles. The red lines represent the 50% values for each, and the red bounding square encompasses the 25% to 75% values.

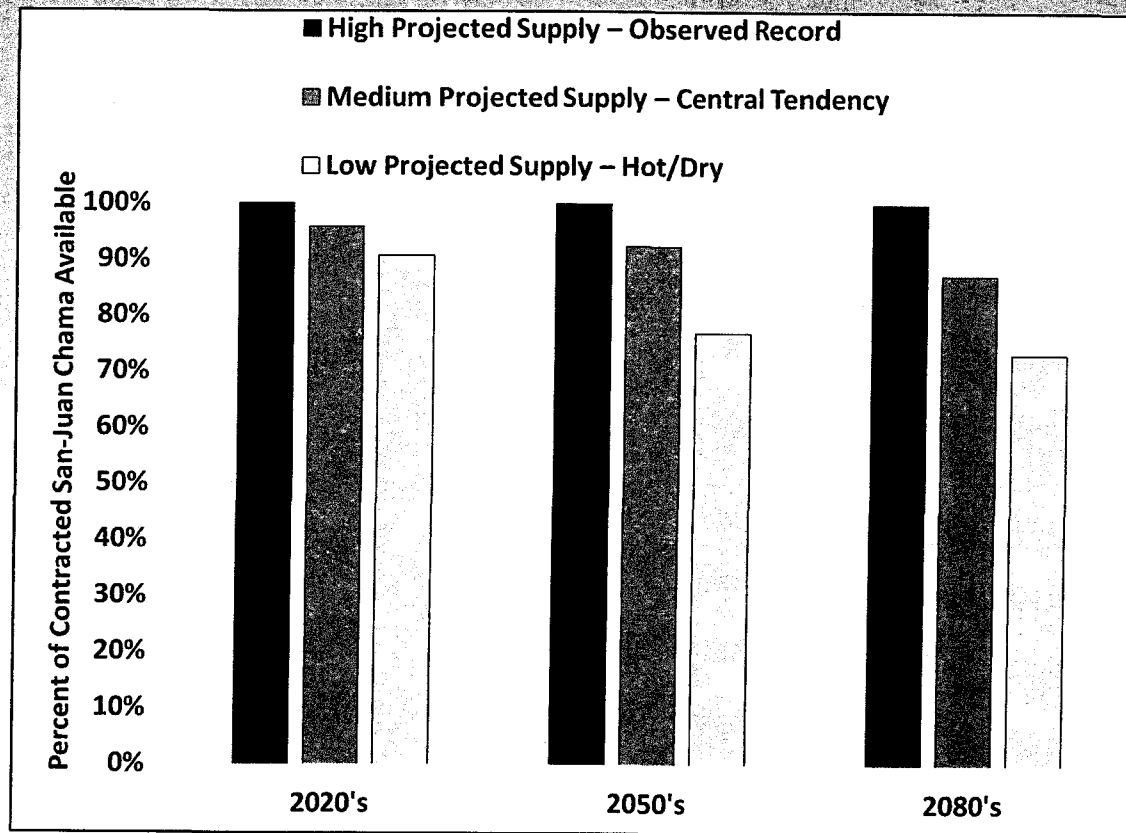
The climate-change data were derived by Reclamation from base data first developed as part of the West-Wide Climate Risk Assessment

# Water 2120 Planning for Uncertainty and Climate Change


 Albuquerque Bernalillo County  
Water Utility Authority

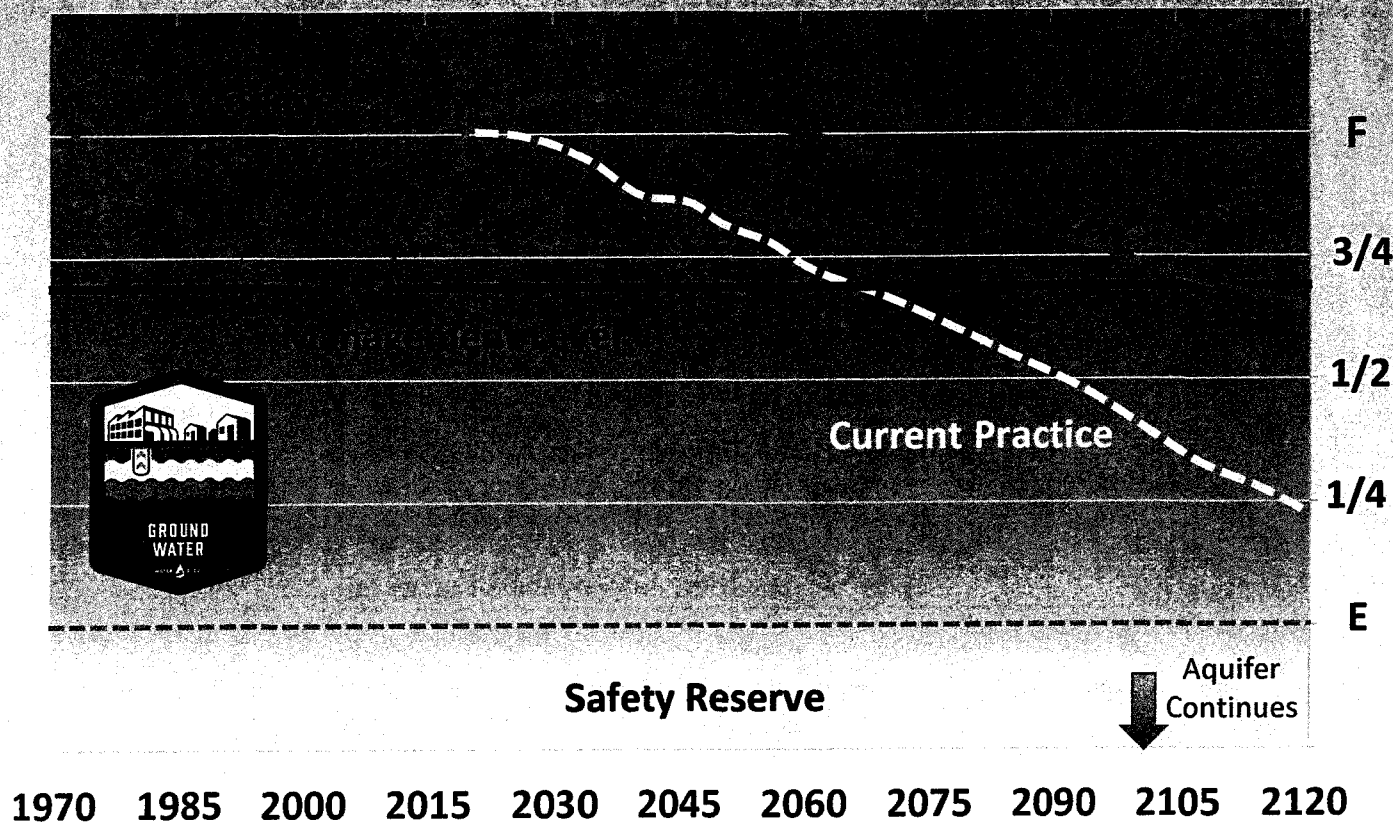


# Supply Projections Include Historical and Climate Change



# Groundwater Reserve Management

 Albuquerque Bernalillo County  
Water Utility Authority



Water  
2120

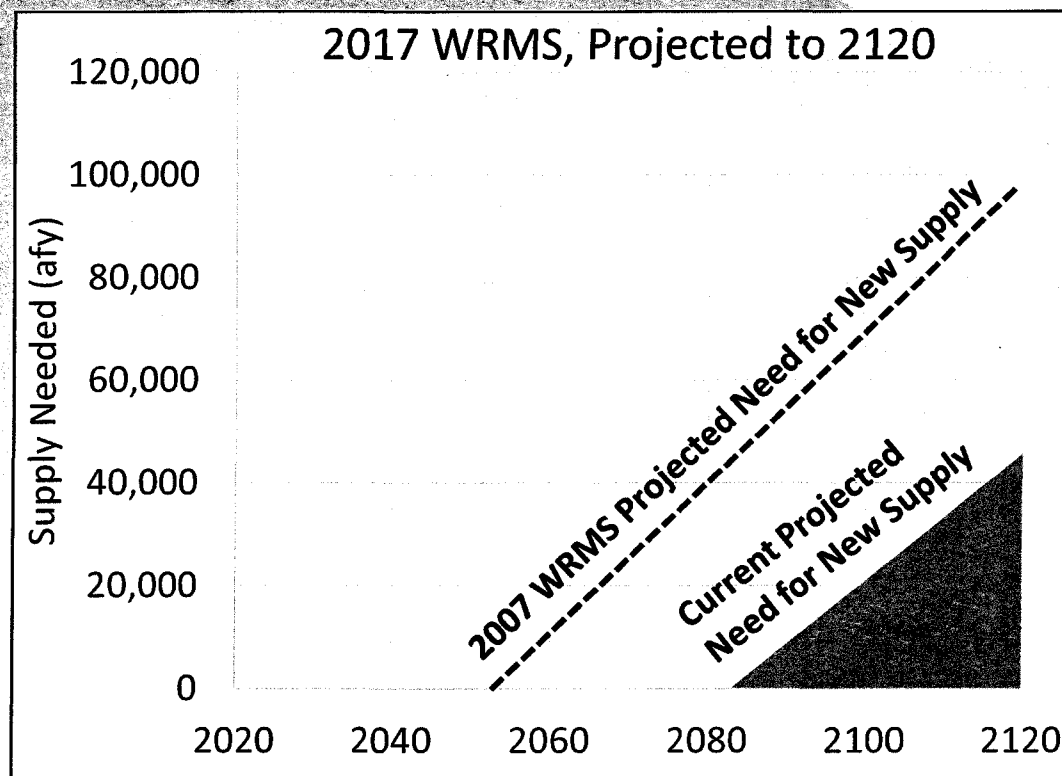
Current  
Practice



# Current Projected Supply Need

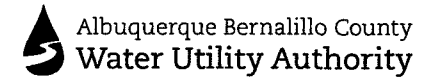
- Medium demand
- Medium supply  
(central tendency climate change)

Supply →			
Demand ↑	High	Medium	High
	Low	Medium	High
	Medium	Medium	High
	Low	Medium	High



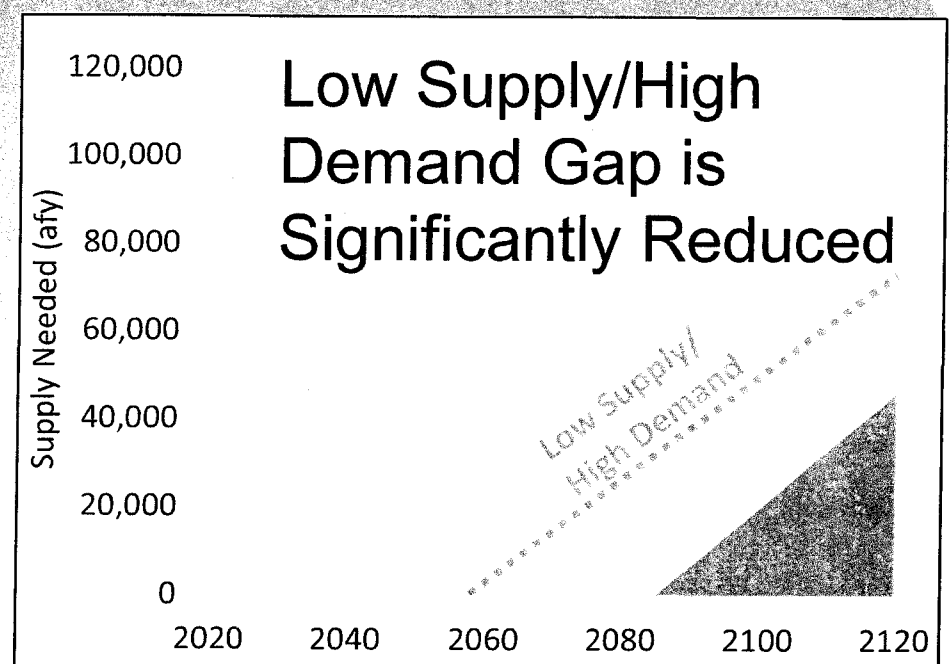
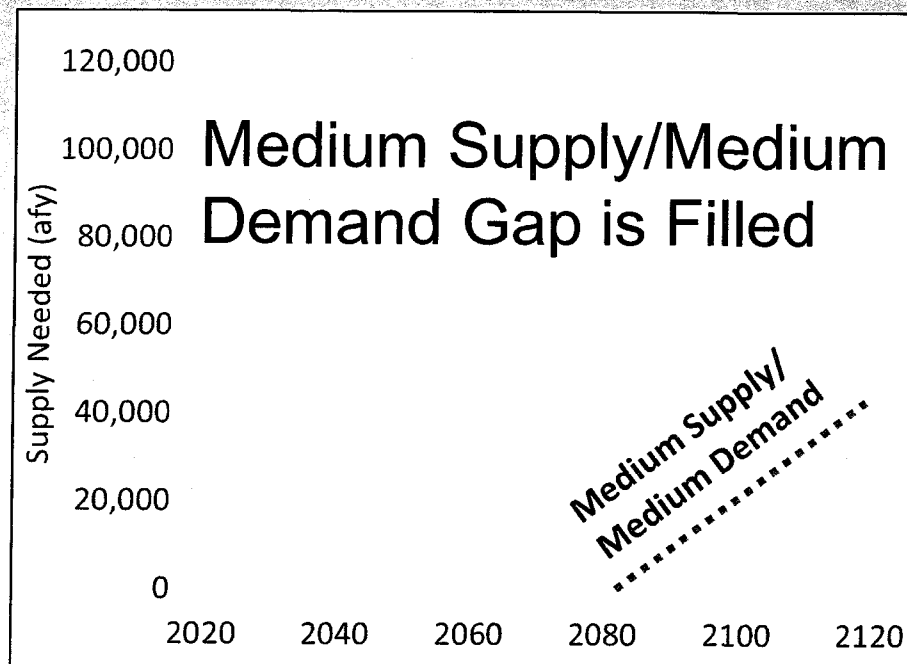
# Meeting the Demand

## *Portfolio 1*



- Existing supplies (groundwater and surface water)
- Conservation – 110 GPCD in 20 years
- Reuse – includes ASR and/or new storage
- Connect North I-25 Nonpotable to Southside Reuse
- Storm water capture
- Indirect potable reuse
- Watershed management

# Supply Gap is Filled by Portfolio 1





## Water Conservation & Drought Management Plan (aka 5 Year Plan)

### Committee Decision on Boundaries of Plan

#### WCO Controls/Significantly Influences:

- Alternative Water Sources
- Graywater
- Stormwater
- New Construction
- Commercial Rebates, Programs
- Outdoor Irrigation
  - Parks

#### WCO Does Not Control:

- City/County Private Wells
- Regionalization
- Living River
- Watershed
- Water Reuse

**Public Input**  
Summer/Fall 2018

### Results Based Accountability (RBA) Goals for Plan

#### Short-term RBAs

- Eye On Water
- Passport Program
- Rebates

**5 Year Plan Approved**  
July 1, 2019

**EXHIBIT**

2

2016 Demographic and Preliminary Data	Value	Category	Gallons	AF	Description			
Available Housing (Residential Units) <sup>1</sup>	####	Volume Diverted	1,507,376,700	4,626	Water diverted from local sources			
Occupied Housing (Residential Units) <sup>1</sup>	####	Volume Imported	1,284,590,000	3,942	Water imported via Buckman Direct Diversion			
Housing Occupancy Ratio	0.861	Volume Total Supply	2,791,966,700	8,568	Sum volume diverted and volume imported			
Owner-occupied Housing (Residential Units)	####	Volume Exported	42,640,421	131	Water exported to customers outside the city			
Renter-occupied Housing (Residential Units)	####	<b>Volume Available to Customers</b>	2,749,326,279	8,437	Volume total supply minus volume exported (demand)			
Owner Household Size (Persons/Household)	2.37							
Renter Household Size (Persons/Household)	2.18	Volume SFR Billed	1,406,554,400	4,317	Single-family residential customers			
Average Household Size (Persons/Household)	####	Volume MFR Billed	292,628,300	898	Multi-family residential customers			
Population Living in Owner-occupied Housing	####	Volume ICI Billed	801,260,200	2,459	Industrial, commercial and institutional customers			
Population Living in Renter-occupied Housing	####	Volume Other Metered	281,891,200	865	Other metered customers			
Population Living in Group Quarters <sup>4</sup>	1,321	Volume Provided to Customers	2,782,334,100	8,539	Sum volume SFR, MFR, ICI Billed and Other Metered			
Population Based on Occupancy	####	Volume Non-revenue (Available-Provided)	-33,007,821	-101	Volume available to customers (demand) minus volume provided			
Table DP05 Population Estimate <sup>3</sup>	####	Volume Reuse	397,390,000	1,220	Reclaimed wastewater			
PEPANNRES Population Estimate <sup>4</sup>	####							
		Single-family Residential Accounts	29,093		City billing records			
		Multi-family Residential Accounts	10,191		City billing records			
		Owner-occupied (SFR) Housing (Residential Units)	22,071		Table DP04			
		Renter-occupied Housing (Residential Units)	13,469		Table DP04			
		Renter-occupied Housing, MFR	8,776		MFR accounts times occupancy ratio			
		Renter-occupied Housing, SFR	4,693		Total renter occupied minus MFR occupied			
		Raw SFR Population	62,539		Number SFR accounts times owner-occupied household size			
		MFR Population	19,132		Number MFR accounts times renter-occupied household size			
		Group Quarters Population	1,321		Group quarters population			
		Raw Population	82,992		Sum SFR, MFR and group quarters population			
		PEPANNRES Adjustment	883		PEPANNRES minus raw population			
		Adjusted SFR Population	63,422		Raw SFR population plus PEPANNRES adjustment			
		MFR Population	19,132		Same as above			
		Group Quarters Population	1,321		Same as above			
		<b>Total Population</b>	<b>83,875</b>		Sum adjusted SFR, MFR and group populations			
		GPCD SFR	60.76		Volume SFR Billed divided by (SFR Population times Days in Year)	Ratio		Overall GPCD
		GPCD MFR	41.91		Volume MFR Billed divided by (MFR Population times Days in Year)	0.76	SFR/Person:	45.94
		GPCD MFR + Group Quarters	38.20		Volume MFR Billed divided by (MFR + GQ Population times Days in Year)			
		GPCD ICI	26.17		Volume ICI Billed divided by (Total Population times Days in Year)	1.00	MFR/Person	9.56
		GPCD Other Metered	9.21		Volume Other Metered divided by (Total Population times Days in Year)	1.00		26.17
		GPCD Non-revenue	-1.08		Volume Non-revenue divided by (Total Population times Days in Year)	1.00		9.21
		<b>GPCD Overall</b>	<b>89.81</b>		Volume Available to Customer (Demand) divided by (Total Population times Days)			-1.08
								89.81
		2016 w/o adjustment	2017 w/o adjustment	2017 with adjustment				
	GPCD SFR	56.95	58.22	60.76				
	GPCD MFR	38.89	40.16	41.91				
	GPCD ICI	19.66	25.10	26.17				
	<b>Total GPCD</b>	<b>86.47</b>	<b>86.11</b>	<b>89.81</b>				

<sup>1</sup> ACS 5-year average Table DP04 (Retrieved 3/11/2018)

<sup>2</sup> ACS 5-year average Table B26001 (Retrieved 3/11/2018)

<sup>3</sup> ACS 5-year average Table DP05 (Retrieved 3/11/2018)

<sup>4</sup> PEPANNRES (Estimates Universe Place 162, Santa Fe City, New Mexico) (Retrieved ????)

EXHIBIT 3