



# Agenda

DATE 1/6/14 TIME 1:16pm  
SERVED BY Caryn Grosse  
RECEIVED BY [Signature]

**SANTA FE WATER CONSERVATION COMMITTEE MEETING**  
**CITY HALL - 200 LINCOLN AVE.**  
**CITY COUNCILORS' CONFERENCE ROOM**  
**TUESDAY, JANUARY 14, 2014**  
**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 DECEMBER 10, 2013 WATER CONSERVATION COMMITTEE MEETING
6. CONSENT AGENDA
  - A. DROUGHT, MONSOON AND WATER RESOURCE MANAGEMENT UPDATE (Rick Carpenter)
  - B. STATUS UPDATE ON WATER CONSERVATION EDUCATION & OUTREACH (Laurie Trevizo)

**DISCUSSION ITEMS:**

7. 2014 LEGISLATIVE PROPOSAL ON WATER CONSERVATION (Councilor Ives, 10 minutes)

**INFORMATIONAL ITEMS:**

8. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE INITIATIVES: (Councilor Ives, 72 minutes)
  - A. GROUP #5- DOMESTIC WELLS WITHIN THE CITY LIMITS (24 minutes)
  - B. GROUP #1 – WATER CONSERVATION & DROUGHT MANAGEMENT PLAN UPDATE (12 minutes)
  - C. GROUP #2- WATER CONSERVATION EDUCATION/OUTREACH (12 minutes)
  - D. GROUP #3- WATER CONSERVATION CODES, ORDINANCES & REGULATIONS (12 minutes)
  - E. GROUP #4- REESTABLISH TREND OF NET ANNUAL REDUCTIONS IN PER CAPITA WATER USAGE AND IDENTIFYING LARGE WATER USERS (12 minutes)

**MATTERS FROM STAFF:**

9. INTRODUCTION OF ROBERT WOOD, WATER CONSERVATION SPECIALIST SENIOR (Laurie Trevizo, 10 minutes)
10. 11TH ANNUAL CHILDREN'S POSTER CONTEST (Laurie Trevizo, 10 minutes)

**MATTERS FROM COMMITTEE:**

**NEXT MEETING – TUESDAY, FEBRUARY 11, 2014:**

CAPTIONS: JANUARY 30, 2014 @3 pm PACKET MATERIAL: FEBRUARY 3, 2014 @3 pm

**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.

**Index Summary of Minutes  
Water Conservation Committee  
December 10, 2013**

<b><u>INDEX</u></b>	<b><u>ACTION TAKEN</u></b>	<b><u>PAGE(S)</u></b>
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Call to Order	Call to Order by Chair Peter Ives, City Councilor's Conf. Room – 4:00 pm	2
Roll Call	Roll call indicated a quorum	2
Approval of the Agenda The Chair request that Item B be pulled from the Consent Agenda and reported on.	<b>Mr. Wiman moved to approve the agenda as amended, second by Mr. Pushard, motion carried by unanimous voice vote.</b>	2
Consent Agenda	<b>Mr. Wiman moved to approve the Consent Agenda as amended, second by Ms. Randall, motion carried by unanimous voice vote.</b>	3
Approval of Minutes: Corrections: Page 2 – Laurie Trevizo, Water Conservation <del>Officer</del> Manager Page 2 – Caryn Grosse, <del>City Staff</del> Water Conservation Specialist Page 3 - #7, Open Discussion: <i>Utilization of the rebates has increased and the water rates for the City of Santa Fe - now are relatively high. It is unknown if the rebates have increased due to the increase of the water rates.</i> Page 4 - As long as there is an account and it isn't a rented building <i>and otherwise</i> meets the requirements; the city is willing to help.  Laurie said that they are looking at hourly readings. It cannot do the city of Santa Fe completely <i>because of the terrain</i> .  Page 5: Mr. Roth stated that the Santa Fe Builders Association is focusing on energy consumption and the next code cycle will be driving - towards <i>decreasing</i> water use and scoring conservation more heavily.	<b>Mr. Michael moved to approve the minutes as amended, second by Mr. Roth motion carried by unanimous voice vote.</b>	2-3

**Index Summary of Minutes  
Water Conservation Committee  
December 10, 2013**

<p>Page 6: The requirement is that they provide signs on the table or <i>note it</i> on the menu.</p> <p>Page 9: Laurie announced that they have a new Water Conservation Project <del>Manager</del> <i>Administrator</i> – Rachel Wexler who is working on rebate processing.</p>		
Discussion Items	Informational, no formal action.	4-6
Introduction to POSAC Members	Informational	6-7
Informational Items Rebate Analysis	Informational	7-8
<p>Group Reports</p> <p>Group #4</p> <p>Group #5</p> <p>Group #1</p> <p>Group #2</p> <p>Group #3</p>	Note that Committee Reports alternate at each meeting. Informational, no formal action taken.	8-12
Matters from Staff	2014 Meeting Schedule	12
Matters from Committee	Mr. Pushard moved to recommend approval of Nancy as a board member, second by Mr. Roth, motion carried by unanimous voice vote, 1 abstention.	12
Next Meeting	January 14, 2014	
Adjournment	There being no further business to come before the Water Conservation Committee, the meeting was adjourned at 6:00 pm	13
Signature Page		13

**WATER CONSERVATION COMMITTEE  
MINUTES  
TUESDAY, DECEMBER 10, 2013  
4:00p.m. – 6:00 p.m.  
City Councilor's Conference Room, Santa Fe, NM**

1. **Call to Order** - The meeting of the Water Conservation Committee was convened by Councilor Ives, Chair at 4:00 pm, City Councilors Conference Room, Santa Fe, New Mexico. A quorum was present at time of roll call.

2. **ROLL CALL**

**Present**

Councilor Peter N. Ives  
Melissa McDonald, Vice Chair  
Karyn Schmitt  
Tim Michael  
Giselle Piburn  
Doug Pushard  
Stephen K. Wiman  
Lisa Randall  
Bill Roth

**Not Present**

Grace Perez

**Others Present:**

Laurie Trevizo, Water Conservation Officer  
Caryn Grosse, Water Conservation Office  
Nancy Avadesan – Barker Realty, Prospective Member

Fran Lucero, Stenographer

3. **APPROVAL OF AGENDA**

The Chair request that Item B be pulled from the Consent Agenda and reported on.

Mr. Wiman moved to approve the agenda as amended, second by Mr. Pushard, motion carried by unanimous voice vote.

4. **APPROVAL OF MINUTES FROM NOVEMBER 5, 2013**

Corrections:

Page 2 – Laurie Trevizo, Water Conservation ~~Officer~~ Manager

Page 2 – Caryn Grosse, ~~City Staff~~ Water Conservation Specialist

Page 3 - #7, Open Discussion: *Utilization* of the rebates has increased *and* the water rates for the City of Santa Fe - now are relatively high. It is unknown if the rebates have *increased due* to the increase of the water rates.

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*Mr. Michael moved to approve the minutes as amended, second by Mr. Roth motion carried by unanimous voice vote.*

## **5. CONSENT AGENDA**

*Mr. Wiman moved to approve the Consent Agenda as amended, second by Ms. Randall, motion carried by unanimous voice vote.*

### **A. Water Conservation Education & Outreach: Events Update**

### **B. Update on 3<sup>rd</sup> Party Surveys**

#### **1. Residential End Use Water Survey**

#### **2. Demand Elasticity**

Ms. Trevizo made reference to the memo that was included in the committee packet and noted that it does not differ much from the memo reviewed previously with the exception of the project status. In October, 2013 when Ms. Trevizo attended the Water Smart Conference; she was able to speak with the Alliance for Water Efficiency Director. The Alliance for Water Efficiency was acting in a signatory to this project and they hired Mr. Freier and there were other grant funding commitments and grant funding sources. For example, the City of Santa Fe was funded by the Walton Foundation and therefore we did not pay in to being a participant in this third party study. The researcher made some conclusions and therefore followed a request to remove him from the assignment for this project. The Stakeholders, all seven agencies felt the same way; there were lack of communication issues and data sharing concerns. The City was providing a lot of data but we weren't receiving an analysis. The recent follow up call was to identify how to get the data materialized and a new project manager will be assigned. The Primary Researcher is the Economist and he is staying on the project.

## 6. DISCUSSION ITEMS

### A. Drought, Monsoon and Water Resource Management Update (Rick Carpenter - telephonically) (Memo dated 11/20/13 included in Packet)

It has been around for approximately 2 years and basically what we do is update on the drought and the monsoon. Mr. Carpenter talked about the additions in the memo; local conditions – Source of Supply Utilization Summary and Upper Santa Fe River/CRWTP. At the request from this committee we have added information on the San Juan Basin. We are in the 3<sup>rd</sup> year of the most significant drought. The Sept rains and monsoon have helped. Our local reservoirs have benefitted significantly from that. We have about 25-26% storage coming in from that. We are at about 66% and runoff is holding steady at about 2 million gallons in to the reservoir and we have a pretty good snow pack; this is just as of today. The upper level gauge is above 24 inches and it is a very wet snow, the soil is already moist. We are going to get good runoff into our reservoirs. Luckily the September rains and these early snows have helped. The stream flow forecast for the San Juan River Basin is 75% of the 30 year average (1981-2010) for 2013. Heron reservoir is currently at a historic low level of 30%% capacity. The forecasters are starting to think about revising some of their model output, it is not the Rockies on the other side of the divide but at least the San Juan's may actually get a little bit better of a snow pack than we were thinking of in the year. That 30% runoff in the Heron might get better but if it doesn't we will still have some significant issues. We have been running the Buckman wells more than we normally would like too. Mr. Carpenter and the committee followed the description from page 2 table. Mr. Carpenter stated that they are still trying to co-mingle the Buckman well water with the surface water so the temperature of the water doesn't get real, real cold. When it sits in those tanks it is almost at freezing before it goes in to people's meters and we start having frozen meter issues. Unfortunately we are running those wells a little more than we want to, but it is not a lot. The demand is way down, 6 ½ million gallons a day.

Rio Grande Basin – Not much has changed even in the long range forecast. Not too sure how much will come down in native flow, probably at best no more than average.

If we don't get some good snow in the San Juan's, than the San Juan – Chama Project will have curtailed deliveries during the next irrigation season. It isn't necessarily bad for the City of Santa Fe or the Buckman Direct Diversion project because we have stored water in Abiquiu so whatever percentage of our full allocation may show up in Heron. The only issue for us is whether or not there is carriage water, whether that is San Juan-Chama water releases or native Rio Grande that may be or may not be in the water. After those constraints, even if we have diminished the delivery from the Federal Government on that project, because we have stored water we should still be able to produce close to 100% this year and maybe even next year by virtue of the stored water.

#### Q&A

Mr. Wiman: I see that a lot of the time we are using the Buckman wells because of turbidity and sediment in the river, that shouldn't have been a surprise in the design. Has there been any thought to reconfiguring the design at all regarding pre-filtrations to make sure to capture all the water passing by; both the native flow and the San Juan Chama?

Mr. Carpenter: As far as redesign, I wouldn't say that, we have seen elevated turbidity and sediment more than we would have anticipated during the design phase of the project

due to the severity of the drought and the wildfires. It is a little late to change things around as far as the mechanics of the project is concerned. What we can do is mix and match and plan ahead for the other sources of supply that we have so that we are still able to meet demand. Some of the other things that we can do, is we can always make the decision; what it really boils down to is how badly do we want to handle the solids? From a sediment standpoint and what the sand separators can pull out and what drops out by gravity in the basins at the plant and also if turbidity is high, how much (inaudible) do we have to add which also adds to the solids that come out of the gravity thickness from these two processes? We can handle that, we can go up to 2,000; we can go up to 2,500 ncu in that river if we have to. If we had a catastrophe on another source of supply, we could do that. It is a matter of how much we want to put that equipment through for maintenance or repair perspective; we can still do it and how much do we want to pay to dispose of the solids. It would be a moderate shift in the paradigm or how we are planning to operate the system as a whole rather than just the specifics of BDD.

Mr. Wiman said that his concern is how much we have been pumping from the Buckman wells this year. Do you know how that compares with last year at this time?

Mr. Carpenter: It is higher because we had one phenomenon that has not shown up until this year and it was what we hope and what we think now, since we have been able to have a good look at it over the last several weeks. We had some sand show up, a sand bar built up right in front of the screens on the diversion structure itself in the river. A very large screen, very hard angular sand, and the origin we are not sure of yet. That sand bar according to all of the geomorphologic modeling we have done was never supposed to show up, but it did. Primarily because of those historic rains that we had in September. That sand bar has primarily cleaned itself out and we are seeing it return back to normal, but through July and August it was mostly turbidity from the monsoon. Because of that sand bard, we were shut down for some weeks completely, and some other weeks, maybe 1, 2 or 3 \_\_\_\_\_ at the most. Because of that sand, it was clogging up the intake. That sand bar has moved along now, the river is cleaning itself.

Chair Ives: The reservoir levels, you noted that between the two it was at 2,400 ac. ft.

Mr. Carpenter: Between the two we are at about 65%, at anytime between the two storage is at 4500 ac. ft.

Chair Ives: What was our permitted amount in 1929 pre-compact?

Mr. Carpenter: Pre-compact was 1,063 and since then our permitted storage is 5,040 annually.

Chair Ives: Looking at our reservoirs had a huge influx from the monsoonal rains but it didn't look like the other reservoirs, up and down the Rio Grande and Rio Chama fared as well. What is your sense of how far they came back in terms of total storage as a result of the monsoon influx?

Mr. Carpenter: That is the good news and bad news, our local reservoir benefitted a lot. The other reservoirs up and down the Rio from Elephant Butte all the way up to Heron varied quite a bit. Elephant Butte came up about 15% and El Vado for some reason did not come up as much as Abiquiu for example, and then Heron is Heron so we were back to 30%. It was pretty variable, everything was significant. It really bailed us out of what

I think would have been catastrophic and now maybe not so catastrophic up and down the Rio. Of course all the reservoirs are operated differently. Cochiti for example has been releasing water because their legislative mandate is flood control and recreation so they have been releasing water. It is relatively variable from one reservoir to the next and it is hard to compare then because they all have different rules or operating and storing. Generally speaking from Elephant Butte to Heron it is a significant concern that if we don't have at least an average snow pack and run off this year; keep in mind the soil moisture is way up. If we do have an average snow melt we should have at least an average run off. Heron was only 30%.

Q: With Claudia going to the county, who is wearing that hat?

Mr. Carpenter: Rick is at this time. We are down several positions some of which are key positions like Claudia's, offers have been extended to two employees and one will start December 16<sup>th</sup> and the other December 30<sup>th</sup>, there will be a significant learning curve.

The Chair asked that the new staff be invited to the January meeting. Mr. Carpenter will be happy to do that. Ms. Trevizo will have a new employee and Mr. Carpenter will have three new employees.

## **7. Introduction to POSAC Members**

Melissa McDonald introduced Anna Hansen, Chair for the Parks Open Space Advisory Committee (POSAC).

A brief introduction noted that POSAC was created in 2007. The first mandate was to assess how to improve the parks and oversee the \$30 million bond for Parks and Trails. POSAC members have worked on this mandate by managing the bond allocation, working on ADA requirements and improvements and new irrigation in the parks. The mandate was very specific as to what needed to be done. POSAC did not oversee the trails; mostly the parks and open space purchases that were taking place. POSAC worked on the 2012 bond and added another \$7 million to augment some of the parks that did not benefit from the 2007 bond money. Southwest Activity Node (SWAN) (acronym for the park that will be built at Tierra Contenta) was a targeted project. It was stated that there are many multi-faceted opportunities that can happen. This was one benefit from the 2012 bond acquisition. Ms. Hansen was appointed Chair in 2013 and Ms. McDonald was appointed to the committee this year as well. All the parks have grown but the staff has not grown for upkeep nor have the resources. One of the ways to contribute is through water conservation now that we have new irrigation systems. There are a lot of opportunities for Water Conservation. The Chair from POSAC would like to have more collaboration amongst committees to work on projects together. She would like to work with the Sustainable Santa Fe Commission. The commission consists of 9 individuals (she listed the name of the members)

Ms. McDonald commented that POSAC welcomed her input immediately and suggested that the Water Conservation Committee and the Water Conservation office need to be a part of their endeavors. There is an opening for the collaborative team to make a change. Ms. McDonald stated that the WCC has not had a Master Plan since 2001; it needs to be updated with a water conservation perspective. We would like to come back and have the Water Conservation Committee input. Ms. McDonald reported that they had a great meeting with Director, Nicholas Schiavo and at that meeting talked about the difficulties that parks has with their water usage and water conservation efforts and that type of thing. Ms. McDonald stated that this was a great



opening to work with the Water Division to look at some of the things that she has been reporting on such as the public benefit rate, or perhaps bulk water buying. Ms. McDonald stated that they are assessing the park water usage. We are probably going to pick 5 parks that are high water parks and really do audits and get our numbers together and go back to the Water Division to discuss. The next POSAC meeting is Tuesday, December 17<sup>th</sup> at Frenchy's field from 3-5 pm and the WCC is always invited to attend.

Ms. Hansen said that she is in support of a new Master Plan.

Ms. Randall stated that we need to work hand-in-hand, the city has a model and if water conservation is not part of that plan, it is a travesty.

Mr. Roth asked what percentage of water the parks use.

Ms. McDonald: 6% and they are committed to bringing that down.

Chair: How much is included in the reclaim?

Ms. McDonald: The 6% is not included in the reclaim.

Ms. Hansen stated that the water in the reclaim is already committed.

Ms. McDonald noted that Karyn Schmitt and Tim Michael are also working with the POSAC.

## **8. INFORMATIONAL ITEMS**

### **A. Rebate Analysis – Doug Pushard**

A draft is included in the packet today (45 pages). It is close to final, we will incorporate all of 2013 data in an update and hopefully have this done by January, 2014. The current state of the report; framework of the report is done, 2013 will change some of the conclusions and some of the recommendations. The Conclusion section and Executive section are lacking at this time in the present version, but it is known that they will require more attention and detail. Rebate programs have saved us water. We still have lots of room for rebates in the outdoor section. We have done a lot of good noted in the in-door section; we need to do more in the out- door section. We do not look at the rebate in just saving water; we take into consideration the customer and what the outlay that the customer will have to spend in order to implement it and it is different between residential and commercial. When looking at the rebates we have to look at both sides of the equation. A simple one is when we look at cisterns, the rebate we give for cisterns, clearly from the city perspective it saves water when people implement them but the amount of money we are giving, there are very few of them that have been done. Rain barrels: If you look at the number of rebates we have given for rain barrels, we have not given a lot of rebates but there are a lot of rain barrels throughout the city. The whole intent is to modify the behavior from a short term perspective.

Mr. Roth: Did you calculate how much water has been saved? Total city usage per year?

Mr. Michael: 1,250 ac. ft. will be saved for the life of the device.

Total City usage per year is 10,000 ac. ft.

Mr. Wyman: How would you present these findings to the city and plan for future rebates?

Mr. Michael: The on-going rebates will continue to be in effect. In time people may lose interest, some of the rebates are not effective and possibly should be abandoned.

Mr. Pushard: The program is working; we may want to re-evaluate the amount of money we are paying. Mr. Pushard is working with Ms. Trevizo on the outdoor topic and getting commercial businesses to participate. The intent is to have a meeting with Mr. Carpenter and Ms. Trevizo to discuss specific recommendations and bring back to this committee for discussion.

Chair Ives: Thank you for the hard work in doing this analysis. The Chair would like to challenge the committee; "we see how the rebates have impacted the city; how do we use this moving forward." Ideas: If you do this we will give you this benefit. Another approach might be, regulate some of the uses and figure out how people can have funds available for certain items. Chair Ives would like to know what the market penetration is and set a goal on what the market would like to have.

Mr. Roth: It is known that some of these rebates will need to be codified in the future.

Mr. Pushard: Group #3 will report more. Rebate Program is a very effective tool but it also will take a long time to have a high penetration rate.

Mr. Roth: Impact fees, could encourage better behavior as it pertains, to energy and water.

Laurie Trevizo: Thank you to Tim Michael and Doug Pushard; it was a good learning experience as we looked at the history of the programs. Even as a historical document it puts all those pieces that we can refer back to as a resource of information. This information is noteworthy that shows the pros and cons on how to implement a program.

Mr. Pushard said that there will be two sets of conclusions; how they would pertain to the city and how they would pertain to others. Mr. Pushard would like to be on the February meeting agenda.

## **9. Group Reports Water Conservation Committee Initiatives**

### **A. Group #4 – Re-establish Trend of Net Annual Reductions in Per Capita Water Usage and Identifying Large Water Users – Karyn Schmitt**

Ms. Schmitt – Thank you to Tim Michael and Doug Pushard for doing the rebate report; it is good to see the evaluation for all the various things. She reported that they are working with the Parks and other items of concern. The rebate program doesn't cover out-door a lot as discussed earlier nor cisterns, pop up

sprinkler that use lower pressure for higher flow and so forth. We met with Ms. Trevizo today and discussed looking at add-ons that will basically take your regular clock and make it more energy efficient. We are looking at ET controllers and the price is very expensive. When looking at residential as well as commercial, this could work well with the parks and we talked about doing a pilot project and something to talk to POSAC about. That might be an easy thing you put on there and you get a percentage of water right away compared to if they have a setting, this will take it down. We continue to try to figure out how much we've been saving with our efforts is something that we have been working on as a committee for the last couple of years. Ms. Schmitt will be requesting to be on the call for the advanced metering infrastructure system. Basically the RFP has gone out to providers to see what they can offer us in terms of metering; this is not the billing system. This will be a good tool for the homeowner as well as the city to see if all the needs before the firefly was installed. Laurie said that it offers some pieces not all the pieces.

The Chair challenged that presumption and suggested that the city should go out to look at a unit that does everything that it is interested in having done and see if a current manufacture of the various types of units might not be willing to reinvent the wheel for us as part of that process.

Ms. Trevizo showed the Conserve Track which is in the Water Conservation office that controls the data and we wanted to see what comes up that can interface and facilitate all the work that they have to do. One rebate request has quite a few steps and to correlate all of this with our metering and billing system, that is a challenge.

The Chair is working diligently to get a strong IT department with the City of Santa Fe to accomplish so many of the high technology opportunities and challenges we have before us.

Ms. Randall: We are interested in any type of remote reader – we would like to monitor water use on a real time daily basis. Real time watering on all of our lines is what we would like. Lisa said that she would offer the schools for any type of pilot programs for the remote reader.

Ms. McDonald wanted to be clear that there are two RFPs, one for the meters and then a similar RFP for the billing. When you talk about an IT person we need to make sure that these two things are really happening together. I know that Nick Schiavo is aware that they need to happen but doesn't show a strong a strong concern but I think it is really important for everybody to be asking this question. If these two things don't work together we are missing our opportunity. From the Water Conservation Office perspective what we talked about today, is really most effective if the rebates can then go to the water bill and get automatically applied. We need to make sure that all the departments that are important to the billing are addressed. A separate discussion should be held with Ms. Trevizo to assure this is on her list.

B. Group #5 – Domestic Wells Within the City Limits – Stephen Wiman

Maxine Paul, Graduate of Columbia University, BA in Environmental Science and is a Masters Candidate in water resources at UNM. Mr. Bob Kriger – Architect, Rain Vessels Company which is architecturally sound and aesthetic way to store water. Bob is on the Private Well working group along with Rachel Wexler from the Water Conservation Office. Doug, Grace and Peter who just left; Pete is our secret weapon as he is our hydrologist. Two days after the last Water Conservation committee meeting we had a download from Claudia and the scope of this project, which I believe Maxine may mimic or come close to what Claudia laid out, it is a huge task. My personal interest as a geologist and interest in water conservation is to know the impact of pumping private wells on the regional aquifer. We will work as a group with Maxine as she goes forward with her study. The initial emphasis is to work amongst us on the hydrologic aspects of this, including Peter and our overall committee.

Maxine Paul: The UNM Water Resources Program has a professional project program; my project is not a PhD dissertation. It sounds like it covers a lot of issues but really it is a step back looking at the relative case law that emphasizes issued on domestic wells across the west and Santa Fe. We want to see if it can provide the example of how local ordinances are beneficial and to see if they can address some of the broad concerns on domestic wells. I am working with Claudia Borchert, Mr. Reed Benson at the Law School, Bob Barrens, Director of the Water Resources Program. What am I interested in or if people are interested in talking to me about domestic wells; I am interested in what are the most important problems may they be implementation issues, is it metering that you think is the biggest issue, is aquifer sustainability a strong topic. Does conservation really matter, I am asking for help to determine some of the most specific concerns. Right now there is not a lot of literature on domestic wells in New Mexico. I am looking at writing about 35-page result paper on natural resources. Right now there is not a lot of literature on domestic wells in New Mexico that I can use for a paper.

McDonald: Is this a city and county effort? There are concerns that cross over from the city and the county.

Maxine: The ordinance is going to be the main policy part that the city has done, but the county is necessary to include as a lot of issues are about boundaries as they cross over to the city wells. The county has very little regulation on domestic wells so it won't be difficult to look at both.

Chair: A pleasure to meet you and have you working on this. One of our biggest problems is ignorance; we may know that there are 711 wells across the city registered at the state engineer's office we don't know what the impact is from those wells. Accuracy, are there other wells out there that aren't registered with the city, hydrologist from the river, Marcos Martinez does the water work within the city and he will be a good resource. I would be curious to see if the city at some level could compel people to meter their wells so we would actually have a sense of that. That would be a policy goal, as we simply do not know the answer to those questions. There would be legal concerns through the OSE policy over the last 60 years in terms of domestic wells. The Chair would like to

understand from a policy perspective fully the legal arguments for getting meters in place and from there assess the impact of the problem to figure out the direction we want to take in a realistic manner.

Ms. Wexler: Metering is a requirement of the existing ordinance regarding domestic wells but it is not being enforced.

Chair Ives: The question is whether or not we can compel it. We are interested in any potential changes to the ordinance that would leverage our capacity to gather and track that information and understand it as part of the city's water venture.

Chair: What does state law provide?

Maxine: Comment on metering that has taken place, shows 141 users in the area and they don't end up using that much from their wells, ¼ ac ft. at an average. However, the ordinance has no way to enforce metering so you are getting survey bias. Only people who are interested in reporting are reporting. There is definitely a lack of information. There are restrictions from statute that says they can't mandate or can't enforce metering.

Mr. Wiman will have a meeting tomorrow and collaboration with Maxine will take place from the hydrological perspective to get her started. The city doesn't really know how many wells are within the city limits.

C. Group #1 – Water Conservation and Drought Management Plan Update

Mr. Pushard – Brainstorming session was held, as a follow up to last month's meeting, strategic plan of the drought management plan would include those recommendations. It was the request that the top 5 items be sent to Grace and the request was made again. It would be in the appendix and may not make it to the report. Worked on guiding principals, if you have any comments send them to Grace. Committee will meet in January. The intent is to edit and come back and review the document, February deadline may not be met, hopefully by March.

Ms. McDonald, what is the objective of the 5 goals?

Mr. Pushard: What you would like to accomplish in your working group, for example the parks – conservation strategies. It will go in to the strategic plan which is an appendix of the drought management plan. The plan is not due until the end of next year but it has to go through the public comment path for review.

D. Group #2 – Water Conservation Education/Outreach

Mr. Wiman – gave a presentation to the Realtors, good attendance from the Water Conservation members. Thank you to Nancy for her planning and she will also help to get the committee scheduled again. No feedback at this time. Nancy said that she did get some great questions from the Realtors Association and is assured more questions will result from the Realtor Brown Bag. 10-15 minutes wasn't much time to present.

Ms. Schmitt met with Javier Gonzales, candidate for Mayor who is very interested in having this same presentation. This would be a great Water Conservations presentation for all candidates.

The Chair said he would like to open this up to the public and invite the candidates.

It was recommended that the presentation venue would be good at one of the schools. Lisa will get dates and times for use of the School Board meeting room. Suggestion is to have staff there. Presentation is approximately – 45 minutes with questions. Set up the session for 1 ½ hour. It would be good to have Mr. Carpenter there re: Buckman issues. January is the ideal time.

Laurie suggested that a dry run of the presentation would be good prior to presenting to the brown bag at the Realtors Association.

E. Group #3 – Promote Outdoor Water Conservation

Mr. Pushard - January 9<sup>th</sup> presentation, an e-mail will be sent to Laurie, Architects lunch, distribute to the committee.

Kim Shanahan is now a member of this working group, agreed to work with the city on the UPC green code, (city plumbing code in 2014) which included purple pipe to be able to bring in to commercial buildings. Purple pipe would be for irrigation, it would be hard to bring it in. Water usage rating system, met on this, agreement to use the state building code and the city building code. Target to drive down water usage in homes but also rewarding, to use the rating system to bring down the impact fees, measure it and reward on the water use. SFCC is also interested in teaming on this effort. American Alliance for Water Efficiency contact is forthcoming. Concept of a base line – is what will be used.

10. MATTERS FROM STAFF

Meeting schedule for 2014 was distributed to the committee.

Introduction of Rachel Wexler, Water Conservation Office – She is working on some rebates and also the poster contest, calendar is still in the works.

Happy Holidays to all!

11. MATTERS FROM COMMITTEE

Melissa McDonald: Future: Tree program, looking at urban trees and runoff and overlays on the index, passive water harvesting, interested in looking at this, working with Bob.

**Mr. Pushard moved to recommend approval of Nancy as a board member, second by Mr. Roth, motion carried by unanimous voice vote, 1 abstention.**

Ms. McDonald – When we have vacancies on the committee, we should put the information out to the public to invite other candidates. The Chair did explain that in the future an open process will be used.

Presentations: Thank you to Nancy Avadesan; she comes from the Realtor community and has a passion and willingness to work with the Water Conservation Committee, she is an attribute by joining the WCC.

In regards to Senator Peter Wirth's visit to the Water Conservation Committee; is there interest from the committee to write a letter to the State Senator or representatives on what we would like to see them do. The Chair said that this is a follow up item for the next agenda. Ms. Mc Donald: When would it come out? Draft will be at the next meeting. Ms. McDonald would like to be involved in the process.

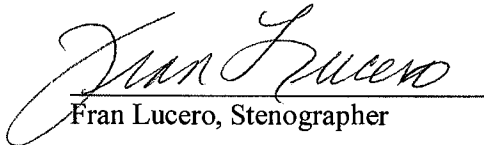
**12. NEXT MEETING – January 14, 2014**

**13. Adjourn**

There being no further business to come before the Water Conservation Committee, the meeting was adjourned at 6:00 pm.

Signatures:

\_\_\_\_\_  
Councilor Peter Ives, Chair

  
\_\_\_\_\_  
Fran Lucero, Stenographer

# MEMORANDUM

**TO:** City of Santa Fe Public Utilities Committee  
City of Santa Fe Water Conservation Committee  
Buckman Direct Diversion Board

**FROM:** Rick Carpenter, Water Resources and Conservation Manager

**VIA:** Nick Schiavo, Acting Public Utilities Department and Water Division  
Director

**DATE:** January 06, 2014

**SUBJECT:** Update on Drought, Monsoon, and Water Resource Management

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## **CURRENT UPDATE – GENERAL WATER RESOURCE MANGEMENT**

As the Committee/Board is aware, our region is still suffering through a severe drought. Our region has gone through three consecutive years of record drought and heat. It is now apparent that we are probably heading into a fourth consecutive year of severe drought and abnormal heat which will present significant challenges to all water purveyors, utilities, and irrigators going forward into next year. Even though much of the State and our region have received moderate monsoonal rains overall in July and August, and with much of the state receiving record high monsoonal rains in September, most of the state of New Mexico remains in “severe to extreme” drought conditions. New Mexico appears to be the epicenter of the western U.S. drought. Weather prediction models indicate that, at least through the early part of this winter, if not longer, drought conditions in the southwest (especially Arizona and New Mexico) should be neutral to below average precipitation (snow) and above average temperatures, therefore, overall drought conditions will likely still persist at least through the early part of next year. Runoff into regional river basins and reservoirs is expected to be normal to below normal.

This current drought is extreme, but what sets it apart from previous extreme droughts is that, absent significant winter snow the rest of this year, the region will enter into next spring and summer without very much carry-over water in regional reservoirs – they are at low levels (except for the local McClure reservoir in Santa Fe). For example, Heron reservoir (San Juan-Chama Project water) is currently at 35% of capacity. This condition could make this year much more challenging than the last year has been. However, the City of Santa Fe has invested in a robust and diverse portfolio of four distinct water supply sources that allows for flexibility in meeting demand: Buckman well field, City well field, Canyon Road Water Treatment Plant on the Upper Santa Fe River, and the Buckman Direct Diversion on the Rio Grande.



## **LOCAL CONDITIONS**

### **Source of Supply Utilization Summary**

November 2013

City Wells	7.47mg	22.91af
Buckman Wells	39.94mg	122.57af
CRWTP	50.30mg	154.36af
BRWTP	91.12mg	279.64af
<i>Other Wells(Osage, MRC, etc)</i>	<i>0.00mg</i>	<i>0.00af</i>

### **Upper Santa Fe River/CRWTP**

	Total Combined Reservoir Level	Santa Fe Snow Gage	Reservoir Inflow
January 04, 2014	64.3%	25.0 inches	1.74 MGD
5-Year Average This Date (2009 – 2013)	47.9%	22.3 inches	0.44 MGD

Heading into September, water resource managers for the City were expecting the Canyon Road Water Treatment Plant to experience significant supply shortfalls later this year and into next year – due in part to severely reduced inflows resulting from the drought, but also due to the planned construction projects inside of the reservoir footprints. However, as of January 4<sup>th</sup>, and due to the recent heavy rains in mid-September and some early snow storms, total combined storage in Nichols and McClure reservoirs is up to 64.3% (or about 2,572 acre-feet of storage). Flows into Nichols are being by-passed due to construction on the new intake facility. Inflows are expected to continue for the near future and so McClure has been releasing a small amount of water to approximate inflows.

### **Buckman Regional Water Treatment Plant**

Flows in the Rio Grande are relatively low but the BDD Project is able to divert water. Turbidity and suspended solids are very low and raw water quality is good. Demand in the system has been low, requiring only 3 to 4 mgd from the BDD Project.

## **REGIONAL CONDITIONS**

### **Rio Grande Basin**

Surface flows in the Rio Grande and its tributaries have been well below normal, storage levels in regional reservoirs are very low currently. The recent rains have helped river flows (at least normal, temporarily) and regional reservoirs are receiving needed inflow, but normal to above normal to above normal snow pack is still needed this coming winter or reservoir levels will still

be critically low heading into next irrigation season. Recent weather forecast models seem to be suggesting that snow pack for the rest of this winter may be disappointing. Native flows in the Rio Grande will likely be low to very low.

### **San Juan Basin**

It should be stressed that, conditions could significantly worsen for San Juan Chama Project deliveries next year if the drought persists (i.e., low snow pack this coming winter in the San Juan Basin), due to a lack of carry-over storage in Heron Reservoir and other reservoirs in the system. Heron Reservoir is currently at a historic low level of 35% of capacity for this time of year. Deliveries to SJCP contractors could be significantly curtailed next year. It is still too early in the year to say with much confidence, but the Bureau of Reclamation has called a meeting of San Juan-Chama contractors for January 15<sup>th</sup> wherein early forecasts for runoff and SJCP water deliveries are expected.

# City of Santa Fe, New Mexico

# memo

**Date:** January 3, 2014

**To:** Public Utilities Committee  
Water Conservation Committee

**From:** Laurie Trevizo, Water Conservation Manager

**Via:** Rick Carpenter, Water Resources and Conservation Manager  
Nick Schiavo, Public Utilities Department and Water Division Director

**RE:** Status Update on Water Conservation Education and Outreach for including 2014 upcoming events and 2013 Yearly Accomplishments

The City of Santa Fe Water Conservation Office provides a number of Education and Outreach to the community. The educational materials or events provide outreach opportunities to a variety of audiences. A year-in-review is provided for 2013 to showcase the accomplishments of the Water Conservation Office.

## **Upcoming 2014 Events:**

### **2014 Water Conservation Calendars:**

Approximately 5,000 calendars will be distributed into the community and some make their way around the state. These calendars showcase winning artwork of the 10<sup>th</sup> Annual Children's Poster Contest and provide monthly tips on irrigation.

### **11<sup>th</sup> Annual Children's Poster Contest:**

Theme: Saving Water is Always in Season!

Judging: January 24, 2014

This year's theme is Saving Water is Always in Season! The annual poster calendar is a favorite in the Santa Fe community. Winners of the poster contest receive a prize package that includes conservation kits for saving water at home. The grand prize winning poster is displayed for a year on the back of a city bus and on the calendar cover. First through third place winners will be featured monthly in the 2015 calendar. In the 10<sup>th</sup> Annual Poster Contest, nearly 300 posters were submitted, the winners of which are showcased in the 2014 calendar which is currently being distributed.

### **QWEL (Qualified Water Efficient Landscaper) Training:**

Upcoming: Spring 2014

The City of Santa Fe and the New Mexico Water Conservation Alliance will be co-sponsoring Qualified Water Efficient Landscaper (QWEL) training. QWEL is an approved U.S. EPA WaterSense Irrigation Auditor certification program. Landscape professionals who achieve and maintain QWEL certification and have a current City of Santa Fe business license will become approved contractors for the City of Santa Fe Water Conservation Irrigation Efficiency Rebate Program. Training is limited to 25 participants. Invitations will be mailed and emailed (if available) to landscape design and installation firms.

## **2013 Water Conservation Accomplishments:**

### **Rebates:**

The number of rebates awarded in 2013 increased compared to 2012:

<b>Rebate Type</b>	<b>Number of Rebates 2013:</b>	<b>Number of Rebates 2012:</b>
High Efficiency Toilet (Residential)	267	254
High Efficiency Toilets (Commercial)	362	6
Clothes Washer (front loader replacement)	30	41
Clothes Washer (top loader replacement)	172	228
Rain Barrels (50-99 gal)	67	12
Rain Barrels (100-199 gal)	2	3
Rain Barrels (200-499 gal)	2	1
Cistern	3	1
<b>Total Rebates Awarded:</b>	<b>905</b>	<b>546</b>

### **Media Advertisements and Articles:**

- 250 monthly PSA Prime Drive Time messages on 6 Hutton Stations including Spanish language station
- Weekly 30 minute radio show on KSWV, PSA's and commercials
- Weekly PSA's on KSFR for time of day watering reminder
- 4,000 Water Conservation Calendars distributed around the community and the state
- 8,000 Save Water Santa Fe newsletters inserted in to Santa Fe New Mexican and Thrifty Nickel
- 5,000 Save Water Santa Fe newsletters distributed around town and events
- Print media: Green Fire Times, Home Town News, Round the Roundhouse, Santa Fe Reporter, EcoSource, 2013 Visitors Guide, 2013 Annual Manual, Santa Fe New Mexican, Journal North

### **Press Releases:**

- Resolve to Save Water- January
- Winterization Tips and Frozen Meters - February
- How the City Manages Drought- February
- Fix A Leak Week – March
- Gallons Per Capita Per Day Announcement- March
- Mayors Water Conservation Challenge – April
- Water Fiesta – April
- Time of day Watering – May
- Children's Poster Contest- May
- New Website to Help Community Save Water – May
- City Prepared to Use Groundwater to meet Summer Demand – June
- Drought Survival Guide- July
- Water Consumption Down – August
- Call for Entries 11<sup>th</sup> Annual Children's Poster Contest- September
- Spooky Showerhead Swap – October
- Outdoor Winterization and End of High Demand Season- November
- Water Conscious Gifts- December

### **Media coverage articles:**

*Associated Press – State and National Wire Service*

- Santa Fe Imposes Water Restrictions
- **The Wichita Eagle** “Keys to Making Water Conservation Successful is to involve community. Santa Fe: A lot of carrot”

- **Saint Paul Pioneer** “Santa Fe Shows the Nation How to Save Water”
- **KOAT-** Santa Fe Launches new Water Conservation Website

#### *Santa Fe New Mexican*

- City Report Helps Residents Monitor Daily Water Use (front page)
- Our View: Save Water Like It's Second Nature (Mayor Challenge)
- Editorial – Conserve Water to Ease Drought
- Front-Page - Santa Fe Outdoor Water Restrictions Take Effect
- Drought, limited water supply presents challenges (Earth Week) (front-page)
- Photo & Caption – Children's Water Fiesta
- La Mariposa Montessori Student Takes Top Price in City's Water Conservation Poster Contest – includes photo

#### *Albuquerque Journal North*

- Children's Water Fiesta Article and Photos (front page)
- Editorial - Get Ready to Conserve Water
- Annual Water Conservation Rules in Effect (front-page)
- Commercial Water Rebates Offered
- NM Water: The Case for Half Full- Santa Fe mentioned as a leader in Water Conservation

#### *Santa Fe Reporter*

- Running Dry. It's Earth Month; Save Some Water (Mayor Challenge)

#### *Round the Roundhouse*

- Saving Water during the Legislature
- Fix Your Flapper during Fix a Leak Week
- Rebates and other Water Saving Incentives
- Mayor's Water Conservation Challenge
- Watering Time of Day Restrictions
- Santa Fe Launches new Water Conservation Website
- Drought Awareness
- Overall Water Consumption is Down
- Winterization Tips – Indoor and Outdoor

### **Events and Participation:**

March 9-10	Santa Fe Area Homebuilders show
March 18-22	Fix-A-Leak Week
March 18-22	Qualified Water Efficient Landscaper (QWEL) Training
April 1-30	Mayors Water Conservation Challenge
April 16-17	Children's Water Fiesta
April 19-22	Earth Day events
April 27	Project WET teacher training
May 8	Children's Poster Contest Winners awards ceremony
May 11	Community Day
July 1-31	Know When to Water-Bill Insert
July 24	Santa Fe Bandstand co-sponsor
July 25	Colorado River Day
August 24	Rainwater Harvesting Community Event
October 31	Spooky Showerhead Swap
November 5-14	QWEL Training
December 13	Children's Poster Contest Entry Deadline

### **Web and Social Media:**

- Water Conservation website [www.savewatersantafe.com](http://www.savewatersantafe.com) launched on May 26, 2013
  - **220,610** hits and visits since launch
  - Average page view surpasses industry standard
  - Most downloads are for rebate forms

- City Highlights Newsletter
- City Website Facebook and Twitter Announcement – Outdoor Watering Restrictions
- City of Santa Fe Water Division Website
- Banner Ads [www.santafehometownnews.com](http://www.santafehometownnews.com)
- Fandango Movie Website Banner
- Banner Ads edible Santa Fe [www.ediblesantafe.com](http://www.ediblesantafe.com)
- Banner Ads [www.Santafe.com](http://www.Santafe.com)
- Website Banners – Time of Day Watering  
(KTRC Talk, Outlaw Country, ESPN, Project 101.5, Radio Free SF, blu 102.9)

#### **Ordinance and Resolution Development:**

- May - Voluntary Restrictions Resolution passed: Resulted in Bill insert for July Water Bills on how and when to water landscapes, language in print materials was changed from recommended watering no more than 3 times per week to water no more than 3 times per week.
- June – Commercial Rebate Ordinance passed: Targeted outreach will occur in Winter 2014.

#### **Partnerships and Coordination:**

- Participation in 2 independent Nation-wide 3<sup>rd</sup> party Water Conservation Studies
- Santa Fe Public Schools
- Green Lodging Initiative
- Area Landscape Companies: QWEL Participation
- State of New Mexico, Building Services: coordination with watering schedules
- City Parks Department: coordination with watering schedules
- City Environmental Services: coordination on messaging and community events
- City Meter Reading and Transmission & Distribution staff: coordination on water waste enforcement

## Water Conservation Committee

### Work Group #5 on Domestic Wells

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Status Report – Draft -- January 8, 2014

Assignment: Facts, conclusions and recommendations on domestic wells inside City limits regarding

1. Quantities of water use and impacts on aquifer and related streams.
2. Scope and reach of existing ordinances as may be applied to all wells.

<u>Facts on assignment #1</u>	<u>Ref</u>
The OSE database on permits filed since the administrative basin was declared in 1956 identifies 711 domestic and shared wells inside the 37 sq.mi. city limits. Names and locations are on file for these wells. Similar data is available for areas being considered for annexation, but those areas have not been separately queried for the Work Group.	1
The OSE file count in the Aamodt case north of the City was found by watermaster field inspection to undercount actual wells by 18 percent. So, more than 800 actual wells could be a reasonable estimate for the city count.	2
The US Census reports 868 drilled wells and 66 hand-dug wells serving houses in Santa Fe in 1990, totaling 934 self-service households in that independent survey.	3
Santa Fe County found that the median of 141 households on shared wells (metered per OSE regulations) uses 0.28 AFY. The Aamodt watermaster reported that single and shared households metered by court order use an average 0.29 AFY.	4 and 2
The County report found that 2/3 of well households use less than the City amount for penalty pricing (>0.29AFY sold at \$7020/AF) and 1/3 use over the penalty amount.	4
City water meter connections at large lots average 0.25 AFY, with a similar distribution of high and low values as the well meters in the County report. The City Water Division recommended budget for single-family dwelling units is 0.26 AFY.	4 and 2
The 0.28 AFY median metered rate for shared wells in the County corresponds to an amount for self-service wells in the City of 260 AFY, based on the Census count. Thus, private wells add 2.5 percent to the City supply of 10000AFY, and add 14 percent to the inside City well-field withdrawals of 1920 AFY for 2012 (excluding Buckman wells).	5
The consumptive use amount from domestic wells and all City supplies is a lesser amount than the overall use, due to return flow to the aquifer from outside uses (a significant fraction) and to the Waste Water Treatment Plant (60% of overall use) from inside uses.	5
The uncertainty in the usage estimate of 260 AFY for domestic wells in the City is + or – 25% as indicated by a USGS report for NM of 0.21 AFY statewide, and recognizing the unregistered well rate above.	6
The City ordinance in 1995 curtailed growth of domestic wells in the City. Growth was near 2% per year. The City has issued 18 or 20 conditional permits for replacing grandfathered wells, but no permits for new wells in the City since 1995.	7 and 8
The curtailed growth of domestic wells prevents the aquifer water-level from drawing down up to 2 feet in the next 40 years, according to published model projections. Continued domestic-well use at a rate near 260 AFY will continue to deplete the aquifer inside the footprint of the City limits. The 37 sq. mi. contains 3550 AF per foot	8 and 9

of saturation at a specific yield of 15%. Continued use of 260AFY corresponds to an additional 3 feet of water-level decline in 40 years of domestic-well use.	
Domestic wells are historically concentrated in the eastern mountain-front zone of the City. Some adjacent reaches of the Santa Fe River are interrelated to the aquifer water level and the occasional live stream feeds the aquifer throughout. The 260AFY is derived to an unknown degree from the interrelated stream, but some percentage is induced from the river source. Aquifer impacts will be reduced by that percentage. Models are capable of quantifying these ratios. No significant effect from City domestic wells is seen on other stream reaches due to distance.	8,9 and 10
<u>Facts on assignment #2</u>	
State statutes delegate powers to Municipalities regarding the use of wells in general, new domestic water wells in particular, the use of water in general, water conservation, public acequias, irrigation of public grounds and preventing waste or excess use. The powers to regulate new domestic wells and other water uses in general have been supported after review by the NM Appeals Court and the NM Supreme Court.	11
The City's current ordinance on new domestic wells 25-1.10 requires metering, sanitary seal, construction standards, limitation on usage, water-budget procedures, and other conservation "as necessary".	11
The Anaya case (Santa Fe River Adjudication) is in progress in Santa Fe District Court. A handful of domestic wells, at their own initiative, have received court-ordered rights in the case. Most domestic wells have not been made parties to the case.	12

#### Tentative Conclusions:

- Private domestic wells in the City use an uncertain amount of water collectively and individually, but collective use is likely in the range of 200 to 350 AFY.
- The City system or other sources would have to supply an equivalent amount to the households if private well use were to be interdicted. Net consumption is a lesser amount due to return flow both to the aquifer and to the treatment plant.
- Wells built since 1956 are on record with the OSE. The growth rate in the City is nil.
- Individual domestic wells use water in a pattern of amounts similar to that of large lots on City system meters.
- Curtailed growth will save up to 2 feet of aquifer water levels in the 40-year period after 1996. Continued use of existing wells will deplete about 3 feet from aquifer water levels in 40 years, or less where some percentage of well water is sourced from the adjacent stream reach.
- The current City domestic well ordinance does not extend coverage to wells built before year 1996, however the City, subject to legal review, is authorized to regulate all well-water uses.

#### Tentative Recommendations:



- Consider a public-information program to bring private well owners into the City water-conservation programs using rebates such as fixture credits, etc.
- Seek review by the City water Attorney office of the merit of a court-ordered deadline for domestic-well owners claims to be filed with the court in an amount based on historic beneficial use (not 1 , 3 or any other default amount of AFY) and enjoining well users not parties to the case.
- Study the potential benefits of identifying private wells posted with signage as a secure, safe and sanitary source of community drinking water in an emergency.

## References

1. Carpenter Memorandum, June 3, 2013, and Water Division, 2012, Annual Water Report, p6
2. Gallegos, Brian, 2004, Report of Post-Moratorium Wells Watermaster, filed US District Court, April 25, 2005
3. US Census, Detailed Housing Characteristics-New Mexico, Table 79, Structural Characteristics for 1990, p. 171
4. Lewis, Amy C., 2013, Water Resource Inventory of the Espanola Basin, for Santa Fe County
5. Water Division, City of Santa Fe, 2012, 2011 Annual Water Report, page 5 city well use
6. National Water Information System, Water Use Data for New Mexico, Santa Fe County, Year 2005
7. Oral communication, Nov 14, 2013, Claudia Borchert
8. Balleau and Silver, 2005, Hydrology and Administration of Domestic Wells in New Mexico, Natural Resources Journal, Vol 45, figures 14 and 15
9. McAda and Wasiolek, 1988, Simulation of the Regional Geohydrology of the Tesuque Aquifer System near Santa Fe, New Mexico, USGS WRIR 87-4056 (The basis of the OSE administrative model and of the City's SURFS and WaterMAPS models for planning)
10. City of Santa Fe, 2008, Long Range Water Supply Plan, Appendix A, (fig 27 and 28)
11. Statutes 3-53-1, -2, -3, -4, -5, and Smith and Stennis Cases.
12. Consent Orders, SF71.43.347 (C) for Jerry D. Powers, and for Matteucci Galleries, Inc.

# Water Conservation in Santa Fe



November 5, 2013

This presentation was prepared by the Water Conservation Committee  
with assistance from the City of Santa Fe Water Conservation Office.

Latest version per S. Wilman, 1/6/14

## Overview

- \* What are the sources and uses?
- \* Is there enough?
- \* What are we doing?

2

11/5/2013

## Our Water Sources

Annual Contribution  
from Primary Sources

### \*Surface Water

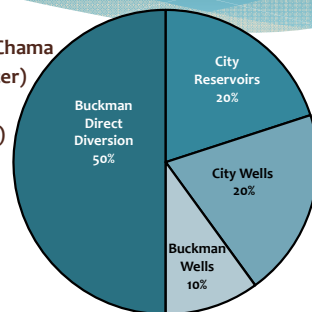
- ▶ Buckman Direct Diversion  
(Rio Grande and San Juan-Chama  
Project Water)
- ▶ City Reservoirs  
(Santa Fe River Watershed)

### \*Wells

- ▶ Buckman Wells
- ▶ City Wells

- ▶ Reclaimed Wastewater

### \*Conservation!

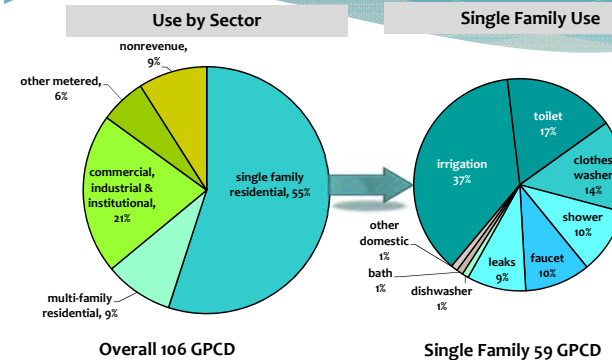


3

11/5/2013

## How Is It Used?

GPCD = Gallons per Capita per Day



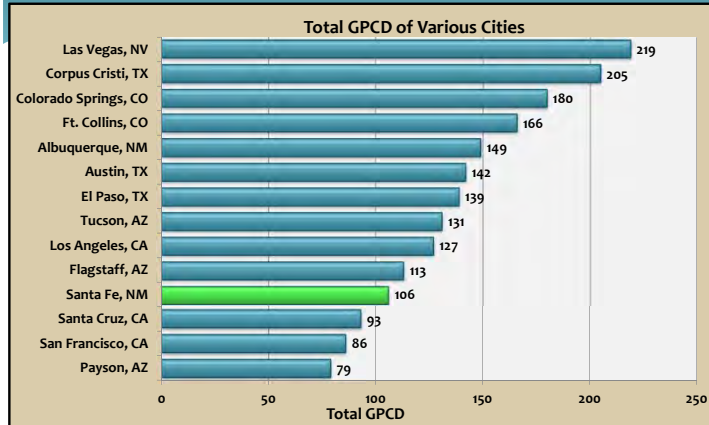
Overall 106 GPCD

Single Family 59 GPCD

4

11/5/2013

## How do we stack up?



## Is there enough?

**Yes!**

Our supply meets our current demand  
thanks to

- \* long-range planning,
- \* a diverse source portfolio
- \* and conservation efforts

What about in 2020? 2045?

6

11/5/2013

## Water for the future depends on...

- \* Annual precipitation and temperatures
- \* Length and frequency of severe droughts
- \* Population, growth and land-use planning
- \* Adaptation to climate change
- \* Emergency planning
- \* Improved conservation
- \* Level of concern for future generations

7

11/5/2013

## Conservation

- \* Most cost effective source of water on a per unit basis
- \* Defers additional major capital outlays
- \* Preserves our groundwater “bank account”
- \* Helps community define how we want to use our limited water (i.e., conserve for what?)

8

11/5/2013

## Water Conservation does not promote development and growth

Developers must submit water budgets and buy or provide water rights to offset their demand so there is no new net demand on the system. The city provides no net new water.

- \* Commercial Development < 5 acre-feet/year
- \* Residential Development < 10 acre-feet/year
- \* Mixed Use Development < 7.5 acre-feet/year



- \* Developer pays fee to City (or uses banked conservation credits) for water to offset new water demand

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11/5/2013

- \* Commercial Development > 5 acre-feet/year
- \* Residential Development > 10 acre-feet/year
- \* Mixed Use Development > 7.5 acre-feet/year



- \* Developer transfers water rights to City to offset new water demand

## What are We Doing? Year-Round Water Conservation

- \* Public outreach and education
- \* 1987 ordinance requires citizens and businesses to comply with prescribed water conservation regulations
- \* 2007 City Code amendment requires year round water conservation vs. short term “fixes”
- \* Conservation ordinances apply to all water customers and all residents in the city limits, including domestic well owners

10

11/5/2013

## Year-Round Water Restrictions

- \* Eating establishments serve water only upon request. Signage required
- \* Lodging facilities change linens no more frequently than every four days per long-term guests
- \* Public bathrooms must exhibit Water Conservation signage

11

11/5/2013

## Year-Round Water Restrictions

- \* Outdoor irrigation prohibited 10AM – 6PM from May 1 through October 31. Maximum of 3 days/week recommended
- \* Turf grass or seed mixes shall not contain more than 25% Kentucky Bluegrass

12

11/5/2013

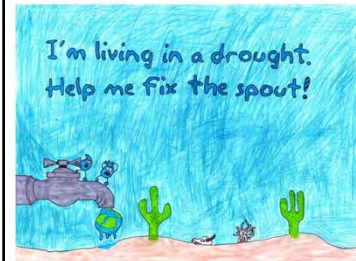
## Year-Round Water Restrictions

- \* Cleaning of outdoor surfaces with water is prohibited
- \* Shut-off nozzles are required on hoses used for hand watering
- \* Swimming pools must be covered when not in use
- \* Fugitive water is prohibited
- \* Specified construction must use treated wastewater

13

11/5/2013

## Conservation Programs



- \* Education: calendar, TV and movie ads, booths, gardens, medians, PR Plan, youth programs, radio show and teacher training
- \* Aggressive rebate program offered
- \* Increased training for landscape professionals called QWEL

14

11/5/2013

## Conservation Programs

- \* Residential and Commercial Rebates
- \* Commercial Audits or Leak Detections and Irrigation Evaluations
- \* Waste Reduction Ordinances and Building Codes
- \* Water Budget Calculators and Demonstration Gardens

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11/5/2013

## Conservation Rebates

Rebate for	Commercial (C), Residential (R) or Both	Rebate Amount \$
High-Efficiency Clothes Washer		
• Top-Load Machine	Both	350
• Front-Load Machine	Both	150
High-Efficiency Toilet (HET)		
• Residential	R	175
• Commercial Hotel/Motel	C	125
• Commercial Tank-Type	C	250
• Commercial Flushometer	C	500
Water-Free Urinal	Both	500
Commercial Process Efficiency	C	Site-specific
Rainwater Harvesting (Rain Barrels and Cisterns)	Both	12 to 50 depending on size of rain barrel and 0.25 per gallon for a cistern

[www.savewatersantafe.com](http://www.savewatersantafe.com)

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11/5/2013

## Summary

- \* Broad portfolio of water sources available
- \* Ongoing year-round conservation program
- \* Threats: increasing local & regional demand, drought/fire and climate change
- \* Conservation is our cheapest water source
- \* Conservation awareness, education and practice help ensure water for the future

17

11/5/2013

## Community Involvement ... The Questions

How do you conserve water? Are you doing enough?  
Is conservation a way of life?

### What are your priorities?

- \* Parks, sports fields
- \* Gardens – ornamental & food
- \* Santa Fe River
- \* Long showers
- \* Smart growth
- \* Tourism

### What changes would you like to see?

- \* New programs?
- \* How can we encourage more conservation?
- \* What is important to your quality of life?

What would you like us to take back to the Water Conservation Committee?

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## Get Involved!

- \* **Conserve!**
- \* Take advantage of rebates! For more information on rebates, go to [www.savewatersantafe.com](http://www.savewatersantafe.com)
- \* Join the Water Conservation Committee or one of our working groups. We're actively recruiting water experts and motivated citizens

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## For Further Info

### City of Santa Fe Conservation Office

- \* Laurie Trevizo, Water Conservation Manager  
505-955-4223, [ltrevizo@santafenm.gov](mailto:ltrevizo@santafenm.gov)



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## Resources

- \* Chair, Water Conservation Committee : Peter Ives, City Councilor, District 2, 505-955-6816, [pnives@santafenm.gov](mailto:pnives@santafenm.gov)
- \* [www.savewatersantafe.com](http://www.savewatersantafe.com)
- \* Water Conservation Office 505-955-4225
- \* Water Waste Hotline 505-955-4222
- \* City Parks 505-955-2100
- \* Santa Fe County [www.santafecountynm.gov/public\\_works](http://www.santafecountynm.gov/public_works)
- \* NM Office of the State Engineer  
[http://www.ose.state.nm.us/conservation\\_index.html](http://www.ose.state.nm.us/conservation_index.html)
- \* NM Drought conditions <http://droughtmonitor.unl.edu>
- \* NM Governor's Drought Task Force  
[www.nmdrought.state.nm.us/links.html](http://www.nmdrought.state.nm.us/links.html)

#### Working Group 4

##### Issue: Promoting Conservation Strategies of Large Water Users

<b>Strategic Goal</b>	Contribute to reducing water use by optimizing water use by large water users
<b>Objectives</b>	Optimize water use by large users
<b>Tasks</b>	<ul style="list-style-type: none"><li>• Identify large water users</li><li>• Promote the installation of electronic transmitting water meters</li><li>• Estimate contribution to total demand</li><li>• Engage large water users in the discussion of how to optimize water use</li><li>• Identify ways to optimize the water consumption of large users, and encourage water conservation by large users, especially parks</li><li>• Engage in discussion Research on Smart Controllers for rebates/park installations</li><li>• Explore and suggest potential rebate programs and potential savings for large users</li><li>• Explore behavioral modification models as a means to reduction of use</li><li>• Research commercial water budgets</li></ul>
<b>Members</b>	Karyn Schmitt, Melissa McDonald, Tim Michael
<b>Notes</b>	<ul style="list-style-type: none"><li>• Research on Smart Controllers for rebates/park installations</li><li>• Exploring with WCC on ways to localizing —adding passive water harvesting info to the curriculum perhaps through the QWEL program</li><li>• Participate establishing a WAA networking opportunities</li><li>• Liaison with Parks and Open Space (POSAC--Melissa McDonald)</li><li>• Support AML efforts for better meter reading and better software packages that help consumers track individual daily water use as a tool for increased efficiency and conservation</li></ul>
<b>Reference Material</b>	<ul style="list-style-type: none"><li>• Water Use in Santa Fe, Borchert et al., July 2009</li><li>• QWEL Guide and website/WaterSense</li><li>• City of Tucson, City of Flagstaff, Salt Lake City, Boulder website &amp; others (engage in discussions with other water conservation programs)</li><li>• Upper Rio Grande Impact Assessment, a report developed by Reclamation's West Wide Climate Risk Assessment, a WaterSMART Program, <a href="http://www.usbr.gov/WaterSMART/wcra/reports/urgis.html">http://www.usbr.gov/WaterSMART/wcra/reports/urgis.html</a></li><li>• Santa Fe Basin Study Preliminary Assessment Report, <a href="http://www.santafenm.gov/index.aspx?nid=2577">http://www.santafenm.gov/index.aspx?nid=2577</a></li><li>• 2001 City of Santa Fe Parks Mater Plan</li></ul>
<b>Fiscal Impact</b>	To be determined

#### Working Group #4: Promoting Conservation and Efficiency Strategies of Large Water Users

(Melissa McDonald, Tim Michael, Karyn Schmitt)

- **Parks outreach—we are continuing to work with the parks department on establishing numbers for parks water usage and looking into overall outdoor water needs on a per park basis. Once this is established, we will work with parks to look at ways that water is used in the parks and ways to increase efficiency and conservation. A long-term goal is to also look at water conservation in the parks planning process. How do parks fit into the overall city's water budget? How can city processes could be improved and streamlined to support parks with water conservation and efficiencies. We are excited that Robert Woods will be joining the water conservation staff and hope to meet with him soon. His diverse background, knowledge, and experience in the area will certainly be an asset to our committee but also to our working group.**



- **Metering/Billing Practices-** It is our belief that when people know, on a daily basis how much water they are using, water conservation practices are much more effective. We continue to push for better AMI/AMR meters and billing software. We are following the city's rfp process to support this effort. We also are beginning to compile data as reference material.
- **Outdoor water use/rebates-** We met with Laurie Trevizo to discuss available water rebates/outdoor rebates. The water conservation office is currently focusing on WaterSense recommendations for rebates. Laurie explained that the WaterSense organization has rigorous testing of products so that they are well vetted. We discussed the convertible ET controlling units. We are currently polling local irrigation suppliers and contractors to see what their experience with these products has been (please see attached).
- **Legislative Agenda –** We are following the efforts of the state's water conservation bills specifically around rebates, water collection rebates/financing, and the creation of water districts.
- **Other areas of interest—**passive water harvesting as it relates to increasing water availability in the landscape for plant material and reduction of soil erosion, urban treescapes/heat island/water harvesting mapping, using water budgets in the planning process

#### **Current Reading Material:**

- Santa Fe Basin Study Preliminary Assessment Report, <http://www.santafenm.gov/index.aspx?nid=2577>
- Upper Rio Grande Impact Assessment, a report developed by Reclamation's West Wide Climate Risk Assessment, a WaterSMART Program. <http://www.usbr.gov/WaterSMART/wcra/reports/urgja.html>
- 2001 City of SF Parks Master Plan
- Permaculture in Practice, [http://www.santafenewmexican.com/life/home/permaculture-in-practice-a-tale-of-two-drought-strategies/article\\_ac7ef3d3-59d8-5a93-bb71-2bb49dcbb019.html](http://www.santafenewmexican.com/life/home/permaculture-in-practice-a-tale-of-two-drought-strategies/article_ac7ef3d3-59d8-5a93-bb71-2bb49dcbb019.html)
- Soil Sensors, <http://archive.lib.msu.edu/tic/golfd/article/2003jun49.pdf>
- Smart Water Info  
<http://public.dhe.ibm.com/common/ssi/ecm/en/gwf12345usen/GWF12345USEN.PDF>  
<http://www.cityofdubuque.org/index.aspx?NID=1395> Pilot Project  
<http://bv.com/Home/news/solutions/water/smart-water-technology-benefits-challenges-and-three-action-steps-for-utilities>  
<http://www.waterworld.com/articles/2010/09/ami-changing-the-face-of-water-utility-customer-service.html>  
[http://www.waterefficiency.net/WE/Editorial/Data\\_Where\\_to\\_Start\\_20202.aspx](http://www.waterefficiency.net/WE/Editorial/Data_Where_to_Start_20202.aspx)  
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[http://www.waterefficiency.net/WE/Articles/AMIthe\\_AllPurpose\\_Tool\\_16058.aspx](http://www.waterefficiency.net/WE/Articles/AMIthe_AllPurpose_Tool_16058.aspx)

**Laurie requested a point person please indicate:**

Melissa McDonald

505-424-4444 (o)

[mel@sfpermaculture.com](mailto:mel@sfpermaculture.com)

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ETWATER	HERMITCRAB	ETW-HC	Add-on	48	Signal
Hunter	Solar Sync*; Wired Version (Includes sensor and controller)	SOLARSYNC	Add-on	99	Sensor
Hunter	Wireless Solar Sync*; (Includes wireless sensor)	WSS	Add-on	99	Sensor
Rain Bird	Kit to Upgrade Existing ESP-Modular Series C	ESP-SMTE-UPG	Add-on	22	Sensor
Rain Bird	Kit to Upgrade Existing ESP-Modular Series C	ESP-SMT-UPG	Add-on	13	Sensor
Rain Bird	ET Manager Cartridge**	ETC-LX	Add-on	48	Signal
Irrisoft	CLc Weather Reach Cellular Controller Link	CLc	Add-on	48	Signal
Irrisoft	CLe Weather Reach Ethernet Controller Link	CLe	Add-on	48	Signal
Irrisoft	CLw Weather Reach Wi-Fi Controller Link	CLw	Add-on	48	Signal
Hunter	Solar Sync*; Wired Version (Includes sensor)*	SOLARSYNCSSEN	Add-on	99	Sensor
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-B-X-CW	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-C-X-SP	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-C-X-CW	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-C-X-CH	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-C-X-CH	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-B-X-CH	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-C-X-CH	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-C-X-CH	Standalone	48	Signal
HydroPoint	WeatherTRAK ET Pro2 Smart Water Manager	WTPRO2S-B-X-SW	Standalone	48	Signal

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## **GROSSE, CARYN L.**

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**From:** WEXLER, RACHEL F.  
**Sent:** Friday, December 27, 2013 12:12 PM  
**To:** COSS, RON D.; SNYDER, BRIAN K.; CARPENTER, RICK R.; BUSHEE, PATTI J.; CALVERT, CHRIS; DIMAS, BILL; DOMINGUEZ, CARMICHAEL A.; IVES, PETER N.; RIVERA, CHRISTOPHER M.; TRUJILLO, RONALD S.; 'Lise Knouse'; 'Stephen Wiman'; 'Doug Pushard'; 'Giselle Piburn'; 'Melissa McDonald'; IVES, PETER N.; 'Karyn Schmitt'; 'Grace Perez'; 'LISA RANDALL [LRANDALL@sfps.info]'; 'timmichael@comcast.net'; 'Bill Roth'; WURZBURGER, REBECCA D.  
**Cc:** TREVIZO, LAURIE L.; SANDOVAL, MARGE D; GROSSE, CARYN L.  
**Subject:** Conservation poster contest judging invitation

The 2014, Annual Children's Water Conservation Poster Contest for all Santa Fe 1st-6th graders is underway! This year's theme is "Saving Water is Always in Season!" We have received many creative entries demonstrating the theme.

We would like to invite you to be a member of our judging team for the Poster Contest. The judging will take place at the Water Division conference room on Friday, January 24, 2014. It will begin at 10 AM and typically takes about an hour. If you are available and would like to participate, please RSVP.

We look forward to seeing you at this event. Thank you for your support of Water Conservation programs in our city.

Rachel

Rachel Wexler  
City of Santa Fe Water Conservation Office  
505-955-4229