



# Agenda

DATE 10/28/13 TIME 9:14am

SERVED BY Laurie Trevizo

RECEIVED BY [Signature]

**SANTA FE WATER CONSERVATION COMMITTEE MEETING**  
**CITY HALL - 200 LINCOLN AVE.**  
**CITY COUNCILORS' CONFERENCE ROOM**  
**TUESDAY, NOVEMBER 5, 2013**  
**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 OCTOBER 8, 2013 WATER CONSERVATION COMMITTEE MEETING
6. CONSENT AGENDA
  - A. 2014 WATER CONSERVATION COMMITTEE SCHEDULE (Laurie Trevizo)
  - B. DROUGHT, MONSOON AND WATER RESOURCE MANAGEMENT UPDATE (Rick Carpenter)
  - C. UPDATE ON 3<sup>RD</sup> PARTY SURVEYS (Laurie Trevizo)
    - i. RESIDENTIAL END USE WATER SURVEY
    - ii. DEMAND ELASTICITY

**DISCUSSION ITEMS:**

7. 2014 LEGISLATIVE RECOMMENDATIONS (Councilor Ives, 20 minutes)
8. REQUEST FOR APPROVAL WATER CONSERVATION POWERPOINT PRESENTATION (20 minutes)

**INFORMATIONAL ITEMS:**

9. REBATE ANALYSIS (Councilor Ives, 20 minutes)
10. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE INITIATIVES: (Councilor Ives, 60 minutes)
  - A. GROUP #3- PROMOTE OUTDOOR WATER CONSERVATION (12 minutes)
  - B. GROUP #4- REESTABLISH TREND OF NET ANNUAL REDUCTIONS IN PER CAPITA WATER USAGE AND IDENTIFYING LARGE WATER USERS (12 minutes)
  - C. GROUP #5- DOMESTIC WELLS WITHIN THE CITY LIMITS (12 minutes)
  - D. GROUP #1 – WATER CONSERVATION & DROUGHT MANAGEMENT PLAN UPDATE (12 minutes)
  - E. GROUP #2- WATER CONSERVATION EDUCATION/OUTREACH (12 minutes)

**MATTERS FROM STAFF:**

**MATTERS FROM COMMITTEE:**

**ITEMS FOR NEXT AGENDA – TUESDAY, DECEMBER 10, 2013:**

Introduction of POSAC members

CAPTIONS: November 20, 2013 @3 pm    PACKET MATERIAL: November 22, 2013 @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.

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**WATER CONSERVATION COMMITTEE**  
**October 8, 2013**

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**DRAFT: SUBJECT TO APPROVAL**

**MINUTES OF THE**  
**CITY OF SANTA FE**  
**WATER CONSERVATION COMMITTEE MEETING**  
**Santa Fe, New Mexico**

**October 8, 2013**

**1. CALL TO ORDER**

A meeting of the City of Santa Fe Water Conservation Committee was called to order by Councilor Peter N. Ives, Chair on this date at 4:00 p.m. in the City Councilors' Conference Room, City Hall, Santa Fe, New Mexico.

**2. ROLL CALL**

Roll Call indicated the presence of a quorum as follows:

**Members Present:**

Councilor Peter N. Ives, Chair  
Melissa McDonald, Vice Chair  
Tim Michael  
Doug Pushard  
Karyn Schmitt  
Stephen K. Wiman  
Grace Perez

**Member(s) Absent:**

Giselle Piburn, excused  
Lisa Randall, excused  
Bill Roth, excused  
1 vacancy

**Others Present:**

Laurie Trevizo, Water Conservation Manager  
Caryn Grosse, Water Conservation Specialist  
Nancy Avidisian  
Geno Zamora, City Attorney's office  
Jo Ann G. Valdez, Stenographer

**3. APPROVAL OF AGENDA**

Mr. Michael moved to approve the Agenda. Ms. McDonald seconded the motion. The motion passed unanimously by voice vote.

4. **APPROVAL OF CONSENT AGENDA**

Mr. Michael moved to approve the Consent Agenda. Ms. McDonald seconded the motion. The motion passed unanimously by voice vote.

5. **APPROVAL OF MINUTES : SEPTEMBER 10, 2013 WATER CONSERVATION COMMITTEE MEETING**

The following changes were made to the Minutes of the September 10, 2013 meeting:

Stephen Wimen was changed to read: Stephen Wiman throughout the entire document.

Page 1, Bill Roth was **not present**.

Page 9, last paragraph, last sentence, Karyn Schmitt was changed to read: Karyn Grosse

Mr. Wiman moved to approve the Minutes of the September 10, 2013 meeting as amended. Mr. Michael seconded the motion. The motion passed with 1 abstention (*Ms. Schmitt was not present at the September 10, 2013 meeting*).

6. **CONSENT AGENDA**

a. **Drought, Monsoon and Water Resource Management Update**

b. **Water Conservation Education and Outreach: Upcoming Events**

**DISCUSSION ITEMS:**

7. **OPEN MEETINGS ACT PRESENTATION**

Mr. Geno Zamora presented a PowerPoint presentation on Ethics and Open Government. [A copy of the presentation was included in the Committee Members' packets. Please see Exhibit "7a" for the specifics of this presentation].

Mr. Zamora said one of the things he is trying to do, through the City Attorney's office, is to formulize and make presentations to the boards and committees regarding Ethics and Open Government.

Mr. Zamora reviewed four laws that are applicable to municipalities. They are:

- City of Santa Fe Ethics Ordinance, SFCC §1.7, et seq.
- New Mexico Government Conduct Act § 10.16-1, et seq.
- New Mexico Open Meetings Act (OMA), § 10.15-1, et seq.
- New Mexico Inspection of Public Records Act (IPRA), § 14-2-1, et seq.

The Committee Members had the following questions/comments:

- Mr. Michael said the presentation is specific for employees of the City of Santa

Fe and does not specifically talk about committees of the City of Santa Fe. He asked for clarification on this.

Mr. Zamora said he uses this presentation for boards and employees. He said because committee members interact with employees, it's important to know the limitations on employees. Committee members are also considered "public officials".

- Mr. Michael said the committee members do vote on rebate programs that affect himself and other people in the group because of what they do for a profession. He asked in this case, should the committee members abstain from voting when those types of matters come before the committee.

Mr. Zamora said one of the things that he highlights in his presentations is the things you are likely to see, and conflicts of interests, is certainly one of those issues and he will get to that later in the presentation. The short answer is, if there is a defined conflict of interest exists: then there is a requirement of disclosure and abstention that he will get to.

Mr. Zamora said the definition for a "Conflict of Interest" is:

- "a specific and identifiable prospect of pecuniary gain or loss (not shared with the public) from an official act of any public official or employee to:*
- *Self or Family member: family defined as household members, children, step-children, brothers, sisters, parent, step-parents, domestic partner and all persons claimed on dependents on latest tax return.*
  - *Business owned by self or household member*
  - *Employer, client or customer*
  - *Non-profit where public official employee or household member is an officer or director*
  - *Contributor to council or mayoral race in last 2 years (if over \$1,000 for council, or if over \$2,500 for Mayor)*

### ***Disclosure***

#### ***Method***

- *For member of governmental body at a public meeting of that body*
- *For the City Manager, City Attorney or City Clerk to the Governing Body at a public meeting*
- *For a City employee, to the City Manager*

*When there is a conflict, public official or employee shall not perform an official act of attempt to influence another person to perform an official act in a conflicted matter.*

Mr. Zamora reviewed the rules about accepting gifts noting that the general rule is that committee members should not receive gifts from people who come before this Committee, however, there are some exceptions, such as gifts that are less than \$50, for example, a water bottle.

Mr. Zamora noted there are specific codes of ethics with regard to political activity. Improper political campaigning includes:

- *Public Official or employee shall not knowingly request or authorize another to request a subordinate to make a campaign contribution or provide services to a campaign*
- *All public employees are subordinates of the Governing Body*
- *Public officials or employees shall not engage in political campaigning while on duty*
- *No use of City resources for campaigns (funds, equipment, vehicles, etc.)*
- *No promise of an appointment to any City position as a reward for political activity or contribution.*

Mr. Zamora reviewed the Code of Ethics for Honoraria noting that public officials shall not request or receive an honorarium for a speech or service rendered in the performance of his or official duties. Reasonable reimbursement for meals, lodging or travel expenses is permissible. Reimbursements shall be reported within 10 days. He said this form is available through the City Clerks because the public has the right to know where the governing bodies are and what conference they are attending, for example.

- Ms. Perez said a couple of the Water Conservation Committee Members attended a conference but this did not happen.
- Mr. Zamora said if you paid the costs for everything, you do not have to report this; however, if the conference paid your costs, the disclosure form should be submitted to the City Clerk's office, because again the public has the right to know.
- Ms. McDonald said the conference paid for their hotel fees. She asked if it would be best to go back and report this.
- Mr. Zamora said it would be best for them to submit a disclosure form.
- Ms. Trevizo mentioned that she just returned from a conference on Friday where she received a scholarship for the registration fee. She noted that the City paid for the hotel and travel expenses.

Mr. Zamora said it would be best for her to report this also.

Mr. Zamora reviewed the Annual Disclosure requirement noting that upon election or appointment, public officials and department heads should disclose their name, address, phone number, employer (if other than the City), professional, occupational or business licenses; for-profit and non-profit Board memberships and businesses owned. This is maintained for public record for the public to see whether or not the members have any conflict of interests.

Mr. Zamora reviewed the Open Meetings Act noting that meeting notices have to be published 74 hours in advance and no amendments to agendas should be done within 72 hours.

- Ms. Perez asked what should be done if a Committee Member has some new information that they want to share with the Committee and it's not on the agenda.

Mr. Zamora said now we're getting into the "artificial" aspect and, keep in mind, transparency. He said if you have a quorum of the governing body, you are holding a meeting and would be violating the Open Meetings Act by not advertising it, or not giving the public the opportunity to participate. He said this could include e-mails.

Staff is the one who needs to communicate information to the Committee, such as meeting dates, agendas, etc. He said the best thing to do is to communicate with staff or the Chair on items for the agenda also. Staff will distribute the information.

- Mr. Michael said there could be water events around the City that the Committee Members or a quorum of the Committee is likely to attend. He asked if this is ok.

Mr. Zamora said the safest way is to advertise the event and be sure not to conduct business.

Ms. Schmitt asked if this is the something that working groups should avoid as well.

Mr. Zamora said the subcommittee process is OK under certain guidelines: 1) there can't be a quorum of the Committee and 2) if there is a full quorum present, advertise the meeting.

Executive Sessions are not recommended; and if the committees feel that there is a need for an executive session, they need to be approved by the City Manager.

Mr. Zamora concluded his presentation noting that his office is always open to anybody who may have a question. He asked that committee members go through staff to contact him.

## **INFORMATIONAL ITEMS:**

### **8. REBATE ANALYSIS**

Tim Michael and Doug Pushard prepared a handout that was distributed in the Committee Members' packets entitled "*A Review of City of Santa Fe Water Conservation Rebate Programs*". Please see Exhibit "8" for the specifics of this presentation.



Chair Ives said the information on how our programs work is very valuable in assessing their effectiveness and to determine logically where we want to go in the future. He asked what the intent or objective was in undertaking this particular issue.

Mr. Pushard said the objective is to get Committee Members involved in the process; to see if we are on the right track and give the Committee Members information that may be missing. Their original thought, was to look at how the City is promoting the various rebates.

Mr. Pushard said it turns out that there is not a lot of data to answer this question, and then he started to realize that there are other questions like how effective has the Rebate Program been to the city and the users (has it reduced their water rates). The purpose of the review is to understand the effectiveness of the City's rebate programs in order to identify the programs that have been most effective and those that have the potential to provide the largest water savings.

Mr. Pushard said a question that he asked in a meeting in the past was whether a rebate analysis was done before and the answer is no. He said this got him thinking- has any city done a rebate analysis and in just doing a superficial search, he couldn't find any city that has done one. He said we are fortunate in that the City has published a ton of data and they could come up with some best practices that the Committee, the working group and the City could use in going forward.

Chair Ives suggested the working group try to engage the Water Company a little more directly by talking to senior staff and letting them know about the analysis that is being done to give them feedback.

Mr. Pushard said he appreciated the suggestion because they did not think of that. He said the next step is to get with staff in about two weeks to review the information, and they should have a final conclusion done for the next meeting.

Ms. Perez referred to page 1 of the Rebate Analysis, one of the foot notes states "*Connections estimate at 0.79 times population*". She asked where this came from.

Mr. Pushard said this was based on 2012 data.

Ms. Perez said she thinks is fantastic and she thanked Mr. Pushard and Mr. Michael for doing this. She said she was really surprised that there have been no rebates; no moisture sensors, ET controllers; pressure-reducing valves and other outdoor devices at all. She asked if these are the programs that Laurie's office is re-evaluating.

Ms. Trevizo said yes.

Ms. Perez asked if it would be appropriate for her to ask why the numbers are zeroed.

Ms. Trevizo said you have to have a staff evaluation prior to the application, and they conducted some audits in the past and found that the bottom line was that the landscape professionals were uncomfortable with ET controllers, moisture sensors, rain sensors, any of these new technologies. Therefore, she pulled everything back because the landscape professionals need to be trained on these technologies.

Mr. Pushard said they found out that the programs were not well communicated.

Ms. McDonald said from a documentation standpoint and the City's standpoint, this makes sense but from the homeowner and the landscaper's perspective, it doesn't make sense in the workflow of the individual. She said while she thinks that the intention is very good, she thinks we should look at how it's being implemented and does it make sense in the workflow of the individual.

Ms. Perez referred to page 9, Table 10 – *Residential Rebate Calculated Water Savings*. She said out of all the toilets that were retrofitted in the City since the Retrofit Program came to being only 0.0053 acre feet of water was saved. She asked if this is correct.

Mr. Pushard said from the Rebate Program, not the Retrofit Program. He said another thing to be done is to look at the Retrofit Program because these numbers are only for the Rebate Program.

Ms. Grosse said that these look like the water factors that they use.

Mr. Pushard said they have not done all of the calculations, year-to-date.

Ms. Perez referred to Table 8, page 10, and said it would be helpful to have the total dollars per acre-foot that is saved. It would also be interesting to know how much money is spent on a project.

Ms. Trevizo mentioned that the Rebates are totally funded by the Levy Fund that goes on the water bills around April.

Chair Ives requested that the working group look at the leveraging effect with having the state in parallel.

Mr. Michael said this is only a draft report and they would like to have a final review for the Committee to review at the next meeting.

## **9. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE INITIATIVES:**

### **A. GROUP #2 – Water Conservation Education/Outreach**

Ms. Perez said Group #2 updated the date in the presentation and copies of the

updated presentation are included in the Committee Members' packets. Please see Exhibit "9a" for the specifics of this presentation.

Ms. Perez said they are still welcoming comments and Tim Michael has done a great job in making it more readable. She noted that they added a slide on how the water is used and how we stack up when compared to other cities. They also added a slide, in response to Ms. McDonald's comments at the last meeting on getting feedback.

Ms. McDonald said she appreciated the inclusion of parks.

Mr. Pushard referred to page 14 and noted that the City no longer offers irrigation audits. Also on page 15, rebates for irrigation efficiency has to be taken off.

Chair Ives referred to page 19 under Community Involvement and questions. He said it would be helpful to include the website addresses where follow up questions could be made. He suggested that they change the question to "What would like to see done?" Chair Ives would like to have a website that is specifically used to aggregate the feedback, etc.

The presentation will be an action item for the next meeting for approval by the Committee.

Ms. Trevizo requested that an outline on the fiscal impacts be done, as far as what they are expecting for budget items, as well as anything in advance; any expectations from other committee members who will be presenting, etc. for planning purposes. She would also like to see a calendar on where the presentations are going to be at because much of the print media requires month's notice.

#### **B. GROUP #3 – Promote Outdoor Water Conservation**

Mr. Pushard said one of the questions that Chair Ives asked at the last meeting, and one of the things that the Group worked on, was the creation of an equivalent of the HERS rating – creating a WERS rating (Water Efficiency Rating System). He said as an industry, as a whole, there is no WERS rating system.

Mr. Pushard distributed a handout on what the HERS Index is. The Home Energy Rating System (HERS) index is the industry standard by which a home's energy efficiency is measured. It's also the nationally recognized system for inspecting and calculating a home's energy performance.

Mr. Pushard said they met with Stephen Hayes who is the President of the Homebuilders Association for the State of New Mexico and he was independently thinking about the same idea and has provided some input. He said the next step would be to try and have a combined document and come up with the components that would be within a rating system. He asked people who may have some ideas to send it to him or Laurie Trevizo. He offered to have a draft by the next meeting.

Ms. Trevizo mentioned that she attended the annual meeting of the Alliance for

Water Research and their research committee is actually looking at something very similar to this, on a federal level. She said this could be something that the working group might want to consider rolling in.

Mr. Pushard noted that they have two presentations scheduled with the Architects and the Association of Realtors. This will be brain-storm sessions to get their feedback and ideas. The Association of Realtors is scheduled for November 6, 2013 and the Architects is scheduled for January 9, 2014. He will send out the location information to Laurie Trevizo if anyone is interested in attending the sessions.

**C. GROUP #4 – Re-establish Trend of Net Annual Reductions in per capita water usage and identifying large water users**

Ms. Schmitt said Group #4 is looking at three to four potentially large water users. She explained that they are interested at looking at handheld devices to identify large water users.

She said the next thing is lodging. She noted that she was recently at the Inn of Anasazi Hotel and when you check in, they have you sign a document about whether or not you want to choose the option to conserve water because water is a limited precious natural resource. She feels that this is a good process to get people familiar with water and they could encourage all the hotels to do this.

She noted that staff met with the Watershed Association and the hotels on October 3<sup>rd</sup> and they would like to hear about that meeting.

Ms. Grosse said it was a status update from the representatives who are heading up the Green Lodging Initiative. They spoke about the steps they have made so far and it appears that 11 of the hotels have largely completed their steps and are going through the process. They expect to host a forum in March or April where other hotels will be invited.

Ms. Schmitt said they would like to communicate with them at one point. She asked if there was any way to acknowledge or reward the hotels.

Ms. Grosse said the Green Concierge program works with some of the online booking agencies to give them green ratings based on the particular categories that they opted to participate in and excel in.

With regards to Parks, Ms. Schmitt noted that Ms. McDonald presented a draft recommendation to POSAC asking them how they would like to proceed, and a Water Conservation Subcommittee has been created within the POSAC. Once they have established the subcommittee, the working group will liaison with them to see what can be done with them, and what they can work on with them in terms of water efficiency in parks. She said they also have some numbers on water use in the parks, and they also have a map of the maps, and they will be working on correlating that information. She said they also want to liaison with Lisa Randall from the public schools to see what they are doing and see if she wants any assistance from them.

#### **D. GROUP #5 – Domestic Wells within the City Limits**

A written report from Group #5 was distributed. Please see Exhibit “9d” for the specifics of this presentation.

Mr. Wiman reported that they had a committee meeting and the Working Group is interested in determining the impact of private wells within the City with respect, in particular, to 1) the drawdown of the Tesuque Formation aquifer, 2) the impact on the pumping of private wells on water flow on the City in reaches of the Santa Fe River, 3) the impact of private wells on effluent arriving at the water treatment plant and 4) the net impact of gains and depletion of the lower Santa Fe River below the plant.

Mr. Wiman said the number and usage of private wells in the city remains unknown. The range estimates are between 600 to 3,000 wells and 200 to 3,000 acre-feet per well per year. In order to determine the impact of the pumping of an unknown number of private wells, and before any other additional work such as physically inventorying wells is conducted, it is proposed by Working Group #5 that quantitative hydrologic modeling be conducted to determine the range of the possible impact of wells. It is anticipated that this modeling could be properly conducted by a qualified geotechnical firm already under contract by the City.

Chair Ives suggested that this be run by the legal department.

Ms. McDonald said there are a lot of wells that have replacement wells and the City has data on those that have been put in place. She said as part of the fiscal impact that will happen further down the line, on requiring metering, she would like to see some kind of provision or discussion for those who cannot afford the additional cost of a meter. What kind of program is going to allow them to get a meter?

Ms. Perez asked if they should set up a meeting with the legal department.

Chair Ives said yes, he thinks this would be prudent to do.

Ms. Perez noted that the hydrologist has a lot of on-the- ground experience dealing with some of the legal issues.

Ms. McDonald noted that she and her husband and several other people are working on a Water Harvesting Bill. They are meeting with some of the representatives tonight and she will give an update on this later.

#### **E. GROUP #1 - Water Conservation and Drought Management Plan Update**

Ms. Perez reported that they have started developing guiding principles.

## **MATTERS FROM STAFF**

### **10. WATER CONSERVATION COMMITTEE PROPOSED 2014 SCHEDULE**

Copies of the proposed 2014 Committee schedule were distributed in the Committee Members' packets. The Committee will vote on this at the next meeting.

## **MATTERS FROM THE COMMITTEE:**

### **11. 2014 Legislative Recommendations**

Chair Ives said he hopes to have recommendations to look at for the next meeting.

## **ITEMS FOR NEXT AGENDA – Tuesday, November 5, 2013**

Ms. Gross noted that the next meeting was scheduled for November 5, 2013 due to the Thanksgiving holiday.

- Invitation to State Legislators
- Demand Elasticity, if available
- *Captions:* October 18, 2013 @ 3 p.m.
- Packet Material: October 23, 2013 @ 3 p.m.

## **ADJOURNMENT**

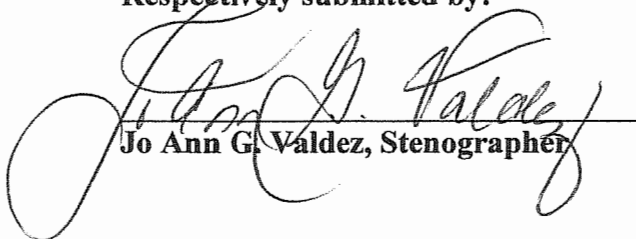
There being no further business to come before the Committee, the Chair called for adjournment at 6:15 p.m.

**Approved by:**

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**Councilor Peter N. Ives, Chair**

**Respectively submitted by:**



**Jo Ann G. Valdez, Stenographer**

## 2014 SANTA FE WATER CONSERVATION COMMITTEE MEETING SCHEDULE

DATE	LOCATION	TIME
JANUARY 14, 2014	City Councilors' Conference Room	4-6 PM
FEBRUARY 11, 2014	City Councilors' Conference Room	4-6 PM
MARCH 11, 2014	City Councilors' Conference Room	4-6 PM
APRIL 8, 2014	City Councilors' Conference Room	4-6 PM
MAY 13, 2014	City Councilors' Conference Room	4-6 PM
JUNE 10, 2014	City Councilors' Conference Room	4-6 PM
JULY 8, 2014	City Councilors' Conference Room	4-6 PM
AUGUST 12, 2014	City Councilors' Conference Room	4-6 PM
SEPTEMBER 9, 2014	City Councilors' Conference Room	4-6 PM
<sup>1</sup> OCTOBER 7, 2014 10/13/14 Columbus Day	City Councilors' Conference Room	4-6 PM
<sup>1</sup> NOVEMBER 4, 2014 11/11/13 Veteran's Day	City Councilors' Conference Room	4-6 PM
DECEMBER 9, 2014	City Councilors' Conference Room	4-6 PM

City Councilors' Conference Room – 200 Lincoln Avenue

<sup>1</sup>First Tuesday meeting due to Holiday

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## January 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
1				1	2	3	4
2	5	6	7	8	9	10	11
3	12	13	14	15	16	17	18
4	19	20	21	22	23	24	25
5	26	27	28	29	30	31	

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## February 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
5							1
6	2	3	4	5	6	7	8
7	9	10	11	12	13	14	15
8	16	17	18	19	20	21	22
9	23	24	25	26	27	28	

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## March 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
9							1
10	2	3	4	5	6	7	8
11	9	10	11	12	13	14	15
12	16	17	18	19	20	21	22
13	23	24	25	26	27	28	29
14	30	31					

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## April 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
14			1	2	3	4	5
15	6	7	8	9	10	11	12
16	13	14	15	16	17	18	19
17	20	21	22	23	24	25	26
18	27	28	29	30			

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## May 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
18					1	2	3
19	4	5	6	7	8	9	10
20	11	12	13	14	15	16	17
21	18	19	20	21	22	23	24
22	25	26	27	28	29	30	31

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## June 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
23	1	2	3	4	5	6	7
24	8	9	10	11	12	13	14
25	15	16	17	18	19	20	21
26	22	23	24	25	26	27	28
27	29	30					

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## July 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
27			1	2	3	4	5
28	6	7	8	9	10	11	12
29	13	14	15	16	17	18	19
30	20	21	22	23	24	25	26
31	27	28	29	30	31		

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## August 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
31						1	2
32	3	4	5	6	7	8	9
33	10	11	12	13	14	15	16
34	17	18	19	20	21	22	23
35	24	25	26	27	28	29	30
36	31						

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## September 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
36		1	2	3	4	5	6
37	7	8	9	10	11	12	13
38	14	15	16	17	18	19	20
39	21	22	23	24	25	26	27
40	28	29	30				

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## October 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
40				1	2	3	4
41	5	6	7	8	9	10	11
42	12	13	14	15	16	17	18
43	19	20	21	22	23	24	25
44	26	27	28	29	30	31	

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## November 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
44							1
45	2	3	4	5	6	7	8
46	9	10	11	12	13	14	15
47	16	17	18	19	20	21	22
48	23	24	25	26	27	28	29
49	30						

365

## December 2014

	Sun	Mon	Tue	Wed	Thu	Fri	Sat
49		1	2	3	4	5	6
50	7	8	9	10	11	12	13
51	14	15	16	17	18	19	20
52	21	22	23	24	25	26	27
1	28	29	30	31			

**1 Jan** New Year's Day  
**20 Jan** Martin Luther King Day  
**12 Feb** Lincoln's Birthday  
**14 Feb** Valentine's Day  
**17 Feb** Presidents Day  
**4 Mar** Mardi Gras Carnival  
**9 Mar** Daylight Saving (Start)

**17 Mar** St. Patrick's Day  
**1 Apr** April Fool's Day  
**18 Apr** Good Friday  
**20 Apr** Easter  
**21 Apr** Easter Monday  
**5 May** Cinco de Mayo  
**11 May** Mother's Day

**17 May** Armed Forces Day  
**26 May** Memorial Day  
**8 Jun** Pentecost  
**9 Jun** Pentecost Monday  
**14 Jun** Flag Day  
**15 Jun** Father's Day  
**4 Jul** Independence Day

**1 Sep** Labor Day  
**11 Sep** September 11th  
**17 Sep** Citizenship Day  
**26 Sep** Native American Day  
**13 Oct** Columbus Day  
**16 Oct** Boss's Day  
**18 Oct** Sweetest Day

**31 Oct** Halloween  
**2 Nov** Daylight Saving (End)  
**11 Nov** Veterans' Day  
**27 Nov** Thanksgiving  
**7 Dec** Pearl Harbor  
**25 Dec** Christmas Day  
**31 Dec** New Year's Eve

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2014

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# 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 *RC*

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

**DATE:** October 25, 2013

**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 two consecutive years of record drought and heat. It is now apparent that we are wrapping up a third consecutive year of severe drought and 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 January of this year, the latest model runs are suggesting that 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 beginning of next year.

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). This condition could make next year much more challenging than the current 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.

Earlier this year, BoR/USACoE models indicated the probability of critically low flows in the Rio Grande at Otowi Gage, and they were correct - the last few months have seen flows as low as about 350 cubic feet per second (CFS). In a “normal” year flow ought to be around 1,000 cfs or more. However, during the prolonged rains of September 10th – 17th, the record-breaking rains produced flows exceeding 8,000 cfs at times at Otowi Gage. Flows over the last two or three weeks have been in the range of 1,000 cfs (+/-).

Since CRWTP and BRWTP have been unable to produce very much water lately, City and Buckman wells are providing most of the water supply to meet demands.

## **LOCAL CONDITIONS**

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

August 2013

City Wells	57.85mg	177.55af
Buckman Wells	195.43mg	599.76af
CRWTP	23.02mg	70.67af
BRWTP	18.77mg	57.60af
<i>Other Wells (Osage, MRC, etc)</i>	<i>7.84mg</i>	<i>24.06af</i>

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

	Reservoir Level	Santa Fe Snow Gage	Reservoir Inflow
October 23, 2013	60.3%	0.0 inches	18.40 MGD
5-Year Average This Date (2008 – 2012)	54.4%	0.0 inches	1.56 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 October 23<sup>th</sup>, and due to the recent heavy rains, storage in McClure reservoir is up from 29.0% to 81.1% (or about 2,400 acre-feet), with total combined storage (Nichols and McClure) at 60.3% and increasing daily. 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 (4 – 5 cfs) in order to avoid spilling water over the spillway and also to facilitate the Fishing Derby on the Santa Fe River in town, which took place in mid-October.

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

The last few months have seen flows as low as about 350 cubic feet per second (CFS). In a “normal” year flow at this time of the year ought to be around 1,000 cfs or more. However, during the prolonged rains of September 10th – 17th, the record-breaking rains produced flows exceeding 8,000 cfs at times at Otowi Gage. Turbidity and suspended sediment has also been very high, especially following intense monsoonal rain storms (as high as 7,020 ntu). For this

reason, the BDD Project has been more-or-less shut down during the months of July, August, and most of September, but was able to produce in the range of 3 – 4 mgd through most of October due to reduced turbidity and flows at approximately 1,000 cfs in the river.


### **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 (but rising due to recent storms), and the federal BoR recently stated that if there is no “meaningful moisture” received this winter/spring then this would mark the lowest water levels ever in New Mexico reservoirs prior to entering into a new irrigation season. The recent rains have helped river flows (at least temporarily) and regional reservoirs are receiving needed inflow, but 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 this coming winter may be disappointing.

### **San Juan Basin**


The streamflow forecast for the San Juan River Basin is 75 percent of the 30 year avg. (1981-2010) for 2013. San Juan-Chama contractors have received full allocation of San Juan-Chama Project water this year (up from a previous forecast of only 80%). However, most of this water has already been used by the larger purveyors and irrigators in the middle Rio Grande, and so they are no longer calling for/releasing their water. The water that is currently in the Rio Grande at Otowi Gage is therefore not so much imported San Juan-Chama water as it is environmental flows and native Rio Grande water. However, when water quality conditions permit, the BDD Project is still able to call for and receive its allocation of San Juan-Chama water.

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. If conditions do not change, after deliveries are made out of Heron Reservoir this year, that reservoir will be heading into the next water –year at very low levels. Deliveries to SJCP contractors could be significantly curtailed as a result.



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## Water Conservation: Federal, State, And Local Requirements Are Helping To Drive The Use Of Water Efficient Technologies

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By Amy Vickers - April 2005 - [Green](#)

Governing bodies are imposing rules and regulations on certain types of water use in a growing number of cities and regions. Although many facility executives are familiar with temporary water use restrictions, such as limited hours for lawn and landscape irrigation during drought, facility executives increasingly have to heed permanent water conservation rules.

Why are requirements for water conservation here to stay? In most communities the reason boils down to water demands outstripping supplies. Increasing growth — the U.S. population is projected to exceed 300 million by 2010 — is putting pressure on drinking water supplies. Pollution, such as contamination of ground water, is forcing some drinking water sources to close or require expensive treatment technologies to keep them potable. Alternative sources such as reclaimed wastewater and desalinated seawater are options in some locales. However, they require costly new infrastructure and are not trouble-free. Simply put, to keep water and sewer service available and affordable, everyone needs to get better at doing more with less water.

The good news is that regardless of whether water conservation is required, there is a bevy of ways to save water in commercial and institutional facilities.

Examples Of Water Conservation Ordinances And Rules				
Water Efficiency Measure	Description	Est. Water Savings*	Jurisdiction	More Information
Low-volume toilets (≤1.6 gal/flush), urinals (≤1.0 gal/flush), faucets (≤ 2.5 gal/minute @ 80 psi or ≤ 2.2 gpm @ 60 psi), and showerheads (≤ 2.5 gal/minute @ 80 psi or ≤ 2.2 gpm @ 60 psi). Exceptions for certain special uses (i.e., prisons).	Sets maximum flow rates for plumbing fixtures	35 to 70 percent	United States (federal law applies to local, state, and federal level)	<a href="#">Click Here</a>
Non-flushing Urinals	No water used for flushing urinals	1 to 5 gallons per flush	Arizona Oregon	<a href="#">Click Here</a>



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Lawn irrigation restrictions (year-round)	Lawn watering limited to two applications per week, before 10 a.m. and after 4 p.m. only. Certain exemptions allowed.	5 to 15 percent	Southwest Florida Water Management District	<a href="#">Click Here</a> <a href="#">Click Here</a>
Turf limits	No more than 25 percent of an area set aside for landscaping can be grass in new non-residential developments. New golf courses are limited to an average of 5 acres per hole, with a maximum 10 additional acres for driving ranges. Rebate of \$1 per square-foot of existing turf removed.	More than 50 percent per square foot of lawn replaced by native or adaptive plant material or ground cover	Las Vegas	<a href="#">Click Here</a> <a href="#">Click Here</a>
Pre-rinse kitchen sink spray valves	All models manufactured after January 2006 must be equal to or less than a flow rate of 1.6 gallon/minute	50 gallons per hour of use per valve, about 100 to 300 gallons per day per kitchen	California	<a href="#">Click Here</a> <a href="#">Click Here</a>
*Actual savings will vary depending on pre-conservation water use rates and related factors (e.g., occupancy levels, leakage, climate, etc.).				

## Water Conservation Ordinances and Rules

Water conservation policy and program initiatives targeted at the commercial and institutional sector often focus on reducing the amount of water used by plumbing fixtures, cooling systems and irrigation. These types of uses are typically the largest components of water demand at commercial and institutional facilities. What follows is an overview of technologies and practices that can curb water consumption.

**Low-Volume Plumbing Fixtures.** By now, most facility executives are aware that under the U.S. Energy Policy Act of 1992 (EPAct) only low-volume toilets, urinals, faucets and showerheads can be installed in most facilities. EPAct sets maximum flow rates for fixtures. Since it was enacted, plumbing manufacturers have developed products that exceed EPAct's water efficiency requirements. For example, high-performance dual-flush and 1.0-gallon-per-flush toilets are now available, as are nonflushing urinals and models that use less than 0.5 gallons per flush. Showerheads and lavatory faucets with flow rates of 1.0 to 1.5 gallons per minute are also gaining acceptance as functional designs improve. EPAct was designed to save water through normal fixture replacements. It is estimated that by 2020, the United States, will save between 6 billion and 9 billion gallons of water a day, enough to supply four to six cities the size of New York City.

**Urinals That Don't Use Water.** What do the Baltimore/Washington International Airport, Walt Disney World and the El Paso, Texas, Independent School District have in common? They all use urinals that use no water for flushing. Waterless urinals look like conventional urinals, but instead of using water for flushing, a liquid, usually oil, or canister trap contain odors in the urinal drain. Two states have laws governing nonflushing urinals. Arizona requires all urinals installed in new state buildings after Jan. 1, 2005, to be waterfree fixtures. Recently, the [Oregon State Plumbing Board](#) approved a rule to promote the installation of waterless urinals by allowing them in city, county, state and federal government facilities. Several cities and water systems offer rebate incentives for urinals that don't use water, including Austin, Texas, and Seattle.

**Recirculated Cooling Systems.** Several water suppliers and cities require efficient water cooling practices and equipment. Denver Water requires all water used for evaporative or refrigerated cooling and air conditioning, including equipment such as condensers, and processes, to be recycled or reused. New York City requires recirculated water for medium and large refrigeration and air-cooled systems; properties with steam-source refrigeration must use some condensate for cooling tower makeup water.

**Landscape Water Use.** Lawn watering is restricted year-round in the cities and towns served by the [Southwest Florida Water Management District](#). Irrigation applications to lawns are limited to twice a week, and only before 10 a.m. and after 4 p.m. Certain exemptions are allowed, but this is one of the more aggressive lawn watering rules that is not directly related to drought. Most lawn and turf areas, including playing fields, can survive and thrive on a

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GREEN

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### PREVIOUSLY VIEWED

Water Conservation: Federal, State, And Local Requirements Are Helping To Drive The Use Of Water Efficient Technologies - Facilities Management Green Feature

reduced watering schedule if irrigations are ramped down carefully. Landscape and lawn health may actually improve under a more water-thrifty irrigation regime; excessive watering is a common culprit of root rot, plant diseases and bug infestations. In addition to water savings with reduced irrigation schedules, chemical — fertilizer, pesticide and herbicide — as well as labor costs may be reduced.

**Turf Limitations.** Las Vegas is cracking down on excessive lawn watering by applying turf limits to new properties, including commercial sites and golf courses. Existing multifamily and business property owners that convert grassy areas to water-thrifty native or adaptive plant materials or to waterfree ground covers can earn \$1 per square foot in the Water Smart Landscape Rebate program offered by the [Southern Nevada Water Authority](#).

**Pre-rinse Spray Valves.** Nearly 20,000 water-saving, pre-rinse spray valves have been installed in California restaurants and food service facilities as part of a commercial water conservation program. [Wisconsin's Focus on Energy](#) and the [San Antonio Water System](#) have similar programs. The 1.6-gallon-per-minute hand-held spray devices are similar to the 3- to 5-gallon-per-minute conventional spray heads used to remove food residue from dishes, flatware and other food-service items prior to cleaning in a commercial automatic dishwasher. A study of water-thrifty pre-rinse spray valves found that the valves saved about \$300 per year in reduced water and energy costs. The payback on the valves was less than three months.

*Amy Vickers, an engineer and water conservation specialist with Amy Vickers & Associates, Inc. in Amherst, Mass., is author of Handbook of Water Use and Conservation: Homes, Landscapes, Businesses, Industries, Farms (WaterPlow Press).*


## Nonflushing Vs. Low-volume Urinals

Considerable discussion, and some grumbling, has occurred in recent years over the performance of urinals that don't use water. While the numbers of nonflushing urinal installations and enthusiastic customers are growing — along with manufacturers who offer products — some facility executives have complained about increased odor, clogging, and failing or short-lived and expensive trap seal products that create unpleasant cleanup tasks for maintenance workers.

Aside from splash-back problems with some early models that have been corrected, surveys of users of nonflushing urinals show users are generally pleased with the new fixtures. However, facilities that don't have reliable drain-line pitch and maintenance workers who are reluctant to clean nonflushing urinals — hard water increases mineral build-up that can require more aggressive bowl cleaning — may avoid these problems by installing wash-down urinals that use only 0.5 gallon per flush or less.

Like most new technologies, the performance of nonflushing urinals will likely improve over time. For the right situation, the urinals will function just fine, save tons of water, and reduce water and sewer bills.

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## State Rainwater Harvesting Statutes, Programs and Legislation



Record droughts and water-supply worries have served as catalysts for state legislatures to consider legislation legalizing the catchment and use of rainwater for use in households and for lawns.

There has been increased interest over the past five years in legislation allowing, defining, and clarifying when rainwater harvesting can occur. Rainwater harvesting is the act of utilizing a collection system to use rainwater for outdoor uses, plumbing, and, in some cases, consumption. States have also passed legislation encouraging the use of Graywater. Graywater refers to the reuse of water drained from baths, showers, washing machines, and sinks (household wastewater excluding toilet wastes) for irrigation and other water conservation applications.

States must ensure water-quality standards and public health concerns are met. In some states, such as Colorado, previous water law stated that all precipitation belonged to existing water-rights owners, and that rain needed to flow to join its rightful water drainage. However, a 2007 study conducted by the Colorado Water Conservation Board and Douglas County determined that only 3 percent of rain actually reached a stream or the ground. Colorado followed-up by enacting two pieces of legislation, one allowing certain types of well owners to use rainwater and one authorizing pilot development projects.

Texas and Ohio are among states that have devoted a considerable amount of attention to this issue, and have numerous enacted laws regulating the practice of rainwater harvesting. Texas offers a sales tax exemption on the purchase of rainwater harvesting equipment. Both Texas and Ohio allow the practice even for potable purposes. Oklahoma passed the Water for 2060 Act in 2012, to promote pilot projects for rainwater and graywater use among other water saving techniques.

For updates on pending legislation and past years, please see the [NCSL Energy and Environment Legislation Tracking Database](#)

### Map of Rainwater Harvesting Laws



#### Featured Items

- ▶ [NCSL Energy and Environment Legislation Tracking Database](#)
- ▶ [Map of Rainwater Harvesting Laws](#)
- ▶ [State Rainwater Harvesting and Graywater Laws and Programs](#)
- ▶ [2012 Notable Rainwater Harvesting Legislation](#)

#### NCSL Staff Contact

[Douglas Shinkle](#)

## State Rainwater Harvesting and Graywater Laws and Programs

[Arizona](#) | [Colorado](#) | [Illinois](#) | [North Carolina](#) | [Ohio](#) | [Oklahoma](#) | [Oregon](#) | [Rhode Island](#) | [Texas](#) | [Utah](#) | [Virginia](#) | [Washington](#) | [U.S. Virgin Islands](#)

### Arizona

Arizona had a tax credit for water conservation systems that included collection of rainwater; however, the credit expired on Jan. 1, 2012. The credit is equal to 25 percent of the cost of the system. The maximum credit in a taxable year could not exceed \$1,000. From 2007 to 2010, over \$360,000 was credited to homeowners that purchased a water conservation system. [Arizona Revised Statutes §43-1090.01](#)

[AZ H 2363](#) (2012) – Established a joint legislative study committee on macro-harvested water. The committee shall study, analyze and evaluate issues arising from the collection and recovery of macro-harvested water, including reviewing scientific data on surface water, rainwater harvesting, methodology costs and benefits, potential impacts on water rights, downstream users, and potential aquifer management issues and groundwater management issues.

[AZ H 2830](#) – This bill allows the governing body of a city or town to establish an energy and water savings account that consists of a designated pool of capital



investment monies to fund energy or water savings projects in public facilities, including rainwater harvesting systems. (Arizona Revised Statutes §9-499.16)

### Colorado

Colorado had some of the nation's strictest rainwater harvest laws, essentially prohibiting the practice. In 2009, two laws were passed that loosened restrictions. [CO SB 80](#) allowed residential property owners who rely on certain types of wells to collect and use rainwater. *Colorado Revised Statutes §37-90-105* [CO HB 1129](#) authorized 10 pilot projects where captured precipitation was used in new real estate developments for non-potable uses. *Colorado Revised Statutes §37-60-115*

Resources:

- ▶ [Colorado Division of Water Resources outlined information on SB 80](#)
- ▶ [Colorado Legislative Council Issue Brief on SB 80 and HB 1129 and Rainwater Harvesting in Colorado](#)
- ▶ [Criteria and guidelines for pilot projects](#)

### Illinois

In 2009, Illinois created the Green Infrastructure for Clean Water Act which relates to water conservation, efficiency, infrastructure and management while promoting rainwater harvesting. [Illinois Revised Statutes Chapter 415 §56](#)

IL H 991 of 2011 amended the Homeowners' Solar Rights Act. It requires that within 120 days after a homeowners' association, common interest community association, or condominium unit owners' association receives a request for a policy statement or an application from an association member, the association shall adopt an energy policy statement regarding: (i) the location, design, and architectural requirements of solar energy systems; and (ii) whether a wind energy collection, rain water collection, or composting system is allowed, and, if so, the location, design, and architectural requirements of those systems. [Illinois Revised Statutes Chapter 765 § 165/20](#)

### North Carolina

NC H 609 of 2011 directed the Department of Environment and Natural Resources to provide statewide outreach and technical assistance regarding water efficiency, which shall include the development of best management practices for community water efficiency and conservation. This shall include employing water reuse practices that include harvesting rainwater and using grey water. [North Carolina General Statutes § Session Law 143-355](#)

### Ohio

Ohio allows rainwater harvesting, even for potable purposes. Private water systems that provide drinking water to fewer than 25 people are regulated by the Ohio Department of Health (ODH). Ohio also has a Private Water Systems Advisory Council within the ODH. The nine member council is appointed by the governor with the advice and consent of the Senate. [Ohio Revised Code §3701.344](#) and [Ohio Revised Code §3701.346](#)

### Oklahoma

[OK HB 3055](#) of 2012 created the "Water for 2060 Act." The bill initiates grants for pilot programs. The pilot projects shall be innovative programs that will serve as models for other communities in the state. Pilot projects may include, but are not limited to, community conservation demonstration projects, water use accounting programs, retrofit projects, school education projects, Xeriscape demonstration gardens, projects which promote efficiency, recycling and reuse of water, and information campaigns on capturing and using harvested rainwater and gray water.

### Oregon

Since Oregon allows for alternate methods of construction of rainwater harvesting systems, the Oregon Building Codes Division (BCD) created methods for both potable and non-potable systems. [Oregon Revised Statute §455.060](#)

Senate Bill 79, passed in 2009, directs the BCD to increase energy efficiency, by including rainwater harvesting, in new and repaired buildings.

Resources:

- ▶ [Potable Alternate Method](#)
- ▶ [Non-Potable Alternate Method](#)
- ▶ [Oregon Smart Guide - Rainwater Harvesting](#)

### Rhode Island

[RI HB 7070 of 2012](#) created a tax credit for the installation of cisterns to collect rainwater. Any individual or business that installs a cistern on their property to collect rainwater for use in their home or business shall be entitled to a state income tax credit of ten percent (10%) of the cost of installing the cistern not to exceed one thousand dollars (\$1,000). Each entity shall be allowed only one tax credit over the life of the cistern unless they are replacing an existing cistern with a larger cistern and have not received the maximum tax credit of one thousand dollars (\$1,000). A cistern is defined as a container holding fifty (50) or more gallons of diverted rainwater or snow melt, either above or below ground.

### Texas

[Texas HB 3391](#) of 2011 is one of the most far-reaching and comprehensive pieces of legislation regarding rainwater harvesting in recent years. Among its provisions:

- ▶ Allows financial institutions to consider making loans for developments that will use harvested rainwater as the sole source of water supply.
- ▶ Requires rainwater harvesting system technology for potable and nonpotable indoor use and landscape watering be incorporated into the design and construction of each new state building with a roof measuring at least 50,000 square feet that is located in an area of the state in which the average annual rainfall is at least 20 inches.
- ▶ Requires the development of rules regarding the installation and maintenance of rainwater harvesting systems that are used for indoor potable purposes and connected to a public water supply system, prior to this bill it could only be used for nonpotable purposes. The rules must include criteria to ensure that safe drinking water standards are met and the water does not come in contact with the public water supply at a location off of the property.
- ▶ Requires a person who intends to connect a rainwater harvesting system to a public water supply system for potable purposes to give written notice to the municipality or the owner or operator of the public water supply system. A municipality or public water supply system may not be held liable for any adverse health effects allegedly caused by the consumption of water collected by a rainwater harvesting system that is connected to a public water supply system and is used for potable purposes if the municipality or the public water supply system is in compliance with the sanitary standards for drinking water.
- ▶ Encourages each municipality and county to promote rainwater harvesting at residential, commercial, and industrial facilities through incentives such as the provision at a discount of rain barrels or rebates for water storage facilities. Requires the Texas Water Development Board (TWDB) to ensure that training on rainwater harvesting is available for the members of the permitting staffs of municipalities and counties at least quarterly. School districts are strongly encouraged to implement rainwater harvesting systems.



- Prohibits a municipality or county from denying a building permit solely because the facility will implement rainwater harvesting.

#### Other Texas Statutes

[Texas Health and Safety Code §341.042](#) outlines standards for harvested rainwater. Includes health and safety standards for treatment and collection methods for harvested rainwater intended for drinking, cooking, or bathing.

[Texas Property Code §202.007](#) prevents homeowners associations from banning outdoor water-conserving measures, including rainwater harvesting installations. The legislation allows homeowners associations to require screening or shielding to obscure view of the tanks.

[Texas Tax Code §151.355](#) allows for a state sales tax exemption on the purchase of rainwater harvesting equipment.

#### Resources:

[The Texas Manual on Rainwater Harvesting](#) provides information on the practice and outlines sales tax exemptions at the state and local level (pg. 53).

In 2005, the legislature ordered the creation of a Texas Rainwater Harvesting Evaluation Committee; see here for its [2006 Report to Texas Legislature with Recommendations](#).

The Texas Water Development Board sponsors the [Texas Rain Catcher Award](#) to advance the technology, educate the public, and to recognize excellence in the application of rainwater harvesting systems in the state.

#### Utah

Utah allows for the direct capture and storage of rainwater on land owned or leased by the person responsible for the collection. If a person collects or stores precipitation in an underground storage container, only one container with a maximum capacity of no more than 2,500 gallons may be used. For a covered storage container, no more than two containers may be used, and the maximum storage capacity of any one container shall not be greater than 100 gallons. [Utah Code Annotated §73-3-1.5](#)

#### Virginia

In 1981, Virginia passed Senate Bill 1416, which gave income tax credit to individuals and corporations that installed rainwater harvesting systems. "There is hereby established the Alternative Water Supply Assistance Fund to be administered by the Department to provide grants to localities to be used for entering into agreements with businesses and individuals to harvest and collect rainwater for such uses as determined necessary by the locality, including, but not limited to, irrigation and conservation." However money has not been allocated for these purposes.

[Va. Code Ann. § 32.1-248.2](#) – Requires the development of rainwater harvesting and graywater guidelines to ease demands on public treatment works and water supply systems and promote conservation.

#### Resources:

[Virginia Rainwater Harvesting and Use Guidelines](#)

#### Washington

In Washington, state law allows counties to reduce rates for storm water control facilities that utilize rainwater harvesting. Rates may be reduced by a minimum of ten percent for any new or remodeled commercial building. However, the rate can be reduced more than ten percent, depending on the county. [Kitsap County's Ordinance](#) reduces surface and stormwater fees by 50 percent. [Washington Revised Code §36.89.080](#)

Uses for harvested rainwater may include water closets, urinals, hose bibbs, industrial applications, and for irrigation purposes. Other uses may be allowed when first approved by the authority having jurisdiction. [Washington Revised Code §51-56-1623](#)

#### Resources:

In 2009, the Washington Department of Ecology issued an Interpretive Policy Statement clarifying that a water right is not required for rooftop rainwater harvesting.

[Washington Department of Ecology Rainwater Collection website](#)

#### U.S. Virgin Islands

Since 1964, the U.S. Virgin Islands has required most buildings to be constructed with a self-sustaining potable water system, such as a well or rainwater collection system.

[U.S. Virgin Island Code Title 29 §308](#)

### 2012 Notable Rainwater Harvesting Legislation

STATE	BILL	SUMMARY
<b>California</b>	CA AB 1750 (Pending: To Senate Committees on Natural Resources and Water and Rules.)	Would enact the Rainwater Capture Act of 2012. Would authorize residential, commercial and governmental landowners to install, maintain, and operate rain barrel systems and rainwater capture systems for specified purposes, provided that the systems comply with specified requirements. Would authorize a landscape contractor working within the classification of his or her license to enter into a prime contract for the construction of a rainwater capture system if the system is used exclusively for landscape irrigation.
	CA AB 2398 (Pending: In Senate Committee on Natural Resources and Water: Held in committee.)	Would enact the Water Recycling Act of 2012. Would establish a statewide goal to recycle specified amounts of water by specified calendar years. Would require the adoption of a drinking water criteria for groundwater recharge project utilizing recycled water and the development and adoption of drinking water criteria for advanced treated purified water for raw water augmentation projects. Establish a related research fund. Relates to permits and permit fees for raw water augmentation projects. Relates to inspections.
<b>Illinois</b>	IL HB 1585 (Pending: Referred to House Committee on Rules.)	Would provide that "plumbing" includes rainwater harvesting distribution systems, but does not include any rainwater harvesting distribution system or rainwater harvesting collection system unless otherwise required by the Illinois Plumbing Code.
<b>Massachusetts</b>	NJ AB 2890 (Pending: To Assembly Committee on Environment and Solid	Water Conserving Plants Purchase Tax Deduction – Would provide for a personal income tax deduction for the purchase of certain water conserving plants and items: WaterWise plants and landscaping items intended to reduce water usage, including, but not limited to: drought resistant plants that last for more

STATE	BILL	SUMMARY
	Waste.)	than one year; kits or devices specifically designed for generating compost; grey-water recovery systems where the effluent is used for watering plants; rainwater recovery and storage devices where they are used for watering plants; rain sensors for irrigation systems; and, underground drip irrigation systems.
<b>New Jersey</b>	NJ AB 2890 (Pending: To Assembly Committee on Environment and Solid Waste.)	Rainwater Capture and Water Conservation - This bill would establish several incentives for installation and operation of a rainwater capture system and prohibiting any fees or taxation related to the purchase, installation and use of these systems.
<b>New York</b>	NY AB 6490 (Pending: Amended in Assembly Committee on Real Property Taxation.)	Would create a tax exemption program for commercial and residential real property owners who purchase or install systems for rainwater harvesting, which a municipality within Westchester or Putnam county could adopt by resolution.
<b>North Carolina</b>	NC HB 282 (Failed: Adjourned.)	Would provide that homeowners associations may not prohibit the installation of certain water and energy efficiency improvements by homeowners. Water efficiency improvement. - Rain gardens, cisterns, rain barrels, and other devices or landscaping installations intended to capture, collect, or store rainwater or to reduce the need for irrigation.
	NC SB 427/ NC HB 787 (Failed: Adjourned.)	Would improve the security of North Carolina's water resources. Employing water reuse practices that include harvesting rainwater and using grey water.
<b>Washington</b>	c WA HB 1025 (Failed: Adjourned.)	The rate a county may charge a school district under this section for storm water control facilities would be reduced by a minimum of ten percent for any new or remodeled commercial building that utilizes a permissive rainwater harvesting system. Rainwater harvesting systems would be properly sized to utilize the available roof surface of the building. The jurisdiction would consider rate reductions in excess of ten percent dependent upon the amount of rainwater harvested.
	WA SB 5447/ WA HB 1746 (Failed: Adjourned.)	Related to utility rates and charges for unoccupied mobile home lots in manufactured housing communities: The rate a city or town may charge under this section for storm or surface water sewer systems or the portion of the rate allocable to the storm or surface water sewer system of combined sanitary sewage and storm or surface water sewer systems shall be reduced by a minimum of ten percent for any new or remodeled commercial building that utilizes a permissive rainwater harvesting system. Rainwater harvesting systems would be properly sized to utilize the available roof surface of the building. The jurisdiction would consider rate reductions in excess of ten percent dependent upon the amount of rainwater harvested.
<b>Wisconsin</b>	WI AB 737 (Failed to Pass.)	This bill would require DSPS to promulgate rules that establish standards for the installation of graywater and rainwater systems and that authorize the use of graywater and rainwater within the building, or on the property surrounding the building, from which the graywater was generated or the rainwater was collected.

Source: National Conference of State Legislatures, 2012

#### Denver Office

Tel: 303-364-7700 | Fax: 303-364-7800 | 7700 East First Place |  
Denver, CO 80230

#### Washington Office

Tel: 202-624-5400 | Fax: 202-737-1069 | 444 North Capitol Street, N.W., Suite 515 |  
Washington, D.C. 20001

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# City of Santa Fe, New Mexico

## memo

Date: November 6, 2013

To: Water Conservation Committee

Via: Nicholas Schiavo, Interim Water Division and Public Utility Director <sup>NSA</sup>

From: Laurie Trevizo, Water Conservation Manager *LT*  
Rick Carpenter, Water Resources and Conservation Manager

Re: Recommended Changes to Water Conservation Committee Presentation

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### Background:

The presentation is a great effort and the contributions of working group #2 are recognized and appreciated. The Water Division and Water Conservation Office would like to offer some recommendations in support of the WCC presentation on water conservation to the community.

### Recommendations:

General Comments: Suggest increasing the font size where space allows to improve legibility.

Suggest expanding Notes section to provide greater direction for other presenters to follow.

Slide #2: Bullet #4 "What do we need to do (in the future)?" It appears there are no subsequent slides for this bullet. Recommend deleting bullet

Slide #6: Recommend removing the GPCD's from Australian cities. This frame of reference would not be applicable in comparison to US cities due to different laws, cultural behaviors, landscaping or plant needs.

Slide #8: It is unclear the purpose of this slide, it doesn't seem to fit within the context of the presentation. It is possible this will take a while to explain. Recommend removing.

Slide #9: Bullet 3: Length and frequency of severe droughts  
Bullet 4: Population, growth and land use planning

Slide #10: Conservation is the most cost effective source of water on a per unit basis. Add bullet to include: defers additional major capital outlays

Slide #11: 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.

Slide #12: Add bullet Public Outreach and Education

Slide #13: Break into 2 or 3 slides, consider adding pictures

Slide # 14: Under Education include radio show and teacher training

Slide #15: Notes: The Water Conservation Office performs leak detections in response to high water bills or high consumption and there is not a charge to the customer. Leak detections or audits can be performed when customers make a request however, their current consumption will be reviewed and if they are already a low water user an audit will not be performed.

Slide #18: Remove [www.water2conserve.com](http://www.water2conserve.com) and replace with [www.savewatersantafe.com](http://www.savewatersantafe.com)

Slide #20: Recommend changing “Hardship” to “a way of life”. When asking the question “What changes would you like to see?” implies that the City will make the necessary changes. Also the suggestions of increased rebate amounts and penalties are set via City Council not the Water Conservation Office. The implication with this language is that the Water Conservation Office or the Water Conservation Committee might have the authority to make these changes when these tasks fall under the prevue of City Council.

Slide #21: Include “For More information on rebates, water saving tips, rules and regulations go to [www.savewatersantafe.com](http://www.savewatersantafe.com)”

It is unclear what the attendees of the presentation may be recruited for, the Water Conservation Committee only has one vacancy at this time.

Slide# 23: Consider including Santa Fe County and the Office of the State Engineer as resources.

Recommended Action:

Staff recommends changes to the presentation become incorporated prior to approval.

We recognize working group #2 has put a great deal of effort into the presentation, the effort is greatly appreciated and will help to further educate the community. We hope the recommendations will help create a stronger, more effective tool to answer the questions which the community may have regarding water conservation.

## 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.

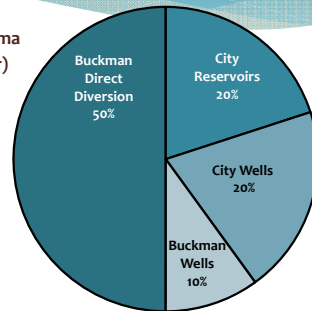
## Overview

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

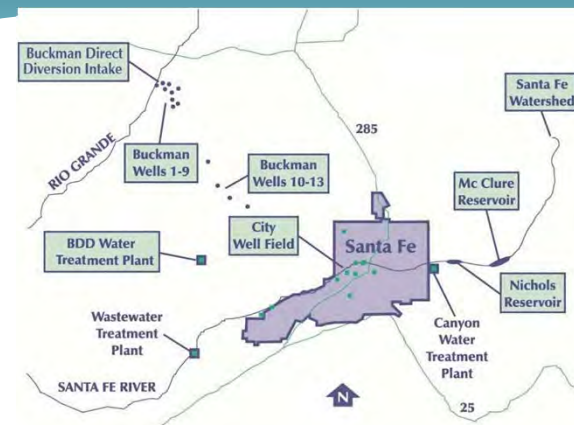
## What are our sources of water?

- \*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!

Annual Contribution  
from Primary Sources

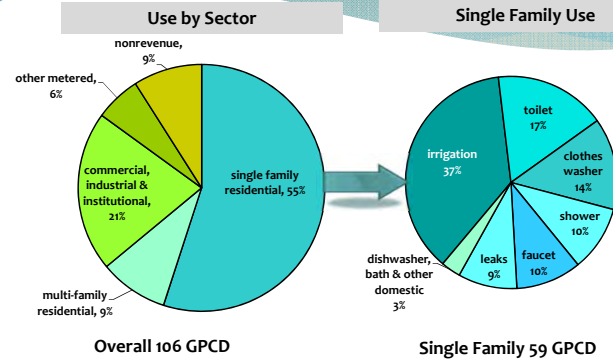


## Sources of the City's Water

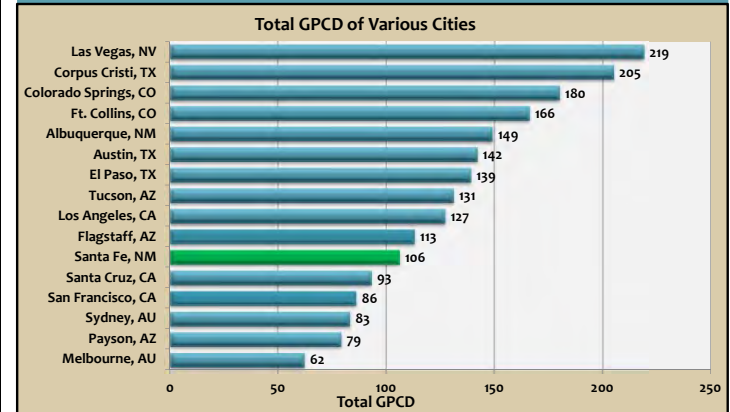


## How Is It Used?

GPCD = annual water consumption ÷ population served



## 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?

## Threats to our water supplies

Source of supply	Power and communication system damage	Drought	Wellhead contamination	Long-term pumping	Forest fires	Storms	Upstream contaminants
City Wells	X	X	X	X			
Buckman Wells	X	X	X	X			
City Reservoirs & Canyon Road Water Treatment Plant	X	X			X	X	
Rio Grande, Buckman Diversion & Water Treatment Plant	X	X			X	X	X

## Water for the future depends on...

- \* Annual precipitation and temperatures
- \* Length and severity of droughts
- \* Population
- \* Adaptation to climate change
- \* Emergency planning
- \* Improved conservation
- \* Level of concern for future generations

## Conservation

- \* Most cost effective source of water – 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?)

## Water Conservation does not promote development and growth

Developers must submit water budgets and buy or provide offset water. The city provides no net new water.

- |   |   |
|---|---|
| * Commercial Development<br>< 5 acre-feet/year  | * Commercial Development<br>> 5 acre-feet/year                        |
| * Residential Development<br>< 10 acre-feet/year  | * Residential Development<br>> 10 acre-feet/year                      |
| * Mixed Use Development<br>< 7.5 acre-feet/year   | * Mixed Use Development<br>> 7.5 acre-feet/year                       |
| ↓   | ↓   |
| * Developer pays fee to City (or uses banked conservation credits) for water to offset new water demand | * Developer transfers water rights to City to offset new water demand |

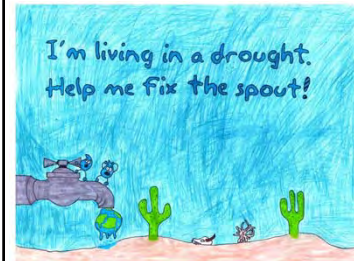
## What are We Doing? Year-Round Water Conservation

- \* 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

## Year-Round Water Restrictions

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

## Conservation Programs



- \* Education: calendar, TV and movie ads, booths, gardens, medians, PR Plan, youth programs
- \* Aggressive rebate program offered
- \* Increased training (QWEL)

## Conservation Programs

### Residential – rebates

- \* See separate slide

### Residential – info

- \* Water budget calculator
- \* Demonstration gardens

### Commercial - free

- \* Audit/leak detection
- \* Irrigation evaluation

### Commercial – rebates

### Commercial - info

- \* Water budget calculator
- \* Water waste reduction ordinances

## Residential Rebates

### Rebates for

- \* High-efficiency clothes washer
- \* High-efficiency toilet (HET)
- \* Rainwater harvesting



## Commercial Rebates

### Rebates for

- \* High-efficiency toilets (HET)
- \* Water-free urinals
- \* Rainwater harvesting
- \* Commercial process efficiency

## Sample Conservation Rebates

### How much are the rebates?

- \* High-Efficiency Clothes Washer \$150 - \$350
- \* Rainwater Catchment System \$0.25 per gallon capacity
- \* Toilet Rebate \$125 - \$500
- \* Water-Free Urinal Rebate \$500

[www.water2conserve.com](http://www.water2conserve.com)

## 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

## Community Involvement ... The Questions

How do you conserve water?  
Are you doing enough? Is conservation a hardship?

### 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?

- \* Increased rebate amounts?
- \* Increased penalties for excessive use?
- \* New programs?

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

## Get Involved!

- \* Conserve!
- \* Take advantage of rebates!
- \* Join the Water Conservation Committee or one of our working groups
- \* We're actively recruiting water experts and motivated citizens

## For Further Info

### City of Santa Fe Conservation Office

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



## Resources

- \* Chair, Water Conservation Committee : Peter Ives, City Councilor, District 2, 505-955-6816, [pnives@santafenm.gov](mailto:pnives@santafenm.gov)
- \* [Savewatersantafe.com](http://Savewatersantafe.com)
- \* Water Conservation Office 505-955-4225
- \* Water Waste Hotline 505-955-4222
- \* City Parks 505-955-2100
- \* 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: Promoting Conservation Strategies of Large Water Users**

Tim Michael, Melissa McDonald & Karyn Schmitt

### **Task Report (November 4, 2013)**

#### **1. Residential (primarily single-family residential)**

- Efforts continue to promote the installation of electronic transmitting water meters
- On-going research on outdoor irrigation and landscape rebates
  - a. Review of San Antonio, TX proposed rebate
  - b. Researching add-on seasonal adjustment for existing clocks as a less expensive option for homeowner rebate

#### **2. Lodging**

- Received update from water conservation on the Green Lodging Initiative at last committee meeting. Will seek follow up.

#### **3. Parks**

- Looking forward to having a representative of POSAC attend a WCC meeting proposing December 2013.
- Met with water division staff to review water usage numbers at the parks. We are currently analyzing the data. We are coordinating our efforts with the water conservation office and POSAC subcommittee.
- Located GIS turf & irrigation maps currently reviewing
- Working to locate Park Master Planning documents
- Discussed with Gary Varela, Parks Superintendent, on-going efforts to create a water tech team for the parks department.

**October 8, 2013**

**Report to the Water Conservation Committee from Working Group #5**

**Grace Perez**

**Doug Pushard,**

**Peter Balleau**

**Bob Kreger**

**Stephen Wiman**

**ASSUMPTIONS:**

We understand that, under New Mexico law, the City of Santa Fe has the power to regulate both the drilling and operation of private wells within the city limits. The extent of that power merits legal review.

To date, the City has chosen only to prohibit the drilling of new wells and to issue permits for replacement wells and to not regulate the operation or production of water from existing private wells.

With the issuing of permits for replacement or re-drill wells, the City requires that meters be installed and that well owners turn in monthly water usage totals. Compliance with reporting has been minimal, as has been compliance enforcement by the City.

WCC Working Group #5 is interested in determining the impact of private wells within the City with respect, in particular, to 1) the drawdown of the Tesuque Formation aquifer, 2) the impact on the pumping of private wells on water flow in the City in reaches of the Santa Fe River, 3) the impact of private wells on effluent arriving at the water treatment plant and 4) the net impact of gains and depletion of the lower Santa Fe River below the plant.

The number and usage of private wells in the city remains an unknown. The range of estimates is between 600-3,000 wells and 200 to 3,000 acre-feet per well per year. An estimate of consumptive use would be a smaller number of acre-feet, which is also unknown but may lie in the range of 50% of the usage. The difference between water use and consumption is returned to the water treatment plant from indoor water use, and to the water table from outdoor water use. The variation of amounts of well water use among individual properties is thought to be wide, with some wells out of operation entirely and others probably exceeding the historically authorized maximum rate of 3 AFY.

If the City were to be involved in the monitoring and/or regulation of private wells, the issue would probably be quite contentious because of the value of the wells to property owners and the perception that the (presumed) water rights associated with those wells are in jeopardy.

**ACTION PLAN – QUANTITATIVE HYDROLOGIC MODELING**

In order to determine the impact of the pumping of an unknown number of private wells, and before any other additional work such as physically inventorying wells is conducted, it is proposed by WCC Working Group #5 that quantitative hydrologic modeling be conducted to determine the range of the possible impact of wells. It is anticipated that this modeling could be properly conducted by a qualified geotechnical firm already under contract to the City.

**Model Input**

The inputs would include the number and usage of wells and the routing of estimated return flow as described above. Other variables would include reservoir parameters such as permeability estimates, interval thickness, and other characteristics as specified in the most suitable available models.

The uncertain rates will be bracketed for these model runs by reasonable estimates from the judgment of the City hydrogeology contractors considering existing databases in this and other parts of the state. The sensitivity of the river and aquifer effects to the range of input will be used to decide if the acquisition of more specific data on the private wells is justified. We discussed the means of obtaining site-specific data, including using the Anaya case process.

WCC Working Group #5 will work with the City's choice of contractor to approve the input modeling parameters and coordinate the modeling work.

**SUMMARY**

Members of WCC Working Group #5 have discussed a range of positive and detrimental effects of domestic well operations on the water-management interests of the City and we are in agreement that the numbers need to be understood before a position is recommended to the Water Conservation Committee with respect to possible changes in City policies.

Through the proposed quantitative hydrologic modeling, the overall impact of private wells could be more properly assessed before the City undertakes any further action to properly count, monitor and possibly regulate these private wells.

## Working Group #1

### Guiding Principles Draft

10/25/13

- The goals of water conservation adhere to the City charter, pending Council approval.
- Protection and preservation of the water supply is a high priority of the Water Division.
- Community awareness, responsibility, participation and education are key elements of a water conscious community.
- The Water Division recognizes its linkage with the regional, national and international watersheds of the Rio Grande and Colorado River.
- Partnerships are necessary to achieve our water goals.
- The precautionary principle provides a framework to guide city water decisions in the pursuit of sustainability.
- The city recognizes the reality of climate change and the need to develop strategies that promote resiliency and adaptability.
- Efficient use of water resources protects our community's quality of life.