



Agenda

DATE 5/2/18 TIME 12:05
SERVED BY Christine Chavez
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SANTA FE WATER CONSERVATION COMMITTEE MEETING
CITY HALL – 200 LINCOLN AVE.
CITY COUNCILORS' CONFERENCE ROOM
MAY 8, 2018
4:00 PM TO 6:00 PM

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF CONSENT AGENDA
5. APPROVAL OF MINUTES FROM THE APRIL 10, 2018 MEETING

CONSENT AGENDA:

6. WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR APRIL 2018 (Christine Chavez)
7. UPDATE ON CURRENT WATER SUPPLY STATUS (Christine Chavez)
8. DISHWASHER REBATES & EXTENSION OF APPLICATION PERIOD (Christine Chavez)

ACTION ITEMS:

9. SUSTAINABLE SANTA FE COMMISSION FEEDBACK (Christine Chavez, RBA Subcommittee)
10. 2017 GALLONS PER CAPITA PER DAY (GPCD) FINAL REPORT (Christine Chavez, Tim Michael)
11. SUBCOMMITTEE RECOMMENDATIONS FOR 5-YEAR RBA GOAL (Christine Chavez, RBA Subcommittee)

INFORMATIONAL ITEMS:

12. WATER CONSERVATION COMMITTEE DISCUSSION – PROJECTS FOR FY 18/19 (Christine Chavez)

MATTERS FROM PUBLIC: (5 minutes)

MATTERS FROM STAFF: (5 minutes)

MATTERS FROM COMMITTEE: (5 minutes)

NEXT MEETING – (Councilor's Conference Room): TUESDAY, JUNE 5, 2018

CAPTIONS: due by 3:00 pm, Monday, May 21, 2018

PACKET MATERIAL: due by 3:00 pm, Wednesday, May 23, 2018

ADJOURN.

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

**SUMMARY OF ACTION
SANTA FE WATER CONSERVATION COMMITTEE MEETING
CITY HALL - CITY COUNCILORS CONFERENCE ROOM
200 LINCOLN AVENUE
TUESDAY, APRIL 10, 2018, 4:00 PM**

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APPROVAL OF CONSENT AGENDA	APPROVED	2
APPROVAL OF MINUTES FEBRUARY 13, 2018	APPROVED	2
<u>CONSENT AGENDA</u>		
WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR FEBRUARY 2018	APPROVED	2
UPDATES TO REBATE PROGRAM	APPROVED	2
UPDATE ON CURRENT WATER SUPPLY STATUS	APPROVED	2
<u>INFORMATIONAL ITEMS</u>		
2016 AWWA WATER LOSS AUDIT	INFORMATION/DISCUSSION	2-5
ROUND TABLE DISCUSSION WITH WATER DIVISION DIRECTOR	INFORMATION/DISCUSSION	5-10
COMMITTEE INTRODUCTIONS TO COUNCILOR ROMERO WIRTH	INFORMATION/DISCUSSION	10
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REPORT FEEDBACK

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

INFORMATION/DISCUSSION 12-13

MATTERS FROM THE PUBLIC

INFORMATION/DISCUSSION 13

MATTERS FROM STAFF

INFORMATION/DISCUSSION 13

MATTERS FROM COMMITTEE

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NEXT MEETING

MAY 8, 2018 14

ADJOURN

ADJOURNED 14

**SANTA FE WATER CONSERVATION COMMITTEE MEETING
CITY HALL, CITY COUNCILORS CONFERENCE ROOM
200 LINCOLN AVE.**

TUESDAY, APRIL 10, 2018, 4:00 PM

1. CALL TO ORDER

The meeting of the Santa Fe Water Conservation Committee was called to order by Chair, Councilor Carol Romero Wirth, at 4:00 pm, on Tuesday, April 10, 2018, at City Hall, City Councilors Conference Room, 200 Lincoln Avenue, Santa Fe, New Mexico.

2. ROLL CALL

MEMBERS PRESENT

Councilor Carol Romero Wirth, Chair

Lisa Randall

Tim Michael

Stephen K. Wiman

Doug Pushard

Scott Bunton

Ken Kirk

Bill Roth

Robert Coombe

Aaron Kauffman

MEMBERS ABSENT

Justin Lyon, Excused

OTHERS PRESENT

Glen Schiffbauer, Green Chamber of Commerce

Christine Chavez, City of Santa Fe, Water Conservation Manager

Caryn Grosse, Water Conservation Division

Rick Carpenter, Director, Water Department

Amy Ewing, Daniel B. Stephens and Associates, Inc..

Meg Hennessey, NMED, Surface Water Quality Bureau

Andy Otto, Watershed Association

Elizabeth Martin, Stenographer

3. APPROVAL OF AGENDA

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

VOTE The motion passed unanimously by voice vote.

4. APPROVAL OF CONSENT AGENDA

MOTION A motion was made by Mr. Pushard, seconded by Mr. Kirk, to approve the consent agenda as presented.

VOTE The motion passed unanimously by voice vote.

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

Mr. Kauffman said he was not in attendance at the last meeting and is shown as present.

Mr. Michael said on page 2 his name is shown as Michaels. There is no "s" at the end of his name. Mr. Michael said on page 3 at the top of the page, it should say OSE and in the 4th paragraph it should say GPCD. Where it talks about digital sites, it should be Digital Sites, on page 4, in the middle of the page it should say BBER, on page 8 at the top of the page it says gong and should be going and on page 12 it should be the AWWA audit.

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

VOTE The motion passed unanimously by voice vote.

CONSENT AGENDA

Items 6 through 8 were approved on consent.

**6. WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR MARCH
 2018**

7. UPDATES TO IRRIGATIONS REBATES

8. UPDATE OF CURRENT WATER SUPPLY STATUS

INFORMATIONAL ITEMS

9. 2016 AWWA WATER LOSS AUDIT

Ms. Ewing handed out her presentation which is attached herewith to these

minutes as Exhibit "1".

Ms. Chavez said we worked on this last year. Ms. Grosse compiled all the information for Ms. Ewing. We have worked with this company on quite a few projects. We will be starting on 2017 pretty quickly and are already gathering data.

Ms. Ewing reviewed her presentation.

The questions asked by the Committee during the presentation were as follows:

Mr. Coombe said there is more water billed than produced.

Ms. Ewing said it could be the lag time between reading the meter and billing. It is more likely that some of the meters were not accurate. There were also straight estimates being made at that time. There could be errors with production numbers or the reading numbers as well.

Mr. Kauffman asked when were the height of the meter changes made.

Ms. Chavez said it corresponds with the height of the chart. We did estimates for 2 to 3 months. We did see it in the GPCD as well. It used to take 3 to 4 month to adjust, now it is a couple of days.

Ms. Randall asked why were people allowed to opt out.

Mr. Pushard said it was about radio waves and big brother. We gave them the ability to opt out.

Mr. Bunton asked how many opted out.

Ms. Grosse said less than 200.

Mr. Pushard asked what is the national number for loses.

Ms. Ewing said there used to be an industry standard for unaccounted for water, but it was found that there is no way really to compare systems. No unaccounted for water is what is acceptable now. The point of these types of analysis is to try to find out where the water is going.

Ms. Hennessy asked which parks are you speaking of and why are they allowed to have un-metered water.

Ms. Ewing said it is not the City of Santa Fe she is talking about.

Mr. Coombe asked what does that mean to the certainty of the numbers.

Ms. Ewing said there is pretty significant uncertainty with that number. It is useful to target some of the activities.

Mr. Roth asked regarding the 65% how does that compare to previous audits.

Ms. Ewing said the audits done in 2014 and 2015 were not done in as much in-depth as this one. That number was 58 in 2014 and 59 in 2015. The data is getting better and better. A lot of improvements have been made.

Chair Romero Wirth asked what are you talking about when you discuss back flow prevention.

Ms. Ewing said she is speaking about the installation of a device that prevents back flow water from going back into the system. That can confuse the meter and can look like a leak. It is a good practice to have those devices. This is an old system. You have come challenges.

Mr. Bunton asked is there a rough age after which construction has taken care of this problem.

Ms. Ewing said she did not know. Older systems have a bit more issues. Albuquerque's Back Flow Prevention Program does annual inspections. The customer is charged a fee. Many of these systems pay for themselves.

Mr. Kirk asked does the County do a water audit as well.

Ms. Ewing said she did not know.

Ms. Chavez said it is a requirement for the Water Trust Program.

Ms. Ewing said the drinking water bureau table they make is a few years behind so probably 2016 is available online. She will look and see.

Ms. Hennesey said the Water Trust Board application process is open to May 16th. Is the City planing to apply for money for updates.

Mr. Carpenter said we always try to send at least one in, sometimes 2 or 3. It is a great candidate for funding for us.

Ms. Ewing said the Water Trust Board has not been favorable in the past toward these kinds of projects.

Mr. Carpenter said we can make it sound like a capital improvements project then it is more of a candidate for funding.

Chair Romero Wirth asked your contract is until June 2019.

Ms. Ewing said yes.

Chair Romero Wirth asked so we will get 3 more audits from you.

Ms. Ewing said we will do 2017 and 2018. We are not able to do 2019 because our contract will expire before the data is available. Staff will be ready and able to do what she has done by then. The analysis will continue.

Mr. Coombe asked why is it that the 5.7% corresponds to only 1.8% of the cost of operations.

Ms. Ewing said those calculations are done by spread sheet model. We have to take into account the financial data calculated on customer retail cost and total production costs. Also power and chemical costs. They are considered to be part of the cost of the production of the water.

Mr. Coombe said something is not working. It is a small point.

Ms. Ewing said we can provide the formulas to you in writing.

Mr. Michael said he has the same issue. It seems like 3 times more than the income from water is a lot to run the Water Utility. He can't square the numbers.

Mr. Carpenter said our budget is \$35 million. The tier 2 water rates get us where we want to be.

Mr. Roth asked as a percentage of income how much do the higher rates contribute.

Mr. Carpenter said he did not have that with him, but would get it to Mr. Roth. It is not a small percentage.

Mr. Roth said commercial water conservation is a big driver of this. It will be an interesting political situation. The better we do the higher rates have to be.

Ms. Chavez said she will make sure the Committee gets the link to the final report.

Chair Romero Wirth thanked Ms. Ewing.

10. ROUND TABLE DISCUSSION WITH WATER DIVISION DIRECTOR

Mr. Carpenter said thank you for having me. The idea that he and Ms. Chavez had was to have an open discussion. He will do the best he can. He can come back if we don't get everything covered.

Mr. Wiman said in view of everything we know how would you advise us in developing GPCD production in the future.

Mr. Carpenter said he is concerned with the San Juan/Chama water with regard to climate change and infrastructure. It is one of our best water sources and may not be as dependable as we thought. The City of Santa Fe does a great job of calculating our GPCD. His biggest push would be the long term trend. He trusts that more. The best way is good data and having the methodology as consistent as possible. We need to be efficient with the San Juan/Chama water. It is looking good for near term, but is not going to be as reliable as we thought it would be. The annual operations plan meeting is Thursday. He can report back on that.

Mr. Pushard said thank you for coming and for this format. Albuquerque presented to us last month regarding their 100 year plan. Do you think we should look at doing something like that. Do a longer term plan and include capital outlay.

Mr. Carpenter said yes. John Stomp is big on long term planning. We are delinquent on getting our 40 year plan going back to the OSE. People there are big on demographics and data. He meets with John once a month. He wants to look out 40, 50 to 100 years to see what we need to do to ensure our water future. The other thing is we are breaking down our 40 year plan into 5 year increments. We will plan for that and get it funded for 5 years and have a longer term vision out there.

Ms. Hennessy asked the City's long term Water Supply Plan, is it your office that did that.

Mr. Carpenter said with a consulting firm, but water resources and the conservation group staffed it. It is being updated right now.

Mr. Coombe said we are in the midst of thinking about a 5 year plan for water conservation. One thing we face is clarity of objectives even for that short of a period of time. Albuquerque has a number. We don't. Is the objective to save as much water as we can. Be as efficient as we can. The conservation plan is something the City needs. Clarity in its objectives is necessary given climate models. We were talking about an objective that would be in an era of protracted drought and a time that the population will not increase significantly. Is a GPCD constant over that time a good objective. Hold consumption costs and build elements to increase efficiency. Is it possible for the City to confirm a firm objective.

Mr. Carpenter said he is comfortable with an objective, but not a firm objective. There are too many variables. We have to continually assess that. There are 5 to 10

variables that effect what would be our objective. That is updated every year.

Mr. Coombe said we don't have that now.

Mr. Carpenter said if we want to call it 85 we better be able to defend it.

Mr. Michael said we are working to craft a plan for the next 5 years for the Water Conservation Office. If the City does or does not have a numerical objective we are struggling with can we, as a Committee, say for their plan lets find a number. We were thinking of 90. Even if the population changes it is not under the purview of the Conservation Office. They can only control some things. Is a number like 90 reasonable.

Mr. Carpenter said he thinks 90 is reasonable. You might want to think about, now that we established 90, how much of that is residential and how much is commercial and how does that fold back into the rebate programs. You should have a number to start the discussion. That is only healthy. He would support that.

Mr. Otto said regarding managing ground water, how involved is the Department with that and how involved do we need to be.

Mr. Carpenter said we are as involved as we have determined is effective for us to be. There are some problems. You need to involve a great many stakeholders. It is complicated. There are a lot of models out there. Some DOT agrees with each other on and some not. The permit has not been issued yet, but we have used parts of 2 maybe 3 ground water models to come up with the permit. He strongly disagrees with that. We need to come up with something everyone agrees with. That is hard to do. We have tried to do that, but no one wants to fund that. We are doing a Field Optimization Study, but if there is no plan and we have a lot of growth we want to do some ASR. If we spend a lot of money on that and have no plan to manage it, he can't justify spending funds on something like that without the cooperation of the region.

Mr. Carpenter said we are very interested in ground water management and a plan with buy in from the major stake holders.

Ms. Hennessy said recently she has been in touch with the City about helping to create a watershed based plan. Meeting EPA requirements for 2019 funding is what her division and she specialize in. We are in the very early stages.

Ms. Hennessy said she is working with stormwater run off projects to restore the aquifer which can be funded under EPA. We are reaching out. If aquifer storage is important we can hopefully have funding within a year to address that.

Mr. Carpenter said water quality is a huge part of the equation.

Mr. Bunton said in order to have a functioning ground water plan don't you have to know how much is taken out by private wells and the ability to control that.

Mr. Carpenter said yes, but most domestic wells are not metered.

Mr. Bunton asked isn't that a first step that has to be taken.

Mr. Carpenter said yes, but that is very difficult. It is very political. People consider their wells as part of their property.

Mr. Bunton said you can spend \$10 million on a plan, but if you don't control what is being taken out of the aquifer you are spending that money for nothing.

Mr. Carpenter said yes, but limitations are something people resist. It is a very political battle. State laws would have to be changed.

Mr. Roth said when you build in the County you have to have a meter on your well. Why are the people in the City special and don't need meters.

Mr. Carpenter said if the City Council wants to take that on and pass Ordinances and give Direction to the Water Director what authority would be necessary, we can look into. We can do anything we want to, but it is the political will and the funding.

Mr. Bunton asked what is the history on that.

Mr. Carpenter said we have very different user profiles.

Mr. Carpenter said the County has more opportunity for growth and development than the City does.

Mr. Bunton asked so the assumption is that the problem won't get much bigger than it is now in the City.

Mr. Carpenter said we are largely built out, but there are opportunities for development around the edge of the City. It is not the same as the County. It depends on what kind of developments are done. We look at things differently.

Mr. Wiman asked do we have the geotechnical data to see how much wells are drawing down on the aquifer.

Mr. Carpenter said there are places where we could do ASR and it would work. We do a model, but don't have control over what development is done. We don't know how many private wells there are. We have been looking at it for a long time now. We would have to get that data to do a real plan.

Ms. Hennessy asked is there any potential to do a voluntary reporting system.

Mr. Carpenter said it is possible. We probably would not get much participation.

Mr. Michael asked can the City buy from someone their private well right.

Mr. Carpenter said no. The right is tied to the land.

Mr. Kauffman said given the current snow pack and run off projections do you have a sense of what you will use from the City wells.

Mr. Carpenter said we have an analysis done. He would say that we will pump City and Buckman wells more than we have. MRCD said they will run out of water that they call for in May or June. Albuquerque says if they are not going to call for their water we will not as well. Carriage changes are so big. If no one is going to call for water we will just turn on our wells. We have a couple of wells at Buckman that have gone artesian. It is actually time to start running these wells to keep them healthy. This is the year to do it. That is what our plan says. 1,500 acre feet from Nichols and McClure. It may be more or it may be less. We have a weekly meeting with all the resource staff to determine that. On an annual basis we are going to pump the wells more than we have.

Mr. Pushard said typically wells are about 10%. We are talking 20%.

Mr. Carpenter said 15%, 20% or 25%. If things go south BDD will not be available from mid to late July to September, but will be the rest of the year. We will get what we are going to get from the reservoirs.

Mr. Carpenter said before the BDD the well percentage was a lot higher.

Mr. Kirk asked what about an emergency limit on the use of water.

Mr. Carpenter said we can meet the demand. Things have changed. We have 4 very reliable sources of water. The question is we are in a drought do we want to heighten awareness through water restrictions. That is a policy decision not a water supply decision.

Mr. Bunton asked how long can you meet the demand.

Mr. Carpenter said it depends on how bad it gets or if we get a monsoon. Years, decades. We have more flexibility and options than we used to have.

Mr. Coombe said that is not motivating conservation. If there is no urgency then how do you establish a goal.

Mr. Carpenter said we are not saying there is no urgency. He thinks we are on

the precipice of having a big drought again. There is a lot to still think about. We need to maintain our level of heightened awareness no matter what. In 2002, when he first came, the population was 30% less than it is now. In 2018 we are using about 8,100 to 8,200 more acre feet.

Mr. Coombe said that will be driving the Committee and what we do in 5 years. Are the issues going to be about resiliency and efficiency of the system to hold at 90 GPCD. Can that inform not only the sorts of measures to put together, but also a package of things that keeps us at that point.

Mr. Carpenter said yes. If we are going to plan we have to plug numbers. Our long range plan assumes 90 GPCD. We have to stay aware no matter how good or bad a year is.

Mr. Coombe said we need that sort of clarity to inform the matter in which we motivate people to conservation.

Mr. Roth asked what percentage of population growth are you looking at.

Mr. Carpenter said not very big. Just under 1% a year.

Mr. Otto asked does water flowing in the Santa Fe River help in conservation issues or hurt them.

Mr. Carpenter said to heighten awareness, sure. Do you want a living river through town by conserving water, sure. Do people wonder why we want to conserve when there is a river running through. That is a split decision.

Chair Romero Wirth said thank you for coming.

11. COMMITTEE INTRODUCTIONS TO COUNCILOR ROMERO WIRTH

The Committee members introduced themselves and their backgrounds to Chair Romero Wirth.

Chair Romero Wirth said she was happy to be Chair of this Committee and is excited to work with all of the members.

12. SUSTAINABLE SANTA FE COMMISSION REPORT FEEDBACK

Ms. Chavez said we all have to give Mr. Pushard a big hand because he wrangled the Sustainability Commission at their last meeting. He voiced his own personal opinions. It was well received in the end. They did give us a draft of the plan.

She told them we would form a subcommittee to review the plan and make recommendations.

Mr. Pushard said he wants to make sure everyone got the whole Sustainability Plan.

Ms. Chavez said she would forward to the group.

Mr. Pushard said that is important. They not looking for edits. They are looking for big things they have missed. First go through the plan and see what is missing and what linkages are missing. Our 5 year plan for example. Compile the big things of what is missing and then prioritize that list. 2 things that we need to think about when looking at it is that it is an ongoing plan. How do we create the linkage in the ongoing method. Sharing plans, getting feedback. Create a process. Most concerning to him is a large discussion on structure. How do we put together a sustainable organization. That is of concern to him. He doesn't know where that pony goes. We have to think about that and how does water conservation fit. He is an advocate of changing the name of this Committee. It is too limiting. What is the structure of a City Sustainability Plan. We need to think about that.

Chair Romero Wirth said the Mayor is talking about bringing the Sustainability Plan into the Mayor's office as well.

Mr. Pushard said he would like to get feed back from all members and then have a subcommittee look at that and create linkage. They would like to get something within 30 days.

Chair Romero Wirth said they are on a pretty fast track. We need to find out their time table.

Ms. Chavez said we could probably only meet a couple of times.

Mr. Bunton said that is a good idea. Separate into 2 subcommittees. Plan and relationship and process.

Mr. Pushard said that is the way to have the most value.

Mr. Michael asked is he right or wrong that the 5 year plan is a programmatic plan for this office and the Sustainability plan is a significantly different beast. As you work through this that is important to realize.

Ms. Chavez said that is a good point. They are 2 different plans. Maybe coordinate information in 2 groups.

Mr. Pushard said given what he thinks is important, and with the short time table

that we have, is can we have the 5 year scorecard team for the next 30 days. That is the team who is best capable of handling that process issue. Trying to force a 5 year plan in, we may not do each other justice. Let's put the 5 year plan on hold for now.

Ms. Chavez said she will talk to the Chair about that.

Mr. Pushard said this Friday you are all invited to a meeting here in this room from 10:00 am to Noon where Rice University representatives are coming in to work on carbon related issues of Sustainability Plan. They are going to present to the Commission on Friday. If anyone is interested let him know so he can let them know. They are having a question period of the Sustainability Commission from 12:45 pm to 1:30 pm the same day here in this room.

13. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE WORKING GROUPS

A. IRRIGATION SUBCOMMITTEE

Mr. Pushard said his report is in the meeting packet.

Ms. Chavez said the irrigation rebate has pushed out. Printed materials are coming at the end of the month. We need to talk a bit more about that as a group. It is all on our website.

Mr. Pushard said it will be presented on April 29th at the Convention Center.

B. GENERAL EDUCATION PROGRAM/GRANTS

None

C. SCORECARD SUBCOMMITTEE

Mr. Wiman said with the guidance given from Mr. Carpenter we need to talk about and agree what to do going forward. We need to increase the frequency of meetings if you are up against your deadline.

Ms. Chavez said we do need to meet more frequently. We will have to bring this information back for the next meeting.

D. WATER CONSERVATION CODES/ORDINANCES/REGULATION

Mr. Pushard said the Alliance of Water published the State Water Scorecard. We got a C. It was a scale of 80 to zero and we were 16.

Mr. Bunton asked how did Albuquerque do.

Mr. Pushard said it is as a state ranking. He would like to put this on the agenda for next month. He would like to put the questions on the next agenda. What would be a State level effort we would like to push forward. We have the ability to at least put forward a Resolution asking the State to investigate moving up forward on the water conservation issues. An example would be metering. It is a discussion he would like to have at next months meeting.

Mr. Bunton said we have 2 Resolutions we have been working on regarding aligning the City to the County regarding fees for violations. One gives the Department the ability to align when the County changes. The other version allows for an expedited process by the Council.

Ms. Chavez said thank you for being so thorough. We will be bringing this back to go before the Committee.

Mr. Bunton said our new Chair may have an opinion.

Chair Romero Wirth asked we are aligning to them and we are ok with that. What was behind that.

Ms. Chavez said their standard is much higher than ours and in line with Albuquerque. She will show the Chair both versions and have a discussion with her.

14. MATTERS FROM THE PUBLIC

Mr. Otto said on April 29th at 6:30 pm the movie Shadow of Drought will be shown at CCA. It deals with the southern California drought and how they dealt with that.

15. MATTERS FROM STAFF

Ms. Chavez said this month is very busy for staff. The one thing she wants to tell the Committee about is the Mayor has decided to participate in the water challenge. Santa Fe ranked number 1 before. Everyone please get on the site and sign up.

Ms. Randall requested that she reach out to the Superintendent and ask for that information to be shared.

Ms. Chavez said that is a good idea.

Chair Romero Wirth asked how does it work.

Ms. Chavez said you go on line take a small pledge. You can get prizes.

16. MATTERS FROM THE COMMITTEE

Mr. Pushard said the Water Summit is coming up. We are looking for 2 or 3 volunteers to be room facilitators.

Mr. Kauffman said his term is finishing up in June. It has been a pleasure being on the Committee. Thank you for this opportunity.

**17. NEXT MEETING
TUESDAY, MAY 8, 2018**

18. ADJOURN

There being no further business before the Committee the meeting adjourned at 6:15 pm.

Councilor Romero Wirth, Chair



Elizabeth Martin, Stenographer



Water Conservation Office

Monthly Overview of Scorecard Progress – April 2018



Education Outreach:

Education Initiative:

- Passport Program Tour of BDD – Carlos Gilbert on 4/25 (Lisa)
- Passport Program Tour of BDD – Salazar on 4/11 (Lisa)
- Passport Program Tour of BDD – Amy Biehl on 4/4 (Lisa)
- Passport Program Tour of BDD – Gonzales on 4/10 and 4/19 (Lisa)
- Watershed Tour for Santa Fe Girls School on 4/5 (Lisa and Patricio)
- Watershed Tour for Ramirez Thomas on 4/10, 4/11 and 4/12 (Caryn, Patricio, Mario)
- Participated at the Los Alamos Water Fiesta on 4/6 (Mario, Lisa, Patricio)

General Outreach:

- Restaurant audit on 4/3 at Dr. Field Goods (Caryn)
- Restaurant audit on 4/4 at 2nd Street at the Railyard (Mario/ Patricio)
- Restaurant audit on 4/3 at Tortilla Flats (Caryn)
- Restaurant audit on 4/5 at Upper Crust Pizza (Caryn)
- Staff participated in Railyard Earth Day event on 4/21
- Christine presented rebate program as part of another workshop at the Railyard Earth day event on 4/21
- All staff participated in the NGWS: Staffed a booth and presented children's water conservation activities during the community day on 4/29. Rebate program was presented during community day as well as a session on the Restaurant Pilot Project during the regular conference.



Communication and Customer Service:

Strategic Marketing Plan:

- Save Water Santa Fe radio show guests (Andy Otto, Amanda Hatherly, Jeremiah Kidd, Kim Shanahan)
- Video shoot for the do-it-yourself drip irrigation installation video on 4/5
- Rebate campaign advertising finalized
- Drought campaign ad placement identified and campaign theme being finalized to meet social marketing best practices to address the value of water and tie to programs. #Drought Different & It's the Same Water – Save it (depicting skier, fisherman, child drinking water, someone showering)
- Layout of Drought Survival Guide wrap in process.
- Make a Reservation to Save Water – reached 3,721 people with 268 post engagements and 2,235 video views.
- Website analytics demonstrate the top pages being visited by unique visitors is rebates, rebate application, outdoor rebates and indoor rebates. 1,696 page views in 30 days.
- Mayor's Challenge – Currently in 3rd place. Front-page article in SFNM, 2,593 people reached on social media with 222 post engagements. Strategic plan with op-ed, news release, advertising, etc. provided to Mayor.

Eye On Water Rollout:

- 3,023 sign ups as of 4/17/2018

Indoor Water Audits:

- None scheduled for April

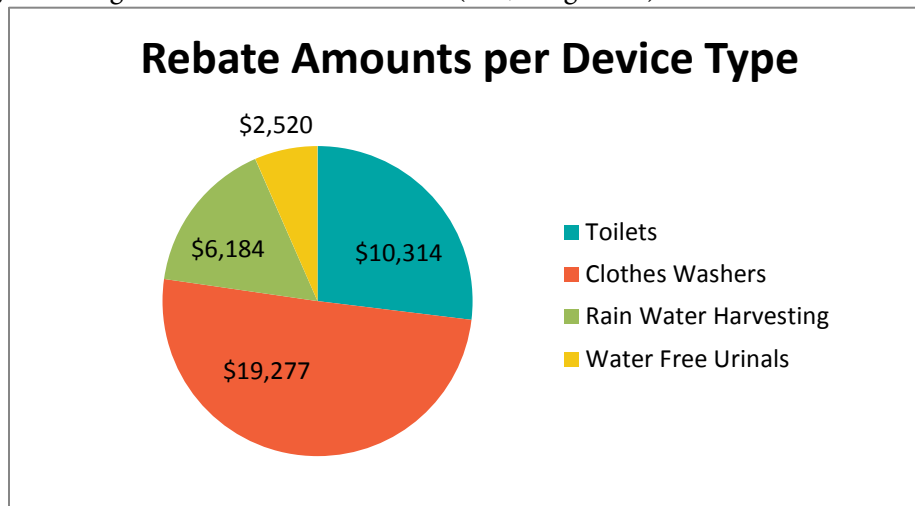
Enforcement Activity:

- No warnings or citations given
- 469 continuous consumption letters sent

Residential and Commercial Rebates:

Remaining fund balance as of April 18, 2018: \$261,705.50

Water savings resulting from rebates: 2.53 acre-feet (823,458 gallons)



Rebates awarded FY-to-date:

- HET (all types) -157
- Clothes Washers (all types) -72
- Rain Water Harvesting (including rain barrels) -35
- Water Free Urinals- 4

**Effective Program Management****Organizational Development:**

- Christine attending Essentials for Supervisors Training on Friday mornings through April
- Christine attended Reasonable Suspicion Training on 4/4
- All staff has attended Active Shooter Training
- Christine attended Public Utilities Meeting on 4/4
- Christine presented water conservation program at SFCC on 4/10
- Christine/Patricio met with customer service and T&D to discuss continuous flow letters being sent out to customers with suspected leaks
- Christine/ Caryn and Mario attended Gray Water Training at the SFCC 4/26-4/27

Water Conservation Committee:

- Scott/ Tim/ Doug/ Bill attended the Sustainability meeting set up with Rice University on 4/13

Integration with Water Resources:

- Finalizing 2016 AWWA Audit, collecting info for 2017 AWWA Audit
- 2017 GPCD in final review
- Christine attending monthly project status meetings with Water Resources
- Christine working with Water Resources on a joint RFP for expansion of passport program

- Caryn/ Christine working on coordinating water conservation pieces into the Long Range Water Supply Plan work



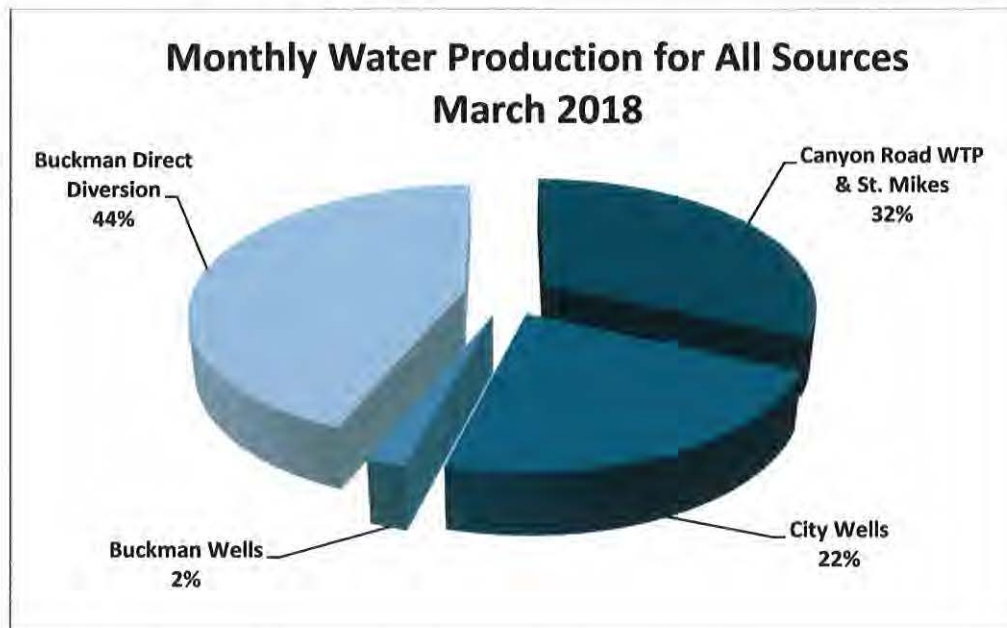
Stewardship and Conservation:

Regional Collaborations:

- Christine/ Caryn met with representative from PNM/NMGas Company to coordinate joint advertising/ bill inserts and cross-promotion of rebate programs
- Patricio Pacheco is serving on the NMWCA board-attended 3/7/2018 meeting
- 2018 Next Generation Water Summit-April (Christine)

**City of Santa Fe, Source of Supply Section
Water Production and Environment Office Update
May 2, 2018**

Water Production Update for March, 2018



Total Production of System

Sum: 207.9 MG million gallons (MG) for 31 days

Daily Average Production (to meet demand/maintain storage): 6.71 Million Gallons per Day (MGD).

Current (04/20/2018) Reservoir Storage Levels:

McClure: 31.0% or 338.31 MG

Nichols: 46.7% or 100.7 MG

Combined: 33.6% or 461.8 MG

Santa Fe River Flow (04/20/2018):

Below Nichols (Living River Flows): 0.19 cubic feet per second (cfs) or 0.122 MGD

Streamflow at Gage below Nichols: 0.16 cfs or 0.10 MGD (Actual including Living River Flows)

Above McClure (Reservoir Inflow): 0.58 cfs or 1.1 MGD

Santa Fe (aka, Baca Street) Well at the Former PNM Santa Fe Generating Station

Work at the site was initiated during the week of March 6th with the drilling of four wells on PNM property within the footprint of the former PNM Santa Fe Generating Station. All wells are expected to be completed by the end of April upon completion of two wells next to the Acequia Trail and one additional well at the City's Santa Fe Well site. Upon completion of the well drilling, the contractor for PNM and the PSTB has submitted an "Letter Report", which include field soil boring lithologic logs; monitoring well construction diagrams; a discussion of field analyses completed; and photograph logs" for USTB-18. This well is of extreme importance because of the "free" product found during past investigations of this well. Staff shall provide an update to the Committee after

receipt of the full report. At the time of this report, two of the seven planned ne monitoring wells are left to be completed. Completion is expected during the final week of April.

Downtown Groundwater/Soil Investigations

The City of Santa Fe is continuing its collaboration with the New Mexico Environment to perform another round of monitoring at five groundwater monitoring sites in, and around the Plaza, and downtown area. This work is being performed to further investigate possible sources of formerly detected chlorinated solvents, provide insight into groundwater flow direction, and inform the development, if necessary, of strategies to remove and remediate the problem. Sampling is expected to be completed by May 18th.

Former Ortiz Landfill

INTERA'S Phase II site investigation report for the former Frank Ortiz Landfill was submitted to the NMED Ground Water Quality Bureau on December 4, 2017. The City met with NMED on January 5, 2018 to discuss the report and its findings. The NMED accepted the findings and conclusions of the site investigation, as well as a proposed amendment of our Stage 1 Abatement Plan pursuant to the findings of the Phase II investigation. In that amendment the City has proposed the installation of two new monitoring wells, groundwater monitoring, and continued/additional soil-vapor monitoring at the Ortiz site. NMED approved the City's amendment contingent upon their request for two new vapor monitoring points. City staff tentatively agreed to this provision. The City has received verbal NMED approval of the work plan, as amended. INTERA is currently preparing estimates of the costs, which it will present to the City, for the drilling additional ground and vapor monitoring wells at the site

Drought/Monsoon, Storage, and ESA Update

NOAA has recently (04/08/18) updated ENSO (El Nino/La Niña) status to: **"A transition from La Niña to ENSO-neutral is most likely (~55% chance) during the March-May season, with neutral conditions likely to continue into the second half of the year."** Heron, Abiquiu, and El Vado reservoir levels on the Chama River are no longer rising. Runoff projections for this year are far below normal. Local Upper Santa Fe River reservoir storage volume is slowly decreasing, but that is normal for this time of year (about 35% full). Recent minor snows may help (?) when runoff season begins later this Spring. The City received 100% delivery (5,230 AF) from BoR of full firm-yield of San Juan-Chama Project (SJCP) water for year 2017, and received a January, 2018 delivery of 2,290 AF. No new deliveries have been made since January but BoR is projecting a full 100% firm-yield delivery of SJCP water by the end of the year. There are no water-related Endangered Species Act (ESA) updates. Updates on ESA issues will be made as needed. Rio Grande Compact Article VII storage restrictions are not in effect, which means the City is allowed to impound "native" runoff into Nichols and McClure Reservoirs above the pre-Compact pool of 1,061 acre-feet (AF); however, Article VII is expected to go back into effect in June. Updates to this condition will be made as needed.

Most Current City of Santa Fe SJCP Reservoir Storage Pools:

Heron:

5,230 AF. Year-2017 deliveries were 100% of annual total.

2,290 AF. Year 2018 deliveries (through January).

El Vado:

0 AF.

Abiquiu:

9,733 AF. SJCP carry-over from previous years plus 2017 deliveries. No time limit to vacate due to storage agreement with ABCWUA.

TOTAL SJCP RESERVOIR STORAGE:
17,253 AF

City of Santa Fe, New Mexico

memo

Date: April 17, 2018

To: Shannon Jones, Public Utilities Director
Rick Carpenter, Water Division Director

From: Christine Y. Chavez, Water Conservation Manager

RE: Dishwasher Rebates & Extension of Application Period

Background:

With the prospect of 2018 being a drought year, the Water Conservation Office is re-examining all device types and rebate amounts to find additional ways to incentivize water customers to be more efficient in their water use.

Potential Water Savings:

Dishwashers have not previously been a part of our rebate program as they typically use less water than handwashing the same amount of dishes. Over the last decade dishwashers have become even more efficient. The current Energy Star specifications which went into effect on January 29, 2016, require that standard dishwashers (capable of handling at least eight place settings) use 3.5 gallons or less of water per cycle. By comparison, the Energy Independence and Security Act of 2007 specified that dishwashers must use 6.5 gallons per cycle or less. At an estimated 264 cycles per year, replacing an older dishwasher with an Energy Star labeled model could save up to 792 gallons per year. The water savings yields a potential rebate amount of \$36, and a water-saving factor of 0.002430.

While \$36 is not a huge incentive on its own, when coupled with PNM's rebate (\$50 for an Energy Star dishwasher) the combined rebates could create a substantial incentive for households with older models to upgrade to high efficiency models.

Partnership with PNM, NMGCo:

Recently, the Water Conservation Office met with Robin Harder of ICF. Her company provides residential energy audits to PNM and New Mexico Gas Company customers. Ms. Harder indicated that ICF would be willing to mention our rebates to their customers during audits done in Santa Fe and we are already directing our customers to look at PNM's rebate programs with a link on our website. At this time, only clothes washers are eligible for rebates from both PNM and City of Santa Fe; adding dishwashers would provide additional opportunities for alignment and cross-promotion between our program and PNM's.

Recommendation:

We request approval to add a dishwasher rebate of \$36 to the rebate program. We believe that, combined with the PNM rebate, this rebate will incentivize customers to upgrade to more water and energy efficient appliances.

In addition, we request a change to the time period during which customers can apply for rebates after purchase/installation, from 90 days to 6 months, to more closely match the application period PNM allows for their rebates. This application deadline extension would apply to all rebate types, not just clothes washers and dishwashers.

City of Santa Fe, New Mexico

memo

Date: May 4, 2018

To: Water Conservation Committee

From: Caryn Grosse, Water Conservation Specialist Sr.

Via: Christine Chavez, Water Conservation Manager
Rick Carpenter, Water Division Director, Water Resources and Conservation Manager
Shannon Jones, Public Utilities Department Director

RE: Water Conservation Committee Comments on Sustainable Santa Fe 25-Year Plan

Background:

The Water Conservation Committee has been given an opportunity to provide feedback on the Sustainable Santa Fe 25-Year Plan Draft Water Section, specifically, items which might have been missed by the Sustainable Santa Fe Commission.

A subcommittee of the Water Conservation Committee, including Scott Bunton, Robert Coombe, Tim Michael, Stephen Wiman and Doug Pushard, offered comments on the Sustainable Santa Fe Plan, focusing on the Water Section which is appended (with suggested edits). The comments were compiled into the following categories: What is Missing From the Plan, Recommendations for the Plan Moving Forward, and Suggested Edits.

What is Missing From the Plan:

1. The SSFP gives us an opportunity to create better linkage in several areas. We are mentioned in the text, in some of these areas, but not in the goals. The items below are just a few that would create better linkage. In fact, we should look for the opportunity to have water in every section as it impacts everything we do.
 1. Under Education and Training we need to add our K-12 program and our work with SFCC
 2. Under Built Environment the effort to move WERS in to the Multi-Family as well as our Commercial Audit program
 3. Under Energy our installation of PV as part of reducing our energy / water production footprint
2. In the beginning section of the document we need to add the energy / footprint of water and the concept of embodied water. We need to be clear that this document is not addressing the latter, but does address the former.
3. We are not familiar with the Compact of Mayor's Carbon Model. It leaves out the carbon footprint of water, or something between 10-20% of carbon. It could be argued that it is indirectly in each of the categories. It would be important to know how it is being considered in the plan. Who can we talk to about this??
4. Include links in the document to other plans by other cities.
5. At the meeting there was a discussion on funding. A couple ideas came out of this area (i.e. increasing taxes, taxing part of the lodging tax or cost savings program). Potential sources of funding would be a valuable addition to any final plan.

6. Overall the document feels like a list of lists. We should strive to make the water section of this document more inclusive of what we are working on in our 5-Year Scorecard and improve the document by providing high-level feedback.
7. Expand commercial restaurant audit from pilot to full rollout.
8. Reduction of WERS from 70 to 60. This is well supported by the data which Katherine Mortimer has been gathering.
9. Introduction of WERS to Multi-family sector

Recommendations for the Plan Moving Forward:

When the Commission is undertaking a new project, or is going to update or modify its "living report" or prepare new material for publication or submission to City officials, the Commission should at the outset notify the Water Conservation Committee of the ways in which the project may touch water use or conservation issues, and request the Committee's up-front input. At the conclusion of such a Commission effort, when a report or other products are being prepared -- and well before they are finalized, presented to officials, or publicly unveiled -- the Commission should request the Committee to review and comment on those portions that address facets of water supply, use, and conservation.

The Committee offers to the Commission its substantial water-focused expertise and urges it to take advantage of that expertise as the Commission conducts its work. To this end, the Committee will be pleased to meet or correspond with the Commission or its representatives. It is decidedly in both the Commission's and the Committee's best interest -- and, more importantly, in the interest of Santa Fe and its citizens and government -- to ensure that each is fully aware of the other's agendas and actions, and that both approach issues and matters of mutual concern harmoniously and cooperatively in order to avoid the confusion and credibility damage of contradictory approaches, conclusions, or recommendations. Effective collaboration between the Commission and the Committee will enhance the efforts and further the complimentary missions of both.

Most importantly, this document and our 5-Year plan are very compatible. The format is very different, but most of the content should be the same. The SSFP lists goals from other documents in time-based categories (i.e. immediate 1-2 years, near-term 2-5 years and long-term 5+ years). The first two are the same as our plan.

Suggested Edits to the Plan:

While edits to the text were not requested, some suggestions were offered by the Committee members. These suggested edits have been tracked in the attached pages of the water section.

WATER

~~Background.~~ Recommend deleting term “drinking” water.

~~Drinking W~~water demand in the Santa Fe region is met in several ways: the City of Santa Fe Water Division serves customers within City limits, the Santa Fe County Public Utilities Department provides water to several areas of development adjacent to City limits, the Agua Fria Community Water System Association serves residents of Agua Fria Village which is surrounded on all sides by the City, and the Buckman Direct Diversion Water Treatment Plant (BDD) ~~is a~~ treatment facility shared by the City and County which provides a portion of the ~~drinking~~ water consumed by each. The City is a leader in implementing innovative technologies and planning strategies to meet demand efficiently and is proactively grappling with shortages and the challenges that climate change brings to ensure system resilience and maintain groundwater resources. Due to limited and shared water resources in the Santa Fe Basin, all aspects of City planning are impacted by water management decisions and regional collaboration is common including the completion of the 2016 Jemez y Sangre regional water plan and the joint management of the BDD by the City ~~of Santa Fe~~ and ~~County of~~ Santa Fe ~~County~~.

The City’s water footprint is further expanded by the consumption of energy, especially the Buckman Direct Diversion, which moves water eleven miles and 1,100 vertical feet to the water treatment plant. Like most non-renewable and hydropower consumers, Santa Feans’ use of energy has a significant impact on water use that’s easily forgotten because ~~the Buckman Direct Diversion~~ it’s located far from the City itself. Addressing this water-power nexus is complex due to institutional and conventional constraints, but it is important for all energy consumers to be informed about the ~~water implications of energy~~ energy implications of water processing and use as well as being conscientious about reducing energy waste. The City has installed solar panels with a capacity to generate 2.5MW of power to provide about 40% of the energy required to run the BDD operation.

Water resources for the City and surrounding areas come from the following sources:

Surface water

The City of Santa Fe has five sources of water: surface water from the Santa Fe River, surface water from the Rio Grande, Tesuque Formation groundwater from the City Well Field and the Buckman Well Field, treated effluent, and water conserved by its residents. ~~The City of Santa Fe has two sources of surface water: The Santa Fe River, and San Juan — Chama Project (SJCP) water diverted from the Rio Grande via the Buckman Direct Diversion (BDD).~~ The Santa Fe River is the historic source of water for the City, which holds rights has the right to divert and consume up to 5,040 acre-feet per year. ~~The Santa Fe River~~ river flow is dependent on rainfall and snowpack in the Santa Fe municipal watershed, which consists of a 16,500-acre watershed draining the south facing slope above Upper Canyon Road.

~~The~~ 17,260 acres within the upper Santa Fe River Watershed and is located in the public lands of the Santa Fe National Forest, part of which is designated as the Pecos Wilderness. ~~San~~ This water is stored in two reservoirs (McClure Reservoir and Nichols Reservoir) and is treated at the Canyon Road Water Treatment Plant. The City has the right to store up to 3,985 acre feet in the reservoirs (combined), but this maximum storage may be reduced, under the terms of Article VII of the Rio Grande Compact, when water levels at Elephant Butte and Cabello Reservoirs fall below 400,00 acre feet. Also under the Living River Ordinance of 2012, the City of Santa is required to divert up to 1,000 acre feet per year in wet or normal years to the Santa Fe River.

Water diverted at the Buckman Direct Diversion consists of native Rio Grande water rights and San Juan-Chama Project (SCCP) water rights. -The San Juan-Chama Project (SJCP) is a federally-funded water project managed by the Bureau of Reclamation and is part of the complex legal and hydraulic framework of the Colorado River Compact. The SJCP imports water from Colorado from three tributaries of the San Juan River, which is itself a tributary of Upper from the Colorado River Basin. This water is conveyed via through 26 miles of tunnels which convey the water beneath the Continental Divide into creeks flowing into Heron Reservoir, from which it is released and into the Chama River, passes through El Vado Reservoir and Abiquiu Reservoir in northern New Mexico. SJCP. Released SJCP water continues to water flows down the Chama and into the Rio Grande at the rivers' confluence in Espanola, NM before continuing and continues downstream to the BDD intake structure northwest of Santa Fe. The City of Santa Fe and Santa Fe County jointly operate the BDD and have a permanent has a contract with the Bureau of Reclamation which allows for the delivery of up to 5,230,605 acre-feet/year of SJCP water for diversion from the BDD and has State permits to divert this water at BDD. Of this total allotment, 5,230 acre feet is allocated to the City of Santa Fe and 375 acre feet to Santa Fe County. Water diverted at Buckman also includes native Rio Grande water rights held by the City of Santa Fe, Santa Fe County and Las Campanas. SJCP water is projected to make up about two thirds of the water diverted at BDD. This water is treated at the Buckman Direct Diversion Water Treatment Plant.

The City Water Division is presently working with the Bureau of Reclamation to evaluate how best to utilize this imported water and is considering several alternatives to fully consume its SJCP water, including the its highest rated project designed to pipe treated effluent derived from the diversion and consumption of SJCP water back to the Rio Grande downstream from Buckman in order to be allowed to increase BDD diversions and fully consume the its 5,230 acre-feet of imported SJCP water. SJCP contract water, because it is imported to the Rio Grande Basin, can be fully consumed as it is not obligated to additional users downstream. By optimizing the City's use of SJCP water, impacts to local sources of water including the Santa Fe River and the regional aquifers, could be reduced.

Groundwater

The City of Santa Fe has two sources for groundwater – the City Well Field is permitted to produce up to 4,865 acre-feet per year and consists of seven active wells within the City, and the Buckman Well Field is permitted to produce up to 10,000 acre-feet per year and consists of 13 wells located roughly 15 miles NW of Santa Fe. With the addition of the Buckman Direct Diversion and reductions in demand due to voluntary conservation measures undertaken by City water customers, City water managers have been able to reduce reliance on groundwater with the intention of preserving as much water in the ground as possible to be used for supply in times of future shortage. But declines in surface water accumulation, in both the Santa Fe watershed and the headwaters of the San Juan River in Colorado, are projected to increase reliance on groundwater.

Snowpack

The City's two sources for surface water – The Santa Fe River and the San Juan –Chama Project – draw from two different watersheds which are already showing effects of climate change. -The Santa Fe River Basin is located directly adjacent to town and is subject to significant variation in annual precipitation and snowpack. The San Juan –Chama Project imports water from the San Juan Basin on the west slope of Southern

Colorado, which is part of the Colorado River Basin, into the Rio Grande basin via a series of tunnels beneath the continental divide.

In 2015 the City completed the Santa Fe Basin Study with Santa Fe County and the Bureau of Reclamation. The impacts of Climate Change were estimated for each source watershed for the Santa Fe Water System and compared with projected population growth. Estimates for water availability show a shortage of roughly one third from both watersheds by the year 2055, which could lead to a projected shortfall of up to 9,000 acre-feet of water supply (depending on population growth and water demand). Climate Change science also suggests that there will be a significant change in the form of precipitation and the timing of storm water runoff experienced. Changes include earlier runoff, overall reductions in total snowpack, and increased evaporative losses; which could result in diminished water availability.

Rainwater catchment

Santa Fe receives most of its rainfall in intense and infrequent precipitation events. The City provides incentives for individual buildings to install water catchment systems, but there are challenges associated both with the legality of large scale rainwater harvesting and with the cost and space implications of building systems large enough to capture large and infrequent precipitation events. Under New Mexico law, storm water cannot be impounded for greater than 96 hours without a permit, in order to ensure that water is not diverted from downstream users with water rights. Therefore, rainwater catchment systems on rooftops are legal, but diversion and capture of storm water running over-land ~~is~~are not.

(Water Summary Chart/Table here, information supplied by staff)

Objective:

Utilize innovative technologies, long range planning, and proactive approaches to ensure that water system resources are resilient, and groundwater resources are maintained.

Targets

1. Maintain its position as a regional and national leader in water conservation and efficient use
2. Establish municipal waste water reuse applications for treatment plants to reduce demand on ~~fresh~~treated water resources
3. Increase on-site utilization and infiltration of rainwater
4. Provide incentives to installing residential and commercial ~~gre~~aywater systems
5. Work with LANL and local solar companies to engineer water recycling technologies that would place Santa Fe as a business leader in water reuse.
6. Provide incentives and remove permitting hurdles for net-zero construction practices. This has already begun with the 2016 update of the Green Building Code to include the Water Efficiency Rating Score (WERS) tool.
7. Provide ongoing evaluation and monitoring of groundwater conditions to help inform a more accurate OSE administrative groundwater model

8. Develop criteria for evaluating projects in relation to identified ~~y~~values held by Santa Fe and its residents regarding water use.
9. Encourage WERS monitoring in homes and businesses.
10. Develop and incorporate WERS standards for multiple family residences and for the commercial sector.

Strategies

Immediate

WA1: Optimize management of reclaimed wastewater

What	Reclaimed Wastewater has been identified by the Santa Fe Basin Study as the most viable opportunity for increasing the resiliency of Santa Fe's water supply in order to be prepared for Climate Change. City customers only consume about 30% of the total water which is diverted for drinking water production. 70% of the total water produced for Santa Fe water customers is returned to the City's wastewater treatment facility. NEEDS VERIFICATION. Regardless of the impacts of climate change and drought, some portion of the water produced for City residents will always be available from this source, making it extremely resilient.	
How	<ul style="list-style-type: none"> Identify options for how best to utilize reclaimed water including a triple bottom line evaluation of the impacts of each evaluated option. 	
Who	Lead	City of Santa Fe Public Utilities Department, Water Division
	Support	City of Santa Fe Public Works Department
Resources	Existing Resources	Seek grant funding. Potential partners include Bureau of Reclamation and Santa Fe County.
	Needs Funding	

Comment [GCL1]: Per one reviewer: This "...has already been examined in the wastewater study. To my mind, implementing the results of the wastewater study is not a priority at this time."

WA2: Groundwater modeling and monitoring

Comment [GCL2]: Per reviewer: "We might add 'Limit the permitting of new wells in the city, and require metering of all private wells.'"

What	Study local geology to evaluate aquifer recharge and contaminant transport.	
How	<ul style="list-style-type: none">• Continue monitoring projects and work to collect technical information that can help to inform more accurate OSE and NMED groundwater administrative models• Manage groundwater as a reserve to be maintained for future increases in demand or reductions in supply• Maintain MOU's with LANL regarding the Work Plan for sampling Buckman Wells to evaluate groundwater contamination and the BDD Work Plan for evaluating storm water runoff• Evaluate feasibility of an Aquifer Storage and Recovery Project• Evaluate a large-scale water recycling system using solar power to pump water back uphill daily where it would first serve as a solar battery by generating electricity at night and then flowing downstream for reuse.	
Who	Lead	City of Santa Fe Public Utilities Department, Water Division
	Support	City of Santa Fe Public Works Department
Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

WA3: Triple bottom line criteria for utility decision making

What	Increased utilization of multi-priority evaluation criteria, such as Triple Bottom Line, to inform decision making.	
How	<ul style="list-style-type: none">• Following on the success of Triple Bottom Line (3BL) criteria for the evaluation of the Santa Fe Basin Study, implement this evaluation method more broadly for City decision making.	
Who	Lead	City of Santa Fe Public Utilities Department, Water Division
	Support	<ul style="list-style-type: none">• City of Santa Fe Legislative Services• City of Santa Fe Finance Department• Water Rates Consultant
Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

WA4: Water pricing structures

What	Continue to evaluate pricing strategies to ensure adequate funding, water accessibility, and conservation.	
How	<ul style="list-style-type: none">• Utilize City's budget planning process to forecast necessary capital expenditures needed to ensure the viability and resiliency of the City's Water infrastructure.• Work with utility pricing consultant to ensure that pricing is designed to socially equitable for all members of the Santa Fe Community while ensuring ongoing water conservation.	
Who	Lead	City of Santa Fe Public Utilities Department, Water Division
	Support	<ul style="list-style-type: none">• City of Santa Fe Finance Department• Utility Pricing Consultant
Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

WA5: Water conservation program

What	Continue support for the City of Santa Fe's water conservation program.	
How	<ul style="list-style-type: none">• Ensure adequate funding is available to support water conservation efforts by the City.• Continue to evaluate and improve effectiveness of the programs that the Water Conservation Office develops and implements.• Expand financial incentives for water conservation• Evaluate new opportunities to increase water conservation for various Utility clients and support upgrades, through the incentive program, to achieve them.	
Who	Lead	City of Santa Fe Public Utilities Department, Water Division
	Support	<ul style="list-style-type: none">• Water Conservation Committee• Public Utilities City Council Committee• City of Santa Fe City Council• Santa Fe County

Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

WA6: Water system education and outreach

What	Increase education and outreach about Santa Fe's water system.	
How	<ul style="list-style-type: none"> Track the benefits of the Water Conservation Office's new Passport Program for 4th graders designed to teach kids about how our water use and environment interact. Work with various stakeholders to design tours/field trips and/or presentations to educate on the components of Santa Fe's water system. Ensure that the 'energy water' nexus is explained to all customers so they understand that water conservation and reduction has broader impacts than just on that side of the equation. 	
Who	Lead	City of Santa Fe Public Utilities Department, Water Conservation Office
	Support	<ul style="list-style-type: none"> Santa Fe Public Schools Santa Fe Watershed Association Santa Fe County Buckman Direct Diversion City of Santa Fe Wastewater Division
Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

WA7: Leak detection

What	Utilize and educate on the most effective and available leak detection methods starting with the Eye on Water app.	
How	<ul style="list-style-type: none">• Encourage customers to utilize the most current leak detection methods and technology to reduce unnecessary water waste.• Work with the Water Conservation Office to make sure that educational and marketing around leak detection methods/technologies are part of the standard outreach messaging for the community.	
Who	Lead	City of Santa Fe Water Division, Utility Billing & Customer Service
	Support	City of Santa Fe Public Utilities Department, Water Conservation Office
Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

Near-term

WA8: Catchment and infiltration

What	Increase focus on water catchment and infiltration.	
How	<ul style="list-style-type: none"> • Create a pilot program for a neighborhood/area of the City to explore the capture, treatment and reuse of greywater (e.g., water from showers, sinks, etc.) to be used for irrigation in those areas. • Increase Rainwater Harvesting: Market existing rainwater harvesting rebate programs currently in place within the City. • Expand and mandate programs for rainwater harvesting (e.g., mandatory installation of gutter on pitched roofs, etc.) to provide trackable and achievable conservation opportunities. • Work with state agencies to address limitations to storm water storage seeking to be allowed to store a like amount of water to that which would have infiltrated the aquifer under pre-development conditions. • Change the current Storm water Fee to allow a focus on permeability in addition to the other projects it supports. • Continue investigations into opportunities for optimizing the reuse of wastewater. • Work with neighborhoods to identify coordinated solutions to neighborhood scale stormwater opportunities 	
Who	Lead	<ul style="list-style-type: none"> • City of Santa Fe Public Works Department, Storm water Manager • City of Santa Fe Public Utilities, Water Resources, Water Conservation and Waste Water Divisions
	Support	<ul style="list-style-type: none"> • City of Santa Fe Public Works Department, Streets Division • City of Santa Fe Parks Department
Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

WA9: Tracking sustainability metrics

What	Increase transparency for tracking sustainability goals.	
How	Expand the Conservation Scorecard program recently created by the Water Conservation Office to include tracking of sustainability metrics City-wide.	
Who	Lead	City of Santa Fe Public Utilities Department, Water Division
	Support	City of Santa Fe Information Technology Division
Resources	Existing Resources	Existing City department budgets.
	Needs Funding	

Long-term

WA10: Reclaimed water



What	Pursue opportunities to expand reclaimed water projects including potable reuse.	
How	To be determined	
Who	Lead	City of Santa Fe Public Utilities Department, Water Division
	Support	To be determined
Resources	Existing Resources	
	Needs Funding	System planning, design and funding

City of Santa Fe, New Mexico

memo

Date: April 19, 2018

To: Public Utilities Committee

From: Christine Y. Chavez, Water Conservation Manager 
Patricio M. Pacheco Water Conservation Education & Compliance Specialist 

Via: Shannon Jones, Public Utilities Division Director
Rick Carpenter, Acting Water Division Director and Water Resources and Conservation Manager

RE: 2017 GPCD (gallons per capita per day) Analysis utilizing NM Office of the State Engineer Methodology

Introduction:

A common measurement of water conservation success is the gallons per capita per day (GPCD) calculation. Staff has completed the annual GPCD report for 2017 using the New Mexico Office of the State Engineer (NMOSE) methodology referenced below. The new GPCD calculation for 2017 resulted in 90 gallons per capita per day. As part of the conditions applied to the City's water right permits, the City must submit an annual GPCD calculation to the NMOSE. Though this region of New Mexico has experienced climatic and seasonal challenges, the calculated GPCD of 90 is a result of progressive on-going water conservation efforts by the City's water customers.

NMOSE GPCD Calculator Methodology:

To better regulate municipal water use, the NMOSE began to condition municipal water-rights permits with the GPCD measurement and began a program to standardize the GPCD methodology. On March 16, 2009, the NMOSE released the standardized GPCD methodology using the GPCD calculator, 2.04 Beta Version. The City was required to use the tool for the first time in 2010.

Results of the 2017 GPCD Calculator:

The GPCD for 2017 was 90 gallons per capita per day for the City of Santa Fe. The previous year, the GPCD was calculated at 87. The GPCD did not really go up for 2017, in fact it stayed pretty constant but the office chose to apply a adjustment to the population that is calculated as part of the spreadsheet. The Santa Fe Water Conservation Committee worked on a population adjustment based on PEPANNRES (Annual Estimates of the Resident Population). The reason this adjustment was made is because population was being overestimated which resulted in a lower GPCD number. For example, in 2017 the population was 87,474 without the adjustment and with the adjustment 83,878 which is a more accurate estimate. This is important because it gives the City a more accurate picture of the GPCD and helps establish true targets for conservation relative to the customer sector it focuses on.

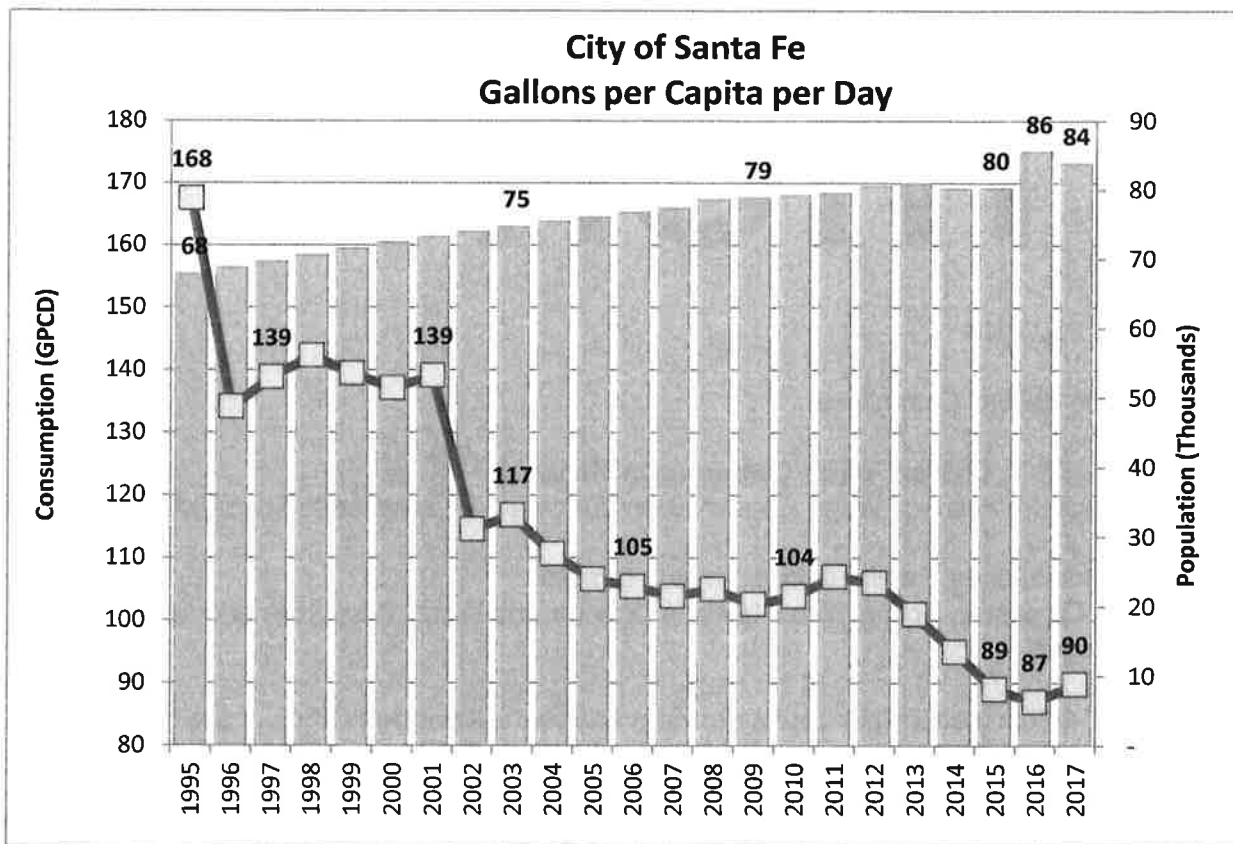
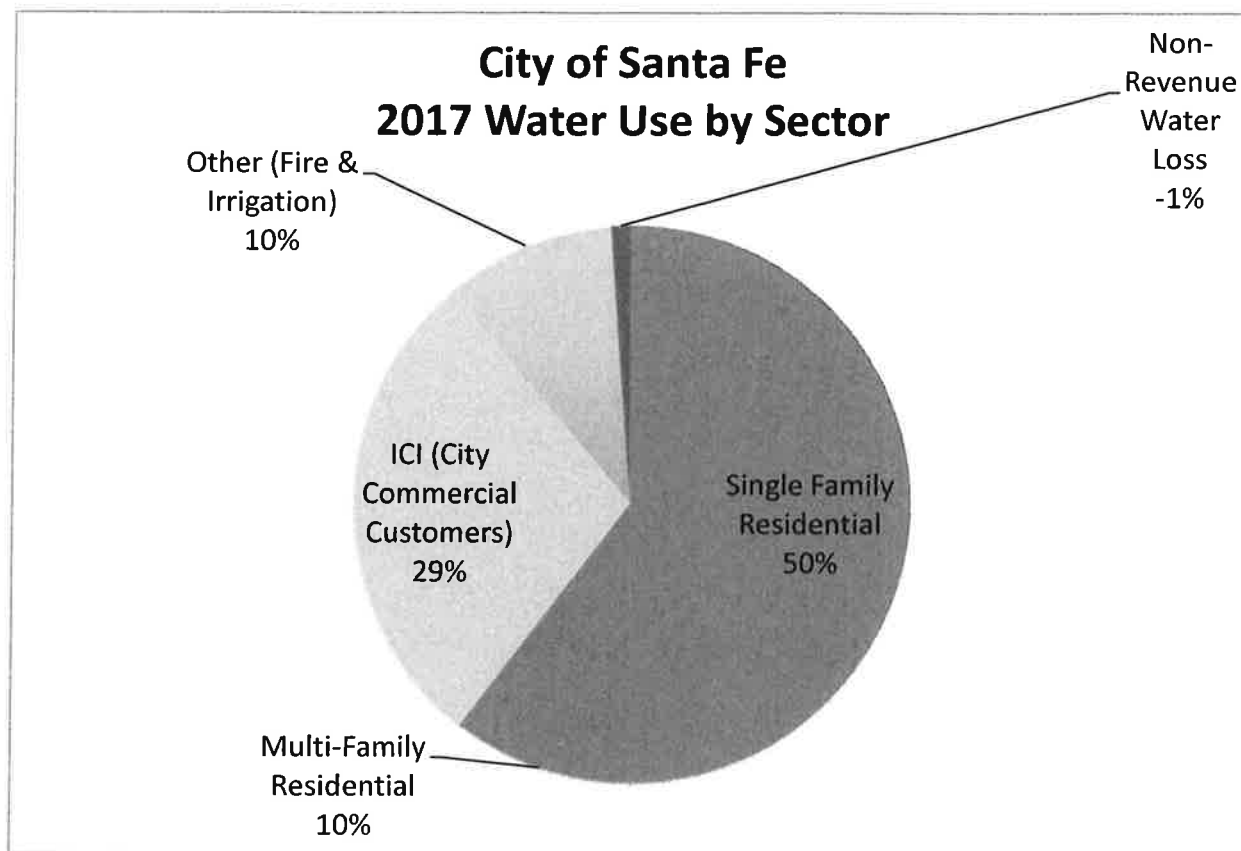


Figure 1: GPCD for the City of Santa Fe from 1995-2017

Figure 2: Pie Chart



Conclusion:

The City has achieved lower water consumption through public outreach, ordinances requiring customers to comply with water conservation conditions and the utilization of incentives. The City's single-family residential customer uses approximately 57 gallons per day or an average of 1,710 gallons per month. What the 2017 GPCD recognizes is that there is a significant opportunity to lower water use in the ICI or commercial sector. Therefore a 2018 goal is to target water conservation programming for the commercial sector.



NMOSE GPCD CALCULATOR

Gallons per Capita - v2.05

Release Date: August 2015

This spreadsheet-based GPCD calculator is designed to help quantify and track water uses associated with water distribution systems. The spreadsheet contains several separate worksheets. Sheets can be accessed using the tabs towards the bottom of the screen, or by clicking the buttons on the left below. Descriptions of each sheet are also given below.

It should be noted that all the recorded data should be from actual metered results and should not include any estimates.

THE FOLLOWING KEY APPLIES THROUGHOUT:

	Value to be entered by user
	Dropdown box, pick from list
	Value calculated based on input data
	No longer available for input

Look for the following boxes that provide additional information: [Instructions](#) [Info](#)

Please begin by providing the following information, then proceed through each sheet:

NAME OF CITY OR UTILITY:

REPORTING YEARS: Enter the most recent reporting year: Data can be entered back to:

NAME OF CONTACT PERSON: E-MAIL: TELEPHONE: Ext.

SELECT THE REPORTING UNITS FOR VOLUME DATA: For unit converter click here:

Instructions & Utility	This sheet
Census Data	Census data and the portal to get the data from the Census website
Single-Family	Single-Family residential gallons and population
Multi-Family	Multi-Family residential gallons and population
ICI & Other Metered	Other data including Commercial, Industrial and Institutional [1.3] and Other metered [1.4] categories
Reuse	Data related to water reuse projects
Total Diverted	Total Production and Diverted Water
Reported Data	The calculated data graphical review of most common performance indicators
Annual Performance	The calculated data graphical review of annual performance indicators
Monthly Performance	The calculated data graphical review of monthly performance indicators
Definitions	Use this sheet to understand terms used in the audit process

All parties reserve the right to validate the data recorded in this document. This does not bind the OSE or the Utility to the results. It is a tool used for planning purposes.

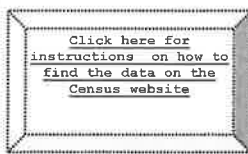
Questions or comments regarding the software please contact us at: waternm@state.nm.us

Census Information Data Table 2.1

Info



OR



2017	TO	2011
------	----	------

Use the most recent census data

[Return to instructions](#)

DATA

US Census Table	Description	Census Year	INPUT
DP-1	Profile of General Population and Housing Characteristics	2016	
Subject			
Relationship	In group quarters	Total	1,321
Housing Occupancy	Total housing units	Total	41,270
	Occupied housing units		35,540
	Vacant housing units		5,730
Households by Type	Average household size	Total	2,298

Formula: Household Size = Total Population / Total Number of Housing Units

Vacancy Rate %	13.9%
----------------	-------

COMMENTS:

The City of Santa Fe used 2011-2015 American Community Survey 5-year estimates for the housing occupancy, units in structure and housing tenure data. Average household size was calculated by taking the weighted average of the avg. household size of owner-occupied units with the avg. household size of renter occupied units. Table B26001 was used for the group quarters population.

DATA INPUT SHEET

City of Santa Fe Public Utilities Department

Instructions

3. SINGLE-FAMILY RESIDENTIAL (SFR)

MONTHLY DATA

TABLE 3.1
SFR BILLED WATER CONSUMPTION (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	90,891,600	82,116,900	88,238,700	99,248,300	110,664,600	143,024,600	172,966,100	156,115,300	148,625,700	128,022,800	98,590,500	88,149,300
2016												
2015												
2014												
2013												
2012												
2011												

TABLE 3.2
NUMBER OF SFR CONNECTIONS (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	28,726	28,733	28,772	28,785	28,776	28,791	28,810	28,829	28,840	28,861	28,869	28,874
2016												
2015												
2014												
2013												
2012												
2011												

TABLE 3.3
INACTIVE (ZERO USE) SFR CONNECTIONS (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017												
2016												
2015												
2014												
2013												
2012												
2011												

You have entered Active Connections Only in Table 3.2; leave the cells below blank

TABLE 3.4
SFR POPULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	66,893	66,909	66,999	67,029	67,008	67,044	67,090	67,132	67,158	67,208	67,226	67,238
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2011	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

Formula = (No. of Connections - No. of Zero Use Accounts) * Ave. Household Size

TABLE 3.5
SFR GPCD CALCULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	43.83	43.83	42.48	49.36	53.27	71.11	83.17	75.02	73.72	61.45	48.69	42.29
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2011	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

Formula = Billed Water Consumption (SFR only) / Calculated Population (SFR only)

COMMENTS:

Single Family Residential Consumption and # of Accounts comes from the customer utility database queried by the ITT Dept.

ANNUAL DATA

TABLE 3.6

ANNUAL CONSUMPTION

TABLE 3.7

ANNUAL CALCULATION
1,408,554,400
N/A
N/A
N/A
N/A
N/A

TABLE 3.8

AVG ANNUAL CONNECTIONS

TABLE 3.9

AVG CONN CALCULATION
28,806
N/A
N/A
N/A
N/A
N/A

TABLE 3.10

CALCULATED GROWTH RATE
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 3.11

No VACANT SFR CONNECTIONS

Are you sure growth is zero?

TABLE 3.12

SIZE OF HOUSEHOLD
2,32865
2,32865
2,32865
2,32865
2,32865
2,32865

TABLE 3.13

SFR POPULATION
67,078
N/A
N/A
N/A
N/A
N/A

TABLE 3.14

ANNUAL SFR GPCD
57.45
N/A
N/A
N/A
N/A
N/A

DATA INPUT SHEET

City of Santa Fe Public Utilities Department

Instructions

4. MULTI-FAMILY RESIDENTIAL (MFR)

MONTHLY DATA

TABLE 4.1

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	21,457,200	20,020,800	20,275,900	21,255,300	22,283,900	27,133,400	32,188,400	31,408,800	28,351,100	26,858,700	21,735,200	19,659,800
2016												
2015												
2014												
2013												
2012												
2011												

TABLE 4.2

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	7,822	7,822	7,822	7,822	7,822	7,822	7,822	7,822	7,822	7,822	7,822	7,822
2016												
2015												
2014												
2013												
2012												
2011												

If only Current Number of Units is Known, put this number in Table 4.7

TABLE 4.3

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479	15,479
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2011	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

Formula = (Number of Units - Vacant MFR Connections) * Ave. Household Size

TABLE 4.4

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	44,72	46,19	42,25	45,77	46,44	58,43	67,08	65,45	61,05	55,97	46,80	40,97
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2011	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

TABLE 4.5

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	44,72	46,19	42,25	45,77	46,44	58,43	67,08	65,45	61,05	55,97	46,80	40,97
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2011	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

Formula = MFR Billed Water Consumption (Monthly) / MFR Population (Monthly)

ANNUAL DATA

TABLE 4.6

Year	ANNUAL CONSUMPTION	ANNUAL CALCULATION
2017		292,628,300
2016		N/A
2015		N/A
2014		N/A
2013		N/A
2012		N/A
2011		N/A

TABLE 4.7

Year	ANNUAL UNIT CALCULATION
2017	7,822
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A
2011	N/A


TABLE 4.8

Year	ANNUAL UNIT CALCULATION
2017	7,822
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A
2011	N/A

TABLE 4.9

Year	ANNUAL MFR GPCD
2017	51.79
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A
2011	N/A

DATA INPUT SHEET

 Santa Fe Public Utilities Department

Instructions

MONTHLY DATA

2017 TO 2011

TABLE 5.1
ICI WATER CONSUMPTION (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	53,118,400	51,179,300	55,642,600	59,022,200	63,313,600	75,516,600	90,612,800	86,943,000	82,432,600	71,965,900	60,932,700	50,580,500
2016												
2015												
2014												
2013												
2012												
2011												

TABLE 5.2
OTHER METERED (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	236,100	1,408,700	668,800	7,741,800	22,742,500	34,749,800	53,693,200	64,663,400	48,078,600	28,649,100	17,461,800	1,777,400
2016												
2015												
2014												
2013												
2012												
2011												

COMMENTS:

The ICI Consumption Table is based up on the Water Division's active, commercial accounts consumption queried from the customer utility database. The other metered consumption is based upon active fire account usage and irrigation account usage queried from the customer utility database via an ITT data pull

5. INDUSTRIAL, COMMERCIAL & INSTITUTIONAL (ICI) AND OTHER METERED

ANNUAL DATA

TABLE 5.3
ICI ANNUAL CONSUMPTION

TABLE 5.4
ICI GPCD

TABLE 5.5
ICI ANNUAL CALCULATED

TABLE 5.6
OTHER ANNUAL CONSUMPTION

TABLE 5.7
OTHER METERED GPCD

TABLE 5.8
OTHER ANNUAL CALCULATED

6. REUSE

City of Santa Fe Public Utilities Department

Instructions

MONTHLY DATA

2017 TO 2011

TABLE 6.1

[illegible]

COMMENTS:

2016 reuse diversions are based on the monthly accounting of treated effluent users provided by the wastewater division.

ANNUAL DATA

TABLE 6.2

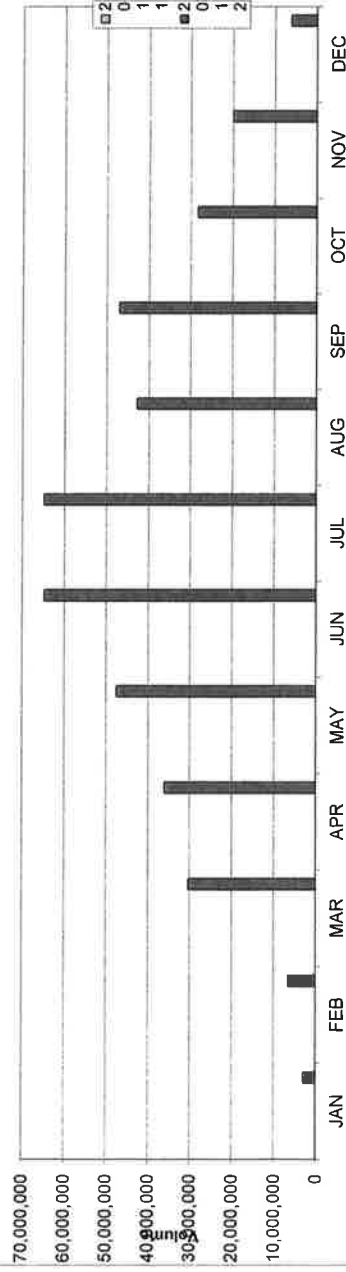
[illegible]

TABLE 6.3

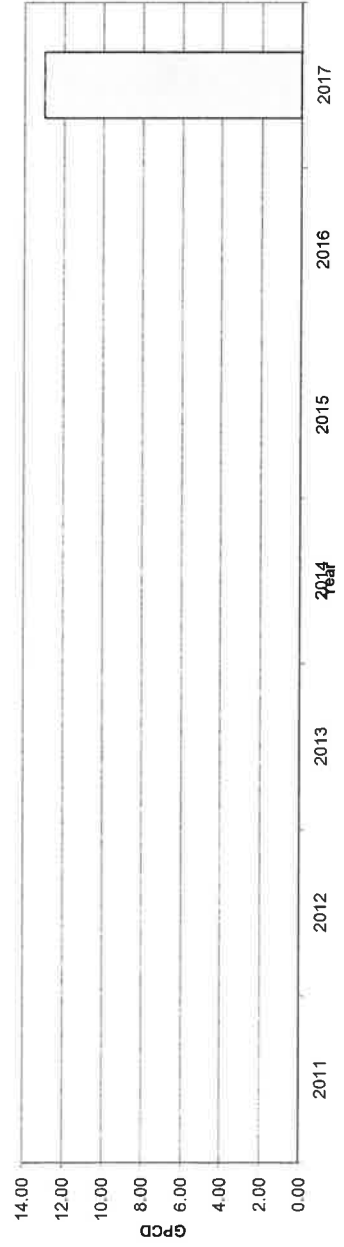
REUSE GPCD	12.98	N/A	N/A	N/A	N/A	N/A	N/A
------------	-------	-----	-----	-----	-----	-----	-----

Reuse Volume

Graph 6.1



Reuse GPCD



7. TOTAL WATER DIVERTED AND SUPPLIED

MONTHLY DATA

TABLE 7.1

TOTAL WATER DIVERTED (Monthly) (Gallons (US))												
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	61,598,600	49,378,400	52,832,500	73,032,600	163,945,100	218,827,800	230,661,600	209,532,500	143,944,300	122,447,100	98,816,600	82,359,600
2016												
2015												
2014												
2013												
2012												
2011												

TABLE 7.7

ANNUAL TOTAL DIVERTED	
ANNUAL TOTAL DIVERTED CALC	1,507,376,700
	N/A
	N/A
	N/A
	N/A
	N/A

ANNUAL DATA

TABLE 7.2

IMPORTED WATER (Monthly) (Gallons (US))												
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	103,100,000	100,000,000	133,600,000	137,300,000	90,090,000	107,400,000	106,900,000	99,800,000	139,300,000	103,400,000	74,300,000	89,400,000
2016												
2015												
2014												
2013												
2012												
2011												

TABLE 7.8

ANNUAL TOTAL IMPORTED	
ANNUAL TOTAL IMPORTED CALC	1,284,590,000
	N/A
	N/A
	N/A
	N/A
	N/A

TABLE 7.3

EXPORTED WATER (Monthly) (Gallons (US))												
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	0	0	0	0	0	18,496,044	0	24,144,377	0	0	0	0
2016												
2015												
2014												
2013												
2012												
2011												

TABLE 7.10

ANNUAL TOTAL EXPORTED	
ANNUAL TOTAL EXPORTED CALC	42,640,421
	N/A
	N/A
	N/A
	N/A
	N/A

TABLE 7.4

TOTAL WATER SUPPLY (Monthly) (Gallons (US))												
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	164,698,600	149,378,400	186,432,500	210,332,600	254,035,100	307,731,756	337,561,600	285,188,123	283,244,300	225,847,100	173,116,600	171,759,600
2016	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0

Formula = Total Water Diverted + Imported water - Exported Water

TABLE 7.11

ANNUAL TOTAL EXPORTED	
ANNUAL TOTAL EXPORTED CALC	42,640,421
	N/A
	N/A
	N/A
	N/A
	N/A

TABLE 7.12

ANNUAL TOTAL WATER SUPPLY	
ANNUAL TOTAL WATER SUPPLY	2,749,326,279
	0
	0
	0
	0
	0

TABLE 7.13

TOTAL POP EST	
TOTAL POP EST	83,878
	N/A
	N/A
	N/A
	N/A
	N/A

TABLE 7.5

SYSTEM TOTAL GPCD (Monthly)												
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2017	63	64	72	84	98	122	130	110	113	87	69	66
2016	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2015	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2014	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2013	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2011	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

TABLE 7.14

SYSTEM TOTAL	
Year	GPCD
2017	89.80
2016	NA
2015	NA
2014	NA
2013	NA
2012	NA
2011	NA

The Total Water Diverted values (Table 7.1) exclude water supplied from the Buckman Direct Diversion Project to the City of Santa Fe (City). The Imported Water values (Table 7.2) are the City's portion of water delivered from the Buckman Direct Diversion Project (BDD Project). The sources of total water diverted include: the City Wells, Canyon Rd Water Treatment Plant & St. Michael's Well, Buckman Wells, and other wells including: Osage Well, Wastewater Well, Mary Sanchez Links well, MRC Well South. *Note: With the exception of Osage Well, Other Wells were not included in previous years gpcd calculations. The Exported Water values (Table 7.3) represent non-BDD Project water delivered to Santa Fe County by the City under the Water Resources Agreement.

8. SUMMARY GPCD REPORTED DATA

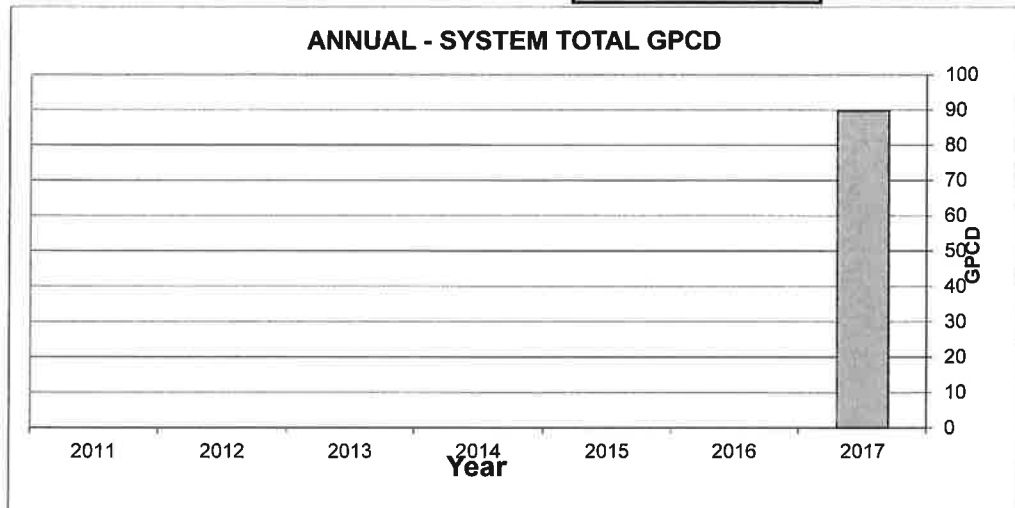
Santa Fe Public Utilities Depa

ANNUAL

2017 To: 2011

Year	SYSTEM GPCD
2017	89.80
2016	NA
2015	NA
2014	NA
2013	NA
2012	NA
2011	NA

ANNUAL - SYSTEM TOTAL GPCD



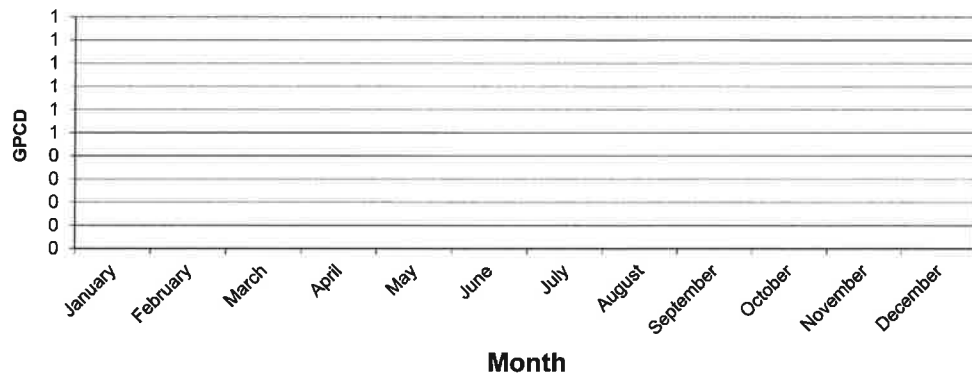
MONTHLY

Month	SFR GPCD
January	No Data
February	No Data
March	No Data
April	No Data
May	No Data
June	No Data
July	No Data
August	No Data
September	No Data
October	No Data
November	No Data
December	No Data

Year 2016

Peak/Ave #DIV/0!

Monthly - Single-Family Residential GPCD Sector Specific Population

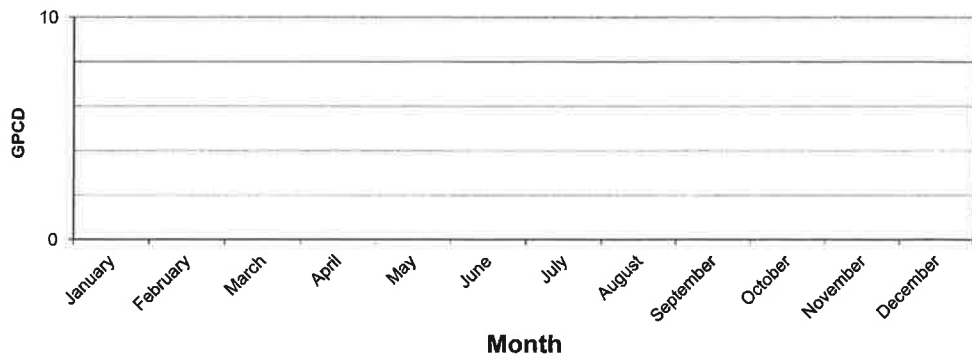


YEAR 2016

Month	MFR GPCD
January	No Data
February	No Data
March	No Data
April	No Data
May	No Data
June	No Data
July	No Data
August	No Data
September	No Data
October	No Data
November	No Data
December	No Data

Peak/Ave #DIV/0!

Monthly - Multi-Family Residential GPCD Sector Specific Population



YEAR 2016

9. System Total Annual Reporting Performance

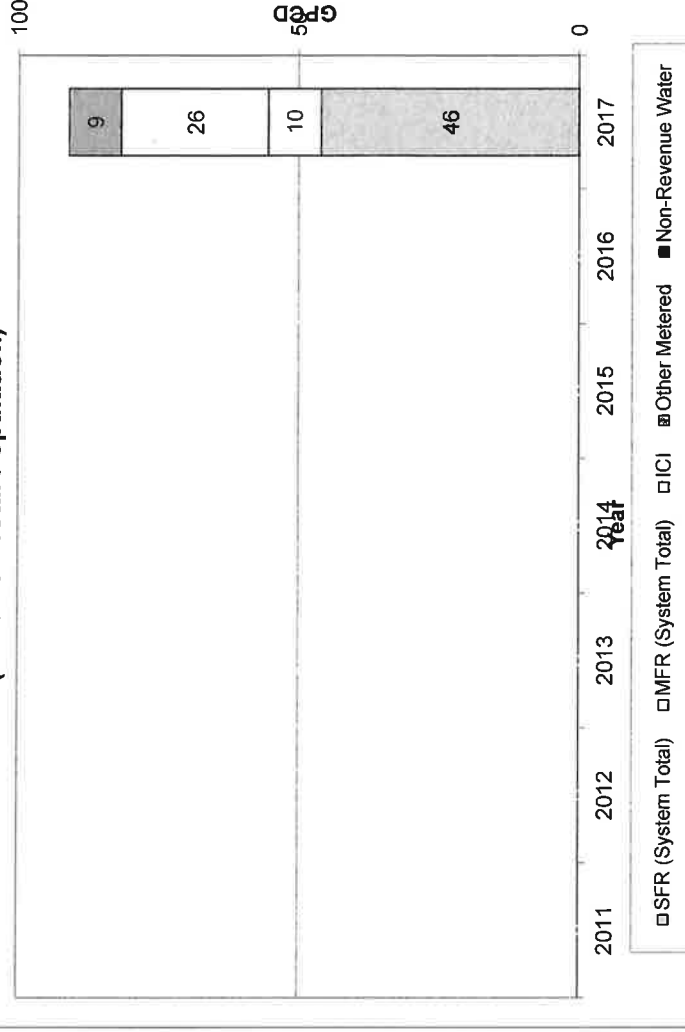
Overall Annual GPCD (based on Total Population)

Year	SFR (System Total)	MFR (System Total)	ICI	Other Metered	Non-Revenue Water	Total Supplied	Non-Revenue Volume Million Gallons (US)
On Graph?	Yes	Yes	Yes	Yes	Yes		
2017	45.94	9.56	26.17	9.21	-1.08	102.78	(33.01)
2016	N/A	N/A	N/A	N/A	#####	#VALUE!	-
2015	N/A	N/A	N/A	N/A	#####	#VALUE!	-
2014	N/A	N/A	N/A	N/A	#####	#VALUE!	-
2013	N/A	N/A	N/A	N/A	#####	#VALUE!	-
2012	N/A	N/A	N/A	N/A	#####	#VALUE!	-
2011	N/A	N/A	N/A	N/A	#####	#VALUE!	-

City of Santa Fe Public Utilities Department

2017 to 2011

Annual Analysis of GPCD - Viewer (based on Total Population)



10. Monthly Reporting Performance

Choose Year for Monthly Analysis

2016

Choose Sector

Non-Revenue

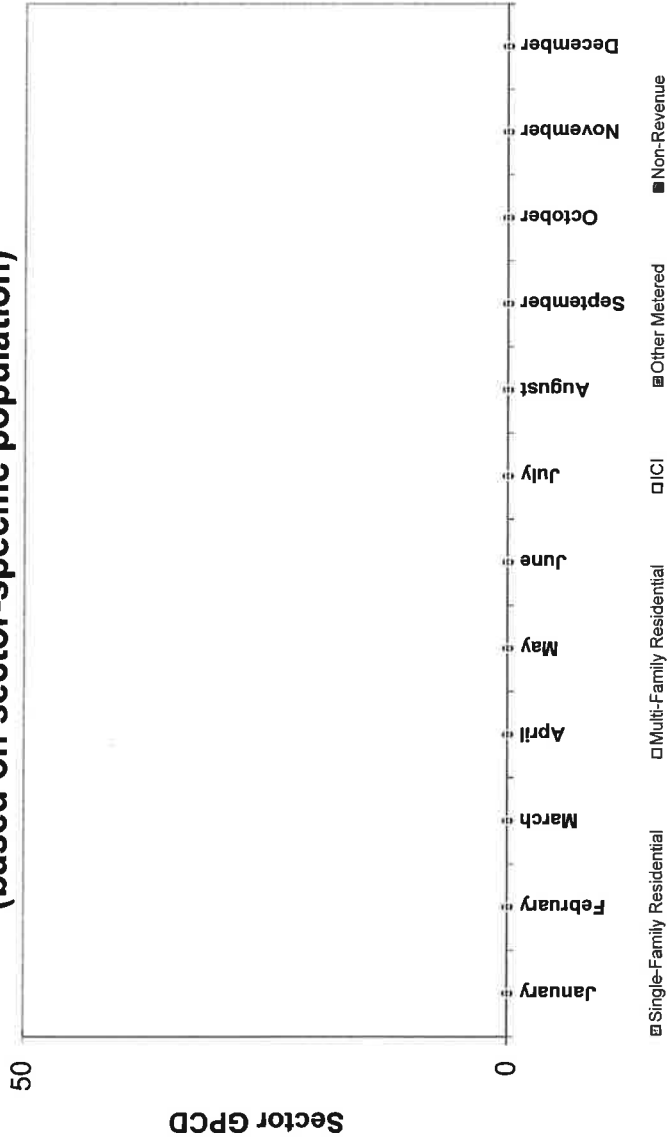
Monthly GPCD

Month	Single-Family Residential	Multi-Family Residential	ICI	Other Metered	Non-Revenue
JAN	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
FEB	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
MAR	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
APR	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
MAY	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
JUN	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
JUL	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
AUG	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
SEP	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
OCT	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
NOV	No Data	No Data	#VALUE!	#VALUE!	#VALUE!
DEC	No Data	No Data	#VALUE!	#VALUE!	#VALUE!

City of Santa Fe Public Utilities Department

2017 to 2011

Monthly Analysis of GPCD - Viewer (based on sector-specific population)



NMOSE GPCD Software: Definitions

GPCD v2.0

[Back to Instructions](#)

Item Name		Description					
Active Connections		All active Single Family Residential connections within the utility. Connections that are not occupied or show zero activity are not counted in this category.					
Annual Multi-Family Residential GPCD Calculation	Find	The MFR GPCD is Annual MF Calculation (4.6) divided by the annual MFR Population (4.9).					
Annual Single Family Residential GPCD Calculation	Find	The SFR GPCD is Annual SFR Calculation (3.7) divided by the annual SFR Population average (3.13).					
Billed Water Consumption (Multi-Family Residential)	Find	This is the total billed consumption for Multi-Family Residential uses only. Provide the amount of water used (gallons) for multi-family residential connections by month in Table 4.1, or by year in Table 4.5. If multi-family residential is not available as a separate category, provide an explanation in the Comments Box and include usage in the Industrial, Commercial and Institutional Table 5.1 or Other Metered Table 5.2 on Sheet 5.					
Billed Water Consumption (Single-Family Residential)	Find	This is the total billed consumption for Single-Family residential uses only.					
Calculated Growth Rate	Find	The calculated growth rate is a calculation developed to normalize the data to the growth in the utility. The growth is determined by evaluating the percentage change in the number of connections within the utility on an annual basis, provided in Table 3.9 Average Connections Calculated . If there are no more than one years' data, then this will not be calculated. This Table is for the utilities use in checking the growth percentage calculated against their own estimates. It is also used in Table 4.8 Number of (Multi-Family) Units if only the current number of multi-family units can be					
Census Data	Find	The Census data is used to standardize the calculation of population by utilizing numbers of people per household. It also records information on the vacancy rate within each city which enables calculation of the number of households actually being used. There is a link to a pdf document in Definitions showing the user how to find and record the relevant data.					
Converter	Find	<div>The user may develop a GPCD Analysis based on one of two input unit selections: 1) Gallons (US) 2) Cubic feet Please select the units from the instructions worksheet. An interactive unit converter is also provided below. Input volume in first box below and select units to be converted.</div> <table><tr><td>1</td><td>Gallons (US)</td><td>=</td><td>0.134</td><td>Cubic Feet</td></tr></table>	1	Gallons (US)	=	0.134	Cubic Feet
1	Gallons (US)	=	0.134	Cubic Feet			
Exported Water	Find	Enter all water exported from the system. This will include any pass-through arrangements or wholesale contracts to other drinking water suppliers, where the reporting utility is the water rights permit holder.					
GPCD		Gallons per capita per day (GPCD) is a method utilized internationally to measure water use by drinking water suppliers. It is most commonly used to describe historical and current water uses, providing a baseline of water use that is not as susceptible to changes in population. GPCD is also used for planning purposes, allowing estimates of future demand requirements based on localized population projections. More sophisticated planning efforts utilize GPCD to determine conservation potential, track the results of program implementation, and calculate projections based on conservation adjusted GPCD.					
General Information		The white boxes are data entry cells and are used for inputting data. All other cells except dropdown menus (purple boxes) are protected for the user's benefit to stop any overwriting of formulas and calculated cells. The green boxes are values that have been calculated based on inputs.					
Graphing Results	Find	Datasets will automatically be graphed when using the graphing data tools in both the Annual and Monthly Performance worksheets. For example, choosing the year and the use sector from the purple dropdown boxes will allow these variables to be graphed.					
Imported Water	Find	Enter all water imported from other systems. This will include any retail contracts with other drinking water suppliers where this utility purchases water from another utility and is not the permit holder.					
Inactive and Zero Connections	Find	The inactive and zero connections are recorded in Table 3.3 so that unused single family residential connections will be removed from the calculation of single family population when Total Units is chosen from the drop down list in Table 3.2.					
Industrial, Commercial and Institutional (ICI)	Find	Includes industrial properties, such as manufacturing, commercial properties such as restaurants, shopping malls, and institutional customers such as schools, universities and prisons.					

Multi-Family Residential Connections	Find	A multifamily unit is living units in an apartment complex, duplexes, triplexes, trailer parks, and condo or town houses that have multiple units serviced by a single connection. They are not counted in the single-family residential category.
Multi-Family Residential Population	Find	Multi-family population is calculated from number of MFR units in the Annual Unit Calculation (4.8) minus Vacant MFR Connections (4.10). That number is then multiplied by Average Size of Occupied Housing Units from the US Census (2.1).
Non-Revenue Water		Non-revenue water is all the water the utility diverts and/or produces, but does not get paid for. Non-revenue water includes apparent losses such as meter inaccuracies, theft, and database errors, real losses such as leaks. It also includes unbilled authorized uses such as fire-fighting, line flushing and disinfection. The Calculator does not provide data entry for unmetered billed water. This might include bulk sales or monthly fees not based on usage. The non-revenue water in the Calculator includes all water that is not metered.
Other Metered	Find	All categories of billed metered use that is not otherwise classified in SFR, MFR or ICI. This provides the user the opportunity to track alternative categories. Examples included irrigation only, stand pipes, and fire hydrant/construction meters. Everything not included in SFR, MFR, ICI or Other will end up in non-revenue water.
Reuse	Find	Reuse, or Recycled water is former wastewater (sewage) that has been treated to remove solids and certain impurities and reused by a water supplier. In most locations, it is only intended to be used for nonpotable uses, such as irrigation, and dust control. This data is not included in any other calculation. It is provided as a tracking tool for the user.
Single Family Residential Connections	Find	SFR Connection is a stand alone or independently metered housing unit. The number used in the Calculator can be Total Connections or Active Connections only.
Single Family Residential Population	Find	Single Family Population (3.13) is calculated from number of active connections times size of average household (3.12). It can be calculated monthly or annually depending on the data provided. If Total Connections is chosen (3.2), then inactive connections are subtracted prior to multiplying by size of average household (3.12). If Active Connections is chosen (3.2), then number of connections are multiplied by size of average household (3.12) without any subtractions.
Size of Average Household	Find	This Table is determined from the US Census data in Table 2.1, Sheet 2. This data is used to determine a total single-family population and total multi-family population for both the monthly and annual data (Tables 3.4 and 3.13, Tables 4.3 and 4.9 respectively).
Total Connections		All active and inactive Single Family Residential connections within the utility.
System Total GPCD	Find	The System Total GPCD is calculated by dividing the quantity of Total Water Diverted (plus imports minus exports) by the System Total Population
Total Population	Find	The Total Population estimate is the sum of the single-family population + multi-family population + group quarters population.
Vacant Single-Family Residential Connections	Find	This is a calculated field using either i) the average of the monthly vacant SFR connections, if monthly data are available or ii) an estimated value based on the Census data vacancy rate multiplied by the number of Total SFR connections. When Total Connections is chosen in Table 3.2, vacant single family residential connections are subtracted from Total Connections prior to calculating a population (based on household size) and a single family GPCD.

How to find the data required for Census section

2] Census Bureau Home Page - Microsoft Internet Explorer

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http://www.census.gov/

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U.S. Census Bureau

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2007 State Population Estimates

New on the Site

Data Tools

American FactFinder

Jobs@Census

Catalog

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2010 Census

People & Households

Business & Industry

Estimates & Projections • Housing • Income | State Median Income • Poverty • Health Insurance • International • Genealogy • More

Economic Census • Get Help with Your Form • Economic Indicators • IBCS • Survey of Business Owners • Government • E-Stats • Foreign Trade | Export Codes • U.S. Employment Dynamics • More

Data Finders

Population Clocks

U.S. 303,169,399

World 6,641,904,937
17:51 GMT (EST-5) Jan 04, 2008

Population Finder

city/ town/ county/ or zip

or state

Select a state

Find An Area Profile with QuickFacts

www.census.gov
click on [Census 2000]

Click on [Summary File 1]

Click on [\[Access to all tables and maps in American FactFinder\]](#)

Click on [Detailed tables]

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http://factfinder.census.gov/servlet/DTGeoSearchByListServlet?ds_name=DEC_2000_SF1_UA_lang=en&ts=217515022328

Google Census 2000 Go Bookmarks 3993 blocked Check AutoLink Send to census 2000 Settings

U.S. Census Bureau
American FactFinder

Select Geography

You are here: Main > Data Sets > Data Sets with Detailed Tables > Geography

Census 2000 Summary File 1 (SF 1) 100-Percent Data Detailed Tables

Choose a selection method

Search by geographic type

Select a geographic type

Nation

Select one or more geographic areas and click Add

United States

Add

Current geography selections

Download data for more than 7,000 geographic areas using the Download Center

Remove

Next

Click on the dropdown boxes and
Select [Place]

When "Select a State" box appears

Select [New Mexico]

Select Geographic area from drop down list that is the closest description of your service area

Add this to the base box as shown below

American FactFinder - Microsoft Internet Explorer

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http://factfinder.census.gov/servlet/DTGeoSearchByListServlet?ds_name=DEC_2000_SF1_UA_lang=en&ts=217516149203

Google Census 2000 Go Bookmarks 3993 blocked Check AutoLink AutoFill Send to Settings

U.S. Census Bureau
American FactFinder

Select Geography

You are here: Main > Data Sets > Data Sets with Detailed Tables > Geography

Census 2000 Summary File 1 (SF 1) 100-Percent Data Detailed Tables

Choose a selection method

Search by geographic type

Select a geographic type

Place

Select a state

New Mexico

Select one or more geographic areas and click Add

A Place

Acoma Lake CDP

Agua Fria CDP

Alamo CDP

Alamogordo city

Albuquerque city

Algodones CDP

Algodones CDP

Map It

Add

Current geography selections

Download data for more than 7,000 geographic areas using the Download Center

Remove

Click [Next]

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http://factfinder.census.gov/servlet/DTSubjectShowTablesServlet?_ts=217515106171

Google Census 2000 Go Bookmarks 3993 blocked Check AutoLink Send to census 2000 Settings

U.S. Census Bureau
American FactFinder

Select Tables

You are here: Main > Data Sets > Data Sets with Detailed Tables > Geography > Tables

Census 2000 Summary File 1 (SF 1) 100-Percent Data Detailed Tables

Choose a table selection method

Search by subject

Select one or more tables and click Add

H11E. Total Population in Occupied Housing Units by Tenure (Some Other Race Alone Householder)

H11G. Total Population in Occupied Housing Units by Tenure (Two or More Races Householder)

H11H. Total Population in Occupied Housing Units by Tenure (Hispanic or Latino Householder)

H11I. Total Population in Occupied Housing Units by Tenure (White Alone, Not Hispanic or Latino Householder)

H12. Average Household Size of Occupied Housing Units by Tenure

H12A. Average Household Size of Occupied Housing Units by Tenure (White Alone Householder)

H12B. Average Household Size of Occupied Housing Units by Tenure (Black Alone Householder)

H12C. Average Household Size of Occupied Housing Units by Tenure (Asian Alone Householder)

H12D. Average Household Size of Occupied Housing Units by Tenure (Hawaiian and Other Pacific Islander)

H12E. Average Household Size of Occupied Housing Units by Tenure (Other Race Householder)

Abbreviations

Black - Black or African American

Latino - American Indian and Alaska Native

Hispanic - Hawaiian and Other Pacific Islander

SOR - Some Other Race

What's this?

Add

Current table selections

P37. Group Quarters Population by Group Quarters Type

H12. Average Household Size of Occupied Housing Units by Tenure

Remove

Show Results

Add boxes P37, H3, and H12 to the base box by highlighting them and then click [Add]
Once all the tables show in the base box click [Show Result]

U.S. Census Bureau
American FactFinder

Detailed Tables
You are here: [Data](#) > [Data Sets](#) > [Data Sets with Business Tables](#) > [Grouping](#) > [Tables](#) > [Results](#)
Use the links above to change your results. [Options](#) | [Print](#) | [Download](#) | [Related Items](#)

P37. GROUP QUARTERS POPULATION BY GROUP QUARTERS TYPE (91 - Universe: Population in group quarters)
Data Set: [Census 2000 Summary File 1 \(SF 1\) 100-Percent Data](#)

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see [http://factfinder.census.gov/home/en/data/special/en/sf1.htm](#)

	New Mexico
Total	35,307
Institutionalized population	19,175
Correctional institutions	10,340
Prisons	9,310
Other institutions	1,426
Noninstitutionalized population	16,142
College dormitories (excludes college quarters off campus)	7,921
Military quarters	1,327
Other noninstitutional group quarters	7,381

U.S. Census Bureau
Census 2000

H3. OCCUPANCY STATUS (91 - Universe: Housing units)
Data Set: [Census 2000 Summary File 1 \(SF 1\) 100-Percent Data](#)

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see [http://factfinder.census.gov/home/en/data/special/en/sf1.htm](#)

	New Mexico
Total	750,576
Occupied	677,971
Vacant	102,408

U.S. Census Bureau
Census 2000

H12. AVERAGE HOUSEHOLD SIZE OF OCCUPIED HOUSEHOLDS BY TYPE (91 - Universe: Occupied housing units)
Data Set: [Census 2000 Summary File 1 \(SF 1\) 100-Percent Data](#)

NOTE: For information on confidentiality protection, nonsampling error, definitions, and count corrections see [http://factfinder.census.gov/home/en/data/special/en/sf1.htm](#)

Done Internet


Transfer results to spreadsheet

END

Beginning of
Section

City of Santa Fe, New Mexico

memo

Date: May 4, 2018
To: Water Conservation Committee
From: Christine Chavez, Water Conservation Manager 
RE: 5-Year Results Based Accountability Goal for Water Conservation Plan

A subcommittee was formed to address the 5-year goals as they related to the updated Water Conservation Plan. The subcommittee is working on aligning our goals with Results Based Accountability as well as the scorecard this same subcommittee helped develop in 2017. After many discussions the subcommittee decided to establish a 5-year RBA goal based on a GPCD reduction to 85. The 5-year plan will include annual scorecards with different elements to be pursued that contribute to the GPCD reduction. The scorecard can be used to support and measure that goal on an annual basis. There is supporting rationale for the goal that can be discussed in the meeting but the approval of the 5-year RBA goal will allow staff to move forward on development of the Water Conservation Plan specifics that will allow us to go to public input in the fall.