



# Agenda

**SANTA FE WATER CONSERVATION COMMITTEE MEETING**  
**CITY HALL – 200 LINCOLN AVE.**  
**CITY COUNCILOR'S CONFERENCE ROOM**  
MAY 14, 2019  
4:00 PM

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF CONSENT AGENDA
5. APPROVAL OF MINUTES FROM THE APRIL 9, 2019 MEETING

**CONSENT AGENDA:**

6. UPDATE ON CURRENT WATER SUPPLY STATUS (Andrew Erdmann, Water Conservation Specialist Senior, [paerdmann@santafenm.gov](mailto:paerdmann@santafenm.gov), 955-4223)

**ACTION ITEMS:**

7. DRAFT APPROVAL OF ADOPTION OF 2015 UPC CODE (Christine Chavez, Water Conservation Manager, [cychavez@santafenm.gov](mailto:cychavez@santafenm.gov), 955-4219)

**INFORMATIONAL ITEMS:**

8. 2018 GPCD Discussion ((Christine Chavez, Water Conservation Manager, [cychavez@santafenm.gov](mailto:cychavez@santafenm.gov), 955-219)
9. DISCUSSION OF DROUGHT MESSAGING DURING HIGH DEMAND SEASON (Christine Chavez, Water Conservation Manager, [cychavez@santafenm.gov](mailto:cychavez@santafenm.gov), 955-219)
10. DISCUSSION OF CURRENT REBATE PROGRAM AND CONSIDERATION OF NEW WAYS TO DETERMINE THE VALUE OF THE REBATE BEING OFFERED (Christine Chavez, Water Conservation Manager, [cychavez@santafenm.gov](mailto:cychavez@santafenm.gov), 955-4219)
11. RECOMMENDATIONS FOR NEW WATER CONSERVATION COMMITTEE MEMBERS TO BE FORWARDED TO MAYOR FOR APPOINTMENT (Councilor Romero-Wirth)

**UPDATES FROM SUBCOMMITTEE GROUPS:**

12. UPCOMING SUBCOMMITTEE MEETINGS(Christine Chavez, Water Conservation Manager, [cychavez@santafenm.gov](mailto:cychavez@santafenm.gov), 955-219)

**MATTERS FROM PUBLIC:**

**MATTERS FROM STAFF:**

**MATTERS FROM COMMITTEE:**

**NEXT MEETING – (Councilor's Conference Room):** TUESDAY, JUNE 11, 2019

**CAPTIONS:** Due BY 3:00 pm, May 27, 2019

**PACKET MATERIAL:** DUE BY 3:00 pm, May 29, 2019

**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.

RECEIVED AT THE CITY CLERK'S OFFICE  
DATE: May 7, 2019  
TIME: 10:07 AM

**SANTA FE WATER CONSERVATION COMMITTEE MEETING  
CITY HALL, CITY COUNCILOR'S CONFERENCE ROOM  
200 LINCOLN AVE.  
TUESDAY, APRIL 9, 2019, 4:00 PM**

**1. CALL TO ORDER**

The meeting of the Santa Fe Water Conservation Committee was called to order at 4:00 pm by Councilor Romero-Wirth, Chair, on Tuesday, April 9, 2019 at City Hall, in the Land Use Conference Room, Santa Fe, New Mexico.

**2. ROLL CALL**

**MEMBERS PRESENT**

Councilor Carol Romero-Wirth, Chair  
Lisa Randall, Vice Chair  
Tim Michael  
Doug Pushard  
Ken Kirk  
Stephen K. Wiman  
David Carlson  
Scott Bunton  
Robert Coombe  
Bill Roth  
Stephen Schmelling

**MEMBERS ABSENT**

**OTHERS PRESENT**

Christine Chavez, City of Santa Fe, Water Conservation Director  
Andy Otto, Santa Fe Watershed Association  
Andrew Erdmann, City of Santa Fe, Water Conservation  
Katherine Mortimer, Land Use Department  
Glenn Schiffbauer, Green Chamber of Commerce  
Patricio Pacheco, City of Santa Fe, Water Conservation  
Stan Holland, City of Santa Fe, Wastewater Division  
Chris Calvert  
Elizabeth Martin, Stenographer

### **3. APPROVAL OF AGENDA**

Chair Romero-Wirth said she would like to move item 8 to after the consent agenda.

**MOTION** A motion was made by Ms. Randall, seconded by Mr. Bunton, to approve the agenda as amended.

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

### **4. APPROVAL OF CONSENT AGENDA**

**MOTION** A motion was made by Mr. Michael, seconded by Ms. Randall, to approve the consent agenda.

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

### **5. APPROVAL OF MINUTES MARCH 12, 2019**

**MOTION** A motion was made by Mr. Kirk, seconded by Mr. Michael, to approve the minutes as presented.

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

### **CONSENT AGENDA**

#### **6. UPDATE ON CURRENT WATER SUPPLY STATUS Andrew Erdman**

Approved on consent.

**Item 8 was heard at this time.**

### **ACTION ITEMS**

#### **7. AN ORDINANCE AMENDING SECTION 25-4.3 SFCC 1987 REGARDING THE COMMERCIAL WATER USER REBATE PROGRAM TO EASE THE APPLICATION AND REBATE ADMINISTRATION PROCESS AND TO CLARIFY CERTAIN SECTIONS OF THE CODE. Chair Romero-Wirth, Christine Chavez**

Chair Romero-Wirth said she checked with the City Attorney and she said an item does not have to be introduced to be an action item, but has to be titled correctly to be an action item. This has been introduced at Council now and is in your packets. The subcommittee met and included the outcomes from the last meeting.

Mr. Bunton said the principal thing done to change it was on the prescriptive and performance rebate that was provided for. The subcommittee was uncomfortable moving forward with the performance piece so that was struck. That called for the reaming of the award as just the award rather than the prescriptive award. There was some tinkering otherwise. If you think any of that is particularly important let him know.

Ms. Chavez said that was the biggest piece and caused the most discussion. Now it is mostly for equipment that we have a baseline for. We resolved the tenant landlord issue and the submetering challenge. It aligns to some of the work we are doing for Phyn now, but does not limit that. The schedule now is that it goes all the way to Council for a public hearing on June 12<sup>th</sup> so we are still looking at July. We can offer the rebate to restaurants in the summer, but it is a lengthy process.

Mr. Coombe said he recalls something in the Ordinance that requires the City to maintain a database of efficiencies. Is the City prepared to do that and calculate the amount of water saved.

Ms. Chavez said the subcommittee is now going to meet to write a set of procedures and guidelines for application for the rebate. That will be a reference there.

Mr. Pushard said that data is coming from Bill Hoffman, but won't cover everything they could possible do. There are not studies on some of the things equipment can do. Also this speaks to why we were uncomfortable with the performance path. This is 90% coverage.

Mr. Coombe asked what about the concept of if they come up with something unique for water savings and it has not been rated, but we give them the option to put the required meter on so we can see if it did anything and after a point they get the credit. This was to encourage people to try new things and technologies that have a potential of saving water. It was a path for them.

Mr. Pushard said he would like to get this Ordinance through. This is a clean Ordinance. It solves some of the problems with the past Ordinance and broadens it. You are raising a trial program. Having that conversation as a subcommittee would be better at this time.

Ms. Chavez said adding an incentive for submetering allows us to collect data. That is the only way we can see they are saving water.

Chair Romero-Wirth said in terms of noticing this at Council, she can see if she

can get the notice on this faster. What is the target date.

Mr. Pushard said in May. We would like to start recruiting restaurants to be part of this and announce it.

Chair Romero-Wirth said the biggest problem is the request to publish. She does not know why that can't get moved up. She will check on that and see if it can be faster.

Mr. Michael asked are we going to vote on this.

Chair Romero-Wirth said yes. The result of your vote will go forward to the Council Committees.

Mr. Michael said he would like to suggest a wording change. Page 2, line 12, put a period at the end of office and delete the rest of the sentence. He does not want to tie the hands of the Water Conservation Office as they go through the process.

**MOTION** A motion was made by Mr. Pushard, seconded by Mr. Michael, to approve the Ordinance changes as amended by Mr. Michael.

Mr. Bunton said he discovered two technical issues with this. He would like to explain.

Mr. Bunton said he would like to make a friendly amendment to do the following things: on page 3, under subparagraph E, correct the numbering and on page 5, subsection G, all the material that is struck needs to be omitted.

Mr. Pushard and Mr. Michael agreed to the amendment.

Mr. Michael said here are other errors he can point out quickly so there is no reason to believe this is a complete list of errors. In the future if we do this again we should work from a clean copy.

Ms. Chavez said Jesse informed her that the City Attorney made a couple of changes on this as well.

Chair Romero-Wirth said so for right now we are going to go with these changes. She can make other amendments. Tim send her the other amendments you have and she can do that. She would like it if you would review this for errors and get it to her as soon as possible so she can present all the changes at once.

Mr. Michael said if he reviews this for errors it will be just for errors, not content.

To re-state, the motion is to approve the amended Ordinance as twice amended by the Committee.

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

## **INFORMATIONAL ITEMS**

### **8.     DISCUSSION ON MULTI-FAMILY GRAY WATER OPPORTUNITIES**

Ms. Chavez said we were going to talk about this as a group. Before that she had set up an internal City meeting to go over the proposal again and talk about it. Then we wanted to talk about it as a group and get comments and ideas.

Ms. Chavez explained this is regarding the issue Chris Calvert brought forward about gray water stub outs. It was written into the first Green Building Code and we pulled it out. We looked at it as a group and it has some stumbling blocks. We met again with Mr. Calvert and staff to see if there was a way to do it. She reached out to Shannon Jones, the Director of Public Utilities, and he recommended that she put together a group meeting with Land Use, Water Conservation and the Wastewater Division to look at possibilities. Kathryn Mortimer and Stan Holland were part of that group. We looked at two options. One was the multi family option. Once we did that, it was evident that we needed to do a lot more investigation. The challenge is making it a requirement is an issue. Having them do it on their own is a better option. The stub out does not save water, but using it does. We have a Green Building Code amendment we are trying to get through and don't want to stop that process for this. We still tried to think of ways to move forward with it. What we came up with was single family residential as a possibility. We are thinking of adding an amendment to the code going through now as a stub out. We cannot offer a rebate at this time, but we could offer an incentive under Water Bank fees. In order to do that we have to align the Built Environment subcommittee and City staff to help us look at this. We need to look at the Water Bank Ordinance for amendments to support this and how the WERS score might be changed. There is still a lot of work to do on this issue.

Mr. Mortimer said we feel there is more that is needed before we make it a requirement for a variety of reasons, but we want to move people in that direction and create incentives and identify places that make sense. Dee went through the requirements for putting these in and there has to be subsoil testing to determine the size of the stub out. In some soils it may not be physically possible to put in a system. We looked at unintended consequences. We considered increasing the WERS by 5 points may be helpful to drive people to some of these other things to get additional points. Pairing that with an educational outreach campaign to explain to people what you need and how easy it is and what they need to do. We can calculate what the water rate is that goes into these systems. We could calculate the water savings and based on our water rates how much they could be expected to save in water fees. For multi family we see that as a definite possibility for bigger amounts of water, but have to be cognizant of how thick the sewage is that goes into our sewer and the ability to move

that through the system. If we have to install more pumps to move that into the system have we undone what we did. This has to be done a lot more thoughtfully and with more analysis. That is where we are with staff recommendations.

Mr. Roth said to offset the cost of a system with a rebate would be a substantial amount of money. Right now it costs \$1,300 to get it to a house, then there is the cost of an infiltration area. He doesn't see the City being willing to do that. As far as encouraging people to do it at the very least if there was a handout available when you talk to Amanda about the offset fee and if she had standardized infiltration models and a sample of how to calculate flow with the code it would help. There is a lot that could be done to get people to realize if they go that route what the costs and savings are. The City calls for a certain number of trees and shrubs to be planted on single family new construction.

Ms. Mortimer said you mean in the planning of the drainage areas.

Mr. Roth said it is feasible through Plan B if we inform people how to go about it if we give them a plan of how to go about it and a worksheet. There are different types of soils. You can calculate for that.

Mr. Calvert said he understands that there have been meetings since the one he was in. This is a different conclusion from what we reached. When we talked about single family it was different. This is back to a full fledged gray water system. What he took out of that meeting was the problem with the stub out above ground was that there is a grey area or confused area in the plumbing code because you are using a waste pipe for a supply purpose so the code does not know how to deal with that in a conventional sense. If you can convince them you can retrofit a house to do gray water he doesn't see why you can't do some lobbying to get the plumbing code to realize gray water as a unique entity and that it can be treated differently from what is in the code right now.

Mr. Roth said that is the State Code.

Mr. Calvert said it does not quite get to what gray water is about. That has to change not in just Santa Fe, but in the west in general because this is a resource that needs to be tapped. We have a code that does not want to deal with this in any other way than in a conventional manner. The multi family we thought was a no brainer. More water for irrigation and save a lot of water. If we are getting to the point where our saving water is going to be effected by wastewater and what they can deal with then the question at some point becomes how much more water can we save. Where is the limit. You have to decide that because otherwise all this effort for saving water is for naught because they cannot handle any more. Especially in commercial. There is a lot of water to be saved in commercial. That will bump up against it.

Mr. Holland said he is learning about gray water and it's use too.

Chair Romero-Wirth said thank you for coming.

Mr. Holland said in the commercial application it is cleaned up to be reused in the toilet system.

Mr. Pushard said technically our plumbing code allows us to do that today, but it is expensive technology that allow us to do it so we use it outside.

Mr. Holland said so it is for irrigation purposes.

Mr. Pushard said 98% of it.

Chair Romero-Wirth said Chris' original idea was taking the washing machine water or dishwasher water and doing your irrigation with it. Not a big system. Just a fairly simple set up to allow you do to something with that water.

Mr. Calvert said yes, on the single family side.

Chair Romero-Wirth said even on the multi family side we were talking about laundry units. Common laundry rooms.

Mr. Holland said he thinks as far as the plant goes, he started in 2002 and the flow at that time was 8 million gallons a day. Right now we are seeing 5.5 million gallons from that neighborhood. That is low flow toilets and conservation efforts. As far as its impact on the plant with less water organics are getting more concentrated. At what point to we say it is too dense to treat. It is a good point to take a look at it and see based on where we are right now what the predicted limits would be. A very real one is knowing that the less water down the sewer system the more impact on the plant. The lower flows do cause some issues particularly in flat lines. We are looking at those to get water to flow through the pipes. If we know about it in advance we may be able to deal with it better. In the summer the system goes septic on us. Temperatures are up, there are lower flows and more sulfide gas and odor problems and more corrosion problems. It is not as much on PVC. We are waiting to see. It may not have as much impact in the older part of town, but on concrete pipes the sulfide gas is eating them up. It is not a question of if it will happen, it is a question of when. As we move out we are dealing with new pipe systems. There are more odor complaints from people just coming up through their venting system. It has to be a balance of what the plant can handle and how much we can reduce the flow and get the gravity system to work. We do have pump systems in the mountains. They push it, but eventually it ties into a gravity system. They become septic very fast. It is an aspect we need to be aware of as we go forward. This would only happen with new development here. It would give us a chance to change our system possibly.

Chair Romero-Wirth said she would like to know what other cities are doing with



this situation. It seems like we need to get out in front of it.

Mr. Pushard said thank you Stan for coming. Hopefully you will come back. He does think the point of getting in front of this is important. He recommended doing some modeling at the last City/County meeting. It is projected that flows to the Wastewater Treatment Plant in the next decade will go down 10% to 20%. Funding a study would be a good piece of work. We are going to get at cross purposes on this. This is a problem for Santa Fe because we are a leader in water conversation. Our water per person is much lower than other cities so we are going to run into this problem faster than other cities. Studying it is critical. Not doing a project because it will save water, but put less water in the sewer system is something we all scratch our heads over and say why are we here. He would like to see a study. His second point is meeting with the Fire Department to see if we can have them start putting the sand flush they do from hydrants into the Wastewater Plant. All that water is just taking oils off the street and going into the river. It could go into the sewer line. We could do a pilot on that.

Mr. Holland said he has been part of some talks on that. There are companies out there that have a machine that does that. It is their technology and you have to buy into that. It comes down to the fact that finding where the man hole is and where you flush from is a problem. You have to shut off the streets. It is tedious and time consuming. Sometimes it can't be done because of what is out there. Some lines are sensitive and you have to watch what you put down there. Roots are a real problem for us. If a line is not properly cleaned it can cause back ups.

Mr. Kirk said the Santa Fe Utility is part of his old association, the National Association of Clean Water Agencies. Anybody can ask question and it is an excellent way to get very good information quickly about how other utilities are dealing with the same situation.

Chair Romero-Wirth asked where does that leave us.

Ms. Chavez said we talked about the Built Environment Subcommittee and City staff looking at this more if the subcommittee is interested in taking this on. We have to have City staff included.

Mr. Roth said he thinks that is highly appropriate.

Chair Romero-Wirth said that subcommittee has had trouble meeting. Are you all on the same page on the date.

Mr. Roth said we are rebooting that.

Ms. Chavez said maybe a meeting once a month for the subcommittee and a meeting of staff.

Mr. Coombe said if there is a GPCD limit on the wastewater system, is he correct in thinking if a hard limit is on the way you beat that by water reuse. Recycling water with the pipeline project.

Chair Romero-Wirth said people expect you don't run that water through wastewater.

Mr. Roth said that is an interesting question. For the pipeline project in general the more water you are returning the more water you can revert to replace it.

Mr. Coombe said in principle you could get three cycles and drop the defacto GPCD by a factor of three.

Chair Romero-Wirth asked why three.

Mr. Coombe said we put 65% of the water from the Wastewater Plant into the river. Instead of doing that pump it back up through the Buckman Treatment Plant. 35% is consumed. Then pump it back up and put it back through again.

Mr. Kirk said that sounds like toilet to tap.

Mr. Coombe said it is a political problem. In a conversation about that project the notion of putting that pipeline up there is one notion to do this.

Chair Romero-Wirth said both of those are being looked at.

Mr. Pushard said that helps us be a more sustainable City, but does not effect GPCD. That is water produced.

Mr. Coombe said it does in a virtual way. If you used it three times at a fixed GPCD would that not be a reduction.

Mr. Pushard said from sustainable yes, but from GPCD no.

Mr. Coombe said in principle it deals with the limit.

Mr. Michael said it is a natural obvious thing to do and to reduce GPCD piling on with it, yes.

Mr. Roth said one of the issues with that is the energy required to pump the water back up and produce clean water is sizeable. It may not effect our water consumption, but when you look at the amount of water required to produce that energy we have to do serious modeling to ensure it is a water conservation method. Water credits are a better investment. It is still a closed loop with Albuquerque taking it out.

Mr. Coombe said the cost of rebuilding the Wastewater Treatment System would be a factor. Think of the pipeline project in terms of if much of the San Juan/Chama water goes away.

Mr. Roth said yes. It would be nice to see the work on that and the energy footprint on it.

Mr. Schmelling said he would like to endorse Doug's idea of modeling some of this stuff. It would be simple calculations for impact and a quick calculation to put some boundaries on.

Mr. Wiman asked to what is the differential cost of treating the effluent to drinking water as opposed to standard now to move on. A ball park number.

Mr. Holland said that is outside his expertise. He can't venture a guess just yet.

Chair Romero-Wirth said we will move this to the Built Environment Subcommittee and see if we can find something that works.

Ms. Chavez said this has been a good exercise of limits if we move forward with other things.

Mr. Calvert said it is State code and an uphill fight, but if it is happening in other places in the west how are they dealing with it and their code so they can do it and we can't. As you want to conserve more water you are going to have to push the envelope more. We may have to be one of the first ones to do that.

## **9. DISCUSSION ON REBATE OPPORTUNITIES**

Ms. Chavez said this conversation coming out of subcommittee work is related to the Chris Calvert work as well. This amended Ordinance did strike new and kept it for existing customers. It is something that limits us. We need to find a way around it or it may not work. We offer rebates for existing homes to increase their water usage. We give it as a credit on their water bill. With the new Ordinance we have to see how to give them the rebate and how we look at this in the future.

Mr. Pushard said he would like to give an example. As most of you know The Pantry is opening a new restaurant on the south end of town. Building is going on. There are construction plans and equipment lists are done. They bought the equipment. They sent him the list of the equipment. He looked at the list and saw there were things that could have been updated to save water. Here is someone who could save water before they open their doors rather than having them replace the toilet and give them a rebate. He is going to try to talk him into getting rid of what he just bought and getting new. This is an example of where we are probably not doing the right thing.

Ms. Chavez said on our end the issue she has with that is she does not feel like we should be incentivising restaurants to do something on the front end to do something more efficient when they should be doing that to begin with. This would be double incentivising them. It directly conflicts with what the Water Bank is doing. It is a conflict on the processing end. The one applicant we did have got the commercial rebate and the original rebate. We had to hash that out in this amendment. Thank goodness we only had one before we saw the issue.

Mr. Roth said one of the added advantages with stressing Plan B is the fact that their water use is supposed to be monitored to make sure their use is less than what it was. There is a penalty if they are not. The mechanism is through reduced Water Bank fees. It just needs to be pushed and stressed more overall during the permit process. No one is taking advantage of it.

Chair Romero-Wirth asked how do we raise awareness.

Ms. Chavez said we did not get too far into the discussion on the Chris Calvert thing, but we were exploring looking at the Water Bank fees to support an incentive for the home builder, but we have not totally explored that or if it would offset.

Mr. Roth said the easiest path is Plan B. Work is already in place. It starts at the design process as a path to save the home buyer money. If there is a gray water system it is just happening. We need to prepare materials for people when they apply for a permit that shows model systems to encourage people to submit for these things.

Mr. Bunton said the office could prepare a list of the easiest and most efficient equipment in each of the categories and provide that and that would meet the WERS requirements and qualify the person building the new building for a reduction in Water Bank fees.

Mr. Roth said the conversation has to be started at the front end.

Mr. Pushard said having a packet for option B would be good and Water Conservation and Land Use could both hand it out and that would be great. Option B, we talk about it at builders luncheons and the builders don't know anything about it. Doing something to increase awareness of a program we have to do new construction would be a good thing.

Chair Romero-Wirth said sometime the owner will drive the conversation.

Mr. Pushard said secondly this requires a change in process of how we manage rebates. Today they bring in a receipt, we figure out an amount and we give them a credit on their water bill. Now we would have to look and have a third party verify it or have some verification after the fact which we don't do at all in Water Conservation. We don't have those policies and procedures today. It is something we should start working

toward for new construction. Option B will not work in commercial and large multi family units.

Mr. Roth said we actually have data monitoring in place with Eye on Water. That could be used for commercial and multi family. We have not taken advantage of the data we are collecting. One of the requirements could be they are going to sign up for Eye On Water and sign a release that allows the City to look at their information as part of the policy.

Ms. Chavez said good point. With new homes and businesses they most of the time will be required to be submetered, but on new homes they are built efficiently anyway. If we want a business to come in more efficient this is a mechanism for that, but only if they go further than what was already required.

Mr. Roth said yes, if the City is going to cut impact fees the City can inspect that.

Mr. Erdmann said one challenge the Water Bank has is they used to have a staff and they no longer have any. That is in the Ordinance. We are supposed audit everyone on Plan B. From his perspective we do have the mechanism in place if we could get it working through Plan B. It is a matter of figuring out how to do it.

Chair Romero-Wirth asked is any of that being addressed for budget hearings. Is this a choice being made consciously. Is it being brought up to the folks who make the decision.

Mr. Erdmann said the value of the Water Bank is not understood by the people making the decisions.

Chair Romero-Wirth said it is incumbent on you guys to make that pitch to the people above you. These are all conversations and decisions that have been going on all year. It would be great if you guys try to start something from below. She can ask questions when it comes to her, but it is almost too late.

Mr. Erdmann said this is supposed to work across a couple of Departments, but Departments are pushing back. It has been challenging to get that to happen. We tried to advocate before they eliminated them.

Ms. Chavez said all of them require an amendment to the Ordinance. It is something we need to look at to offset the discussion of all our rebate money going into the Water Bank for development going elsewhere. That could drive a position if we could get it through. The code needs revision.

Chair Romero-Wirth asked is there a place this can go for more conversation.

Ms. Chavez said Built Environment.

## **10. DISCUSSION OF UPCOMING JOINT CITY/COUNTY MEETING ON MAY 7<sup>TH</sup>**

Chair Romero-Wirth said we are still looking at the date of May 7<sup>th</sup> and an agenda that looks at the demand side. Christine had some ideas to make this less presentation orientated and create some dialogue. There will be some presentation materials to get to what the City does and what the County does and a give and take from both committees. Also there will be a productive conversation to feed the 5 Year Plan.

Ms. Chavez said in the packet is a compilation of all the feedback collected from first public meeting. There is tons of information. It was a great process. We have gotten a lot of press and public positive feedback on the process. Those who have been moderators for those sessions we would like to have that same process for this meeting. The tables of integrated groups can facilitate five questions and process the discussion. She and Claudia could work on what would be presented. The table discussion could be on how we move forward. The County does not have a water conservation program or staff. What are ways the County can contribute to this program and others. It will be difficult to come up with the five questions. She wanted to throw that idea out there and see if there were other ideas.

Mr. Roth said the meeting of the City and County he will not be able to attend. He will be out of town. He thinks what makes sense is to try to develop a mechanism for ongoing conversations on memberships of County people on subcommittees of this group or people from this committee on their committee. Half of this committee goes away in two months. You are starting over again at that point. Concepts will not get you there at this point. Plan for years to come and what is best to meet the objective.

Mr. Kirk said there are regular meetings of the Utilities head and County head monthly as least. If you have anything you want him to suggest to them or the committee he is glad to do that.

Chair Romero-Wirth said the problem is Anna Hamilton does not sit on that committee. We need to make sure members are okay with that date. Everybody was in agreement on the topic. We would like to have more back and forth dialogue. Also seize the opportunity to feed the 5 Year Plan. This not just one meeting on these things. We will look to see where they lead us. She is not sure the 5 Year Plan will be the total focus. We need to think about that.

Mr. Pushard said he thinks this committee has really over the years evolved to use the subcommittee process very well. He likes Bob's recommendation to establish a process to allow subcommittees comprised of both committees to work because that is how we work. It is effective to do that. As a working document we have a Water Conservation Scorecard. We can get that to the County committee if we want to so they understand what we do in water conservation so presentations are not necessary. If you

want to have round tables discuss what are the things we want to work on that is fine. Maybe there are some things they would like to partner with us on or things they want us to partner with them on.

Mr. Michael said he is not at all sure how the County planning process works, but maybe under the planning umbrella is a place to get an ongoing mechanism for ongoing conversations.

Ms. Chavez said she appreciates that feedback. We need a mechanism to move past the 5 Year Plan as well. The focus will be on water conservation.

Chair Romero-Wirth said it will, but it will not all be about the 5 year Plan. That is ours. She doesn't know if they think that way at all. She doesn't think we can take the whole meeting for feeding our 5 Year Plan.

Mr. Kirk said they talked a number of times about Chapter 25 and a process of going through that. They would like to focus on the conservation part of Chapter 25.

Chair Romero-Wirth said she thinks that should be a large part, but we have done nothing ahead of time to lay the ground work. There is a certain level of presentation stuff that is going to have to happen to bring everyone up to a common understanding. She knows Christine wants something for the 5 Year Plan.

Ms. Chavez said maybe a presentation to just their group would be better. The public could be integrated into the tables as well. She is not sure how that would work. It has worked for us in the past. After the presentations how do we facilitate getting input.

Mr. Roth left the meeting.

Mr. Coombe said presentations are okay and reasonable for that group to find out what one another is doing. At the first meeting there was an issue brought up that had to do with the issue of permits for wells. Both the City and County need to come to a common understanding of aquifer storage. Could we not jointly attack that problem. Establish a subcommittee to resolve an issue that relates to the zillion wells out there. There is a common issue that the City and County need to come to a common understanding on. A common project is a mechanism for ongoing collaboration.

Ms. Chavez said maybe if we identify two or three things we could work on together that would work. She likes the domestic well idea.

Mr. Wiman said he likes the idea of throwing out something on the table and saying here are things we can work together on. The City has never taken a position on domestic wells. The County has regulation, but do not enforce them.

Mr. Schmelling said he thinks the idea of having small group discussions works very well. It is a change of format. The success or failure of that depends on the questions. The challenge is to come up with questions to bring everybody into the discussion.

Mr. Pushard said Stephen's idea is a good idea. In order to make that happen we have to prioritize what we think we would want to work on with the County. We have a bunch of stuff we are working on. His opinion is wells/aquifer storage, outdoor irrigation, the restaurant program and the new resident program are important. The new resident program would focus on new people moving here. It is on our list, but we have not done anything on it before.

Mr. Wiman said wells would be something we can work on using the map of wells surrounding us.

Chair Romero-Wirth asked is that confrontational. That is why we wanted to start with conservation.

Mr. Erdmann said it might be confrontational. The County is making a renewed effort to enforce the rules we are talking about. It will be a brand new plan. They are not going to have much data from that yet. It just started. They could tell us about it. He hates to start telling them they have not done anything.

Ms. Chavez said that is the one program where we can learn from them.

Mr. Pushard said he recommends we put out some ideas on the table and Ken can tell them about that on Thursday night and let them know they need to bring some ideas to the table as well.

Chair Romero-Wirth said back to the framework. It is a two hour meeting. She proposes a half hour, 15 minutes for the City and 15 minutes for the County, to talk about what we are doing with regard to conservation. An hours worth of small groups with four questions with 15 minute segments to help feed the 5 year Plan. Then the last half hour talking about topics we might be able to have joint working groups on to feed into future meetings.

Ms. Chavez said she doesn't think the process works with a time limit to talk about each issue.

Chair Romero-Wirth said then maybe we only do one thing or two.

Ms. Chavez asked would it be possible to form a subcommittee of two from their committee and two from ours to talk about the framework.

Mr. Kirk said this was on the agenda at the last meeting, but it was the last item



and there was no time to talk about it. That will not happen again this Thursday.

Chair Romero-Wirth said we are being a bit more ambitious that we can be. We don't have any common level of understanding to discuss the 5 Year Plan.

Ms. Chavez said we could develop the mechanisms to work with them in the Plan.

Chair Romero-Wirth asked why can't we spend an hour on the small groups to feed the 5 Year Plan.

Ms. Chavez said we were looking at the full two hours.

Chair Romero-Wirth asked do we have to be so rigid with the process.

Ms. Chavez said it would be consistent with the ways we collect information.

Chair Romero-Wirth said she does not don't think conversations in working groups need to take that long. We heard four ideas here and no one is disputing them. That is the launching point to figure out their four ideas and which ones seem to be the top two or three most interesting and have urgency. We move forward on those.

Mr. Kirk said there are only six members of the County committee.

Chair Romero-Wirth said she thinks this can work.

Ms. Chavez asked could we work with a representative of the County committee and her to vet the agenda.

Chair Romero-Wirth said she is willing to cut down the presentation time to 15 minutes total for the County and City combined. Then we do an hour and a half for small groups then 15 minutes to discuss joint working groups to move forward.

Mr. Schmelling said there is nothing magical about four questions. Get three or two in. Cut back or have different groups do different questions to cover them all.

Mr. Pushard said Ken said something that triggered his memory. There are six of them and eleven of us. This is not a good meeting to do what you want to do. They will have one person and we will have two to three at a table so our view will be the predominate view. We need to rethink it and bring it down to two questions.

Mr. Kirk said thank you for making his point.

Chair Romero-Wirth said she is going to push hard against a meeting to look at the agenda. This is not that hard. We can figure this out. The general framework of

what she described will work. We do need to figure it out to make it so we are not dominating the conversation. We need to make them feel welcome and contributing and a part of this.

Mr. Kirk said the Chair has a good point Christine. He does not think this meeting will work in the format you are proposing.

Chair Romero-Wirth said she and Christine will work on this. If anyone has any thoughts email us.

## **UPDATES FROM SUBCOMMITTEE GROUPS**

### **11. 5 YEAR WATER CONSERVATION PLAN**

Ms. Chavez said all of the feedback from the public meeting is in your packet. We have three other meetings coming up. Two this week and on May 11th. Are any of you able to help her with moderators for those. She needs some for Saturday.

Chair Romero-Wirth and Mr. Coombe said they will be at all of the meetings. Mr. Bunton will be there on Thursday, Ms. Randall will be there on Thursday and May 11<sup>th</sup>, Mr. Kirk will be there on Saturday and May 11<sup>th</sup>.

Ms. Chavez asked that they be there a half hour early for some brief training.

### **12. BUILT ENVIRONMENT**

Ms. Chavez reported that Land Use is participating on this one as well.

Chair Romero-Wirth said you have a to do list now.

### **13. ICI**

Ms. Chavez said we will be meeting soon.

Chair Romero-Wirth reminded the committee that there cannot be a quorum of the membership at any of the subcommittee meetings.

### **14. MATTERS FROM THE PUBLIC**

Mr. Otto invited everyone to a ribbon cutting on April 27<sup>th</sup> at 10:30 am for the rain gardens in Franklin Miles Park.

**15. MATTERS FROM STAFF**

Ms. Chavez said in your packets is the quarterly update of the score card. You will get that every quarter. If you have feedback or questions let us know.

Ms. Chavez said we have six people who have expressed interest in joining this committee.

Chair Romero-Wirth said she and Christine will talk about the process for that.

**16. MATTERS FROM THE COMMITTEE**

Mr. Carlson informed the committee that he has to resign. He is taking a position outside of the area. He has enjoyed participating with this incredible group. He is going to miss it.

Chair Romero-Wirth and Ms. Chavez thanked Mr. Carlson for his participation and service.

**17. NEXT MEETING  
MAY 14, 2019**

**18. ADJOURN**

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

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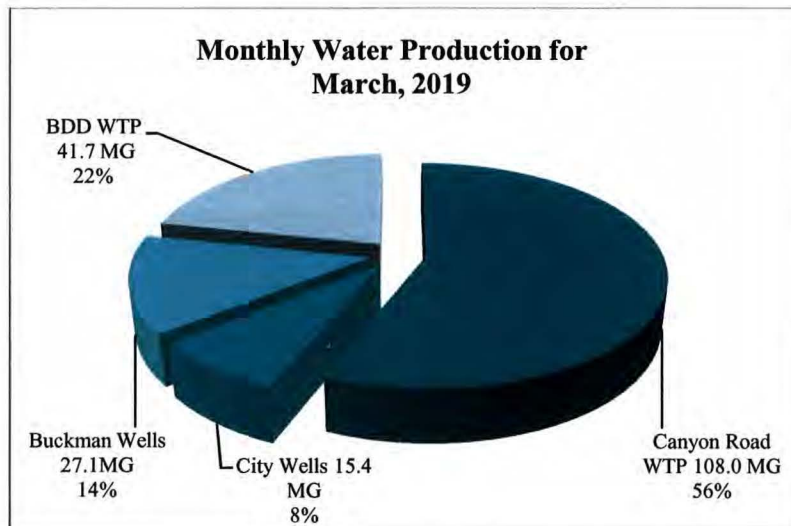
Councilor Carol Romero-Wirth, Chair

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Elizabeth Martin, Stenographer



**City of Santa Fe, Water Division**  
**Water Production, Environment, Drought/Monsoon, ESA, and Storage Update**  
**May 1, 2019**



**Total Production of System**

**Monthly Total Production:** 192.22 million gallons (MG)

**Daily Average Production:** 6.17 million gallons per day (MGD)

**Reservoir Storage Levels as of April 21, 2019:**

**McClure:** 58.77% or 623.79 MG

**Nichols:** 100.0% or 216.25 MG

**Combined:** 65.75% or 840.04 MG

**Santa Fe River Flow:**

Below Nichols (Living River Flows): 0.30 cfs

Streamflow at Gage below Nichols: 14.5 cfs (9.41 MGD Total, including Living River Flows)

Above McClure (Reservoir Inflow): 33.7 cfs (21.8 MGD)

**Water/Environment Update**

All wells on City and PNM property, at and near the Former PNM SF Generating Site, have been completed and samples taken. However, two nested wells (USTB-37/38) on property owned by the Santa Fe Public Schools (SFPS) District immediately north of the Acequia Trail still need to be completed to close the current campaign of well-drilling and sampling. The New Mexico Environment Department (NMED), PNM, and their contractor – INTERA Inc., are still working with SFPS to obtain final permission to access the property in order to drill these wells. It is hopeful that access permission will be granted by SFPS by the end of April, so that the currently planned monitoring network for the site can be completed.

The City met with the NMED Petroleum Storage Tank Bureau (PSTB) and on April 4<sup>th</sup> to further discuss the investigation of the PNM Santa Fe Generating Site and the data which has been obtained and analyzed by INTERA and NMED to date. NMED indicated that remediation of that site could commence by January 1, 2020, after a remediation plan has been developed by PNM and approved by the NMED-PSTB.



City staff was also informed at the April 4<sup>th</sup> meeting that the NMED Groundwater Quality Bureau has issued an "Abatement Plan Required" letter on March 25<sup>th</sup> under Section 20.6.2.4101 – 44115 (Groundwater Pollution Abatement Regulations). As a result of that letter, PNM is required to submit a Stage 1 Abatement Plan (S1AP) within sixty (60) days from the date of the letter. In the S1AP, PNM must address contamination at the site including nitrates and Chlorinated Volatile Organic Compounds (CVOCs) such as Perchloroethylene (PCE), Trichloroethene (TCE), Methylene Chloride, Vinyl Chloride and others. These contaminants will not be addressed under in the Petroleum Corrective Action Fund (CAF) investigation and remediation supervised and paid for by the NMED-PSTB and must, therefore, be individually addressed by PNM pursuant to New Mexico's Ground Water Protection Regulations

An RFP for further investigation of the Ortiz and Paseo de Vista Landfills closed on January 10, 2019. Four proposals from qualified firms were reviewed and ranked. The team of INTERA Inc. and Gordon Environmental has been selected for the the conduct of this work. The Environmental Services Division has executed a contract after review by the PUC and Finance Committees, with final approval by the City Council on March 27<sup>th</sup>. Quarterly methane monitoring, as required by the NMED Solid Waste Bureau is expected to begin at Paseo de Vista Landfill immediately. Further investigations of the Former Ortiz Landfill, as required by the NMED Groundwater Quality Bureau, is expected to commence after July 1, 2019.

The U.S. Environmental Protection Agency and U.S. Army Corps of Engineers published their proposed rule regarding the definition of Waters of the United States (WOTUS) on Thursday - February 14, 2019. with a sixty day public comment period. The public comment period closed on April 15, 2019. In response, City staff filed final comments on April 12, 2019, as well as the City Council's Resolution in Opposition to a Proposed Rule Change by the Environmental Protection Agency and the Department of the Army Revising the Definition of "Waters of the United States"; Submitting this Resolution to the Environmental Protection Agency; and Encouraging City of Santa Fe Residents to Submit Their Comments During the Public Comment Period Ending April 15, 2019. The New Mexico Attorney General and attorneys general from thirteen other states and the District of Columbia have filed comments in protest and opposition to the rule and its revised definition of WOTUS.

#### Drought/Monsoon, Storage, and ESA Update

NOAA has recently updated ENSO (El Nino/La Niña) status to:

**Weak El Nino conditions are likely to continue through the Northern Hemisphere spring 2019 (~80% chance) and summer (~60% chance).**

Heron, Abiquiu, and El Vado reservoir levels on the Chama River are experiencing some early spring runoff. Runoff for last year was far below normal due to previous drought conditions, but snow pack is at or above normal so far this winter/spring. Local Upper Santa Fe River reservoir storage volume is increasing rapidly. The City received over 90% delivery from BoR of full firm-yield of San Juan-Chama Project (SJCP) waterfor year 2018, and 2019 is projected to be about normal. Updates on ESA issues will be made as needed. Rio Grande Compact Article VII storage restrictions are in effect, which means the City is not allowed to impound "native" runoff into Nichols and McClure Reservoirs above the pre-Compact pool of 1,061 acre-feet (AF). Updates to this condition will be made as needed; however, Article VII is expected to stay in effect for the foreseeable future.

#### Most Current City of Santa Fe SJCP Reservoir Storage:

Heron:

9,483 AF

El Vado:

0 AF

**Abiquiu:**

5,001 AF (This includes SJCP carry-over from previous years plus 2018 deliveries. No time limit to vacate due to storage agreement with ABCWUA.)

**TOTAL:**

**14,484 AF**

# 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 Specialist  
Andrew Erdmann, Water Conservation Specialist

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

**RE:** 2018 GPCD (gallons per capita per day) Analysis utilizing NM Office of the State Engineer Methodology

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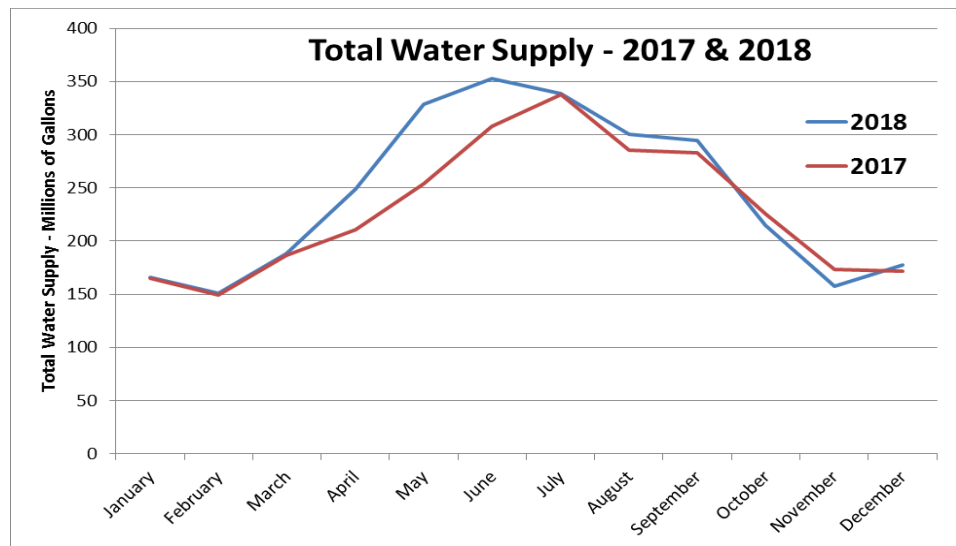
### **Introduction:**

A common measurement of water conservation success is the gallons per capita per day (GPCD) calculation. Staff has completed the annual GPCD report for 2018 using the New Mexico Office of the State Engineer (NMOSE) methodology referenced below. The new GPCD calculation for 2018 resulted in 95 gallons per capita per day, an increase of 5 gpcd from 2017. As part of the conditions applied to the City's water right permits, the City must submit an annual GPCD calculation to the NMOSE.

### **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.

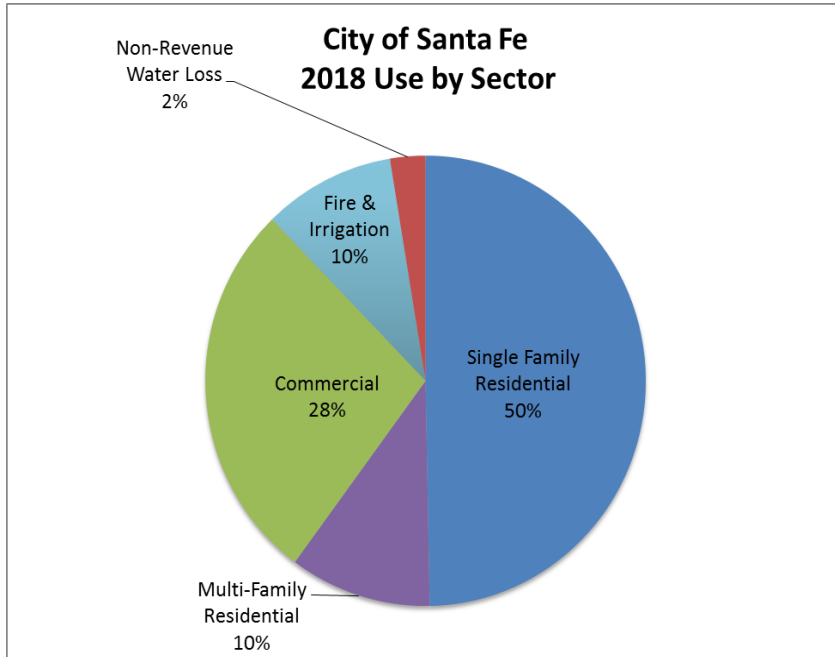




### **Results of the 2018 GPCD Calculator:**

The GPCD for 2018 was 95 gallons per capita per day for the City of Santa Fe. The previous year, the GPCD was calculated at 90. There are two primary components to the GPCD calculation: total water supply and population. In terms of total water supply, significant drought affected Santa Fe in 2018 and resulting in an earlier-than-usual spring and summer which lengthened the high demand season, shifted the peak demand month from July to June, and resulted in increased total system from 2.75 to

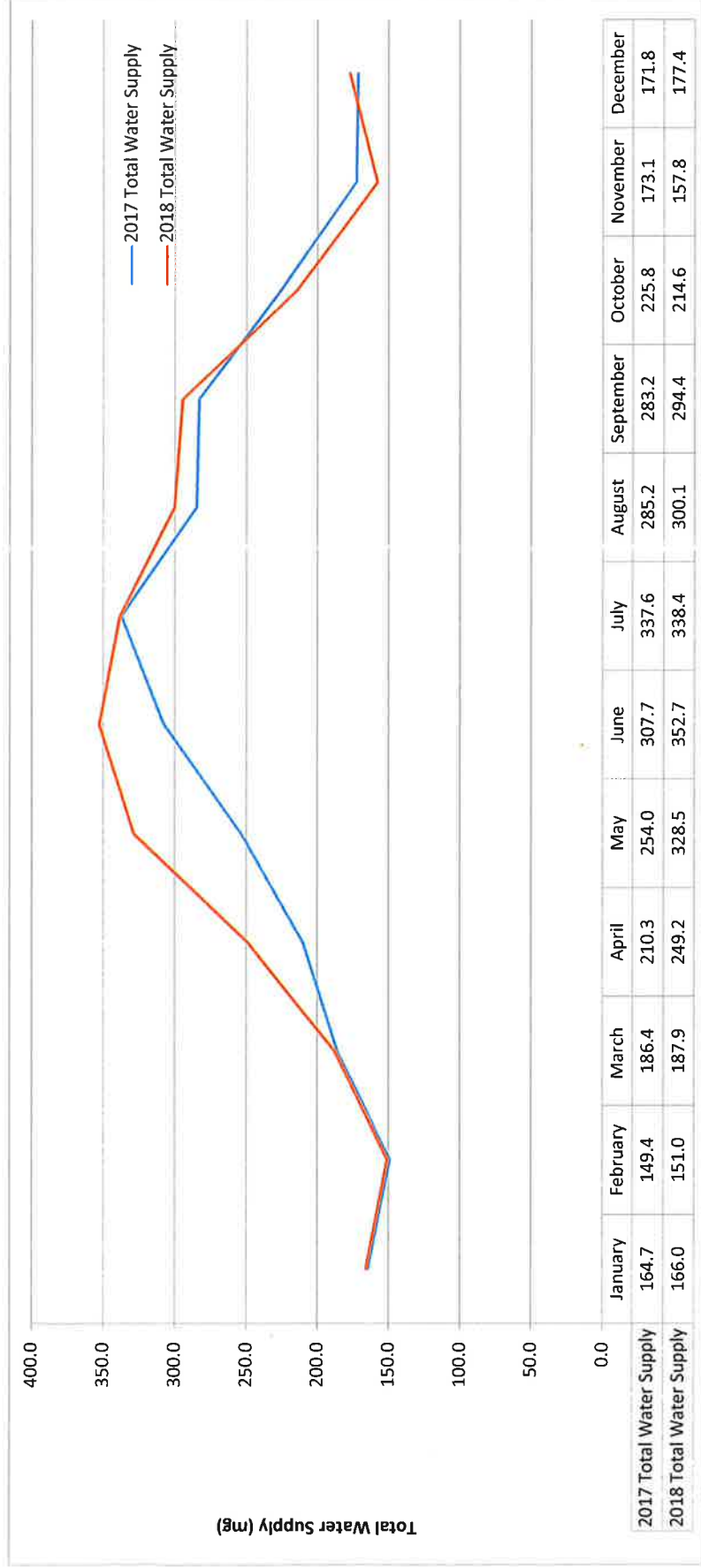
2.9 billion gallons. In terms of population, based on input from water conservation committee members, PEPANNRES (annual estimates of the resident population) were used instead of census data because it is an annual estimate while our local census data is based on growth projections that over-estimate current population and artificially lower the GPCD. The total population considered for the 2017 GPCD was 83,878 people and the 2018 value is 83,776 people.



### **Conclusion:**

For many years Santa Fe's GPCD dropped annually and 2018 marks the second consecutive year that the GPCD has increased. The 2017 increase was likely the result of a change in practice for determining the total population – a move from the higher estimates provided by the US census to a more conservative value based on annual estimates. In 2018 the GPCD increased because Total Water Supply increased to meet increased demand associated with drought. For 2019 the water conservation office is developing a new 5-year plan to collect public input to target good opportunities for expansion of the water conservation program in new ways and in new directions.

2018	City Wells (gallons)	Buckman Wells (gallons)	CRWTP (gallons)	BDD (millions of gallons)	Diverted (gallons)	Imported from BDD (gallons)	Totals (gallons)
January	3,728,000	7,768,000	66,889,000	87,621,578	78,385,000	87,621,578	166,006,578
February	9,462,000	7,781,000	48,347,000	85,357,773	65,590,000	85,357,773	150,947,773
March	59,875,000	4,217,000	52,633,000	71,178,551	116,725,000	71,178,551	187,903,551
April	20,721,000	23,773,000	44,702,000	159,867,111	89,196,000	159,867,111	249,063,111
May	44,619,000	3,379,000	50,435,000	229,939,356	98,433,000	229,939,356	328,372,356
June	71,023,000	44,454,000	48,234,000	188,827,666	163,711,000	188,827,666	352,538,666
July	78,397,000	10,935,000	58,842,000	190,113,157	148,174,000	190,113,157	338,287,157
August	93,416,000	41,443,000	10,205,000	154,901,038	145,064,000	154,901,038	299,965,038
September	86,082,000	95,284,000	0	110,664,055	181,366,000	110,664,055	292,030,055
October	62,281,000	20,671,000	0	128,476,155	82,952,000	128,476,155	211,428,155
November	36,098,000	10,597,000	11,510,000	99,601,138	58,205,000	99,601,138	157,806,138
December	18,630,000	536,000	56,147,000	102,048,232	75,313,000	102,048,232	177,361,232
TOTALS	584332000.00	270838000.00	447944000.00	1608595809.40	1,303,114,000	1,608,595,809	2,911,709,809



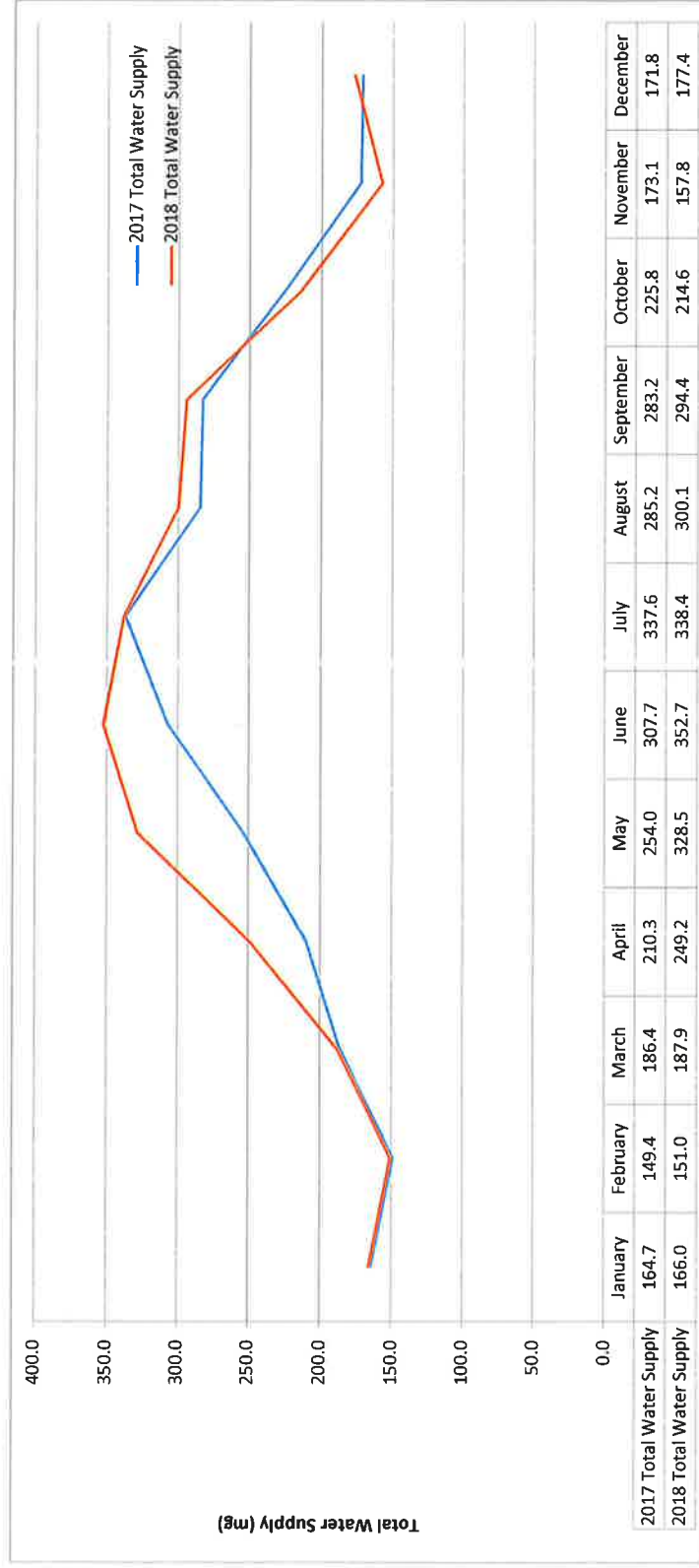
GPCD Data Analysis

	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	TOTALS
FIRE														
# Accts	2017	385	386	388	393	393	393	393	394	400	401	402	405	405
# Accts	2018	406	408	412	415	414	415	415	419	417	416	416	416	418
Consumption (Gal)	2017	68,100	7,100	15,400	11,100	151,700	151,700	10,013,700	25,600	28,300	10,002,800	8,700	69,400	20,409,400
Consumption (Gal)	2018	2,900	900	900	1,700	11,000	11,000	13,600	204,600	19,079,200	100,800	175,500	133,600	19,804,500
IRRIGATION														
# Accts	2017	233	228	336	336	380	390	391	394	397	399	394	378	300
# Accts	2018	262	260	391	391	402	403	408	411	408	408	409	403	324
Consumption (Gal)	2017	253,200	1,407,800	667,900	7,740,100	22,731,500	34,736,200	53,488,600	45,584,200	47,977,800	28,472,600	17,328,200	1,698,600	262,086,700
Consumption (Gal)	2018	370,800	456,300	670,500	6,910,700	27,573,800	31,579,200	37,199,800	25,473,100	25,126,700	20,732,900	2,377,200	406,500	178,877,500
Single Family Residential														
#Accts	2017	28,988	28,997	29,049	29,072	29,054	29,074	29,100	29,124	29,140	29,168	29,179	29,187	
#Accts	2018	29,212	29,225	29,266	29,313	29,367	29,388	29,411	29,472	29,500	29,512	29,516	29,535	
Consumption (Gal)	2017	90,891,600	82,406,800	88,238,700	99,248,300	110,664,600	143,024,600	172,966,100	156,115,300	148,525,700	128,022,800	98,590,500	88,149,300	1,406,844,300
Consumption (Gal)	2018	93,327,300	90,120,000	88,539,600	103,966,400	136,048,000	164,308,800	177,083,200	147,105,400	138,813,900	131,951,100	91,512,900	87,603,300	1,450,379,900
Multi Family Residential														
# Accts	2017	575	575	576	576	577	576	576	575	578	578	578	575	577
# Accts	2018	577	577	577	577	577	577	577	575	577	577	576	576	575
Consumption (Gal)	2017	21,457,200	20,020,800	20,275,900	21,255,300	22,283,900	27,133,400	32,188,400	31,408,600	28,351,100	26,853,700	21,735,200	19,659,800	292,628,300
Consumption (Gal)	2018	21,546,800	20,484,100	19,502,200	22,018,700	26,119,100	32,367,500	32,230,500	30,512,900	29,369,300	26,879,300	21,487,900	20,833,200	303,351,500
Commercial														
# Accts	2017	3,341	3,344	3,351	3,354	3,354	3,351	3,351	3,356	3,357	3,356	3,357	3,355	3,351
# Accts	2018	3,357	3,354	3,358	3,365	3,369	3,364	3,364	3,369	3,369	3,371	3,379	3,380	3,378
Consumption (Gal)	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	801,260,200
Consumption (Gal)	2018	52,586,600	51,530,500	52,353,600	60,349,100	73,079,500	82,895,300	87,761,500	81,409,700	79,151,900	75,771,400	57,967,900	52,115,100	806,912,100
Total Water Supplied														
Prod(Gal)	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	2,749,326,279
Prod(Gal)	2018	166,018,478	150,953,773	187,881,151	249,166,611	328,477,956	352,693,866	338,363,957	300,100,638	294,545,155	214,749,555	157,839,138	177,372,832	2,918,163,110
Population *	2017	83,287				2017	90							
	2018	83,776				2018	95							

GPCD

\* See Attached Production Sheet

\*OSE methodology recommends using Census data for population projections. Census Data may over-state population considerably due to slow growth since the last census, which would lead to an artificially low GPCD value. Our evaluation for the last 2 years uses PEPAANNRES data, which is updated annually.



2017 Total Water Supply	164.7	149.4	186.4	210.3	254.0	307.7	337.6	285.2	283.2	225.8	173.1	171.8
2018 Total Water Supply	166.0	151.0	187.9	249.2	328.5	352.7	338.4	300.1	294.4	214.6	157.8	177.4
Δ	1.320	1.576	1.494	38.834	74.443	44.957	0.802	14.913	11.204	-11.204	-15.311	5.601





# 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:

<input type="text"/>	Value to be entered by user
<input type="text"/>	Dropdown box, pick from list
<input type="text"/>	Value calculated based on input data
<input type="text"/>	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:	<input type="text" value="City of Santa Fe Public Utilities Department"/>	<input type="text" value="New Mexico"/>
REPORTING YEARS:	Enter the most recent reporting year: <input type="text" value="2018"/>	Data can be entered back to: <input type="text" value="2012"/>
NAME OF CONTACT PERSON:	<input type="text" value="Patricio M. Pacheco"/>	E-MAIL: <input type="text" value="pmpacheco@santafenm.gov"/>
		TELEPHONE: <input type="text" value="505-955-4219"/>
		Ext. <input type="text"/>
SELECT THE REPORTING UNITS FOR VOLUME DATA:	<input type="text" value="Gallons (US)"/>	For unit converter click here: <input type="button" value="Converter"/>

<a href="#">Instructions &amp; Utility</a>	This sheet
<a href="#">Census Data</a>	Census data and the portal to get the data from the Census website
<a href="#">Single-Family</a>	Single-Family residential gallons and population
<a href="#">Multi-Family</a>	Multi-Family residential gallons and population
<a href="#">ICI &amp; Other Metered</a>	Other data including Commercial, Industrial and Institutional [1.3] and Other metered [1.4] categories
<a href="#">Reuse</a>	Data related to water reuse projects
<a href="#">Total Diverted</a>	Total Production and Diverted Water
<a href="#">Reported Data</a>	The calculated data graphical review of most common performance indicators
<a href="#">Annual Performance</a>	The calculated data graphical review of annual performance indicators
<a href="#">Monthly Performance</a>	The calculated data graphical review of monthly performance indicators
<a href="#">Definitions</a>	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](mailto:waternm@state.nm.us)





## Census Information Data Table 2.1



[Click here to access the Census Web site](#)

OR

[Click here for instructions on how to find the data on the Census website](#)

2018	TO	2012
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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	2018	
Subject			
Relationship	In group quarters	Total	1,362
Housing Occupancy	Total housing units	Total	41,484
	Occupied housing units		35,524
	Vacant housing units		5,960
Households by Type	Average household size	Total	2,298

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

Vacancy Rate %	14.4%
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### COMMENTS:

The City of Santa Fe used 2017 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
2018	93,327,300	90,120,000	88,539,800	103,968,400	136,048,000	164,308,800	177,083,200	147,105,400	138,813,900	131,951,100	91,512,900
2017											87,603,300
2016											
2015											
2014											
2013											
2012											

TABLE 3.2 NUMBER OF SFR CONNECTIONS (Monthly)											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	28989	28998	29049	29066	29054	29074	29100	29124	29139	29167	29177
2017											29184
2016											
2015											
2014											
2013											
2012											

TABLE 3.3 INACTIVE (ZERO USE) SFR CONNECTIONS (Monthly)											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018											
2017											
2016											
2015											
2014											
2013											
2012											

TABLE 3.4 SFR POPULATION (Monthly)											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	67,102	67,102	67,102	67,102	67,102	67,102	67,102	67,102	67,102	67,102	67,102
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2016	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
2014	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
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

TABLE 3.5 SFR GPCD CALCULATION (Monthly)											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	44.87	47.97	42.56	51.65	65.40	81.62	85.13	70.72	68.95	63.43	45.46
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
2016	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
2014	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
2012	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data

## 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	
	1,450,379,900
	N/A
	N/A
	N/A
	N/A
	N/A

TABLE 3.8 AVG ANNUAL CONNECTIONS	
	29,093
	N/A
	N/A
	N/A
	N/A
	N/A

TABLE 3.9 AVG CONN CALCULATION	
	29,093
	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	



# DATA INPUT SHEET

City of Santa Fe Public Utilities Department

Instructions

## 4. MULTI-FAMILY RESIDENTIAL (MFR)

Return to Instructions

### MONTHLY DATA

TABLE 4.1 info

MFR BILLED WATER CONSUMPTION (Monthly) (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	21,548,800	20,484,100	19,502,200	22,018,700	26,119,100	32,367,500	32,230,500	30,512,900	29,369,300	26,879,300	21,487,900	20,833,200
2017												
2016												
2015												
2014												
2013												
2012												

TABLE 4.2

NUMBER OF MFR UNITS (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	7,750	7,750	7,750	7,750	7,775	7,800	7,800	7,800	7,800	7,800	7,800	7,800
2017												
2016												
2015												
2014												
2013												
2012												

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

TABLE 4.3

MFR POPULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	15,240	15,240	15,240	15,240	15,298	15,355	15,355	15,355	15,355	15,355	15,355	15,355
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
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

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

TABLE 4.4

MFR GPCD CALCULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	45.61	48.00	41.28	48.16	55.08	70.26	67.71	64.10	63.75	56.47	46.65	43.77
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
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

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

### ANNUAL DATA

TABLE 4.5

ANNUAL CONSUMPTION

TABLE 4.6

ANNUAL CALCULATION
303,351,500
N/A
N/A
N/A
N/A
N/A

TABLE 4.7

No. CURRENT UNITS

TABLE 4.8

ANNUAL UNIT CALCULATION
7,781
N/A
N/A
N/A
N/A
N/A

TABLE 4.9 info

MFR POPULATION
15,312
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 4.10

VACANT MFR CONNECTIONS
1-18
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 4.11 info

ANNUAL MFR GPCD
54.26
N/A
N/A
N/A
N/A
N/A

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

Return to  
Instructions

City of Santa Fe Public Utilities Department

Instructions

## MONTHLY DATA

2018 TO 2012

TABLE 5.1

ICI WATER CONSUMPTION (Gallons (US))											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	52,586,600	51,530,500	52,353,600	60,349,100	73,079,500	82,635,300	87,761,500	81,408,700	79,151,900	75,771,400	57,967,900
2017											
2016											
2015											
2014											
2013											
2012											

TABLE 5.2

OTHER METERED (Gallons (US))											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	256,100	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
2017											
2016											
2015											
2014											
2013											
2012											

## 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

## ANNUAL DATA

TABLE 5.3

ICI ANNUAL CONSUMPTION

TABLE 5.4

ICI GPCD
28.39
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 5.5

ICI ANNUAL CALCULATED
805,912,100
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 5.6

OTHER ANNUAL CONSUMPTION

TABLE 5.7

OTHER METERED GPCD
9.22
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 5.8

OTHER ANNUAL CALCULATED
281,891,200
N/A
N/A
N/A
N/A
N/A
N/A



DATA INPUT SHEET

6. REUSE

Return to Instructions

City of Santa Fe Public Utilities Department

Instructions

2018 TO 2012

TABLE 6.1

REUSE DIVERSIONS (Monthly) (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	2,920,000	6,630,000	30,280,000	36,140,000	47,490,000	64,780,000	64,870,000	42,840,000	47,070,000	26,300,000	19,950,000	6,120,000
2017												
2016												
2015												
2014												
2013												
2012												

COMMENTS:

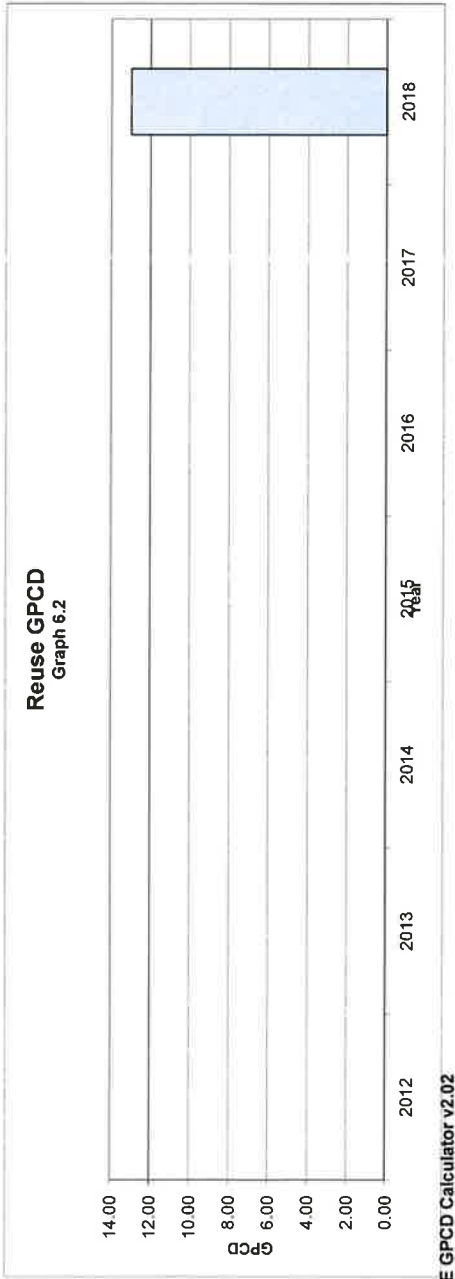
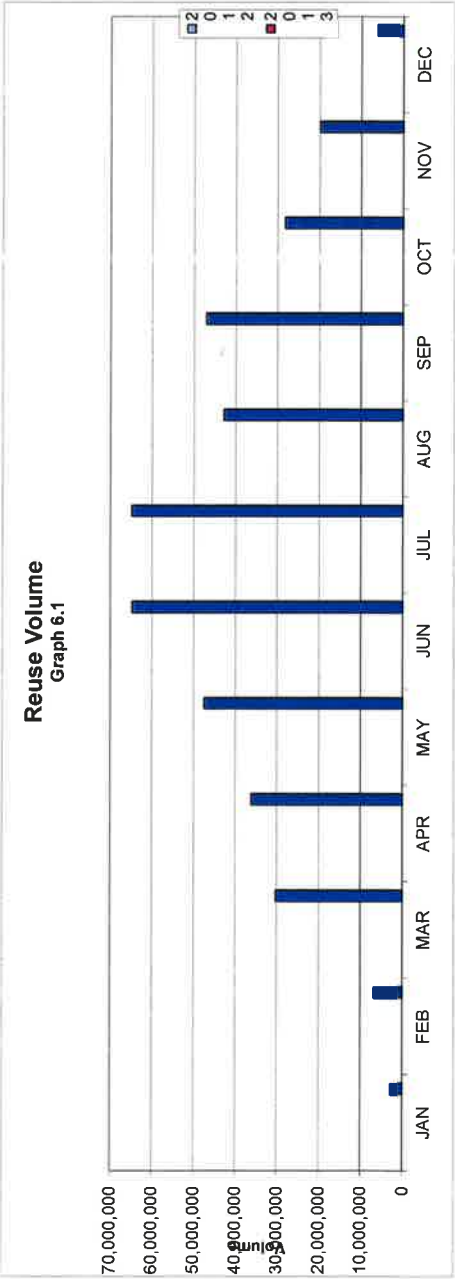
2016 reuse diversions are based on the monthly accounting of treated effluent users provided by the wastewater division.

ANNUAL DATA

TABLE 6.2


TABLE 6.3

REUSE GPCD
13.00
N/A
N/A
N/A
N/A
N/A





## 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
2018	78,385,000	61,590,000	118,725,000	86,196,000	98,433,000	163,711,000	144,174,000	141,944,000	181,386,000	83,952,000	94,200,000
2017											
2016											
2015											
2014											
2013											
2012											

TABLE 7.2

IMPORTED WATER (Monthly) (Gallons (US))											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	87,821,378	83,357,779	71,196,551	159,867,111	229,939,356	188,827,866	190,113,127	154,901,038	110,644,055	125,476,115	99,807,118
2017											
2016											
2015											
2014											
2013											
2012											

TABLE 7.3

EXPORTED WATER (Monthly) (Gallons (US))											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	0	0	0	0	0	0	0	0	0	0	0
2017											
2016											
2015											
2014											
2013											
2012											

Formula = Total Water Diverted + Imported Water - Exported Water

TABLE 7.4

TOTAL WATER SUPPLY (Monthly) (Gallons (US))											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	166,006,578	150,847,773	187,923,551	248,063,111	258,872,356	352,538,666	332,287,127	299,802,038	292,030,058	217,428,195	157,606,136
2017											
2016											
2015											
2014											
2013											
2012											

TABLE 7.5

SYSTEM TOTAL GPCD (Monthly)											
Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
2018	64	64	72	66	150	140	130	116	116	81	63
2017											
2016											
2015											
2014											
2013											
2012											

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. Michaels Well, Buckman Wells, and other wells including Orsage Well, Wastewater Well, Mary Sanchez Well, MTC Well South. Note: With the exception of Orsage Well, other wells were not included in previous years' good calculations. The Exported Water values (Table 7.3) represent non-BDD Project water delivered to Santa Fe County by the City under the Water Reapportionment Agreement.

## ANNUAL DATA

TABLE 7.6

ANNUAL TOTAL DIVERTED	
ANNUAL TOTAL DIVERTED CALC	1,203,114,000
2018	1,203,114,000
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.7

ANNUAL TOTAL IMPORT CALC	
ANNUAL TOTAL IMPORT CALC	1,203,114,000
2018	1,203,114,000
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.8

ANNUAL TOTAL IMPORTED	
ANNUAL TOTAL IMPORTED	1,203,114,000
2018	1,203,114,000
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.9

ANNUAL TOTAL EXPORT CALC	
ANNUAL TOTAL EXPORT CALC	0
2018	0
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.10

ANNUAL TOTAL EXPORTED	
ANNUAL TOTAL EXPORTED	0
2018	0
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.11

ANNUAL TOTAL EXPORT CALC	
ANNUAL TOTAL EXPORT CALC	0
2018	0
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.12

ANNUAL TOTAL EXPORTED	
ANNUAL TOTAL EXPORTED	0
2018	0
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.13

ANNUAL TOTAL WATER SUPPLY	
ANNUAL TOTAL WATER SUPPLY	2,311,739,000
2018	2,311,739,000
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.14

ANNUAL TOTAL POP EST	
ANNUAL TOTAL POP EST	83,776
2018	83,776
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

TABLE 7.15

SYSTEM TOTAL GPCD	
SYSTEM TOTAL GPCD	84.22
2018	84.22
2017	N/A
2016	N/A
2015	N/A
2014	N/A
2013	N/A
2012	N/A

## 8. SUMMARY GPCD REPORTED DATA

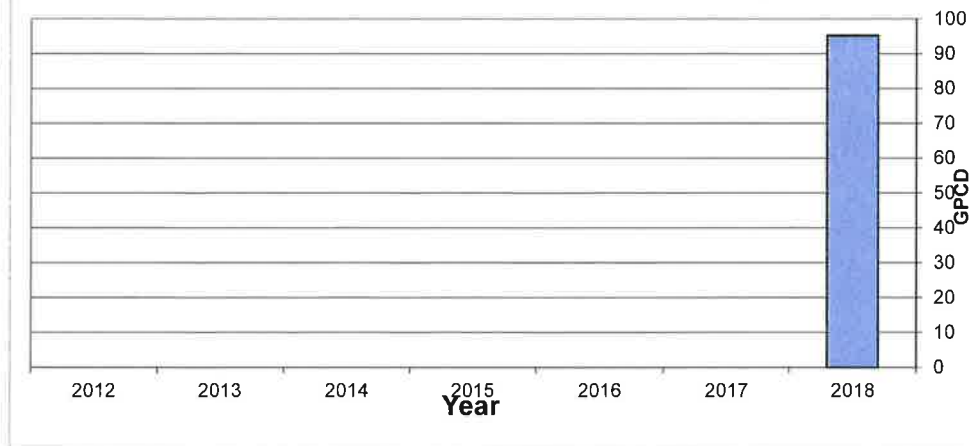
Santa Fe Public Utilities Depa

2018 To: 2012

### ANNUAL

Year	SYSTEM GPCD
2018	95.22
2017	NA
2016	NA
2015	NA
2014	NA
2013	NA
2012	NA

### ANNUAL - SYSTEM TOTAL GPCD



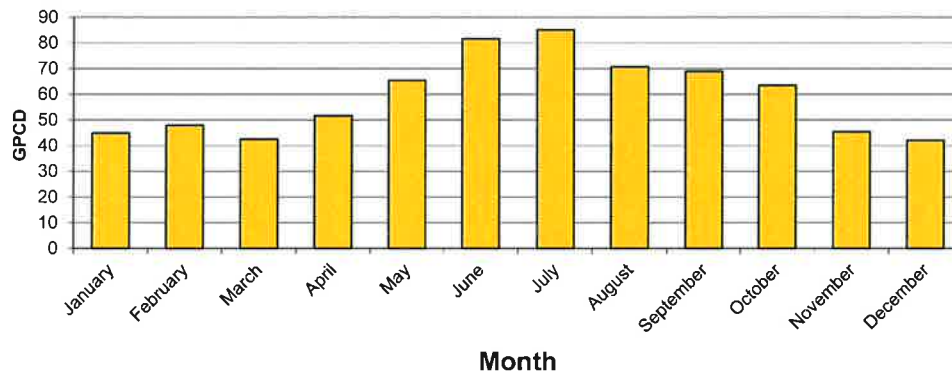
### MONTHLY

Month	SFR GPCD
January	44.87
February	47.97
March	42.56
April	51.65
May	65.40
June	81.62
July	85.13
August	70.72
September	68.96
October	63.43
November	45.46
December	42.11

Year 2018

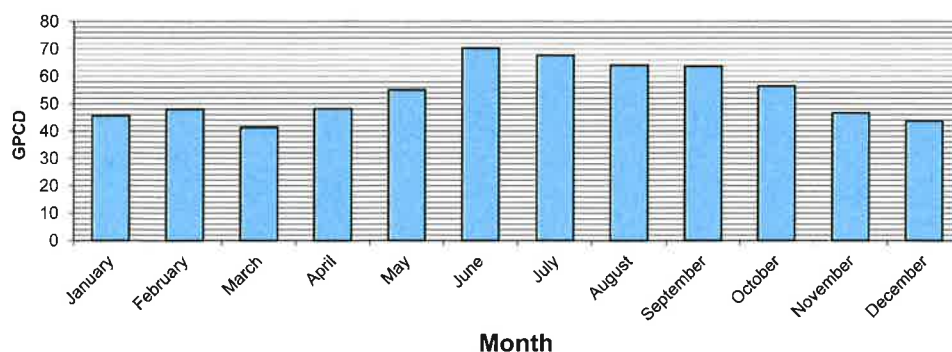
Peak/Ave 1.44

### Monthly - Single-Family Residential GPCD Sector Specific Population



YEAR 2018

### Monthly - Multi-Family Residential GPCD Sector Specific Population



YEAR 2018

Month	MFR GPCD
January	45.61
February	48.00
March	41.28
April	48.16
May	55.08
June	70.26
July	67.71
August	64.10
September	63.75
October	56.47
November	46.65
December	43.77

Peak/Ave 1.30





## 9. System Total Annual Reporting Performance

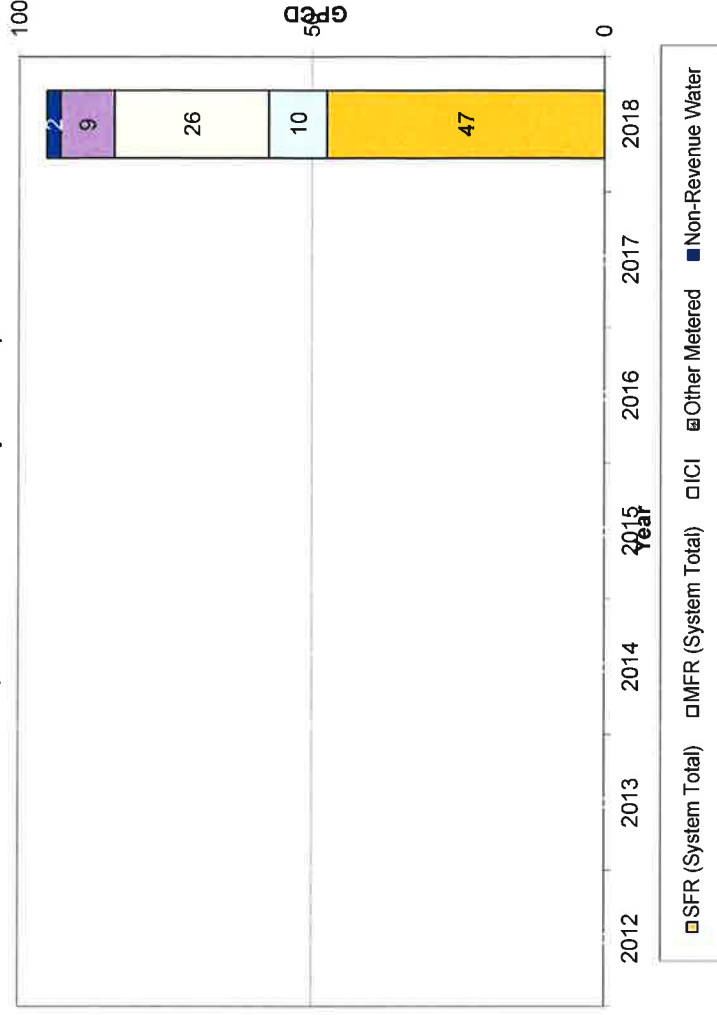
Overall Annual GPCD (based on Total Population)

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		
2018	47.43	9.92	26.39	9.22	2.26	108.22	69.18
2017	N/A	N/A	N/A	N/A	#####	#VALUE!	-
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!	-

City of Santa Fe Public Utilities Department

2018 to 2012

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





# 10. Monthly Reporting Performance

Choose Year for Monthly Analysis

2018

Choose Sector

Non-Revenue

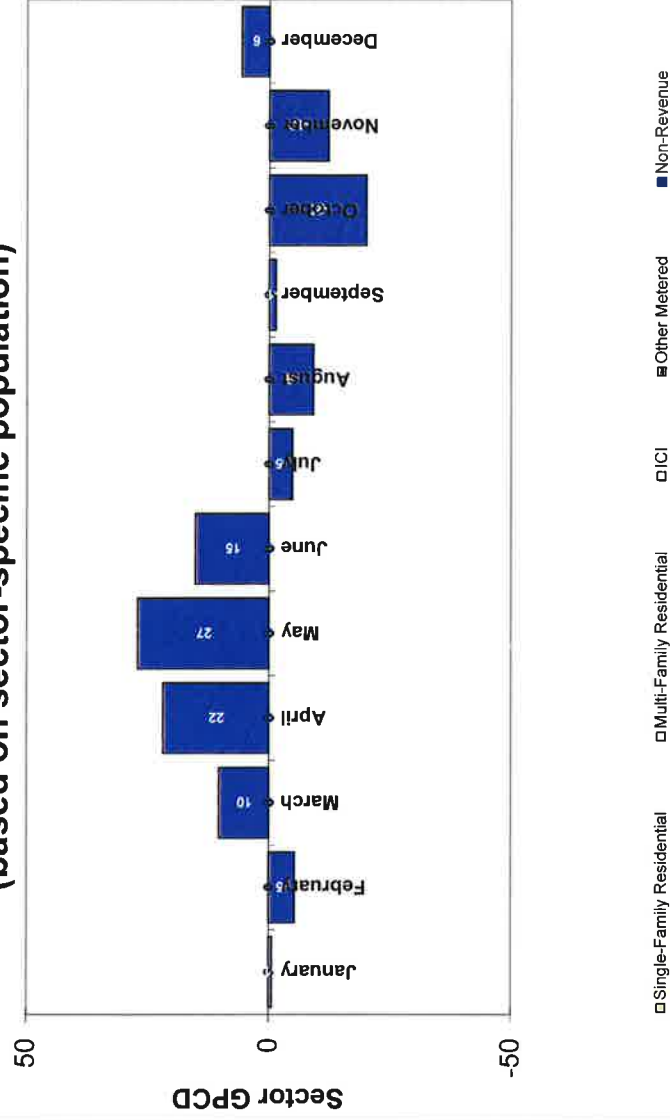
Monthly GPCD

Month	Single-Family Residential	Multi-Family Residential	ICI	Other Metered	Non-Revenue
JAN	44.87	45.61	20.25	0.10	-0.66
FEB	47.97	48.00	21.97	0.60	-5.37
MAR	42.56	41.28	20.16	0.26	10.33
APR	51.65	48.16	24.01	3.08	21.88
MAY	65.40	55.08	28.14	8.76	27.10
JUN	81.62	70.26	32.96	13.63	15.23
JUL	85.13	67.71	33.79	20.67	-4.81
AUG	70.72	64.10	31.35	24.90	-9.14
SEP	68.96	63.76	31.49	19.13	-1.35
OCT	63.43	58.47	29.18	11.03	-19.95
NOV	45.46	46.65	23.06	6.95	-12.18
DEC	42.11	43.77	20.07	0.68	5.79

City of Santa Fe Public Utilities Department

2018 to 2012

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





## DATA INPUT SHEET

City of Santa Fe Public Utilities Department

Instructions

## 4. MULTI-FAMILY RESIDENTIAL (MFR)

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Instructions

## MONTHLY DATA

TABLE 4.1

Info

MFR BILLED WATER CONSUMPTION (Monthly) (Gallons (US))

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	21,546,800	20,484,100	19,502,200	22,018,700	26,119,100	32,367,500	32,230,500	30,512,900	29,369,300	28,679,300	21,487,900	20,833,200
2017												
2016												
2015												
2014												
2013												
2012												

TABLE 4.2

Info

NUMBER OF MFR UNITS (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	10,490	10,490	10,490	10,490	10,490	10,490	10,490	10,490	10,490	10,490	10,490	10,490
2017												
2016												
2015												
2014												
2013												
2012												

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

TABLE 4.3

Info

MFR POPULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	15,312	15,312	15,312	15,312	15,312	15,312	15,312	15,312	15,312	15,312	15,312	15,312
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
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

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

TABLE 4.4

Info

MFR GPCD CALCULATION (Monthly)

Year	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2018	45.39	47.78	41.09	47.93	55.03	70.46	67.90	64.28	63.94	56.63	46.78	43.89
2017	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data	No Data
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

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

COMMENTS:

## ANNUAL DATA

TABLE 4.5

ANNUAL CONSUMPTION

TABLE 4.6

ANNUAL CALCULATION
303,351,500
N/A
N/A
N/A
N/A
N/A

TABLE 4.7

No. CURRENT UNITS

TABLE 4.8

ANNUAL UNIT CALCULATION
10,490
N/A
N/A
N/A
N/A
N/A

TABLE 4.9

MFR POPULATION
15,312
N/A
N/A
N/A
N/A
N/A
N/A

TABLE 4.10

VACANT MFR CONNECTIONS
1507
N/A
N/A
N/A
N/A
N/A

TABLE 4.11

ANNUAL MFR GPCD
54.28
N/A
N/A
N/A
N/A
N/A



## Basis for rebates

tim michael 4/21/19

This discussion is about the conceptual approach for rebates. The current concept is that the rebate amount is designed pay the customer back for the value of the water that the city saves. There are multiple problems with this. Significant is that the payback period is too long. Another problem is that the value assigned to the city water is not attached to a proper basis. (The supposed basis is the price of a water right divided by the useful life of a device. For example, if a water right for one acre-foot costs \$15,000, and the device has a useful life of 10 years, then the supposed cost of an acre-foot of water is \$1,500/year. Dividing a perpetual contract by a number of years makes no sense. What anyway is paper/years?)

Most importantly, the basic concept is wrong. The rebate *should not repay the customer for the water that the city saves*. The purpose of the rebate is to encourage the customer to front the money for the device. If the installation works as intended, both the customer and the city participate in accomplishing the objective of saving water.

(The rebate may or not include the purchase price and the installation cost. It is my opinion that the rebate should support both, because the purpose of the rebate is to save water).

We must abandon the misbegotten concept that the value of water is \$15,000 or anything related to the price of a water right. If the *annual city production cost for an acre-foot of water* is \$1,500 [i.e., \$1,500/(af-yr)] (presumably the city utility can provide a current number), then the city currently calculates rebate amounts according to the following formula:

$$\left( \text{Production Cost}, \frac{\$}{\text{af}} \right) \left( \text{WSR}, \frac{\text{af}}{\text{yr}} \right) (\text{Useful Life}, \text{yr}) = \text{Rebate } \$$$

For example, for a high-efficiency clothes washer, the rebate amount is calculated as:

$$\left( 1,500 \frac{\$}{\text{af}} \right) \left( 0.0157 \frac{\text{af}}{\text{yr}} \right) (10 \text{ yr}) = \$235.50$$

which the city rounds to \$236.00.

Considering the problem of the length of the payback on the investment, I estimate that the purchase price of a high-efficiency front loader is \$630. This makes the amount that the customer has to front to be \$394. The question is, at that the rate that high-efficiency clothes washer saves water, how long will it take for the *customer* to recoup the \$394 investment?

The Tier 1 price for water is \$6.06 per 1000 gallons, or \$1,975 per acre-foot. The customer saves (0.0157\* \$1,975) or \$31 per year. At the rate of \$31 per year, this amounts to a 12.7 year payback.

The payback is significantly worse than this if a reasonable discount rate is applied to account for the future value of money. Essentially, *the investment is never paid back*. See below.

Year	Customer Cash Flow	Present Value of Annual Cash Flow (Discounted Cash Flow)	Sum of Disc Cash Flow	Net Present Value
0	-394	-394		-394
1	31	27	27	-367
5	31	15	104	-290
10	31	8	156	-238
15	31	4	181	-213
20	31	2	194	-200

Paybacks like this are not acceptable for either an individual or for a commercial enterprise. For this reason, I propose a rebate approach based on repaying the customer for the cost of the device (or of the device and the installation), and not based on the amount of water that the device saves.