



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

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

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

CONSENT AGENDA:

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

INFORMATIONAL ITEMS:

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

MATTERS FROM PUBLIC:

MATTERS FROM STAFF:

MATTERS FROM COMMITTEE:

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

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

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

ADJOURN.

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

**SUMMARY OF ACTION
SANTA FE WATER CONSERVATION COMMITTEE
CITY HALL, CITY COUNCILORS CONFERENCE ROOM
200 LINCOLN AVENUE
TUESDAY, FEBRUARY 13, 2018**

<u>ACTION</u>	<u>ACTION</u>	<u>PAGE</u>
CALL TO ORDER		1
ROLL CALL	QUORUM	1
APPROVAL OF AGENDA	APPROVED	2
APPROVAL OF CONSENT AGENDA	APPROVED	2
APPROVAL OF MINUTES JANUARY 9, 2018	APPROVED	2
<u>CONSENT AGENDA</u>		
WATER CONSERVATION PROGRAM SCORECARD REVIEW FOR 2017	APPROVED	2
WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR JANUARY 2018	APPROVED	2
<u>ACTION ITEMS</u>		
APPROVAL TO MAKE CHANGES TO POPULATION CALCULATIONS AS IT RELATES TO THE NEW MEXICO OFFICE OF THE STATE ENGINEER'S METHODOLOGY FOR THE GALLONS PER CAPITA PER DAY CALCULATION	APPROVED	2-4
<u>INFORMATIONAL ITEMS</u>		
RESULTS BASED ACCOUNTABILITY	DISCUSSION/INFORMATION	4-9

DISCUSSION

MATTERS RELATED TO WATER CONSERVATION COMMITTEE	DISCUSSION/INFORMATION	9-10
GROUP REPORTS FROM WATER CONSERVATION COMMITTEE WORKING GROUPS	DISCUSSION/INFORMATION	10-12
MATTERS FROM THE PUBLIC	DISCUSSION/INFORMATION	12
MATTERS FROM STAFF	DISCUSSION/INFORMATION	12
MATTERS FROM COMMITTEE	DISCUSSION/INFORMATION	12
NEXT MEETING	MARCH 13, 2018	12
ADJOURN	ADJOURNED	13

**SANTA FE WATER CONSERVATION COMMITTEE
CITY HALL, CITY COUNCILORS CONFERENCE ROOM
200 LINCOLN AVENUE
TUESDAY, FEBRUARY 13, 2018, 4:00 PM**

1. CALL TO ORDER

The meeting of the Santa Fe Water Conservation Committee was called to order by Councilor Peter Ives, Chair, at 4:00 pm on Tuesday, February 13, 2018 at City Hall in the City Councilors Conference Room, 200 Lincoln Avenue, Santa Fe, New Mexico.

2. ROLL CALL

MEMBERS PRESENT

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

MEMBERS ABSENT

OTHERS PRESENT

Christine Chavez, City of Santa Fe, Water Conservation Manager
Andy Otto, Watershed Association
Caryn Grosse, Water Conservation
Patricio Pacheco, Water Conservation
Elizabeth Martin, Stenographer

3. APPROVAL OF AGENDA

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

VOTE The motion passed unanimously by voice vote.

5. APPROVAL OF MINUTES JANUARY 9, 2018

MOTION A motion was made by Mr. Pushard, seconded by Ms. Randall, to approve the minutes as presented.

VOTE The motion passed unanimously by voice vote.

CONSENT AGENDA

6. WATER CONSERVATION PROGRAM SCORECARD REVIEW FOR 2017

7. WATER CONSERVATION PROGRAM SCORECARD UPDATE FOR JANUARY 2018

ACTION ITEMS

8. APPROVAL TO MAKE CHANGES TO POPULATION CALCULATIONS AS IT RELATES TO THE NEW MEXICO OFFICE OF THE STATE ENGINEER'S METHODOLOGY FOR THE GALLONS PER CAPITA PER DAY CALCULATION

Ms. Chavez said she wanted to give a huge thanks to Tim Michael for all his work on this issue. We were starting to go through the calculation and found that the population projection was inflated. By having a higher population number we have a lower GPD number. We met with Reed Liming, who reports the population each year. He is in agreement with us in terms of what we proposed to him as a way to fix the population numbers as to what is really happening in the City. It will be much more useful to us and more accurate.

Mr. Michael said the spread sheets are in the packet. He reviewed them. What happened last year was because of the way the population was calculated was based on the number of connections. The population it calculated was too high. We knew it was not right. Reed Liming picked up on that as well. Our plan was to fix that. Our conservation with Reed was about what number to use. Instead of using the previous method we are using the PEPANNRES method, a population estimating program.

(Census estimates). 90.77 gallons a day was the number that came forward. We are proposing that is what we use for this year and not to fix last year. We want to go forward.

Chair Ives said one of the big objectives of the OSE was to make sure everyone is using the same process. Do we not help them by rightsizing numbers.

Mr. Michael said on a statewide basis the difference is insignificant. We help ourselves to more accurately reflect the population. We used the tables the State Engineers Office uses on their spread sheet. We are making better use of the same dataset.

Ms. Chavez said we had a discussion with the Office of the State Engineer and they mentioned that several other cities have made adjustments to their population numbers as well. If we continue to report with that high population number the information will not be as accurate.

Mr. Michael said in his conversation with Julie Valdez she said all she does is collect the numbers.

Mr. Pushard said he agrees with Tim on this. He actually called them to see if they do anything with the data and they don't. He understands the issue of adjustments. The alternative would be us not using their number, but have our own number. That causes issues. He does think it will help us. In 2021 the full adjustment to population will be done. As long as we document it and have a conversation with the State Engineer it should be fine.

Mr. Coombe said he agrees. He thinks they will be comparing our number more and more with other cities or States. Tim what do you think the accuracy of that number is.

Mr. Michael said if the population estimates program is correct, he thinks it is in the ballpark.

Mr. Coombe said it behooves us to select one method and go with it.

Mr. Michael said if we choose this method it will be relatively easy to keep at it.

Chair Ives said and there are still those 700 to 800 wells out there that complicate things as well.

MOTION A motion was made by Mr. Pushard, seconded by Mr. Coombe, to approve the method proposed.

VOTE

The motion passed unanimously by voice vote.

INFORMATIONAL ITEMS

9. RESULTS BASED ACCOUNTABILITY DISCUSSION

Ms. Chavez said we been hearing about this from Councilor Ives. She has gone to some training. The City is moving towards this new tracking method. Everyone is having to switch over to it. 3 questions are asked. How much, how well and is anyone better off. Is anyone better off is the hardest one for us to answer. We brought the subcommittee together to work on this. The city Manger gave her copies of the book for the subcommittee and the packet in your meeting packet today. We started there. We thought we would bring this discussion to the Committee and open it up to the group. The subcommittee is she, Mr. Coombe, Mr. Wiman, Mr. Michael and Caryn.

Mr. Wiman said this got his attention and his thoughts going in different directions. The discussion begged the question of if we are better off by just listing things and what are we really doing to encourage a decrease in water consumption. It made him think we are expending a lot of energy for the water to go to the water bank. More water is being used while you are trying to reduce the use elsewhere. He would like to see a projection out in the future of what we need to do to meet the deficit we see in the reports. What can we do to project out into the future. We have had conversations every year of how much would we be reducing consumption each year. He would like to see us doing more forward thinking rather than the path from the past. He has been through this in the corporate world and it was not successful. He is not saying it is the wrong thing to do. It is a useful tool in some respects. It causes us to question if we are doing the right work. We tend to go off in multiple directions. What can we do to maximize the results. Can we look at big picture items like climate change.

Councilor Ives said in this context, as we look at reducing supplies and expanding population, he calls it a resiliency factor. How much reserve we would like to have in our system to overcome a specific situation. What if we used the Stella Modeling System in terms of assessing water and arbitrarily reduce the supply side 1,000 acre feet. Reduce it to the minimum amount and come up with how we need to react to ensure that we as a City can survive. That would be fascinating. It would be a good exercise.

Mr. Coombe said he thinks we need to clarify our goals in general. We can fit what we do into this format, but before we do that we need to ask ourselves what are we doing and why are we doing it. How much water do we save, for who and how is it being used. You can look at it in terms of population growth, drought and climate change. We can quantify how much water is saved through rebates and how much growth that results in. The other side of it is looking hard at the future. What number do

we need to have to respond to climate change and reduction in flow. Where do we need to be. We have years of data and know what the trend is. The real question is where are we going, what are we doing and why. What is the consumption number we need to do and how do we manage it. The closest thing we have is the Santa Fe Basin Study. It is a 2015 study that has projections based on various climate scenarios and estimates for population growth. They project with 4 dry years a deficits of 9,000 acre feet. GPCD. You can take a middle ground, central approach which is still a large number. It is possible we can say using the climate models available that this is what we project in the future that the trend in our GPCD needs to be. Also how much growth can be afforded. It is possible to quantify that through these models. We need to be up front about it. What is water conservation really about. Where are the greatest points of leverage. We get a lot more mileage out of commercial rebates than residential rebates. If you saw the article in the *New York Times* about Capetown South Africa which will run out of water in April you see how bad it can get. They are down to a GPCD of 13 right now. This happened over a period of 3 years. We can do this approach, but we have to be honest in our objectives.

Mr. Roth said for him we have an opportunity to redevelop large areas of the City and we have run out of a lot of low hanging fruit for the current environment. We could use this as a lever to go in and look at how we use water in these new projects. One idea was that all landscaping in these developments use only potable water to water the landscaping. The consensus in the City is that we want growth. It has to be done under guidelines. It will take some political will.

Mr. Michael said he agrees. Well said. That is where we need to go. He agrees with Bob that with the Results Based Accountability guidelines can easily fit what we are doing now. What he wants to say is we have 1 1/2 hours left in this meeting. There is no other place to confront these hard questions other than here. We can hope our new Mayor will look at these kind of things. It has to come from here. He would like to leave here today with some kind of commitment and plan to confront the hard questions. Has the City agreed to the idea that growth is necessary. We don't really know. Have we agreed to that as a City. If we have lets proceed from there. If not we need to move on to something else.

Chair Ives said certainly this is the place to take up those issues. Given the capacity and interest of this group to dig into these types of issues he can think of no better place in the City to pursue those questions. Results Based Accountability is an effort within the City to better understand if our expenditures were making sense and what impact we have been having. We have seen the City Council in the last 2 years become much more engaged in the budget process. We will have to sit down with leadership within the City and start to have those discussions. It is prudent, wise and necessary to do this. It begs the question of what do we need to be looking at now in terms of our code.

Ms. Chavez said when she first got here she was new, but did know that the program had done so much work. Having the scorecard was a great management tool for her. This Results Based Accountability is very timely. It does not look at the checkmark to see if you met the goal. The bigger questions are the ones that came up today. She would like us to take a step back and really figure out what was said today. It is a great opportunity for us to work together. It will take time and we need a plan to approach it. Maybe break out into groups. If this Committee could help us brainstorm some of those ideas today that would be helpful.

Mr. Bunton asked what is the worst case scenario on water supply that we can come up with. He came up with 3 questions. Once we have those numbers available what combination of population and GPCD will get the City to meet that worst case scenario. You have to control population if you are going to control that problem. How do you do that. You can influence that, but it is not an easy thing to do politically. The third question is what conservation actions can reasonably be projected to accomplish that combination. Education and volunteer incentive actions are not enough. Compulsory actions is left such as controls on businesses like car washes. These are politically difficult choices to make. If we can make them early enough it may keep us from having to make such dire changes.

Mr. Coombe said the data regarding the worst case scenario is available. The future is about climate models. It behooves us as a City to use the best climate models.

Chair Ives said we have wonderful potential partner in Descartes Lab. It would be fun to engage them. There might be some opportunity there.

Mr. Coombe said if that is possible it would enable us to make more informed decisions. We need to do this in as informed a manner as possible.

Mr. Michael said thanks guys. You are getting there. Christine is in a pinch here. She has a program to run. She is on board with all of this, but she has to take the Results Based Accountability and put it in place.

Mr. Otto said the main thing we shouldn't forget is the environment. We can base it strictly on population, but it also involves infiltration and the Living River. Keep that right in there with our criteria for how this is going to be determined. It will come to that point at some future time. We also want to say how much water we want in the river and the watersheds.

Mr. Roth asked do you have numbers that you can give us that we can factor in.

Mr. Otto said the Living River Ordinance was aggressive in that way.

Mr. Roth asked is there a baseline.

Mr. Otto said yes. People are first and that is something environmentalists have had to accept, but factoring in the environment is crucial.

Chair Ives said agreed. There is no alternative but to tackle that along with everything else in our code to define Santa Fe's future.

Mr. Coombe said we can go forward with Results Based Accountability. We can easily fit it in. A culture of stewardship, that is a worthwhile thing to do for which we can establish specific objectives and plans.

Chair Ives left the meeting.

Co-Chair Randall took over.

Ms. Chavez said she what she found fascinating in our conservation in the subcommittee was that the Committee was unaware that all of the water saved goes into the water bank. Another thing is that water conservation is embedded in utilities and their job is to sell water, even though this division has the most staff and resources. The other is being that people can buy water out of the water bank that may be a way for them to make up for the water they did not sell. It is contradictory. There are so many connections. What we do here also is to connect to those divisions as well. This is not the biggest thing on the City's radar as well. It is a great opportunity, but it will be interesting how those connections are made through this process.

Mr. Roth said this does give us opportunities to propose things. Shouldn't all these people on a regular basis be sitting at this table and having a roundtable on this stuff. It is all the same water. That would be an awesome project. We get the department heads together and present this.

Mr. Coombe said we can also ask the question about shrinking water use and how much will the rates be.

Mr. Roth said when we are talking about what we want to do that seems to be something that should happen.

Mr. Pushard said he thinks the water bank is an interesting and unique phenomena that we don't appreciate. The Committee does need to understand. We are a net zero City and have been ever since that Ordinance began. It does have some value built into it. One side is do we want to save water to let us grow. The other is about saving water. What do we want to use the water for would be a very worthwhile conversation. He would like to see us allocate some time in a structured way to have a focused discussion. The one issue he fears the least is the quality. We have more water than we need for the next 4 decades. If we just captured all the stormwater we would not even need the watershed. We have far more water rights than we have ever used. Having the modeling gives us an educated background where we could look at

things to prioritize. The models might surprise us. Approaching the existing home stock and doing something with that, since they are 78% of water use, would be effective. We could say if you come in to pull a permit to do anything you have to meet code. We don't do that today. The one thing not on the table is we live in a water basin. It is the wells in the County that worry him. When we are having this conservation we need to have County people here as well. The County is drilling more wells and using more water. We should start with what do we want to do and the 3 questions Scott posed. We need to dedicate time.

Ms. Chavez said we do have the 5 year Water Conservation Plan we will be working on and can identify all the connections and ways to make what we want happen there. It can be in the Plan and we can try to figure out a way to make the Results Based Accountability fit. It is very timely. We are in the midst of developing a long term plan for the department. We need to determine what our 5 year goals are.

Mr. Pushard said for the next meeting we can pick one of Scott's questions and spend 20 minutes or so on it.

Mr. Wiman said he suggests we do this internally first then get other departments involved. He had some comments about the Annual Water Report. It is a perfect example to him that one department under the Water Division does not really understand and consistently portrays information that is wrong. He likes the idea of getting going with the subcommittee first, but maybe some day a retreat or a forum with a facilitator to talk about the big picture goals could be done.

Mr. Roth said we can present 5 questions to these department heads. Growth is not going to stop. The construction industry is a huge contributor to this economy. We should have hard targets.

Mr. Randall asked do we want to formulate a question for discussion at the next meeting.

Mr. Bunton said the trade off of population and GPCD.

Mr. Michael said population is of interest to him. As Doug said the City population and the County population are important. We need to get an idea. His tendency is to use the County population. It is not just population. It is the difference between the population growing or the whole County looks like Las Comanas or the whole County looks like downtown Santa Fe. What is it going to look like in terms of population. That is the kind of question he would like to see.

Mr. Roth said he would base it on the current City and County zoning. Look at what is in place right now and base our discussion on that. Make suggestions.

Mr. Bunton said we could do multiple scenarios. Dense and less dense

scenarios. Select scenarios and come up with answers for each scenario. The Council can then decide.

Ms. Randall said perhaps the topic for the next meeting is bring some suggested questions.

Ms. Chavez said this can develop into an important piece of work. She is concerned about the time it will take us to do that. She likes the idea of breaking into the subcommittee to help focus the conversation a bit more. We need to have action items on the agenda.

Mr. Kirk said it is important to work with the County. In Albuquerque they have a 100 year plan on the books that they have been working on for years. It would be interesting to hear about that from someone in Albuquerque. It might provide us some direction.

Ms. Chavez said she will look into that.

Mr. Pushard said it is on the City website. If we are going to have them come in it would be good for us to all have read the plan before they come in.

Ms. Randall said we need to defer to Christine's urgency, timeline and input. Do we have confirmation of the subcommittee members. If not let Christine know.

Mr. Kirk said he would like to work on this as well.

Ms. Chavez said we will meet as subcommittee and bring back focused pieces to the Committee and look at her deadline. Everyone gets siloed in the plans and then they get shelved. We can write the plan and do a better job and take a different approach. She will collect the data asked for and bring it to the subcommittee. This will be on the agenda again. If anyone else wants to join email her. It is a great opportunity for us to do something great as a group. Thank you.

Mr. Roth said it would be good to identify all the City Committees that address water.

Ms. Chavez said she will work on this with the subcommittee and do as much as we can within the time frame.

10. MATTERS RELATED TO WATER CONSERVATION COMMITTEE

Ms. Randall left the meeting.

Mr. Michael took over.

Ms. Chavez said as you remember we established term limits for the Committee 2 years ago. The terms are staggered. She missed a deadline. According to the list Bill, Doug, Stephen, Tim and Lisa's terms expired in July 2017. She needs a letter from all of you stating that you are interested in serving another term or not. Please email those to her asap. We have Aaron, Justin and Bob whose first terms end in July 2018. She needs to gauge interest in serving a second term.

Mr. Long said he and his wife are moving back east to be closer to family. We are moving right after the conference. It has been an absolute pleasure serving with all of you.

Ms. Chavez said we may have a lengthy exit meeting. Still would like his input on a lot of things. Thank you so much for being on Committee. Best of luck to you and family.

Ms. Chavez said again, if your term is coming up share with her if you want to serve a second term or not so she can advertise for openings and can plan. If you can think of anyone who would be a good replacement for Justin before we put it out let her know.

Mr. Long said we are sending people to Cape Town to work on their water issues. They just did not plan at all. In terms of what comes out of this, he will report back.

Ms. Chavez said that would be a great discussion.

11. GROUP REPORTS FROM WATER CONSERVATION COMMITTEE WORKING GROUPS

A. IRRIGATION SUBCOMMITTEE

Ms. Chavez said we have a subcommittee meeting next Wednesday at 8:00 am. We have our whole outdoor irrigation package to review. We are doing the magnet program. Mario and Patricio are going to go out and place the magnets at dealers on appliances that meet the criteria. We will need to have a discussion on rebates as well. Join us if you are interested.

B. GENERAL EDUCATION PROGRAM/GRANTS

Mr. Kauffman said we are finalizing the rubric to assess the Passport Program. This is to assess the students progress and changes the kids made in terms of the questions they answered. We have determined that we need to come up with different questions. Some are a bit complicated for 4th graders. The grants subcommittee meeting is this Thursday to talk about upcoming funding opportunities. The meeting will

be at 9:30 am.

Ms. Chavez said Aaron has been very helpful in these projects. This is a good opportunity to think about how we phrase the questions for next year. Now we have some grant opportunities as well. If you are interested join us.

Chair Michael said it would be nice if they could answer the questions on the computer.

C. SCORECARD SUBCOMMITTEE

This was previously discussed.

D. WATER CONSERVATION CODES/ORDINANCES

Mr. Pushard said his hand out is in the packet. If you have any questions please send him an email.

Mr. Wiman asked for an update of the restaurant program.

Ms. Chavez said we have 13 restaurants signed up so far. We are working on the timing with the consultant. There is a big social media campaign associated with the audits. We have learned amazing things from the audits so far. We did get a copy of the first report. Staff has done 3 or 4 audits so far. It is going well. We are keeping a spreadsheet on the type of equipment we are seeing. Caryn is working on rebate ideas. The biggest problem is they don't know how much water they are using in their own shop because they are part of a hotel or shopping center. We are looking at metering.

Mr. Roth he is in the design and planning stage of building a restaurant. It would be great if he had some guidelines for the owner to use at the building stage for water conservation.

Ms. Grosse said you could start with best practices for restaurants. We could help you with a couple of other things.

Ms. Chavez said there are restaurants that are doing great things.

Mr. Roth said that would be great. Anything will help. This is Homewise. It could be a perfect model.

Mr. Michael asked will the commercial rebate program will be presented at the Water Summit.

Ms. Chavez said we will have to see. She doesn't think we will be prepared to

give a presentation at the Summit but hopefully it will be mentioned as part of the work being done in Santa Fe.

Ms. Chavez said we got 2 Resolutions approved before the Council. Our programs are getting a lot of questions and discussion and exposure.

12. MATTERS FROM THE PUBLIC

Mr. Otto said we submitted questions to Mayoral and Council candidates. We will have those answers out to everyone on our website and eblast. It is very interesting.

13. MATTERS FROM STAFF

Ms. Chavez said she will send out schedules for the Sustainability Committee and the River Commission.

14. MATTERS FROM COMMITTEE

A. UPDATE FROM TIM MICHAEL ON SUSTAINABLE SANTA FE MEETING

Mr. Michael said he attended this meeting. They are still proposing to have their report out by May 30th to City Council. He is looking forward to seeing it.

Mr. Kirk said he did not attend the last County meeting so they had quorum issues. He will be at the next meeting and will report back.

Mr. Pushard said the Summit is quickly approaching. If anyone wants a copy of the agenda he has them with him. Please sign up soon. We will be sending out press releases. Senator Tom Udall will be our keynote speaker on Tuesday.

Mr. Michael asked are there any kind of special slots for students or interns.

Mr. Pushard said yes. They need to register as a student. When they come they have to show a student ID. A password will be available for registration for you all. Use the one at the bottom of the page.


Ms. Chavez said she can help them register as well.

15. NEXT MEETING TUESDAY, MARCH 13, 2018

16. ADJOURN

There being no further business before the Committee the meeting adjourned at 6:03 pm.

Councilor Peter Ives, Chair



Elizabeth Martin, Stenographer



Water Conservation Office

Monthly Overview of Scorecard Progress – February 2018



Education Outreach:

Education Initiative:

- Teen Job Fair at the Southside Library on 2/16 (Lisa, Patricio, Mario)
- Earth Day Planning meeting at the Railyard Park Community Room on 2/21 (Lisa)
- Meeting with the Youth and Family Services Division on 2/21 (Lisa and Christine)
- Met with the Mayor's Youth Advisory Board on 2/22 (Christine)
- Met with the New Mexico Teacher's Network on 1/26 (Patricio)

General Outreach:

- Master Gardener Presentations on 2/5-2/6 (Christine)
- Restaurant Audit for Casa Chimayo on 2/14 (Patricio and Mario)
- Restaurant Audit for Sweetwater Harvest on 2/1 (Mario)
- Restaurant Audit for the Ranch House on 2/9 (Patricio and Mario)
- Restaurant Audit for Cowgirl (Doug)



Communication and Customer Service:

Eye On Water Rollout:

- 2,917 sign ups as of 2/26/2018

Indoor Water Audits: none

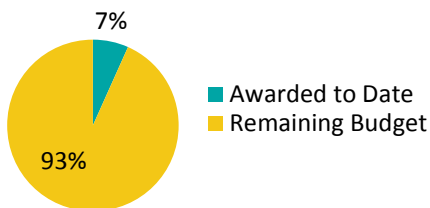
Enforcement Activity:

- 400 continuous consumption letters sent this month
- 15 customers called regarding leaks (fixed)
- 2/9/18 Agua Fria- Warning: Fugitive Water

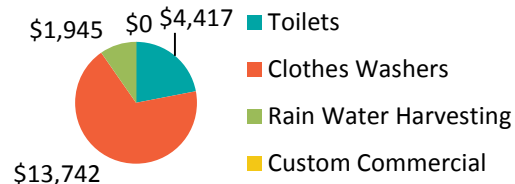
Residential and Commercial Rebates:

Remaining fund balance as of February 26, 2018: \$279,896.00

Rebate Fund



Rebate Amounts per Device Type



Rebates awarded FY-to-date:

- HET (all types) -75
- Clothes Washers (all types) -52
- Rain Water Harvesting (including rain barrels) -34
- Custom Commercial- 0

Strategic Marketing Plan:

- Save Water Santa Fe radio show guests (Andy Otto, George Radnovich, Jeff Goebel, Reed Liming)
- Rebate and Irrigation package design components drafted for final review
- Designed bill insert promoting indoor and outdoor rebates
- Scripted “how to” videos for irrigation including gray water. Video shoot scheduled for 2/28
- Paid boosts on social media to promote Restaurant Pilot Project
- Drafted ads for outdoor irrigation rebate rollout and seasonal high demand

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

- Christine attending Essentials for Supervisors Training on Friday mornings through April
- Christine attended Stormwater meeting with Tetra Tech on 2/7
- Caryn participated in the QWEL PCO Training Webinar on 2/20
- All staff attended the 2018 Land and Water Summit on 2/22-2/23
- Mario attending the Master Gardener training through May on Tuesday mornings
- Patricio attended the New Mexico Water Conservation Alliance meeting on 1/31 and was elected Vice President of the Board.

Water Conservation Committee:

- Tim Michael and Christine Chavez met with Reed Liming on population projections on 2/5
- Doug Pushard and Christine Chavez presented for the Master Gardeners on 2/5 and 2/6
- Scorecard (Results Based Accountability) subcommittee meeting on 2/7
- Aaron Kauffman and Doug Pushard assisting with pilot water harvesting project for St. Michaels High School
- Education/ grants subcommittee meeting on 2/15
- Irrigation Subcommittee meeting on 2/21

Integration with Water Resources:

- Finalizing 2016 AWWA Audit, will begin collecting info for 2017 AWWA Audit next month
- Data gathering on water production numbers/ deliveries to the County for the GPCD
- Christine attending monthly project status meetings with Water Resources
- Christine working with Water Resources on a joint RFP for expansion of passport program


**Stewardship and Conservation:****Regional Collaborations:**

- Patricio Pacheco is serving on the NMWCA board.
- 2018 Land & Water Summit-February (Caryn)
- 2018 Next Generation Water Summit-April (Christine)

City of Santa Fe, New Mexico

memo

Date: March 5, 2018

To: Christine Y. Chavez, Water Conservation Manager 
For Water Conservation Committee

From: Caryn Grosse, Water Conservation Specialist Sr. 

RE: Updates to Rebate Program

Background:

Shannon Jones, Public Utilities Department Director, recently authorized the Water Conservation Office to modify two of our rebates for Clothes Washers and Hotel/Motel Toilets.

Due to changes in the Federal Standards related to energy and water efficiency for clothes washers, a number of machines which qualified for, and marked as Energy Star, on February 4, 2018, were no longer on the list as of February 5. We asked for a "grace period" until the end of the Fiscal Year (June 30, 2018) during which we could use the February 4th list, so as not to penalize customers unduly and to allow the vendors an opportunity to clear out inventory. In addition, this gives the Water Conservation Office time to determine what changes, if any, will need to be made to the rebate program.

The Water Conservation Office also researched and recalculated the values for the Hotel/Motel High-Efficiency Toilet (HET) rebate for toilets used in guest room bathrooms. Our recommendation was that as the recalculated value was very close to that used for the Residential HET we could simplify our program by used the same values.

Attachments:


Clothes Washer Rebates memo dated February 7, 2018, and attachments.


Commercial Toilet Rebates for Hotel/Motel Guest Rooms memo dated February 27, 2018, and attachments


City of Santa Fe, New Mexico

memo

Date: February 7, 2018

To: Shannon Jones, Public Utilities Department Director 

From: Caryn Grosse, Water Conservation Specialist Sr. 

Via: Christine Y. Chavez, Water Conservation Manager
Rick Carpenter, Water Division Director, Water Resources & Conservation Manager 

RE: Clothes Washer Rebates

Background:

In 2015, new Federal Standards related to the energy and water consumption of clothes washers went into effect. These changes apparently caught manufacturers off guard (as well as the Water Conservation Office) and the lack of qualifying machines had a significant impact on our customers and the rebate program, resulting in a drop from 122 clothes washer rebates granted in 2014 to 43 in 2015. With changes to the rebate program in May 2016, the number approved of clothes washer rebate applications has begun to come up again, with 83 clothes washer rebates granted in 2017.

As of February 5, 2018, the Federal Standards have changed again. While more manufacturers were prepared for the change in standards this time, with many more models qualified under the new standard available for customers to purchase immediately, there remains a stock of washers manufactured before the change which were labeled as "Energy Star" or CEE Tier 2 or 3 qualified. They were, in fact, qualifying models as of February 4, 2018, and are still much more water efficient than machines manufactured just four or five years ago.

Recommendation:

We would like to offer our customers a "grace period" through June 30, 2018, during which we will use the lists produced by Energy Star and CEE just prior to the February 5, 2018, change to verify whether their newly purchased clothes washer qualifies for the rebate. This grace period would allow vendors an opportunity to clear out stocks of previously qualifying machines, as well as provide the Water Conservation Office time to determine what adjustments, if any, need to be made to the rebate program and to announce any changes to our customers.

Attachments:

CEE Super Efficient Home Appliances Initiative High Efficiency Specifications for Residential Clothes Washers, Effective February 5, 2018

CEE Super Efficient Home Appliances Initiative High Efficiency Specifications for Residential Clothes Washers, Effective March 7, 2015

Appendix A Proposed Rebate Changes, November 30, 2015

Energy Star Clothes Washers Key Product Criteria, February 5, 2018



CEE SUPER EFFICIENT HOME APPLIANCES INITIATIVE

High efficiency specifications for RESIDENTIAL CLOTHES WASHERS

(Terms of Usage below)

Effective February 5, 2018

Efficiency Criteria

Efficiency Level	Integrated Modified Energy Factor (IMEF) ¹	Integrated Water Factor (IWF) ²
Standard sized clothes washers (> 2.5 cu. ft.)		
CEE Tier 1 ³	≥ 2.76	≤ 3.2
CEE Tier 2 ³	≥ 2.92	≤ 3.2
CEE Advanced Tier ⁴	≥ 3.10	≤ 3.0
Small volume clothes washers (≤ 2.5 cu. ft.)		
CEE Tier 1 ³	≥ 2.07	≤ 4.2
CEE Tier 2 ³	≥ 2.20	≤ 3.7

Connected Criteria

A. Connected Clothes Washer System

To claim compliance with the CEE Connected Specification requirements, a Connected Clothes Washer System shall include the appliance plus all hardware and software elements required to enable communication in response to consumer-authorized energy related commands, not including third-party remote management that may be made available solely at the discretion of the manufacturer. These elements may reside inside or outside of the appliance.

This capability shall be supported through at least two means, as identified in section B.2. The specific design and implementation of the Connected Clothes Washer System is at the manufacturer's discretion, provided it is interoperable with other devices via open communications protocols and enables

¹ IMEF is a measure of the energy consumption of the total laundry cycle, washing and drying, normalized by capacity. It indicates how many cubic feet of laundry can be washed and dried with one kWh of electricity. As IMEF increases, efficiency increases.

² IWF indicates the number of gallons of water needed for each cubic foot of laundry. A lower number indicates lower consumption and hence a more efficient use of water.

³ CEE Tiers 1 and 2 are performance levels intended to enable sufficient product volume for energy efficiency programs to achieve cumulative savings goals and to emphasize significant per unit savings over the performance baseline, which is typically the federal minimum efficiency standard. The CEE Tier 1 aligns with ENERGY STAR[®] Product Specification for Clothes Washers Version 8.0 and the CEE Tier 2 aligns with ENERGY STAR Most Efficient 2018 criteria for clothes washers.

⁴ A CEE Advanced Tier represents an aspirational level of efficiency and product performance, agreed by manufacturers to be technically feasible. While few or no products may fulfill the Advanced Tier's standards at the time it is created and those that exist may not be appropriate for all applications, it lays the groundwork for future programs, provides a longer-term focus and shared performance target for manufacturers, and provides recognition for the first manufacturers to develop products that achieve new heights of efficiency and performance.

economical consumer-authorized third-party access to the functionalities provided for in sections D, F and G.

CEE requires that a product enables economical and direct, on-premises, open standards interconnection. Manufacturers may also choose to provide additional means to connect, including proprietary architecture and protocols.

The product must continue to comply with the applicable product safety standards—the addition of the functionality described below shall not override existing safety protections and functions.

B. Communications

Open Standards—Communication with entities outside the Connected Clothes Washer System that enables connected functionality (sections D, F and G) must use, for all communication layers, at least one of the standards:

- Included in the Smart Grid Interoperability Panel (SGIP) Catalog of Standards
- Included in the NIST Smart Grid framework Tables 4.1 and 4.2
- Adopted by the American National Standards Institute (ANSI) or another well-established international standards organization such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE) or Internet Engineering Task Force (IETF)

Communications Hardware Architecture—Communication with entities outside the Connected Clothes Washer System that enables connected functionality described in sections D through G shall be enabled by either option a, or the combination of option b with options c or d, according to the manufacturer's preference:

- a) Open standards communication port on the appliance combined with open standards communications module
- b) Open standards communication within the physical premises of the home
- c) Built-in communication technology employing a manufacturer maintained cloud connection
- d) Manufacturer-specific external communication module(s) or device(s)

C. Open Access

To enable interconnection with the product, in addition to section B1 that requires open standards, an interface specification, application programming interface (API) or similar documentation shall be made available to interested parties that at a minimum allows transmission, reception, and interpretation of the following information:

- Energy consumption reporting specified in section D that must include accuracy, units, and measurement interval
- Operational status, user settings, and messages specified in section F if transmitted via a communication link
- Demand response specified in section G

D. Energy Consumption Reporting

In order to enable simple, actionable energy use feedback to consumers and consumer authorized energy use reporting to third parties, the product shall be capable of transmitting energy consumption data via a communication link to energy management systems and other consumer authorized devices, services, or applications. These data shall represent the product's interval energy consumption. It is recommended that data are reported in watt-hours for intervals of 15 minutes or less, however, representative data may also be reported in alternate units and intervals as specified in the product manufacturer's interface specification or API detailed in section C.

The product may provide additional types of energy use feedback, such as energy use feedback on the product itself, or energy use associated with the previous cycle. Product feedback, if provided, may be in units and format chosen by the manufacturer, for example, \$/month.

E. Remote Management

The product shall be capable of receiving and responding to consumer authorized remote requests, not including third-party remote management which may be made available solely at the discretion of the manufacturer, via a communication link, similar to consumer controllable functions on the product. The product is not required to respond to remote requests that would compromise essential performance or product safety as determined by the product manufacturer.

F. Operational Status, User Settings, and Messages

The product shall be capable of providing the following information to energy management systems and other consumer authorized devices, services, or applications via a communication link:

- o Operational and demand response status, for example, off or standby, cycle in process, delay appliance load, temporary appliance load reduction.

The product shall be capable of providing the following information on the product to energy management systems and other consumer authorized devices, services, or applications via a communication link:

- o At least two types of messages relevant to the energy consumption of the product. For example, messages for clothes washers might address a performance issue or report energy consumption that is outside the product's normal range.

G. Demand Response

The product shall have the capability to receive, interpret, and act upon consumer-authorized signals by automatically adjusting its operation depending on both signal contents and settings from consumers. At a minimum, the product shall be capable of providing the following for all cycle and setting combinations:

1. Delay Appliance Load Capability: The capability of the product to respond to a signal in accordance with consumer settings, except as permitted below, by delaying the start of an operating cycle beyond the delay period.
 - a. Default settings—The product shall ship with default settings that enable a response for at least four hours.
 - b. Consumer override—The consumer shall be able to override the product's Delay Appliance Load response at any time after the requesting signal has been received. If the consumer elects to override, the product is not required to respond to subsequent demand response signals requesting a response in the current operational cycle. However, responses in subsequent operational cycles shall not be automatically overridden.
 - c. The product shall be able to provide at least one Delay Appliance Load response per consumer initiated operating cycle.
2. Temporary Appliance Load Reduction Capability: The capability of the product to respond to a signal by providing load reduction for a short time period, typically 10 minutes. Upon receipt of signal and in accordance with consumer settings, except as permitted below, the product shall restrict its average power draw during the load reduction period to no more than 50 watts.
 - a. Default settings—The product shall ship with default settings that enable a response period of at least 10 minutes.

- b. The product is not required to provide a response if the consumer selected wash cycle, as indicated in the product user documentation or on the product itself, is explicitly designed or primarily intended for:
 - o Sanitization, such as those in cycles compliance with NSF Protocol P172 “Sanitization Performance of Residential and Commercial, Family-Sized Clothes Washers,” or
 - o Allergen reduction, such as those cycles in compliance with NSF Protocol P351 “Allergen Reduction Performance of Residential and Commercial, Family-Sized Clothes Washers,” or
 - o Laundering of handwash wool articles, such as those cycles in compliance with Woolmark Blue (formerly Gold) or Woolmark Green (formerly Platinum)
- c. Consumer override—The consumer shall be able to override the product's Temporary Appliance Load Reduction response at any time after the requesting signal has been received. If the consumer elects to override, the product is not required to respond to subsequent DR signals requesting a response in the current operational cycle.
- d. The product shall be able to provide at least one Temporary Appliance Load Reduction response per consumer initiated operating cycle.

H. Information to Consumers

If additional modules, devices, services, or infrastructure are part of the configuration required to activate the product's communications capabilities, prominent labels or other forms of consumer notifications with instructions shall be displayed at the point of purchase and in the product literature. These shall provide specific information on what consumers must do to activate these capabilities, for example, “This product has Wi-Fi capability and requires Internet connectivity and a wireless router to enable interconnection with an Energy Management System or with other external devices, systems, or applications.”

© 2018 Consortium for Energy Efficiency, Inc. All rights reserved.

Terms of Usage

The above specifications may not be reproduced, disseminated, published or transferred in any form or by any means, except with the prior written permission of CEE or as specifically provided below.

CEE grants its Members and Participants permission to use the material for their own use in implementing or administering the specific CEE Initiative to which the material relates on the understanding that: (a) CEE's copyright notice will appear on all copies; (b) no modifications to the material will be made; (c) you will not claim ownership or rights in the material; (d) the material will not be published, reproduced, transmitted, stored, sold, or distributed, including in any advertisement or commercial publication; (e) the materials will not be copied or posted on any Internet site, server or computer network without CEE's express consent; and (f) the foregoing limitations have been communicated to all persons who obtain access to or use of the materials as the result of your access and use thereof.

CEE does not make, sell or distribute any products or services, other than CEE membership services, and CEE does not play any implementation role in the programs offered and operated by or on behalf of its members. The accuracy of member program information and of manufacturer product information discussed or compiled in this site is the sole responsibility of the organization furnishing such information to CEE, and CEE is not responsible for any inaccuracies or misrepresentations which may appear therein.

CEE does not itself test or cause to be tested any equipment or technology for merchantability, fitness for purpose, product safety, or energy efficiency and makes no claim with respect thereto. The references and descriptions of products or services within the site are provided “As Is” without any warranty of any kind, express or implied. CEE is not liable for any damages, including consequential damages, of any kind which may result to the user from the use of the site, or any of the product or services described therein.



CEE SUPER EFFICIENT HOME APPLIANCES INITIATIVE

High efficiency specifications for RESIDENTIAL CLOTHES WASHERS

(Terms of Usage below)

Effective March 7, 2015

Efficiency Level	Integrated Modified Energy Factor	Integrated Water Factor
Federal Standard Top Load	1.29	8.4
Federal Standard Front Load	1.84	4.7
ENERGY STAR® Top Load	2.06	4.3
ENERGY STAR® Front Load	2.38	3.7
CEE Tier 1	2.38	3.7
CEE Tier 2	2.74	3.2
CEE Tier 3	2.92	3.2

© 2015 Consortium for Energy Efficiency, Inc. All rights reserved.

Terms of Usage

The above specifications may not be reproduced, disseminated, published or transferred in any form or by any means, except with the prior written permission of CEE or as specifically provided below.

CEE grants its Members and Participants permission to use the material for their own use in implementing or administering the specific CEE Initiative to which the material relates on the understanding that: (a) CEE's copyright notice will appear on all copies; (b) no modifications to the material will be made; (c) you will not claim ownership or rights in the material; (d) the material will not be published, reproduced, transmitted, stored, sold, or distributed for profit, including in any advertisement or commercial publication; (e) the materials will not be copied or posted on any Internet site, server or computer network without CEE's express consent; and (f) the foregoing limitations have been communicated to all persons who obtain access to or use of the materials as the result of your access and use thereof.

CEE does not make, sell or distribute any products or services, other than CEE membership services, and CEE does not play any implementation role in the programs offered and operated by or on behalf of its members. The accuracy of member program information and of manufacturer product information discussed or compiled in this site is the sole responsibility of the organization furnishing such information to CEE, and CEE is not responsible for any inaccuracies or misrepresentations which may appear therein.

CEE does not itself test or cause to be tested any equipment or technology for merchantability, fitness for purpose, product safety, or energy efficiency and makes no claim with respect thereto. The references and descriptions of products or services within the site are provided "As Is" without any warranty of any kind, express or implied. CEE is not liable for any damages, including consequential damages, of any kind which may result to the user from the use of the site, or any of the product or services described therein.

Proposed Rebate Changes

11/30/2015

1 acre foot = 325,850 gallons - 1 acre foot value = \$15,000

Residential Use (single-family, multi-family, mixed use, and churches)

Rebate	Rebate \$	Water Saved (gpy)	Water Saved (afy)	Water Saved (gpd)
^{1a.} Tier 2 or 3 High-Efficiency Clothes Washer	285	6,224	0.0191	17.053
^{1b.} Energy Star High-Efficiency Clothes Washer	236	5,111	0.0157	14.002
^{2.} 1.28 High-Efficiency Toilet (HET)	57	1,226	0.0038	3.359
^{2a.} 0.88 High-Efficiency Toilet (HET)	128	2,759	0.0085	7.559
^{3.} Rain Barrel (50 - 99 gallon)	12	250	0.0008	0.685
^{3.} Rain Barrel (100 - 199 gallon)	25	500	0.0015	1.370
^{3.} Rain Barrel (200 - 499 gallon)	50	1,000	0.0031	2.740
^{7.} Water Harvesting System (500 + gallon)	Varies			

^{1a.} Water saving based on **integrated** water factor of **3.2** for HEWM and **9.5** for conventional WM, average **6.3** loads per week, and **19** gallons saved per load with 3 ft³ capacity

^{1b.} Water saving based on **integrated** water factor of **4.3** for **Energy Star** and **9.5** for **conventional** WM, average **6.3** loads per week, and **15.6** gallons saved per load with 3 ft³ capacity

^{2.} Water saving based on replacing 1.6 gpf, **5.0** flushes per person per day, average Santa Fe household **2.1** persons, flushes per year **3,833**, saving per flush **0.32** gallons

^{2a.} Water saving based on replacing 1.6 gpf, **5.0** flushes per person per day, average Santa Fe household **2.1** persons, flushes per year **3,833**, saving per flush **0.72** gallons

^{3.} Water saving based on average 5 rain events per growing season

^{7.} \$0.25 per gallon of capacity (cistern size), plus applicable bonuses.

Bonus 1 \$0.125 per gallon for maximizing storage capacity to accommodate total roof collection area during a 2" rainfall (total gallons = Roof SF x 2 x 0.623)

Bonus 2 of \$0.25 per gallon for plumbing to use rainwater for toilets, clothes washers, urinals, per city code (2012 UPC as adopted) in addition to maximizing capacity (bonus 1) for a possible total rebate of \$0.625 per gallon.

Commercial Use (restaurants, offices, retail, and schools)

^{4a.} Flushometer Valve HET	400	8,760	0.0269	24.000
^{4b.} Tank Type HET	200	4,380	0.0135	12.000
^{4c.} Hotel/Motel HET	25	560	0.0017	1.534
^{5.} Water Free Urinal	630	13,688	0.0420	37.501
^{5a.} Pint Flush Urinal	550	11,977	0.0368	32.814
^{6.} Commercial Process Efficiency (CPE)	Varies			
^{7.} Water Harvesting System (500 + gallon)	Varies			

^{4a.} Water saving based on replacing 1.6 gpf, 75 flushes per day, flushes per year 27,375,

Appendix A

saving per flush 0.32 gallons

- ^{4b} Water saving based on replacing 1.6 gpf, 37.5 flushes per day, flushes per year 13,688
saving per flush 0.32 gallons

- ^{4c} Water saving based on replacing 1.6 gpf, 4.8 flushes per day average
flushes per year 1,752, saving per flush 0.32 gallons

- ⁵ Water saving based on replacing 1.0 gpf, flushes per day 37.5, flushes per year 13,688,
savings per flush 1.0 gallons

- ^{5a} Water saving based on replacing 1.0 gpf, flushes per day 37.5, flushes per year 13,688,
savings per flush 0.875 gallons

- ⁶ Water saving based on whichever is less, water saved @ \$15,000 per acre foot, or
50% of installed cost

- ⁷ \$0.25 per gallon of capacity (cistern size), plus applicable bonuses.

Bonus 1 \$0.125 per gallon for maximizing storage capacity to accommodate total roof
collection area during a 2" rainfall (total gallons = Roof SF x 2 x 0.623)

Bonus 2 of \$0.25 per gallon for plumbing to use rainwater for toilets, clothes washers, urinals,
per city code (2012 UPC as adopted) in addition to maximizing capacity
(bonus 1) for a possible total rebate of \$0.625 per gallon.

Clothes Washers Key Product Criteria

The ENERGY STAR criteria for clothes washers was changed on February 5, 2018 and is as follows:

Product Type	Current Criteria Levels (as of February 5, 2018)
ENERGY STAR Residential Clothes Washers, Front-loading (> 2.5 cu-ft)	IMEF \geq 2.76 IWF \leq 3.2
ENERGY STAR Residential Clothes Washers, Top-loading (> 2.5 cu-ft)	IMEF \geq 2.06 IWF \leq 4.3
ENERGY STAR Residential Clothes Washers (\leq 2.5 cu-ft)	IMEF \geq 2.07 IWF \leq 4.2
ENERGY STAR Commercial Clothes Washers, Front-loading	MEF _{J2} \geq 2.20 IWF \leq 4.0

ENERGY STAR Qualified Clothes Washer Eligibility

Only front and top-loading clothes washers with capacities greater than 1.6 ft³ and less than 8.0 ft³; and are not defined as Combination All-In One Washer-Dryers, Residential Clothes Washers with Heated Drying Functionality, or top-loading commercial clothes washers are eligible for ENERGY STAR Certification.

Energy Performance Metrics

Modified Energy Factor, MEF_{J2}, is the energy performance metric for ENERGY STAR certified commercial clothes washers as of February 5, 2018.

MEF_{J2} is the quotient of the capacity of the clothes container, C, divided by the total clothes washer energy consumption per cycle, with such energy consumption expressed as the sum of the machine electrical energy consumption, M, the hot water energy consumption, E, and the energy required for removal of the remaining moisture in the wash load, D. The higher the value, the more efficient the clothes washer is. The equation is shown below and the metric units are ft³/kWh/cycle:

$$\text{MEF}_{J2} = \frac{C}{M + E + D}$$

Integrated Modified Energy Factor, IMEF, is the energy performance metric for ENERGY STAR certified residential clothes washers as of March 7, 2015.

IMEF is the quotient of the capacity of the clothes container, C, divided by the total clothes washer energy consumption per cycle, with such energy consumption expressed as the sum of the machine electrical energy consumption, M, the hot water energy consumption, E, the energy required for removal of the remaining moisture in the wash load, D and the combined low-power mode energy consumption, L. The higher the value, the more efficient the clothes washer is. The equation is shown below and the metric units are ft³/kWh/cycle:

$$\text{IMEF} = \frac{C}{M + E + D + L}$$

Integrated Water Factor, IWF, is the water performance metric for ENERGY STAR certified residential clothes washers as of March 7, 2015 and ENERGY STAR certified commercial clothes washers as of February 5, 2018. It allows the comparison of clothes washer water consumption independent of clothes washer capacity. Manufacturers must submit their water consumption factors with their ENERGY STAR certified residential clothes washers.

IWF is the quotient of the total weighted per-cycle water consumption for all wash cycles, Q_A , divided by the capacity of the clothes washer, C . The lower the value, the more water efficient the clothes washer is. The equation is shown below:

$$\text{IWF} = \frac{Q_A}{C}$$

The federal EnergyGuide label on residential clothes washers shows annual energy consumption and cost. These figures use the IMEF/MEF_{J2}, average cycles per year, and the average cost of energy to make the energy and cost estimates. The Integrated Modified Energy Factor, or Integrated Water Factor may not appear on the EnergyGuide label.

City of Santa Fe, New Mexico

memo

Date: February 27, 2018

To: Shannon Jones, Public Utilities Department Director

Via: Christine Y. Chavez, Water Conservation Manager
Rick Carpenter, Water Division Director, Water Resources & Conservation Manager

From: Caryn Grosse, Water Conservation Specialist Sr.

RE: Commercial Toilet Rebates for Hotel/Motel Guest Rooms

Background:

The current rebate values for Hotel/Motel guest room toilets are based on an assumption of 4.8 flushes per room per day, which has been used as the basis of the rebate value since sometime in 2010 (see attached spreadsheets dated 08/10/2010 and 11/30/2015.) Currently, we offer rebates of \$25 for 1.28 gpf, and \$50 for 1.0 gpf or less.

As the Water Conservation Office made inspections of CII properties, including hotels and motels, to confirm compliance/replacement of high-flush toilets with 1.6 gpf toilets during the years 2002-2007, it is unlikely that there are many toilets with flush volumes greater than 1.6 gpf remaining in Santa Fe.

Current Rebates:

Flushes per day	GPF	water use per year (gal)	water savings (gal)	water savings (AFY)	value of water saves (\$15,000 AF)	Current Rebate Amounts
4.8	1.6	2803.2				
4.8	1.28	2242.56	560.64	0.001720546	\$25.81	\$25.00
4.8	1	1752	1051.2	0.003226024	\$48.39	\$50.00
4.8	0.88	1541.76	1261.44	0.003871229	\$58.07	\$50.00

After searching for industry values, it is clear that there is a range of variability in toilet usage in hotels, depending on the type of hotel, type of guest(s), area attractions, and other factors. The AWE Hotels and Motels Introduction states, "It is reasonable to assume an average of 6 to 7 flushes per guest, but it is not reasonable to assume all flushes occur inside the guestroom. A guest at a small motel will spend most of the day away from the motel; resulting in only 2 or 3 flushes/day/guest inside the guestroom. Guests of a resort type hotel will often spend a larger portion of the day at the hotel; resulting in 4 to 6 flushes/day/guest. Hotels catering to business travelers will average only one guest per room; while resort hotels often attract couples and families averaging 2 to 4 guests per room."

Other studies (see Resources, below) assign various usages ranging from 7 flushes per room to 4.8 flushes per guest. In addition, two of the studies noted that housekeeping staff tend to flush guest room toilets as many as 3 times per room (in addition to cleaning the fixture, flushing can be used as a convenient means for housekeeping to dispose of various trash and other materials.)

Comparison with Other Utilities:

An examination was made of the toilet rebates offered by other utilities for Commercial, Institutional and Industrial (CII) customers. The majority of rebates ranged from \$40-50 dollars per toilet; those offering higher rebates require proof that the existing toilets have much higher flush volumes (typically 3.5 gpf). Pre-inspection and/or pre-approval are frequently required to confirm the high flush volumes before beginning the replacement process.

agency	state	rebate type	rebate amount	additional requirements
Bernalillo County	NM	retrofit program-FREE toilets, max 2		Must participate in audit
San Diego County Water Authority	CA	HET 1.1 gpf or less	\$40	
Polk Regional Water Cooperative	FL	Replace 3.5 gpf or greater with 1.28 gpf or less	\$50	inspection required
SoCal Metropolitan Water District	CA	HET 1.1 gpf or less	\$40	
Medford Water Commission	OR	HET 1.28 gpf or less	\$40-85	inspection required, \$85 only if old toilet is 2.5 gpf or greater
Marshall Municipal Utilities	MN	HET 1.28 gpf or less	\$50	
Marin Municipal Water District	CA	HET 1.28 gpf or less	\$150	for replacement of toilets manufactured before 2001
College Station	TX	retrofit pre-1996 with HET 1.28 gpf or less	50% of wholesale cost	pre-approval required
Tucson Water	AZ	Replace 3.5 gpf or greater with 1.28 gpf or less	\$75	pre-1994 building
Washington County Water Conservancy District	UT	Replace pre-2000 toilet with 1.28 gpf or less	\$75	pre-approval required
East Bay Municipal District	CA	HET 1.28 gpf or less	\$50	
San Francisco Water Power Sewer	CA	Retrofit pre-1994 toilet with 1.28 gpf or less		pre-inspection required
Greeley	CO	Replace 3.0 gpf or greater with 0.8 gpf	\$50	Pre-approval required if total exceeds \$1,000
Sonoma County	CA	HET 1.28 gpf or less	cost up to \$300	built before 1992; more than 1.6 gpf
Miami-Dade Water	FL	built pre-1996, replaced with tank or flushometer 1.28 gpf or less	\$50	max 75 per year (lodging)
City of Gallup	NM	Replace pre-1994 toilet with 1.28 gpf or less	\$75	must be certified by lic. plumber, max 20 toilets

Recommendations:

If we make the assumption that the bulk of Santa Fe stays are for the purpose of vacation rather than business, and that the City tends to attract more couples than families, that most guests are out to see the sights for most of the day, and that housekeeping staff members are more water conscious than in other locals, it might be reasonable to assume an average of 10 flushes per room per day instead of the current 4.8.

We may want to consider adding (or replacing 1.0 gpf with) 0.88 gpf toilets. The revised calculations for rebate values and water savings are shown in the table on the next page:

Revised Calculations:

Flushes per day	GPF	water use per year (gal)	water savings (gal)	water savings (AFY)	value of water saves (\$15,000 AF)	Proposed Rebate Amounts
10	1.6	5840				
10	1.28	4672	1168	0.003584471	\$53.77	\$54.00
10	1	3650	2190	0.006720884	\$100.81	\$100.00
10	0.88	3212	2628	0.008065061	\$120.98	\$120.00

As the proposed rebate amounts are very similar to the Residential HET rebate, we could opt to make the Hotel/Motel (guestroom) HET rebates match the residential rebates (which are based on an assumption of 2.1 occupants per household, 5 flushes per person per day, resulting in rebates of \$57 for 1.28 gpf, \$128 for 0.88 gpf or less.) Matching the hotel/motel toilet rebates to the residential rebate amounts for toilets of the same flush volumes would greatly simplify processing of rebates, as well as help to reduce customer confusion and delays which result when customers use the wrong rebate form.

In addition, we may want to consider adding a note to the Commercial rebate application form which clearly indicates that these rebate amounts apply for guestroom toilets only, and that toilets in common areas are eligible for the other Commercial toilet rebates (\$200 for tank type, \$400 for flushometer valve) due to their higher daily usage.

Resources:

Water Savings Analysis for St. Regis Resort, Water Management, Inc,

<http://www.coloradowaterwise.org/Resources/Documents/BP%20Project/St%20%20Regis%20Resort%20report.pdf>

Hotels and Motels Introduction, Alliance for Water Efficiency,

http://www.allianceforwaterefficiency.org/hotels_and_motels.aspx

Hotel Water Conservation: A Seattle Demonstration, Prepared for Seattle Public Utilities by O'Neill & Siegelbaum and the RICE Group,

https://www.seattle.gov/util/cs/groups/public/@spu/@water/documents/webcontent/HOTELWATE_200407081359093.pdf

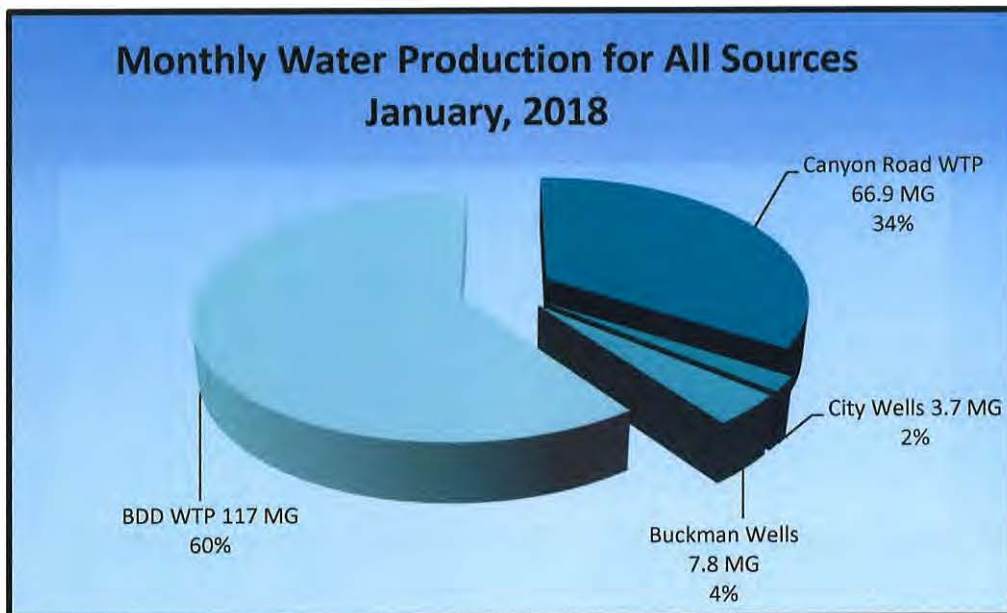
Evaluation of Water Use Reduction Achieved through Hotel Guest Room Toilet Fixture Replacements: Parc 55 Union Square Hotel, Koeller and Company & Veritec Consulting Inc.,

<https://www.us.kohler.com/webassets/kpna/pressreleases/2012/Parc-55-Hotel-Fixture-Replacements-Sept-2009.pdf>

Hidden Oasis: Water Conservation and Efficiency in Las Vegas, Appendix E, Pacific Institute/Western Resource Advocates, https://www.pacinst.org/wp-content/uploads/2015/03/LasVegas_Appendix-E.pdf

**City of Santa Fe, Source of Supply Section
Water Production and Environment Office Update
March 7, 2018**

Water Production Update for January, 2018



Total Production of System

Sum: 152.9 MG million gallons (MG) for 31 days

Daily Average Production (to meet demand/maintain storage): 6.30 Million Gallons per Day (MGD).

Current (02/25/2018) Reservoir Storage Levels:

McClure: 35.6% or 388.11 MG

Nichols: 47.0% or 101.3 MG

Combined: 37.5% or 489.40 MG

Santa Fe River Flow (02/25/2018):

Below Nichols (Living River Flows): 0.17 cubic feet per second (cfs) or 0.11 MGD

Streamflow at Gage below Nichols: 0.17 cfs or 0.11 MGD (Actual including Living River Flows)

Above McClure (Reservoir Inflow): 1.72 cfs or 1.11 MGD

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

The City met with NMED Petroleum Storage Tank Bureau (PSTB) on December 12th for review and discussion of a continued and revised work plan for investigation of the Baca Street Well and former SF Generating Station site. A new Investigation Work Plan and Cost Estimate for Additional Site Investigation and Groundwater Monitoring Activities was also submitted by INTERA (PNM's chosen contractor under Petroleum Corrective Action Fund (CAF) Program) on December 19th, containing many of the revisions requested by the City. This work plan has now been fully approved and funded by the NMED under the CAF. The City's environmental

staff is working with the NMED-PSTB and INTERA to provide access to the site for water level monitoring, sampling, and the drilling of new wells. Work at the site is expected to be initiated in early March.

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 the New Mexico Environment Department (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 new 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. Based on the information gathered during this Site assessment, the report recommends the following future site assessment/site characterization to address the deficiencies of the City's original Phase I Abatement Plan, as previously noted by NMED:

1. The installation of two (2) dual purpose groundwater/soil vapor monitoring wells downgradient at the Site to adequately define potential impacts to soil vapor and groundwater.
2. The report also recommends installing a soil vapor monitoring well (SV-04) adjacent with the existing groundwater monitoring well Ortiz Park-1.
3. If groundwater contamination is consistently identified in proposed monitoring wells Ortiz Park-2 and Ortiz Park-3, then an additional groundwater monitoring well (Ortiz Park-4) may be installed.

The City is awaiting official NMED approval of the work plan, as amended.

Los Alamos National Laboratory Sitewide Monitoring Program

City staff is still waiting for the analytical results for samples taken by LANL and the NMED DOE Oversight Bureau at Buckman Well(s) 1, 6 and 8 on December 7, 2017. Samples were taken at three City wells closest to the Rio Grande for High Explosives, Volatile Organic Compounds, Sem-Volatile Organic Compounds, PCBs, Radionuclides, Tritium, Perchlorate, Hexavalent Chromium, Metals, and general inorganic chemicals by Los Alamos National Laboratory and the NMED Oversight Bureau in early December. Sampling results will be provided to the PUC as they become available. The City's Environmental Compliance Office is also working with the NMED to trend and assess all results obtained from this wellfield sampling in the last 3-5 years.

Public interest regarding this sampling program has been heightened by recent media coverage of the Los Alamos Groundwater Chromium Plume. The Water Division will be proposing to sample other wells within the Buckman Wellfield as part of its annual budget. It is hoped that some additional funding might also be obtained through agreements with Los Alamos National Laboratory.

Drought/Monsoon, Storage, and ESA Update

Drought/Monsoon, Storage, and ESA Update

NOAA has recently (02/12/18) updated ENSO (El Nino/La Niña) status to: **“A transition from La Niña to ENSO-neutral is most likely during the Northern Hemisphere spring (~55% chance of ENSO-neutral during the March-May season.”** Heron, Abiquiu, and El Vado reservoir levels on the Chama River are no longer appreciably rising. Local Upper Santa Fe River reservoir storage volume is slowly decreasing, but that is normal for this time of year (about 37% full). Recent 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 2,990 AF. 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). Updates to this condition will be made as needed.

Most current City of Santa Fe SJCP Reservoir Storage:

Heron:

5,230 AF. Year-2017 deliveries were 100% of annual total.
2,290 AF. Year 2018 deliveries through January.

El Vado:

0 AF.

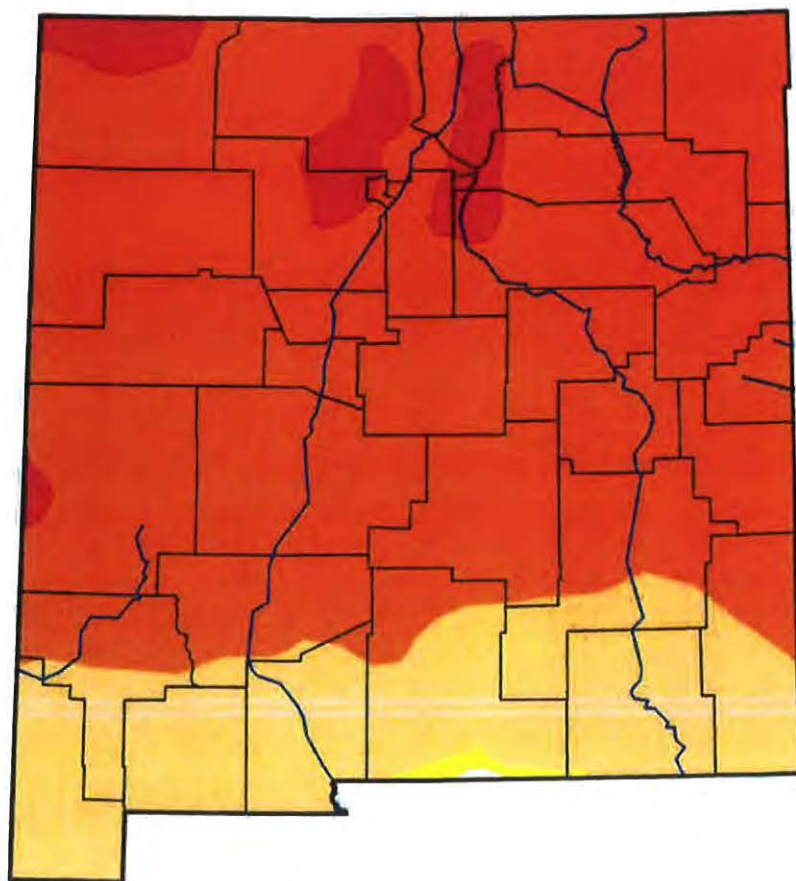
Abiquiu:

10,443 AF. SJCP carry-over from previous years plus 2017 deliveries. No time limit to vacate due to storage agreement with ABCWUA

TOTAL:

18,663 AF

U.S. Drought Monitor New Mexico



February 20, 2018
(Released Thursday, Feb. 22, 2018)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.08	99.92	99.51	77.99	5.23	0.00
Last Week 02-13-2018	0.00	100.00	99.65	80.09	3.96	0.00
3 Months Ago 11-21-2017	78.85	21.15	4.64	0.00	0.00	0.00
Start of Calendar Year 01-02-2018	7.01	92.99	45.97	4.76	0.00	0.00
Start of Water Year 09-26-2017	85.16	14.84	0.00	0.00	0.00	0.00
One Year Ago 02-21-2017	86.71	13.29	2.49	0.00	0.00	0.00

Intensity:

D0 Abnormally Dry
 D1 Moderate Drought
 D2 Severe Drought
 D3 Extreme Drought
 D4 Exceptional Drought

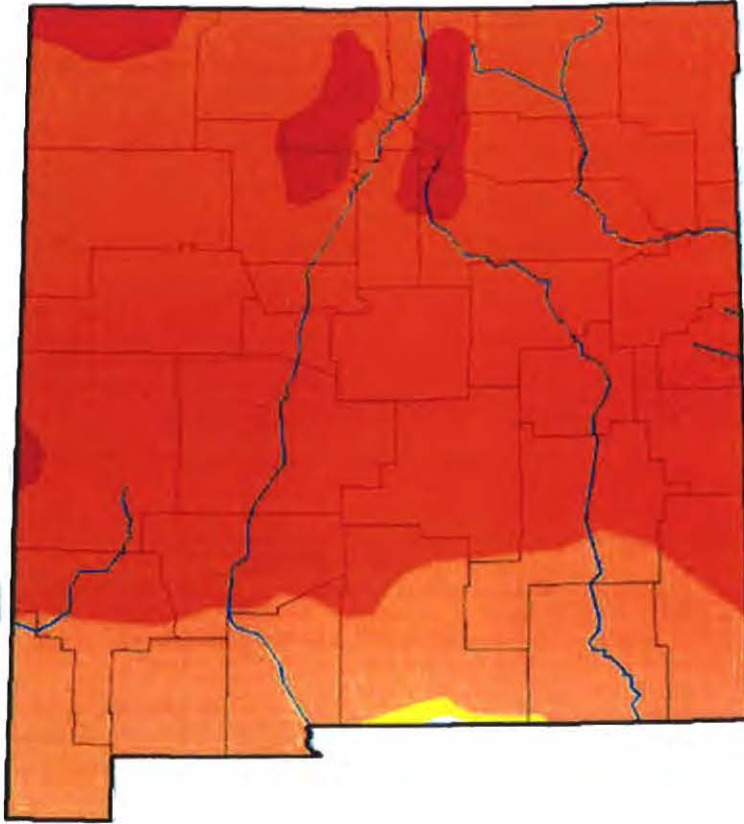
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Deborah Bathke
National Drought Mitigation Center



<http://droughtmonitor.unl.edu/>



Drought Conditions (Percent Area)

Week	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current 2/20/2018	0.08%	99.92%	99.51%	77.99%	5.23%	0.00%
Last Week 2/13/2018	0.00%	100.00%	99.65%	80.09%	3.96%	0.00%
Three Months Ago 11/21/2017	78.85%	21.15%	4.64%	0.00%	0.00%	0.00%
Start of Calendar Year 1/02/2018	7.01%	92.99%	45.97%	4.76%	0.00%	0.00%
One Year Ago 2/21/2017	86.71%	13.29%	2.49%	0.00%	0.00%	0.00%

Drought Intensities

☐ None: No Drought
☐ D0: Abnormally Dry
☐ D1: Moderate Drought

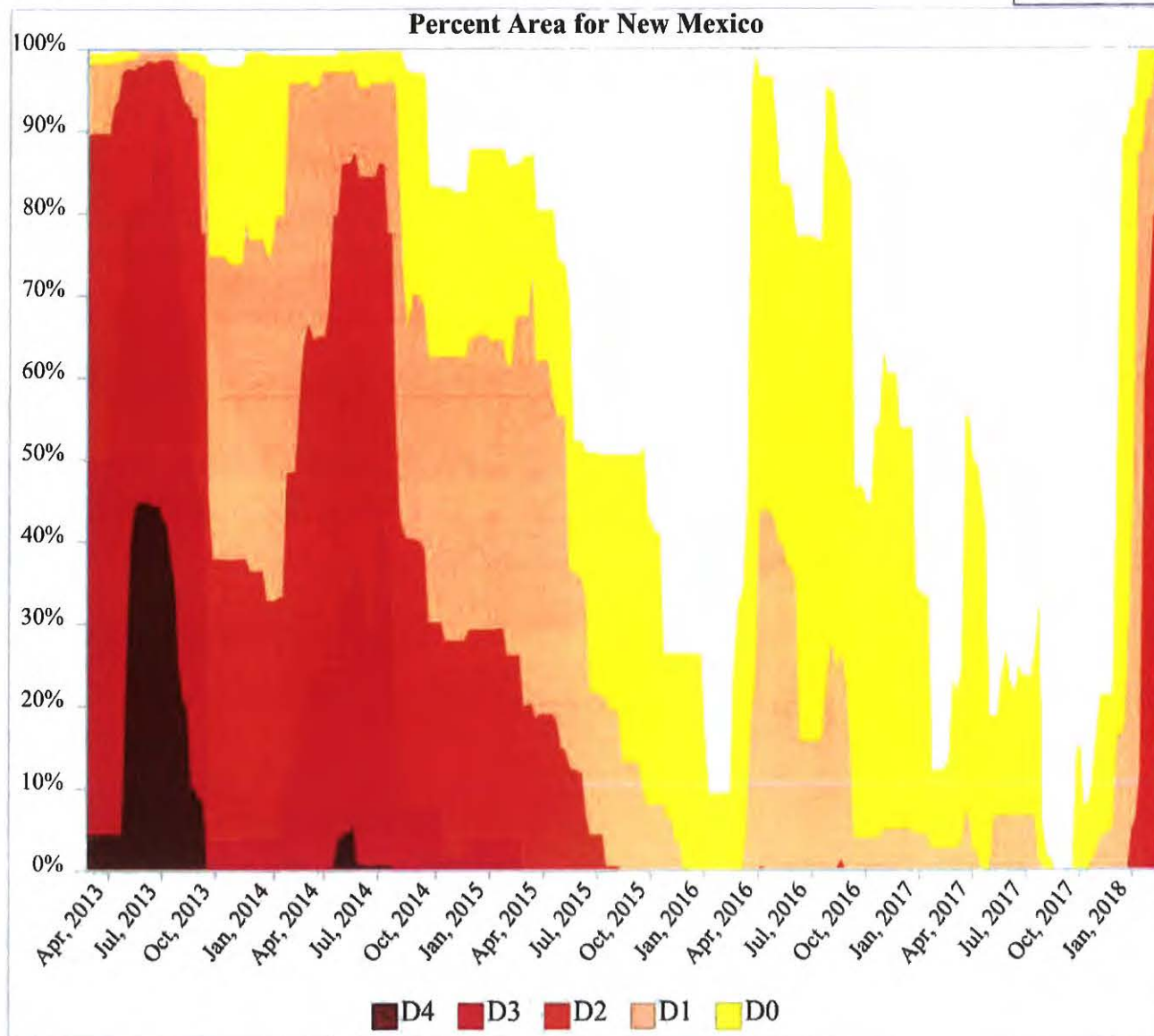
☐ D2: Severe Drought
☐ D3: Extreme Drought
☐ D4: Exceptional Drought



<http://droughtmonitor.unl.edu/>

[Download Image](#), [Download as JSON](#), [Download as XML](#)

[Show Data](#)



[Download Image](#)

[Show Data](#)

