



# Agenda

CITY CLERK'S OFFICE

DATE 12/20/17 TIME 3:40

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## **PUBLIC UTILITIES COMMITTEE MEETING**

**WEDNESDAY, JANUARY 3, 2018**

**City Hall – City Council Chambers**

**200 Lincoln**

**Regular Meeting – 5:00p.m.**

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF CONSENT AGENDA
5. APPROVAL OF MINUTES FROM THE DECEMBER 6, 2017 PUC MEETING

### **INFORMATIONAL ITEMS**

6. Update on City Well Field Optimization Study findings and path forward (5 Year Strategic Plan). (Bill Schneider)

### **CONSENT – ACTION CALENDAR**

7. Monthly Update of Capital Projects. (Shannon Jones)
8. Update on Current Water Supply Status. (Alex Puglisi)
9. Water Conservation Program Scoreboard Update for December 2017. (Christine Chavez)
10. Wastewater Management Division Monthly Update. (Shannon Jones)
11. Environmental Services Division Monthly Update. (Shirlene Sitton)
12. Request for approval of Amendment No. 1 to the original PSA Item #17-0676 with Facility Solutions Group, Inc. for additional lighting fixtures at the Source of Supply Canyon Road Water Treatment Plant for the amount of \$3,640.00 exclusive of NMGR. (John Alejandro)

Public Utilities Committee – 1/3/2018

Finance Committee – 1/22/2018  
City Council – 1/31/2018

13. Request for approval to purchase one (1) Dump Truck from Summit Truck Group in the amount of \$137,606. (Kenneth Espinoza)

Public Utilities Committee – 1/3/2018  
Finance Committee – 1/22/2018  
City Council – 1/31/2018

14. Request for approval of Resolution No. 2018-\_\_\_\_\_. A resolution to provide incentives for voluntary Gray Water Harvesting in the City of Santa Fe, New Mexico by means of an existing rebate program. (Christine Chavez) (Councilor Ives)

Public Utilities Committee – 1/3/2018  
Water Conservation Committee – 1/9/2018  
Finance Committee – 1/15/2018  
City Council – 1/31/2018

15. Request for approval of Resolution No. 2018-\_\_\_\_\_. A resolution in support of a campaign to focus on Voluntary Water Conservation by restaurants in the City of Santa Fe, New Mexico. (Christine Chavez) (Councilor Ives)

Public Utilities Committee – 1/3/2018  
Water Conservation Committee – 1/9/2018  
Finance Committee – 1/15/2018  
City Council – 1/31/2018

### **EXECUTIVE SESSION**

In accordance with the New Mexico Open Meetings Act NMSA 1978, §10-15-1(H)(7), discussion regarding settlement with N. Harris Computer Corporation/Advance Utility Billing Software. (Marcos Martinez)

### **End of Executive Session**

**MATTERS FROM THE PUBLIC**

**MATTERS FROM THE CITY ATTORNEY**

**MATTERS FROM STAFF**

**MATTERS FROM THE COMMITTEE**

**NEXT MEETING: Wednesday, February 7, 2018 @ 5:00pm**

**ADJOURN**

**PERSONS WITH DISABILITIES IN NEED OF ACCOMODATIONS, CONTACT THE CITY CLERK'S OFFICE AT 505-955-6520, FIVE (5) WORKING DAYS PRIOR TO THE MEETING DATE.**

**SUMMARY INDEX**  
**PUBLIC UTILITIES COMMITTEE**  
**January 3, 2018**

<b>ITEM</b>	<b>ACTION TAKEN</b>	<b>PAGE(S)</b>
1. CALL TO ORDER		
2. ROLL CALL	Quorum Present	1
3. APPROVAL OF AGENDA	Approved as presented	1
4. APPROVAL OF CONSENT AGENDA	Approved as amended	2
5. APPROVAL OF MINUTES - December 6, 2017	Approved as presented	2
<b>INFORMATIONAL ITEMS</b>		
6. City Well Field Optimization Study Update	Presentation/Discussion	2-4
<b>CONSENT ACTION CALENDAR</b>		
8. Current Water Supply Status Update	Approved on Consent	4
10. Wastewater Management Division Update	Approved on Consent	4
12. PSA 1709676 Amendment No. 1 for added lighting at Canyon Road Water Treatment Plant	Approved on Consent	4
13. Dump Truck Purchase from Summit Truck Group	Approved on Consent	5
<b>CONSENT ACTION DISCUSSION</b>		
7. Capital Projects Monthly Update	Approved with discussion	5-6
9. Water Conservation Program Update	Approved with discussion	6
11. Environmental Services Division Update	Approved with discussion	7
14. Resolution for rebate incentives for Voluntary Gray Water Harvesting	Approved with discussion	7-8
15. Resolution to support Voluntary Water Conservation by restaurants in the City	Approved with discussion	8-9
<b>EXECUTIVE SESSION</b>	From 6:05 to 6:35	9-10
<b>MATTERS FROM THE PUBLIC</b>	None	10
<b>MATTERS FROM THE CITY ATTORNEY</b>	None	10
<b>MATTERS FROM STAFF</b>	None	10
<b>MATTERS FROM THE COMMITTEE</b>	None	10
<b>NEXT MEETING:</b>	Wednesday, February 7, 2018	10
<b>ADJOURNMENT</b>	Adjourned	11

**MINUTES OF THE**  
**CITY OF SANTA FÉ**  
**PUBLIC UTILITIES COMMITTEE**

January 3, 2018  
City Council Chambers  
5:00 p.m.

**1. CALL TO ORDER**

A regular meeting of the City of Santa Fé Public Utilities Committee was called to order by Councilor Christopher Rivera, Vice Chair, on this date at approximately 5:00 p.m. in the City Council Chambers, City Hall, 200 Lincoln Avenue, Santa Fé, New Mexico.

**2. ROLL CALL**

Roll call indicated the presence of a quorum as follows:

**Members Present:**

Councilor Chris Rivera, Chair  
Councilor Signe Lindell  
Councilor Renee Villarreal

**Members Absent:**

Councilor Ronald S. Trujillo, Excused  
Councilor Joseph M. Maestas, Excused

**Others Present:**

Shannon Jones, Wastewater Management Division  
Stephanie López, Public Utilities Department  
Alex Puglisi, Public Utilities Department  
Christine Chavez, Public Utilities Department  
Shirlene Sitton, Environmental Services Division  
Bill Schneider, Water Division  
Marcos Martínez, Assistant, City Attorney  
Renée Martinez, Deputy City Manager  
Elizabeth Martin, Stenographer

NOTE: All items in the Committee packet for all agenda items are incorporated herewith to these minutes by reference. The original Committee packet is on file in the Public Utilities Department.

**3. APPROVAL OF AGENDA**

**MOTION: Councilor Lindell moved to approve the agenda as published. Councilor Villarreal seconded the motion and it passed by unanimous voice vote.**

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

Councilor Lindell requested discussion on items 9,11,14 and 15.

Councilor Villarreal requested discussion on items 14 and 15.

Chair Rivera requested discussion on item 7.

**MOTION: Councilor Villarreal moved to approve the Consent Agenda as amended. Councilor Lindell seconded the motion and it passed by unanimous voice vote.**

#### **5. APPROVAL OF MINUTES**

##### **a. December 6, 2017**

**MOTION: Councilor Villarreal moved to approve the minutes of December 6, 2017 as presented. Councilor Lindell seconded the motion and it passed by unanimous voice vote.**

Chair Rivera thanked staff for all their work over the last year. He stated that he appreciates all of them and the fact that they are always ready and prepared for these committee meetings. He feels that this is one of the smoothest operating committees because of them. He is happy to show his appreciation for all the hard work throughout the year. Please pass these comments on to those who work for you and with you.

Councilor Lindell said she agrees.

#### **INFORMATIONAL ITEMS**

##### **6. Update on City Well Field Optimization Study Findings and Path Forward (Five Year Strategic Plan) (Bill Schneider)**

Mr. Schneider reviewed the presentation he put together and handed out. This presentation is herewith attached to these minutes as Exhibit "1".

Councilor Lindell asked why the Ferguson well replacement is first on the list.

Mr. Schneider said because the north west well is not fully permitted it made the most prudent sense to pursue a replacement well.

Councilor Lindell said the Agni Fria replacement is twice the capacity and quite a lot less money. Could you explain.

Mr. Schneider said the value there is Agua Fria is still producing pretty well despite its age. We did not

necessarily agree with the prioritization in the report and decided to leverage the need and to work in a sequence.

Councilor Lindell said Alto and Ferguson add up to the amount of Agni Fria. Who did the implement order on these.

Mr. Schneider said it was the recommendation of CDB Smith.

Councilor Villarreal asked the majority of implementation orders, do you agree with them.

Mr. Schneider said we have since re-ranked those.

Councilor Villarreal asked if the members could have a list showing the new rankings.

Mr. Schneider said he will provide that.

Councilor Villarreal said this is excellent. These are questions she has had for a long time. What is the difference between well fields and wells utilized for monitoring.

Mr. Schneider said a monitoring well has no pump and monitors the pressure in a particular area.

Councilor Villarreal asked how many monitoring wells do we have in the City.

Mr. Schneider said he can get that information for the Councilor. It far exceeds 50.

Councilor Villarreal asked regarding the locations of where these wells are now will they always stay in the same location and are they good locations in the present. This happened back in the 50s.

Mr. Martinez said because of the time in which the City obtained permits for these wells they will generally remain in this location because they have certain benefits to being permitted when they were. If we were to drill a new location the City would incur a lot of external costs in terms of obtaining water rights. These are grandfathered in.

Councilor Villarreal asked are they the right places. Do they make sense now.

Mr. Martinez said generally the water service is supported by gravity. It is not a problem getting water to the new locations. We have Canyon Road and Buckman as well. It makes some sense to leave them.

Mr. Schneider said with the advent of the living river there is a direct correlation to river leakage recharging the ground water. We do see a progression to the south. Agua Fria and Osage are our best producers. We are not prepared to entertain the burden of the administrative effort for a new well although one was recommended in the study at some point.

Chair Rivera asked the Baca Street well, is that the Santa Fe well.

Mr. Schneider said yes. The Santa Fe well poses some challenges for the City. There is a new piece of information on that. We just met with the NMED and that property has been identified as a priority 1 site. The NMED is going to do a lot of work to determine contamination.

Vice Chair Rivera asked if there is an issue would NMED provide funding to replace it.

Mr. Martinez said that is unlikely. They view their responsibility to be to make sure the water quality is cleaned up. For production they leave that to the City. He is more concerned with water quality and that it is remediated by PNM and NMED.

Chair Rivera asked where is that on our priority list.

Mr. Schneider said 7 or 8. The time it takes to go through this process is 5 to 10 years.

Mr. Martinez said the spill happened in 1955 when 55,000 gallons of diesel fuel went into the ground.

Mr. Schneider said our intention was to inform the committee. As things evolve he will come back with updates and share their public notification plan.

## **CONSENT ACTION CALENDAR**

### **8. Update on Current Water Supply Status (Alex Puglisi)**

Approved on Consent.

### **10. Wastewater Management Division Monthly Update (Shannon Jones)**

Approved on Consent.

### **12. Request for approval of Amendment No. 1 to the original PSA, Item #17-0676 with Facility Solutions Group, Inc. For additional lighting fixtures at the Source of Supply, Canyon Road Water Treatment Plant, for the amount of \$3,640.00 exclusive of NMGRT. (John Alejandro)**

#### **Committee Review:**

Public Utilities Committee

01/03/2018

Finance Committee

01/22/2018

City Council

01/31/2018

Approved on Consent.

**13. Request for approval to purchase one (1) Dump Truck from Summit Truck Group in the amount of \$136,606. (Kenneth Espinoza)**

**Committee Review:**

Public Utilities Committee

01/03/2018

Finance Committee

01/22/2018

City Council

01/31/2018

Approved on Consent.

**CONSENT ACTION DISCUSSION**

**7. Monthly Update of Capital Projects (Shannon Jones)**

Chair Rivera said regarding the hospital tank project, the contract balance is still pretty significant. The project looks to be almost complete. Are we looking at having that money for other projects or will it be used up.

Mr. Jones said a large sum will continue to trickle out from the contractor for payment. The project is near completion. There is still a balance of liquidated damages as well.

Chair Rivera asked did the hospital wanting to use that road materialize.

Mr. Jones said it is continuing to progress. The hospital would have access to that road for maintenance purposes.

Chair Rivera asked is it required to be fenced off close to St. Michaels.

Mr. Jones said there will be an access gate that will be locked. The City will have access for maintenance.

Councilor Villarreal said on your memo you talked about the capacity study that has proved to be challenging. What did you mean by that.

Mr. Jones said the study was an add on to look at the river and understand the nutrients and the response of the river. We did pretty well, but part of the task order was to work closely with the Environment Department so they were involved along the way. We have some great data coming out of that, but the recommendation from the Environment Department was to look further down that reach. Our consultant looked at that along with access to the river and flow of the river. As they calibrate the model there are more and more assumptions that have to be put into the model. The more assumptions put in the less of an optimal study it becomes. We want to stay with the true calibrated model without using so many assumptions. That may change the contract. Staff is working closely with them to redefine the boundaries of that study.



Councilor Villarreal asked will that change the amount.

Mr. Jones said right now he is staying firm that the amount will not change.

**MOTION: Councilor Villarreal moved to approve item 7. Councilor Lindell seconded the motion and it passed by unanimous voice vote.**

**9. Water Conservation Program Scoreboard Update for December 2017 (Christine Chavez)**

Councilor Lindell asked could you clarify the statement that says in the course of a year we only had 52 people get the dryer rebate.

Ms. Chavez said that is as of July through December.

Councilor Lindell said when someone buys a dryer at Home Depot are they given paperwork to get the rebate.

Ms. Chavez said we don't offer rebates on dryers. PNM does. We do provide applications to vendors around town.

Councilor Lindell explained that she meant washers, not dryers.

Ms. Chavez said the big box stores do have our applications there. We are working on a program with them to stick a magnet on the washers who qualify. There is a lot of work we can do with our vendors in town. Most people access the rebate on line.

Councilor Lindell said the magnet idea is a terrific one. Stores should like it because it costs nothing and may help them close a sale.

Ms. Chavez said we working with stores now.

**MOTION: Councilor Lindell moved to approve item 9. Councilor Villarreal seconded the motion.**

**DISCUSSION ON THE MOTION**

Councilor Villarreal asked what custom commercial is.

Ms. Chavez said it is a program to design your own rebate. If they can show they can save a quarter of an acre foot up to one acre foot of water we consider it. We have had one so far. We are doing sector specific projects now and starting with restaurants to survey the appliance that we can incentivize. One acre savings qualifies for \$25,000.

**VOTE: The motion passed by unanimous voice vote.**

#### **11. Environmental Services Division Monthly Update (Shirlene Sitton)**

Councilor Lindell said regarding the ITT release of an RFP for collections technology, she would like a bit more info on that. Is that the kind of software that we use with Rubicon. Are we are thinking of implementing that on a permanent basis.

Ms. Sitton said we are very happy with it. The big issue is that is it cellular and we use Verizon. It is not the fault of the technology. It is more the cellular coverage we have. Rubicon is an amazing partner. We are continuing to use them. An RFQ was just awarded to them. We are working on a RFP for the permanent technology. They are the leaders in the industry with an app based technology.

Councilor Lindell said it seems like it has worked pretty well. We already have some familiarity and acceptance by the users. She hopes they come in with a bid that we can work with and can move forward. The information she has gotten back has been terrific. She is impressed with it.

**MOTION: Councilor Lindell moved to approve item 11. Councilor Villarreal seconded the motion and it passed by unanimous voice vote.**

#### **14. Request for approval of Resolution No. 2018-\_\_\_\_\_. A resolution to provide incentives for Voluntary Gray Water Harvesting in the City of Santa Fe, New Mexico by means of an existing rebate program. (Christine Chavez ) (Councilor Ives)**

##### **Committee Review:**

Public Utilities Committee  
Finance Committee  
City Council

01/03/2018  
01/22/2018  
01/31/2018

Councilor Lindell asked what the existing program is.

Ms. Chavez said it is our rebate program. We have a big outdoor irrigation rebate program. One of the components is the gray water harvesting. We want to try to incentivize the effort.

Councilor Lindell asked that she be added as a cosponsor.

**MOTION: Councilor Lindell moved to approve item 14. Councilor Villarreal seconded the motion.**

#### **DISCUSSION ON THE MOTION**

Councilor Villarreal said she loves this idea. She is wondering what is the best way or how you envision the outreach to let residents know this can work for them. Is there a strategy.

Ms. Chavez said we have feedback that a lot of people don't know about our rebate program. We are

trying to push out a package on this in April that will include plumbing rainwater back into the home for usage. We have self audits and self installation booklets that we will be sending out with the incentive of a free sensor. We are working with several sprinkler companies to distribute the booklets and the vendor will give them the free sensor and tell them about the rebates. There are 5 components that we are pushing out in April. We are hoping for a big boost in applications in the spring. We just got an application from the Courtyard Marriott where they are replacing all the toilets there and that will push up the numbers.

Councilor Villarreal said Firebird is good about participating and informing people, but she is wondering if the big box stores would get more involved.

Ms. Chavez said we try to go with the local stores first. They helped us put together the information. They also helped us on a drip irrigation program. The closer we work with the vendors to help us promote the program the more successful we will be.

Councilor Villarreal said the language in the Resolution at the top of page 2 say "to date the gray water harvesting has not received significant recognition as part of the conservation program". She feels we have given it significant recognition.

Ms. Chavez said the State Engineers office put out a great guide. We hand that out and talk about it, but it has never been part of our rebate program. There are huge opportunities with gray water. We are going to start here and will work with other City departments to make sure there will be no negative impacts.

Councilor Villarreal asked that she be added as a cosponsor of this measure.

Councilor Rivera asked that he be added as a cosponsor as well.

**VOTE: The motion passed by unanimous voice vote.**

**15. Request for approval of Resolution No. 2018-\_\_\_\_\_. A resolution in support of a campaign to focus on Voluntary Water Conservation by restaurants in the City of Santa Fe, New Mexico (Christine Chavez) (Councilor Ives)**

**Committee Review:**

Public Utilities Committee	01/03/2018
Finance Committee	01/22/2018
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Councilor Villarreal said she is in favor of this and knows that restaurants are the ideal sector to start with. The language is somewhat vague. It does not talk about what the incentives will be or what direct assistance we will be providing. Do we know that right now.

Ms. Chavez said we are so excited about this project. Staff right now is being trained to do restaurant audits. We have 12 restaurants signed up now and will have more. We will audit each one. After this pilot we will open the program up to others. We are not sure yet what we will incentivize. We need to do the audits first and see what we see out there as far as possible incentives. We need data back from the pilot project first. We hope to look at hotels in the same way next year. We need to identify incentives per sector. This is a great training opportunity for us to learn. There is talk about putting this training into the Community College as well. We have lots of partnerships and have received support from the EPA Water Sense Program. We are implementing their standards into the program as well.

Councilor Villarreal said maybe say what you just said in that section. We will be collecting information to identify specific opportunities for incentives. Work with Jesse Guillen on the wording and it can go to the next committee meeting.

Councilor Lindell said this is an exciting program. Did we look at some other cities and their models.

Ms. Chavez said the Water Sense Program looks at sectors and they make general assumptions. Santa Fe is so unique. There are between 400 and 600 restaurants in Santa Fe depending on what data base you look at. There are so many different things we want to look at. We decided that we wanted to do a pilot project on our own.

Councilor Lindell said she just wondered if other cities had done this.

Ms. Chavez said we are hoping our project will be a model for them. She is sure there are similar models out there.

Councilor Lindell said it might not be a bad idea to review the literature of what others have done.

**MOTION: Councilor Lindell moved to approve item 15 with the proposed language changes. Councilor Villarreal seconded the motion.**

## **DISCUSSION ON THE MOTION**

Chair Rivera had the same concerns about the language. He is glad that it will be worked on.

**VOTE: The motion passed by unanimous voice vote.**

## **EXECUTIVE SESSION**

In accordance with the New Mexico Open Meetings Act, NMSA 1978, §10-15-1(H)(8), discussion regarding settlement with N. Harris Computer Corporation/Advance Utility Billing Software. (Marcos Martinez )

**MOTION: Councilor Lindell moved that the Public Utilities Committee enter into Executive Session pursuant to §10-15-1 (H) (8) to discuss the settlement with No. Harris Computer Corporation/Advance Utility Billing Software. Councilor Villarreal seconded the motion and the motion passed by unanimous roll call vote.**

The Committee went into executive session at 6:05 p.m.

**MOTION: At 6:35 pm, Councilor Lindell moved that the Public Utilities Committee come out of Executive Session and stated for the record that the discussion in the Executive Session was limited to the matters noted on the agenda. Councilor Villarreal seconded the motion. The motion passed by unanimous voice vote.**

#### **MATTERS FROM THE PUBLIC**

None.

#### **MATTERS FROM THE CITY ATTORNEY**

None.

#### **MATTERS FROM STAFF**

None.

#### **MATTERS FROM THE COMMITTEE**

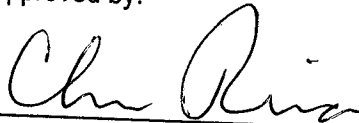
None.

**NEXT MEETING: Wednesday, February 7, 2018 at 5:00 PM**

## ADJOURNMENT

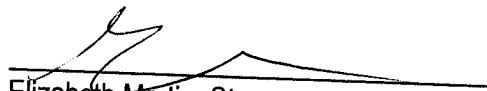
There being no further business before the committee the meeting adjourned at 6:40 pm.

Approved by:

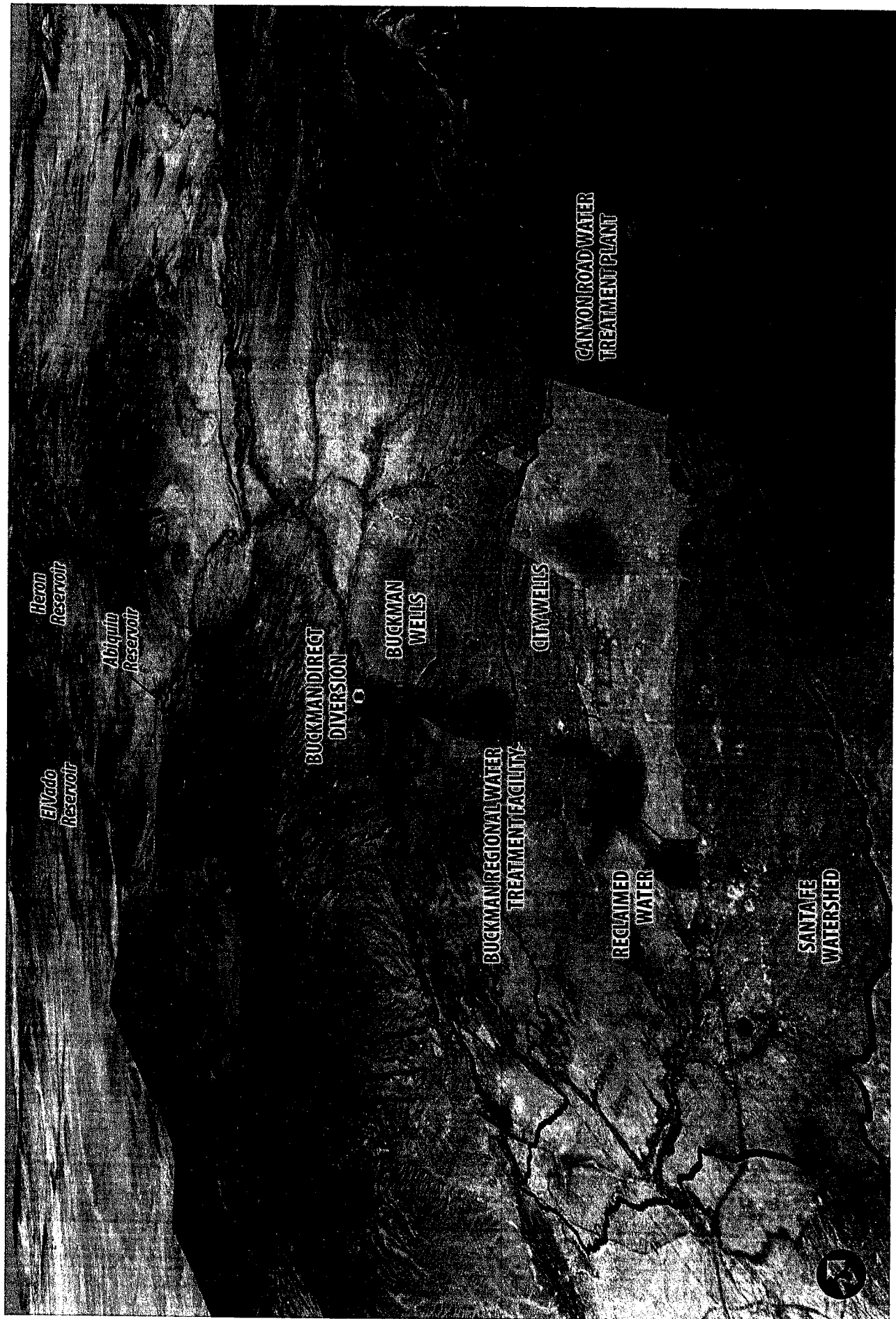


Christopher Rivera, Chair

Submitted by:

  
Elizabeth Martin, Stenographer

# City of Santa Fe Water Supply



Heron  
Reservoir

El Vado  
Reservoir

Abiquiu  
Reservoir

BUCKMAN DIRECT  
DIVERSION

BUCKMAN  
WELLS

CITY WELLS

BUCKMAN REGIONAL WATER  
TREATMENT FACILITY

RECLAIMED  
WATER

SANTA FE  
WATERSHED

CANYON ROAD WATER  
TREATMENT PLANT

EXHIBIT

1

# City Well Field: Background & Permitting

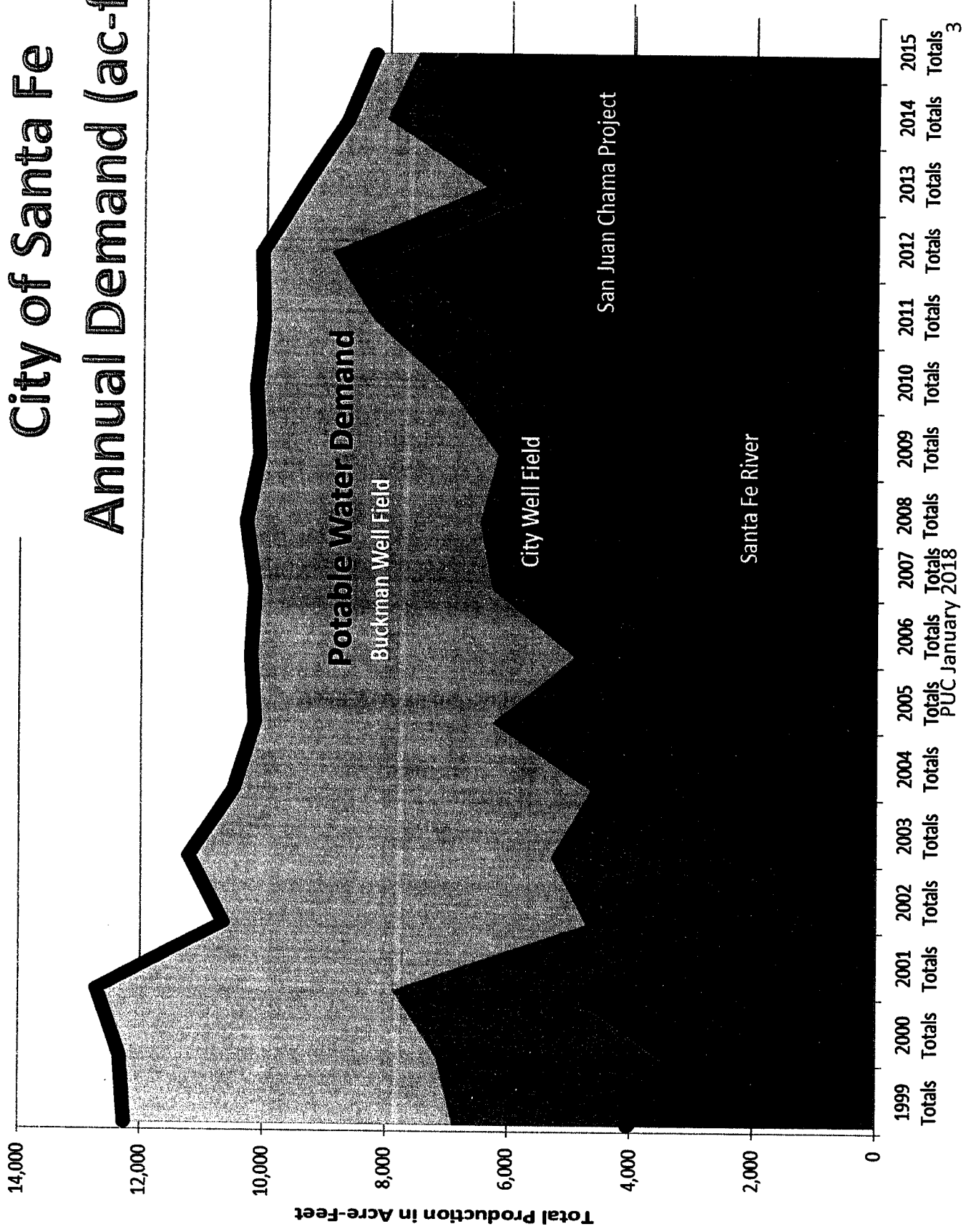
## RG-1113 through RG-1118

- Pre-basin wells drilled between 1946 and 1951 (no offsets)
- Permitted water right of 4,865 ac-ft
- Maximum production of 3,507 ac-ft (1971)
- Supplemental well (Northwest) requested to be permitted as part of CWF in 1999
- Lawyers, Guns and Money Era (2000 through 2016)
- NW Well Settlement (2017)



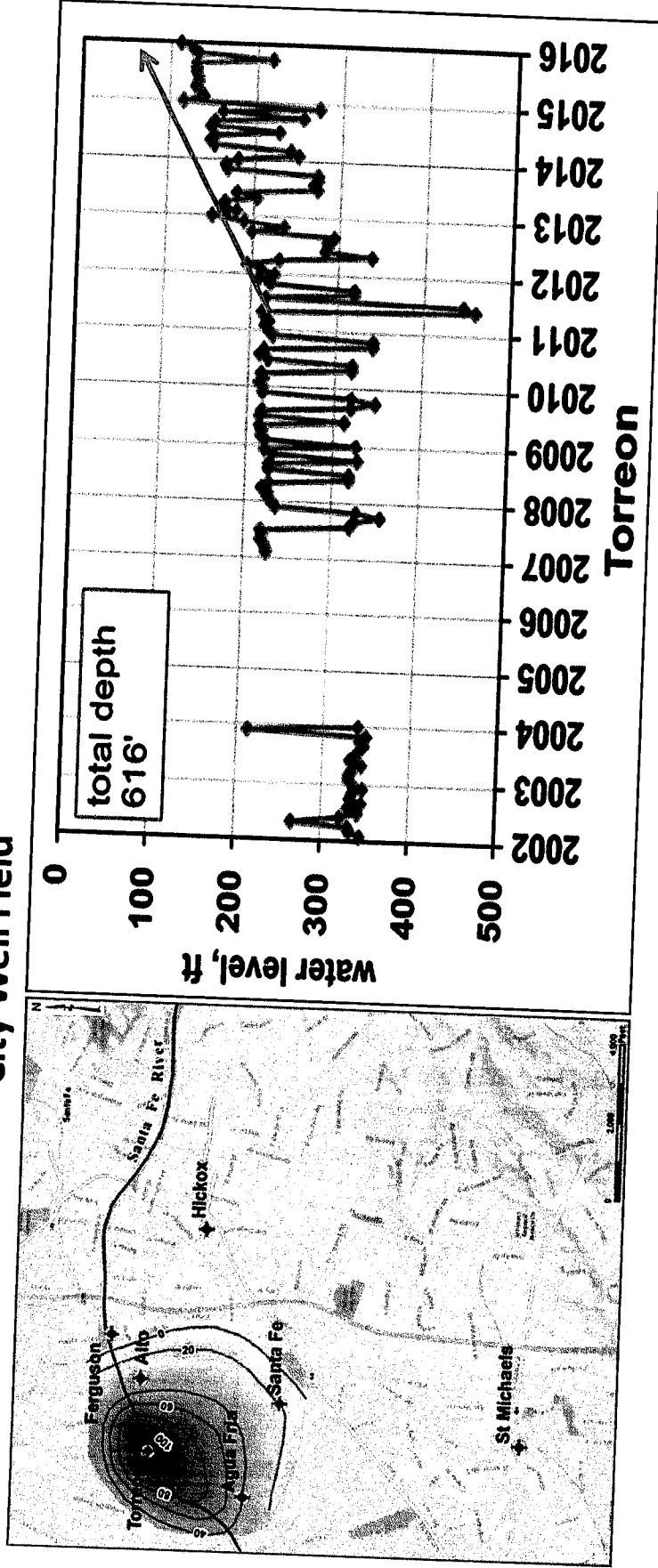
# City of Santa Fe

## Annual Demand (ac-ft)



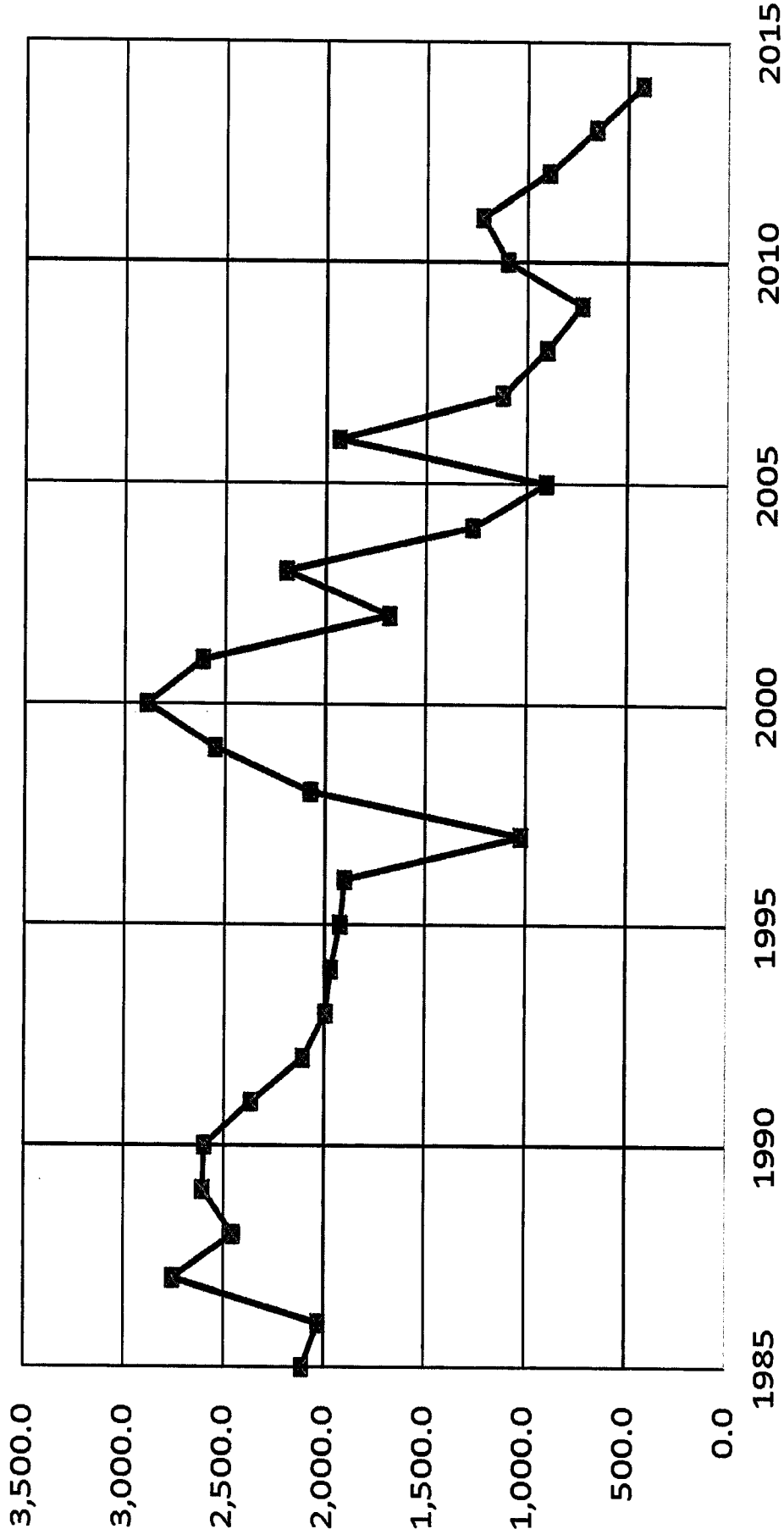
# Aquifer Recovery in City Well Field (Storage)

City Well Field



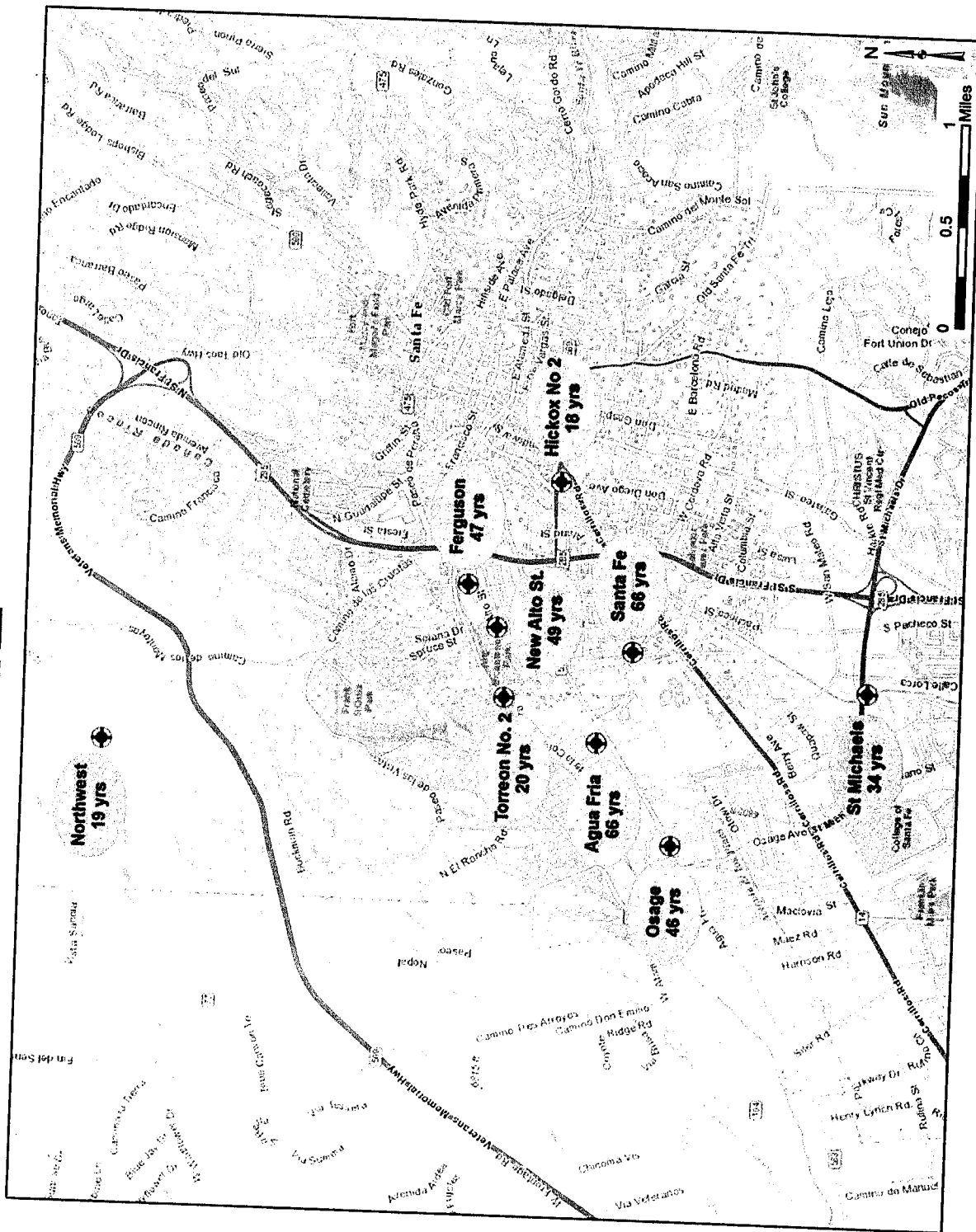
# City Well Field: Decline in use and yield (AFY)

CITY WELL FIELD



# City Well Field: Well Location and

Age



# City Well Field: Optimization Objectives

- Perfect to one year maximum right of 4,865 ac-ft/yr
- Maximize use of 2<sup>nd</sup> least expensive source of water
- Critical supply source necessary to augment uneven surface water supplies, meet seasonal peak demand, and serve as drought reserve

**Santa Fe Water Supply Study: A dry future? Water managers say plans to keep taps flowing are under way**

By T. S. Last / Journal Staff Writer  
Friday, October 16th, 2016 at 12:02pm



# City Well Field Optimization

## Hydrogeologic factors

- Santa Fe River Infiltration (recharge)
- Minimize depletions on tributaries (La Cienega)
- Target coarse aquifer unit of Tesuque Fm.

## Evaluate improvements to existing wells

- Rehabilitation versus replacement
- Cost benefit
- Legacy groundwater contamination

## Distribution System and Storage

- System pressure issues
- Water quality (chlorine residuals)

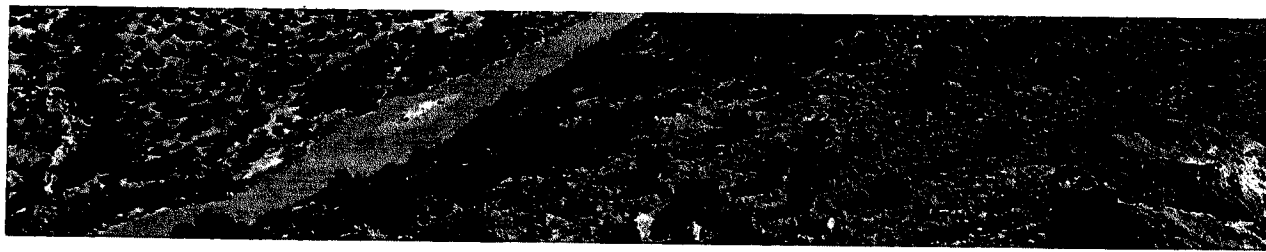
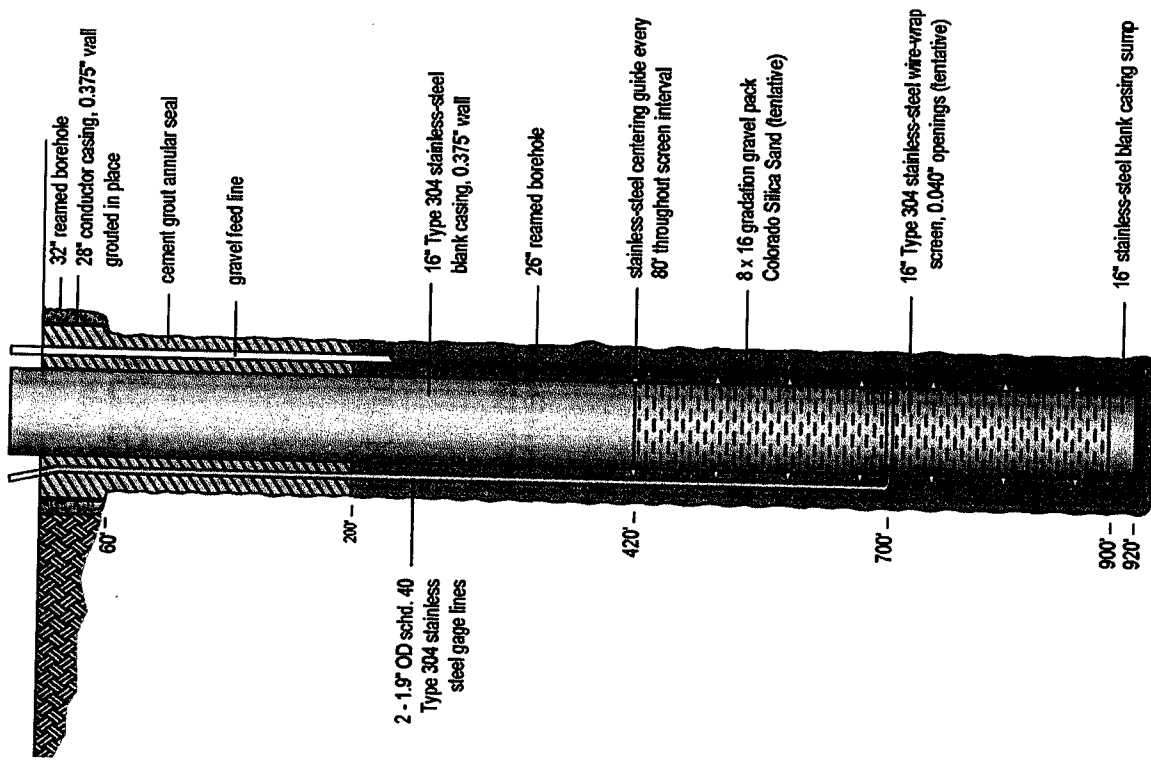


Table ES-2: City Well Field Implementation Plan

IMPLEMENTATION ORDER	PROJECT	RATIONALE	POTENTIAL CAPACITY (AFY)	FACILITY IMPROVEMENTS	ESTIMATED COST			\$/AF
					INFRASTRUCTURE IMPROVEMENTS	TOTAL		
1	Permits	Anticipated lengthy permit acquisition	N/A	N/A	N/A	Included well cost estimates		N/A
2	Torreon Rehabilitation	Short project duration, maintain reliable supply while replacing other wells; best value (\$/AF)	450	\$560,000	N/A	\$560,000		\$1,422
3	Santa Fe Modification	Contain plume before replacing Agua Fria Well	200	\$525,000	N/A	\$525,000		\$2,625
4	Agua Fria Replacement	Maintain reliable supply while replacing other wells; high production capacity; increase capacity 450 AFY	1,150	\$2,083,000	N/A	\$2,083,000		\$1,811
5	Alto Replacement	Improve well performance; requires new site on City property, increase capacity by 200 AFY	650	\$2,024,000	\$80,000	\$2,104,000		\$3,237
6	Ferguson Replacement	Improve well performance; increase capacity by 280 AFY	480	\$1,836,000	\$80,000	\$1,916,000		\$3,825
7	Hospital Booster Station	Necessary to move water to higher pressure zone before high production wells 9 and 10 are in place	N/A	\$1,160,000	\$240,000	\$1,400,000		N/A
8	New Well Design/Construction	Necessary to use 4,865 AFY permitted water right, increases sustainability by moving pumping to the west, good value (\$/AF)	1,920	\$2,438,000	\$52,000	\$2,490,000		\$1,297
9	Osage Replacement Design/Construction	High capacity well, moderate \$/AF	1,055	\$2,680,000	\$56,000	\$2,736,000		\$2,593
10	St Michael's Replacement	Well currently out of service, lowest capacity, highest \$/AF; may not be necessary	300	\$1,892,000	N/A	\$1,892,000		\$6,306
Total			6,205	\$15,706,000				

# Replacement Well Construction and Mitigation

- Neighborhood notification plan
- Is location big enough?
- Noise abatement implementation
- 24/7 work schedule for certain phases
- Drilling fluid containment and disposal
- Disposal of development and test water





# Questions?

