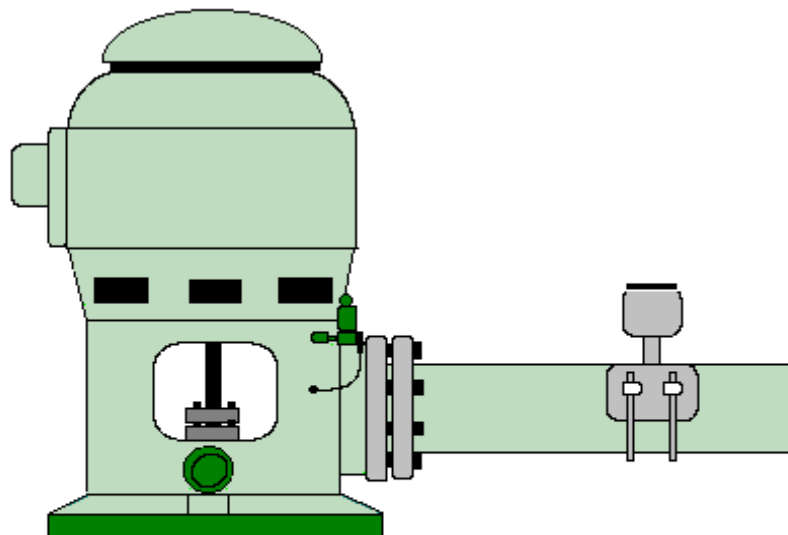


ROSWELL BASIN WATER MASTER

51 st

ANNUAL REPORT

2016



JOHN STEWART, WATER MASTER

1900 WEST SECOND STREET

ROSWELL, NEW MEXICO 88201

Table of Contents

INTRODUCTION..... 1
ADJUDICATION MAP OF THE ROSWELL UNDERGROUND BASIN..... 2

ADMINISTRATION

GENERAL 3
METERING PROGRAM..... 5
CHANGES IN THE ADJUDICATION DECREE 6
VIOLATIONS/ACTIONS 7
ACCOUNTING PROCEDURE REVISION 8

WATER DIVERSION

PERCENT OF USE FOR IRRIGATION, COMMERCIAL, AND INDUSTRIAL..... 9
USE OF WATER IN THE ROSWELL BASIN IN 2016..... 10
FIVE YEAR COMPARISON OF TOTAL DIVERSION 11
ANNUAL DIVERSION VALUES FROM 1967 – PRESENT 12
MUNICIPAL DIVERSION FOR 2016 15

COMMERCIAL AND INDUSTRIAL DIVERSION FOR 2016..... 16
MAP INDICATING AREAS OF IRRIGATION USE..... 17
BREAKDOWN OF IRRIGATION BY AREA 2016 18

FINANCIAL STATEMENTS

APPROVED BUDGET FOR 2016..... 19
EXPENDITURES FOR 2016 20
SUMMARY 21

INTRODUCTION

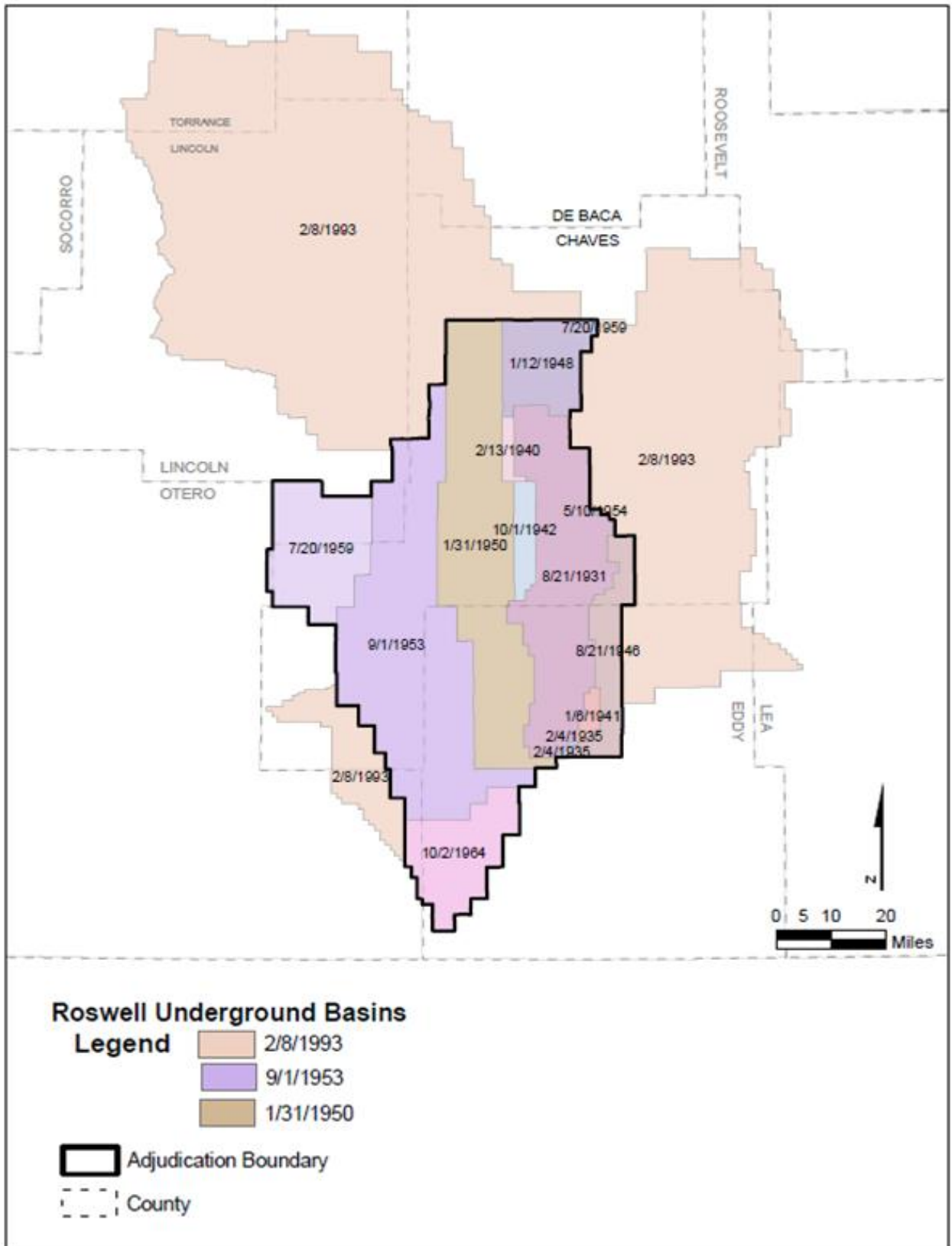
On January 10, 1966 Partial Judgment and Decree was entered under Cause No. 20294 and No. 22600 Consolidated in Chaves County, New Mexico. This Decree which adjudicated all ground water rights for irrigation, municipal, and industrial purposes in the Roswell Artesian Basin in Chaves and Eddy Counties, further provided for the metering of wells to commence January 1, 1967 and the establishment of a Water Master as follows:

“5. The State Engineer shall appoint and employ a Water Master and such assistants as are necessary in the administration and enforcement of this Judgment and Decree, provided that the appointment of the Water Master shall be subject to the approval of the Court. Such Water Master shall be appointed to commence work not later than July 1, 1966. The Water Master and any assistants appointed shall serve under the direction of the State Engineer and under the general supervision of the Court.”

The office was established with the appointment of a Water Master on February 2, 1966. The present Water Master, John Stewart, was appointed by the Honorable [James J. Wechsler, Presiding Judge, on June 12, 2017.](#)

This is the 51th Annual Report of the Water Master’s Office.

ADJUDICATION MAP OF THE ROSWELL UNDERGROUND BASIN



GENERAL

The Roswell Basin Water Master administers the diversion of water under the Adjudication Decree in an area existing, in general, six to eighteen miles west of the Pecos River and twenty miles north of Roswell in Chaves County to twenty miles south of Artesia, in Eddy County equaling a distance of approximately eighty miles. The principal use of water in the area is for agricultural purposes, which accounts for about 91.73% of the total water diverted. Municipal use of water accounts for about 7.12% and about 1.15% is used for commercial and industrial purposes.

Ground water is the principal source of water diverted under the decree and this is further divided into Artesian and Shallow ground water. Generally, a little less than two-thirds of the water is diverted from the Artesian source; about one-third is diverted from the Shallow source. A small portion is diverted from a combination of surface and well waters, primarily through the Hagerman Canal.

Approximately 130,000 acres of land were adjudicated irrigation rights under this decree. The amount of acreage actually irrigated, however, varies from year to year as some rights have, under permit, been spread over larger acreage. Some rights have been transferred to Municipal and Industrial uses, while the Pecos Valley Artesian Conservancy District (PVACD) has retired some rights and some acreage is fallow.

Procedures for accounting of water diverted under the Hagerman Canal were revised in January 1977. Rights under the Hagerman Canal, not having a supplemental source from individually owned Shallow or Artesian wells, are considered by this office to be adjudicated under the Hope Community Ditch Decree and not under Chaves County Cause No. 20294 and No. 22600 Consolidated. Thereafter, diversions of water for rights under the Hagerman Canal were accounted by the Roswell Basin Water Master as follows:

1. Water diverted to farms having canal rights only will not be accounted.
2. Water diverted to farms having an underground right adjudicated or permitted to supplement the entire canal right shall be accounted as other adjudicated ground water rights with appropriate provisions for 5-year accounting, carriage loss and carryover.
3. Water diverted to farms having a combined or commingled right (either as decreed or permitted) where part of the canal right is not supplemented by ground water shall be accounted by considering the canal water diverted to be in direct proportion to the ratio of the non-supplemented canal right and only the supplemented right shall be accounted unless otherwise indicated by conditions of approval of an individual permit.

The Presiding Judge, Honorable [James J. Wechsler](#), served during the 2016 reporting period.

Personnel of the Water Master Office at the beginning of the 2016 season consisted of John Stewart as Roswell Basin Water Master, Gaylan Young, Ahmed Carrasco, and Iain Mason, Assistant Water Masters.

Gaylan Young began on August 1st 2015, working at present time.

Iain Mason began on October 20th 2014, working at present.

Ahmed Carrasco began in March 23, 2015, working at present.

The operations of the Water Master Office are financed through the PVACD. Under the terms of the Adjudication Decree, the Office of the State Engineer (OSE) annually submits to the PVACD a budget for the operations of the Water Master Office. The PVACD Board then moves the Court to approve or modify the budget submitted. The PVACD reimburses the OSE for monthly expenses incurred. The funds for the PVACD are derived from a levy of lands from within the district.

METERING PROGRAM

Eighty-Five meters were found inoperative during the 2016 irrigation season. Based on a total of 1,647 (primary)** meters installed on irrigation, feed pen, dairy, and Hagerman Canal wells, this is 6.0% as compared to 7.3% found inoperative in 2015. Each meter was read an average of 7.0 times, including the beginning and year-end readings. The number of totalizing meters, by brand installed on these wells and the number of each brand, found to be inoperative during the 2016 irrigation season are listed as followed:

MAKE OF METER	TOTAL OF MAKE	% OF TOTAL	TOTAL IN-OP	% MAKE IN-OP	% OF TOTAL INSTALLED
McCROMETER	1,449	88.0%	74	5.1%	4.5%
ROCKWELL/SENSUS	88	5.3%	10	11.4%	0.6%
MISCELLANEOUS	110	6.7%	1	0.9%	0.9%
TOTALS	1,647	100.0%	85	17.4%	6.0%

Adjustments in the amount of water diverted through inoperative meters for 2016 totaled 1,185.77 acre-feet, where 628.78 acre-feet was Artesian underground water and 556.99 acre-feet was Shallow underground water diverted for irrigation use.

** Primary meters are meters the PVACD will repair or replace in the field.

CHANGES IN THE ADJUDICATION DECREE

There were no changes in the Adjudication Decree during the 2016 water year.

VIOLATIONS/ACTIONS

There were 23 instances of overuse in the 2011-2016 accounting period.

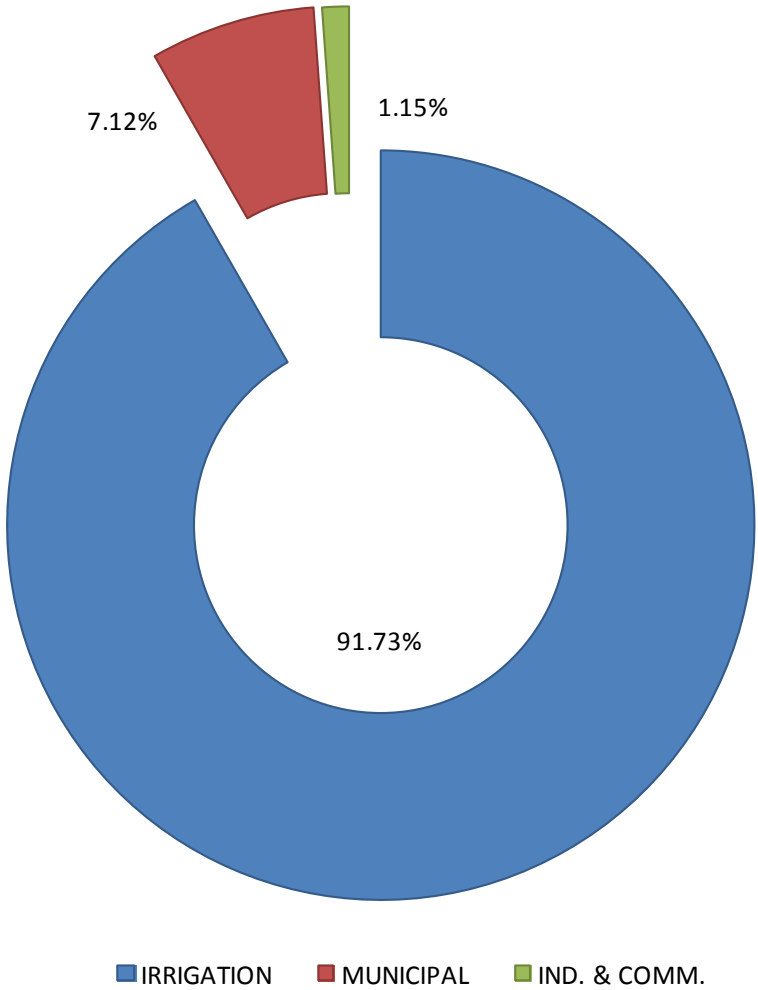
As of the time of writing this report, 5 water users had not signed a consent form, nor paid the fine for over diversion, with the Roswell-Artesia Water Master. These users have been contacted with information provided, but have not done any adequate action to resolve their overuse. These cases have been forwarded to ALU for further review and action.

ACCOUNTING PROCEDURE REVISION

Beginning in 1998 total diversion of water shown for commercial and industrial use and percentages thereof, will be based on “actual” diversions. In the past, diversion amounts were multiplied by 1.43 or 1.67 where applicable, which compensated for carriage loss and/or lack of return flow. Although this was the amount charged against the water right it was not actual diversion amounts. This pertains to commercial or industrial operations that were farm connected.

PERCENT OF USE FOR IRRIGATION, COMMERCIAL, AND INDUSTRIAL

Water useage for 2016



USE OF WATER IN THE ROSWELL BASIN IN 2016

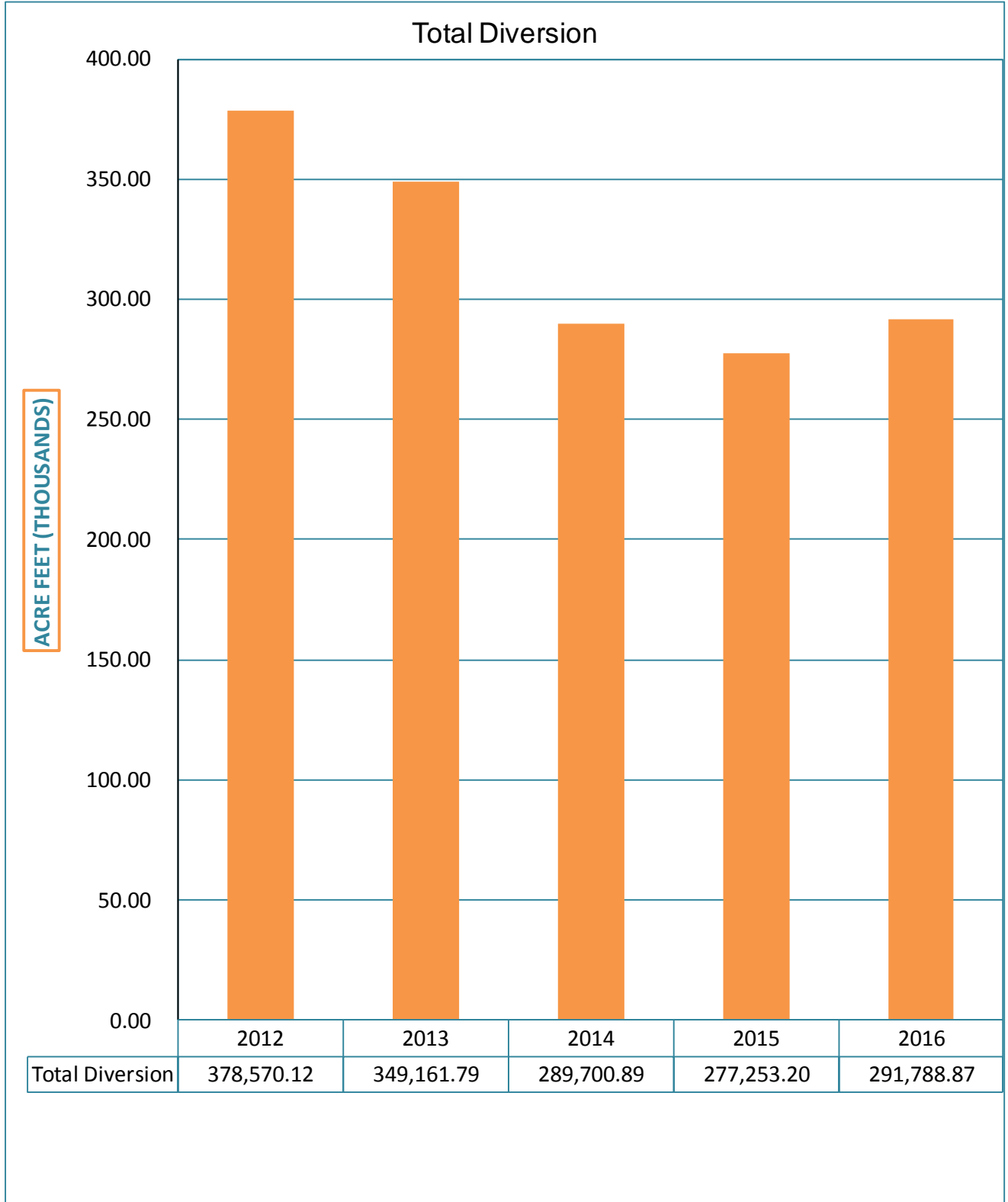
The total water diverted in the Roswell Ground Water Basin for the water year 2016 (November 1, 2015 – October 31, 2016) under the administrative jurisdiction of the Roswell Basin Water Master was 291,788.87 acre-feet. Under the decree for adjudicating water rights in the basin, discrete five-year periods were set-up for accounting of the metered water. This is the fifth year of the tenth five-year period of 2011-2016

Of the total diversion, 217,399.70 acre-feet (73.1%) was from the Artesian source, 69,760.93 acre-feet (24.4%) was from the Shallow source and 7,324.17 acre-feet (2.5%) was diverted from combined underground and surface sources primarily under the Hagerman Canal and the Rio Hondo.

Irrigation use accounted for 91.73% of the total diverted, municipal type use accounted for 7.12% and Miscellaneous, Industrial and Commercial uses accounted for the remaining 1.15%. The irrigation use on 109,269.98 equivalent water right acres (acres as originally adjudicated) permitted, an average diversion of 2.44 acre-feet per acre for the basin as a whole varying from a high of 2.84 acre-feet per acre, in the Roswell – East Grand Plains area to a low of 0.85 acre-feet per acre in the Lakewood – Seven Rivers.

The equivalent acreage figures and diversion figures do not include unmetered stock and domestic uses or water right acreage retired from irrigation under the program of the PVACD. There were eight hundred thirty-six farming units.

FIVE YEAR COMPARISON OF TOTAL DIVERSION



ANNUAL DIVERSION VALUES FROM 1967 – PRESENT

TABULATION OF ANNUAL WATER DIVERSION						
1967 TO PRESENT						
YEAR	IRRIGATION	IRRIGATION	ACRE FEET	MUNICIPAL	INDL./COML.	TOTAL
	ACRE FEET	EQ. AC.	PER ACRE	ACRE FEET	ACRE-FEET	ACRE-FEET
1967	371,250.60	130,132.70	2.85	14,528.30	1,582.60	387,361.50
1968	323,917.10	128,245.00	2.53	13,596.30	1,611.10	339,124.50
1969	345,087.10	128,330.60	2.69	15,586.90	899.10	361,573.10
1970	358,686.80	126,002.40	2.85	15,888.50	916.30	375,491.60
1971	384,228.10	126,121.00	3.05	16,439.60	3,082.00	403,749.70
5-YEAR AVG.	356,633.94	127,766.34	2.79	15,207.92	1,618.22	373,460.08
1972	367,363.60	125,233.80	2.93	14,821.20	2,398.90	384,583.70
1973	386,288.80	125,293.00	3.08	15,335.00	2,983.00	404,606.80
1974	392,413.30	124,240.10	3.16	18,318.50	3,646.30	414,378.10
1975	368,512.60	123,740.70	2.98	16,145.90	3,083.90	387,742.40
1976	419,491.90	123,170.10	3.41	18,182.20	3,271.90	440,946.00
5-YEAR AVG.	386,814.04	124,335.54	3.11	16,560.56	3,076.80	406,451.40
1977	387,858.00	122,703.70	3.16	18,422.70	3,071.40	409,352.10
1978	359,011.00	122,233.70	2.94	15,569.70	3,270.70	377,851.40
1979	355,163.80	122,002.40	2.91	16,181.90	2,853.00	374,198.70
1980	360,484.40	121,763.30	2.96	17,804.30	2,388.60	380,677.30
1981	317,225.20	121,530.00	2.61	14,558.10	2,340.80	334,124.10
5-YEAR AVG.	355,948.48	122,046.62	2.92	16,507.34	2,784.90	375,240.72
1982	377,179.40	120,932.00	3.12	18,292.10	2,747.20	398,218.70
1983	356,836.00	120,277.70	2.97	19,312.30	2,818.30	378,966.60
1984	304,691.90	119,415.20	2.55	19,246.40	2,424.10	326,362.40
1985	293,465.10	119,333.30	2.46	17,494.40	2,863.70	313,823.20
1986	259,739.90	118,634.10	2.19	17,800.60	2,673.00	280,213.50
5-YEAR AVG.	318,382.46	119,718.46	2.66	18,429.16	2,705.26	339,516.88

TABULATION OF ANNUAL WATER DIVERSION (CONT.)

1967 TO PRESENT

YEAR	IRRIGATION	IRRIGATION	ACRE FEET	MUNICIPAL	INDL./COML.	TOTAL
	ACRE FEET	EQ. AC.	PER ACRE	ACRE FEET	ACRE-FEET	ACRE-FEET
1987	285,389.60	118,324.90	2.41	15,775.50	2,892.50	304,057.60
1988	306,838.70	115,696.10	2.65	16,734.60	4,887.40	328,460.70
1989	364,436.70	115,088.00	3.17	17,771.40	4,566.50	386,774.60
1990	356,612.10	115,433.00	3.09	20,569.60	4,733.20	381,914.90
1991	314,893.30	115,378.30	2.73	18,887.10	9,768.90	343,549.30
5-YEAR AVG.	325,634.08	115,984.06	2.81	17,947.64	5,369.70	348,951.42
1992	305,168.40	115,510.40	2.64	17,765.70	4,389.80	327,323.90
1993	356,286.10	115,456.10	3.09	23,841.70	6,215.90	386,343.70
1994	352,106.70	114,402.90	3.08	21,024.60	7,060.00	380,191.30
1995	356,806.30	114,507.90	3.12	24,009.90	5,827.80	386,644.00
1996	345,278.53	113,481.60	3.04	22,245.70	5,781.10	373,305.33
5-YEAR AVG.	343,129.21	114,671.78	2.99	21,777.52	5,854.92	370,761.65
1997	346,681.00	113,568.02	3.05	21,076.10	5,316.80	373,073.90
1998	368,057.77	113,691.05	3.24	22,308.50	5,995.40	396,361.67
1999	317,652.73	113,686.18	2.79	20,275.90	5,765.18	343,693.81
2000	374,090.19	116,364.42	3.21	23,887.60	3,665.50	401,643.29
2001	310,134.69	113,497.67	2.73	22,315.80	3,789.40	336,239.89
5-YEAR AVG.	343,323.28	114,161.47	3.01	21,972.78	4,906.46	370,202.51
2002	348,596.69	113,325.27	3.08	22,815.18	5,473.95	376,885.82
2003	344,034.63	113,537.16	3.03	24,161.26	4,490.87	372,686.76
2004	282,067.23	114,493.28	2.46	21,631.54	5,383.24	309,082.01
2005	283,360.59	114,209.79	2.48	21,864.83	4,689.34	309,914.76
2006	299,201.31	113,967.87	2.63	23,035.87	4,902.82	327,140.00
5-YEAR AVG.	311,452.09	113,906.67	2.74	22,701.74	4,988.04	339,141.87

TABULATION OF ANNUAL WATER DIVERSION (CONT.)						
1967 TO PRESENT						
YEAR	IRRIGATION ACRE FEET	IRRIGATION EQ. AC.	ACRE FEET PER ACRE	MUNICIPAL ACRE FEET	INDL./COML. ACRE-FEET	TOTAL ACRE-FEET
2007	274,911.45	113,949.88	2.41	19,340.93	5,236.68	299,489.06
2008	332,518.41	113,301.16	2.93	24,153.77	4,742.88	361,415.06
2009	318,906.87	112,822.24	2.83	24,236.01	4,655.21	347,798.09
2010	281,768.05	113,156.44	2.49	22,767.73	4,421.11	308,956.89
2011	347,523.28	115,624.74	3.01	27,823.83	4,775.55	380,122.66
5-YEAR AVG.	311,125.61	113,770.89	2.73	23,664.45	4,766.29	339,556.35
2012	346,477.82	118,661.20	2.92	26,201.48	5,890.82	378,570.12
2013	319,938.55	118,631.50	2.70	24,686.17	4,537.07	349,161.79
2014	264,132.42	118,530.84	2.23	21,953.72	3,614.75	289,700.89
2015	252,437.30	115,221.39	2.19	21,213.13	3,602.77	277,253.20
2016	266,267.05	109,269.98	2.44	21,965.15	3,556.67	291,788.87
5-YEAR AVG.	289,850.63	116,062.98	2.49	23,203.93	4,240.42	317,294.97
2017						
2018						
2019						
2020						
2021						
5-YEAR AVG.						
2022						
2023						
2024						
2025						
2026						
5-YEAR AVG.						

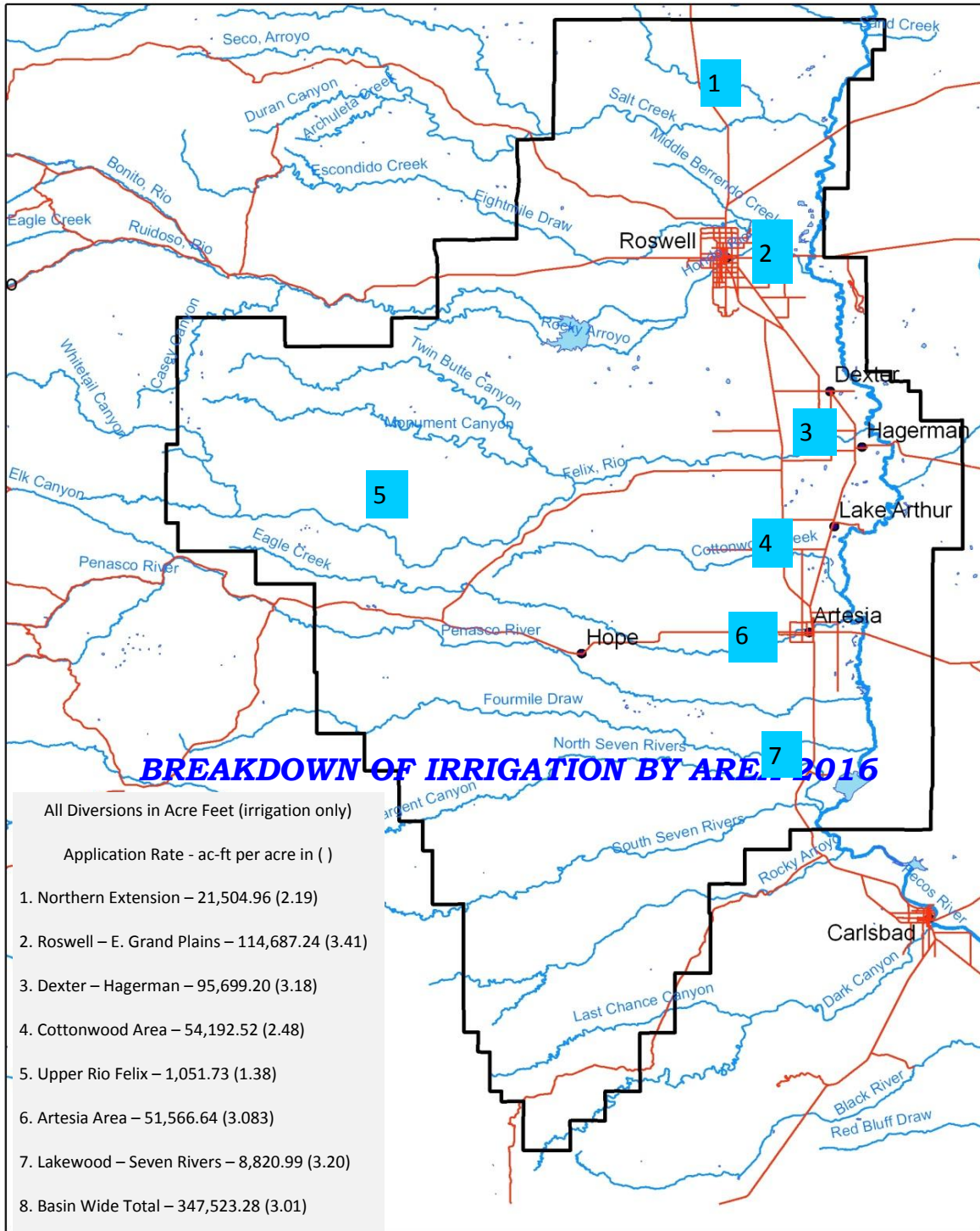
MUNICIPAL DIVERSION FOR 2016

MUNICIPAL & MUNICIPAL TYPE USE	PUMPAGE IN ACRE-FEET			REMARKS
	SHALLOW	ARTESIAN	TOTAL	
ROSWELL	0.00	12,072.47	12,072.47	
DEXTER	678.44	449.88	1,128.32	
HAGERMAN	0.00	382.94	382.94	
LAKE ARTHUR	2.34	74.97	77.31	
ARTESIA	0.00	5,357.91	5,357.91	
HOPE	0.00	47.40	47.40	
CO OPS	0.01	2,506.83	2,506.84	
DOMESTIC UTILITIES	49.29	293.24	342.53	
SCHOOL SYSTEMS	30.32	19.11	49.43	DEXTER & ROSWELL
TOTAL MUNICIPAL USE	760.40	21,204.75	21,965.15	

COMMERCIAL AND INDUSTRIAL DIVERSION FOR 2016

COMMERCIAL AND INDUSTRIAL USE				
FOR 2016				
	PUMPAGE IN ACRE FEET			
COMMERCIAL DAIRY & FEED PEN USE	SHALLOW	ARTESIAN	TOTAL	REMARKS
FEED PEN OPERATIONS (N. F. C.)	0.00	0.00	0.00	Not Farm Connected
FEED PEN OPERATIONS (F. C.)	78.42	0.00	78.42	Farm Connected
DAIRIES (F. C.) **	10,668.76	27,913.34	38,582.10	**Included in IRR. Total
DAIRIES (N. F. C.)	297.44	734.78	1,032.22	Not Included in IRR. Total
TOTALS	375.86	734.78	1,110.64	
MISC. INDUSTRIAL & COMMERCIAL	SHALLOW	ARTESIAN	TOTAL	
CHAVES COUNTY	1,641.69	240.23	1,881.92	
EDDY COUNTY	48.82	515.29	564.11	
TOTALS	1,690.51	755.52	2,446.03	
TOTAL ALL COML. & INDUST.	2,066.37	1,490.30	3,556.67	
TOTAL ALL MUNICIPAL (pg.17), COMMERCIAL AND INDUSTRIAL USE	2,826.77	22,695.05	25,521.82	** EXCLUDES FARM CONNECTED DAIRIES

MAP INDICATING AREAS OF IRRIGATION USE



BREAKDOWN OF IRRIGATION BY AREA 2016

DESCRIPTION	ACRE-FEET	PUMPAGE IN ACRE-FEET				APP. RATE
		SURF	SHALLOW	ARTESIAN	TOTAL	
NORTHERN EXTENSION	29,305.17		0.00	15,836.17	15,836.17	1.62
ROSWELL - EAST GRAND PLAINS	98,296.91		22,586.76	70,444.88	93,031.64	2.84
DEXTER - HAGERMAN	81,016.43	2,837.18	24,139.90	42,397.13	69,501.95	2.57
HAGERMAN IRR. COMPANY	24,996.21		1,425.98	7,936.64	9,362.62	1.12
NON SUPPLEMENTAL CANAL USE		4,486.99			4,486.99	
PECOS RIVER AUGMENTATION AT LAKE ARTHUR					0.00	
COTTONWOOD AREA <small>AC/FT incl. P.R.A.</small>	50,636.65	0.00	9,466.08	31,203.71	40,669.79	2.41
UPPER RIO FELIX	2,280.39	0.00	0.00	1,169.46	1,169.46	1.54
ARTESIA AREA	48,431.44		12,122.63	28,883.57	41,006.20	2.54
PECOS RIVER AUGMETATION AT SEVEN RIVERS	9,648.07					0.00
LAKEWOOD - SEVEN RIVERS <small>AC/FT incl. P.R.A.</small>	17,911.97		1,445.56	4,770.80	5,051.84	0.85
TOTAL ALL AREAS <small>(DOES NOT INCLUDE H.I.C.)</small>	337,527.02	7,324.17	69,760.93	194,705.72	266,267.05	2.37

APPROVED BUDGET FOR 2016

FY 2016 Roswell Water Master Operating Budget

Employees: John Stewart
 Iain P Mason
 Gaylan D Young
 Cesar A Carrasco

Object Code	Object Item	Amount
2031	Permanent Position F/T	296,900.00
2111	Group Insurance	41,600.00
2121	Retirement	50,500.00
2131	FICA	22,700.00
2141	Workers Compensation	0.00
2171	Retiree Health Care Act	0.00
2191	Other Employees Benefits	<u>0.00</u>
	Salaries and Benefits	411,700.00
3522	Professional Services Contract	0.00
4221	In-State Travel	0.00
4251	Gas & Oil	4,500.00
4281	State Transportation Pool	<u>10,000.00</u>
	In-State Travel	14,500.00
4321	Furniture Fixtures & Equipment	0.00
4382	IT Maintenance Inv. & Rept.	<u>4,600.00</u>
	IT Maintenance & Repair	4,600.00
4411	Office Supplies	0.00
4441	Field Supplies	0.00
4491	Inventory Exempt	<u>0.00</u>
	Supplies	0.00
4571	ISD Services	0.00
4592	Printing & Photographic	0.00
4612	Postage & Mail Services	0.00
4642	Rent/Land & Building	24,400.00
4662	Telecommunications	1,000.00
4681	Employee Train & Educator	<u>0.00</u>
		25,400.00
4831	Data Processing	<u>0.00</u>
		0.00
		<hr/> <hr/>
	Grand Total	456,200.00

EXPENDITURES FOR 2016

Roswell Basin Watermaster
Expenditures For Calendar Year 2016
January - December 2016

	January - June 2016	July - December 2016	Total
Salaries/Benefits	97,480.74	145,175.25	242,655.99
Travel	0.00	0.00	0.00
Vehicle Leases/Gasoline	8,484.51	4,645.43	13,129.94
Supplies - Office/Field Inv. Exempt	3,917.35	586.24	4,503.59
Postage & Mail/Printing	4,000.00	0.00	4,000.00
Rent	9,260.20	11,244.54	20,504.74
Telecommunications	610.36	560.64	1,171.00
Data Processing Equipment	0.00	0.00	0.00
Total Expenditures	123,753.16	162,212.10	285,965.26

SUMMARY

Metered use of water during 2016 resulted in an average use, for irrigation purposes, of 2.45 acre-feet per water right acre. The total quantity diverted for all uses was the fourth lowest since metering began in 1967.

Inoperative meters continued to present some problems. Under the present system of making adjustments all of the water, diverted through inoperative meters, is accounted for. The program of checking and rating meters, with the present staff, is working at a satisfactory level.