STATE OF NEW MEXICO
OFFICE OF THE STATE ENGINEER
WATER RESOURCE ALLOCATION PROGRAM
WATER RIGHTS DIVISION
DISTRICT IV, LAS CRUCES

LOWER RIO GRANDE WATER MASTER
ANNUAL REPORT
2017 ACCOUNTING YEAR

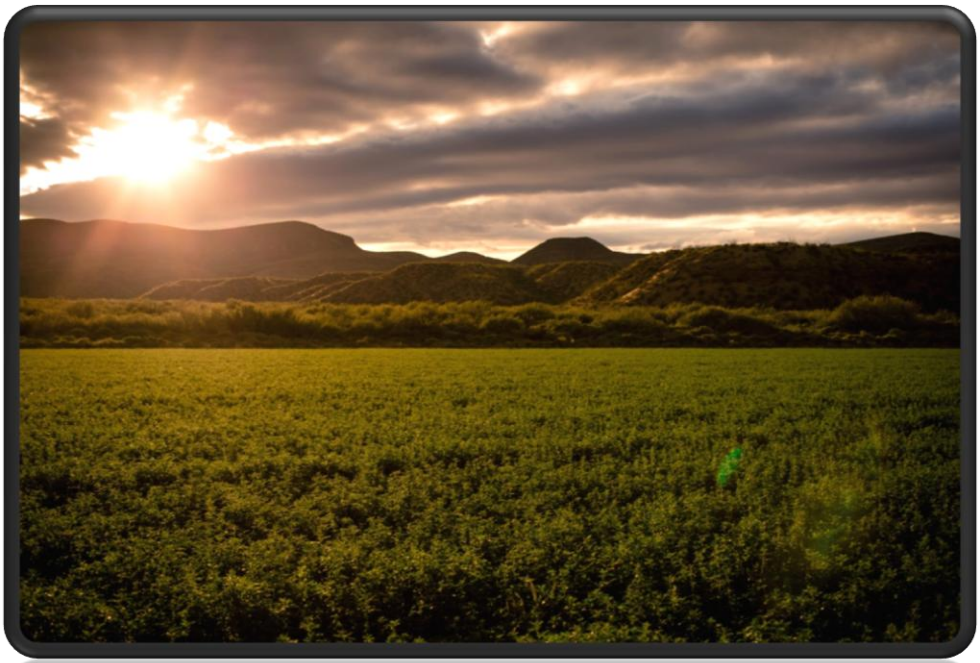

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TABLE OF CONTENTS

COVER PHOTOGRAPH CREDIT:
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INTRODUCTION

On December 3, 2004 the Lower Rio Grande (LRG) Water Master District was established by Order of the State Engineer (SE). The District encompasses a geographic area of 4,224 square miles. The district stretches from its northern extent at the base of Elephant Butte Reservoir in Sierra County, to the southern extent at the New Mexico/Texas/Mexico border in southern Dona Ana County *(See Figure 1 on Page 4).* The District includes the Lower Rio Grande Administrative basin, the Hot Springs Administrative Basin, and the Las Animas Administrative Basin. There are several water users within the District. To name a few: the City of Las Cruces, City of Truth or Consequences, members of the Elephant Butte Irrigation District (EBID), New Mexico State University, New Mexico Spaceport Authority, NASA – Lyndon B. Johnson White Sands Test Facility, Public Utilities of New Mexico, & Union Pacific Intermodal Rail Yard. Additionally, the LRG Water Master District is home to one of the state's largest agricultural producing regions that heavily contribute to the state's $3 billion dollar agricultural industry.

The counties within the district consistently maintain top three state rankings for yield and cash value of crops sold. Examples include: Pecans (State Rank #1 with 51,800,000 lbs produced valued at over $153.3 million). Dona Ana County in particular accounted for 19% of the nation's total pecan production in 2016 and the state of New Mexico was the number 2 ranked state in the nation for production of pecans behind only Georgia. Chile is also a major cash crop within the district (State Rank #2 with 21,500 tons produced in 2016 valued at $17 million) New Mexico is ranked number 2 in the nation for Chile production behind only California. A third crop worth mentioning is Onion. New Mexico ranks fifth in the nation for onion production with a 2016 crop value of $94 million, Sierra & Dona Ana County account for a large portion of this production. *All of the above referenced statistics according to the New Mexico Department of Agriculture's 2016 Agricultural Statistics Bulletin.*

BACKGROUND

The surface and groundwater of the District are administered in accordance with all applicable New Mexico state laws and more specifically in accordance with all SE Order's, permits, licenses, hydrographic surveys, court adjudications, compacts, and settlement agreements, including the following:

- New Mexico Statutes Annotated, Chapter 72
- The Rio Grande Compact *(March. 1938)*
- The Lower Rio Grande Adjudication (State of New Mexico v. EBID)
- Lower Rio Grande Adjudication, SS-97-101- Settlement Agreement and Third Judicial District Court Final Order *(Aug. 2011)*
- SE Order Number 168, First Initial Metering Order (*Dec. 2004)*
- SE Order Number 169, Creating the LRG Water Master District (*Dec. 2004)*
- SE Order Number 172, Amended Metering Order (*Dec. 2005)*
- SE Order Number 180, Supplemental Metering Order *(March. 2007)*
- The Hot Springs Hydrographic Survey *(1958)*
- The Las Animas Creek Adjudication, Cause No. 6427 *(March. 1969)*

New Mexico state law declares that SE has a statutory responsibility to supervise, measure, appropriate, and distribute the waters of the state (*NMSA 1978, Section 72-1-1)*. Additionally, New Mexico state law declares that the SE has the authority to appoint Water Masters whose job is to appropriate, regulate, and control the waters of such water districts, if it is in the best interests of public safety, and the water users of such water districts (*NMSA 1978, Section 72-3-1 & Section 72-3-2).* In accordance with the above referenced statute, the SE appointed a Water Master to the LRG Water Master District who is charged with administering and apportioning the waters of the District, and whose specific duties include; but are not limited to:

- Curtailing illegal diversions

- Measuring and reporting water usage within the district
- Curtailing out-of-priority diversions
- Administering water usage according to agreements entered into by the water users of the district
- Coordinate, where indicated, with the United State Bureau of Reclamation (BOR) and the EBID so as to ensure the appropriate regulation and control of groundwater withdrawals.

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MAP OF THE LOWER RIO GRANDE WATER MASTER DISTRICT

Figure 1.

The LRG Water Master group currently consists of five full time employees who maintain offices at the District IV Las Cruces Office of the State Engineer, at 1680 Hickory Loop, Suite J. Members of the group include LRG Water Master Supervisor Ryan J. Serrano, Senior Assistant LRG Water Master Juan-Carlos Benavides, Senior Assistant LRG Water Master Edward Enriquez, Assistant LRG Water Master Demetrio Alanis, and Assistant LRG Water Master Danny Carrillo. All members of the LRG Water Master group are direct employees of the SE and are compensated from the SE's general fund.

Field work of the Water Master group generally includes inspections of groundwater points of diversion, surface water points of diversions, measurement devices and structures, water right places of use, and any illegal uses or waste of water. Field work also includes the utilization of Trimble GPS technology to acquire well locations and water right place of use locations.

Office work of the Water Master group generally includes preparation of technical reports, memoranda on water rights, and the metered diversions of those rights. The group processes and maintains approximately 14,000 meter records that are submitted to the District IV office annually, tabulates diversion records and determines over diversions, compiles reports, generates compliance notices and general correspondence, provides customer assistance to the general public, coordinates compliance actions with the OSE's Administrative Litigation Unit (ALU), and attends various meetings.

OBJECTIVES

MEETINGS

In 2017, the LRG Water Master Supervisor and his staff participated in several one-on-one meetings with water users both in the office and in the field. Discussions centered on groundwater diversion limits, reconciliation of accounts, settlement provisions, and metering issues. The Water Master Supervisor also participated in occasional meetings with upper management to provide updates and discuss strategy regarding activities within the district. In September of 2017, the State Engineer, the Water Master group, and the EBID held a joint open house/public meeting to address the 2017 surface water allotment and its effect on groundwater diversions.

ENFORCEMENT & COMPLIANCE

In 2017, the LRG Water Master group initiated 102 enforcement and compliance actions for varying degrees of non-compliance within the SE jurisdiction as set forth in the onset of this report. Of the 102 enforcement and compliance actions initiated, 74 (72.5%) have been resolved without further enforcement, and the remaining 28 (27.5%) actions are still pending. If compliance is not achieved on the remaining 54 actions within a timely fashion, then these issues will be forwarded to the SE's ALU to pursue compliance orders in accordance with *NMSA 1978, Section 72-2-18* and enforcement of those orders in either the Third or Seventh Judicial District Courts.

IMPLEMENTATION OF SETTLEMENT TERMS

In addition to the ongoing enforcement and compliance efforts described above, in 2016, Water Master staff also continued to actively implement the 2011 Settlement of LRG Irrigation Water Requirements and Final Judgment issued by the Third Judicial District Court. This Settlement and Judgment set limits on the amount of groundwater that can be diverted for irrigation purposes within the district. The Farm Delivery Requirement (FDR) was set at 4.5 acre-feet/acre, and the Consumptive Irrigation Requirement (CIR) was set at 2.6 acre-feet/acre. Implementation efforts have focused on accurate accounting of the FDR and accommodation of other specific provisions within the settlement that allow for joint management of groundwater rights associated with "farms under the same management/ownership (OwMan). Joint management gives water users more flexibility in allocating groundwater pumping among farms (that is, one farm can pump more, if another farm pumps less), even if those farms have different water rights file numbers. This provision can be used in managing groundwater on separate farms owned by the same party. This provision can also be utilized by a farmer who manages a number of farms, not all of which he or she owns, provided there is a written agreement between the farmer and the landowners.

Water Master staff have made considerable efforts in the last four accounting years to implement and effectively manage the basin wide FDR and the other applicable provisions of the settlement, including but not limited to the OwMan provision. An example of these efforts included the development

of accounting mechanisms in the New Mexico Water Rights Reporting System (NMWRRS) website for accurate tracking of diversion on a yearly basis. Other efforts included providing notice to water users of their specific allowable diversion based on their individual water rights and whether or not they had exceeded that allowable limit in any one accounting year. In March of 2017, Water Master staff tabulated the diversion amounts associated with each individual water right for the previous 2016 accounting year, taking into consideration all of the variables associated with the diversion of groundwater within the district including water right specific FDR's, surface water allotments, and settlement provisions. From this tabulation, Water Master staff determined that approximately 3,992 acre-feet of groundwater was diverted in excess of the total allowable diversion limit associated with the known water rights on file with this office.

In an effort to reconcile the exceeded amount of groundwater in a timely fashion, the Water Master put into motion a stepped procedure for reconciling these diversions. This procedure was developed in coordination with the SE ALU & the SE Hearing Unit. The procedure includes notices to owners, initiation of compliance orders, and an option for expedited administrative hearings. This effort proved to be extremely effective and resulted in of **99%** of the exceeded diversion being successfully reconciled within one year. The details of this effort are summarized in *Figure 2.* on Page 9.

The reconciliation of each exceeded diversion occurred via one of four primary techniques. 1) by identifying and correcting inaccurate acreages in the WATERS database, 2) by verifying and correcting distribution errors (*mostly with a single well that serves multiple water rights*), 3) by grouping farms and associated diversions and averaging the use across several water right files using the OwMan provision of SSI#101, or 4) by paying back. We have instances where water right owners acknowledge their over diversion and are willing to pay it back by either 1) reducing their overall diversion in 2017, 2) by letting land lay fallow in 2017, or 3) temporarily taking land out of production. By far, the use of the OwMan provision is the most commonly used technique for reconciling diversions, and has resulted in over **53,352** irrigated acres within the district being designated as part of an authorized OwMan plan as recorded in the District IV office water rights files. This is a decrease in OwMan acreage over the

previous accounting year of 2,935 acres. A map depicting he physical location of these acres is included hereto as *Figure 3* on Page 10.

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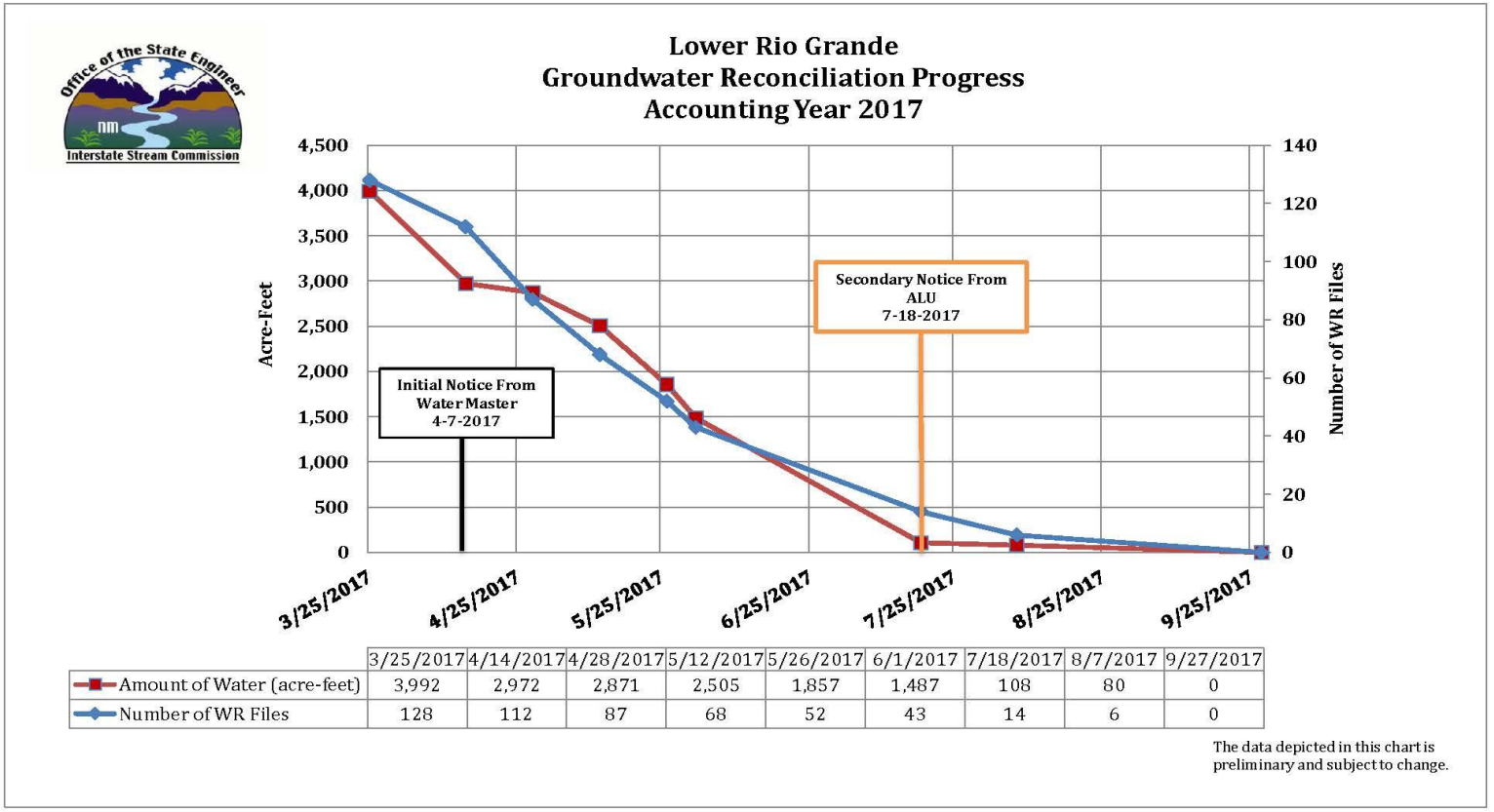

	3/25/2017	4/14/2017	4/28/2017	5/12/2017	5/26/2017	6/1/2017	7/18/2017	8/7/2017	9/27/2017
Amount of Water (acre-feet)	3,992	2,972	2,871	2,505	1,857	1,487	108	80	0
Number of WR Files	128	112	87	68	52	43	14	6	0

Figure 2.

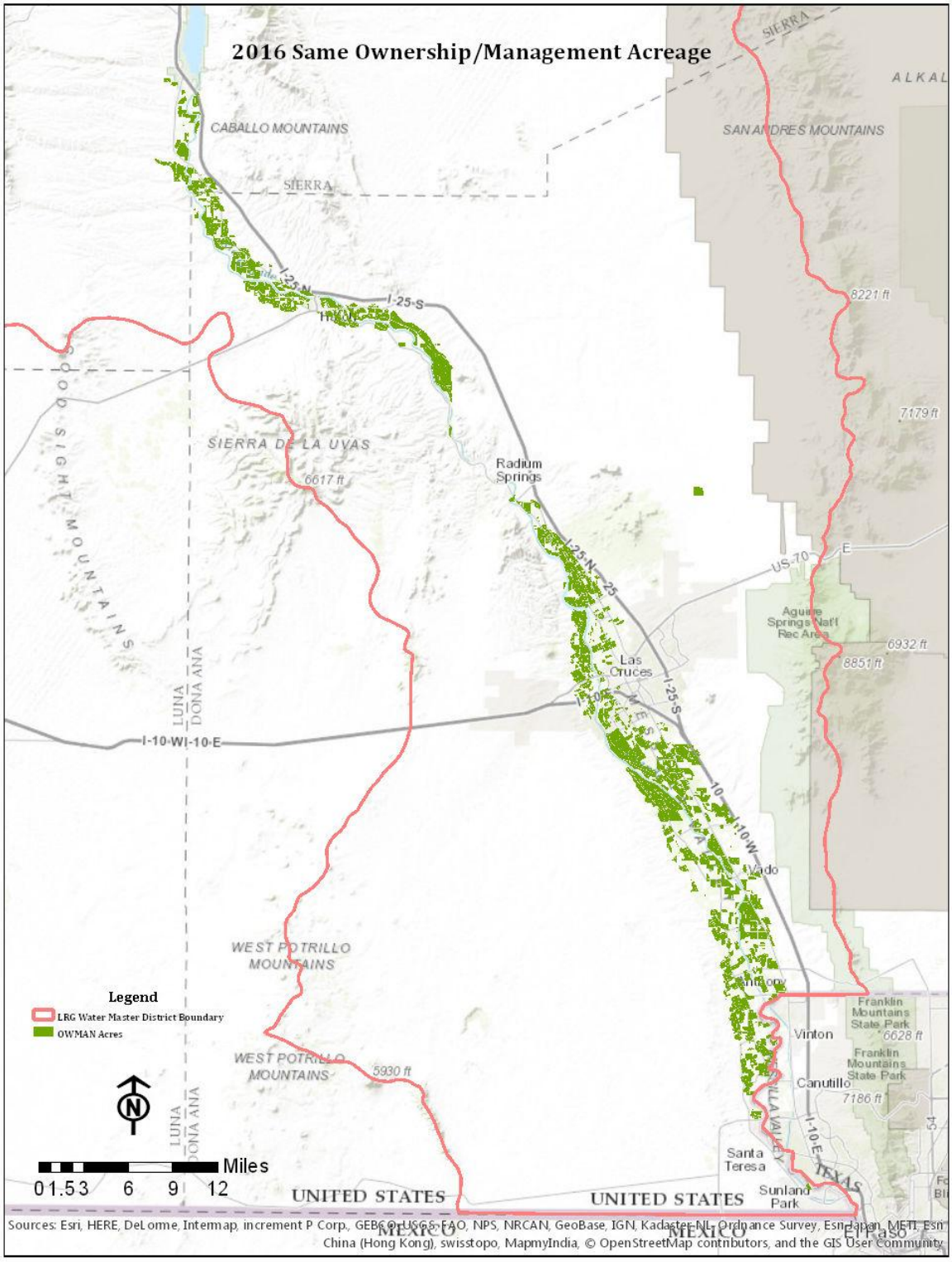
2016 Same Ownership/Management Acreage
CABALLO MOUNTAINS
SIERRA
SAN ANDRES MOUNTAINS
ALKAL
8221 ft
7179 ft
SIERRA DE LA UVAS
6617 ft
Radium Springs
I-25-S
I-25-N
US-70
Aguirre Springs Nat'l Rec Area
6932 ft
8851 ft
Las Cruces
I-10-W
I-10-E
LUNA
DONA ANA
GOOD SIGHT MOUNTAINS
WEST POTRILLO MOUNTAINS
5930 ft
Vado
Anthony
Vinton
Franklin Mountains State Park
6628 ft
Canutillo
7186 ft
Santa Teresa
Sunland Park
TEXAS
UNITED STATES
MEXICO
El Paso
Legend
LRG Water Master District Boundary
OWMAN Acres
N
Miles
0 1.5 3 6 9 12
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

Figure 3.

GROUNDWATER METERING

In accordance with SE Order number 172, it is the responsibility of the water right owners to submit meter readings to the SE on or before the tenth day of January, April, July, and October for the three preceding calendar months, unless otherwise ordered by the SE. In an effort to maintain high voluntary meter reading submittal rates and to ensure a complete and accurate data record, the LRG Water Master group has taken three proactive steps to ensure compliance. Those steps include the following:

STEP 1: Postcard Reminders – In December of each accounting year, LRG Water Master Staff sends a friendly reminder postcard to every water right owner with an actively metered well or diversion. The postcard serves as a general reminder to well owners to submit a final meter reading for the accounting year.

STEP 2: Meter Reading Overdue Letter - In January of the following accounting year, Water Master staff sends out a meter reading delinquency letter to those well owners who failed to submit meter readings for the final reporting period of the year. The letter requires these water right owners to submit their meter reading(s) within 10 days of the receipt of the letter. The letter indicates that if meter readings are not submitted within a timely manner, the issue would be forwarded to the SE's Administrative Litigation Unit.

STEP 3: Outstanding Meter Reading Enforcement – Normally there has been a small percentage of well owners who do not respond to Steps 1 or 2. In order to facilitate a complete data record, Water Master staff conducts field work and physically acquire a meter reading for each of the remaining wells for which a reading has not submitted.

As a result of the LRG Water Master staffs efforts outlined above, **1,706 wells**, or **98%** of the actively metered irrigation wells within the LRG Water Master District have a meter reading entered into the WATERS databases to close out the accounting year 2017. For all other uses we have **80%** reporting.

SURFACE WATER METERING

2017 was the first full year of operation for all four surface water measurement sites within the LRG. The sites are fully functional and logging surface flow data daily. Unfortunately, due to budget restrictions and IT resources, we have not been able to install a data server at the local Las Cruces office to house the real-time transmitted data. To compensate for the lack of a server, water master staff regularly visits each site to ensure proper functionality and to manually download data. The data is then checked for accuracy against field measurements and certified. A brief summary of the 2017 annual diversion totals for each site is listed below in *table 1*.

Site Name	Basin	Average Daily flow (cfs)	Total Diversion -2017 (acre-feet)
Paxton/Cates River Pump	Hot Springs	0	190.00*
Las Palomas Community Ditch	Hot Springs	4.75	2,629.50
Las Animas Community Ditch	Las Animas	1.39	211.37
Holguin River Pump	Lower Rio Grande	1.52	297.99

The sites selected for measurement were identified as locations in critical need of measurement not only for the purposes of this agency but for the users/managers of these surface water systems and the public at large. The construction of these sites was funded through the State of New Mexico's Severance Tax Bond Program, and the Legislatures Capital Improvement award process.

ANALYSIS

2017 DIVERSIONS

For 2017, the EBID board of directors allotted 24.0 acre-inches (2.00 acre-feet per acre) of surface water to its constituents. This allocation equates to **181,280** acre-feet of Rio Grande Project surface water being put to beneficial use within the LRG Water Master District; as compared to 13.0 acre-inches (1.08 acre-feet per acre) or 97,891 acre-feet in 2016. This 46% increase in Rio Grande surface water supply from 2016 to 2017 is the result of above average snowpack and snowmelt runoff from the upper watershed and average spring rainfall in south/central New Mexico that was captured in both Elephant Butte reservoir and Caballo reservoir. Consistent with the previous year's observation, this increase in Rio Grande surface water supply translated to significant decrease of groundwater pumping being witnessed for irrigation purposes in 2017.

The increased amount of surface water and the timing of its delivery (*April 10th, 2017 to the Hatch/Rincon Valley and May 15th, 2017 to the Mesilla Valley*) had a notable impact on the amount of early season supplemental groundwater pumping that we would have normally observed for early season crops such onions, lettuce, cabbage, wheat, alfalfa, and other silage type crops. This staggered release of surface water to has been deployed over the previous three irrigations seasons. This surface water delivery method has proven to be very effective in alleviating the need for early season supplemental groundwater pumping and allowed many farmers to start and in some instances finish crops without supplemental groundwater particularly in the Hatch/Rincon Valley.

A lack luster monsoon season and record breaking high temperature late in the summer and through the fall led to sustained rates of supplemental groundwater diversions later in the growing season. These groundwater diversions late in the season were necessary to finish late season crops such as cotton, alfalfa and pecans.

In 2017, a total of **203,425 acre-feet** of metered groundwater was diverted within the LRG Water Master District. This is a 23% decrease in groundwater diversions compared to the 2016 accounting year.

For irrigation purposes 156,682 acre-feet of groundwater was diverted. This is a 27.5% decrease from 2016. For municipal and other drinking water purposes 38,141 acre-feet was diverted. This is a 4% decrease from 2016. *Table 1* on page 14 compares and summarizes groundwater diversion by category for the 2015, 2016 and 2017 accounting years. Additionally, Figure *4* on page 15 compares irrigation specific diversion totals for the 2014 thru 2017 accounting years.

The Water Master supervisor fielded many requests in 2017 not only for basin wide groundwater diversion data, but also for sub-basin specific diversion data. Seeing the benefit of further analysis at the sub-basin level we have included a further breakdown of sub-basin groundwater diversion hereto. For the purposes of this report sub-basins are defined according to the criteria set for the Lower Rio Grande Basin Hydrographic Survey Report (*Parsons Et. al, 2000*). There are four distinct sub-basins; they are the Rincon Valley Section (RIN), Northern Mesilla Valley Section (NMES), Southern Mesilla Valley Section, and the Outlying Areas Section (OUTLY). *Table 2* on page 16 details this sub-basin breakdown in greater detail.

In the Hot Springs Administrative Basin, a total of 2,192 acre-feet of metered groundwater was diverted under the jurisdiction of the LRG Water Master in 2017, of which 740 acre-feet was diverted for irrigation purposes, and 1,311 acre-feet was diverted for municipal purposes. This municipal use includes the water rights on file with the SE for the City of Truth or Consequences.

In the Las Animas Administrative Basin a total of 243 acre-feet of metered groundwater was diverted under the jurisdiction of the LRG Water Master in 2017, of which 236 acre-feet were diverted for irrigation purposes. Only 6 acre-feet of groundwater was diverted for a use other than irrigation in the Las Animas Basin.

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Three (3) Year Comparison and Summary of Metered Groundwater Diversions in the Lower Rio Grande Water Master District (Acre-Feet)

Category	2015		2016		2017		3-Year Total	
Irrigation	**219,404**	**83%**	**216,252**	**82%**	**156,682**	**77%**	**592,338**	**81%**
Drinking Water: Municipal, Mutual Domestic, and individual Domestic Supply *(includes 2,400 AF of estimated unmetered domestic)*	**34,636**	**13%**	**39,661**	**15%**	**38,141**	**19%**	**112,438**	**15%**
City of Las Cruces	15,166		20,197		21,758			
New Mexico State University	7,218		2,668		2,534			
Mutual Domestic	8,072		7,855		7,866			
Other Drinking Water	4,180		8,941		5,983			
Commercial/Industrial/Dairy	**5,957**	**2%**	**7,384**	**3%**	**8,058**	**4%**	**21,399**	**3%**
All Other Uses	**5,974**	**2%**	**1,555**	**1%**	**544**	**0%**	**8,073**	**1%**
Total	**265,971**		**264,852**		**203,425**		**734,248**	**100%**

Table 2.

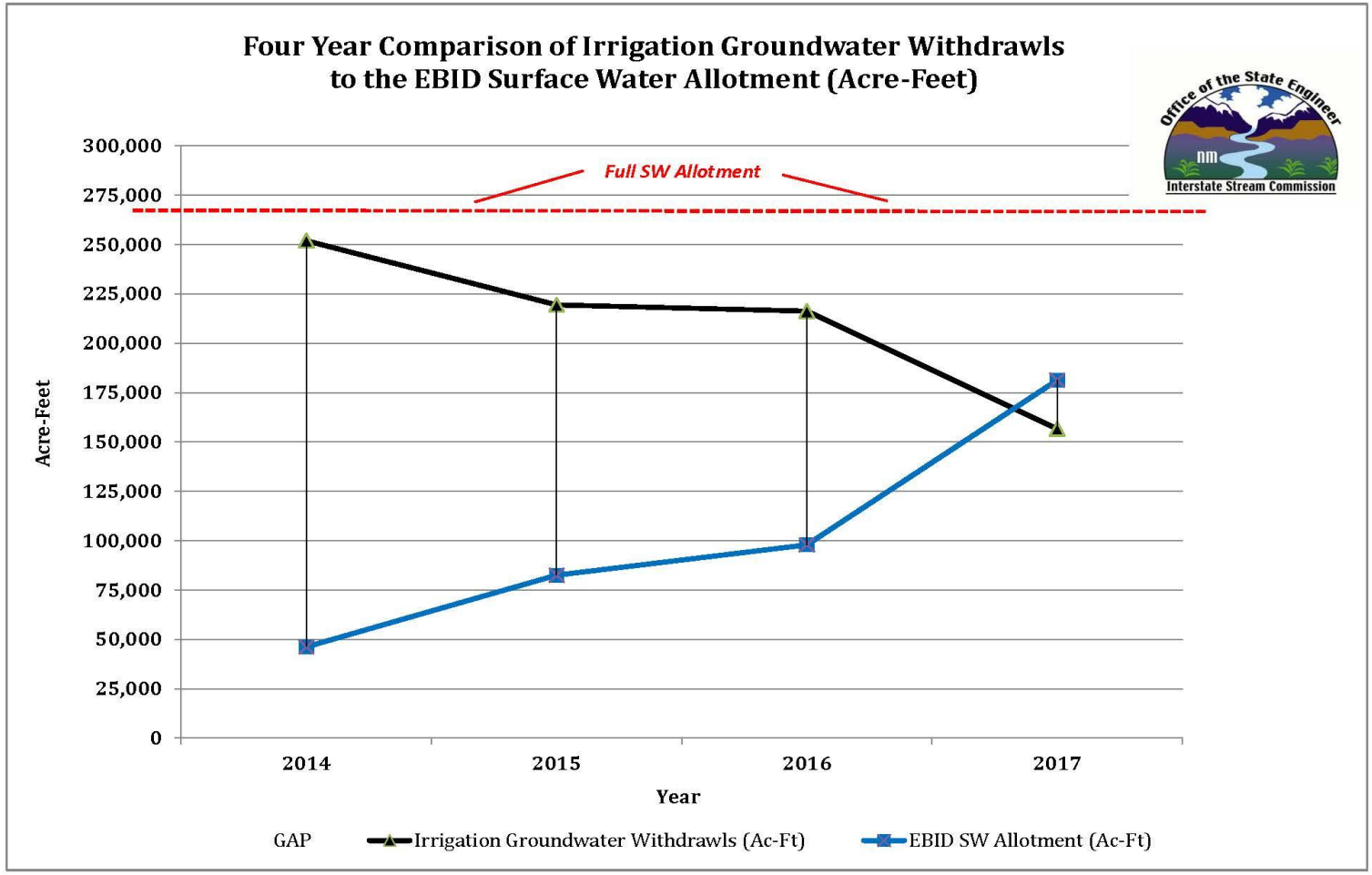
Four Year Comparison of Irrigation Groundwater Withdrawls to the EBID Surface Water Allotment (Acre-Feet)
Office of the State Engineer
nm
Interstate Stream Commission
Full SW Allotment
300,000
275,000
250,000
225,000
200,000
175,000
150,000
125,000
100,000
75,000
50,000
25,000
0
Acre-Feet
2014
2015
2016
2017
Year
GAP
Irrigation Groundwater Withdrawls (Ac-Ft)
EBID SW Allotment (Ac-Ft)

Figure 4.

Lower Rio Grande Sub-Basin Breakdown of Metered Groundwater Diversion (Acre-Feet) - 2017

Category	RINCON		NMES		SMES		OUTLY	
Irrigation	34,279	97.28%	33,533	56.48%	87,275	86.45%	1,511	19.22%
Drinking Water: Municipal, Mutual Domestic, and individual Domestic Supply *(includes 2,400 Ac-Ft of estimated unmetered domestic/all four sub-basins)*	942	2.67%	24,361	41.03%	7,606	7.53%	5,476	69.64%
Commercial/Industrial/Dairy	12	0.03%	1,454	2.45%	5,909	5.85%	688	8.75%
All Other Uses	4	0.01%	19	0.03%	167	0.17%	188	2.40%
Sub-Basin TOTAL(s)	**35,237**	100.00%	**59,369**	100.00%	**100,956**	100.00%	**7,863**	100.00%

BASIN WIDE AGRREGATE		
	Metered Groundwater	**% of Total**
RINCON	**35,237**	**17.32%**
NMES	**59,369**	**29.18%**
SMES	**100,956**	**49.63%**
OUTLY	**7,863**	**3.87%**
TOTAL	**203,425**	**100.00%**

Table3.

GROUNDWATER LEVEL OBSERVATIONS 2014-2017

Groundwater levels within the LRG Water Master district are monitored by a network of shallow groundwater monitoring wells that are drilled into the river valley alluvium and the underlying contiguous Santa Fe group geologic formation. These monitoring wells were drilled as part of a cooperative effort between the New Mexico Interstate Stream Commission (ISC) and the EBID. All of the monitoring wells are drilled in the central portion of the district within the Rio Grande valley alluvial flood plain between the east and west mesas (see map of monitoring well location on page 20).

For ease of data interpretation, we separate the monitoring wells into three (3) distinct geographic sub-basins, the Rincon (RIN), the Northern Mesilla (NMES), and the Southern Mesilla (SMES). The data collection at these monitoring wells is maintained by the EBID, and Water Master staff frequently downloads the data from EBID's hosted website (www.ebid-nm.org) to track groundwater level fluctuations throughout the accounting year.

Over the time period of the 2014 - 2017 accounting years (January 2014 - December 2017), groundwater levels in the RIN sub-basin witnessed an average rate of change of **+1.68 feet**, with the most notable variations shown at monitoring locations: RIN_3R, RIN_11R, and RIN_12R. (*RIN Hydrograph, page 22)*. In the NMES sub-basin, groundwater levels increased by an average rate of change of **+1.52 feet**, with the most notable variations shown at monitoring locations: MES_12R, MES_15R, and MES_43R. *(NMES Hydrograph, Page 24)*. In the SMES sub-basin, groundwater levels decreased by an average rate of change of **0.36 feet**, with the most notable variations shown at monitoring locations: MES_13R, MES_48R, and MES_49R. *(Southern Mesilla Hydrograph page 26)*.

For the purposes of this report, monthly and yearly rates of change per geographic sub-basin were derived using a simple rate of change formula $R = \frac{\Delta X}{\Delta Y}$. Monthly rates of change are based on forty eight months of groundwater level data at each monitoring location. The monthly rate of change per monitoring well location were then aggregated and averaged per geographic sub-basin to establish a weighted sub-basin rate of change in the groundwater table. NOTE: Within each of the three sub-basin

hydrographs, you will notice occasional gaps in some data series. These gaps are the result of instrumentation error and zero values being reported for that particular time period.

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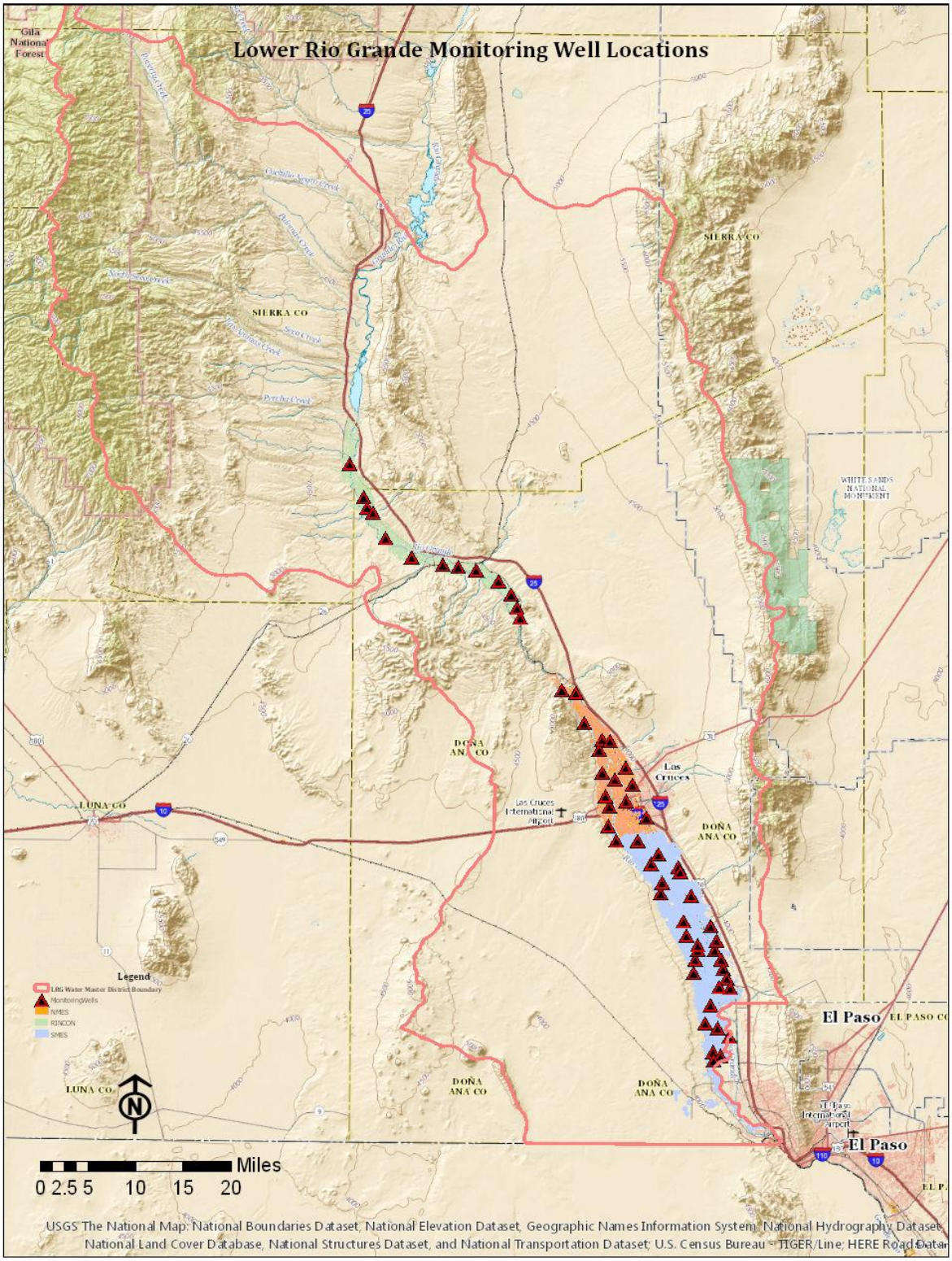
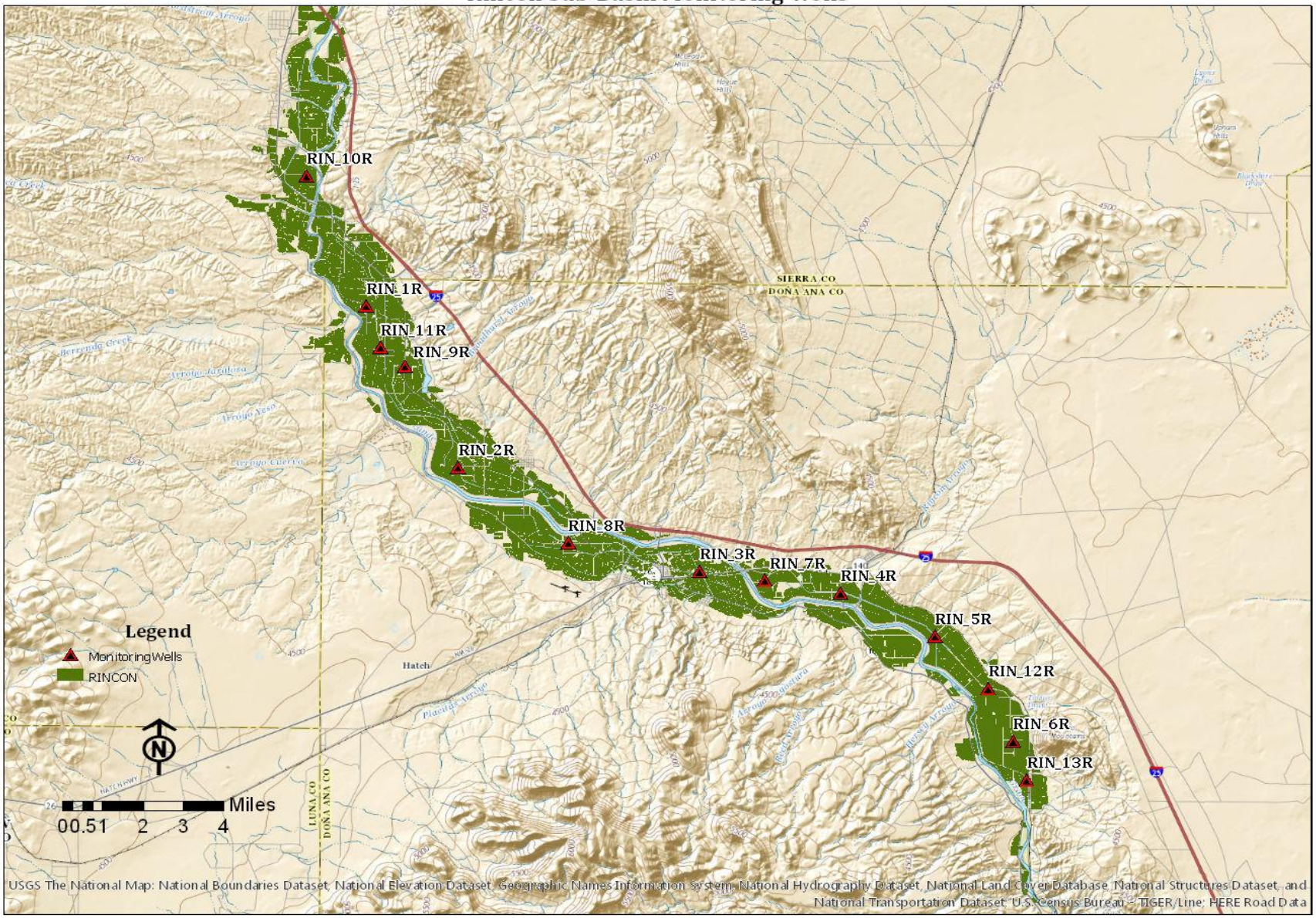
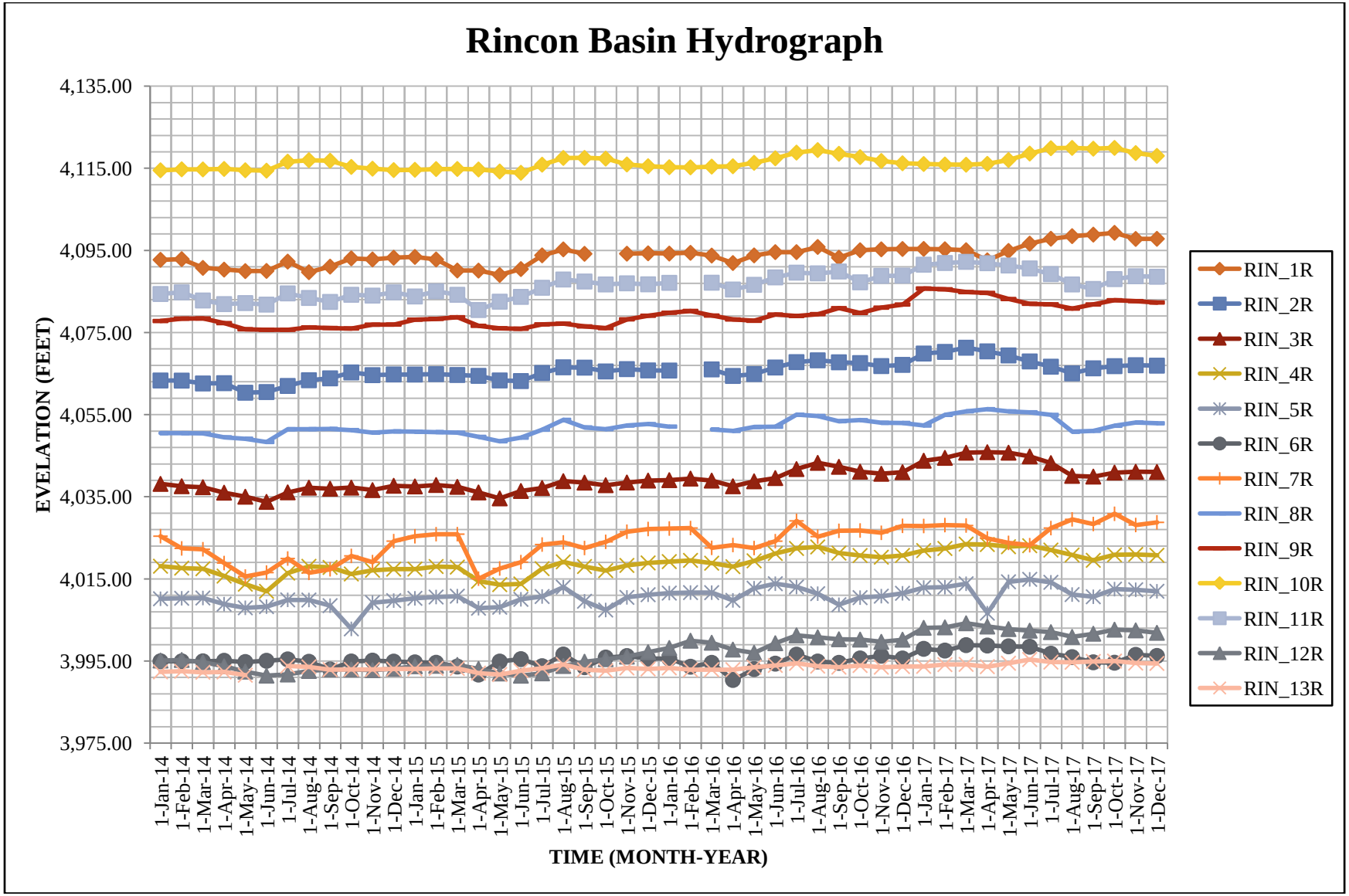

Lower Rio Grande Monitoring Well Locations
Gila National Forest
SIERRA CO
DOÑA ANA CO
LUNA CO
Las Cruces
Las Cruces International Airport
El Paso
El Paso International Airport
WHITE SANDS NATIONAL MONUMENT
Legend
LRG Water Master District Boundary
MonitoringWells
NMES
RINCON
SMES
Miles
0 2.5 5 10 15 20
USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; U.S. Census Bureau - TIGER/Line; HERE Road Data

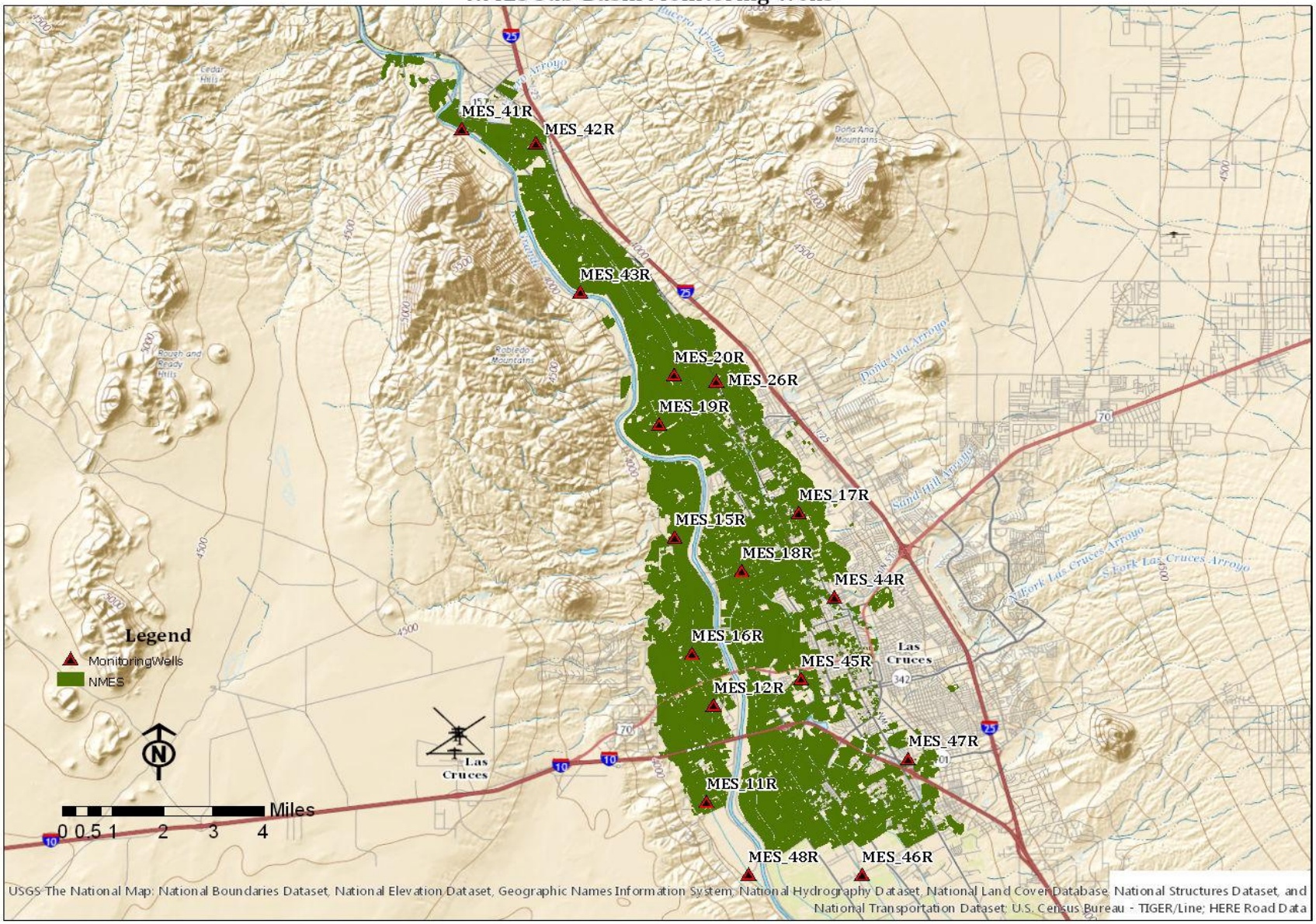
Figure 5.

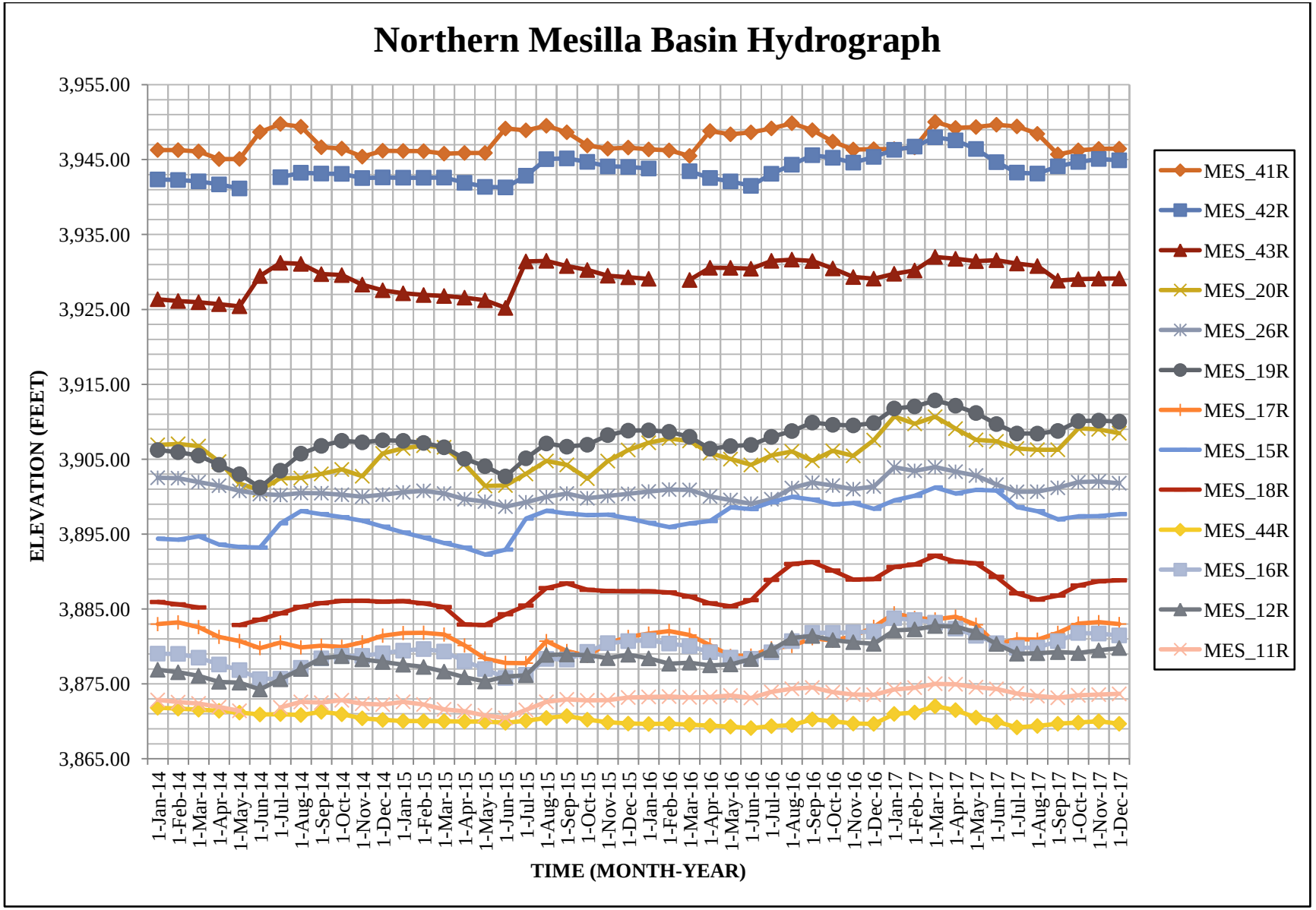
Rincon Sub-Basin Monitoring Wells



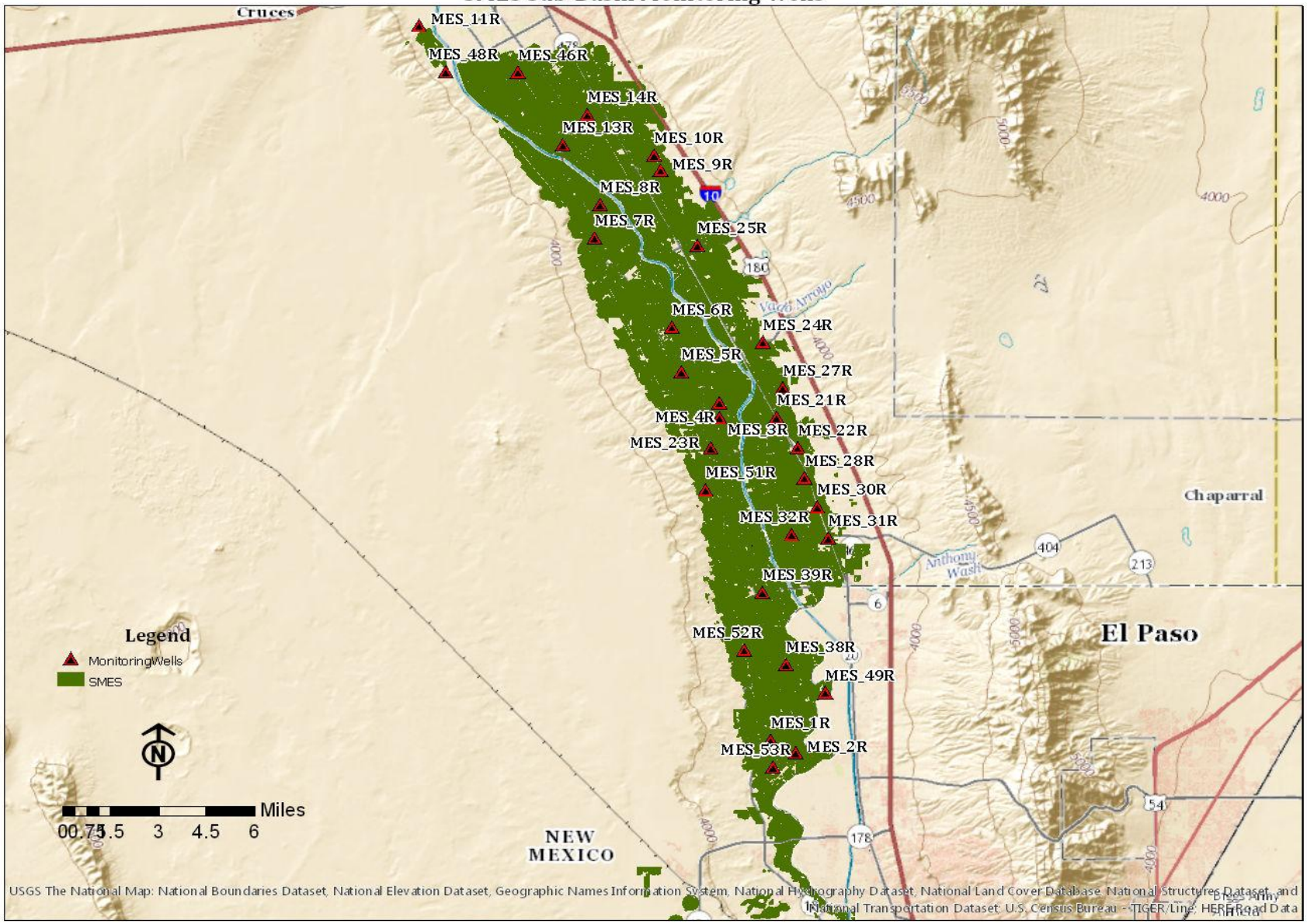

Rincon Basin Hydrograph
EVELATION (FEET)
4,135.00
4,115.00
4,095.00
4,075.00
4,055.00
4,035.00
4,015.00
3,995.00
3,975.00
TIME (MONTH-YEAR)
RIN_1R
RIN_2R
RIN_3R
RIN_4R
RIN_5R
RIN_6R
RIN_7R
RIN_8R
RIN_9R
RIN_10R
RIN_11R
RIN_12R
RIN_13R

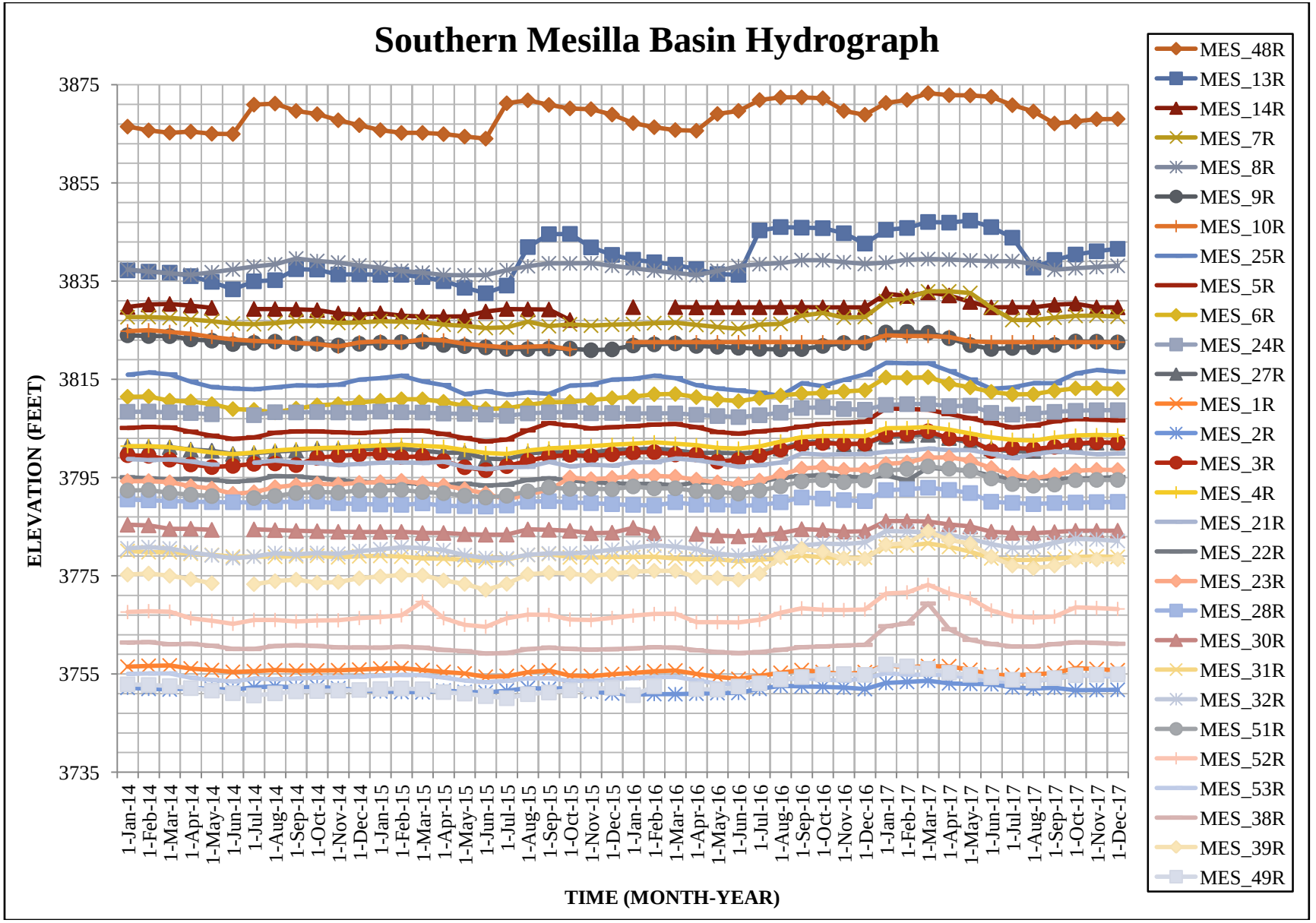
NMES Sub-Basin Monitoring Wells




Northern Mesilla Basin Hydrograph
ELEVATION (FEET)
3,955.00
3,945.00
3,935.00
3,925.00
3,915.00
3,905.00
3,895.00
3,885.00
3,875.00
3,865.00
1-Jan-14
1-Feb-14
1-Mar-14
1-Apr-14
1-May-14
1-Jun-14
1-Jul-14
1-Aug-14
1-Sep-14
1-Oct-14
1-Nov-14
1-Dec-14
1-Jan-15
1-Feb-15
1-Mar-15
1-Apr-15
1-May-15
1-Jun-15
1-Jul-15
1-Aug-15
1-Sep-15
1-Oct-15
1-Nov-15
1-Dec-15
1-Jan-16
1-Feb-16
1-Mar-16
1-Apr-16
1-May-16
1-Jun-16
1-Jul-16
1-Aug-16
1-Sep-16
1-Oct-16
1-Nov-16
1-Dec-16
1-Jan-17
1-Feb-17
1-Mar-17
1-Apr-17
1-May-17
1-Jun-17
1-Jul-17
1-Aug-17
1-Sep-17
1-Oct-17
1-Nov-17
1-Dec-17
TIME (MONTH-YEAR)
MES_41R
MES_42R
MES_43R
MES_20R
MES_26R
MES_19R
MES_17R
MES_15R
MES_18R
MES_44R
MES_16R
MES_12R
MES_11R

SMES Sub-Basin Monitoring Wells




Southern Mesilla Basin Hydrograph
ELEVATION (FEET)
3875
3855
3835
3815
3795
3775
3755
3735
1-Jan-14
1-Feb-14
1-Mar-14
1-Apr-14
1-May-14
1-Jun-14
1-Jul-14
1-Aug-14
1-Sep-14
1-Oct-14
1-Nov-14
1-Dec-14
1-Jan-15
1-Feb-15
1-Mar-15
1-Apr-15
1-May-15
1-Jun-15
1-Jul-15
1-Aug-15
1-Sep-15
1-Oct-15
1-Nov-15
1-Dec-15
1-Jan-16
1-Feb-16
1-Mar-16
1-Apr-16
1-May-16
1-Jun-16
1-Jul-16
1-Aug-16
1-Sep-16
1-Oct-16
1-Nov-16
1-Dec-16
1-Jan-17
1-Feb-17
1-Mar-17
1-Apr-17
1-May-17
1-Jun-17
1-Jul-17
1-Aug-17
1-Sep-17
1-Oct-17
1-Nov-17
1-Dec-17
TIME (MONTH-YEAR)
MES_48R
MES_13R
MES_14R
MES_7R
MES_8R
MES_9R
MES_10R
MES_25R
MES_5R
MES_6R
MES_24R
MES_27R
MES_1R
MES_2R
MES_3R
MES_4R
MES_21R
MES_22R
MES_23R
MES_28R
MES_30R
MES_31R
MES_32R
MES_51R
MES_52R
MES_53R
MES_38R
MES_39R
MES_49R

2018 Accounting Year Outlook

At the time of this report, the United States Department of Agriculture's (USDA), Natural Resource Conservation Service (NRCS) website for the Upper Rio Grande Basin watershed was reporting a basin wide snow water equivalent index number of 56% of normal, or 44% below average. Additionally, the NRCS monthly *New Mexico Basin Outlook Report* for February 2017 forecasts stream flow and runoff at San Marcial to be -6% of normal between March and July of 2018. Essentially, meaning that the Rio Grande Project should expect to receive no boost in usable storage from snowmelt runoff. The only gains in reservoir storage at this point would be from other precipitation events in New Mexico's middle Rio Grande valley. If this forecast holds true, water users within the Lower Rio Grande Water Master district (particularly those with an irrigation purpose of use) can anticipate a sub 1.0 acre-foot per acre allotment via the Rio Grande project and the EBID during the 2018 irrigation season. The EBID Board of Directors has already (at the time of this report) set an initial allotment to its members of 8.0 acre-inchers per acre or 0.66 acre-feet per acre. This equates to 22% of a full surface water supply. With this sharp decline in the amount of surface water supply available to the Rio Grande project, it should be anticipated that ground water diversions for irrigation purposes will increase significantly. On par with the 2014 irrigation season where we recorded 250,000+ acre-feet of groundwater diverted for irrigation purposes. All other uses not affected by available surface water supplies should be expected to maintain their observed three year averages, resulting in an anticipated total groundwater diversion in the 2018 accounting year of 300,000+ acre-feet.