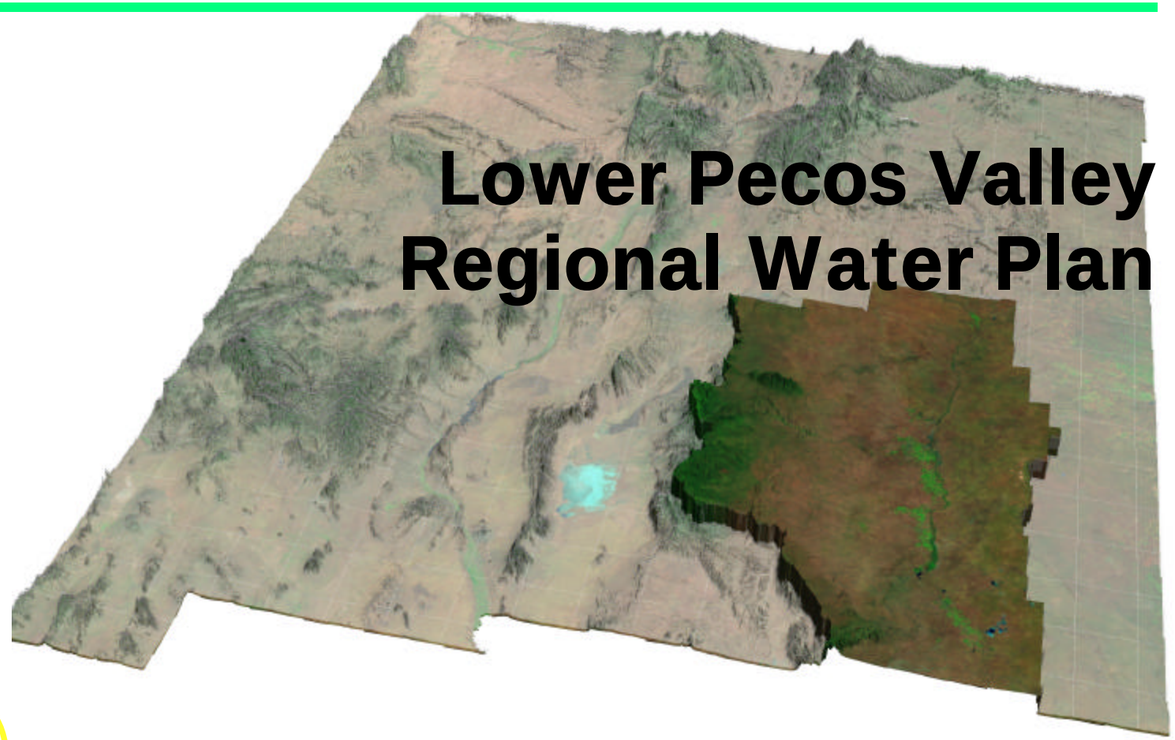
Prepared for:
New Mexico Interstate Stream Commission
Regional Water Planning Program



Lower Pecos Valley Regional Water Plan

Volume I
Executive Summary and Atlas

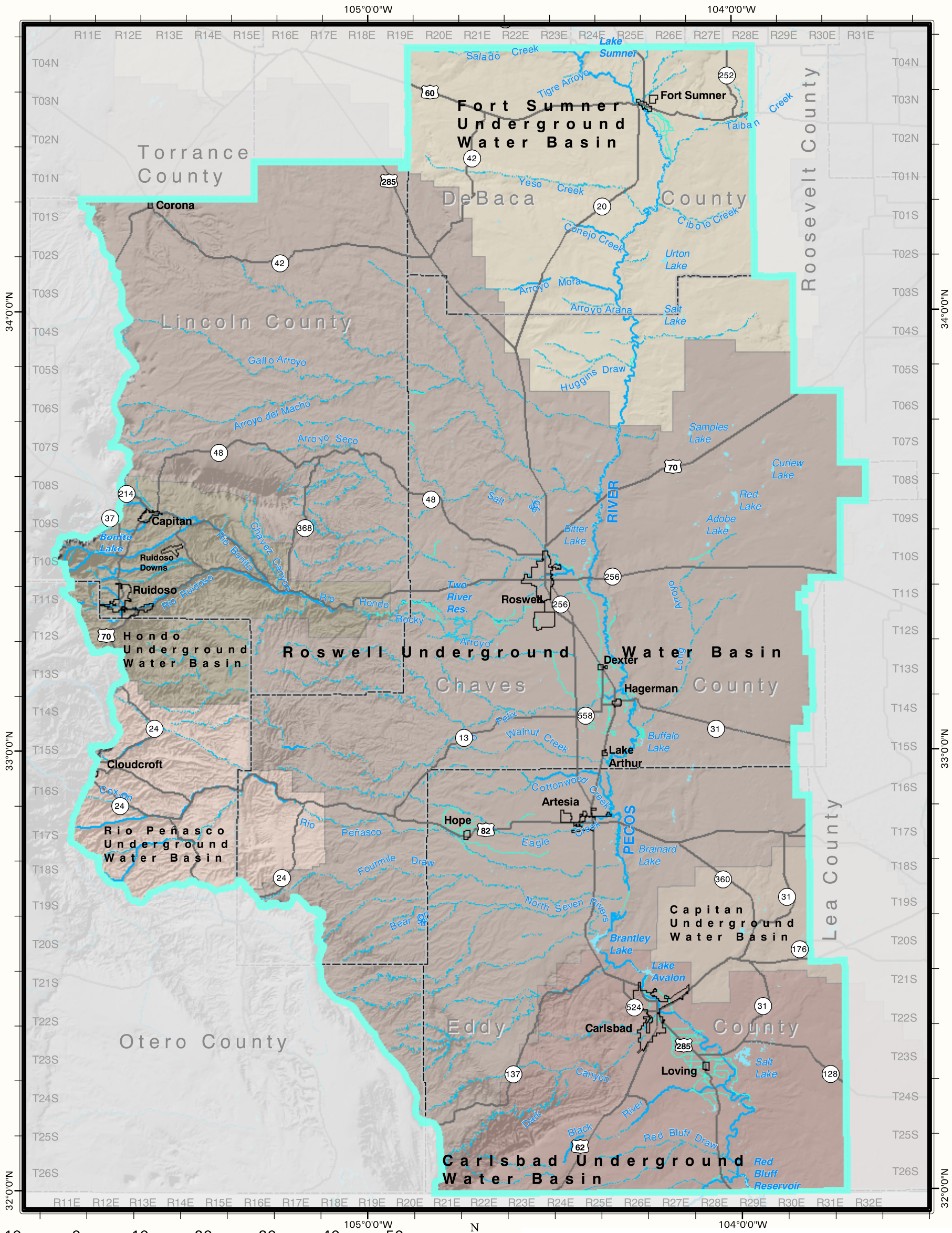
JULY 2001

Prepared by:
PECOS VALLEY WATER USERS ORGANIZATION
P.O. Box 1361
Cloudcroft, NM 88317

LOWER PECOS VALLEY REGIONAL WATER PLAN

PECOS VALLEY REGIONAL WATER PLANNING AREA AND GROUNDWATER BASINS

PLATE 1



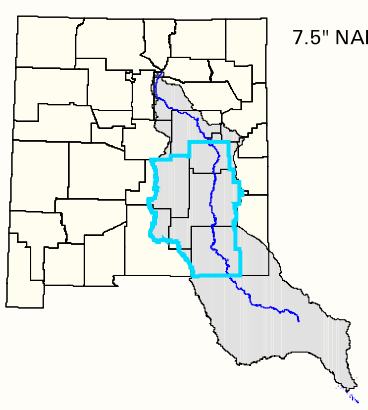
10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Underground Water Basins adapted from NM State Engineer digital data: Electronic communication, J. Kennedy, New Mexico State University to P. Balleau, September 21, 2000.
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

PLANNING REGION 10 BOUNDARY. AREA IS APPROXIMATELY 16,800 SQUARE-MILES.

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

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PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

TOPOGRAPHY AND DRAINAGE BASINS IN THE PLANNING AREA

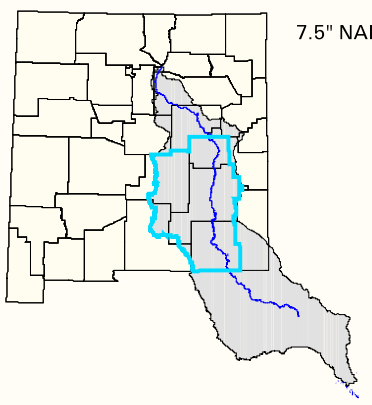
PLATE 2

1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Hydrologic Unit Boundaries are from:
U.S. Geological Survey, 2000, Hydrographic Unit Boundaries,
http://water.usgs.gov/GIS/huc.html.
Base adapted from the National Elevation and Hydrography Datasets,
Tiger Line Data provided by ESRI, Inc. and New Mexico Resource
Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

USGS HYDROLOGIC UNITS

TOPOGRAPHY

HIGHEST ELEVATION IN THE PLANNING AREA IS 12,000 FEET

LOWEST ELEVATION IN THE PLANNING AREA IS 2870 FEET

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

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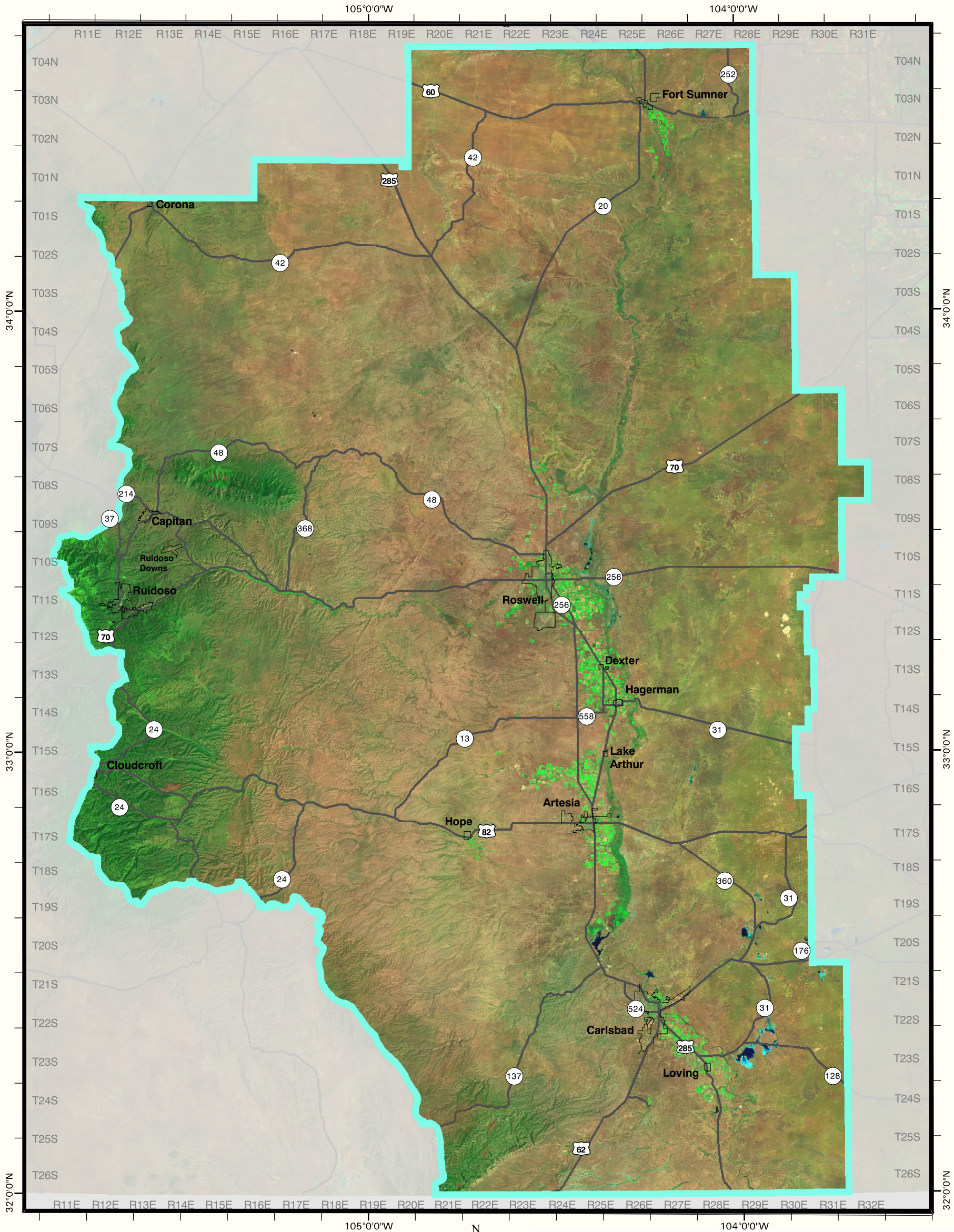
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

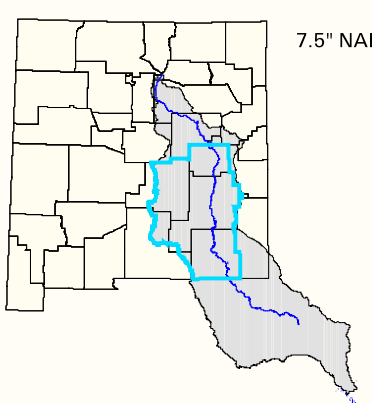
LANDSAT IMAGERY OF THE PLANNING AREA

PLATE 3



10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



LANDSAT Satellite Image provided by:
New Mexico Geological Society, 2000, LANDSAT Thematic Mapper5 Mosaic, Band 7, 4 and 2 Recorded in 1989, 1992 and 1993, distributed by Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

PLANNING REGION 10 BOUNDARY. AREA IS APPROXIMATELY 16,800 SQUARE-MILES.

TOWNS AND CITIES MAJOR ROADS

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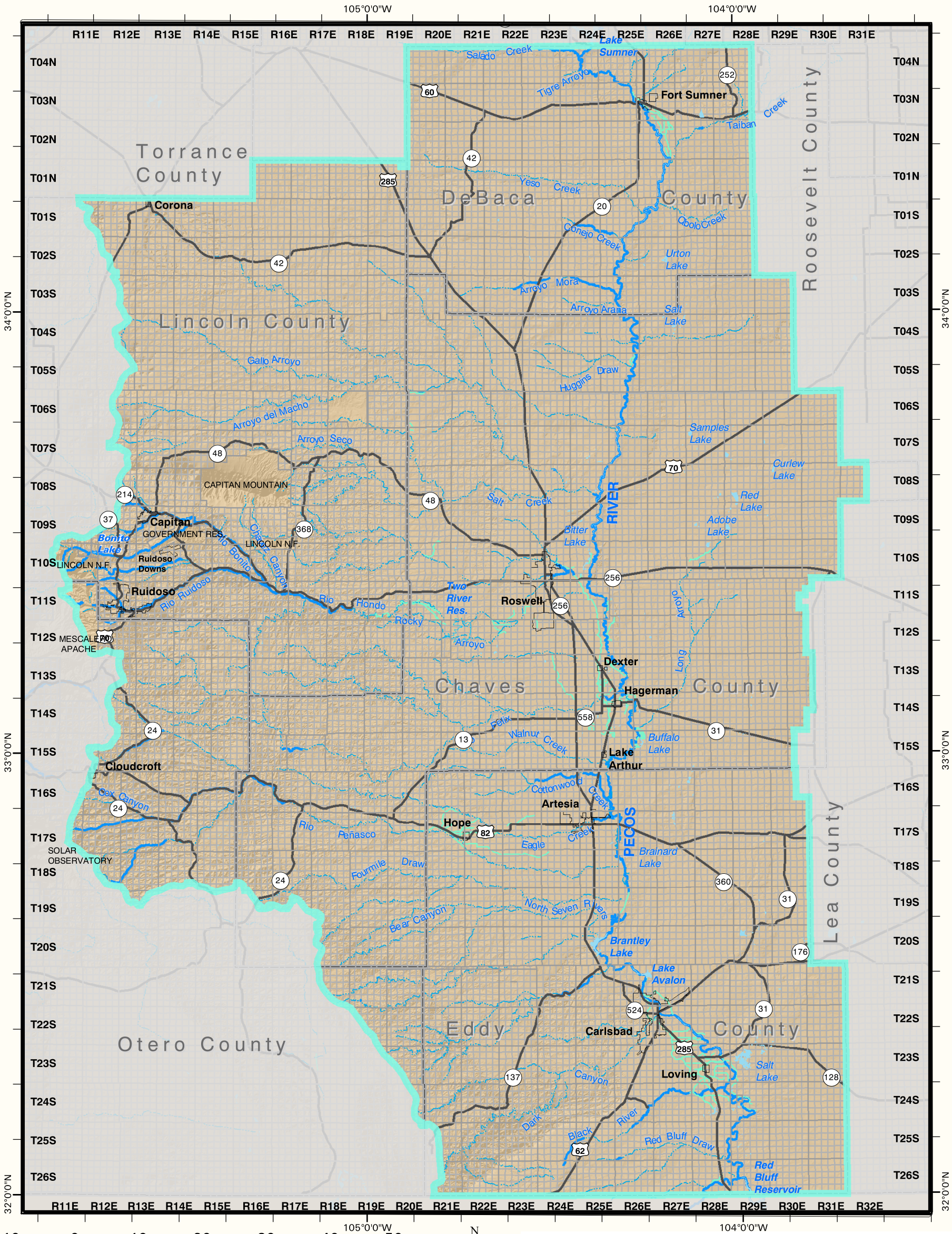
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

TOWNSHIP-RANGE-SECTION MAP OF THE PLANNING AREA

PLATE 4



10 0 10 20 30 40 50 Miles

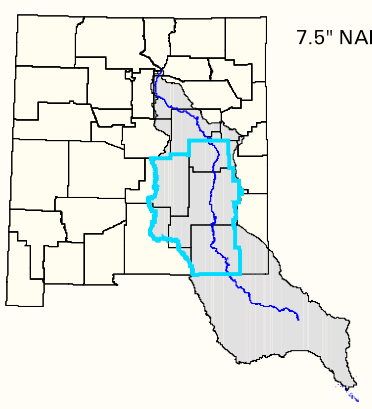
1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER

N W E S



Public Land Survey data adapted from US Bureau of Land Management data provided by:
New Mexico Resource Geographic Information System (RGIS) Clearinghouse, 1996, Resource Data
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

- TOWNSHIPS
- SECTIONS
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

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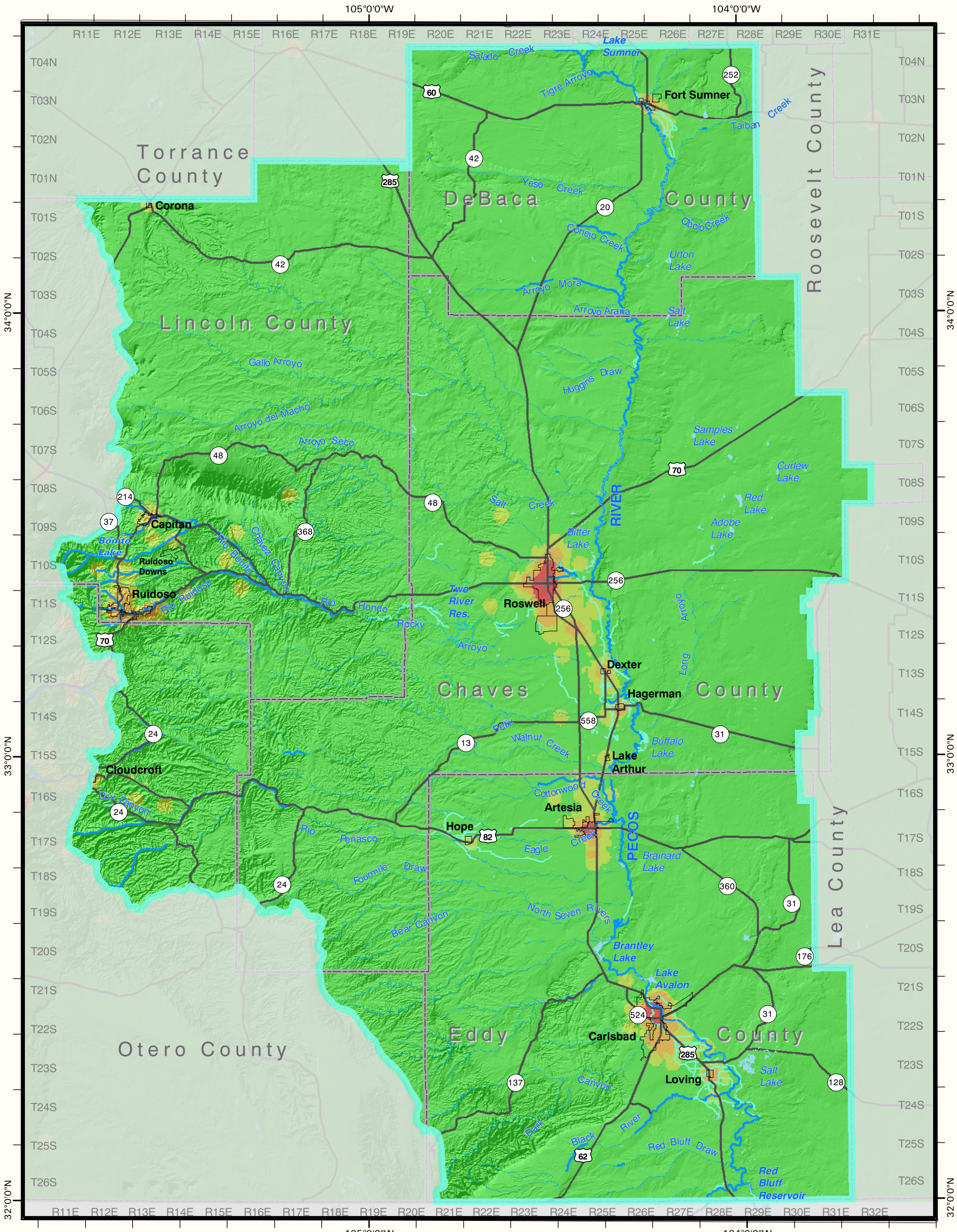
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

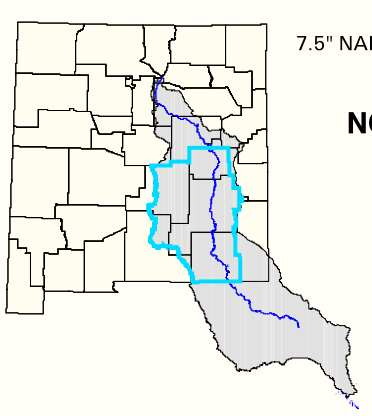
POPULATION DENSITY IN THE PLANNING AREA

PLATE 5



10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



NOTES:YEAR 2000 PROJECTED PLANNING AREA POPULATION = 139,000

Population Density Surface was adapted from 1990 US Census Bureau data provided by:
U.S. Census Bureau, 1990, TIGER Line Data: http://www.esri.com/data/online/
Base adapted from the National Elevation and Hydrography Datasets,
Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

POPULATION DENSITY

- 0 - 15 PERSONS PER SQUARE-MILE
- 15 - 100
- 100 - 1000
- 1000 - 4000

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

BGW

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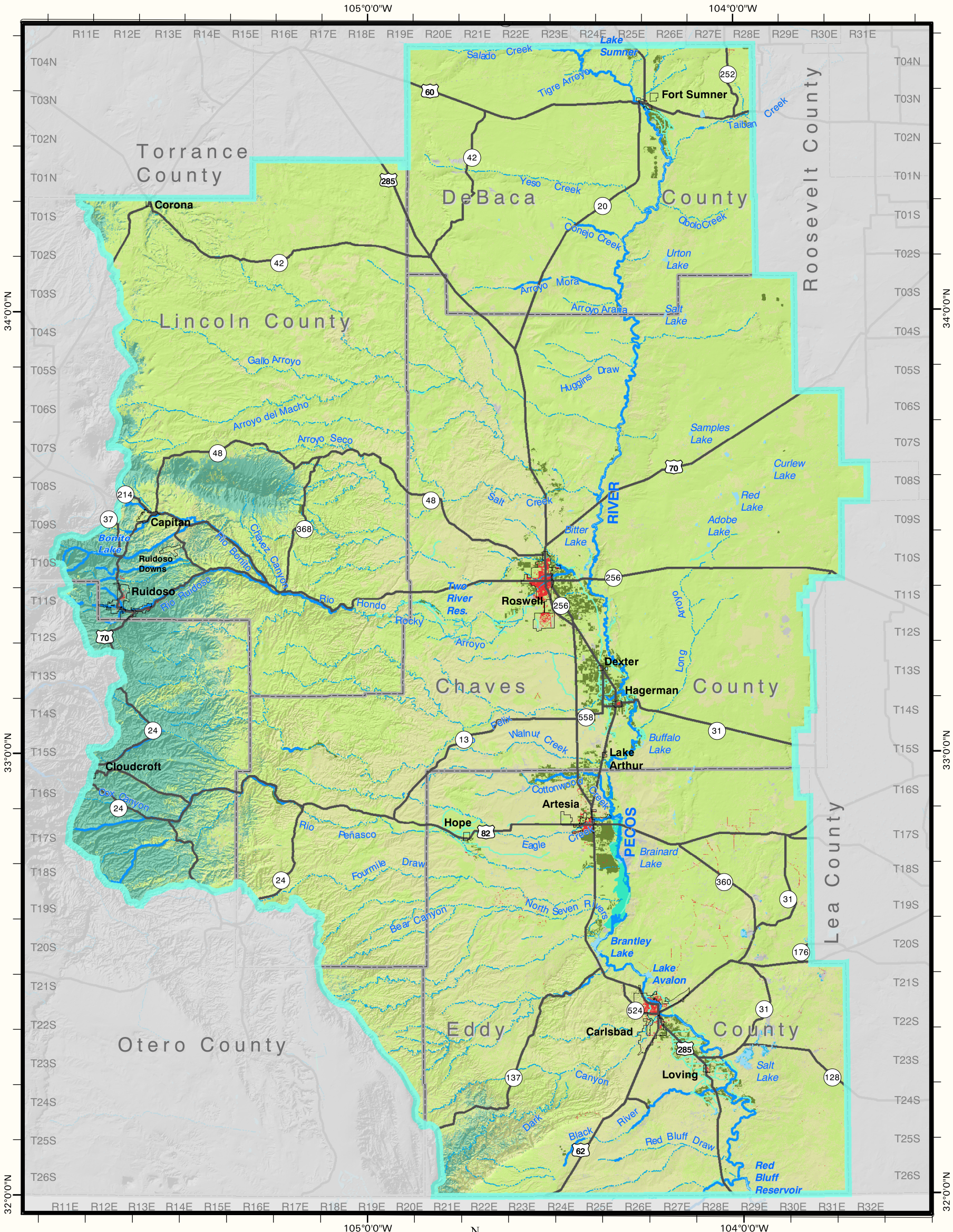
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

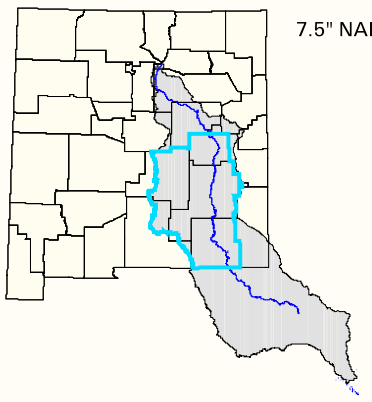
LAND COVER IN THE PLANNING AREA

PLATE 6



10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Land Cover Data adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

LAND COVER TYPE	AREA (ACRES)
OPEN WATER	11,340
URBAN OR BUILT-UP	26,550
BARE ROCK/SAND/CLAY AND MINES	80,590
FOREST	817,080
SHRUBLAND	3,362,410
AGRICULTURAL	127,430
GRASSLAND	6,311,740
WETLANDS	18,040

CANAL OR DITCH
PERENNIAL STREAM
INTERMITTENT STREAM
TOWNS AND CITIES
MAJOR ROADS
COUNTY BOUNDARIES

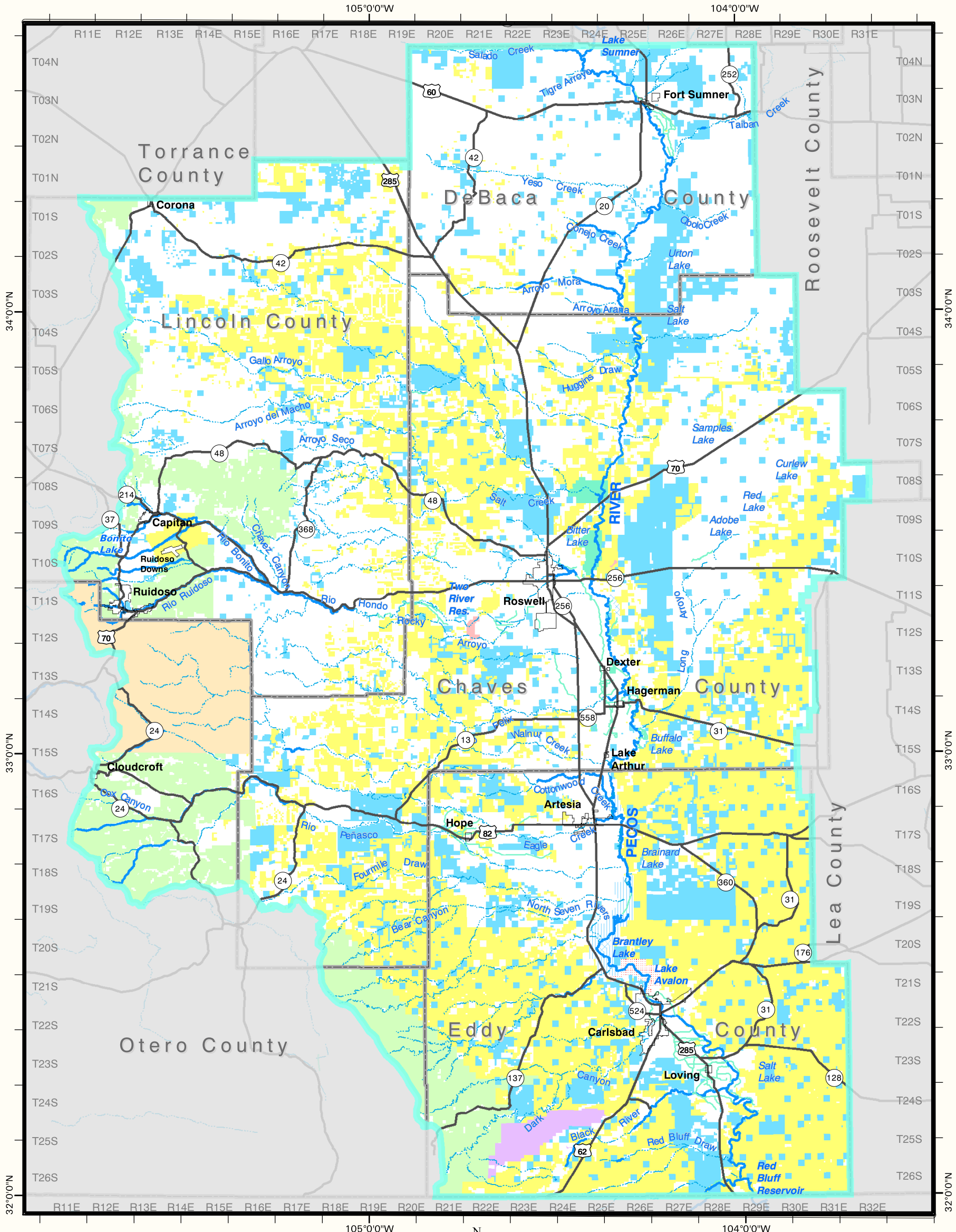
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

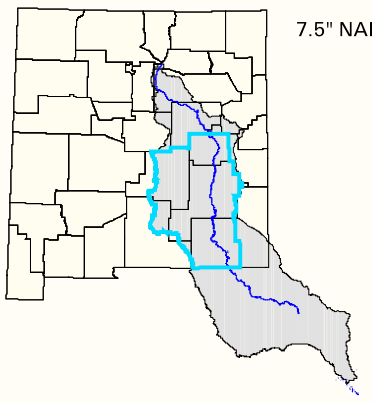
LAND OWNERSHIP IN THE PLANNING AREA

PLATE 7



10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Land Ownership data adapted from US Bureau of Land Management data: New Mexico Resource Geographic Information System (RGIS) Clearinghouse, 1999, Statewide Surface Ownership: http://rgis.unm.edu
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

OWNERSHIP	AREA (SQUARE-MILES)
BUREAU OF LAND MANAGEMENT	4683
BUREAU OF RECLAMATION	21
FISH AND WILDLIFE SERVICE	38
FOREST SERVICE	1251
INDIAN/TRIBAL	489
MILITARY	6
NATIONAL PARK SERVICE	73
PRIVATE	7760
STATE	2425
STATE GAME AND FISH	55
STATE PARK	7

CANAL OR DITCH
PERENNIAL STREAM
INTERMITTENT STREAM
TOWNS AND CITIES
MAJOR ROADS
COUNTY BOUNDARIES

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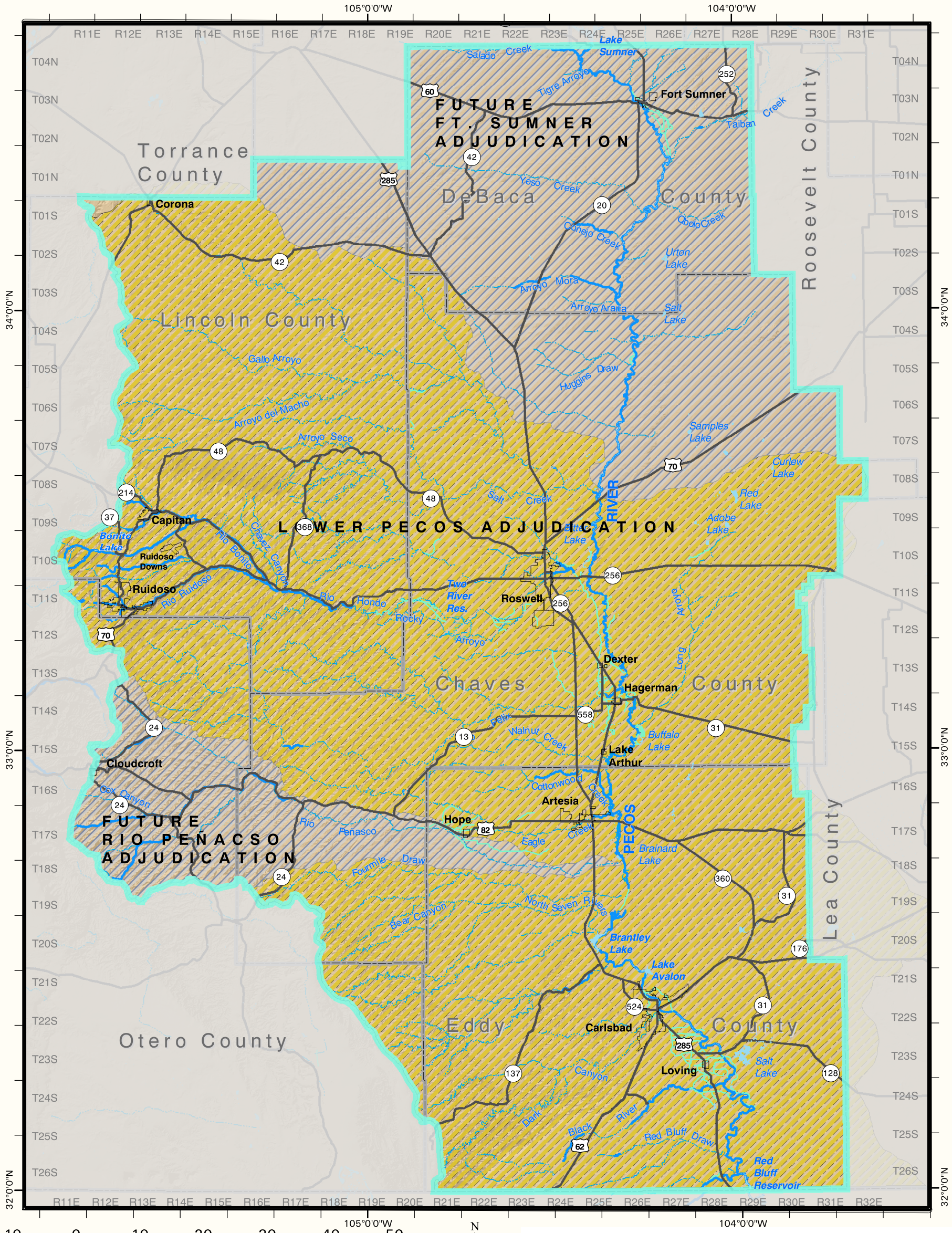
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

BASIN ADJUDICATION STATUS IN YEAR 2000

PLATE 8



Adjudication Status from:
New Mexico Office of the State Engineer, 1999, 1997-1998 Annual Report, http://www.seo.state.nm.us/.
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

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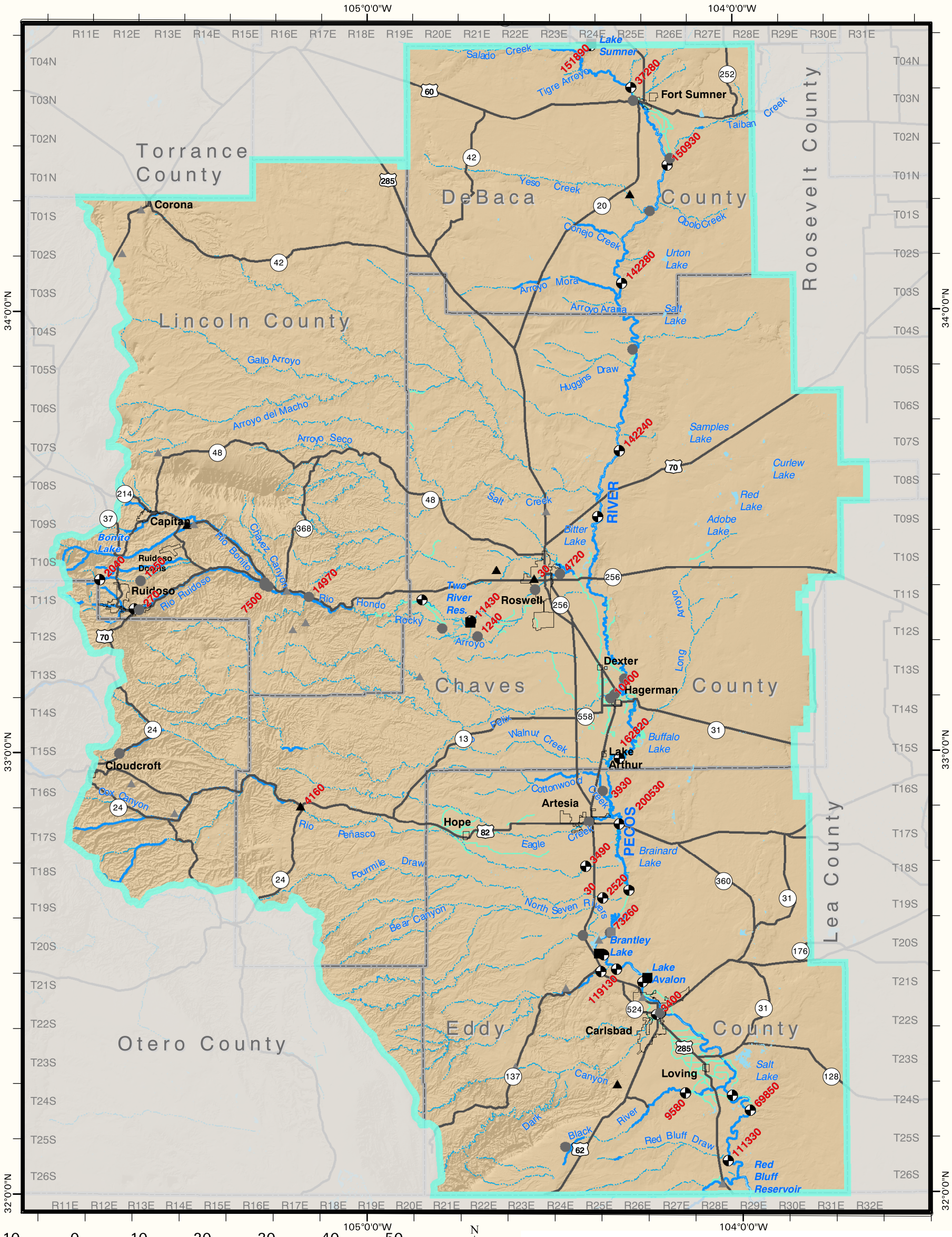
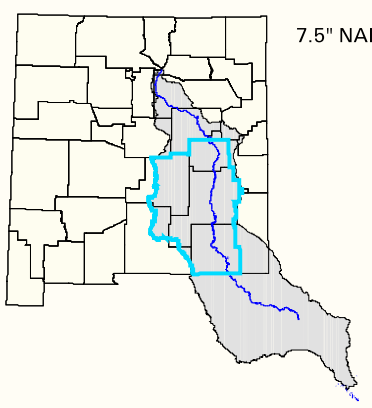
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

MAP OF GAGING STATIONS, PERENNIAL STREAMS AND RESERVOIRS

PLATE 9





Gaging Station data from:
U.S. Geological Survey, 2001, National Water Information System (NWIS), http://water.usgs.gov/gis
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

USGS GAGING AND PEAK FLOW STATIONS

(MEAN PERIOD OF RECORD FLOW (AFY) INDICATED)

- CURRENT DISCHARGE STATION
- CURRENT CREST STAGE STATION
- DISCONTINUED DISCHARGE STATION
- DISCONTINUED CREST STAGE STATION
- CURRENT LAKE STAGE STATION
- DISCONTINUED LAKE STAGE STATION
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

BGW

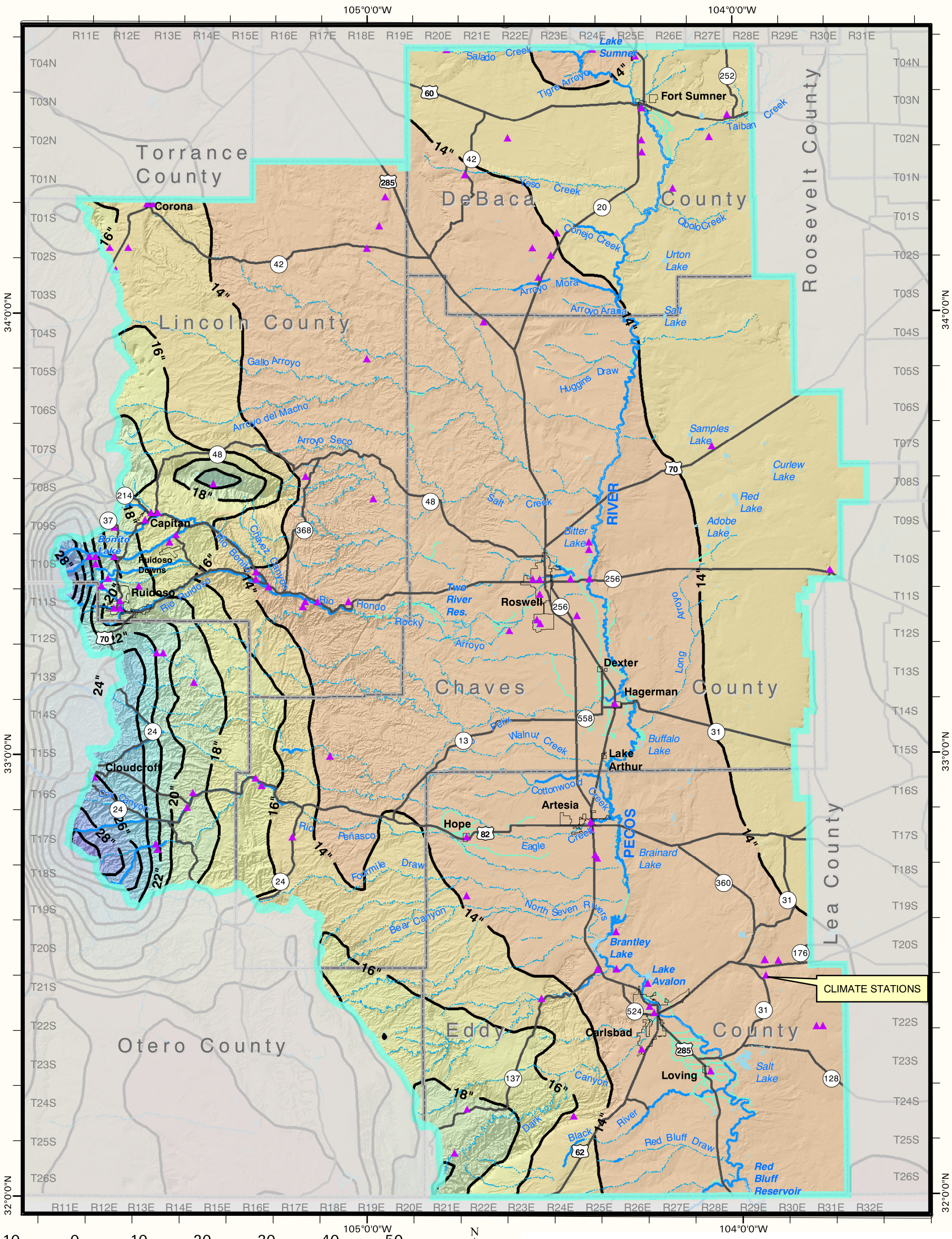
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

PRECIPITATION CONTOURS IN THE PLANNING AREA

PLATE 10



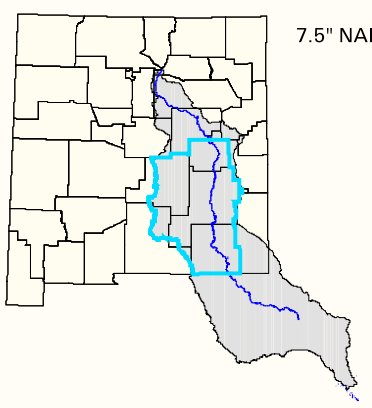
10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Contours adapted from:
National Resource Conservation Service, 2001, Average Annual Precipitation 1961 - 1990: http://www.ftw.nrcs.usda.gov/prism/prism.html.
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

AVERAGE ANNUAL PRECIPITATION 1961 - 1990 (INCHES)

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

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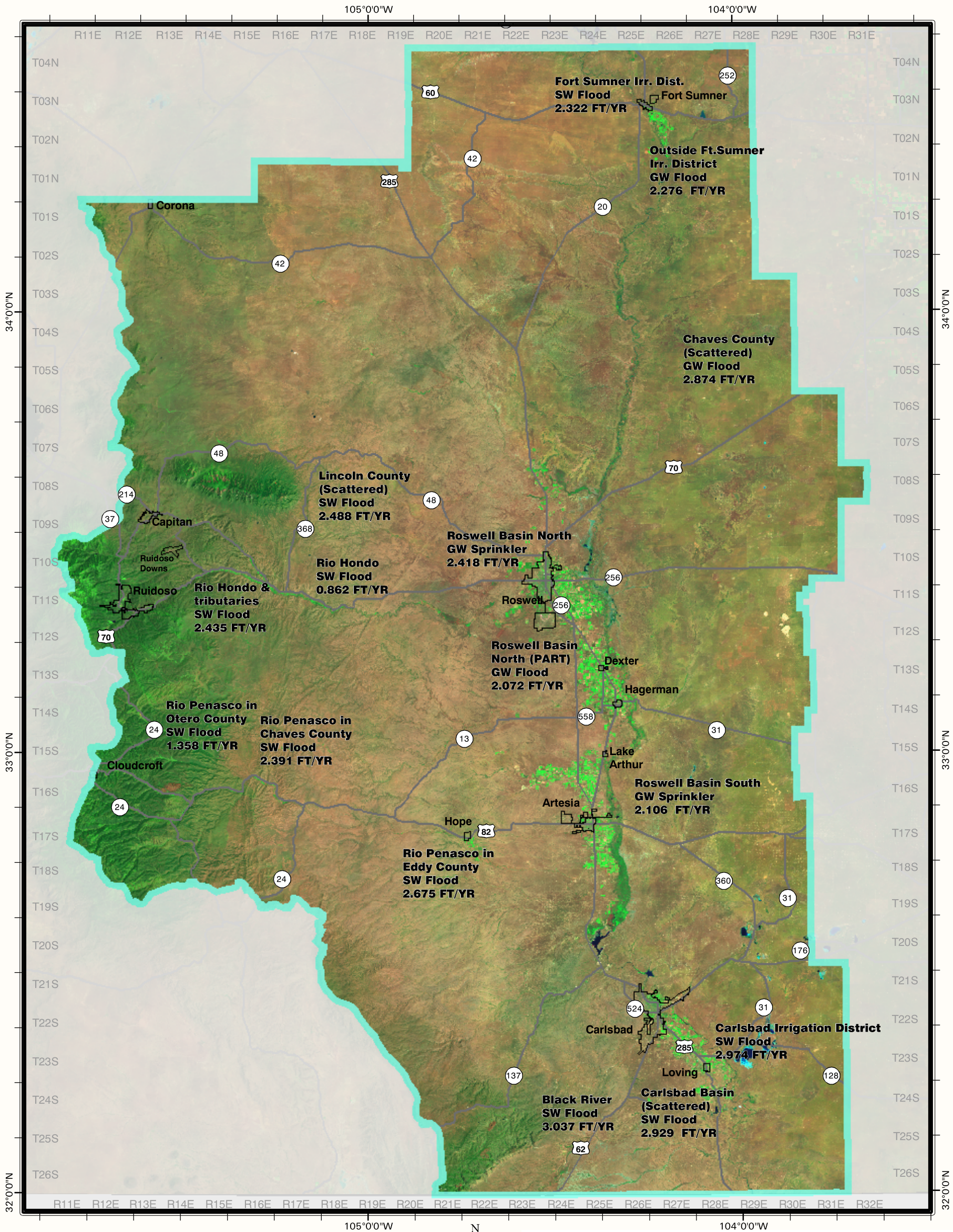
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

CONSUMPTIVE IRRIGATION REQUIREMENT IN THE PLANNING AREA

PLATE 11



10 0 10 20 30 40 50 Miles

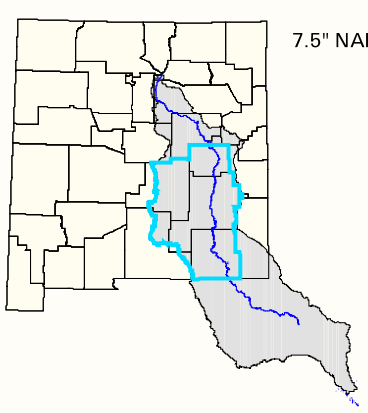
1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER

N W E S



EXPLANATION

TOWNS AND CITIES — MAJOR ROADS

Data from:
Water Use by Categories in New Mexico Counties and River Basins and Irrigated Acreage in 1995 - Technical Report 49 - by: Brian C. Wilson, P.E., Published by: New Mexico State Engineer Office
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

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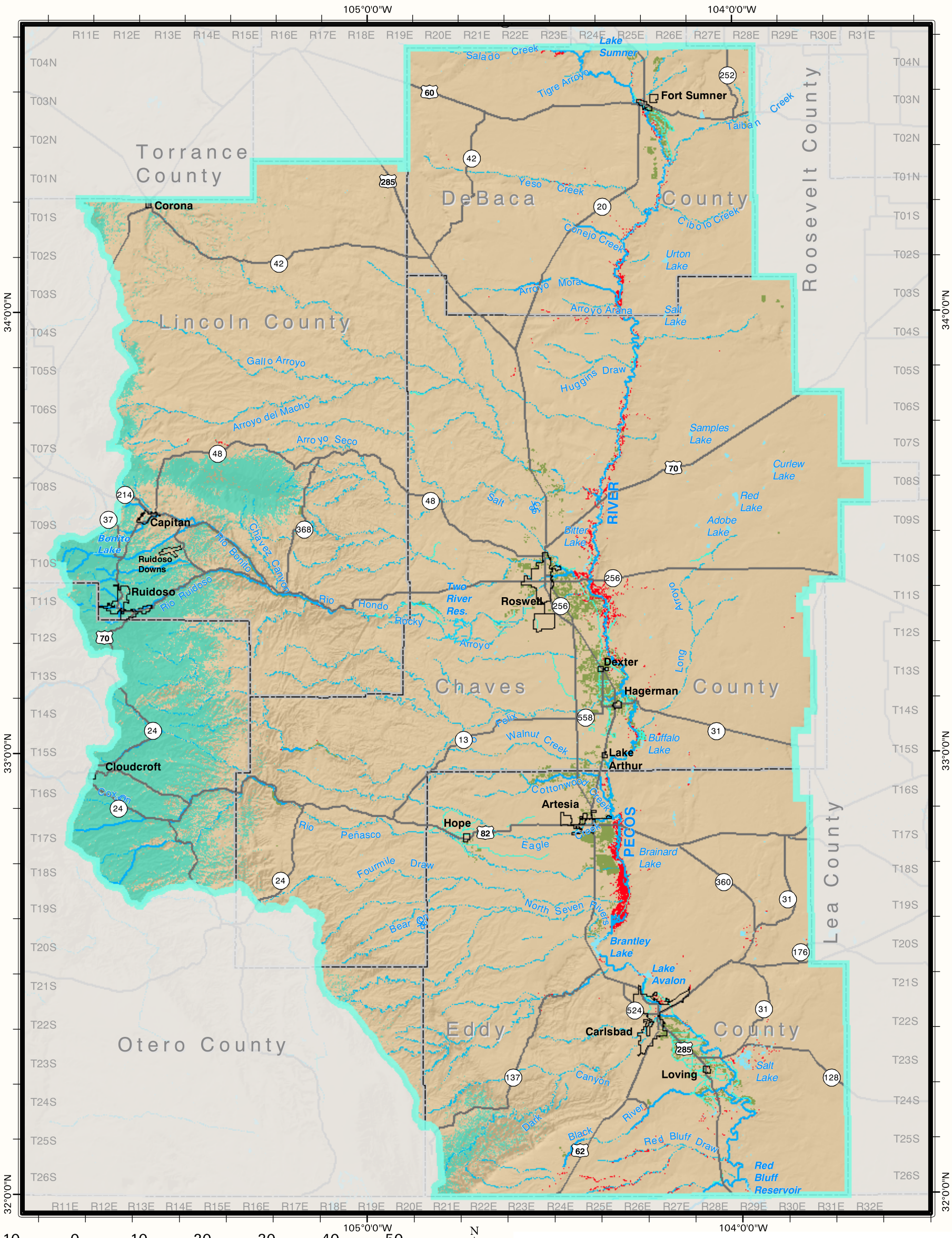
PECOS VALLEY WATER USERS ORGANIZATION

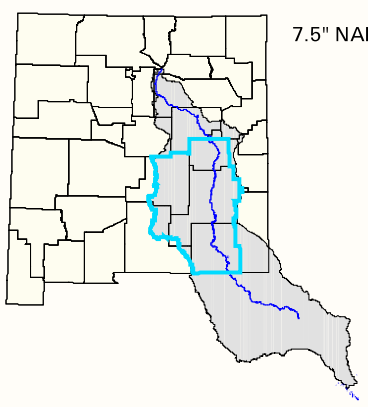
LOWER PECOS VALLEY REGIONAL WATER PLAN

SUMMARY OF VEGETATED ACRES
PLATE 12



10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
New Mexico Geological Society, 2000, LANDSAT Thematic Mapper5 Mosaic, Band 7, 4 and 2 Recorded in 1989, 1992 and 1993, distributed by Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

EXPLANATION

- UNMANAGED VEGETATION IN SHALLOW GROUNDWATER AREAS (<30FT) (70,500 ACRES)
- FOREST (817,080 ACRES)
- AGRICULTURAL (127,430 ACRES)

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

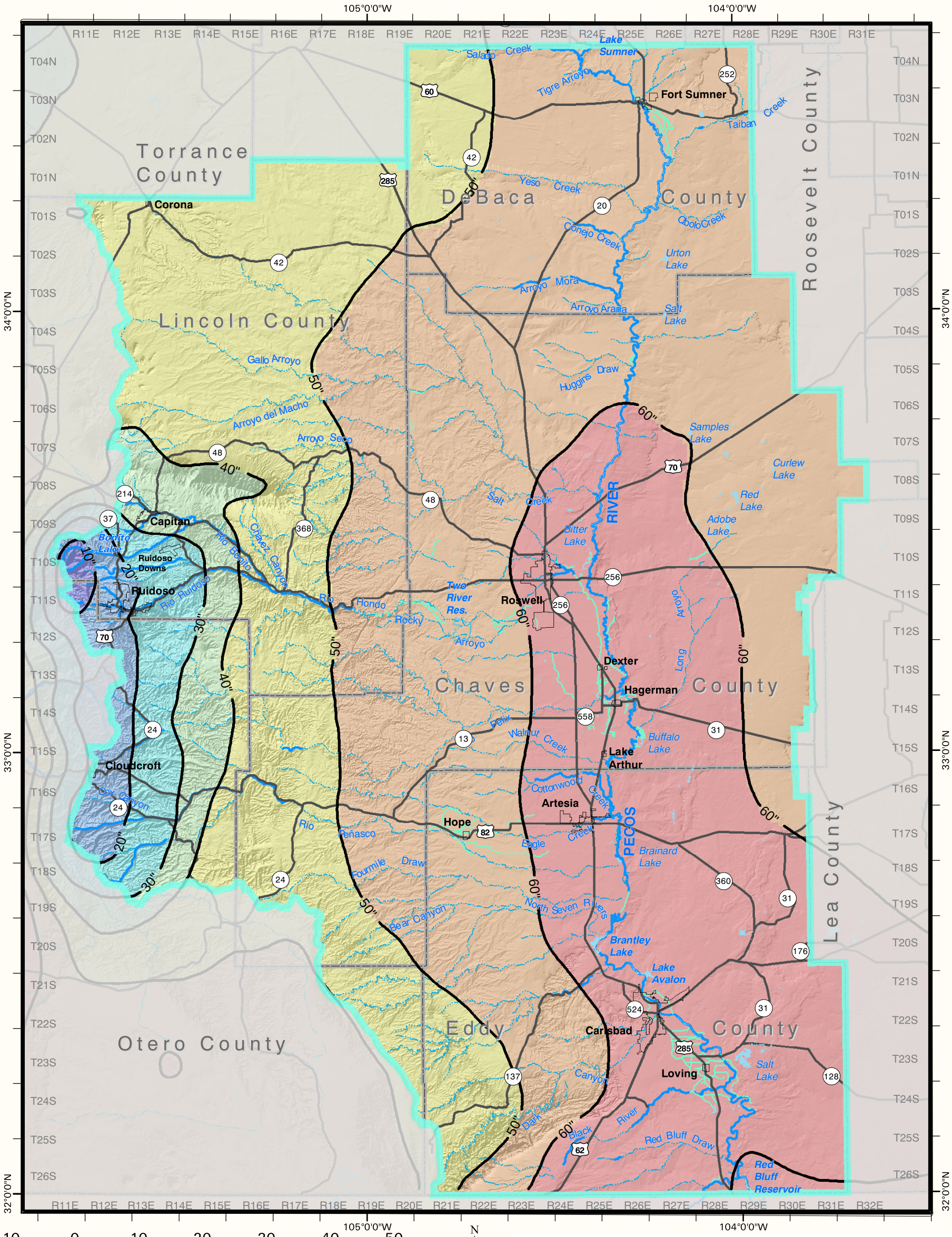
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

NET LAKE EVAPORATION CONTOURS IN THE PLANNING AREA

PLATE 13



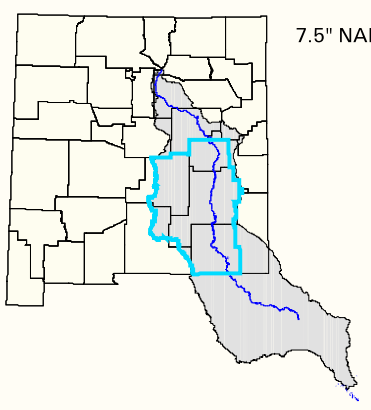
10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Contours adapted from:
National Resource Conservation Service, 2001, Average Annual Precipitation 1961 - 1990: http://www.ftw.nrcs.usda.gov/prism/prism.html.
U.S. Soil Conservation Service, 1972, Gross Annual Lake Evaporation, New Mexico.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

- NET LAKE EVAPORATION CONTOURS (INCHES/YEAR)
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

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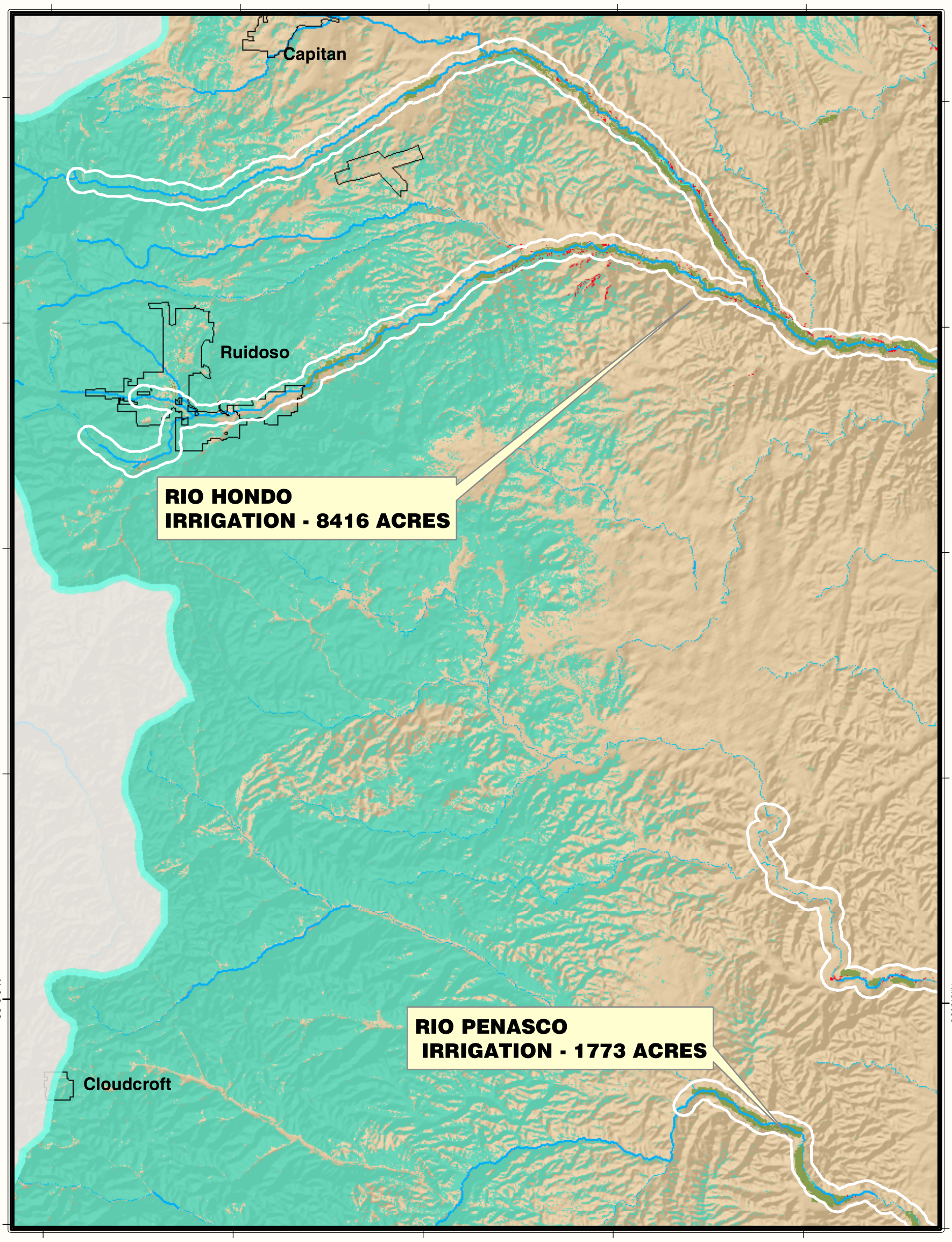
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

VEGETATION DETAIL OF THE WESTERN PLANNING REGION

PLATE 14



Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
New Mexico Geological Society, 2000, LANDSAT Thematic Mapper5 Mosaic, Band 7, 4 and 2 Recorded in 1989, 1992 and 1993, distributed by Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

B G W

LOWER PECOS VALLEY REGIONAL WATER PLAN

VEGETATION DETAIL OF THE NORTH-WEST CENTRAL PLANNING REGION

PLATE 15

105°0'0"W

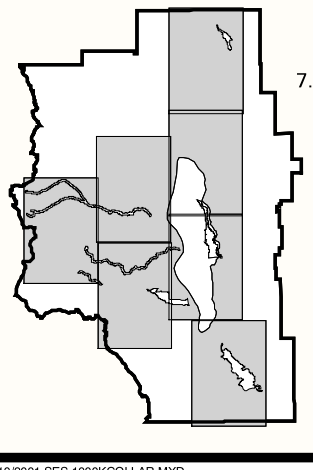
RIO HONDO
IRRIGATION - 8416 ACRES

105°0'0"W

0 5 10
Miles

N
W E
S

1:250,000 1 INCH = 4 MILES
PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER



Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
New Mexico Geological Society, 2000, LANDSAT Thematic Mapper5 Mosaic, Band 7, 4 and 2 Recorded in 1989, 1992 and 1993, distributed by Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

NOTE: WHITE LINES DELINEATE THE AREA FOR WHICH IRRIGATED ACRES ARE COUNTED.

EXPLANATION

- ROSWELL BASIN WATERMASTER AREA
- UNMANAGED VEGETATION IN SHALLOW GROUNDWATER AREAS (<30FT)
- FOREST
- AGRICULTURAL

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES

BGW

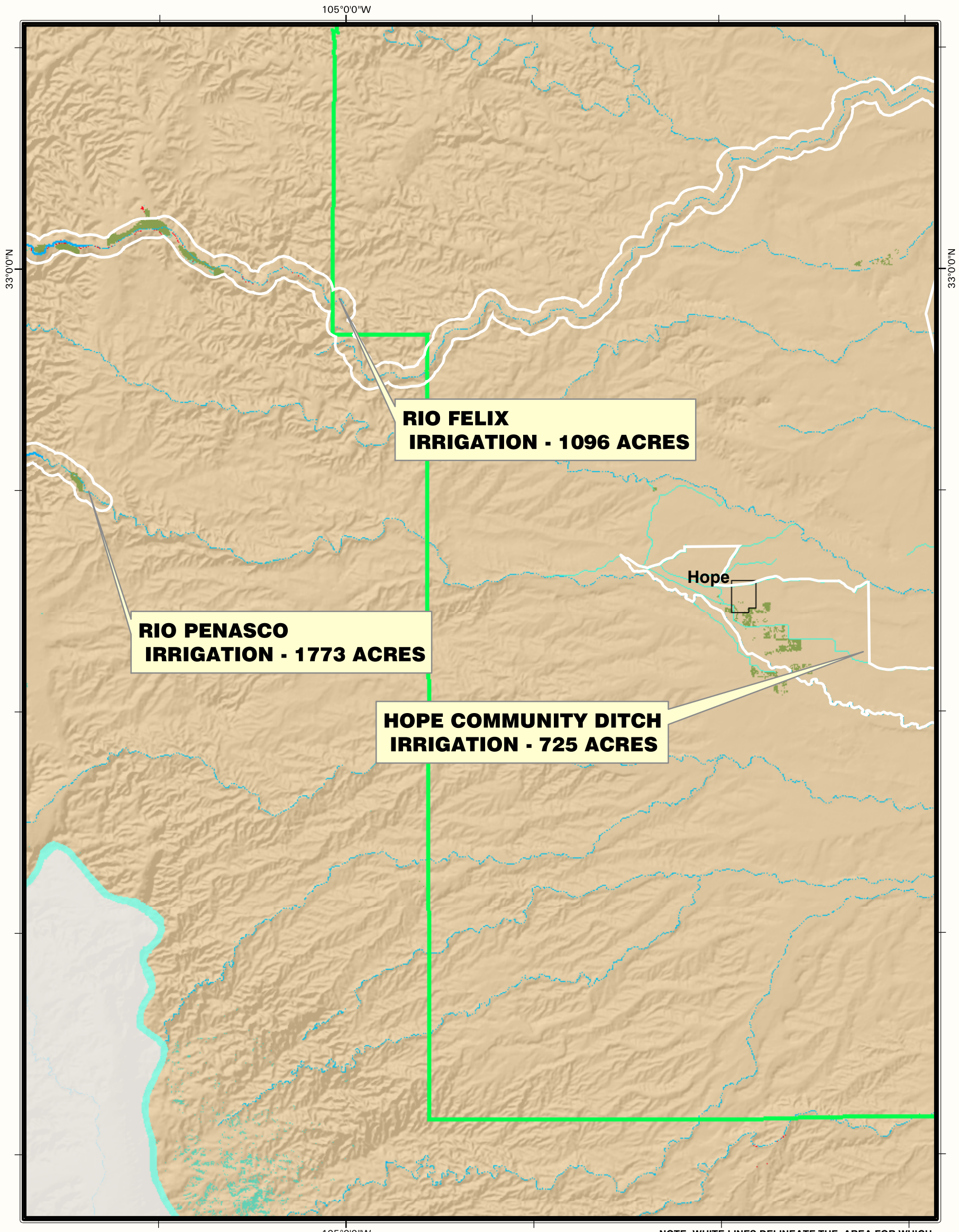
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

VEGETATION DETAIL OF THE SOUTH-WEST CENTRAL PLANNING REGION

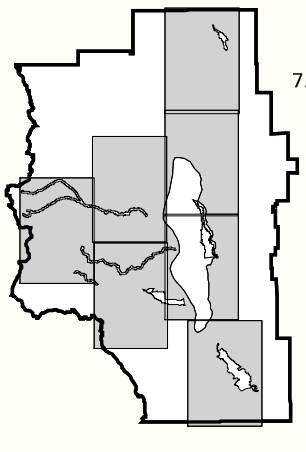
PLATE 16



0 5 10 Miles

N W E S

1:250,000 1 INCH = 4 MILES
PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER



Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
New Mexico Geological Society, 2000, LANDSAT Thematic Mapper5 Mosaic, Band 7, 4 and 2 Recorded in 1989, 1992 and 1993, distributed by Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

NOTE: WHITE LINES DELINEATE THE AREA FOR WHICH IRRIGATED ACRES ARE COUNTED.

EXPLANATION

- ROSWELL BASIN WATERMASTER AREA
- UNMANAGED VEGETATION IN SHALLOW GROUNDWATER AREAS (<30FT)
- FOREST
- AGRICULTURAL

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES

BGW

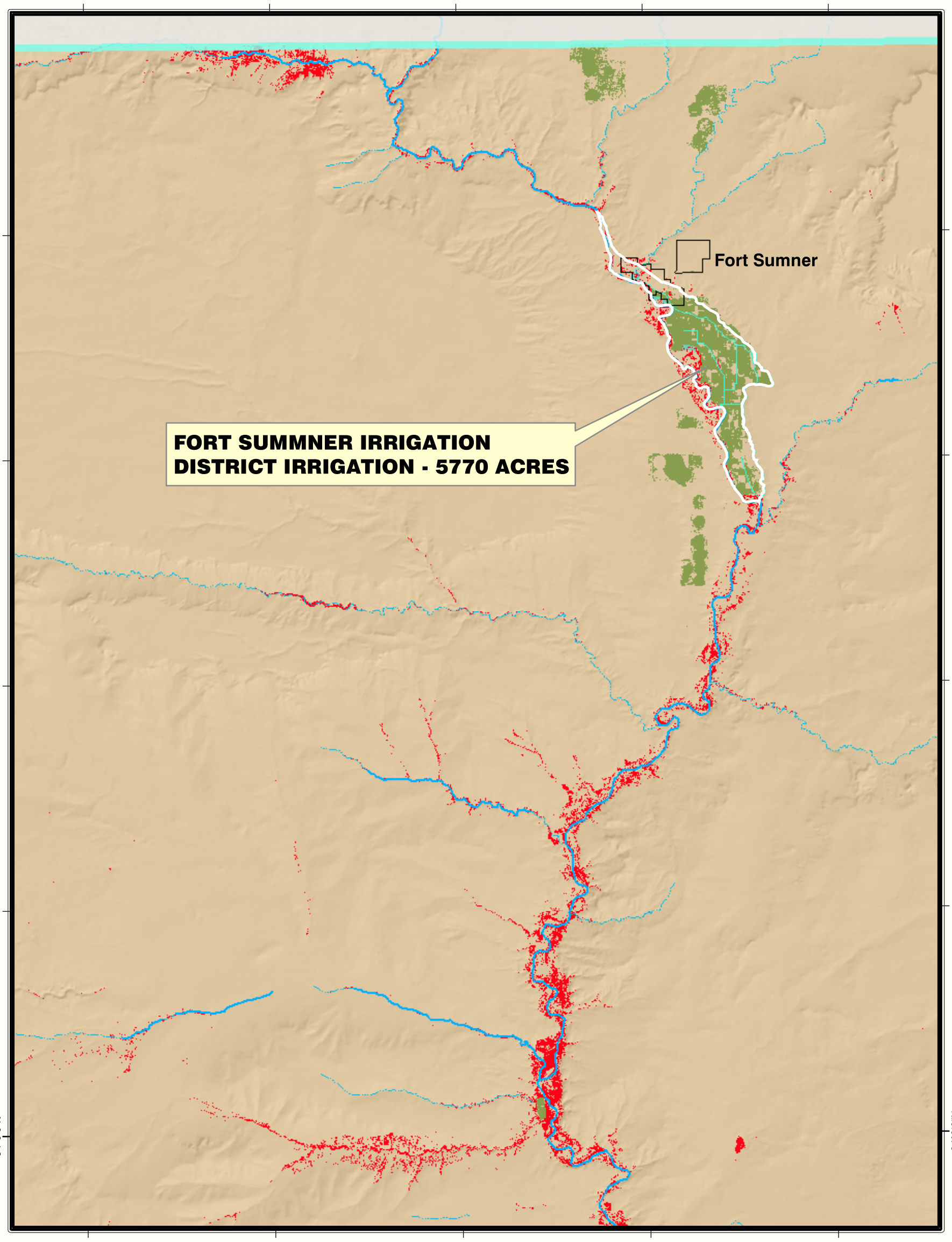
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

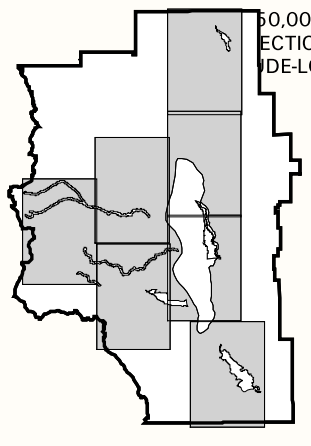
VEGETATION DETAIL OF THE NORTHERN PLANNING REGION

PLATE 17



0 5 10 Miles

50,000 1 INCH = 4 MILES
ECTION: UTM ZONE 13N, NAD83
DE-LONGITUDE TICKS OUTSIDE MAP BORDER



N
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Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
New Mexico Geological Society, 2000, LANDSAT Thematic Mapper5 Mosaic, Band 7, 4 and 2 Recorded in 1989, 1992 and 1993, distributed by Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

NOTE: WHITE LINES DELINEATE THE AREA FOR WHICH IRRIGATED ACRES ARE COUNTED.

EXPLANATION

- ROSWELL BASIN WATERMASTER AREA
- UNMANAGED VEGETATION IN SHALLOW GROUNDWATER AREAS (<30FT)
- FOREST
- AGRICULTURAL

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES

B G W

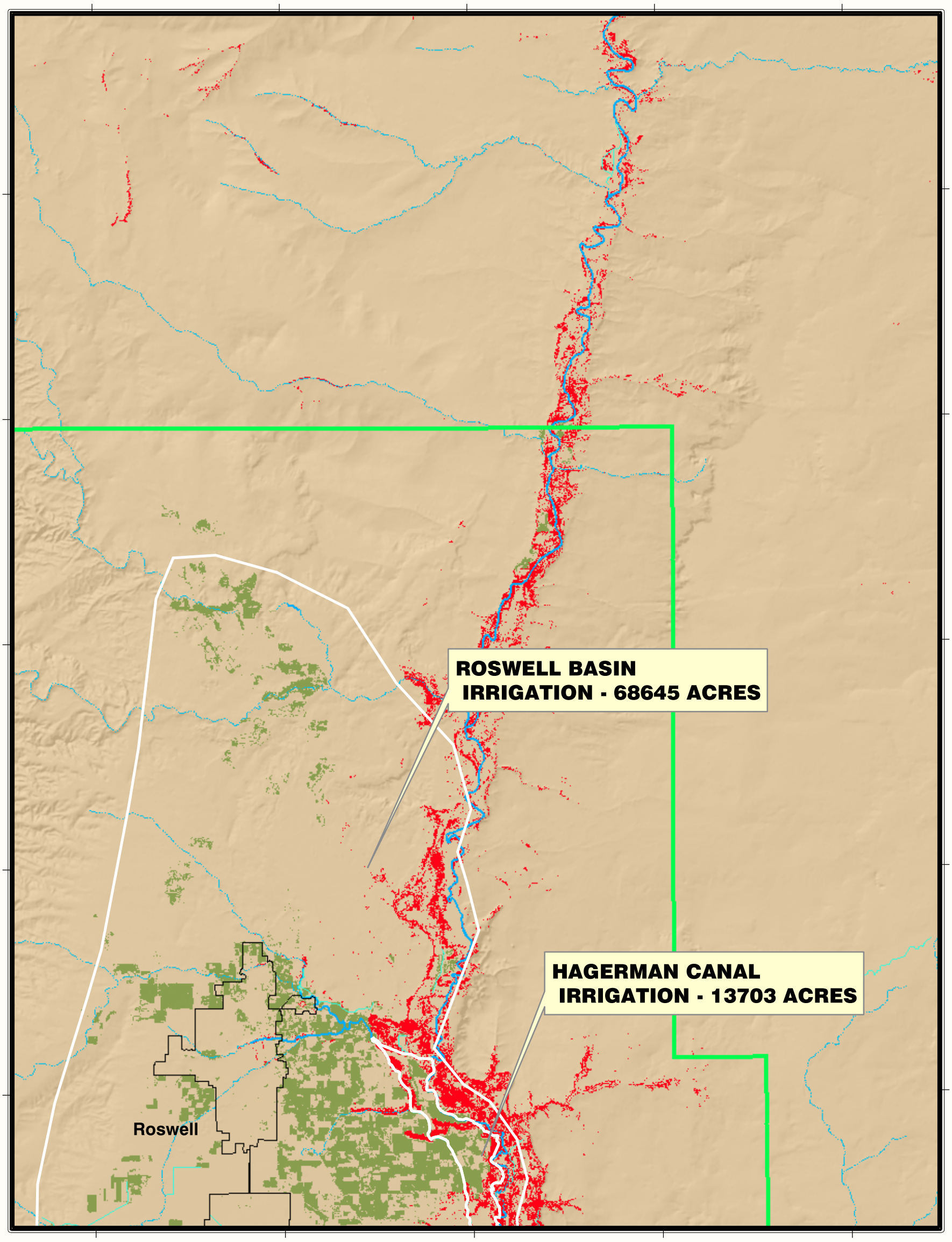
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

VEGETATION DETAIL OF THE NORTH-EAST CENTRAL PLANNING REGION

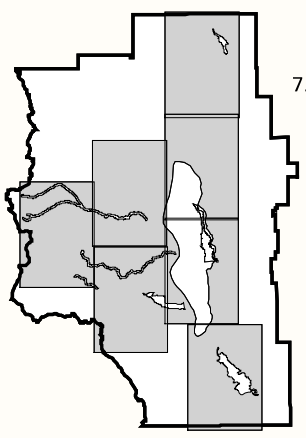
PLATE 18



0 5 10 Miles

N W E S

1:250,000 1 INCH = 4 MILES
PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER



Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
New Mexico Geological Society, 2000, LANDSAT Thematic Mapper5 Mosaic, Band 7, 4 and 2 Recorded in 1989, 1992 and 1993, distributed by Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

NOTE: WHITE LINES DELINEATE THE AREA FOR WHICH IRRIGATED ACRES ARE COUNTED.

EXPLANATION

- ROSWELL BASIN WATERMASTER AREA
- UNMANAGED VEGETATION IN SHALLOW GROUNDWATER AREAS (<30FT)
- FOREST
- AGRICULTURAL
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES

BGW

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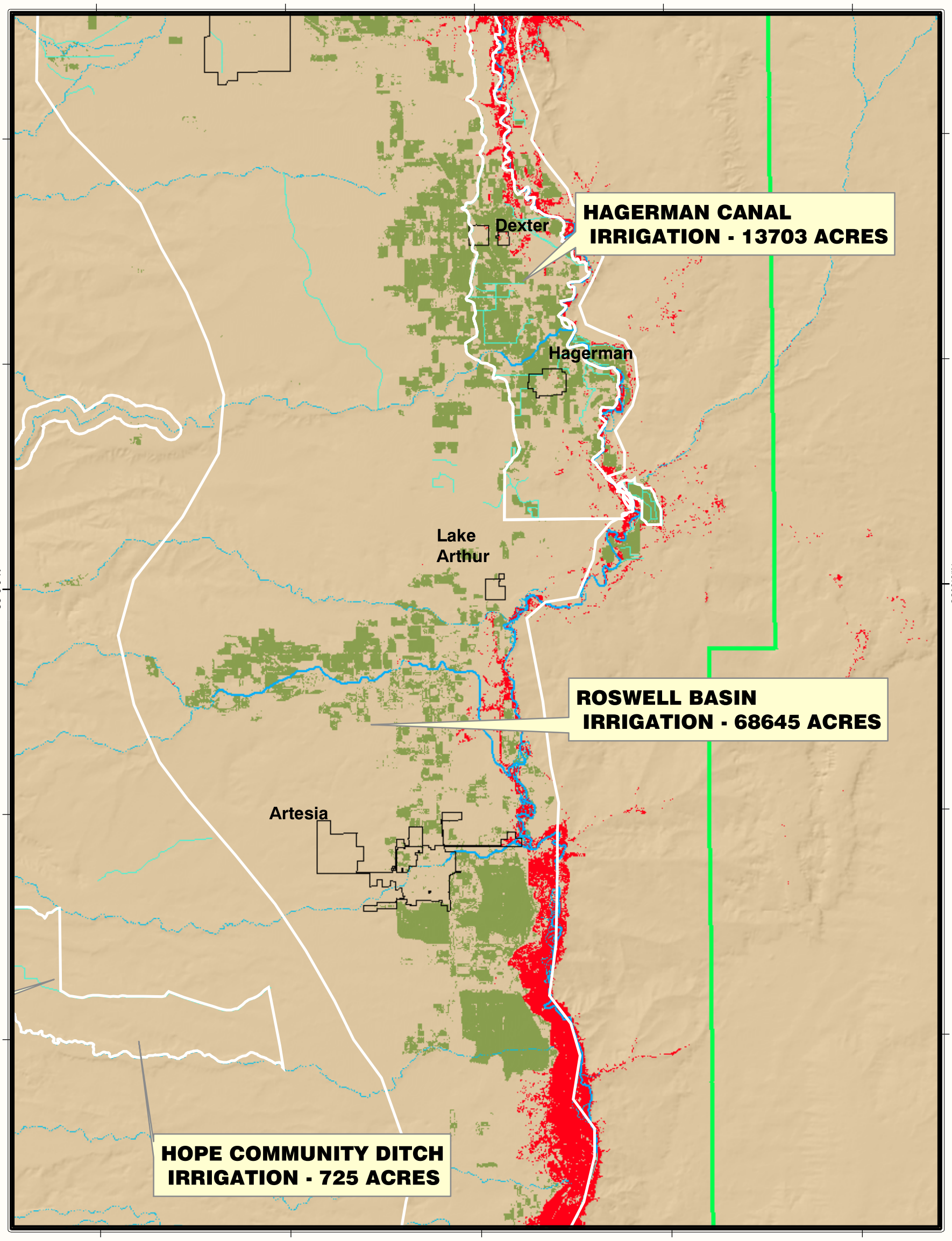
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

VEGETATION DETAIL OF THE SOUTH-EAST CENTRAL PLANNING REGION

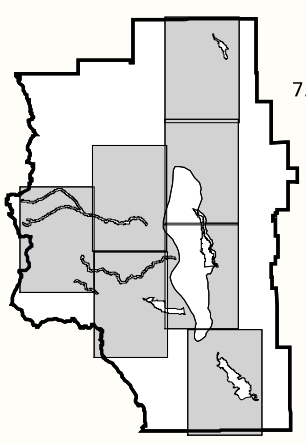
PLATE 19



0 5 10 Miles

N
W E
S

1:250,000 1 INCH = 4 MILES
PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER



Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
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Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

NOTE: WHITE LINES DELINEATE THE AREA FOR WHICH IRRIGATED ACRES ARE COUNTED.

EXPLANATION

- ROSWELL BASIN WATERMASTER AREA
- UNMANAGED VEGETATION IN SHALLOW GROUNDWATER AREAS (<30FT)
- FOREST
- AGRICULTURAL
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES

BGW

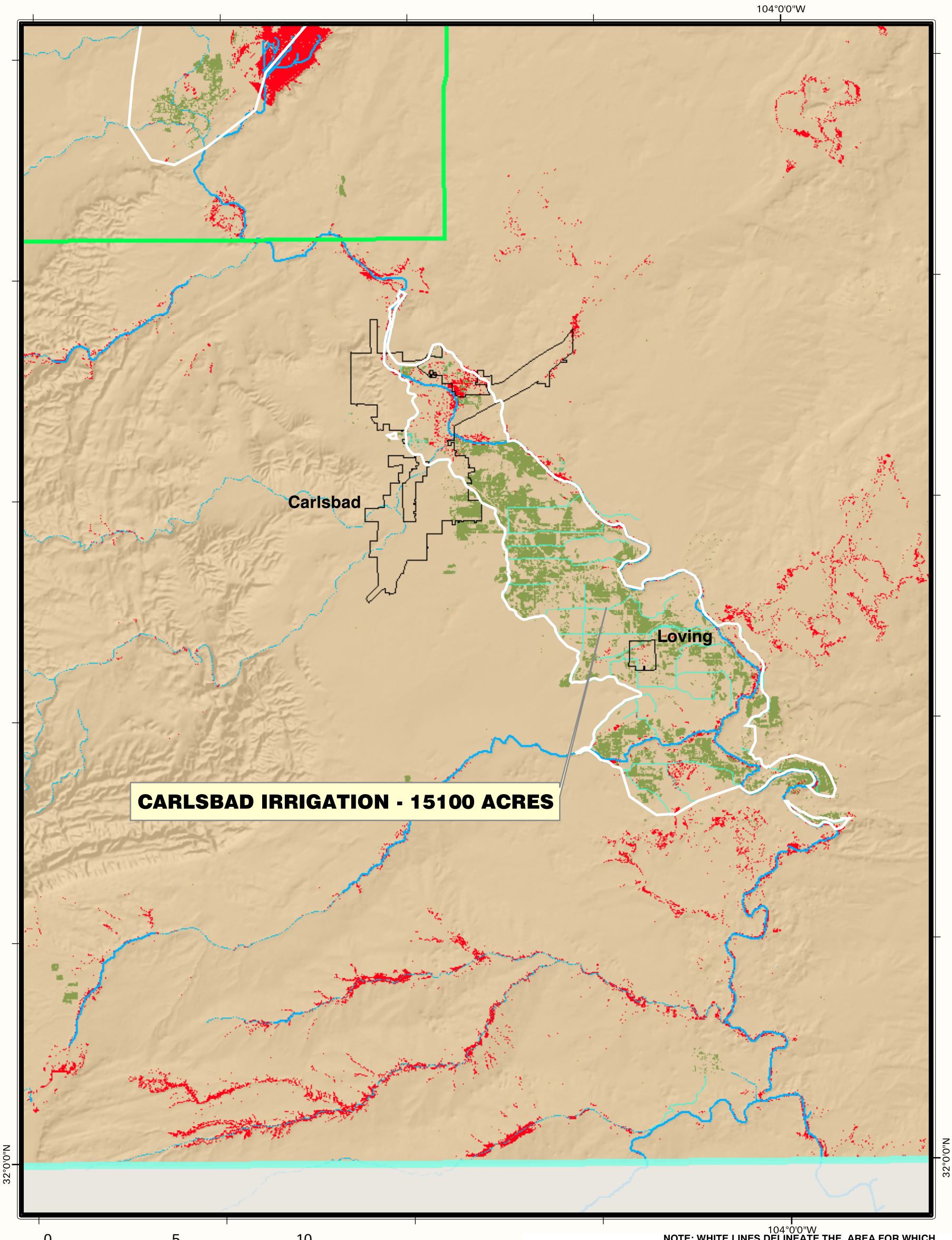
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

VEGETATION DETAIL OF THE SOUTHERN PLANNING REGION

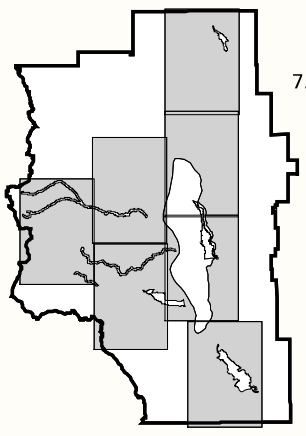
PLATE 20



0 5 10 Miles

N
W E
S

1:250,000 1 INCH = 4 MILES
PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER



Agriculture and Forest adapted from:
U.S. Geological Survey, 2000, National Land Cover Database, http://mapping.usgs.gov/.

Unmanaged Vegetation area adapted from:
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Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

NOTE: WHITE LINES DELINEATE THE AREA FOR WHICH IRRIGATED ACRES ARE COUNTED.

EXPLANATION

- ROSWELL BASIN WATERMASTER AREA
- UNMANAGED VEGETATION IN SHALLOW GROUNDWATER AREAS (<30FT)
- FOREST
- AGRICULTURAL
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES

BGW

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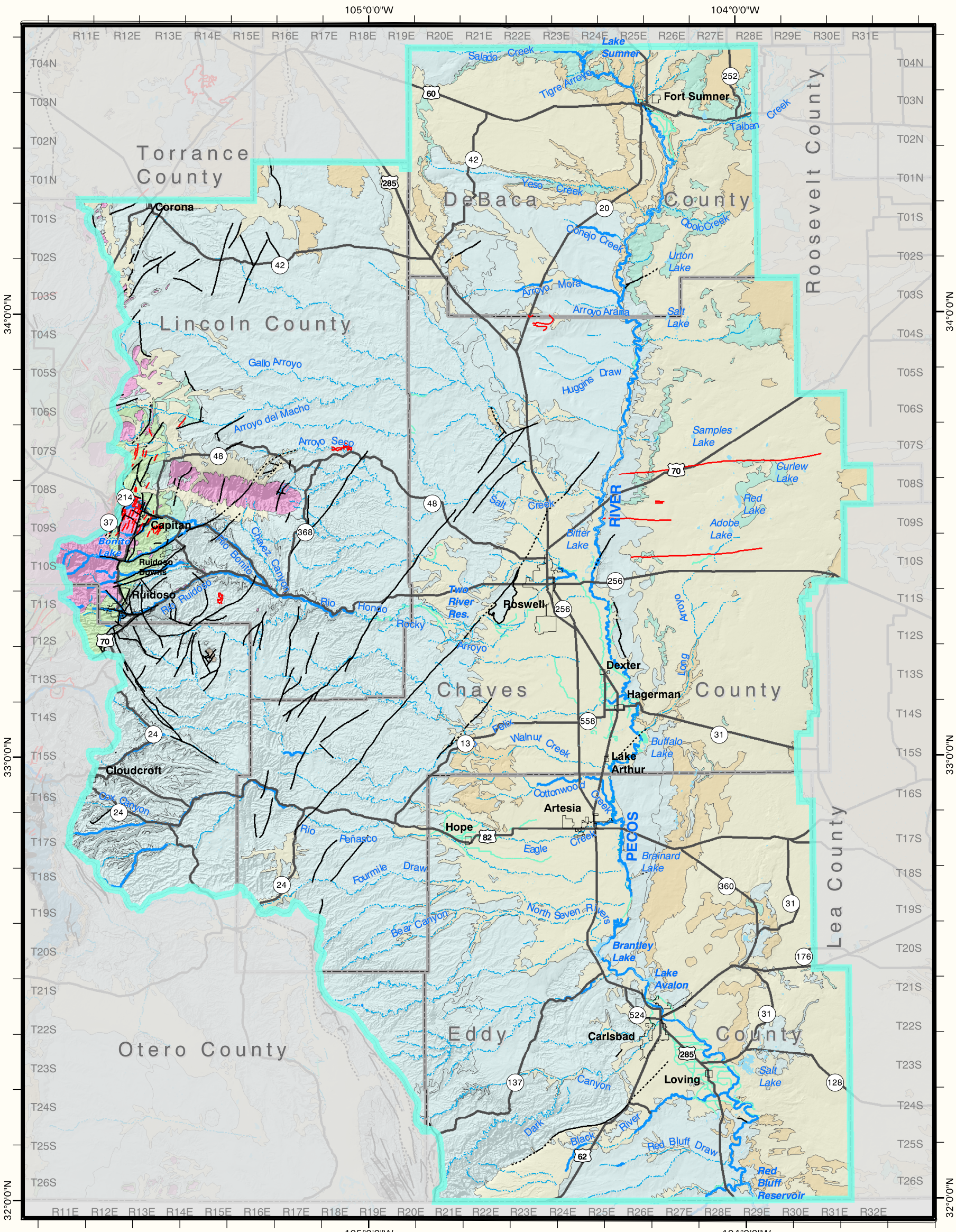
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

GEOLOGIC MAP OF THE PLANNING AREA

PLATE 21



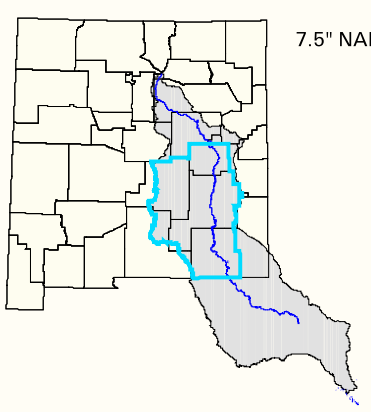
10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Geology adapted from:
Green, G.N. and Jones, G.E., 1997, Digital Geologic Map of New Mexico: U.S. Geological Survey, Open-File Report 97-0052, in ARC/INFO format.
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

GENERALIZED GEOLOGY

(SEE APPENDIX TABLE F1)

- YOUNG ALLUVIUM
- OLDER ALLUVIUM
- SIERRA BLANCA VOLCANICS
- CRETACEOUS FORMATIONS
- JURASSIC FORMATIONS
- TRIASSIC FORMATIONS
- PERMIAN FORMATIONS
- PENNSYLVANIAN FORMATIONS
- PRECAMBRIAN ROCKS

- DIKE
- FAULT - APPROXIMATE
- FAULT - CONCEALED
- FAULT

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

BGW

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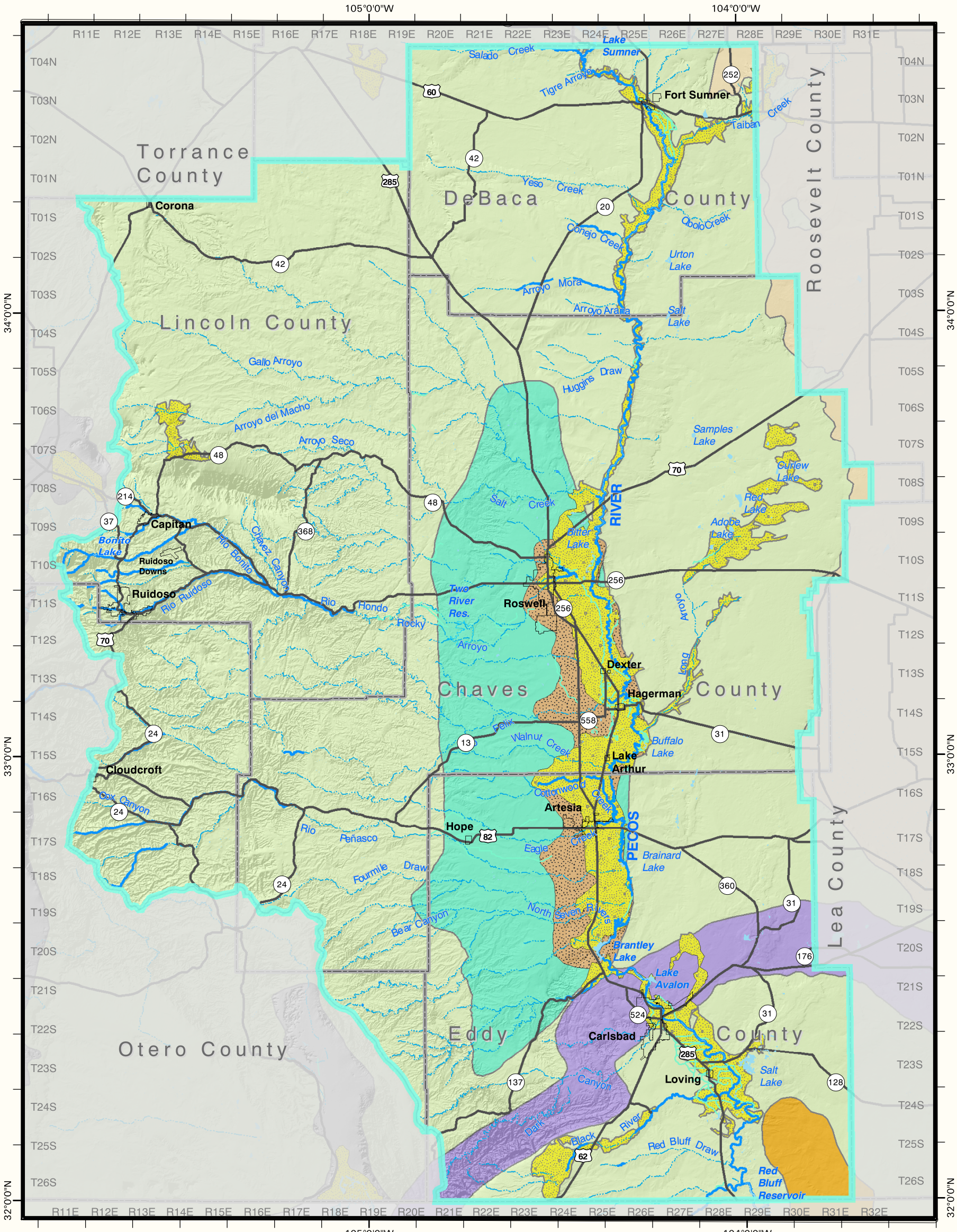
PECOS VALLEY WATER USERS ORGANIZATION

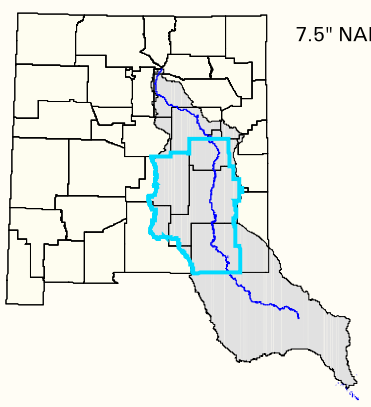
LOWER PECOS VALLEY REGIONAL WATER PLAN

MAJOR AND MINOR AQUIFERS IN THE PLANNING AREA

PLATE 22



1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Aquifer areas adapted from:
U.S. Geological Survey, 2000, Principal Aquifer Digital Data, http://water.usgs.gov/gis.

Green, G.N. and Jones, G.E., 1997, Digital Geologic Map of New Mexico: U.S. Geological Survey, Open-File Report 97-0052, in ARC/INFO format.

Welder, G.E., 1983, Geohydrologic Framework of the Roswell Ground-Water Basin, Chaves and Eddy Counties, New Mexico: New Mexico Office of the State Engineer, Technical Report 42.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

EXPLANATION

AQUIFERS

- Capitan Reef Aquifer
- High Plains aquifer
- Minor Bedrock and Alluvial Aquifers
- Pecos River Basin Alluvial Aquifer
- Roswell Artesian Aquifer
- Roswell Shallow Aquifer
- Shallow Alluvial Aquifers

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

BGW

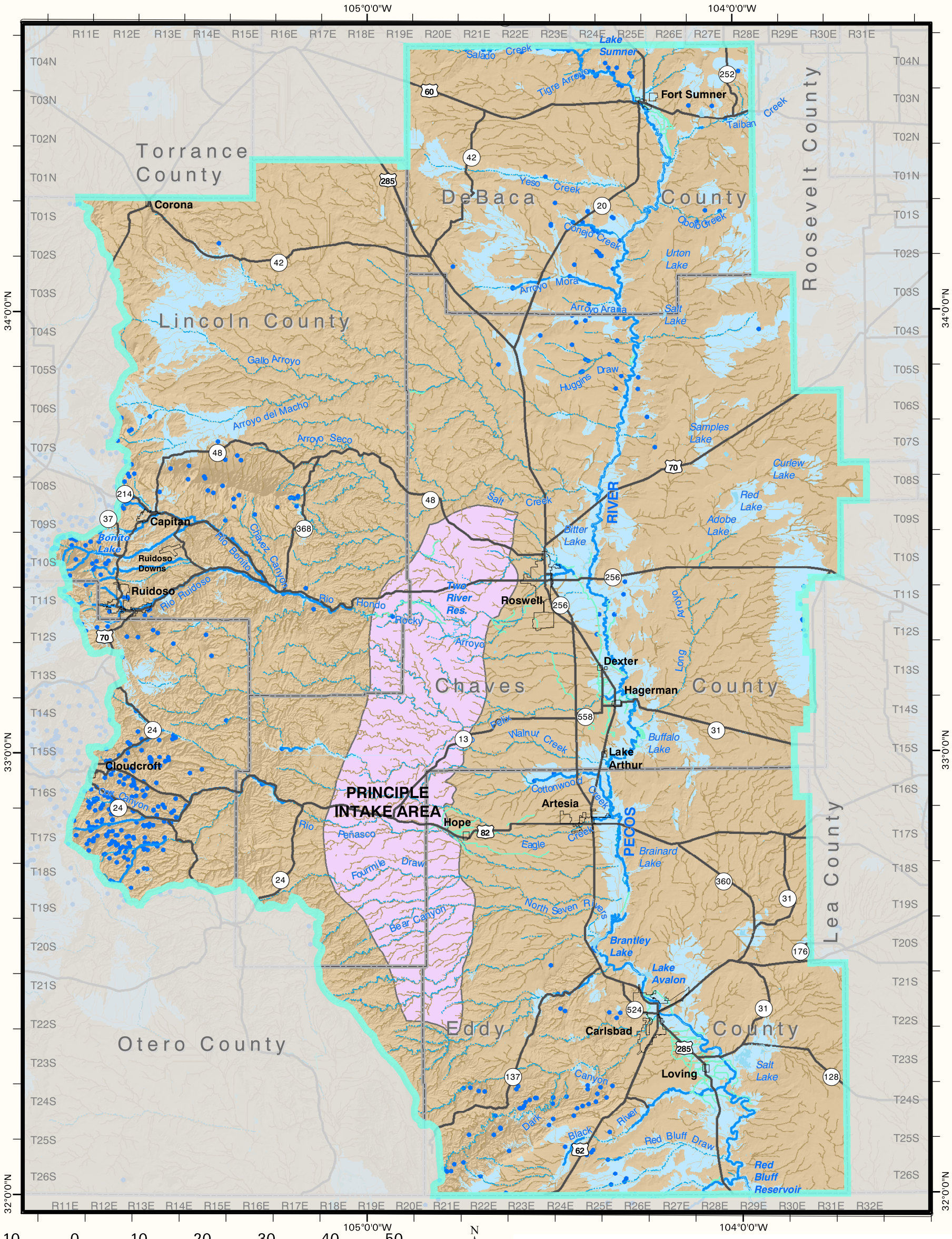
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

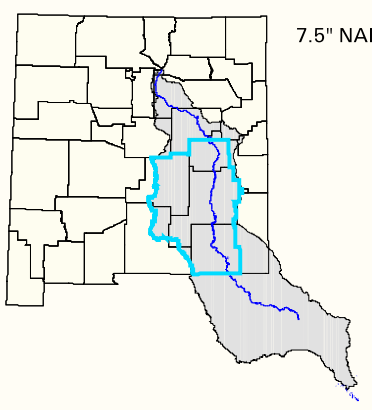
LOWER PECOS VALLEY REGIONAL WATER PLAN

RECHARGE AND DISCHARGE AREAS IN THE PLANNING AREA

PLATE 23



1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Adapted from:
U.S. Geological Survey, 2000, Groundwater Site Inventory (GWSI) Database: http://nm.water.usgs.gov/request.html

New Mexico Office of the State Engineer, 2001, WATERS Database

Principle Intake Area from:
Fiedler, A.G. and Nye, S. 1933, Geology and Ground-Water Resources of the Roswell Artesian Basin: U.S. Geological Survey Water - Supply Paper 639.

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

EXPLANATION

- POTENTIAL DISCHARGE AREA
- POTENTIAL RECHARGE AREA
- SPRINGS/SEEPS
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

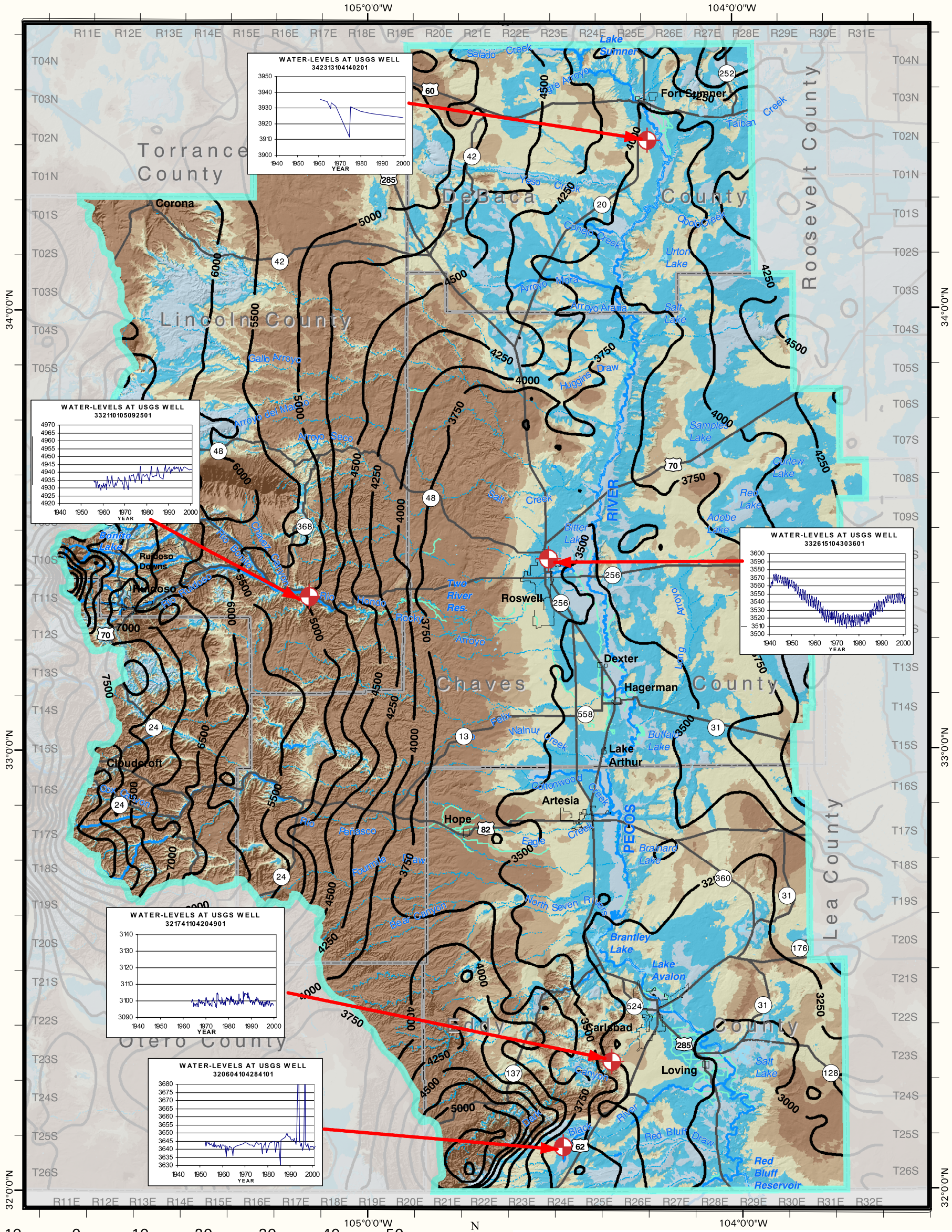
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

WATER TABLE MAP AND SELECTED WELL HYDROGRAPHS

PLATE 24



1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER

Contours and Depth-to-Water adapted from:
U.S. Geological Survey, 2000, Groundwater Site Inventory (GWSI) Database: http://nm.water.usgs.gov/request.html

New Mexico Office of the State Engineer, 2001, WATERS Database

New Mexico Resource Geographic Information Systems (RGIS) Clearinghouse, 2000, National Elevation Dataset: U.S. Geological Survey, Earth Data Analysis Center, University of New Mexico, Albuquerque, New Mexico.

Hydrograph data from:
U.S. Geological Survey, 2001, National Water Information System (NWIS), http://water.usgs.gov/gis

Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

EXPLANATION

- HYDROGRAPH WELLS

DEPTH-TO-WATER

- <30 FEET
- 30 - 100 FEET
- 100 - 200 FEET
- 200 - 300 FEET
- >300 FEET

- WATER-TABLE CONTOURS, NGVD29 (INTERVAL = 250 FEET AND 500 FEET)
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

BGW

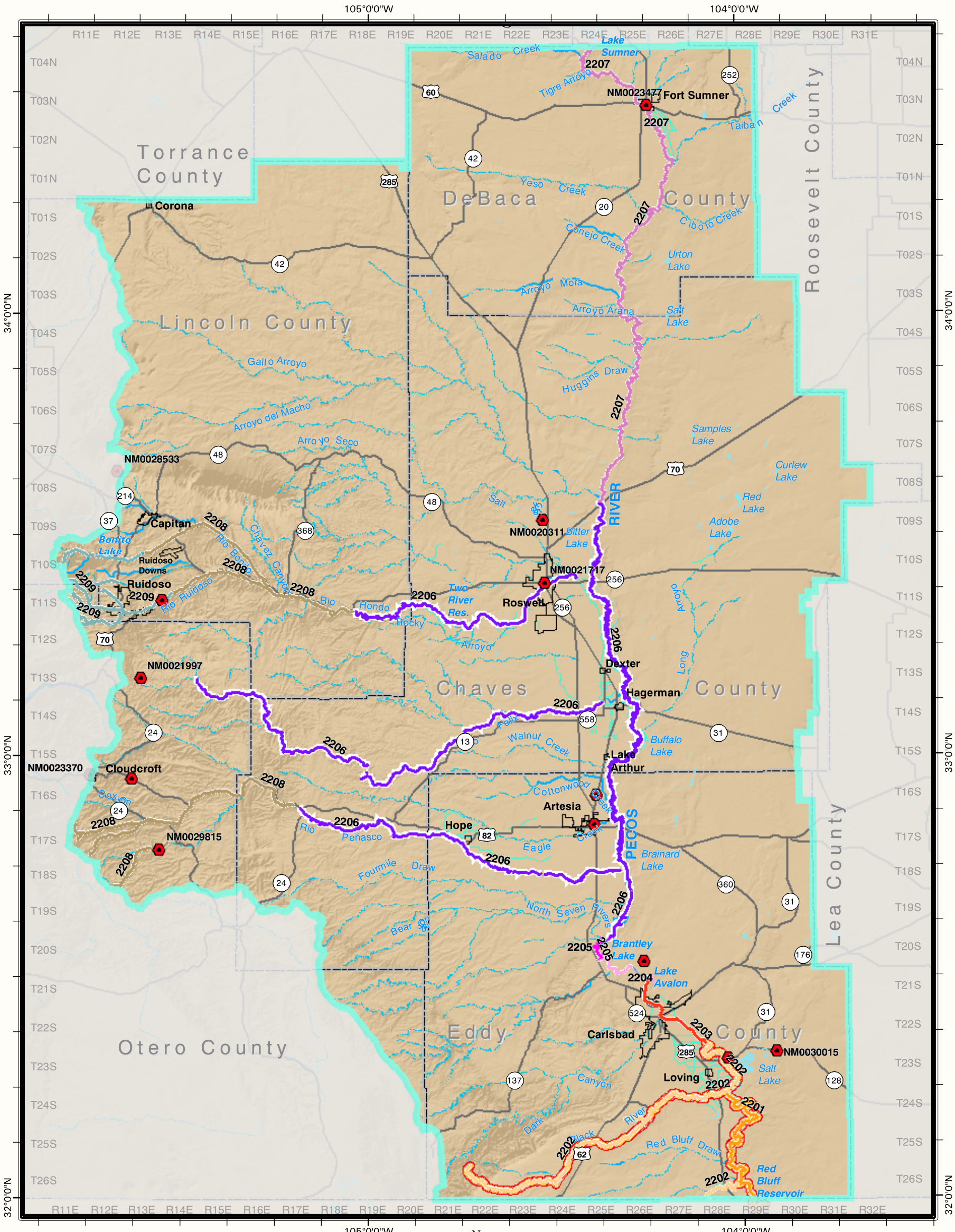
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

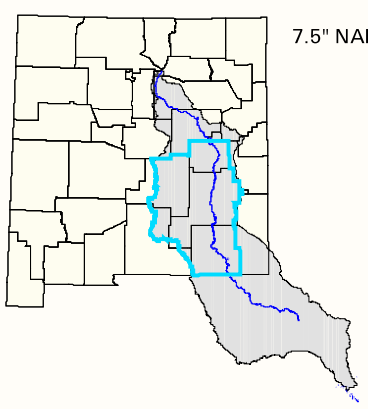
LOWER PECOS VALLEY REGIONAL WATER PLAN

DESIGNATED USES AND NPDES PERMITTED DISCHARGE IN STREAM SEGMENTS

PLATE 25



1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Data from:
New Mexico Water Quality Control Commission, 2000,
State of New Mexico Standards for Interstate and Intrastate Surface Waters
U.S. Environmental Protection Agency, May 2001,
http://www.epa.gov/ast/basins/
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu)

EXPLANATION

DESIGNATED USES OF WATER QUALITY STANDARDS SEGMENTS (20 NMAC 6.1)

- 2201. Irrigation, livestock watering, wildlife habitat, secondary contact and warmwater fishery.
- 2202. Industrial water supply, irrigation, livestock watering, wildlife habitat, secondary contact and warmwater fishery.
- 2203. Industrial water supply, iIrrigation, livestock watering, wildlife habitat, primary contact and warmwater fishery.
- 2204. Irrigation storage, livestock watering, wildlife habitat, secondary contact and warmwater fishery.
- 2205. Irrigation storage, livestock watering, wildlife habitat, primary contact and warmwater fishery
- 2206. Irrigation, livestock watering, wildlife habitat, secondary contact and warmwater fishery.
- 2207. Irrigation, limited warmwater fishery, livestock watering, wildlife habitat, and secondary contact.
- 2208. Fish culture, irrigation, livestock watering, wildlife habitat, coldwater fishery and secondary contact.
- 2209. Domestic water supply, fish culture, high quality coldwater fishery, irrigation, livestock watering, wildlife habitat, municipal and industrial water supply, and secondary contact.

NPDES SITES (FROM USEPA PCS DATA)

CWA SECTION 303(d) IMPAIRED WATERS

- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

BGW

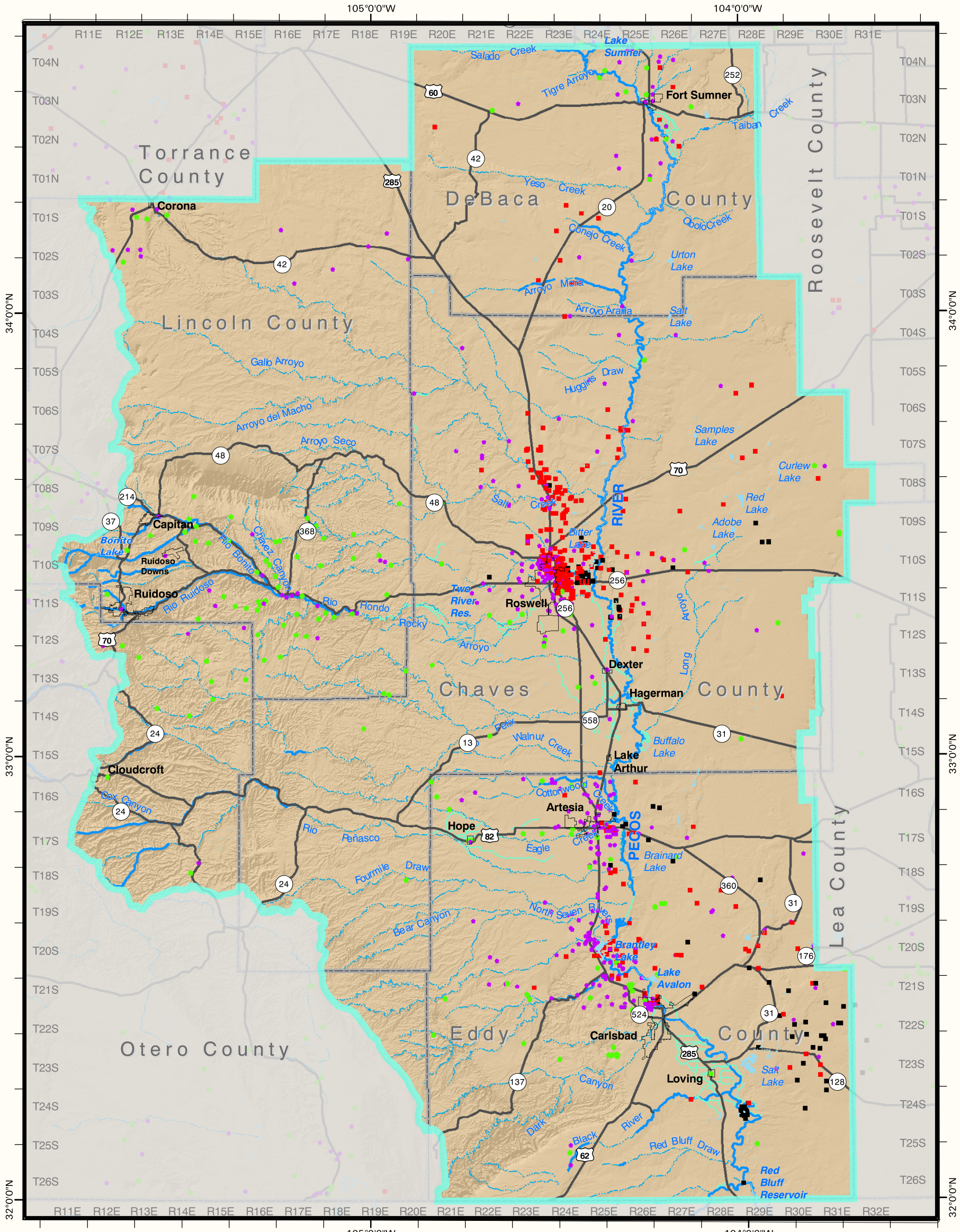
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

GROUNDWATER QUALITY IN THE PLANNING AREA

PLATE 26



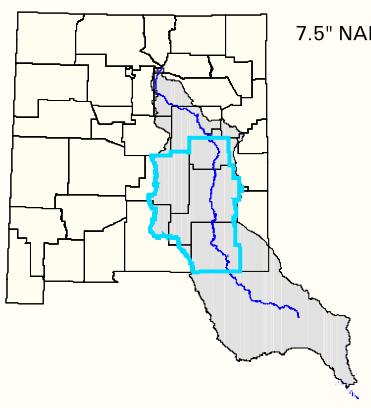
10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Data from:
U.S. Geological Survey, 2000, Groundwater Quality
Database: http://nm.water.usgs.gov/request.html
Base adapted from the National Elevation and Hydrography Datasets,
Tiger Line Data provided by ESRI, Inc. and New Mexico Resource
Geographic Information System data (http://rgis.unm.edu)

EXPLANATION

USGS GROUNDWATER QUALITY DATA

SPECIFIC CONDUCTANCE µS/CM @ 25C AND SUITABILITY

- <1000 DOMESTIC
- 1000 - 3000 AGRICULTURE
- 3000 - 10000 STOCK
- > 10000 FEW USES

CANAL OR DITCH
PERENNIAL STREAM
INTERMITTENT STREAM
TOWNS AND CITIES
MAJOR ROADS
COUNTY BOUNDARIES

BGW

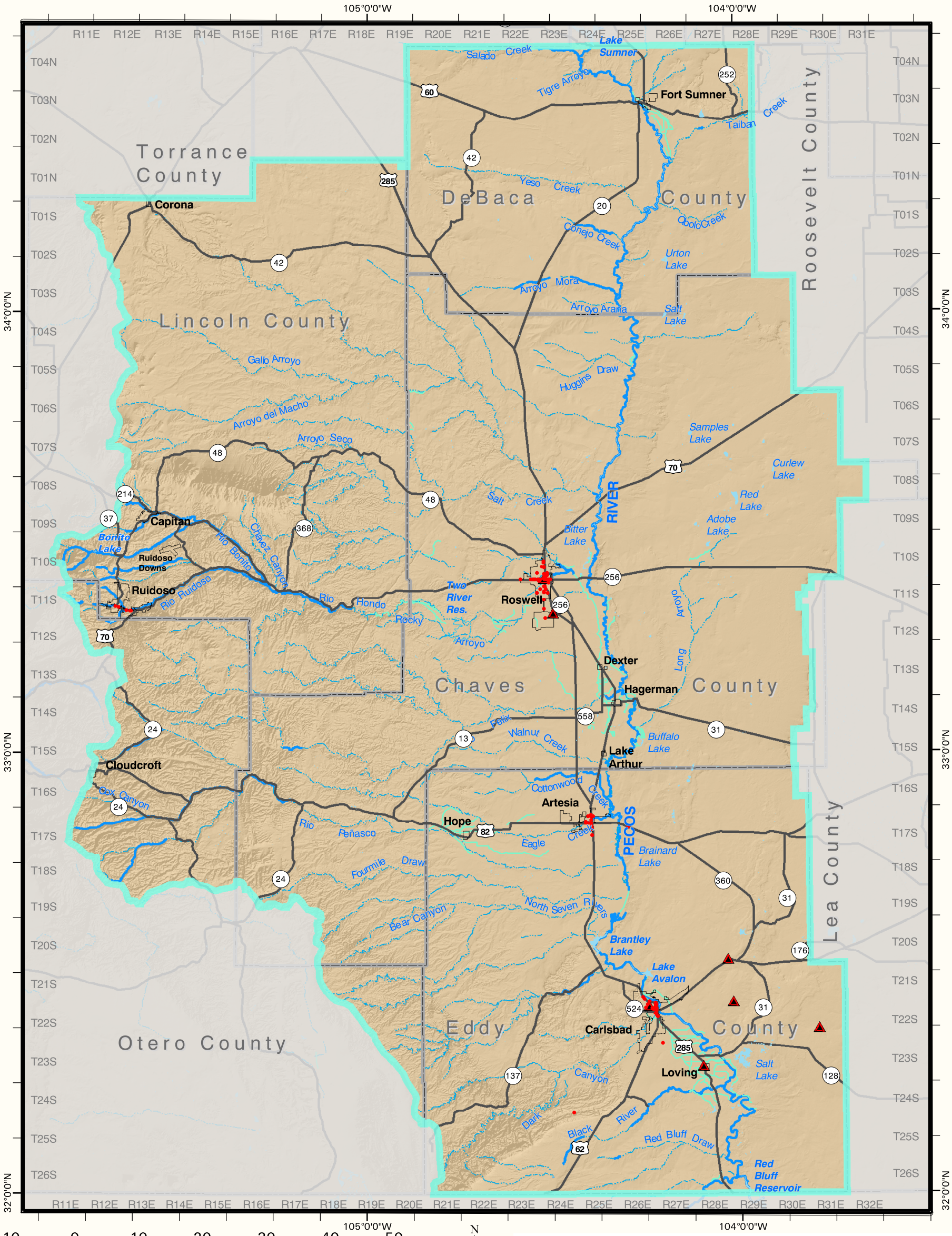
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

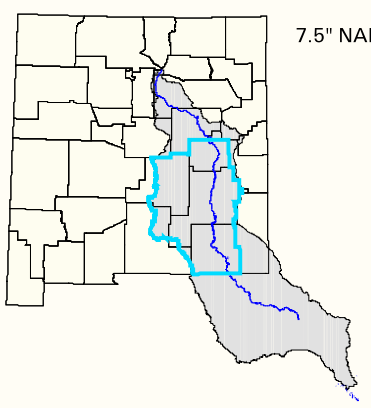
GROUNDWATER CONTAMINATION SITES IN THE PLANNING AREA

PLATE 27



10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES
MAP PROJECTION: UTM ZONE 13N, NAD83
7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER
TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Data from:
New Mexico Environment Department,2001,Past and Current Leak Sites by City: http://www.nmenv.state.nm.us/ust/ustbtop.html
U.S. Environmental Protection Agency, CERCLIS Sites, May 2001, http://www.epa.gov/enviro/
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

- PAST AND PRESENT UST LEAK SITES (116 OF 202 SHOWN)
- APPROXIMATE LOCATIONS OF CERCLIS SITES
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

BGW

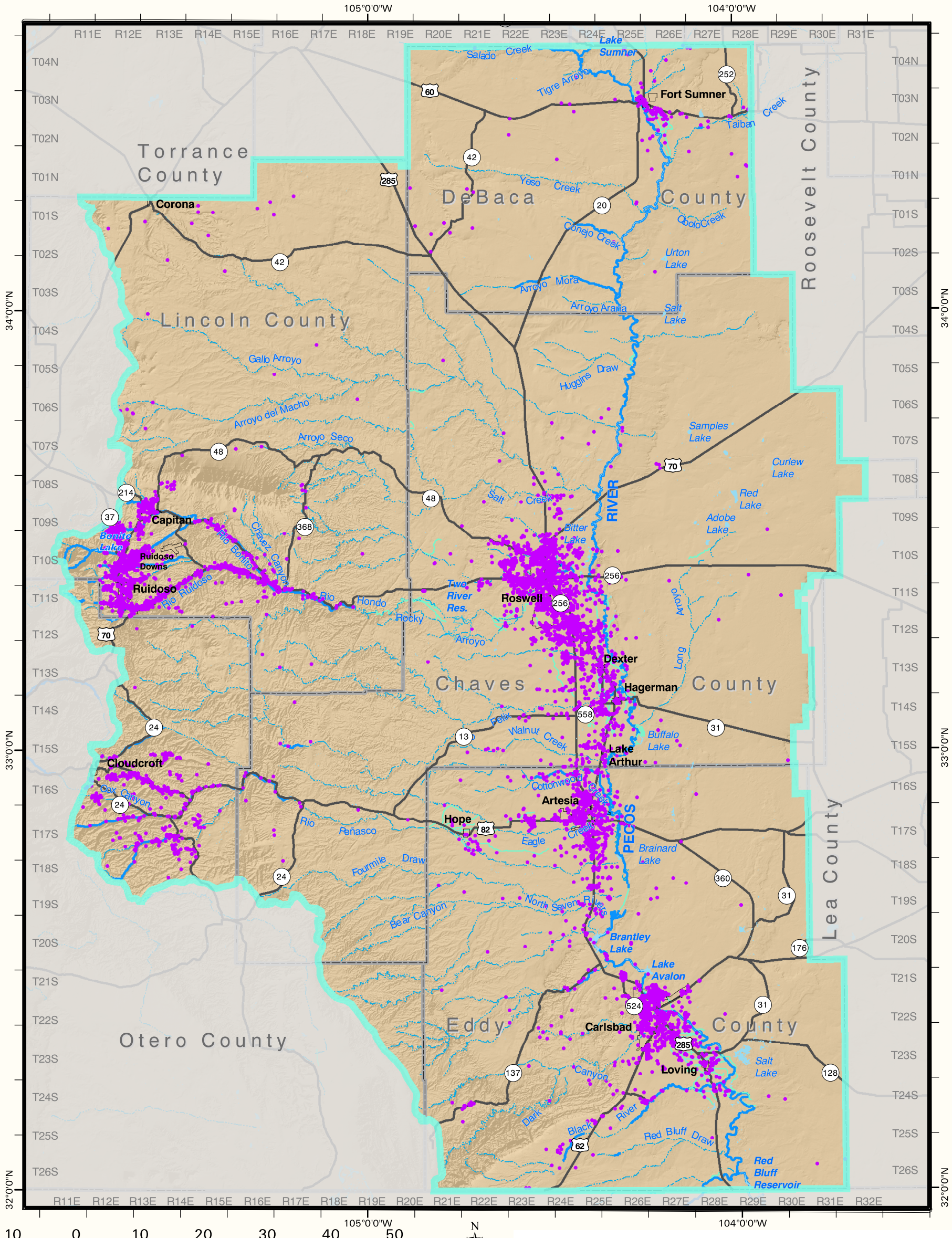
05/10/2001 SES 1000KCOLLAR.MXD

PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

DOMESTIC WELLS IN THE PLANNING AREA

PLATE 28



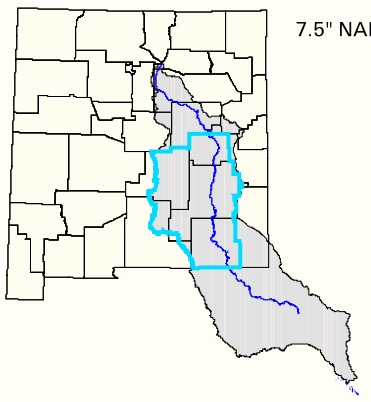
10 0 10 20 30 40 50 Miles

1:1,000,000 1 INCH = 16 MILES

MAP PROJECTION: UTM ZONE 13N, NAD83

7.5" NAD83 LATITUDE-LONGITUDE TICKS OUTSIDE MAP BORDER

TOWNSHIP-RANGE INDEX INSIDE MAP BORDER



Data from:
New Mexico Office of the State Engineer, 2001, WATERS Database
Base adapted from the National Elevation and Hydrography Datasets,
Tiger Line Data provided by ESRI, Inc. and New Mexico Resource
Geographic Information System data (http://rgis.unm.edu).

EXPLANATION

- DOMESTIC WELLS (8454)
- CANAL OR DITCH
- PERENNIAL STREAM
- INTERMITTENT STREAM
- TOWNS AND CITIES
- MAJOR ROADS
- COUNTY BOUNDARIES

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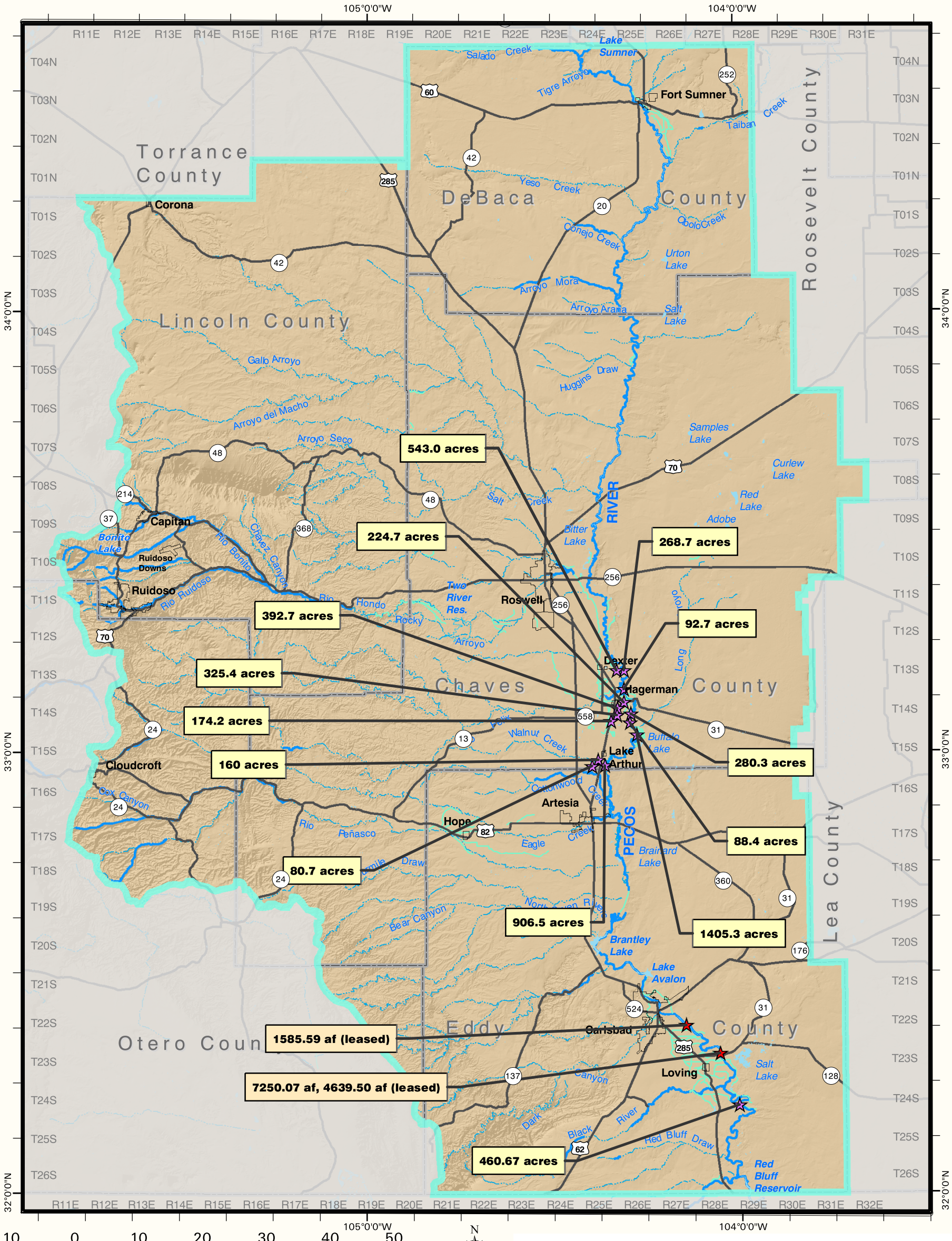
PECOS VALLEY WATER USERS ORGANIZATION

LOWER PECOS VALLEY REGIONAL WATER PLAN

WATER RIGHTS PURCHASED OR LEASED BY THE ISC THROUGH 1999

PLATE 29



Data from:
Electronic communication, J. Kennedy, New Mexico State University to P. Balleau, September 21, 2000.
Base adapted from the National Elevation and Hydrography Datasets, Tiger Line Data provided by ESRI, Inc. and New Mexico Resource Geographic Information System data (http://rgis.unm.edu).

BGW