Summary: Grant County Regional Water Plan

Brief Project Description: This regional project improves and increases access to public water supplies that currently serve approximately 26,000 people in central Grant County (Figure 1). The project has two principal elements:

I. Development of a New Well Field near Grant County Airport.

a. The well field would make 193.2 acre feet per year (AFY) of existing but undeveloped water rights available to Hurley, which does not have its own supply of water. Currently the town leases water from Freeport McMoran Copper & Gold. The well field would include two wells, a treatment facility and other appropriate infrastructure, including a pipeline to Hurley.

b. In addition, this well field would provide a point of diversion for new return flow credits of 750 AFY of water processed by the Silver City wastewater treatment plant (WWTP) and returned to the aquifer. Locations of the WWTP and the proposed airport wells are shown on Figures 2, 3 and 4. This water would be available for use by Hurley, Bayard, Santa Clara, and Silver City, as well as the nearby water associations, including North Hurley, Hanover, Arenas Valley, etc. In March 2013, the Town of Silver City applied to the Office of the State Engineer for this credit, and the application is currently under review by the Hydrology Bureau.

Note: *The 750 AFY is a return to the aquifer of approximately 27% of the 2,800 AFY that Silver City pumps.*

II. Construction of an Inter-Community Pipeline.

This new infrastructure would link Hurley, Bayard, Santa Clara, Silver City, and the public water systems of nearby water associations (Figures 2 and 3). The inter-community pipeline would deliver water as needed by the participating communities to supplement their own water supplies and support their own public water systems. In every case, each entity would continue to manage its own established supply and/or system.

The development of I and II can be staged in four phases as funding becomes available:

1. Well field at airport and pipeline to Hurley
2. Pipeline extension from Hurley to Bayard
3. Pipeline extension from Bayard to Santa Clara
4. Pipeline extension from Santa Clara to Silver City

The total estimated cost for the entire project currently ranges from $16,500,000 to $19,700,000, depending on a variety of factors such as pipeline diameter and the final number of storage tanks installed.

Note: *The proposal for a new well field and intercommunity pipeline builds on attributes of existing public water systems, water sources, and water demand in central Grant County:*

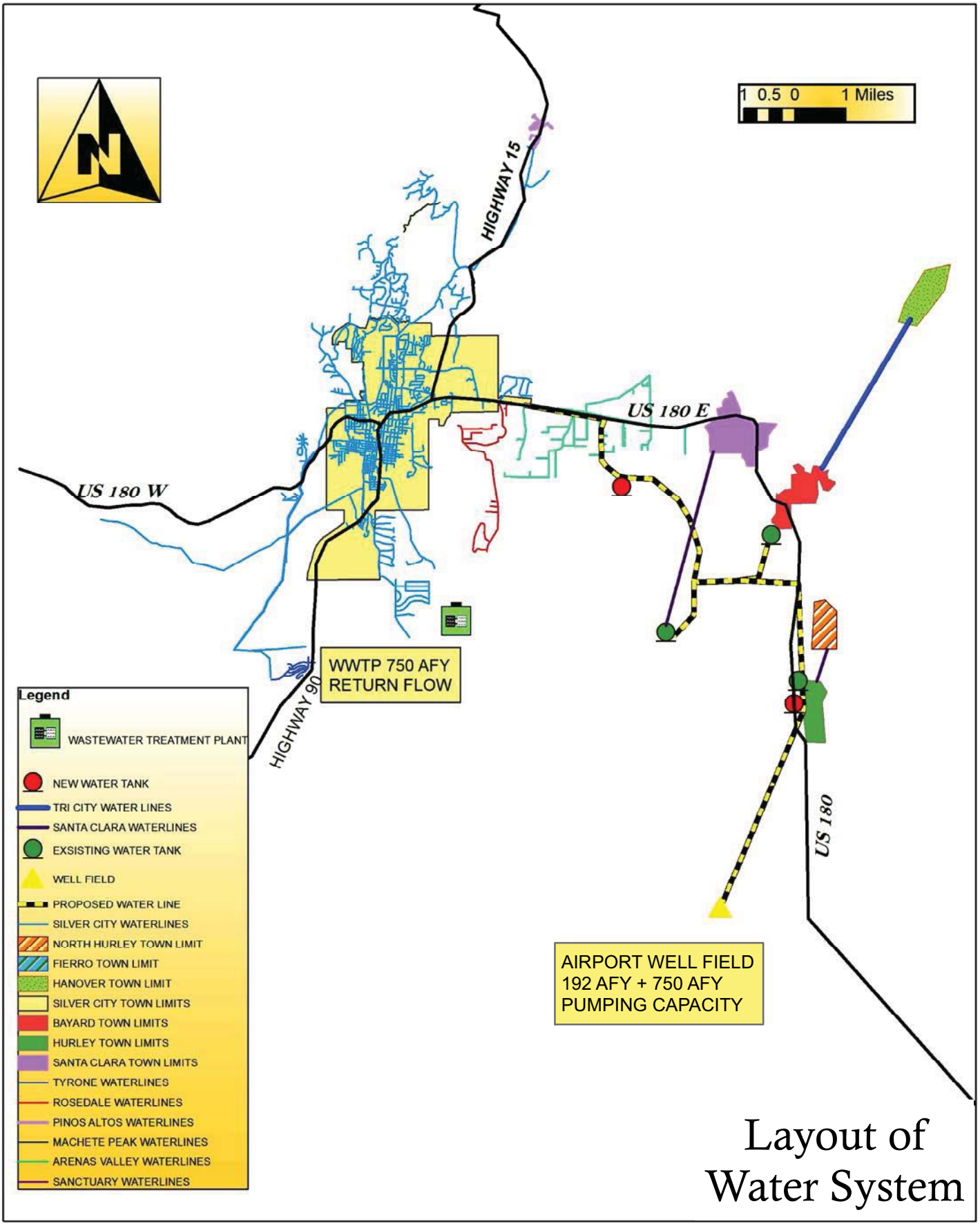
1. *Elements of a regional water system already exist. The Town of Silver City already provides water beyond the Town limits to the water associations of Tyrone, Pinos Altos, Rosedale and the Arenas Valley (Figures 2 and 3). The proposal expands and formalizes it.*
2. *Future demand for municipal and public water supply is expected to be modest.*
3. *The area enjoys a favorable geographic setting that supports abundant ground water stored in the Mangas Trench (Figure 4) as well as ground water recharge from the nearby mountain front.*
4. *Discharge from the Silver City wastewater treatment plant is absorbed into the Mangas Trench aquifer. This water is eligible for additional water rights through return flow credits.*

Attachments: 4 Figures
General Description of Water Supply

Figure 1.
Proposal for Grant County Regional Water System

Figure 2.

Proposal for Grant County Regional Water System



Layout of Water System

Figure 3.
Proposal for Grant County Regional Water System

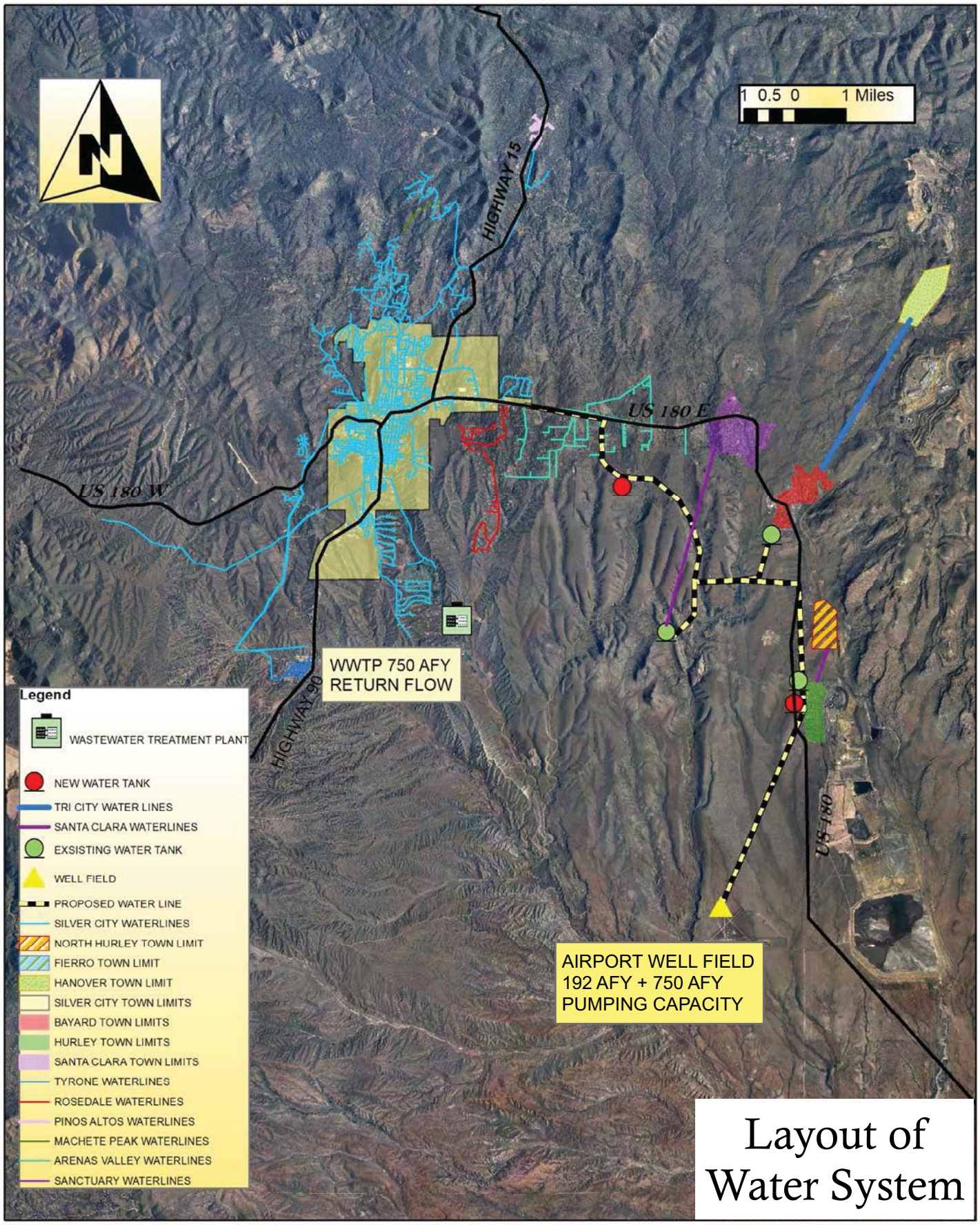
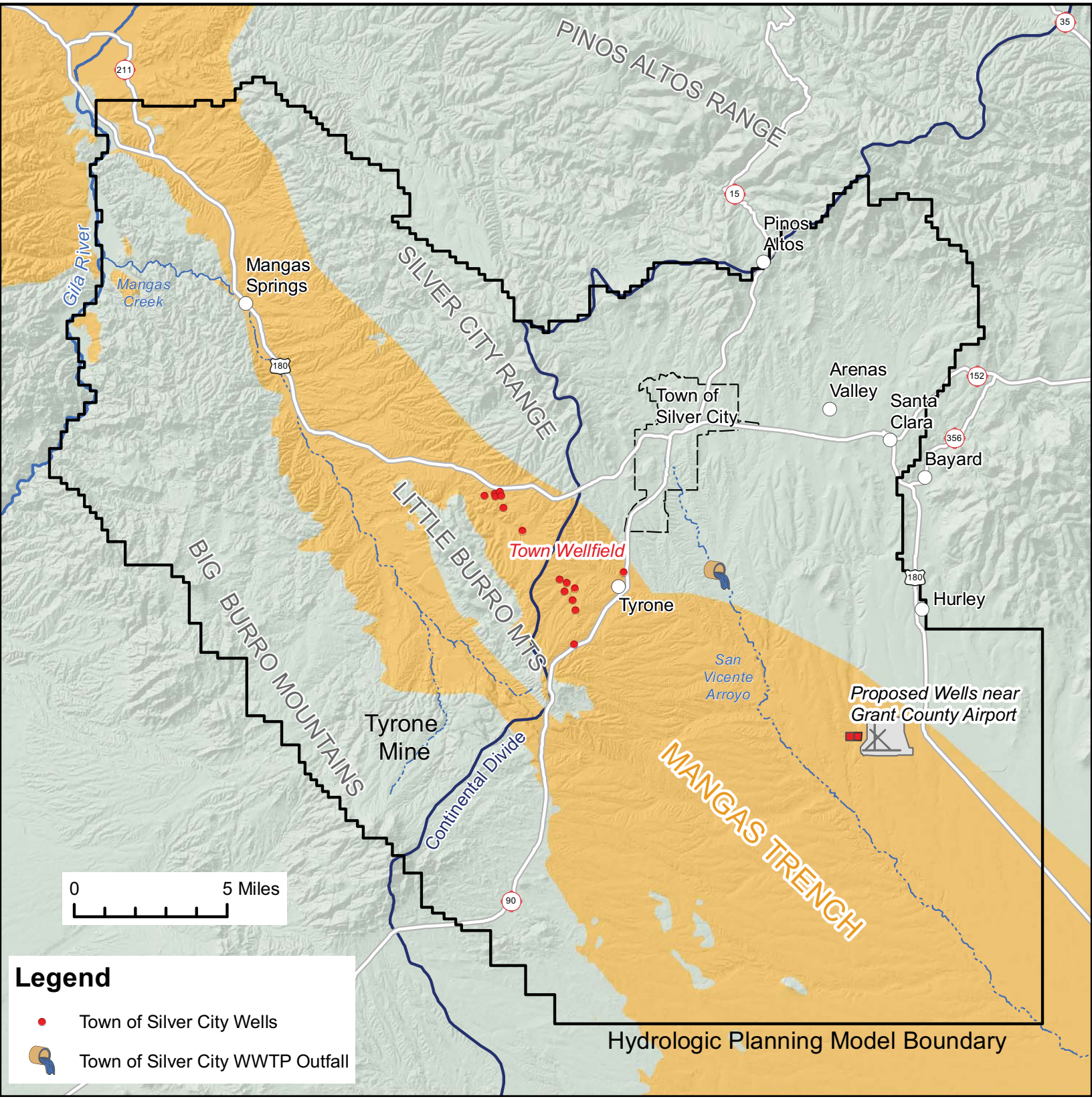
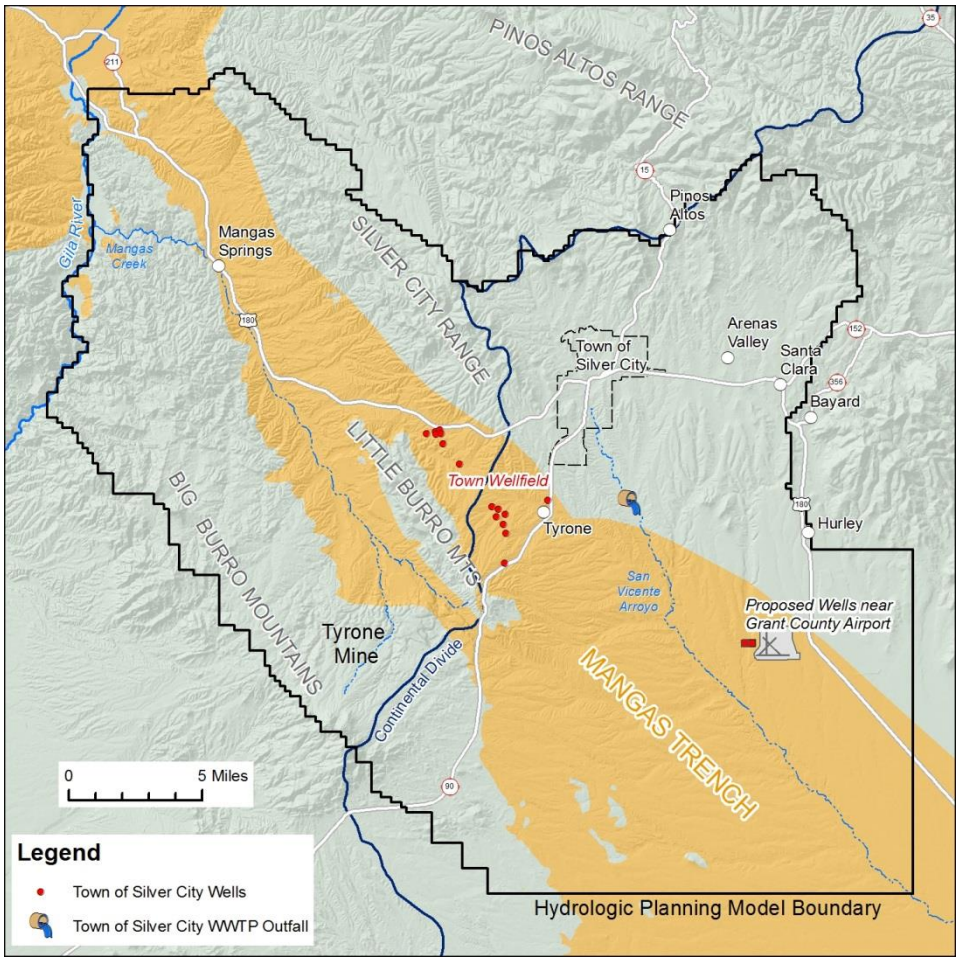


Figure 4.
Proposal for Grant County Regional Water System



GENERAL DESCRIPTION OF WATER SUPPLY

The Gila Group aquifer provides a regional source of water in central Grant County. The principal aquifer is situated in the area of the Mangas Trench, which is a northwest to southeast trending structural feature. The Gila Group aquifer has been demonstrated to produce yields that range from 300 to 700 of gallons per minute to large capacity municipal (Silver City) and mining



Location of Mangas Trench, wastewater treatment plant and proposed wells near airport.

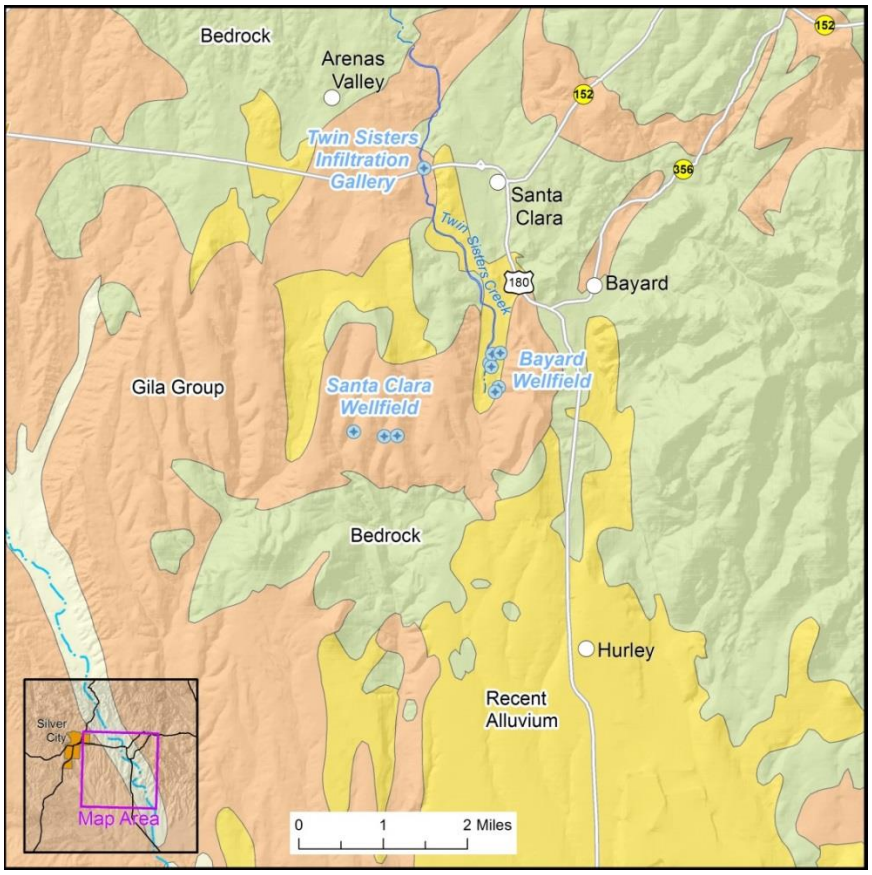
wells where the aquifer is on the order of 1,000 feet thick. In the area of the Santa Clara and Bayard wells, the Gila Group aquifer is present, but it is generally a few hundred feet thick[1], which results in a comparatively limited well yield. Accordingly, reported yields for the Santa Clara and Bayard wells range from tens to 175 gpm.[2] The Gila Group is approximately 1,000 feet thick in the area of Silver City's existing wells and at the site of the proposed wells near Grant County airport[3], which

[1] Dinwiddie, G.A., Mourant, W.A and Basler, J.A., 1966, Municipal Water Supplies and Uses Southwestern New Mexico: New Mexico State Engineer, Technical Report 29D, prepared in cooperation with the United States Geological Survey.

[2] As Footnote 1.

[3] An exploratory well (M-11220-POD1) has been drilled and tested at the airport well site and confirms at least 1,000 feet of Gila Formation.

are located eight to ten miles away from the Santa Clara and Bayard wells. Santa Clara and Bayard can seek improvement of wellfield capacity by drilling wells deeper into the bedrock, but yield from the bedrock is uncertain.



In 2006, the Village of Santa Clara applied with the New Mexico Office of the State Engineer to drill a replacement well for one of its existing wells. The Village drilled an exploratory well in bedrock east of the infiltration gallery along Highway 180. The exploratory well did not produce sufficient water to provide a viable supplemental source to the Twin Sisters gallery by itself, which prompted Santa Clara to apply for an additional exploratory well.[4] This occurrence is an example of the uncertain yield associated with drilling wells into the bedrock in the area of the Santa Clara and Bayard wellfields. Expanding the Town of Silver City municipal water system would provide an optional supply of supplemental water to the Village of Santa Clara and the City of Bayard water systems, and would serve to mitigate the uncertainty associated with developing additional wells in the bedrock aquifer system. The regional water system would also provide a permanent water supply for the Town of Hurley, as an alternative to the source of water currently supplied under agreement with FreePort McMoRan, which presently has a term through year 2018.

[4] Application for Permit to Drill an Exploratory Well (M-10512-Expl2): filed by the Village of Santa Clara with the New Mexico Office of the State Engineer on February 24, 2006. http://nmwrrs.ose.state.nm.us/nmwrrs/waterRightSummary.html, data accessed January 4, 2012.