



# Comprehensive Trails Master Plan

Inventory Phase

Santa Cruz County, Arizona

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Open space and trails planning is becoming more and more important as the human population continues to increase and urban areas expand to meet the ever growing need for more jobs and housing. Open space and trail networks will reduce the dependence on fossil fuel burning modes of transportation and provide opportunities to exercise and experience nature. Santa Cruz County has already experienced the effects of this growth. Local governments need good plans in order to prioritize the funds spent on trail systems and take advantage of opportunities to purchase key properties and easements.

The trail planning process is typically complicated by the number of jurisdictions that trails cross, public awareness and education, and property rights. Mistakes made in the process can make acquiring and installing trails more difficult in the future. Therefore, our goal is to begin the process by collecting good data and providing tools for decision makers.

We intend to contribute to the process by adding trails and open space layers to the Santa Cruz County Planning Departments existing library of GIS files. With this quality information, a comprehensive trails master plan can be conceptualized and brought to the public during the next phase of the project.



## Introduction

### Location and History

Nestled between Cochise and Pima Counties along Southern Arizona's border with Mexico, Santa Cruz County is Arizona's smallest county, at only 1,238 square miles. Created (from Pima County) by the 20th Territorial Assembly in 1899, Santa Cruz County is named after the Santa Cruz River, the major basis for native populations in the region dating back at least four thousand years. As Spanish Colonization reached the area in the 1690's, settlement increased and marked the beginning of the construction of a number of missions and presidios along the Santa Cruz Valley to present day Tucson. Today, Tubac Presidio State Park and Tumacacori National Historical Park preserve and interpret the historical influences of the Spanish on the area. In addition, Spanish arrival brought other economic pursuits to the area, including ranching and mining. During the mid to late 19th Century, with the arrival of Anglo-Americans and the railroad, Santa Cruz County was transformed for its ranching and mining resources. The Town of Patagonia, located in a valley along Sonoita Creek, played an important role in these activities from the late 19th Century through to the mid 20th Century. In recent decades, as economic systems have become more global, manufacturing and trade along the border with Mexico has increased. The twin cities of Nogales, Arizona and Nogales, Sonora are a bustling hub of international trade and commerce along the US – Mexico border.

With its rich history, plentiful opportunities for outdoor recreation and relatively low cost of living, the population of Santa Cruz County will continue to grow. Recognition and preservation of the landscape and its historical resources through the implementation of a trails plan is a critical to maintaining the unique character of Santa Cruz County.



*Positioned South of Pima County and West of Cochise County, Santa Cruz County shares an international border with Mexico. The Trails Master Plan should be coordinated with these neighboring jurisdictions to provide connectivity throughout the region.*



*The I-19 corridor links the major population centers of Amado, Tubac, Tumacacori - Carmen and Rio Rico with the County seat located at Nogales. Settlements to the east include the towns of Patagonia, Sonoita and Elgin.*

## Introduction

### Context

The creation and implementation of a Comprehensive Trails Master Plan will be an important planning tool for Santa Cruz County. With population growth expected to remain strong, pressure for the development of existing open space will increase. Along with the County's Comprehensive Plan, which provides the basic framework for directing growth in the County, the Trails Master Plan will help ensure that access to open space is maintained and enhanced as new areas are developed.

The following table reveals some of the demographics for Santa Cruz County. Understanding and providing for the diverse populations of Santa Cruz County is critical to the success of the Trails Plan. With a significant number of both young people and active retirees in the County, the trails system should offer flexibility

to different user groups with varied interests and activity levels.

Throughout the County, a number of trails projects have been completed or have been conceptualized. The Trails Master Plan hopes to capitalize on the momentum generated by these individual projects by providing an overall vision for the County's open space network. Through a coordinated plan, Santa Cruz County can provide a unified trail network that provides multiple benefits to residents and visitors alike.

The goal of this project is to provide Santa Cruz County with a GIS based Trails Master Plan. Specific objectives and tasks completed to date are summarized in the chart on the following page.

People QuickFacts	Santa Cruz County	Arizona
Population, 2004 estimate	40,784	5,743,834
Population, percent change, April 1, 2000 to July 1, 2004	6.3%	12.0%
Population, 2000	38,381	5,130,632
Persons under 5 years old, percent, 2000	8.7%	7.5%
Persons under 18 years old, percent, 2000	33.6%	26.6%
Persons 65 years old and over, percent, 2000	10.7%	13.0%
Female persons, percent, 2000	52.2%	50.1%
White persons, percent, 2000 (a)	76.0%	75.5%
White persons, not of Hispanic/Latino origin, percent, 2000	17.8%	63.8%
Persons of Hispanic or Latino origin, percent, 2000 (b)	80.8%	25.3%
Language other than English spoken at home, pct age 5+, 2000	80.5%	25.9%
Mean travel time to work (minutes), workers age 16+, 2000	19.7	24.9
Homeownership rate, 2000	68.0%	68.0%
Land area, 2000 (square miles)	1,238	113,635
Persons per square mile, 2000	31	45.2

Objective		Status	Work Completed	Future Action
1	Collect existing GIS data	95%	County GIS Data USFS Data US Census Tiger Data	Possible GIS data from other land management agencies
1a	Organize existing GIS data	80%	Projected all GIS data collected into NAD 83 HARN Consolidated GIS data into easy to use files	
2	Collect existing paper based data	50%	Rio Rico Properties Master Plan Rio Rico School Greenway	Possible paper based data available from other sources
2a	Organize existing paper based data	40%	Created shape files of Rio Rico Properties Master Plan	Verify that all paper based data has been put into GIS Study options in Nogales further
3	Inventory existing trails	95%	GIS Map of existing and proposed trails produced	Include other trails not in existing data sets
4	Identify natural, cultural, and historical amenities	50%	Projected inventory of historic sites in Santa Cruz County Identified other sites from US Census Tiger data	Verify Resource List Define Resource Types More research needed
5	Identify partners – government agencies, user organizations, developers, schools	50%	See appendix for partners and stakeholders contacted	Contact remaining stakeholders Visit remaining areas of the County- Lochiel, Sonoita, Elgin, USFS lands Hold public meetings
6	Identify connections between trails and amenities	30%	Proposed linkages between major trail corridors	Provide links to historic sites Provide trails to amenities in more developed areas
7	Rank the priority of connections	0%	Not Completed	Hold public meetings to determine priorities Analyze growth areas for opportunities
8	Provide trail design guidelines and recommendations for where to implement specific designs	0%	Not Completed	Compile from other trails plans- Santa Clara County, CA.

## Existing Resources

### Historic Resources

Santa Cruz County's historic resources are an important element of the Trails Master Plan. Historic buildings and districts provide recreational, educational, and economic opportunities throughout the County. Greater visibility and appreciation for these resources has several benefits, including increased preservation efforts and helping to reinforce the bond between the residents and the history of the region.

Additionally, early exploration routes utilized by early Spanish, Mexican and Anglo-American settlers in the region offer great opportunities for connecting historic resources. Besides the Juan Bautista de Anza Trail, which has been well researched, other historic transportation corridors including washes and railroad corridors should be studied for the unique resources they may connect.

The inventory of historic resources for the trails master plan was compiled from two main sources. A limited number of historic sites are inventoried in existing GIS databases, including US Census TIGER Data. The most thorough study was completed in 2004 by students in the Preservation Studies Program at the University of Arizona as part of the Feasibility Study for the Santa Cruz Valley National Heritage Area. The feasibility study collected information for the historic resources listed on the National Register of Historic Places. Students also spent time researching and visiting lesser known historic sites that are important to the cultural and historical development of the area. Additional field verification should be completed to verify the exact location and potential trail access to these sites. Additionally, communication with resource managers in Santa Cruz County should be undertaken to coordinate accessibility and preservation of these sites.



*Nogales, Arizona features many beautiful historic buildings and districts that could be linked with an urban trail. Such a trail could provide economic and recreational opportunities for local residents. The Santa Cruz County Courthouse (left) and 10 Cottages on Short Street reflect the variety of resources found throughout Nogales.*



*Throughout the County there are examples of the vernacular building traditions of Southern Arizona. Patagonia's Cady Hall, with its Territorial style influences, and this adobe barn along I-19 in Rio Rico are examples.*



*These traces of the rich mining history in the area can be found in the US Forest Service lands south of Patagonia.*



# Existing Resources

## Regional Trails

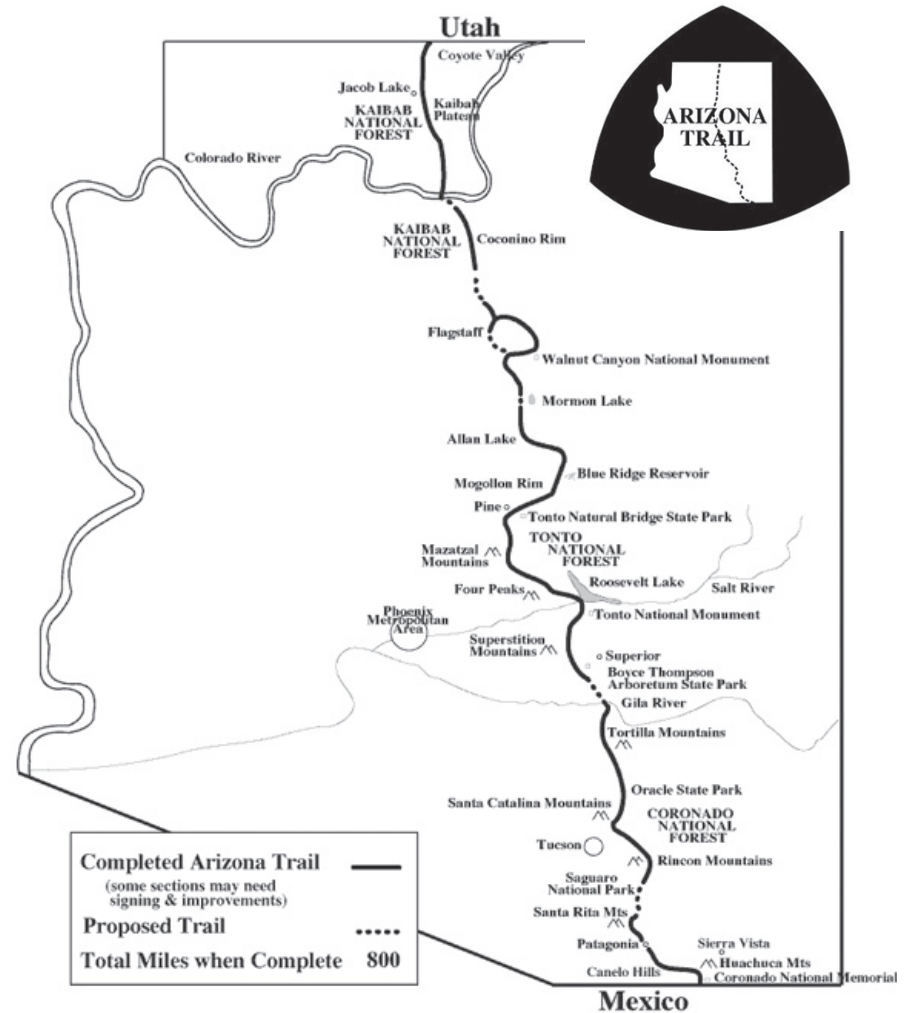
Two significant regional trails bisect Santa Cruz County: the Arizona Trail and the Juan Bautista de Anza National Historic Trail. Completion of these trails will provide the county an excellent overall structure for their trails plan. Linkages between these two trails should be a high priority and will help provide connectivity to the county's public lands.



Tumacacori National Historical Park. Photo by Andrew Gorski, 2006.



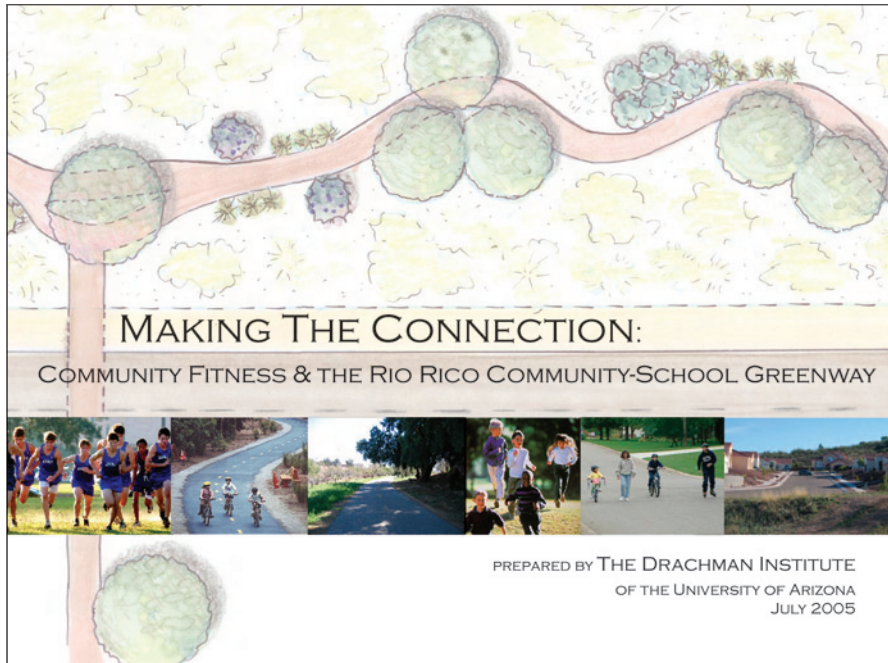
Painting of Tubac Presidio, circa 1774. Painting by Bill Ahrendt, courtesy of the NPS.



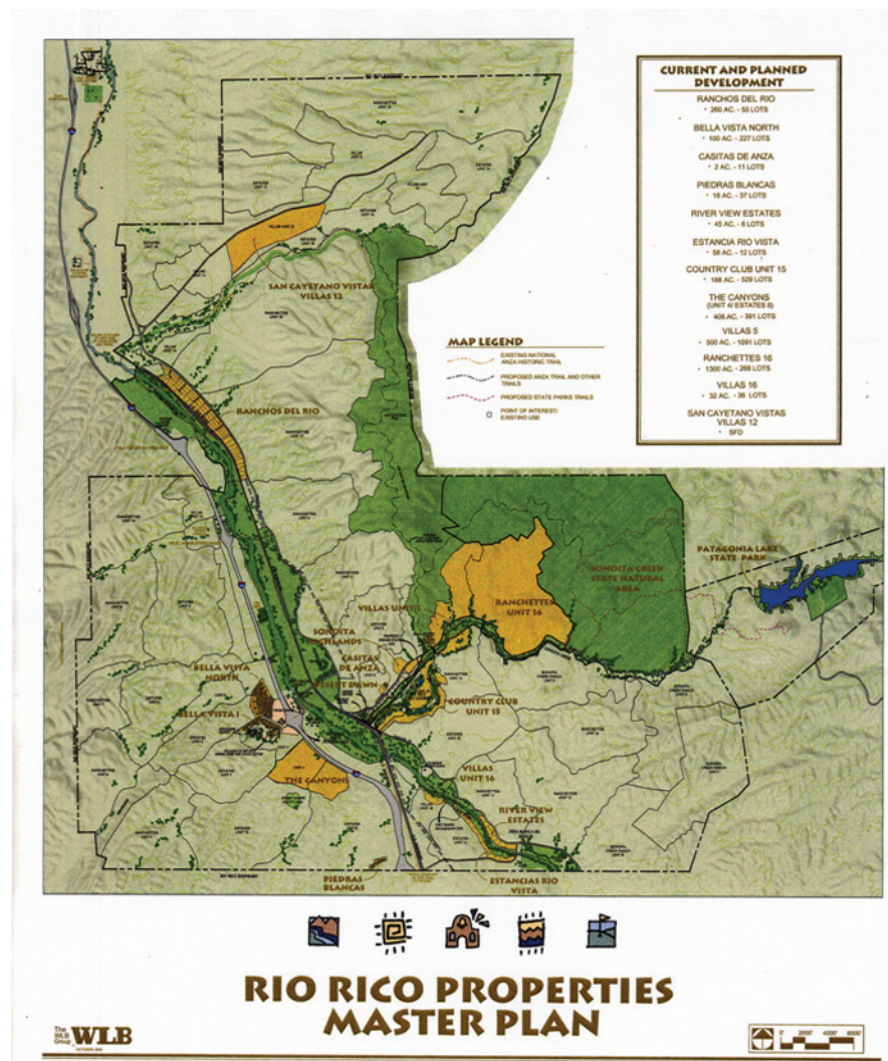
## Existing Resources

### Planned Trails

A number of smaller trail projects have been completed or are planned for the County. In the Rio Rico area several trail projects have been completed over the last few years and there are proposals for other trails in that area, as well. These projects will help build momentum for other trails in the County and put pressure on other developers and municipalities to build trails to satisfy growing demand by both new and existing residents.



*The Rio Rico Community School Greenway, prepared by the Drachman Institute at the University of Arizona. The plan includes a "multi-modal, interconnecting loop trail, between three adjacent schools and the school district office and extending along the 3 mile county owned Frontage Road to Garrett's, with connections to all neighborhoods along the way; enhanced with multi-purpose amenities serving both the community and school populations..."*



Open space and Trail Master Plan for Rio Rico Properties, a major developer in the Santa Cruz Valley. The plan expands the area of the existing Sonoita Creek State Natural Area with a network of trails and protected open spaces. This sensitivity to the natural environment is a dramatic improvement to earlier development at Rio Rico that mostly ignored the natural features of the area.

**GIS Data Collected**

**ESRI - US Census TIGER Data**

- Line data
- Roads
- Rails
- Misc. transport
- Landmarks
- Physical
- Non visible
- Hydrography

Census

- Blocks 2000
- Tracts 2000
- Demtract 2000
- Demblock 2000

Other

- Designated Places 2000
- Key Geographic Locations
- Landmark Polygons
- Landmark Points
- Urban Areas
- School Districts
  - Elementary
  - Secondary
  - Unified

Water Polygons

**Coronado National Forest-  
USFS**

- Trails
- Boundaries

**BLM**

- Arizona Trail

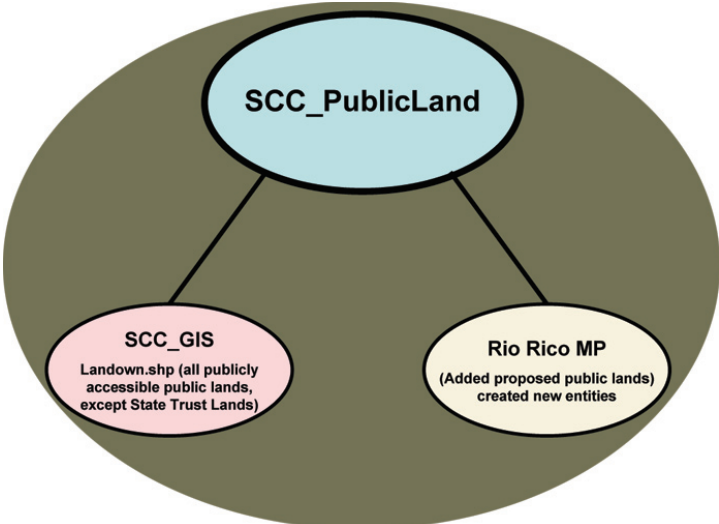
**Pima County**

- Trails

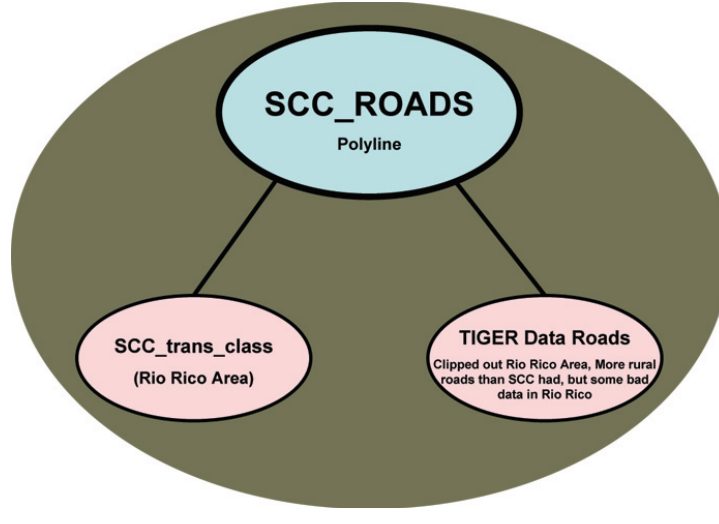
**Nogales**

- City CAD Files now in shapefile and projected

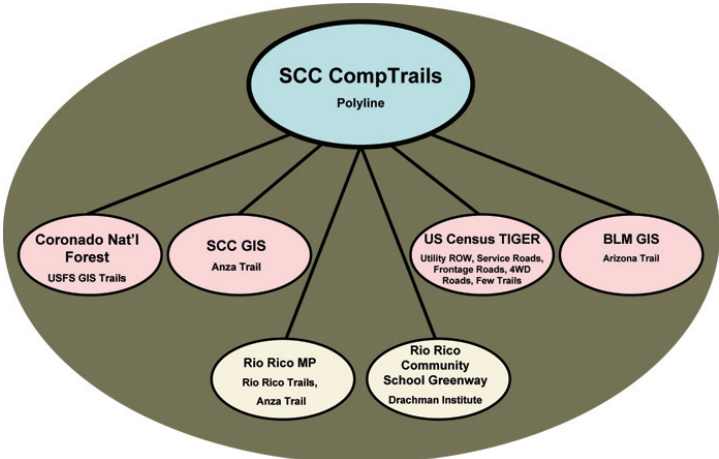
To date, collecting and organizing GIS data has been the focus of the Trails Master Plan. Accessed from a variety of public sources (see sidebar), GIS data has been systematically organized to allow for more detailed analysis during the next phase of the project. The following flowcharts provide an overview of how the main layers of data (shown in blue) are organized and what sources were utilized to create the datasets. Source shown in pink are existing GIS data sets, while sources shown in yellow are other sources of data, including maps and databases.



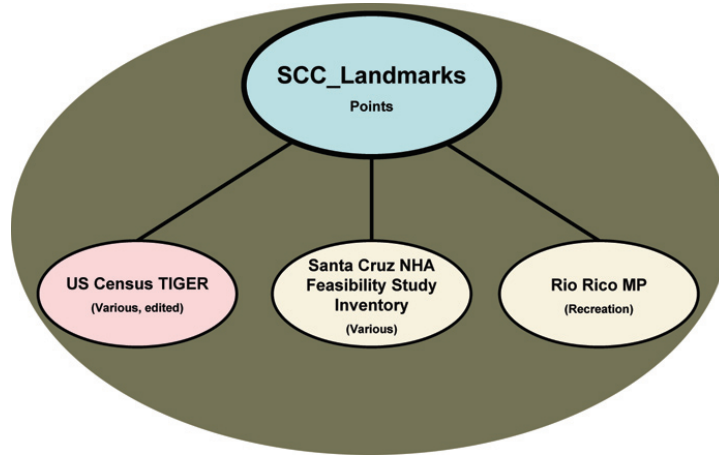
Public Lands data compiled from SCC shapefile and digitized map of proposed open space in Rio Rico.



The road layer consists of Santa Cruz County and US Census GIS data.

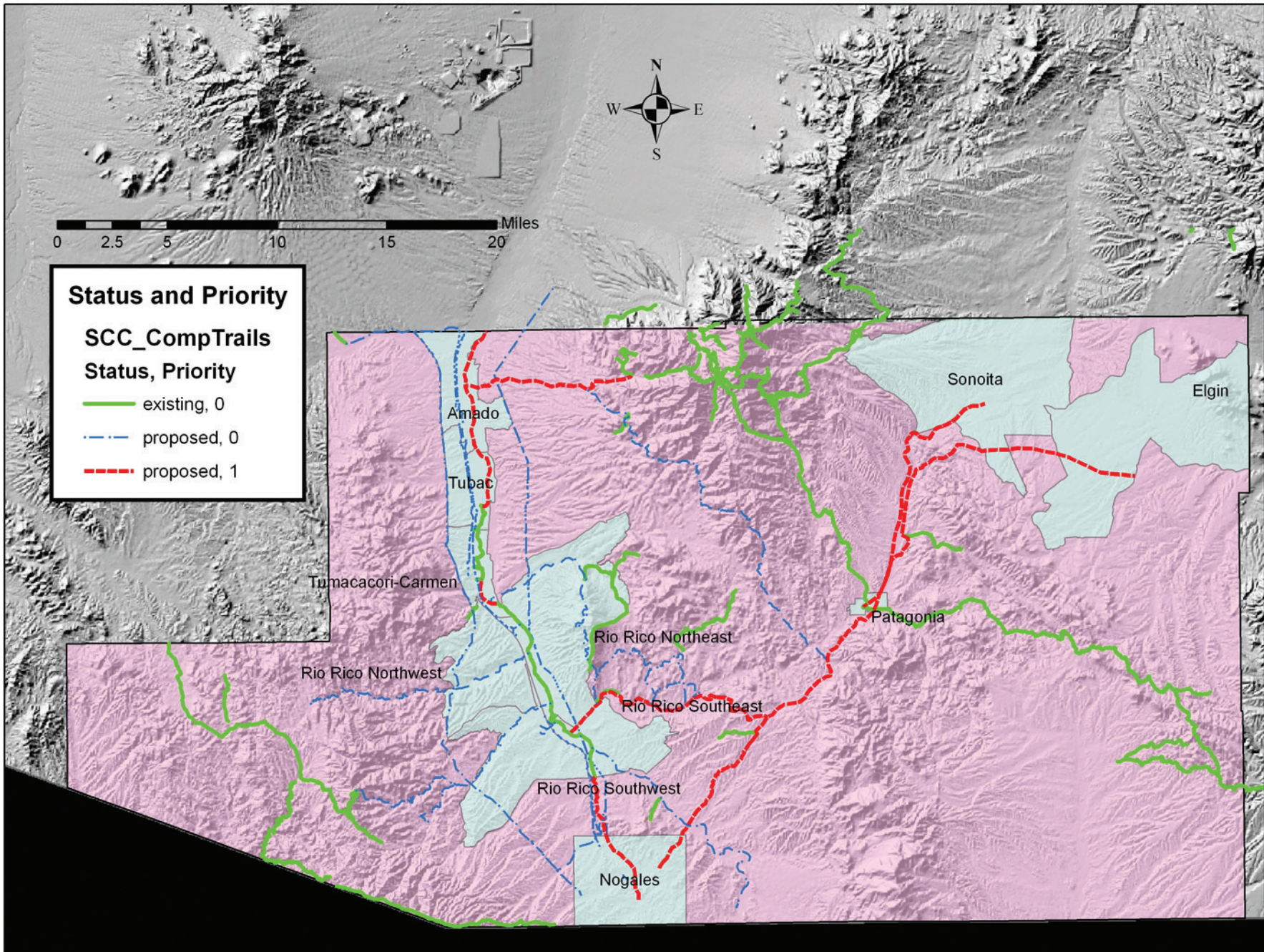


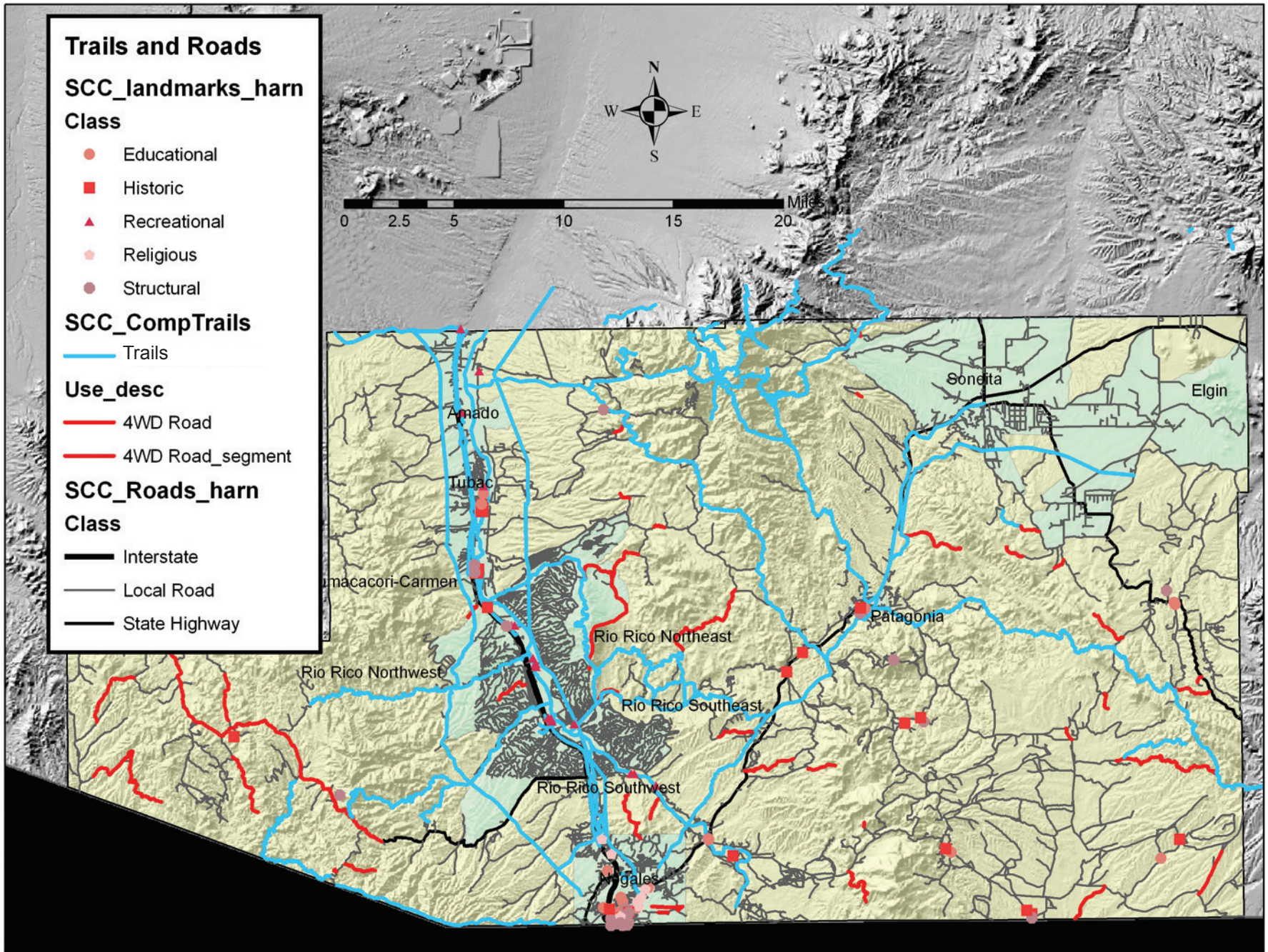
Trails layer consists of GIS data from public sources and proposed trail systems in Rio Rico.



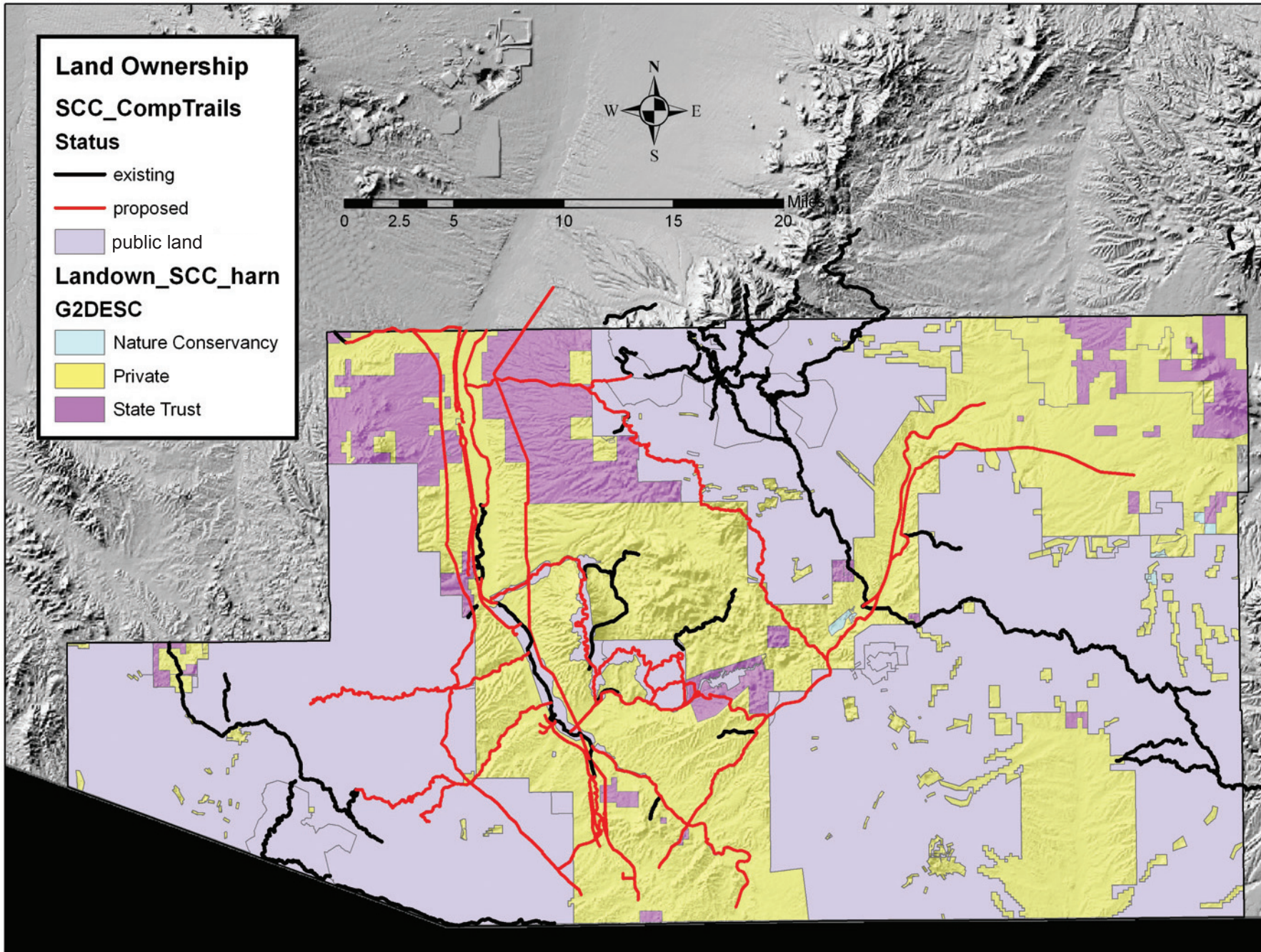
Compilation of important landmarks and amenities was obtained from existing inventories, GIS data, and maps.

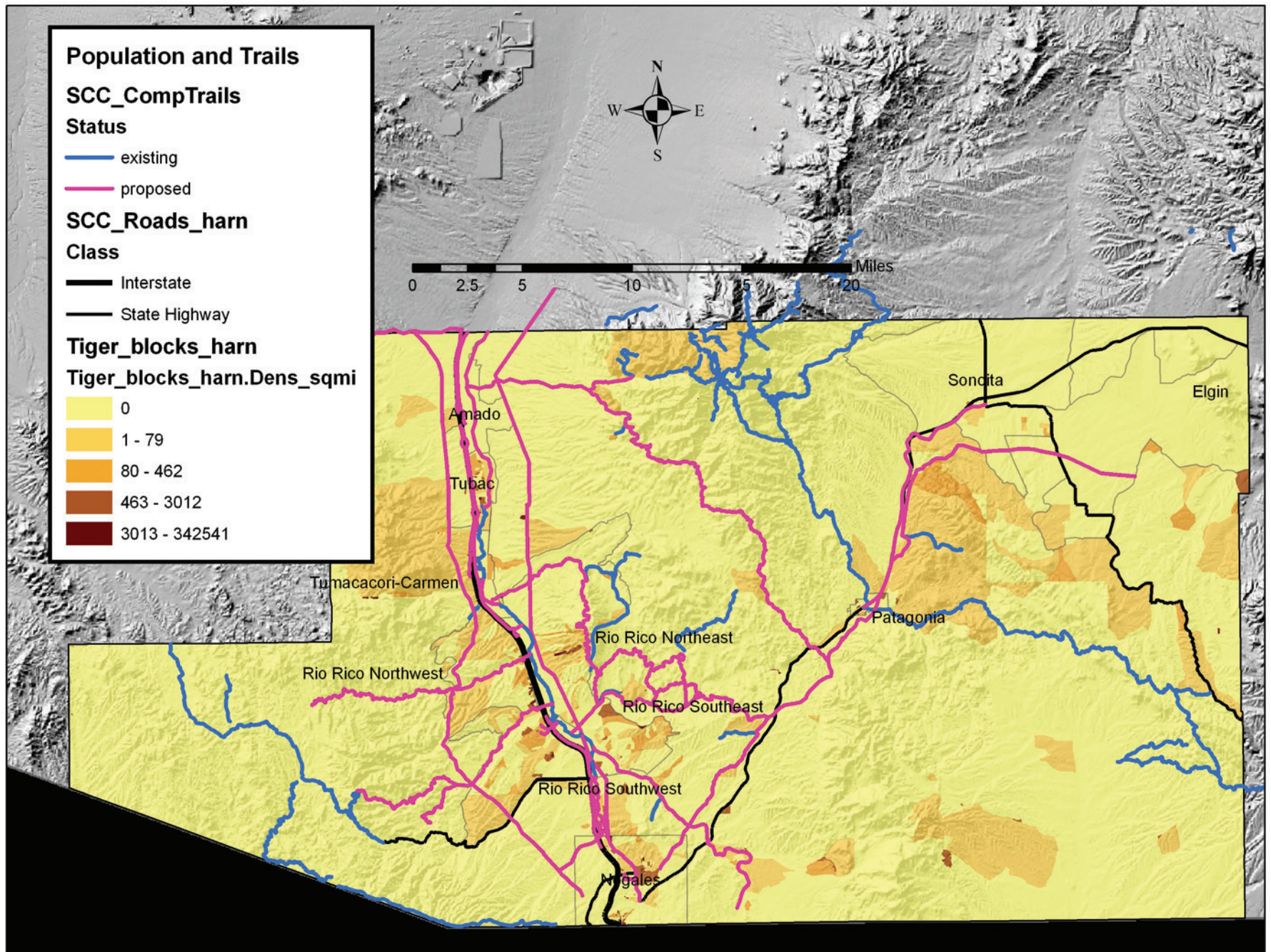
# Trail Priorities



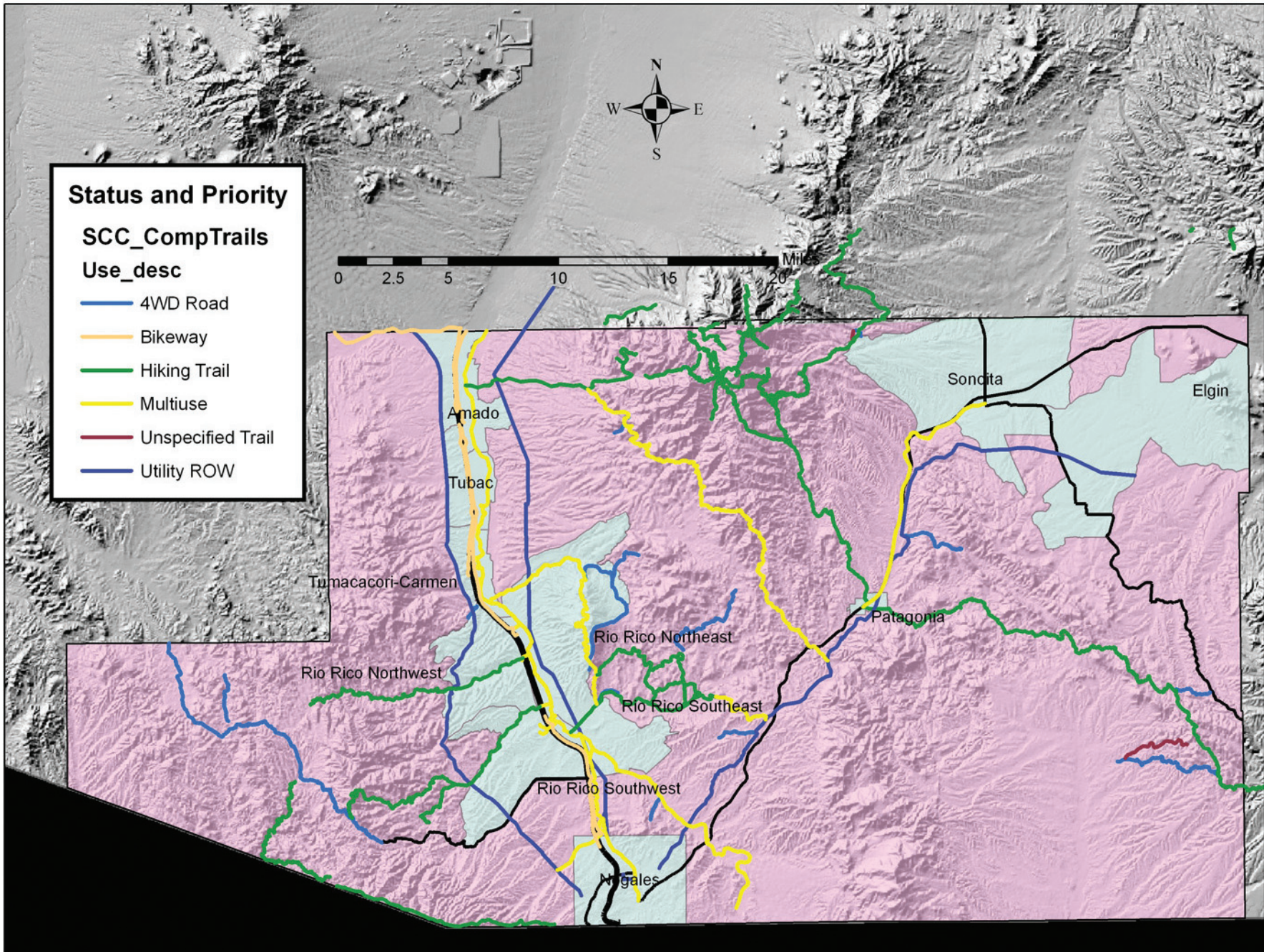


# Land Ownership and Trails

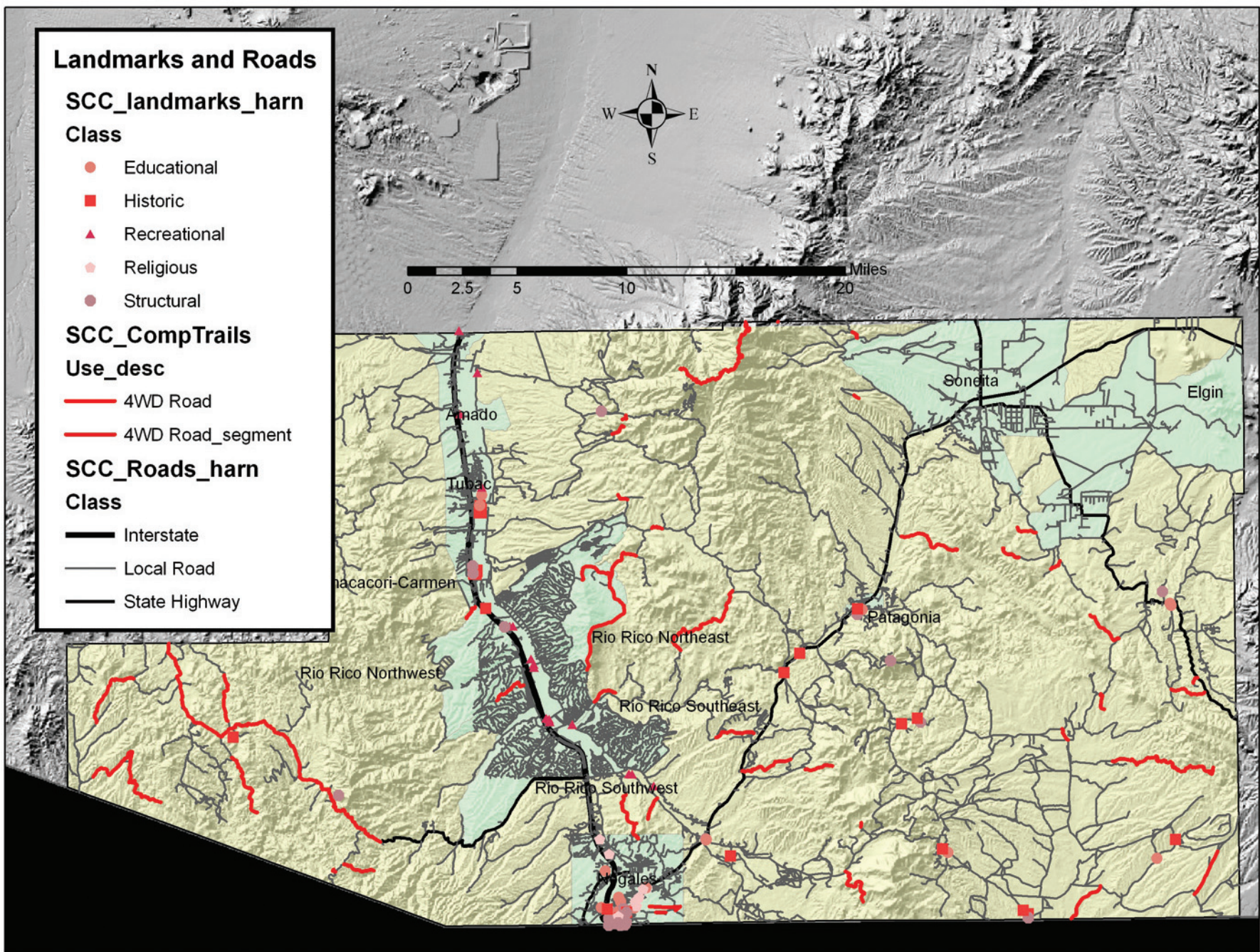




# Trail Use







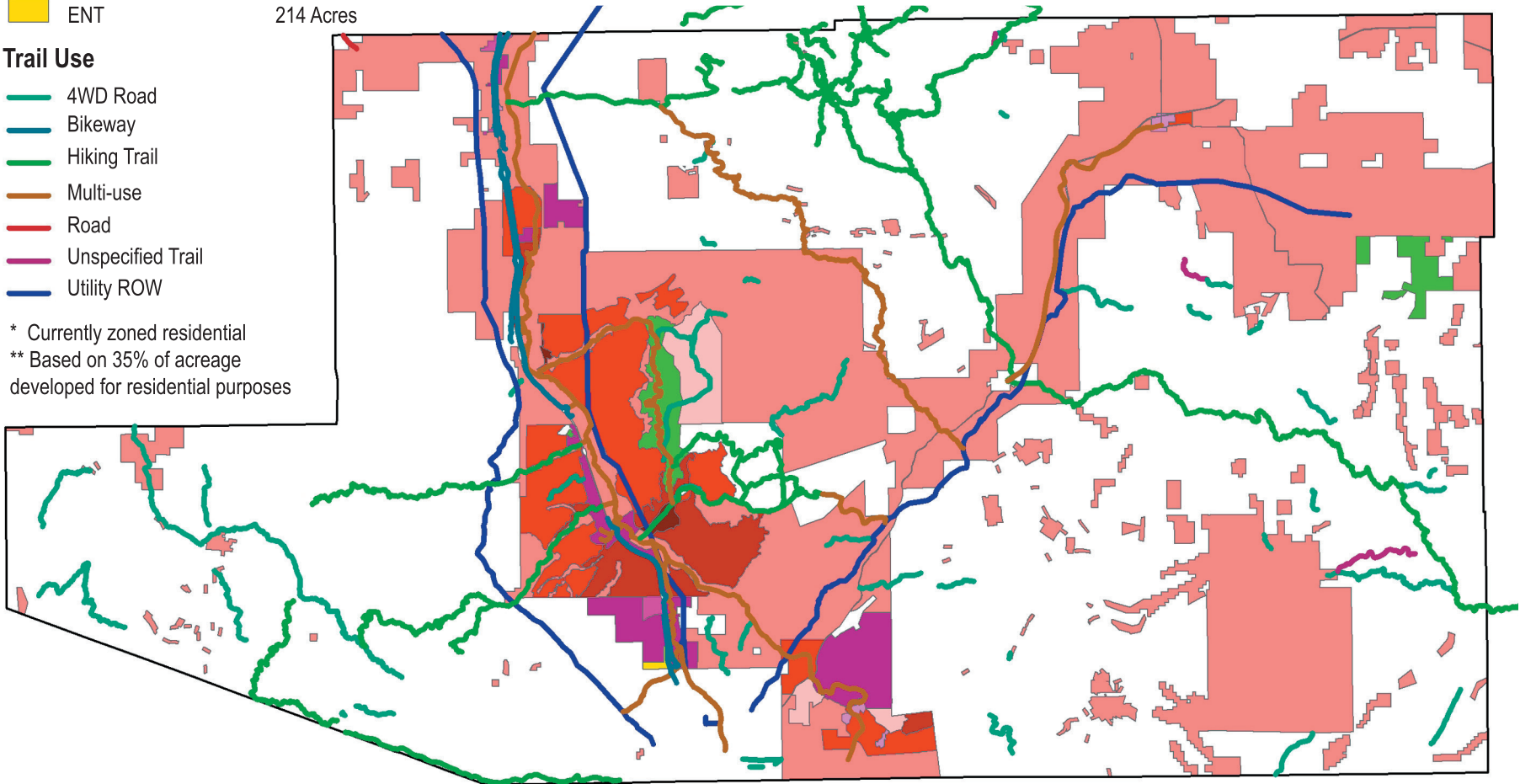
# Comprehensive Plan

Land Use Category	Reidences Per Acre	Total Acres	Total Dwelling Units
HDR	10 RAC	771 Acres	7,710
MDR	3 RAC	9,814 Acres	29,443
LDR	1 RAC	25,383 Acres	25,383
R	.25 RAC	214,469 Acres	53,617
R40	.025 RAC	5,234 Acres	131
PSV		6,360 Acres	
MU	10 RAC	6,880 Acres*	24,080**
RS		333 Acres	
LS		480 Acres	
ENT		214 Acres	

## Trail Use

- 4WD Road
- Bikeway
- Hiking Trail
- Multi-use
- Road
- Unspecified Trail
- Utility ROW

\* Currently zoned residential  
 \*\* Based on 35% of acreage developed for residential purposes



<b>Ranch 40 - R40</b>	The principal land uses in this category are extremely low-density residential (1/40 residential units per acre [RAC] or less), ranching, agriculture, viticulture, low-impact tourism, resource conservation, and accessory uses.	Zoning Districts permitted include GR-40 ( <i>Policy 1.5.1</i> ). Other Zoning Districts may be permitted only as part of a Planned Area Development (PAD), provided the densities of the category are not exceeded within the PAD.
<b>Ranch - R</b>	The principal land uses in this category are very low-density residential (¼ RAC or less), ranching, agriculture, viticulture, low intensity/low traffic tourism, resource conservation and accessory uses.	Zoning Districts permitted include GR-40 and GR. Other Zoning Districts may be permitted only as part of a PAD, provided the densities of the category are not exceeded within the PAD.
<b>Public Lands - PL</b>	The principal land uses in this category are established in accordance with applicable law and regulation of the managing agency. The Public Lands category includes all federal public land managed by the Department of Agriculture and the Department of the Interior and State lands managed by the State Parks Department.	Zoning Districts permitted, while lands remain public, include GR-40 and GR. When public lands are converted to private property, regardless of means, a PAD shall be required for development.
<b>State Trust – ST</b>	The principal land uses in this category are established in accordance with applicable law and regulation of the State Land Department.	Zoning Districts permitted while lands remain in the Trust include GR-40 and GR. When State Trust lands are converted to private property, regardless of means, a PAD shall be required for development.
<b>Preservation - PSV</b>	The principal land uses in this category are historic sites, museums, research study areas, permanent open space and, generally, areas to be preserved in a natural and/or scientifically managed manner. Residential and light commercial uses accessory to the principal preservation function are also permitted. This category applies to private property.	Zoning Districts permitted include P. Other Zoning Districts may be permitted only as part of a PAD.
<b>Local Services - LS</b>	The principal land uses in this category are retail, restaurant, tourism services, and low impact neighborhood services.	Zoning Districts permitted are B-1 and B-2. Other Zoning Districts may be permitted only as part of a PAD.

<b>Low Density Residential - LDR</b>	The principal land uses in this category are residential (1 Residence Per Acre [RAC] or less) and low-intensity tourism services, restaurants, and neighborhood services.	Zoning Districts permitted are GR, SR, R-1 and B-1. Other Zoning Districts may be permitted only as part of a Planned Area Development (PAD), provided the densities of the category are not exceeded within the PAD.
<b>Medium Density Residential - MDR</b>	The principal land uses in this category are residential (3 RAC or less) and retail, office and commercial services.	Zoning Districts permitted are R-1, R-2, R-3, B-1 and B-2. Other Zoning Districts may be permitted only as part of a PAD, provided the densities of the category are not exceeded within the PAD.
<b>High Density Residential - HDR</b>	The principal land uses in this category are single and multi-family residential (10 RAC or less), and retail, office and commercial services.	Zoning Districts permitted are R-4, R-5, MF, B-1 and B-2. Other Zoning Districts may be permitted only as part of a PAD, provided the densities of the category are not exceeded within the PAD.
<b>Mixed Use - MU</b>	The principal land uses in this category are high-density residential (10 RAC or less) integrated with retail, services and employment uses in areas accessible to infrastructure and public services.	Zoning Districts permitted are P, R-4, R-5, MF, MH, MFR, B-1 and B-2. Industrial zoning may be permitted only as part of a PAD, provided the densities of the category are not exceeded within the PAD.
<b>Regional Services - RS</b>	The principal land uses in this category are high-intensity commercial, employment, and retail uses that have regional significance and are situated to take advantage of major transportation corridors and population centers.	Zoning Districts permitted are B-2 and M-1. Other Zoning Districts may be permitted only as part of a PAD.
<b>Enterprise – ENT</b>	The principal land uses in this category are heavy commercial and industrial enterprises with significant employment potential and are situated to take advantage of facilities and major transportation corridors.	Zoning Districts permitted are B-2, M-1 and M-2. Other Zoning Districts may be permitted only as part of a PAD.

## Contacts

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