



# NATURAL AND CULTURAL RESOURCE CONSERVATION

BEST MANAGEMENT PRACTICES AND  
PROGRAMS  
FOR THE HERITAGE SOUTH SECTOR  
FINAL REPORT JUNE 30, 2014



*Rivers are timeless ecological assets of Heritage South.*

Table of Contents

Acknowledgements.....	ii
Introduction .....	1
Water Quality.....	6
Ecology.....	14
Agriculture .....	28
Scenic Corridors.....	32
Cultural and Historical Resources.....	38
Resource Links.....	46
Maps and Lists.....	47

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San Antonio River Authority

San Antonio Water System

## Introduction

San Antonio is the 24<sup>th</sup> largest metropolitan statistical area (MSA) in the United States based on U.S. Census data (April 2012), according to the Texas State Demographer. From 2000 to 2010, the MSA had the largest numerical increase in population of any one of the ten largest cities in the country, and if San Antonio's MSA continues to grow at a 2 percent rate, the MSA's population could double in 35 years. Much of this growth is attributed to the strong local and regional economy, fueled by the oil and gas drilling boom of the nearby Eagle Ford shale formation, continued investments in U.S. Air Force and Army installations, the medical center and related health industries, and a Toyota manufacturing plant.



In response to the tremendous growth the area will likely undergo in the future, Mayor Julian Castro led the SA2020 community-wide visioning process which identified goals for San Antonio to obtain by the year 2020. Goals related to this plan follow:

### **NATURAL RESOURCES STEWARD**

In 2020, San Antonio is to be recognized as a respectful steward of its natural resources and a model for responsible

management. Specific objectives to support this vision are:

**WATER:** Water resources are plentiful and effectively managed through a combination of conservation and supply to support growth and sustainability for the next 50 years.

**ENERGY:** The community relies on a well-balanced and affordable energy program combining the best advances in new technology with traditional energy sources to promote economic growth and environmental stewardship.

**LAND:** Development practices are focused on Smart Growth, Low Impact Development and Green Building.

Anticipated outcomes developed to measure progress include:

- Double the number of green jobs, with a majority of that growth in the high-tech green innovation sector.
- At least 20% of energy generation from renewable sources, and the statewide leader in renewable energy generation.
- 60% recycling.
- 40% overall tree canopy in the city's extraterritorial jurisdiction; 15% tree canopy in Central Business District.

### **COHESIVE NEIGHBORHOODS**

Another key vision is that by 2020, San

## Introduction

Antonio is known for its cohesive neighborhoods with compelling and unique personalities. Modern linked mass transit, improved infrastructure and a concerted effort to preserve and maintain our historic buildings, parks and open spaces compliment smart growth patterns. The result is a livable and vibrant community that is strongly connected to its past and maintains its small town feel.

**GREEN SPACE:** An anticipated outcome of this goal is the growth of green spaces proportional with population growth.



### **City South Management Authority**

With this impending population growth and urbanization there is potential for environmental and cultural resource degradation, loss of farmland, and the erosion of rural community character in the Heritage South Sector.

The Heritage South Sector Plan was adopted September 16, 2010 by City Council as the policy to guide the overall development of the area bounded by Loop 410, State Highway 181, the

southern extraterritorial jurisdiction limits, and IH 35. This plan superseded the City South Community Plan adopted in June 2003. The goals and objectives relating to natural and cultural resource conservation are articulated in the chapters of this document.

In 2005, the City South Management Authority, with members appointed by the City of San Antonio, Bexar County, Southwest ISD, East Central ISD, and Southside ISD, was charged with the planning and zoning for the 63 square mile area bound by Loop 410, IH 37, a line approximately 1350 feet south of the Medina River, and IH 35.

Maintaining the balance of urban and rural character in Heritage South is a major concern of the residents. Since this is a pristine area with significant natural and cultural assets, the Board had advocated for the preservation and incorporation of the natural, agricultural and cultural assets of the City South area into the overall development pattern. Programs of CSMA included the Ag-Initiative to connect local growers with local grocers, a Conservation Development Workshop by Randall Arndt, an expert in conservation subdivisions, an oral history program, and the approval of amendments to the Conservation Subdivision provision of the UDC to promote sustainable development strategies.

## Introduction

The City South Management Authority established a goal in its 2012-2013 Strategic Work Plan to protect and preserve natural, historical and cultural resources for future generations. The CSMA Development Committee hosted a workshop with community partners on August 13, 2012, to share priorities related to resource conservation.

### **Community Stakeholders Present at the August 13, 2012, Workshop:**

Susan Albert,  
Mitchell Lake Audubon Society

Dale Bransford,  
San Antonio River Authority

Peggy Darr,  
Medina River Natural Area

Kay Hinder,  
City Archeologist

Lee Marlowe,  
San Antonio River Authority

Peggy Oppelt,  
Land Heritage Institute

Susan Snow,  
National Park Service

During the workshop significant sites and initiatives were addressed. The National Park Service (NPS) is in the process of a World Heritage Designation for the San Antonio chain of Spanish

Missions. The Espada Acequia is a significant resource that merits preservation, and is located in the Espada master development plan. Currently there is a protection easement, which could have the buffer increased for additional protection. The Espada Ditch Company holds an easement with 3 feet on either side of the ditch.

Another important site is the Casa Viejo at the Truhart Ranch near Southton Road. There is a stone bridge on this site, which was part of the Espada common lands. A National Register nomination for the ranch is in progress. The Conservation Society holds an easement on the bridge and the house.

With a World Heritage status, additional buffers would be warranted to protect the site. The NPS is reviewing the overlay districts and transportation infrastructure proposals near the Mission sites, to ensure that any redevelopment of the area would incorporate the necessary protections.

The San Antonio River Authority (SARA) has jurisdiction over the San Antonio River and the Medina River bed and banks. SARA is concluding a holistic watershed study of the Medina River that should assist in identifying sensitive wetlands and ecosystems. The floodplain in general is critical habitat.

## Introduction

There is also a sensitive ecosystem at the Truhart Ranch. SARA is also creating a Low Impact Development policy which could be implemented by both the City and the County.

The San Antonio Audubon Society is concerned about impacts to Mitchell Lake near the Mission del Lago subdivision, from stormwater, light pollution, and impervious cover. The Audubon Center is a teaching facility, and 4500 students visit the Center annually. The Center is working towards a conservation plan and species restoration, and wants to promote best practices to sustain the ecology of the area. Furthermore, the Center is working with Texas A&M to create opportunities for research related to ecology and conservation.

The Medina River Natural Area consists of 511 acres. Preservation and environmental education are the two main goals of the Medina River Natural Area. The preservation of the riparian areas along the Medina River and the need for on-site storm water management are great concerns.

Kay Hinder, City Archeologist, addressed the importance of the farm and ranch complexes. She noted several sites that are in the process of being reviewed for the National Register of

Historic Places. The Blas Herrera site has been nominated, and the Perez site is in the process of being nominated for the National Register of Historic Places. The National Park Service is in the process of nominating two historic crossings on the Medina River- the Dolores Crossing and the Camino Real/Laredo Road—as National Register listings. The long term outcome is the development of a National Heritage Area for sites that do not meet national park standards, but would allow the linking of all of these areas.

In addition, the National Park Service will determine the 10 most significant sites within the Camino Real de los Tejas National Trail designation for further interpretation and wayfinding. There are different Spanish Trail routes that traversed City South: Palo Alto Road, Old Pleasanton Road, Old Somerset Road, and Applewhite Road.

According to Kay Hinder, there are several areas in Heritage South that have not been surveyed for archeological sites that warrant protection. El Carmen Cemetery and the Perez Rancho have graves of the Canary Island descendants.

Located on the Medina River, the Land Heritage Institute (LHI) consists of 1200 acres. A major historic site at LHI, the

## Introduction

Presnall Watson farmstead has been listed on the National Register of Historic Places. There are hundreds of archaeological sites within its border. The LHI has identified four parcels that warrant conservation. The LHI expressed interest in acquiring several small parcels, remnants of the Applewhite Reservoir project, that are north and south of Neal Road and adjacent to the LHI to incorporate into its natural area or protect from a higher intensity development. These are critical drainage areas that are ecologically sensitive, and should be protected from higher intensity development.

### **Purpose**

The City South Management Authority reviewed the following conservation data, and has developed resource conservation best management practices and programs to be consulted to conserve the natural and cultural environment, to sustain agriculture in the area, and to plan urban development in the Heritage South area.

Each chapter provides an assessment of existing resources, policy guidance, and best management practices and programs to advance resource conservation efforts. This document should be consulted during all phases of the development process including land use plan amendments, rezoning, Master Develop-

ment Plans, Planned Unit Developments, plats, development or non-annexation agreements, and public works and utility projects.

The document also recommends programs that should be considered for adoption by the City of San Antonio to ensure further protection of Heritage South's natural and cultural resources. Finally, it provides a variety of resources and programs for land owners, who are stewards of Heritage South.



## Water Quality

Heritage South is an area marked by the confluence of several rivers and creeks. The surface water resources in Heritage South include the San Antonio and Medina Rivers, and the Comanche, Minita, Medio, Indian, Leon and Salado Creeks. The San Antonio River Basin, approximately 4,180 square miles, is bordered on the west by the Nueces River Basin and on the east by the Guadalupe River Basin. Most of the San Antonio River Basin is rural, particularly in the southern half. The Medina River, a spring-fed tributary of the San Antonio River, rises in north and west prongs that originate in springs in the Edwards Plateau divide of northwest Bandera County and converge near the town of Medina. The river then flows southeast for 116 miles where it meets the San Antonio River.

Several creeks that converge with these rivers, are lined with dense riparian habitats bordered by farms and ranches. Leon Creek rises in northwest Bexar County, runs through Leon Valley and the western portion of San Antonio and flows into the Medina River. Two streams that flow into Leon Creek are Indian Creek and Comanche Creek. Another intermittent stream, Medio Creek, empties into the Medina River. Minita Creek rises south of Loop 410 and runs southeast to its mouth on the San Antonio River. Minita Creek is dammed midway through its course to form Lake Cassin. Salado Creek, which



rises in Fair Oaks Ranch in northern Bexar County, flows through the eastern portion of San Antonio and the planning area, to its mouth on the San Antonio River.

### **Medina River Holistic Watershed Master Plan**

The San Antonio River Authority is developing a long range master plan for the Medina River to address potential water quality and flooding issues in a holistic manner. Scheduled for completion in late 2013, the study will analyze sustainable, non-structural solutions such as green infrastructure, low impact development, stormwater best management practices, protection of riparian corridors through parks and open space preservation, in addition to traditional approaches such as detention ponds and dams. Since the Medina River is a pristine waterway noted for its “old growth”

## Water Quality

trees, the study will emphasize conservation practices to preserve this significant natural asset.

### San Antonio River Mission Reach

The San Antonio River Authority is restoring the Mission Reach Segment of the San Antonio River from Mission Road to Mission Espada, a total of 5.75 miles as part of the River Restoration Project. The ground breaking was on October 12, 2010, and the total cost of this restoration is \$99.3 million, funded by Bexar County, the City of San Antonio, the U.S. Army Corps of Engineers, and the San Antonio River Foundation. The ecosystem restoration includes:

- Construction of pedestrian trail along the entire 5.5 miles
- Over 2 million cubic yards of soil relocation
- Construction of a pilot channel
- Construction of 14 riffle structures and ten acres of embayment habitats



- Restoration of river remnants near Mission San Juan and mission Espada
- Restoration of approximately 260 acres of native riparian vegetation
- Planting of grasses and wildflower seeds
- Approximately 16,000+ trees to be planted under a separate contract by 2015
- Construction of two in-stream pedestrian footbridges (capable of carrying emergency equipment)
- Installation of picnic tables, benches, trash and recycling receptacles, drinking fountains, and trail signage

Map: San Antonio River Authority

## Water Quality

### Mitchell Lake Master Plan

A well-known lake in Heritage South, Mitchell Lake, historically was called *Laguna de los Patos (Lake of the Ducks)* and used by Spanish settlers in the early 1700s as a watering hole for cattle. In the late 1800s, the site was owned by the Mitchell family and was popular for waterfowl hunting. Shortly after the turn of the nineteenth century, the lake was purchased by the City of San Antonio and a dam was constructed to create one of the earliest centralized wastewater treatment facilities for the City. In the late 1930s, the Rilling Road Wastewater Treatment Plant was built upstream of the lake to increase capacity and improve effluent water quality. The Rilling Road Wastewater Plant continued to discharge into the lake until 1987 when Dos Rios Water Treatment Plant was established.

The City started efforts to reclaim the area in 1973 by declaring the lake a refuge for shore birds and waterfowl. In 2000, the San Antonio Water System completed a Mitchell Lake Master Plan to promote education, research, and ecotourism. The plan includes a managed wetland for a waterfowl and shore bird ecosystem, use of lake water for irrigation of the adjacent Mission Del Lago Golf Course, continued water quality assessment of the lake, and the conceptual design of amenities for con-



tinued lake area use by the public for education and research. Strategies to further enhance the lake are to:

- Improve infrastructure and establish an education center. In 2004, a \$1.5 million project to improve roads and bridges and establish a visitors center was completed.
- Procure a conservation easement to buffer future development from Mitchell Lake along its eastern, western, and southern shores. To date, land south of the lake has been acquired by SAWS.
- Construct a hike/bike trail and primitive trails. SAWS is currently coordinating with COSA to install a greenway hike/bike trail on the east side of Mitchell Lake from the Medina River to Mission Espada.
- Reconstruct ponds and fishing piers
- Create development guidelines for adjacent properties
- Implement constructed wetlands adjacent to shorelines

## Water Quality



### Paddling Trails

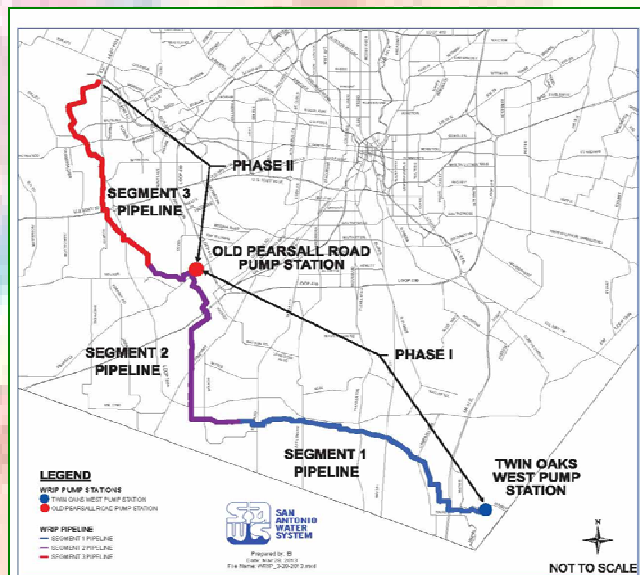
The San Antonio River Authority's update of its Nature-Based Parks Master Plan includes ideas to enhance the recreational value of the San Antonio and Medina Rivers. One identified priority is to develop a paddling trail on the Medina River linking the Medina River Natural Area, the Land Heritage Institute and other pristine natural areas along the river. Another recommendation is the continuation of a paddling trail along the San Antonio River through Bexar County including access/portage points at Otilia Dam that would connect the Mission Reach Paddling Trail to the Saspamco Paddling Trail in southern Bexar County, which would provide a paddling trail exceeding 37 miles in length. The anticipated completion of the Master Plan Update is fall/winter 2013.

### Aquifers

The Edwards-Trinity Aquifer underlies City South and yields fresh to slightly saline water. Directly south of the Medina River is the recharge zone for the Carrizo-Wilcox Aquifer, one of the most

extensive water-bearing formations in Texas. This aquifer furnishes water to wells yielding fresh to slightly saline water that is acceptable for most irrigation, public supply and industrial uses. Water from rainfall along with the San Antonio River feeds the southern part of the Carrizo-Wilcox Aquifer. In some areas of the aquifer pesticides have been detected; however, the concentrations do not exceed EPA standards.

SAWS has constructed an Aquifer Storage Recovery (ASR) facility to store drinking water underground in the Carrizo-Wilcox Aquifer. The technology utilizes existing formations to store water and will reduce pumping from the Edwards Aquifer during summer months and drought conditions. The Water Resources Integration Program, which will install 45 miles of water pipeline and two pump stations to convey water from the SAWS ASR



## Water Quality

facility, the local and expanded Carrizo Programs, and the Brackish Groundwater Desalination program at Twin Oaks to new and existing facilities in southern, western and northwestern Bexar County, is scheduled for completion in 2021.

To maintain and enhance Heritage South water resources, it is critical to implement development practices that minimize increased volumes of stormwater runoff, improve water quality through filtering to reduce pollutants, and prevent erosion of natural channels.

### Related Policy Guidance

#### *Heritage South Sector Plan, 2010*

UTL—1 Implement utilities policies that support land use policies

NR-1 Preserve Medina and San Antonio Rivers and continue to support linear parks

NR-1.3 Protect water quality through flood plain protection and buffers

NR—1.4 Promote Low Impact Development standards to reduce the impact of urban development on rivers, watersheds, and other natural assets

UTL—1.6 Develop buffering requirements to filter run off water from chemicals that would be detrimental to



water quality and other natural resources

UTL-2 Pursue opportunities for developing renewable energy resources

UTL-2.5 Continue to encourage more recycled water usages in the area

UTL—3 Maintain floodplains as natural drainage ways

UTL—3.1 Promote controls on alterations of the natural flood plains, their protective barriers and stream channels

UTL-3.4 Promote alternative storm water management techniques that preserve the natural characteristics of significant 100 year floodplains

NR-1 Preserve Medina and San Antonio Rivers and continue to support linear parks

NR-1.3 Protect water quality through flood plain protection and buffers

## Water Quality

NR—1.4 Promote Low Impact Development standards to reduce the impact of urban development on rivers, watersheds, and other natural assets

### Best Practices and Programs

#### Low Impact Development (LID)

LID is a practice for controlling stormwater runoff volume and reducing pollutant loadings to receiving waters.

LID is a site design strategy that maintains or replicates the pre-development hydrologic regime through the use of design techniques to create a functionally equivalent hydrologic landscape. Hydrologic functions of storage, infiltration, and ground water recharge, as well as the volume and frequency of discharges are maintained through the use of integrated and distributed micro-scale stormwater retention and detention areas, reduction of impervious surfaces, and the lengthening of flow, flood paths, runoff paths and runoff time. Other strategies include the preservation/protection of environmentally sensitive site features such as riparian buffers, wetlands, steep slopes, flood plains, woodlands and highly permeable soils.

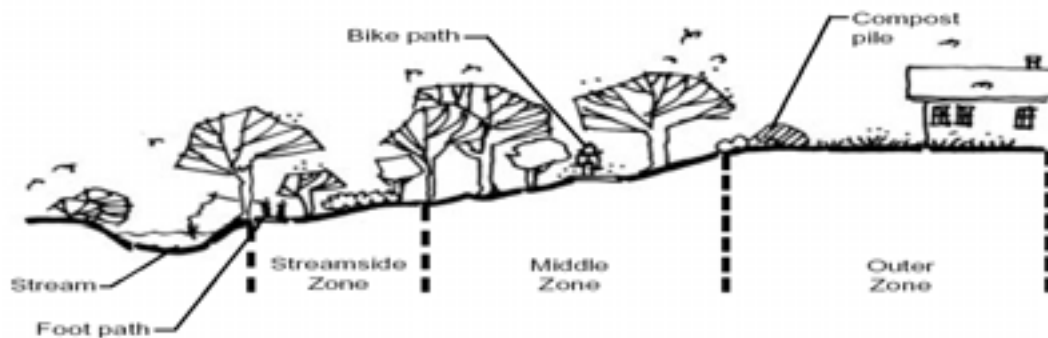
A LID provision should be included in the subdivision stormwater regulations to provide another option for site development.



#### Riparian Buffers

Riparian buffers are areas along streams with trees, shrubs and other vegetation that reduce pollution, reduce erosion, provide wildlife habitat and shade to control water temperature. Riparian protection programs are most effective when coordinated with other surface and ground-water protection programs and with other resource management programs, such as flood control, water supply, protection of fish and wildlife, recreation, and control of stormwater and nonpoint source pollution.

Best practices suggest a buffer of a distance of 50 to 200 feet from the waterline or the riparian area. In addition to federal 404 permitting, riparian buffer distance requirements are regulated in the Flexible Zoning Districts (UDC 35-310.15 (g)) to prevent construction in buffer areas. Buffer requirements should be added to the subdivision stormwater regulations so that they would apply in both the city and the ETJ.



**Three Zone Urban Stream Buffer System  
Section View**

Characteristics	Streamside Zone	Middle Zone	Outer Zone
Function	Protect the physical integrity of the stream ecosystem	Provide distance between upland development and streamside zone	Prevent encroachment and filter backyard runoff
Width	Minimum of 25 ft (8 m) plus wetlands and critical habitat	50 – 100 ft (15 to 30 m) depending on stream order, slope and 100 year floodplain	25 ft (8 m) minimum setback to structures
Vegetative Target	Undisturbed mature forest; reforest if grass	Managed forest, some clearing allowable	Forest encouraged, but usually turfgrass
Allowable Uses	Very restricted e.g. flood control, footpaths, etc.	Restricted e.g. some recreational uses, some stormwater BMP's, bike paths	Unrestricted e.g. residential uses, including lawn, garden, compost, yard wastes, most stormwater BMP's

**Wetlands Reserve Program**

Operated by the USDA Natural Resource Conservation Service, the WRP is a voluntary program that provides technical and financial assistance to eligible landowners to conserve wetland, wildlife habitat, and related natural resources. Landowners are asked to retire marginal land from agriculture:

- wetlands farmed under natural conditions;
- farmed wetlands;
- prior converted cropland;
- farmed wetland pasture;

- farmland that has become a wetland as a result of flooding;
- rangeland, pasture, or production forestland where the hydrology has been significantly degraded and can be restored;
- riparian areas which link protected wetlands;
- lands adjacent to protected wetlands that contribute significantly to wetland functions and values; and
- previously restored wetlands (Conservation Reserve Program

## Water Quality



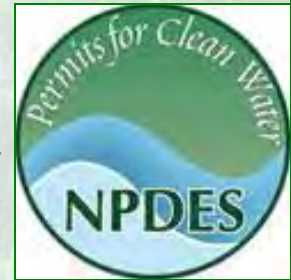
[CRP] land is eligible if it meets WRP requirements).

**WRP offers three enrollment options:** *Permanent Easement.* This is a conservation easement in perpetuity. Easement payment will be the lesser of: the agricultural value of the land, an established payment cap, or an amount offered by the landowner. In addition to paying for the easement, USDA pays 100 percent of the costs of restoring the wetland. *30-Year Easement.* This is a conservation easement lasting 30 years. Easement payments are 75 percent of what would be paid for a permanent easement. USDA also pays 75 percent of restoration costs. *Restoration Cost-Share Agreement.* This is an agreement (generally for a minimum of 10 years in duration) to reestablish degraded or lost wetland habitat. USDA pays 75 percent of the cost of the restoration activity. This does not place an

easement on the property. The landowner provides the restoration site without reimbursement.

### Stormwater Pollution Prevention

San Antonio Water System (SAWS) conducts investigations, inspections and verification of con-



struction activities and responds to public inquiries and illicit discharge situations. SAWS investigates and remediates any pollutant hazardous discharges entering into the Municipal Separate Storm Sewer System. Storm Water Pollution Prevention Plans (SWP3) are reviewed to assure that erosion and sedimentation control measures are properly located and installed and that other Best Management Practices are set up to control the runoff of debris and sediment into the Storm Sewer System.



## Ecology

Heritage South falls in the Texas Blackland Prairie and the East Texas Central Plains, also known as the Post Oak Savannah. The soils are thick, fertile clay soils, and are characterized by grassland which is being replaced by brushy species as a result of overgrazing. As one moves south, the clay gives way to sands and low hills of the South Texas plains.



**Shrubland Community**  
c/o USDA

sists of small trees, shrubs, cactus, forbes and grasses. The principal plants are mesquite, small live oak, post oak, prickly pear cactus, catclaw, blackbrush, whitebrush, huajillo, huisache, and cenizo.

Wetland areas that support riparian habitat are found near rivers, lakes and ponds. A variety of oaks, pecan, hackberry, elm and mesquite can be found along streams.

**Tall Grass Prairie**  
c/o USDA



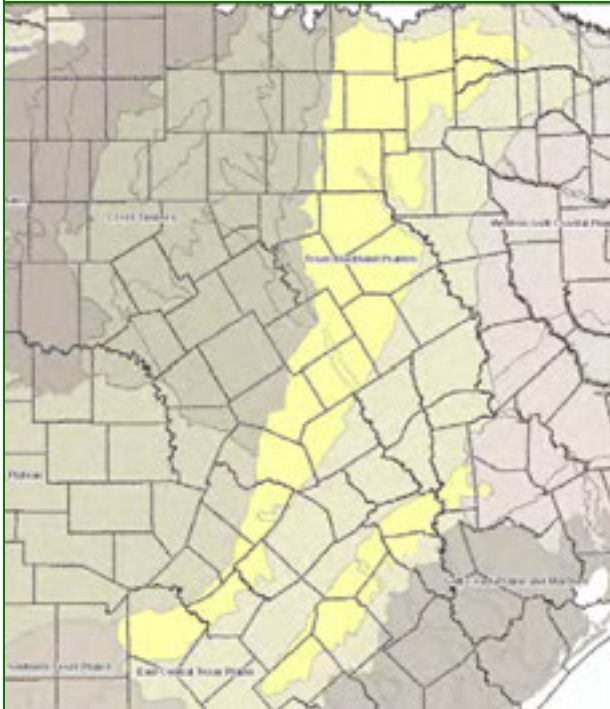
In addition to improved pasturelands, the area is dominated by brushlands (la brasada) that provide dense cover for wildlife and are utilized for cattle grazing and farming. Native grasses support a wide range of wildlife species.

The original tall bunch grass has been replaced by Buffalo grass and Texas grama. The dry land vegetation con-



**Dense Woodland Community**  
c/o USDA

## Ecology



### **Blackland Prairie is a Tier 1 High Priority Ecoregion in Texas**

Percent of Ecoregion under Wildlife Management Plans = 5.77%

Percent of Ecoregion in Public and Nonprofit Conserved Land = 1.52%

According to TPW, the Blackland Prairie is the most severely altered of Texas' ecoregions, since most Blackland Prairie has been converted to crops or development. Only an estimated 5,000 acres remain in their historic condition in terms of plant species. All habitats in this ecoregion are threatened by rapid population growth in most of the ecoregion

and accompanying conversion to urban and pasture, fragmentation and decreasing land parcel size.

### **Post Oak Savannah (East Central Texas Plains) is a Tier III Priority Ecoregion in Texas**

Percent of land under Wildlife Management Plans = 11.18%

Percent of Ecoregion in Public and Nonprofit Conserved Land = 1.13%

This ecoregion historically has been a mix of post oak/blackjack oak forest and savannah on sandy soils interspersed with mid and tall grass prairie on the heavier soil sites. It too is being altered from increasing population pressure. Additionally, there is a trend moving from high intensity crop agriculture to rangeland.



## Ecology

### Protected/Regulated Ecological Values

#### Trees

An analysis of tree cover conducted by American Foresters in 2002 revealed significant tree loss coverage within the San Antonio region. The City of San Antonio saw its heavy tree cover (areas with greater than 50% canopy) decline by nearly 39%, from 63,522 acres in 1985 to 38,753 acres in 2001. The Greater San Antonio Area, including Bexar County and surrounding suburbs saw its heavy tree cover drop from 26% to 20% and the entire San Antonio Region that included portions of the three surrounding counties declined from 22% to 19% over the same 16 year period.

As urbanization has increased, tree loss has had significant consequences on the environment:

- Tree loss in the Greater San Antonio Area between 1985 and 2001 resulted in an estimated increase of 73 million cubic feet of storm water flow during a peak storm event (based on a 2-year, 24-hour storm event).
- Tree canopy lost between 1985 and 2001 would have removed about 3.7 million more pounds of air pollutants annually, at a value of approximately \$8.9 million per year.

San Antonio's tree ordinance is instru-



mental in protecting the tree cover in the city and the ETJ (UDC 35-523).

#### Migratory Birds

The migratory flights of many migrating birds follow specific routes, sometimes quite well-defined, over long distances. The shape of the continent determines the main routes of migration. The Central Flyway runs north to south in the City South area, with the Mitchell Lake area a popular stop along the route.



Courtesy Texas  
Parks and Wildlife

## Ecology



Scissor-tailed  
fly catcher @  
Texas Parks and  
Wildlife

Geographic factors, ecological conditions and meteorological conditions determine such routes. The majority of migrants travels along broad airways within these flyways changing their flight direction in response to the direction and force of the wind. Some routes cross oceans or huge bodies of water. Some small songbirds migrate 500-600 miles across the Gulf of Mexico. They travel to locations where food is favorable and the climate is milder. Bird migration impacts the Texas economy, health and environment. Today, regulated hunting is a major industry in Texas. Most non-game birds were rec-

ognized to be welcome allies against insect pests. Most of the migratory birds help to keep insect pests within tolerable limits. Furthermore, all birds have increasing recreational value as bird watching and other forms of nature related activities become more popular. Ecotourism, including bird watching, camping, hiking, nature study and photography have become part of a tourist multi-billion dollar industry.

### **Mitchell Lake Audubon Center**

The Mitchell Lake Audubon Center is located on a 1200-acre natural area at Mitchell Lake. This unique and beautiful bird haven consists of the 600-acre Mitchell Lake, 215 acres of wetlands and ponds and 385 acres of upland habitat. The Audubon Center has partnered with the San Antonio Water System (SAWS) to showcase this pristine natural area. The Mitchell Lake Audubon Center provides science education for local K-12



## Ecology

schools with a special emphasis on 4th grade.



The Migratory Bird Treaty Act (MBTA) regulates most aspects of the taking, possession, transportation, sale, purchase, barter, exportation, and importation of migratory birds. The Act grants the Secretary of the Interior the authority to establish hunting seasons for migratory birds, where there has been a long tradition of hunting, and for which hunting is consistent with their long term conservation.

### Floodplains

Development in the floodplain is prohibited by the City of San Antonio (UDC 35-522, Appendix F). Waivers may be obtained from the Floodplain Administrator based on certain criteria and upon approval by the San Antonio Planning Commission.



### Wetlands

Wetlands are areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally

include swamps, marshes, bogs, and similar areas. Section 404 of the Clean Water Act (CWA) establishes a program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands. Activities in waters of the United States regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports) and mining projects. Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States, unless the activity is exempt from Section 404 regulation (e.g. certain farming and forestry activities). No discharge of dredged or fill material may be permitted if: (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the nation's waters would be significantly degraded.



**US Army Corps of Engineers**

### Rivers

The San Antonio River Authority has the authority to develop and manage the San Antonio and Medina Rivers, including powers to conserve, store, control, preserve, utilize, and distribute the waters of a designated geographic region for the benefit of the public.



## Ecology



### Protected Natural Areas

The Medina Natural Area, located at 15890 Hwy 16 South, consists of 511 acres of natural area and is operated by the City of San Antonio Parks and Recreation Department. This area offers a trail and special programming to the public. Other natural areas owned and managed by the City are the Medina River Preserve (224 acres), Medina River Greenway (250 acres) and the Leon Creek Preserve (187 acres). The City also holds a conservation easement on 219.6 acres of land

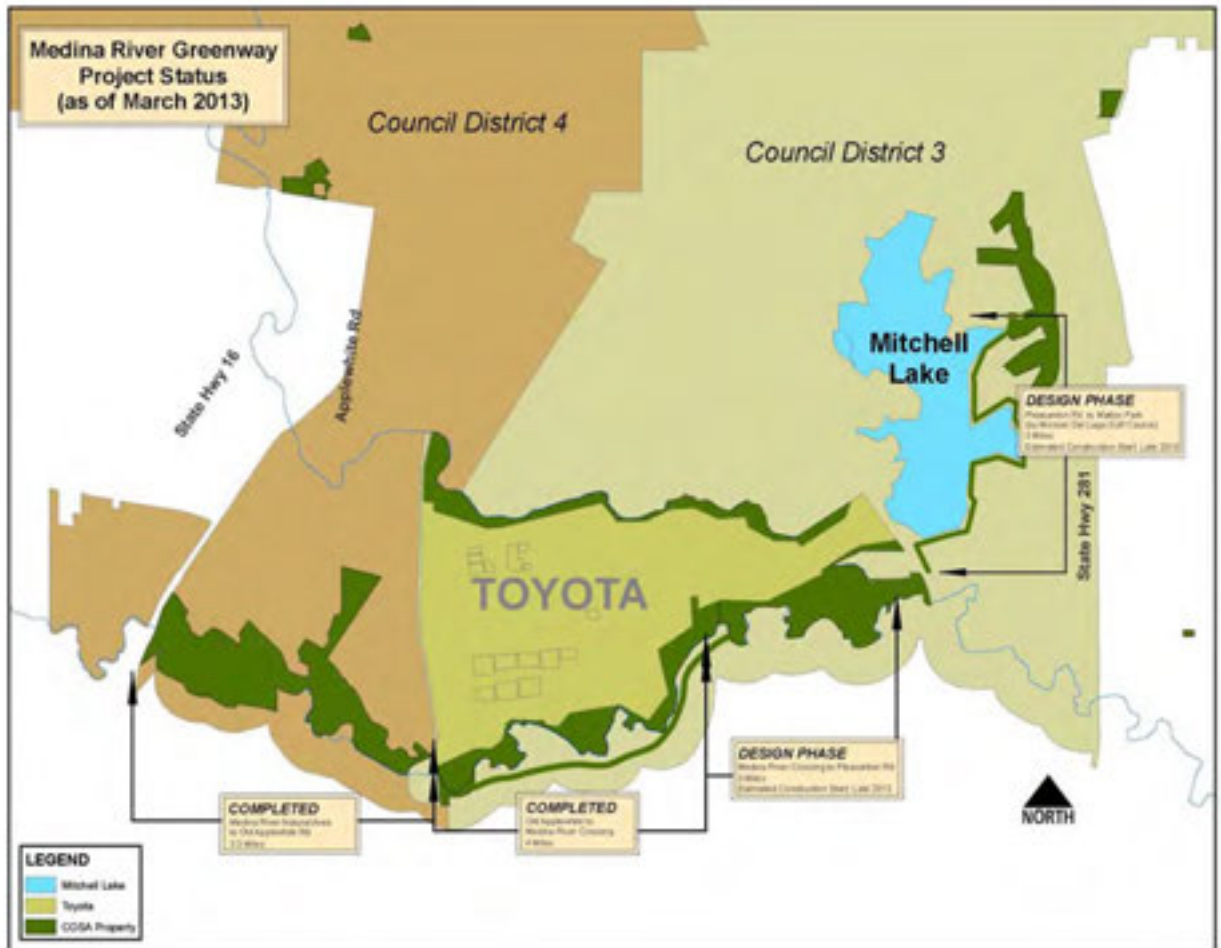
along the Medina River at the Toyota Manufacturing Plant property.

### Medina River Greenway

The City of San Antonio is constructing the Medina River Greenway; when completed the project will be a 13 mile trail. Two segments of the greenway have been completed. A total of \$1.9 million was invested in Phase I from Medina River Natural Area to Old Applewhite Road, and \$2.9 million was invested in Phase II from Old Applewhite Road to Medina River Crossing. Phase III from Medina River Crossing to Pleasanton Road and Phase IV from Pleasanton Road to Mitchell Lake are in the design phase. The total cost of the project is \$9.1 million and estimated project completion is 2013.

The Medina River Greenway has been designated as a national recreation trail, joining a network of more than 1,150 previously designated trails that span more than 13,650 miles through 23 states. Trail enthusiasts will find large cypress, oak and pecan trees growing along the flowing Medina River. The terrain is mostly accessible, but includes switchbacks with slopes up to 8.3 percent in two locations.

## Ecology



### Land Heritage Institute

The Land Heritage Institute interprets, maintains, and develops 1,200 acres of open space on the Medina River and operates as a living museum. It preserves archeological, cultural, historical, recreational and environmental resources and offers education programming. It is located on the Medina River Greenway, on the southern bank of the river.



## Ecology

### Endangered Species Act

Habitat loss and fragmentation are constant issues due to human population pressure, invasive species, disease, and range practices. Private landowners, large and small, play a vital role conserving habitat for fish, wildlife, and plants. In fact, more than two-thirds of the nation's threatened and endangered species use habitat found on private land. Section 10 of the Endangered Species Act regulates a wide range of activities that affect endangered and threatened plants and animals and their habitats. Unless specifically allowed by permit, the ESA prohibits activities that affect listed species and their habitats. For endangered species, permits may be issued for scientific research, enhancement of survival, and taking that is incidental to an otherwise lawful activity. A habitat conservation plan must accompany an application for an incidental take permit to ensure that the effects of the take are minimized and mitigated.

### National Environmental Policy Act

Before federal agencies make decisions that affect the environment, they must consider the effects of their actions on the quality of the human environment. The NEPA process consists of an evaluation of the environmental effects of a federal undertaking including its alternatives. There are three levels of analysis: categorical exclusion determination; preparation of an environmental assessment/finding of no significant impact (EA/FONSI); and preparation of an environmental impact statement (EIS).



*Above: Red Wolf*  
*Left: Texas Horned Lizard*



## Ecology

### Texas Parks and Wildlife's List of Rare Species

Common Name	Scientific Name	Type	Federal Status	State Status
<b>Comal blind Salamander</b>	<i>Eurycea tridentifera</i>	Amphibian		T
endemic; semi-troglobitic; found in springs and waters of caves				
<b>Texas Salamander</b>	<i>Eurycea neotenes</i>	Amphibian		T
endemic; troglobitic; springs, seeps, cave streams, and creek headwaters; often hides under rocks and leaves in water; restricted to Helotes and Leon Creek drainages				
<b>American Peregrine Falcon</b>	<i>Falco peregrinus anatum</i>	Bird	DL	
year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.				
<b>Arctic Peregrine Falcon</b>	<i>Falco peregrinus tundrius</i>	Bird	DL	
migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.				
<b>Black-capped Vireo</b>	<i>Vireo atricapilla</i>	Bird	LE	E
oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer				
<b>Golden-cheeked Warbler</b>	<i>Setophaga chrysoparia</i>	Bird	LE	E
juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer				
<b>Interior Least Tern</b>	<i>Sterna antillarum athalassos</i>	Bird	LE	E
subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony				
<b>Mountain Plover</b>	<i>Charadrius montanus</i>	Bird		
breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous				
<b>Peregrine Falcon</b>	<i>Falco peregrinus</i>	Bird	DL	T
both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level; see subspecies for habitat.				
<b>Sprague's Pipit</b>	<i>Anthus spragueii</i>	Bird	C	
only in Texas during migration and winter, mid September to early April; short to medium distance, diurnal migrant; strongly tied to native upland prairie, can be locally common in coastal grasslands, uncommon to rare further west; sensitive to patch size and avoids edges.				
<b>Western Burrowing Owl</b>	<i>Athene cunicularia hypugaea</i>	Bird		
open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows				

## Ecology

<b>White-faced Ibis</b>	<i>Plegadis chihi</i>	Bird		T
prefers freshwater marshes, sloughs, and irrigated rice fields, but will attend brackish and saltwater habitats; nests in marshes, in low trees, on the ground in bulrushes or reeds, or on floating mats				
<b>Whooping Crane</b>	<i>Grus americana</i>	Bird	LE	E
potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties				
<b>Wood Stork</b>	<i>Mycteria americana</i>	Bird		T
forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including saltwater; usually roosts communally in tall snags, sometimes in association with other wading birds (i.e. active heronries); breeds in Mexico and birds move into Gulf States in search of mud flats and other wetlands, even those associated with forested areas; formerly nested in Texas, but no breeding records since 1960				
<b>Zone-tailed Hawk</b>	<i>Buteo albonotatus</i>	Bird		T
arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions				
<b>Manfreda Giant-skipper</b>	<i>Stallingsia maculosus</i>	Insect		
most skippers are small and stout-bodied; name derives from fast, erratic flight; at rest most skippers hold front and hind wings at different angles; skipper larvae are smooth, with the head and neck constricted; skipper larvae usually feed inside a leaf shelter and pupate in a cocoon made of leaves fastened together with silk				
<b>Rawson's Metalmark</b>	<i>Calephelis rawsoni</i>	Insect		
moist areas in shaded limestone outcrops in central Texas, desert scrub or oak woodland in foothills, or along rivers elsewhere; larval hosts are Eupatorium havanense, E. greggii.				
<b>Black Bear</b>	<i>Ursus americanus</i>	Mammal	T/SA;NL	T
bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened				
<b>Ghost-faced Bat</b>	<i>Mormoops megalophylla</i>	Mammal		
colonially roosts in caves, crevices, abandoned mines, and buildings; insectivorous; breeds late winter-early spring; single off-spring born per year				
<b>Gray Wolf</b>	<i>Canis lupus</i>	Mammal	LE	E
extirpated; formerly known throughout the western two-thirds of the state in forests, brush lands, or grasslands				
<b>Plains Spotted Skunk</b>	<i>Spilogale putorius interrupta</i>	Mammal		
catholic; open fields, prairies, croplands, fence rows, farmyards, forest edges, and woodlands; prefers wooded, brushy areas and tall grass prairie				
<b>Red Wolf</b>	<i>Canis rufus</i>	Mammal	LE	E
extirpated; formerly known throughout eastern half of Texas in brushy and forested areas, as well as coastal prairies				
<b>Creeper (squawfoot)</b>	<i>Strophitus undulatus</i>	Mollusk		
small to large streams, prefers gravel or gravel and mud in flowing water; Colorado, Guadalupe, San Antonio, Neches (historic), and Trinity (historic) River basins				
<b>Golden Orb</b>	<i>Quadrula aurea</i>	Mollusk	C	T
sand and gravel in some locations and mud at others; found in lentic and lotic; Guadalupe, San Antonio, Lower San Marcos, and Nueces River basins				
<b>Spot-tailed Earless Lizard</b>	<i>Holbrookia lacerata</i>	Reptile		
central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground				

## Ecology

<b>Texas Garter Snake</b>	<i>Thamnophis sirtalis annectens</i>	Reptile		
wet or moist microhabitats are conducive to the species occurrence, but is not necessarily restricted to them; hibernates underground or in or under surface cover; breeds March-August				
<b>Texas Horned Lizard</b>	<i>Phrynosoma cornutum</i>	Reptile		T
open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September				
<b>Texas Indigo Snake</b>	<i>Drymarchon melanurus erebennus</i>	Reptile		T
Texas south of the Guadalupe River and Balcones Escarpment; thornbush-chaparral woodlands of south Texas, in particular dense riparian corridors; can do well in suburban and irrigated croplands if not molested or indirectly poisoned; requires moist microhabitats, such as rodent burrows, for shelter				
<b>Texas Tortoise</b>	<i>Gopherus berlandieri</i>	Reptile		T
open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November				
<b>Timber/Canebrake rattlesnake</b>	<i>Crotalus horridus</i>	Reptile		T
swamps, floodplains, upland pine and deciduous woodlands, riparian zones, abandoned farmland; limestone bluffs, sandy soil or black clay; prefers dense ground cover, i.e. grapevines or palmetto				
<b>Big Red Sage</b>	<i>Salvia pentstemonoides</i>	Plant		T
Texas endemic; moist to seasonally wet, steep limestone outcrops on seeps within canyons or along creek banks; occasionally on clayey to silty soils of creek banks and terraces, in partial shade to full sun; basal leaves conspicuous for much of the year; flowering June-October				
<b>Parks' Jointweed</b>	<i>Polygonella parksii</i>	Plant		
Texas endemic; mostly found on deep, loose, whitish sand blowouts (unstable, deep, xeric, sandhill barrens) in Post Oak Savanna landscapes over the Carrizo and Sparta formations; also occurs in early successional grasslands, along right-of-ways, and on mechanically disturbed areas; flowering June-late October or September-November				
<b>Sandhill Woollywhite</b>	<i>Hymenopappus carrizoanus</i>	Plant		
Texas endemic; disturbed or open areas in grasslands and post oak woodlands on deep sands derived from the Carrizo Sand and similar Eocene formations; flowering April-June				
<b>Status Key:</b> LE, LT -Federally Listed Endangered/Threatened PE, PT -Federally Proposed Endangered/Threatened SAE, SAT -Federally Listed Endangered/Threatened by Similarity of Appearance C -Federal Candidate for Listing; formerly Category 1 Candidate DL, PDL -Federally Delisted/Proposed for Delisting NL -Not Federally Listed E, T -State Listed Endangered/Threatened NT -Not tracked or no longer tracked by the State "blank" -Rare, but with no regulatory listing status				

## Ecology

### Related Policy Guidance

#### *Heritage South Sector Plan, 2010*

NR-1 Preserve Medina and San Antonio Rivers, and continue to support linear parks

NR-1.1 Promote development that preserves the natural settings along the rivers and linear parks

NR-3 Support Mitchell Lake Audubon Center (LMAC) as a wildlife resource

NR-3.3 Promote development that will preserve and protect the natural setting of the Audubon Center

NR-3.4 Encourage the use of dark skies principles to help safeguard the natural habitat around Mitchell Lake area

NR-4 Preserve natural resources, parks and open spaces

NR-4.4 Strictly enforce the tree ordinance

NR-4.5 Encourage trees with large canopies to be retained on site when feasible, and new trees strategically located to shade buildings, parking lots, structures, and sidewalks

NR-4.6 Compensate owners subject to governmental acquisition of land in accordance with established by law

NR-5 Plan an interconnected system of parks, open spaces and hike and bike greenways

NR-5.4 Develop open space areas that pro-

vide linkage between neighborhoods, parks, schools and other recreational/cultural facilities including creek way systems that can support trail development and interconnected parkways or linear parks

LU-4 Establish districts through which the unique qualities of the area are protected

LU-4.1 Propose a River Improvement Overlay District to protect the unique environment of the San Antonio and Medina Rivers

LU-5 Implement sustainable development patterns and principles

LU-5.3 Preserve as much as 25% of the developable land to maintain the area's rural character and retain agricultural practices

HOU-1 Ensure an array of housing choices throughout the area with an appropriate mix of densities and housing types

HOU-1.3 Promote clustered housing including Conservation Subdivision Development and large lot development in rural areas

ED-5 Encourage eco-tourism as an economic generator

ED-5.1 Incorporate Heritage South as part of tourism industry's strategic planning and marketing efforts

ED-5.2 Identify sites for eco-tourism promotion and establish site linkages

ED-5.3 Promote tourism capitalizing on Mitchell Lake Audubon Center, Mission Espada, Medina Nature Area, and the Land Heritage Institute

## Ecology

### Best Practices and Programs

- Native brush invasion control
- Prescribed burns

### Land Use and Water Management

- Park and Open Space planning for habitat connectivity, riparian and streamside restoration, flood plain set-asides, and mitigation banks
- Prairie conservation and mowing practices
- Water conservation practices
- Invasive species prevention and removal in public land, rights of way, planned developments
- Tax incentives for open land conservation, restoration and conservation planning
- Safe Harbor and Candidate Conservation agreements
- Conservation Easements
- Conservation Subdivisions
- Conservation Banks

### Farm and Ranch Management

- Agricultural field borders improvements and farming practices to benefit grassland wildlife, soil and water
- Alternative farming methods to benefit migratory birds and pollinators, and retain fallow areas, islands and edges of native vegetation
- Less toxic methods to control pests and weeds
- Use of native grasses (Yellow Indian-grass, Little Bluestem, Big Bluestem, Switchgrass, and Eastern Gamma-grass)

### Safe Harbor Agreements

A Safe Harbor Agreement (SHA) is a voluntary agreement involving private or other non-Federal property owners whose actions contribute to the recovery of species listed as threatened or endangered under the Endangered Species Act (ESA). In exchange for actions that contribute to the recovery of listed species on non-Federal lands, participating property owners receive formal assurances from the Fish and Wildlife Service that if they fulfill the conditions of the SHA, the Service will not require any additional or different management activities by the participants without their consent. In addition, at the end of the agreement period, participants may return the enrolled property to the baseline conditions that existed at the beginning of the SHA.

### Conservation Banks

Conservation banks are conserved and permanently managed lands for species that are endangered, threatened, or candidates for a listing. They offset adverse impacts to these species that have occurred elsewhere. US Fish and Wildlife approves a certain number of species or habitat credits in exchange for a cash contribution to the bank.

## Ecology

### Wildlife Management Plans

The Wildlife Management Tax Valuation allows owners of land with a current Agriculture valuation to manage their property for native Texas wildlife. The Texas Parks and Wildlife Department (TPWD) has biologists who provide technical assistance to assist owners in developing management plans.

### Landowner Incentive Program

TPWD's Statewide LIP Funding Series is designed to meet the needs of private, non-federal landowners wishing to enact good conservation practices on their lands in targeted ecoregions. This allocation of LIP funding is made possible through a cooperative agreement with the USFWS Partners for Fish and Wildlife Program. All projects approved for funding are thereby subject to the terms and conditions that come with federal funding. This funding series is



focused on projects aimed at creating, restoring, protecting and enhancing habitat for species of greatest conservation need throughout the state, as well as activities that positively impact valuable riparian areas and watersheds. Contracts will require a minimum of 25% landowner contribution (in-kind

labor, materials, monetary, etc.). Projects showing the greatest benefit to a species of concern and/or a targeted watershed receive priority, as do projects offering long-term protection, long-term monitoring and greater than the required minimum landowner contribution.

### Lone Star Land Steward

The TPWD Lone Star Land Steward Awards program recognizes and honors private landowners for their accomplishments in habitat management and wildlife conservation. The program is designed to educate landowners and the public and to encourage participation in habitat conservation.



### Conservation Easements

Rich ecological areas can be conserved in perpetuity through conservation easements. Easements assist with reducing the tax burden, while conserving natural resources for future generations. Local governments and affiliated partners could establish a fund to assist with the required monetary endowment to land trusts, such as the Green Spaces Alliance, to ensure that the easement is monitored, while providing an incentive to the land owner to donate an easement.

## Agriculture

The Heritage South area is characterized by working farms and ranches. According to the 2007 US Agricultural Census, there are 349 farm operations for the zip codes 78073, 78214, 78221, 78223, 78224, and 78264. Eighty-two of the operations produced sales in excess of \$50,000 annually. There are 344 cattle, 48 poultry, 36 sheep, and 34 equine operations with sales in the area. Crop operations represented were hay (237), fruit and tree nuts (12), orchards (12), corn (9), wheat (8), vegetables (7), peanuts (3), sorghum (3), cotton (2), Christmas trees (2), and berries (1).

According to the American Farmland Trust, metropolitan areas should have a balance of land uses, including farms and open space, to reduce overall infrastructure costs and provide sufficient revenue to pay for these services. Otherwise, as more residential development occurs, services will be stretched thinner or cut—or property taxes will have to be raised. Owners of agricultural land and open space generally pay more in local tax revenues than they receive back in services.

Texas' agricultural and open space valuation property tax program is justified as a cost-effective incentive to keep land open and in active agricultural use. Even with a reduced assessed value, agricultural properties contribute a sig-

nificant surplus to offset the higher costs of public services for residents.

### **Related Policy Guidance** *Heritage South Sector Plan, 2010*

HOU-1 Ensure an array of housing choices

HOU-1.3 Promote large lot development and clustered housing in rural areas

ED-3 Encourage agribusiness with high technology and research

ED-3.1 Establish a task force and develop a study to provide analysis of agricultural best practices

ED-3.2 Encourage TAMU-SA to coordinate research for agribusiness and irrigation technology development

ED-3.3 Encourage area farmers or potential farmers to produce for local market through farmers markets or grocery stores

ED-3.4 Encourage sustainable farming/gardening practices, such as the use of natural fertilizers and composting

ED-3.5 Obtain water and water rights for agriculture purposes through available resources of rivers and appropriate processes

## Agriculture

ED-4 Establish Heritage South as a viable agricultural region

ED-4.1 Incentivize agricultural land owners to produce for the local and regional economy

ED-4.2 Promote the establishment of area farmers markets

ED-4.3 Market and brand the area as an agricultural hub

### Best Practices and Programs

#### Purchase of Development Rights

Future public initiatives could support a fund to purchase land and development rights from willing landowners to continue agricultural operations without the pressure of urbanization and fragmentation.

#### Conservation Subdivisions

Conservation subdivisions, or cluster development for new housing, can minimize sprawl, infrastructure costs and loss of farmland and open space.

#### Conservation Easements

Conservation easements can assist property owners in protecting their farm and ranch land. The easement is a restriction that landowners voluntarily place on a specified uses of their prop-



erty to protect agricultural heritage. The easement is a recorded legal agreement between the owner and the “holder” of the easement, which may be a nonprofit conservation organization or government agency. The owner may continue the agricultural use of the property while prohibiting urban development. Conservation easements assist with reducing the tax burden, while ensuring agricultural uses for future generations. The City of San Antonio and Bexar County should consider establishing a fund to support endowments paid by property owners to land trusts to promote the use of this conservation tool. Green Spaces Alliance is a land trust headquartered in San Antonio.





## Agriculture



### 2014 Farm Bill Programs

#### Environmental Quality Incentive Program (EQIP)

EQIP provides financial and technical assistance to develop conservation plans to improve soil's capacity to be more drought-resilient. Particular conservation practices that will be employed include residue management practices, such as mulch till and no-till; cover crops; mulching; and crop rotation.

#### Wildlife Habitat Incentive Program (WHIP)

WHIP is a voluntary program for conservation-minded landowners who want to develop and improve wildlife habitat on agricultural land. This program supports practices that improve wildlife habitat and alleviate drought conditions, such as mulch till and no-till, cover crops, mulching and crop rotation, livestock watering facilities, sil-

vopasture establishment, riparian forest buffers and windbreaks. For livestock producers, WHIP can be used for prescribed grazing to prevent overgrazing of drought-stressed pastures and invasive weed growth.

#### Wetlands Reserve Program (WRP)

The Wetlands Reserve Program (WRP) is a voluntary program offering landowners the opportunity to protect, restore, and enhance wetlands on their property.



#### Farmland Protection Program (FPP)

FPP provides funds to State, tribal, or local governments and private organizations to help purchase development rights, conservation easements, and keep productive farmland in agricultural use. It also expands the program to protecting farms and ranches that contain historical and archaeological sites.

## Agriculture

### USDA Technical Assistance

This assistance can help land users to maintain and improve private lands and their management, implement better land management technologies, protect and improve water quality and quantity, maintain and improve wildlife and fish habitat, enhance recreational opportunities on their land, maintain and improve the aesthetic character of private land, explore opportunities to diversify agricultural operations and develop and apply sustainable agricultural systems.

### Grassland Reserve Program (GRP)

This voluntary conservation program supports grazing operations, enhancement of wildlife biodiversity, and protection of grassland under threat of conversion. Participants voluntarily limit future development and cropping uses while retaining the right to graze.



TEXAS DEPARTMENT OF AGRICULTURE  
THOM STAPLES, COMMISSIONER

### Texas Loan Guarantee Program

This state program provides loan guarantees up to \$750,000 to establish or expand an agricultural operation and provides interest rebates up to \$5,000 per year.

### Specialty Crop Block Grant Program

This grant program provides grants to enhance competitiveness of specialty crops in both domestic and foreign markets. Specialty crops include fruits, vegetables, dried fruit, tree nuts, horticulture and nursery crops (including floriculture).

### Texas Emissions Reduction Grant Program

This grant program offers rebates to update or replace on-road vehicles, non-road equipment, locomotives, marine vessels, refueling infrastructure, and on-site electrification to reduce fossil fuel emissions.

## Scenic Corridors and Views

During the extensive City South Community Planning process of 2003 the preservation and enhancement of southern Bexar County's rural and natural character was emphasized in relation to its significant positive impact on the overall quality of life.

The community expressed the desire for the following:

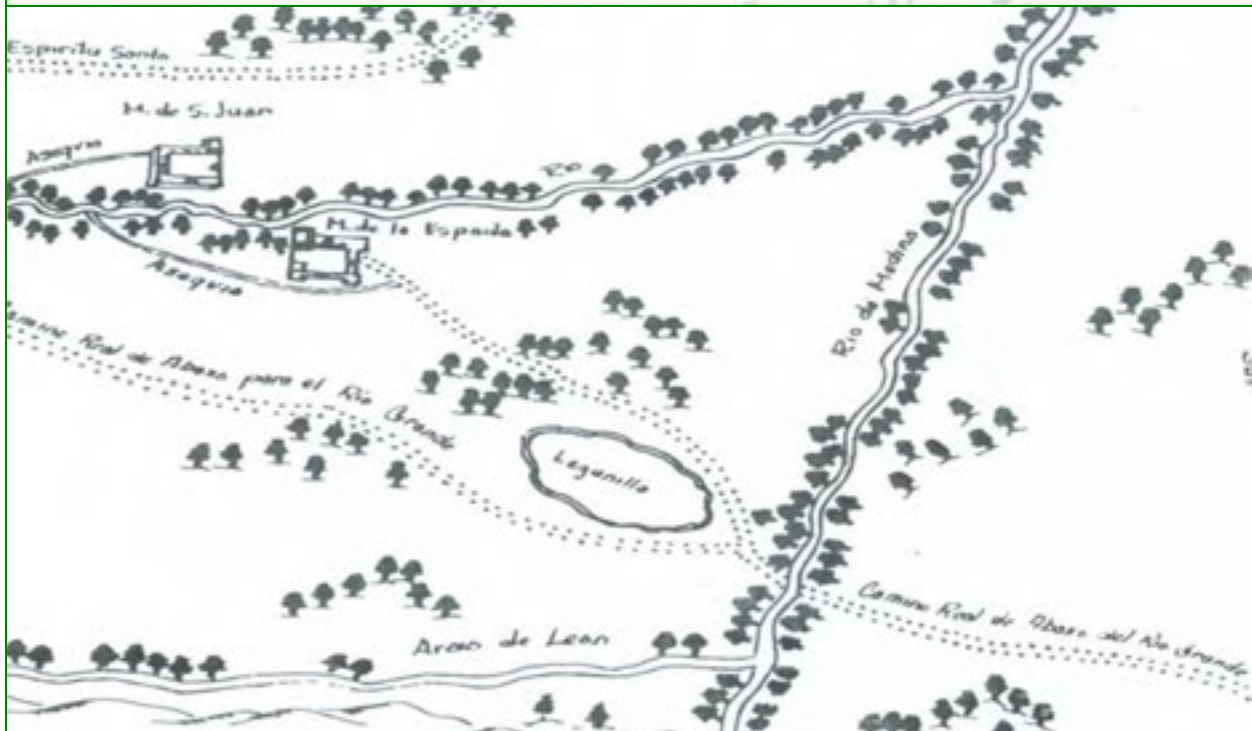
- Green space corridors along waterways and roads
- "Emerald Necklace" connection of parks, creeks, river and lakes
- Preservation of views, trees, historic/archeological resources
- Buffers around Mitchell Lake

Many scenic corridors have their roots in historic Spanish trails including Pleasanton Road and Golaid Road. Others, such as Neal Road and Jett Road, take on their own character as they connect small communities.

Early maps provide insights into the historic corridors of Heritage South:

*Mapa del Presidio del Bexar, 1764 (depicted below)*

- *Camino Real de Abazo para el Rio Grande (known today as Pleasanton Road, formerly Laredo Road)*
- *Camino de La Bahia del Espiritu Santo (known today as Goliad Road/Old Corpus Christi Road)*



## Scenic Corridors and Views

*San Antonio and Its Environs Taken from actual Survey Illustrating the storming of the Town by Texas under Col. Milam, 1835*

- Laredo Road
- La Bahia Road

*Map of Bexar County, 1868*

- Laredo Road
- Goliad Road/Corpus Christi Road

*Map of Bexar County, 1878*

- Laredo/Pleasanton Road
- Goliad Road/Corpus Christi Road
- An unnamed road along today's US 281
- A branch from today's US 281 that projects east immediately north of the Medina River to Mission Espada

*Map of Bexar County, 1887*

- Somerset Road
- Palo Alto Road
- Applewhite Road
- Laredo/Pleasanton Road
- An unnamed road projecting north from the Medina River to Mission Espada
- Goliad Road/Corpus Christi Road

*Map of Bexar County, 1897*

- Somerset Road
- Palo Alto Road
- Applewhite Road
- Pleasanton Road

- Goliad/Corpus Christi Road

*Bexar County Map, 1938*

- A route that follows today's IH 35
- Somerset Road
- Palo Alto Road
- Applewhite Road
- Pleasanton Road
- A route that follows today's FM 1937
- Goliad/Corpus Christi Road

### **El Camino Real National Historic Trail**

El Camino Real del los Tejas National Historic Trail, designated by Congress in 2004, was originally established to connect a series of missions and posts between Monclova, Mexico and Los Adaes, the first capital of the province of Texas (in what is now northwestern Louisiana). It constituted the only primary overland route from the Rio Grande to the Red River Valley in Louisiana during the Spanish Colonial Period from 1690 - 1821.



## Scenic Corridors and Views



Tejas, Lower Road, Old San Antonio Road, and Laredo Road. The Laredo Road and the Lower Road traverse the Heritage South area.

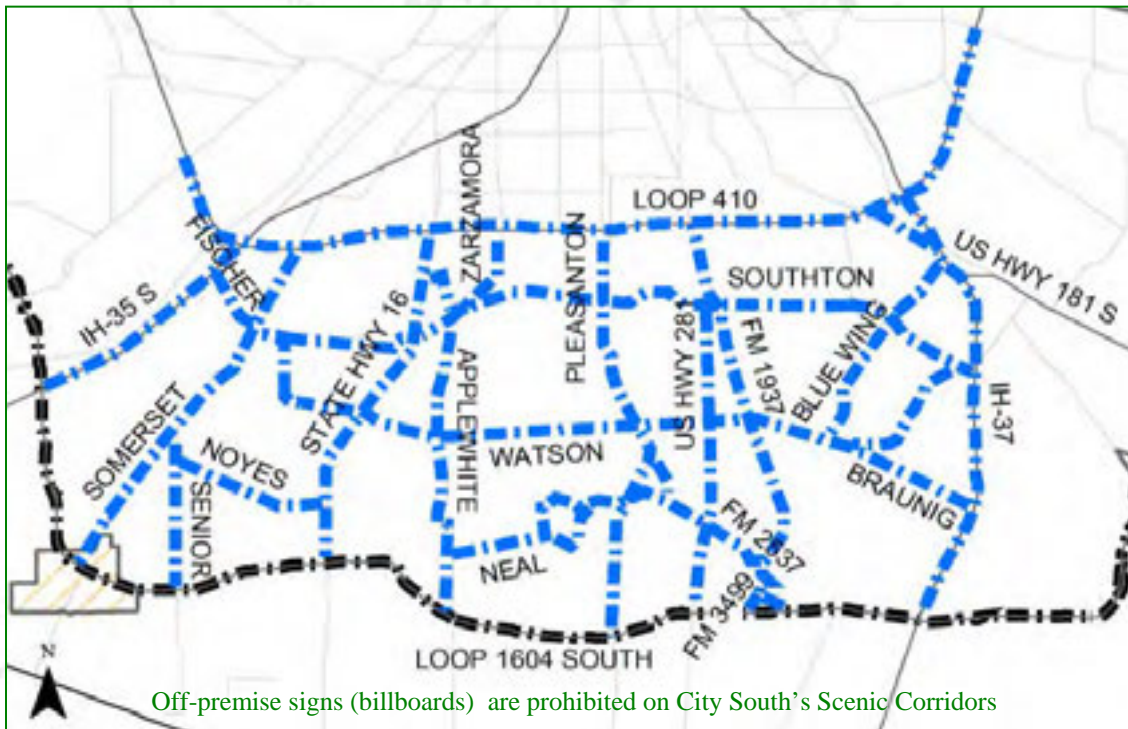
### Context Sensitive Design

The Major Thoroughfare Plan which governs rights-of-way for arterials and highways should respect the rural nature of historic and scenic roads. Context sensitive design should be applied to preserve their character. A rural cross section has been adopted in the MTP to assist with this effort.

The National Park Service in developing the National Historic Trail, broke the trail into four segments that represent use during various time periods. The four trails are El Camino Real de los

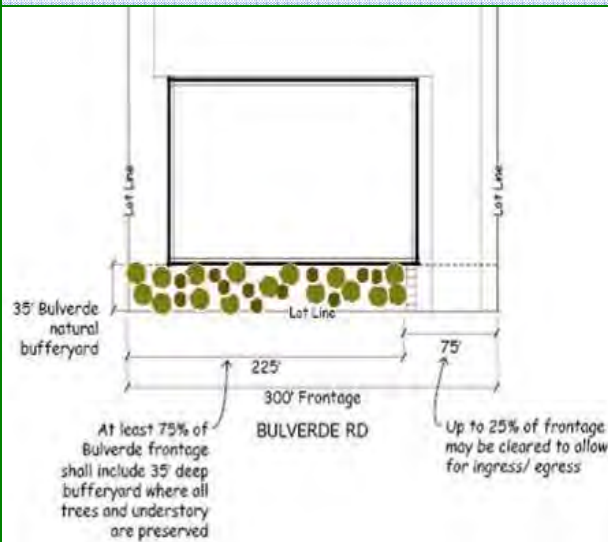
### Scenic Corridor Designation

The Major Thoroughfare Plan arterials that traverse the City South area in both the city limits and the extraterritorial



Off-premise signs (billboards) are prohibited on City South's Scenic Corridors

## Scenic Corridors and Views



*Above: Example of required buffer yard in a Preservation Corridor in San Antonio.*

jurisdiction have been protected by Chapter 28-141 of the San Antonio Code of Ordinances through Scenic Corridor designation which prohibits future off-premise (billboard) sign installation. This should be extended to all arterials in the Heritage South Sector by 2015.

### **Preservation Corridor Overlay Districts**

Increasing visual pollution from development, including above ground utilities and cellular towers is a threat to scenic rural areas. Urban design districts can provide solutions to protect and enhance these unique areas. It is recommended that scenic corridors in the city limits be zoned as Preservation Corridors to provide additional design regulations to preserve the rural character (UDC 35-339.01).

### **Related Policy Guidance**

#### **Heritage South Sector Plan, 2010**

NR-5 Create an interconnected system of parks, open spaces and hike and bike greenways

NR-5.4 Develop open space areas that provide linkage between neighborhoods, parks, schools and other recreational/cultural facilities including creek way systems that can support trail development and interconnected parkways or linear parks

HP-1 Preserve and promote historic sites, trails, and cultural heritage

HP-1.1 Identify potential historic sites and trails in Heritage South Sector Plan area

HP-2 Provide links between historic sites

HP-2.1 Expand linkages through linear parkways, and hike and bike trails

## Scenic Corridors and Views

### Best Practices and Programs

#### Preservation Corridor Districts

This overlay zoning district in San Antonio's Unified Development Code (UDC) chapter 335-339.01 provides design standards for rural roads including sign controls, lighting, landscaping and façade treatments of adjacent non-residential buildings.

#### View Shed Protection Districts

A view shed is an overlay zoning district in the Chapter 35-337 of the UDC that regulates building heights in order to protect an important historic site, landmark, or icon. With the World Heritage application for the San Antonio Historic Missions, consideration should be given to establishing view sheds adjacent to the Missions Park.

#### Scenic Corridors

A provision in Chapter 28 of the City Code, Scenic Corridors can regulate the placement of off-premise signs along designated roadways.

#### Conservation Subdivisions

Important scenic corridors and views can be preserved through cluster development.

#### Conservation Easements

Easements can be used to preserve historic trails, acequias, and open space

features such as scenic corridors.

#### NPS Trail Certification

This is a National Park Service partnership that helps landowners preserve their historic trail properties, and share them with others. The certification process begins when a landowners or manager invites National Park Service trails staff to evaluate a property's historical significance and condition. If the site has played a role in trail history and the owner will allow at least occasional public access, the partners together prepare a certification agreement. The owner/manager can establish visiting times, say where visitors may go on the property, and set other reasonable conditions. Next, the partners might begin planning for site protection and any other needs, such as walkways, signs, and exhibits. The partnership allows plenty of room for choice and flexibility. For example, one owner might choose to install exhibits and sidewalks and open his property to daily visitation. Another might prefer to keep her land undeveloped and limit visits to an occasional school group or researcher.

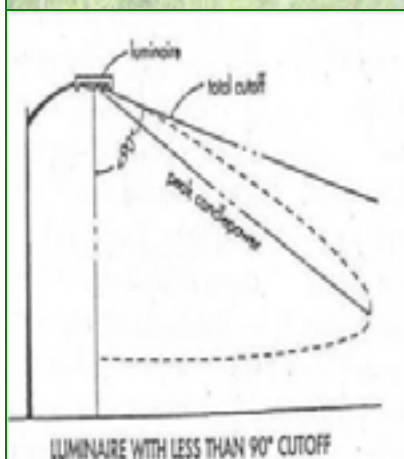


## Scenic Corridors and Views

The needs of both owners can be met. Through certification, landowners are eligible to participate in the Challenge Cost Share Program

### NPS Challenge Cost Share Program

The Challenge Cost Share Program is a partnership-and-matching program for projects related to National Historic Trails administered by the National Park Service (NPS). Through CCSP, the NPS can pay as much as half of a project's costs, up to a total of \$20,000. The successful project proposal must match CCSP money with non-federal dollars and/or by donated in-kind labor, services, and materials. CCSP project proposals must meet the needs of congressionally authorized National Historic Trails. Broadly, those needs include field research, archival and oral history research, protection and restoration of trail resources, and promotion of public understanding and appreciation of National Historic Trails.



Left: Example of light showing cut off fixtures that direct light downward at a 90 degree angle to reduce glare.

### Lighting Overlays

Lighting zoning overlays can protect rural areas and scenic corridors from light pollution by regulating the style and intensity of site lighting.

Outdoor lighting enhances the safety and security of an area; however, if unregulated may have negative impacts on the environment. Sky glow can reduce the view of the stars, and glare and spillover can irritate neighbors, disturb natural systems that support wildlife, damage community aesthetics, and lead to energy waste. The International Dark Sky Association recommends a zone approach:

- 1) Areas with intrinsic natural beauty (national parks, observatories, etc.) where all light trespass should be strictly limited
- 2) Suburban and rural residential areas with low ambient brightness.
- 3) Urban residential areas with medium ambient brightness
- 4) Urban residential and commercial areas with high ambient brightness

The design of the lighting in accordance with the "Dark Sky" approach can be accomplished through the reduction of foot candles and intensity, use of low pressure sodium, and restrictions on fixture height, direction, shielding and placement of fixtures.



## Historic and Cultural Resources



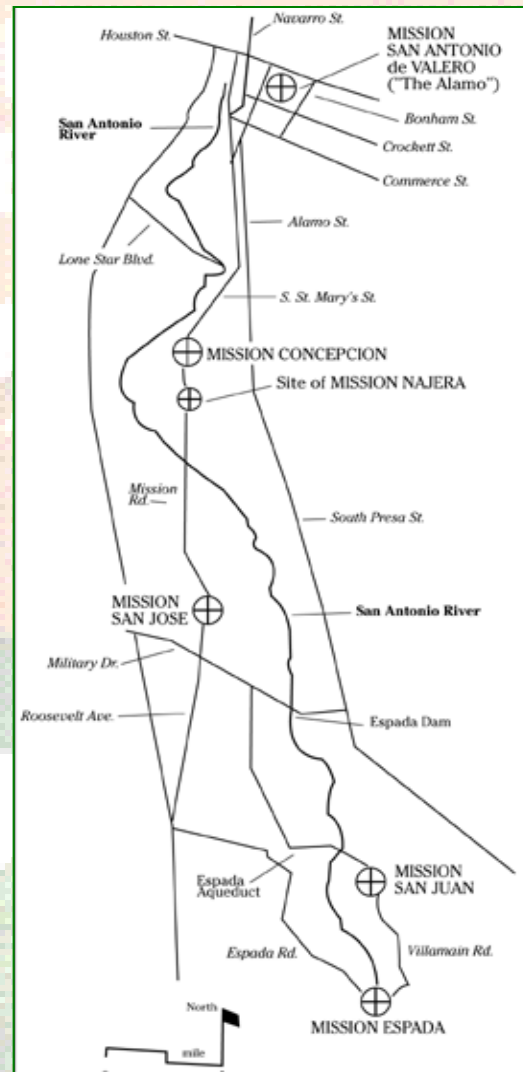
### San Antonio Missions National Historic Park

The National Park Service operates the San Antonio Missions National Historic Park which offers protection, conservation and enjoyment of the Spanish mis-



sions, early Native American traditions, and natural beauty adjacent to the San Antonio River. The Espada Mission, its associated kilns, and acequia are located in Heritage South. Mission San Francisco de la Espada was moved from East Texas to the San Antonio River in 1731.

The Department of the Interior has officially authorized the San Antonio Franciscan Missions for nomination to the United Nations Education, Scientific, and Cultural Organization (UNESCO) World Heritage List. The National Park Service will propose the nomination to the 21-nation World Heritage Committee during the next available round of nominations. A World Heritage nomination is a prestigious listing that acknowledges the historical, cultural or natural value of a site, as well as the commitment of the sovereign nation and the site's owners to its long-term protection and management.



*Right: SA Mission Trail System Map*

## Historic and Cultural Resources

### Park Expansion

In March, 2013, the members of the Bexar County Congressional Delegation, U.S. Congressmen Lloyd Doggett, Lamar Smith, Joaquin Castro, Henry Cuellar, and Pete Gallego announced the introduction of the San Antonio Missions National Historical Park Boundary Expansion Act of 2013 (H.R. 885). The act would expand the boundary of San Antonio Missions National Historical Park by approximately 137 acres near Missions San José, San Juan, and Espada. This land includes a remnant of the San Juan Dam, the headgate to the San Juan Acequia, and the San José Nature Trail to the San Antonio River. The House of Representatives passed the legislation on June 3, 2013. U.S. Senate action is pending.



## Historic and Cultural Resources

### San Antonio Mission Trails

The City of San Antonio's Linear Park Development Program for Salado Creek, Leon Creek, Medina River and the San Antonio River is funded through sales tax approved by voters in 2000, 2005 and 2010. Approximately 1,200 acres of property along San Antonio creekways have been acquired for the city-wide program since its inception. A river walk path and bike route connects all of the historic Spanish missions ensuring opportunities for access to and enjoyment of these significant sites.

Map Courtesy: San Antonio River Authority



## Historic and Cultural Resources

### Battle of Medina

While the exact site of the battleground is not known, the area south of the Medina River east of SH 16 and to Losoya is known to be a part of the battlefield area. The Battle of Medina, fought in 1813 between Spanish Loyalists and the Republican Army of the North, has been called “the bloodiest battle ever fought in Texas” (Thonoff 1985).

### Farm and Ranch Complexes

The prevalent type of historic site within the area is the farm and ranch complex. Farm and ranch complexes generally contain a main dwelling (either standing or ruins), and other outbuildings (standing or ruins) such as barns, smokehouses, sheds, and corrals, representing agricultural activities. Farm and ranch complexes within Heritage South date from the Spanish Colonial period to the mid-20<sup>th</sup> century.

### Early Towns and Communities

Early towns and communities in the area include Cassin, Losoya, Earle, Buena Vista, Southton, and Paso de las

Garza's. Cassin, is located at one of the original Spanish Colonial crossings on the Medina River. Cassin was founded in the early 1900's. It was a railroad stop on the San Antonio Uvalde and Gulf Railroad. Losoya, named after the original Spanish land grant holder, was also located near one of the Spanish Colonial crossings on the Medina River. The modern town of Losoya got its start after the Civil War. Buena Vista, first settled around 1900, once had a school, a store, and a number of homes.



## Historic and Cultural Resources



### Cemeteries

Ten cemeteries/gravesites have been documented within the study area. These include the following: (1) 41BX277, Perez Family Cemetery, ca. 1850; (2) 41BX529, Hermann family cemetery, ca. 1880's; (3) 41BX542, Hernandez family cemetery, ca. 1850's; (4) 41BX543, Ruiz Herrera Cemetery, ca. 1840's; (5) 41BX667, Santissima Trinidad Cemetery, possibly ca. 1813; (6) 41BX 675, Thompson Cemetery, ca. 1875; (7) Esparza Family Cemetery, ca. 1850's; (8) El Carmen Cemetery, ca. possibly as early as 1813; (9) Mitchell/Mauerman Cemetery; and (10) El Carmen Catholic Cemetery, possibly ca. 1813. There remain a number of other cemeteries including the Espada Mission Cemetery, that need to be documented.

### Prehistoric Sites

Archeological sites in the area range from lithic scatters to quarries, campsites, and occupation sites, representing long term and repeated use by Native Americans. Proto historic sites during the time of Spanish contact have also been identified in the area.

### Regulatory Framework

#### National Register of Historic Places and Section 106 Reviews

Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Historic Preservation Council a reasonable opportunity to comment on such undertakings.



## Historic and Cultural Resources



### Texas Historical Commission



#### Texas Antiquities Code

Before breaking ground on a project on state or local government land, the State Archeologist must be notified of any significant archeological sites, and if so, a survey must be conducted and a permit must be obtained.

#### Recorded Texas Historical Landmarks

The Texas Historical Commission (THC) awards RTHL designation to buildings at least 50 years old that are worthy of preservation for their architectural and historical associations. A person may not change the historical or architectural integrity of a building or structure the commission has designated as a RTHL without notifying the commission in writing at least 60 days before the date on which the action causing the change is to begin.

#### Local Historic Districts and Landmarks

Designated landmarks and properties within Historic Districts require review by the Historic Design Review Commission of designated districts and landmarks prior to alteration or demolition.

#### Related Policy Guidance

##### Heritage South Sector Plan, 2010

HP-1 Preserve and promote historic sites, trails and cultural heritage

HP-1.1 Identify potential historic sites and trails in Heritage South

HP-1.2 Preserve sites through Historical Landmark designation

HP-1.4 Promote development that will preserve the natural setting of historic sites and trails

HP-1.5 Educate private land owners on preservation of designated properties

HP-1.6 Explore potential funding sources for marketing and the education of historic areas and cultural assets

HP-1.7 Expand the historic structures and archeological survey to the entire Heritage South area

## Historic and Cultural Resources

HP- 2 Provide links between historic sites

HP-2.1 Expand linkages through linear parkways and hike/bike trails

HP-2.2 Expand linkages to Historical Markers or Historic District Designations

### Best Practices and Programs

#### Department of the Interior's Secretary's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings

The Standards provide guidance on the rehabilitation of historic properties for property owners participating in federal tax credit programs.

#### National Park Service Preservation Briefs and Technical Notes

Preservation Briefs provide in-depth information about various aspects of historic preservation. Many provide guidance on the appropriate treatment of traditional building materials such as slate roofing, plaster, and masonry. Others address architectural features including storefronts and porches, or focus on the reuse of specific building types such as historic gas stations and barns. Additionally, this publication series covers broader themes such as how to understand architectural char-

acter and making historic buildings accessible.

Preservation Tech Notes provide practical information on traditional practices and innovative techniques for successfully maintaining and preserving cultural resources.

#### City of San Antonio Historic Design Guidelines

These Historic Design Guidelines provide historic district residents, property owners, professionals working with historic properties, and potential construction applicants a background history of the City's historic districts, an understanding of architectural design principles, and guidelines which promote predictability and ensure compatibility between new development and the existing historic environment.

#### Local Grants

The San Antonio Conservation Society offers grants for the restoration or rehabilitation of historic structures that are at least 50 years old.

#### Conservation Subdivisions

Historic and cultural resources can be preserved and integrated into Master Development Plans utilizing conservation subdivisions.

## Historic and Cultural Resources

### Tax Incentive Programs

#### Federal Income Tax Credits for Historic Properties (commercial properties)

##### 20% Tax Credit

A 20% income tax credit is available for the rehabilitation of historic, income-producing buildings that are determined by the Secretary of the Interior, through the National Park Service, to be "certified historic structures." The State Historic Preservation Offices and the National Park Service review the rehabilitation work to ensure that it complies with the Secretary's Standards for Rehabilitation. The Internal Revenue Service defines qualified rehabilitation expenses on which the credit may be taken. Owner-occupied residential properties do not qualify for the federal rehabilitation tax credit.

##### 10% Tax Credit

The 10% tax credit is available for the rehabilitation of non-historic buildings placed in service before 1936. The building must be rehabilitated for non-residential use.

#### Conservation Easements

A historic preservation easement is a voluntary legal agreement, typically in the form of a deed, that permanently protects a historic property. Through the

easement, a property owner places restrictions on the development of or changes to the historic property, then transfers these restrictions to a preservation or conservation organization. A historic property owner who donates an easement may be eligible for a federal income tax deduction.

#### City of San Antonio Tax Incentives for Substantial Historic Rehabilitation

Residential properties are eligible for two tax exemption options. The first exemption option freezes city taxes at the pre-improvement value upon verification for ten years. Therefore, the city taxes would be based upon the assessed value of the property before commencement of the rehabilitation. The other exemption choice calls for the payment of zero City taxes for five years, and then for the subsequent five years taxes will be based upon 50% of the newly assessed value of the property. Commercial properties are eligible for the exemption choice that calls for the payment of zero City taxes for five years and, then, for the subsequent five years taxes will be based upon 50% of the newly assessed value of the property.



## Resource Links

Bexar County: <http://www.co.bexar.tx.us/>

Cemetery Preservation: <http://www.thc.state.tx.us/preserve/projects-and-programs/cemetery-preservation/>

City of San Antonio: <http://www.sanantonio.gov/>

Environmental Protection Agency: <http://www.epa.gov/>

Greenspaces Alliance of South Texas: <http://www.greensatx.org/>

Land Heritage Institute: [http://www.penelopeboyer.com/LHI\\_website\\_revised/Welcome.html](http://www.penelopeboyer.com/LHI_website_revised/Welcome.html)

Medina River Greenway: [http://www.sanantonio.gov/parksandrec/greenway\\_trails\\_old\\_medina.aspx](http://www.sanantonio.gov/parksandrec/greenway_trails_old_medina.aspx)

Medina River Natural Area: <http://www.sanaturalareas.org/mr/mrindex.html>

Mitchell Lake Audubon Center: <http://tx.audubon.org/mitchell-lake-audubon-center>

National Historic Preservation Act: <http://www.thc.state.tx.us/project-review/national-historic-preservation-act>

National Park Service: <http://www.nps.gov/index.htm>

National Wetlands Inventory: <http://www.fws.gov/wetlands/Data/Mapper.html>

Natural Resources Conservation Service: <http://www.nrcs.usda.gov/wps/portal/nrcs/site/national/home/>

Office of Historic Preservation, City of San Antonio: <http://www.sanantonio.gov/historic/>

Preservation Covenants and Easements: <http://www.thc.state.tx.us/project-review/preservation-covenants-and-easements>

San Antonio Conservation Society: <http://www.saconservation.org/>

San Antonio Missions: <http://www.missionsofsanantonio.org/>

San Antonio River Authority: <http://www.sara-tx.org/>

San Antonio Water System: <http://www.saws.org/>

Texas Antiquities Code: <http://www.thc.state.tx.us/project-review/antiquities-code-texas>

Texas Department of Agriculture: <http://www.texasagriculture.gov/>

Texas Historical Commission: <http://www.thc.state.tx.us/>

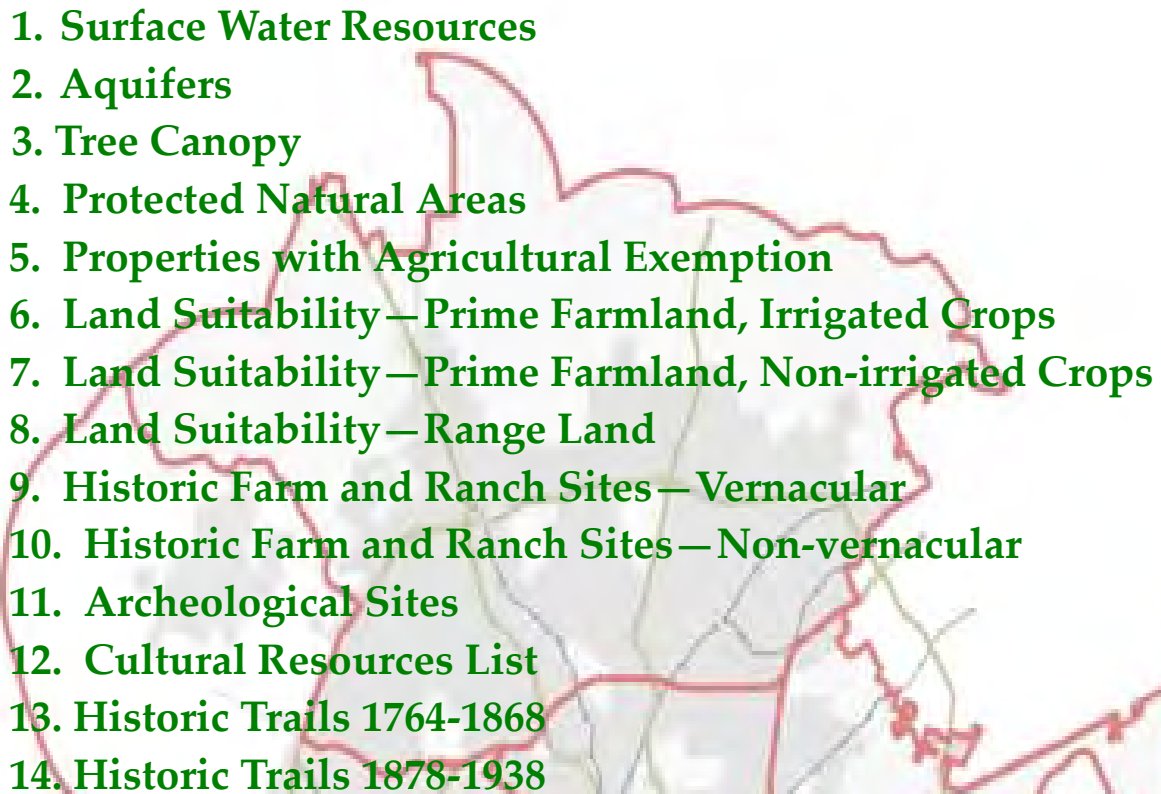
Texas Historic Sites Atlas: <http://atlas.thc.state.tx.us/>

Texas Parks and Wildlife Department: <http://www.tpwd.state.tx.us/>

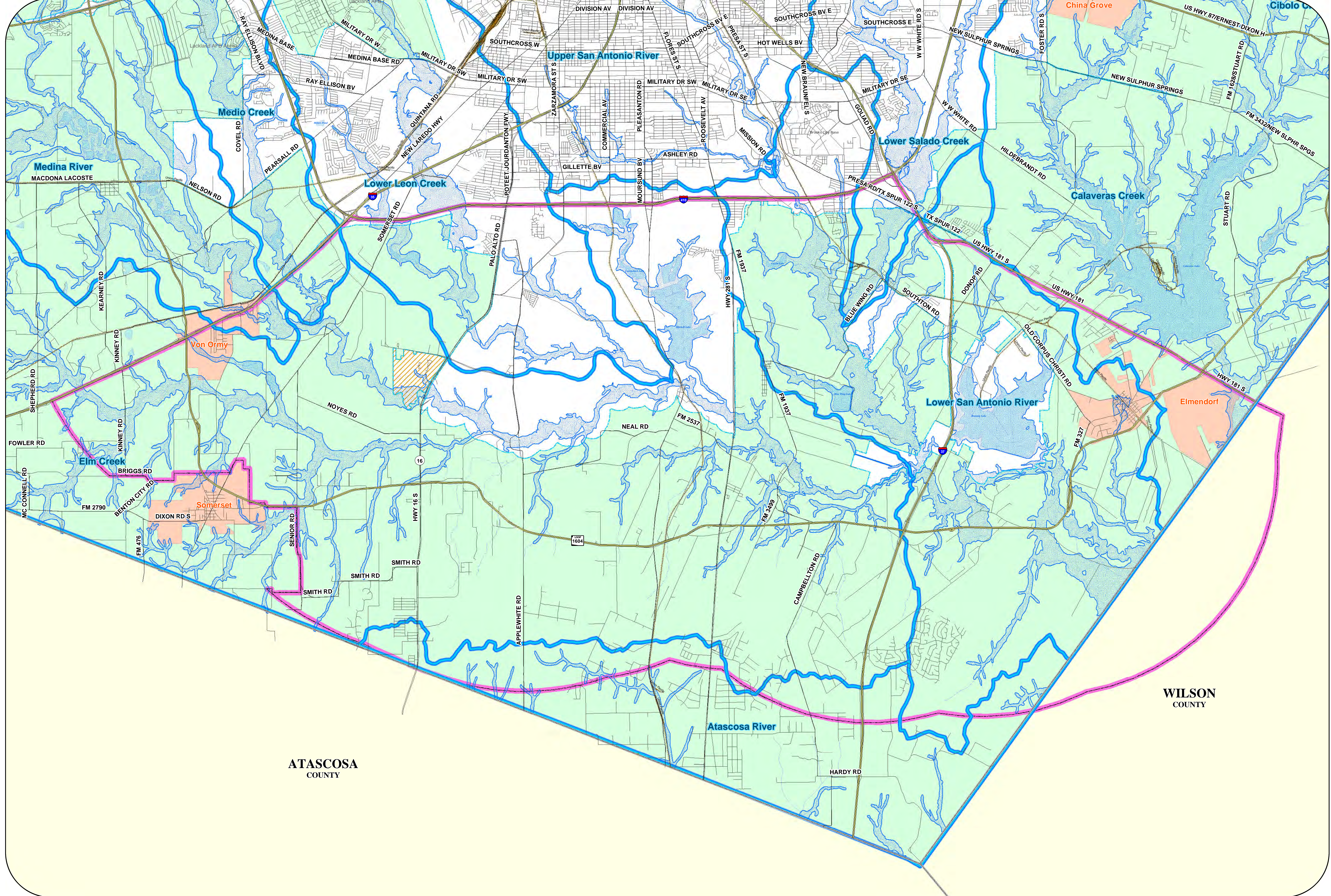
United States Department of Agriculture: <http://www.usda.gov/wps/portal/usda/usdahome>

United States Fish and Wildlife Service Endangered Species Program: <http://www.fws.gov/endangered/>

## Maps and Lists

1. Surface Water Resources
  2. Aquifers
  3. Tree Canopy
  4. Protected Natural Areas
  5. Properties with Agricultural Exemption
  6. Land Suitability—Prime Farmland, Irrigated Crops
  7. Land Suitability—Prime Farmland, Non-irrigated Crops
  8. Land Suitability—Range Land
  9. Historic Farm and Ranch Sites—Vernacular
  10. Historic Farm and Ranch Sites—Non-vernacular
  11. Archeological Sites
  12. Cultural Resources List
  13. Historic Trails 1764-1868
  14. Historic Trails 1878-1938
- 

Note: Land Suitability Maps are derived from the following USDA resource: Natural Resources Conservation Service, United States Department of Agriculture, Web Soil Survey. Available online at <http://websoilsurvey.nrcs.usda.gov/>.



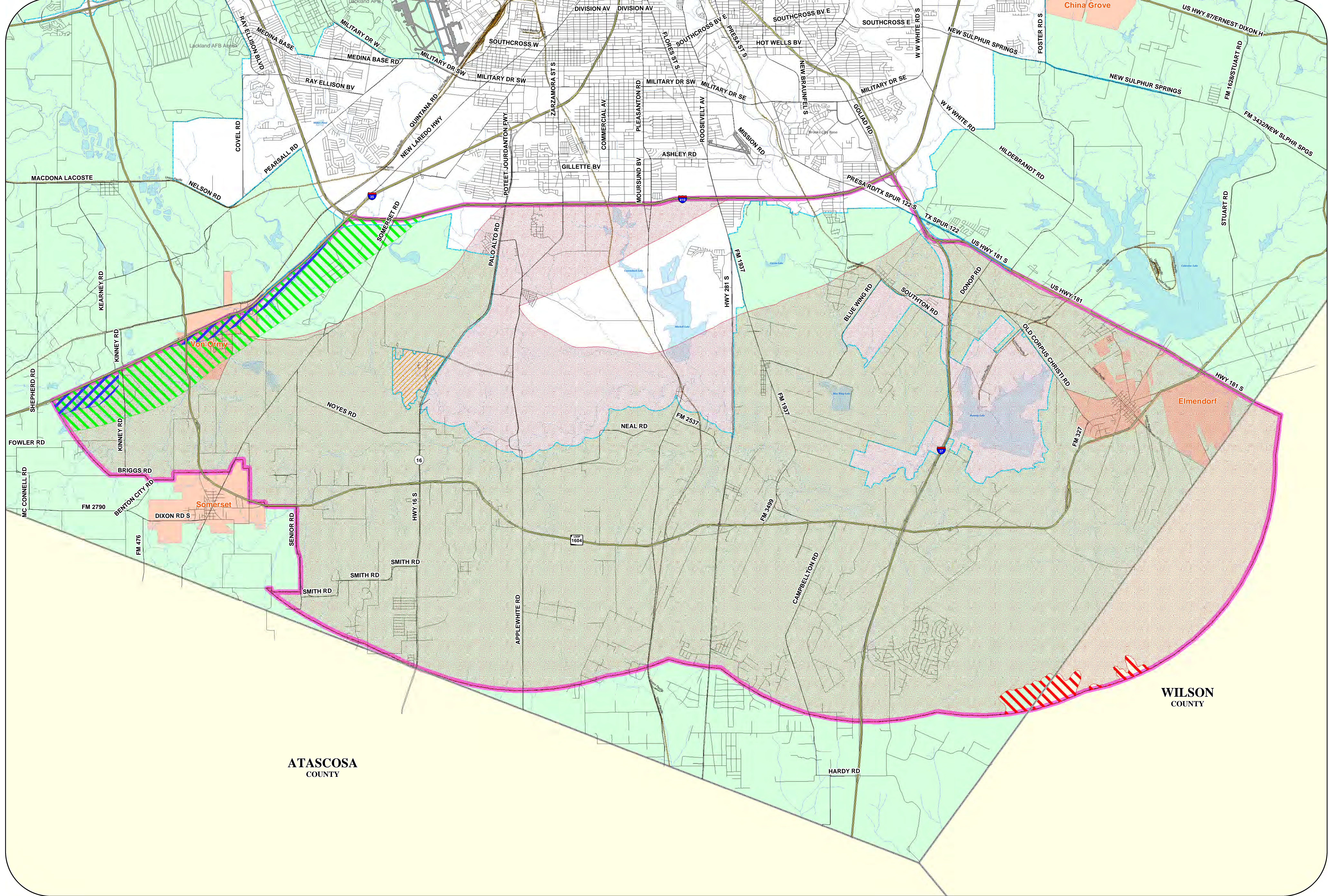
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	Watersheds	Cities and Towns	Bexar County	Rivers/ Streams	Major Road	

**Heritage South Sector Surface Water Resources**

City of San Antonio  
Cliff Morton Development and Business Services Center  
1301 S. Alamo  
San Antonio, TX 78204

Scale: 0 0.5 1 2 Miles

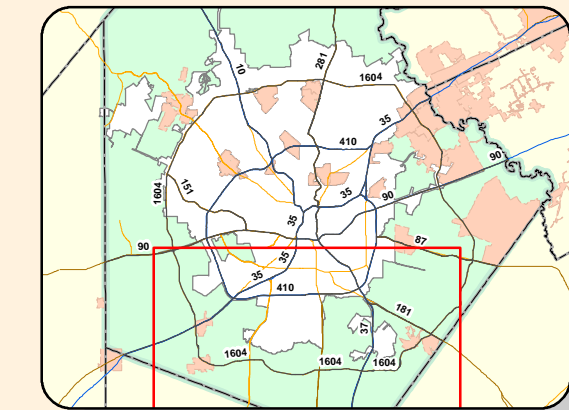
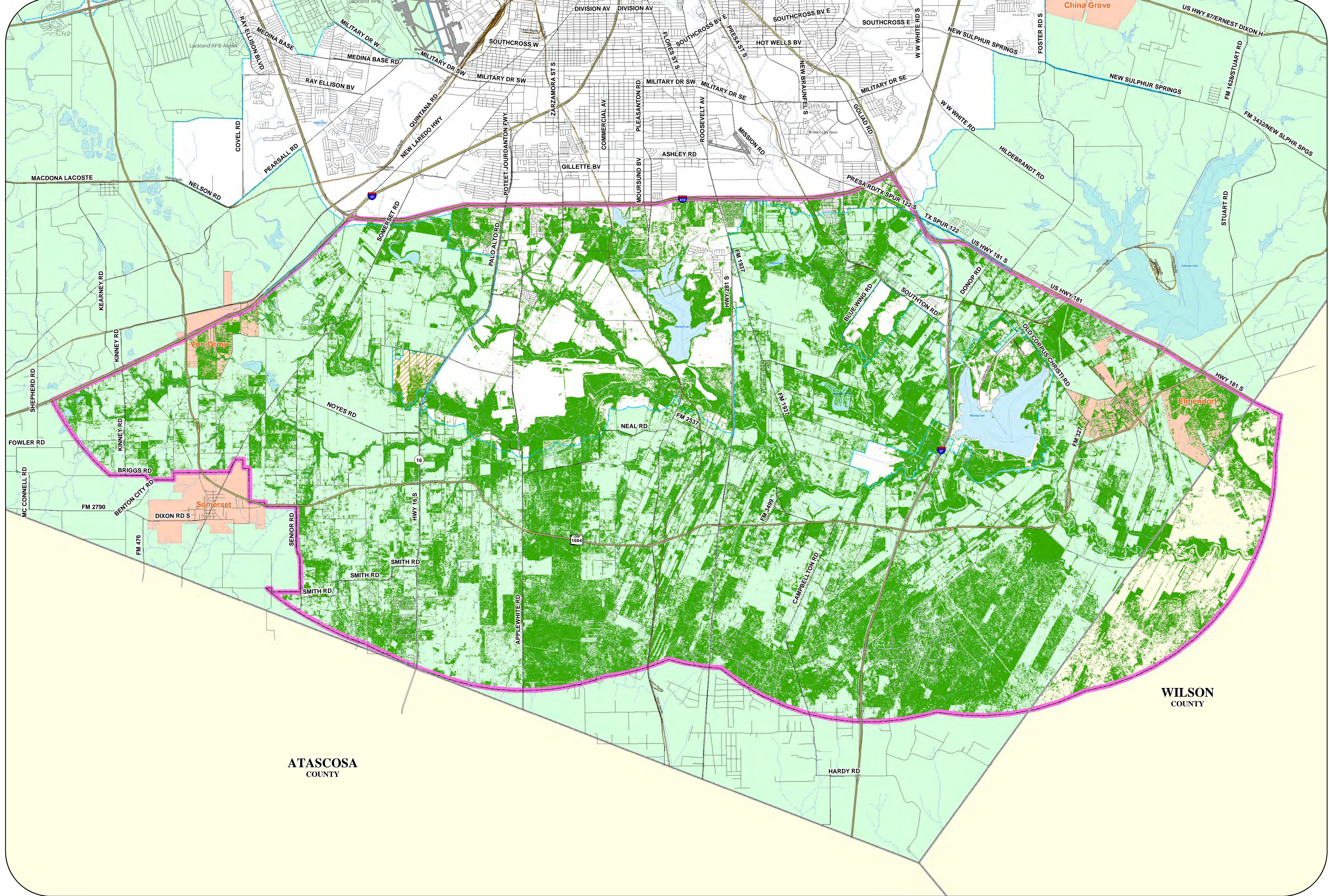
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Heritage South Sector	<b>Aquifers:</b>	City of San Antonio	Limited Purpose Annexation	Lakes	Expressways
Carrizo - Wilcox (outcrop)	Carrizo - Wilcox (subcrop)	Cities and Towns	Bexar County	Rivers/ Streams	Major Road
Edwards BFZ (subcrop)	Trinity (subcrop)	<h2 style="margin: 0;">Heritage South Sector Aquifers</h2>			

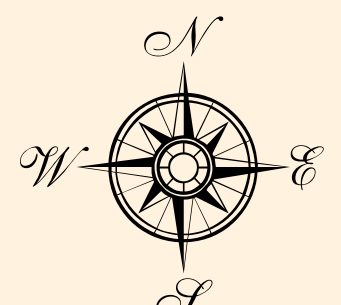
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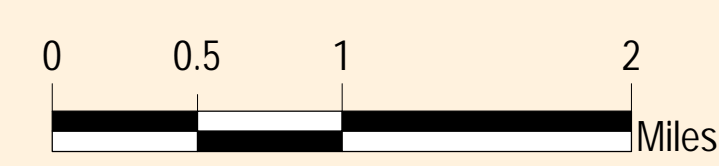


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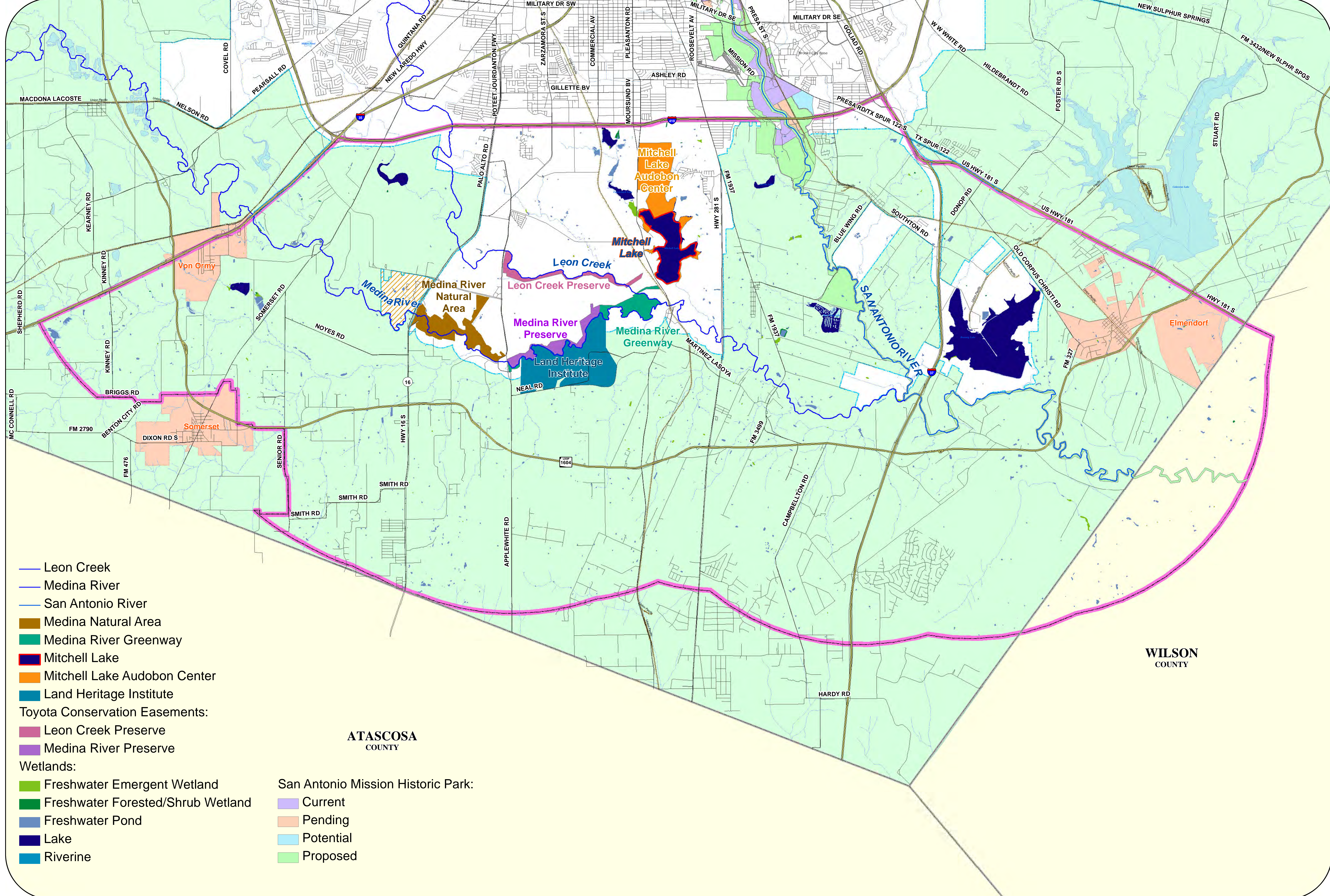
- Heritage South Sector
- City of San Antonio
- Limited Purpose Annexation
- Lakes
- Tree Canopy
- Cities and Towns
- Bexar County
- Rivers/ Streams
- Expressways
- Major Road



# Heritage South Sector 2007 Tree Canopy Study



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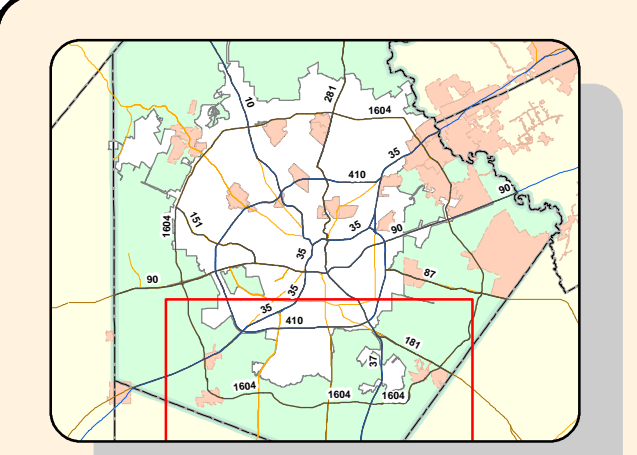


- Leon Creek
- Medina River
- San Antonio River
- Medina Natural Area
- Medina River Greenway
- Mitchell Lake
- Mitchell Lake Audobon Center
- Land Heritage Institute
- Toyota Conservation Easements:
  - Leon Creek Preserve
  - Medina River Preserve
- Wetlands:
  - Freshwater Emergent Wetland
  - Freshwater Forested/Shrub Wetland
  - Freshwater Pond
  - Lake
  - Riverine

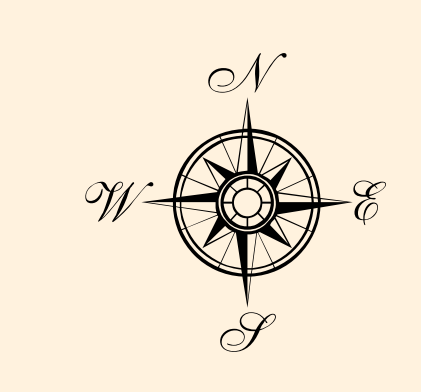
- San Antonio Mission Historic Park:
- Current
  - Pending
  - Potential
  - Proposed

ATASCOSA COUNTY

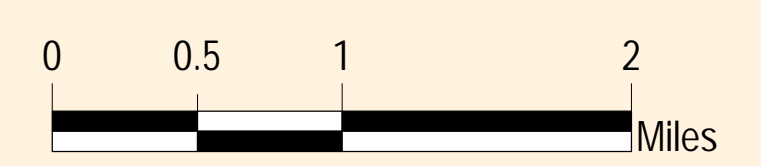
WILSON COUNTY



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- City of San Antonio
- Limited Purpose Annexation
- Lakes
- Expressways
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- Major Road

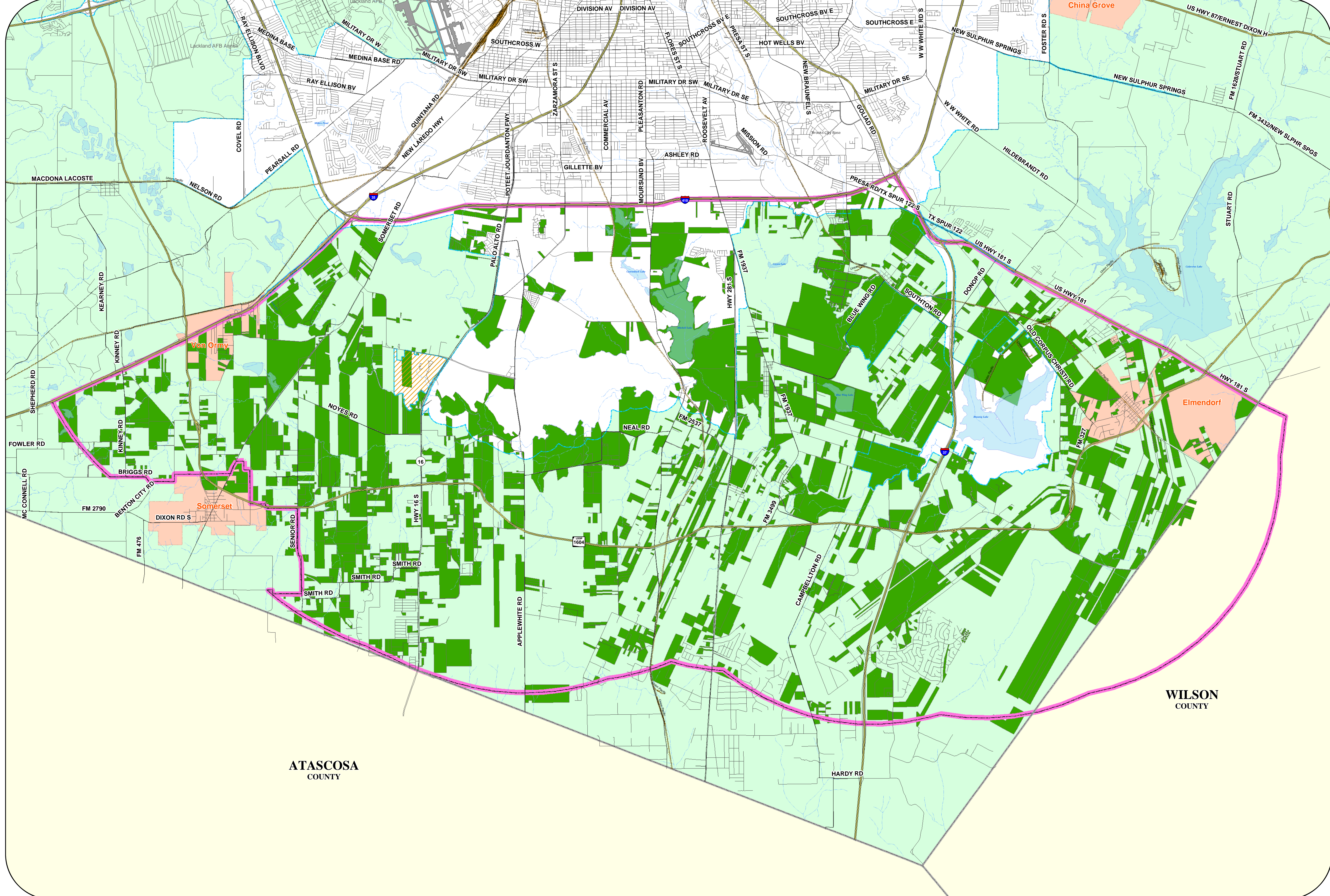


## Heritage South Sector Protected Areas



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Heritage South Sector	City of San Antonio	Limited Purpose Annexation	Lakes	Expressways
Agricultural Exemptions	Cities and Towns	Bexar County	Rivers/ Streams	Major Road

## Heritage South Sector

### Properties with Agricultural Exemption

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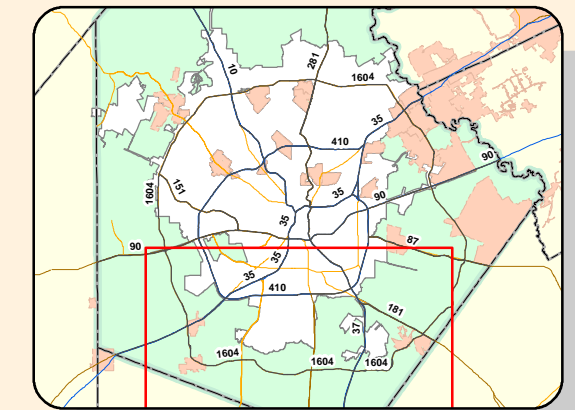
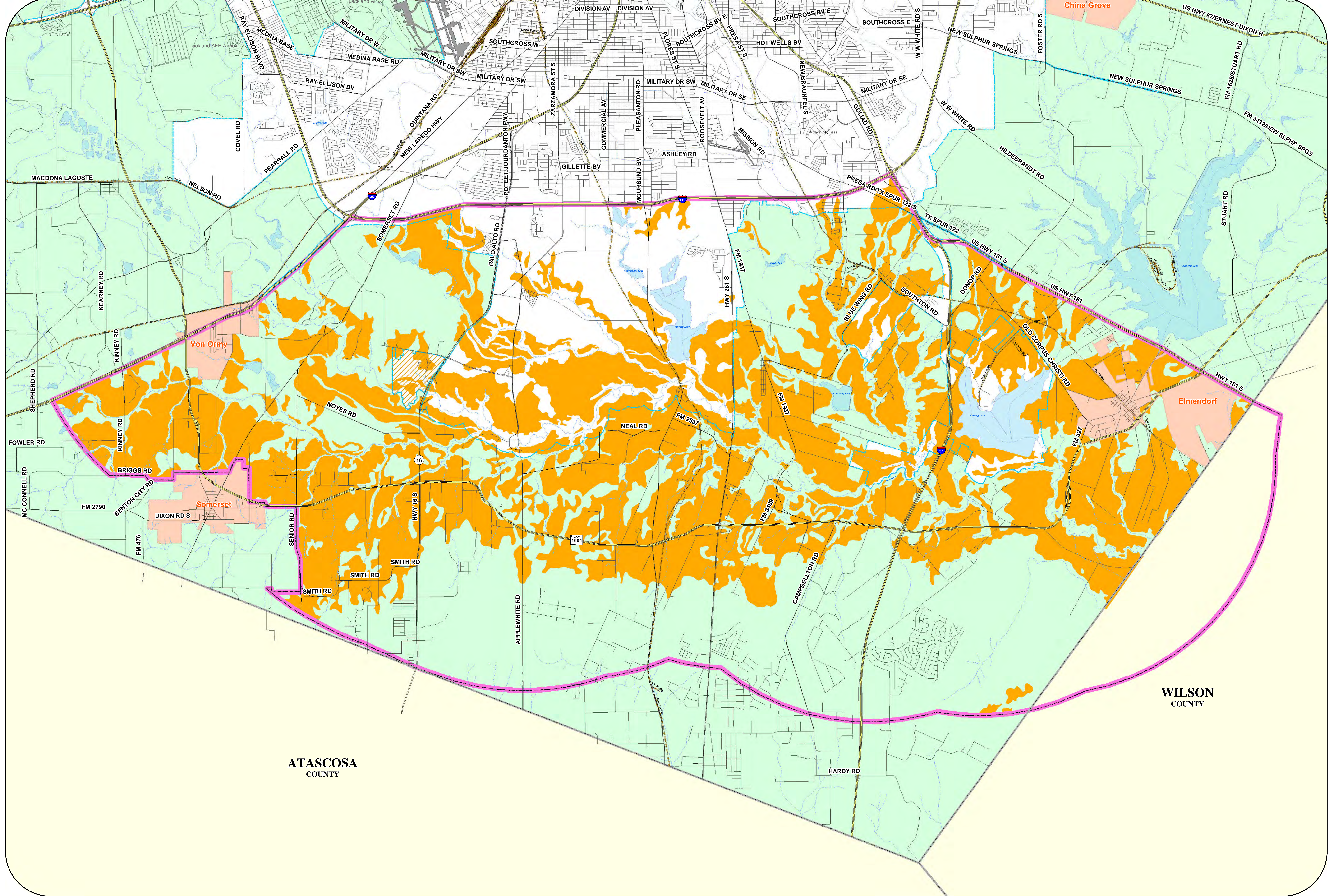
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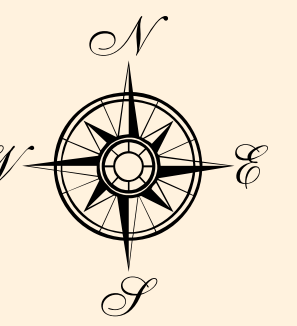
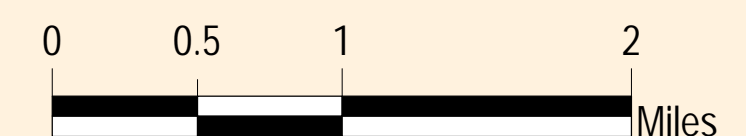
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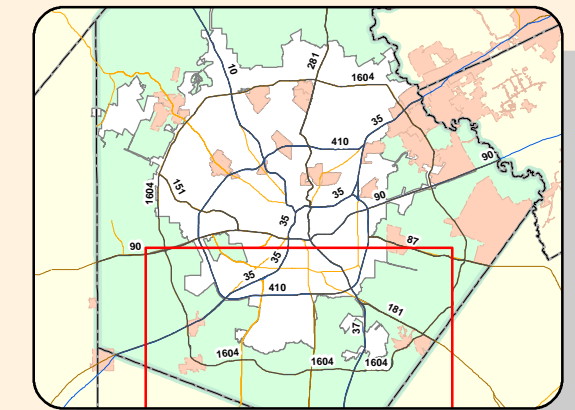
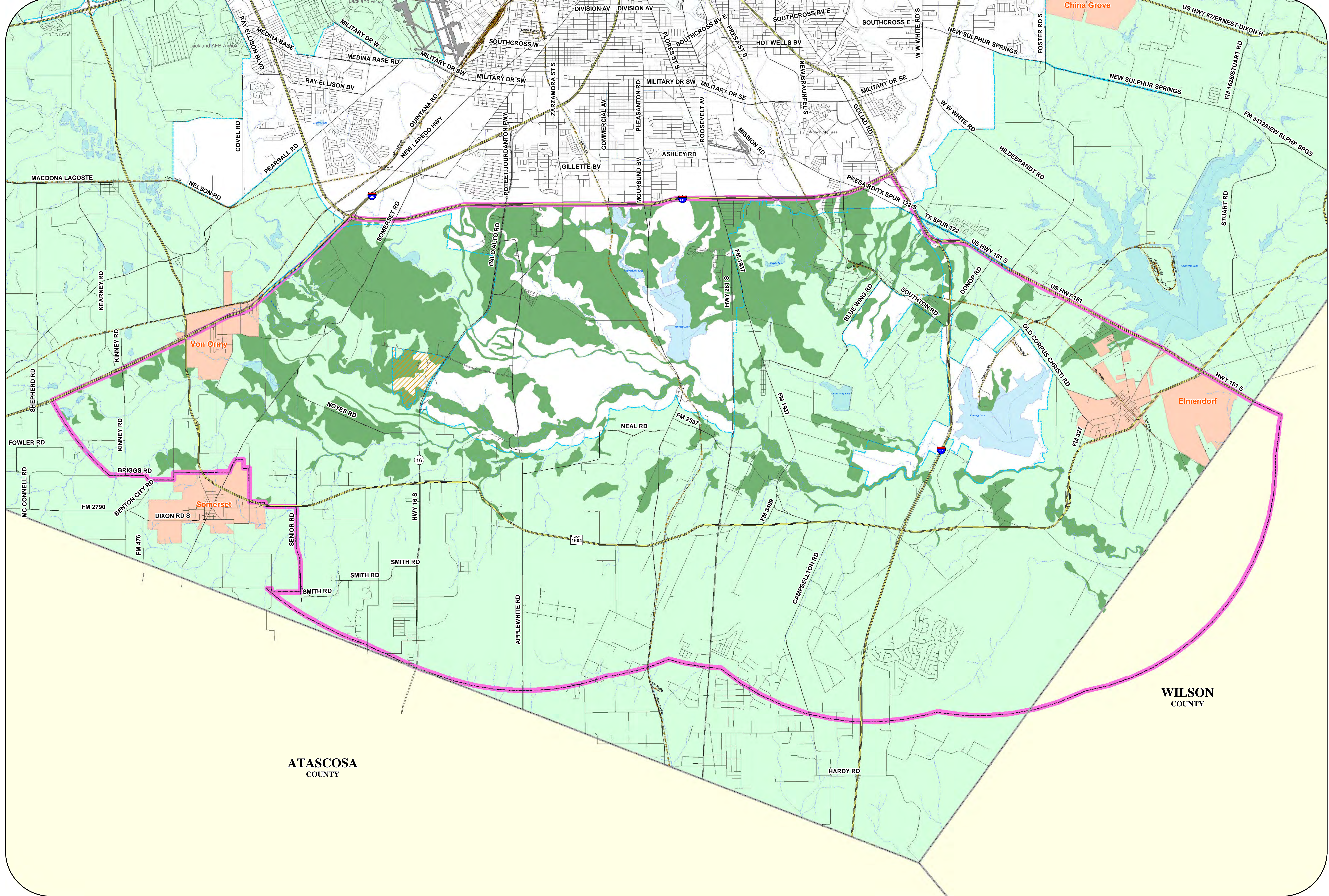
- Heritage South Sector
- City of San Antonio
- Limited Purpose Annexation
- Lakes
- Expressways
- Prime farmland if irrigated
- Cities and Towns
- Bexar County
- Rivers/ Streams
- Major Road

## Heritage South Sector Land Suitability - Farmland, Irrigated Crops

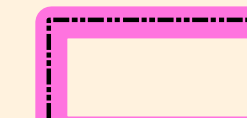



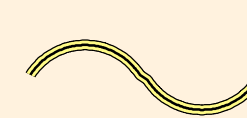


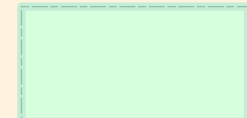

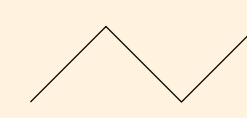


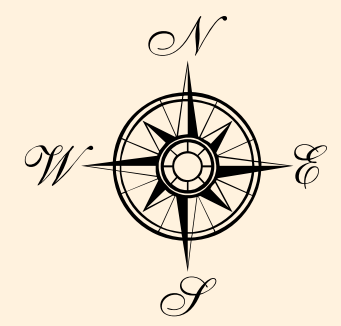
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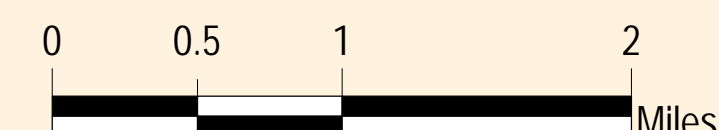
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-  Heritage South Sector
-  City of San Antonio
-  Limited Purpose Annexation
-  Lakes
-  Expressways
-  All areas are prime farmland
-  Cities and Towns
-  Bexar County
-  Rivers/ Streams
-  Major Road




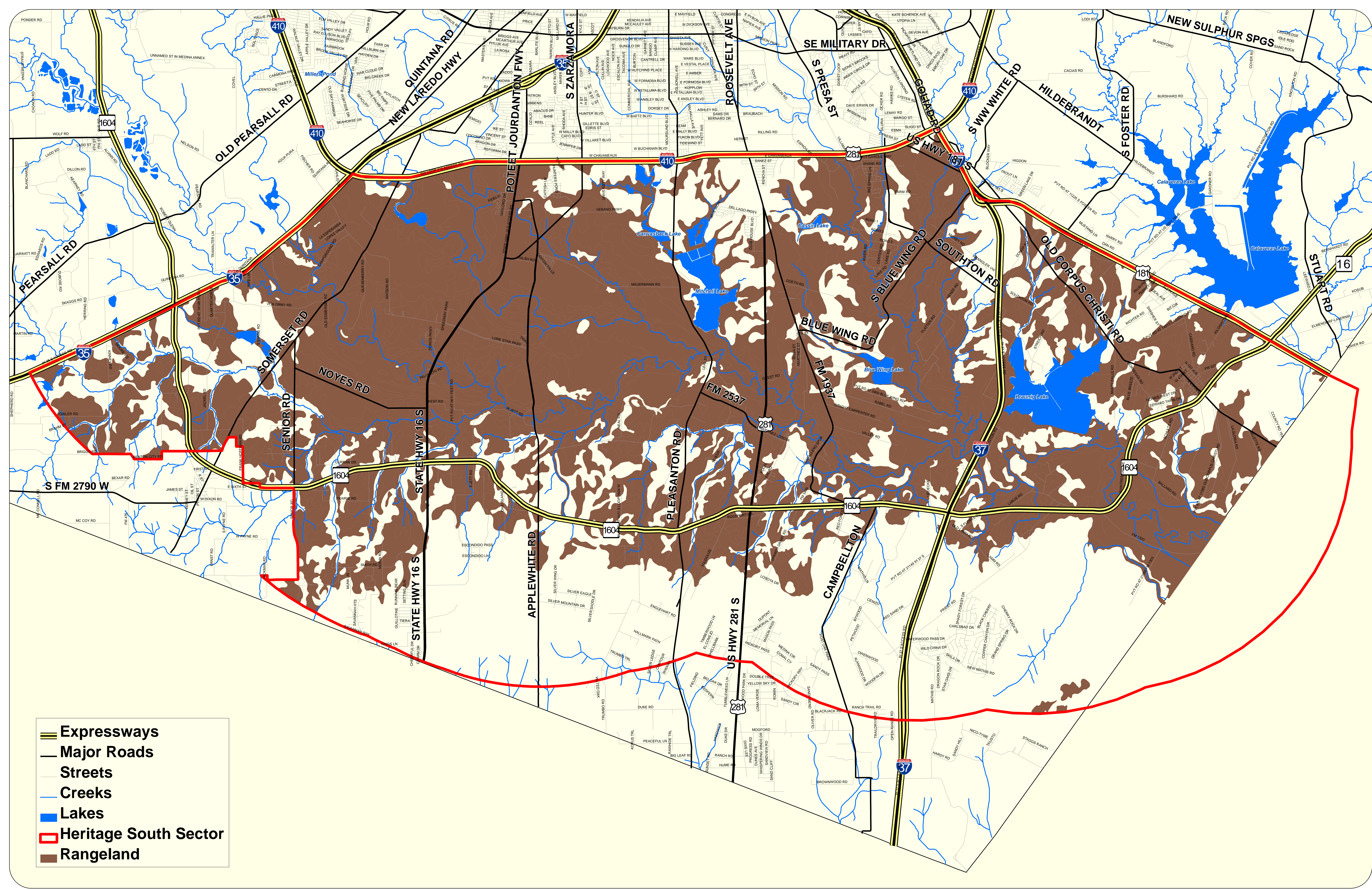
# Heritage South Sector

## Land Suitability - Farmland, Non-Irrigated Crops



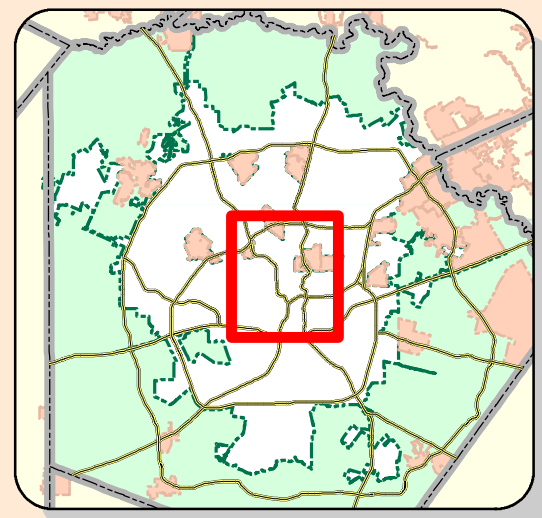
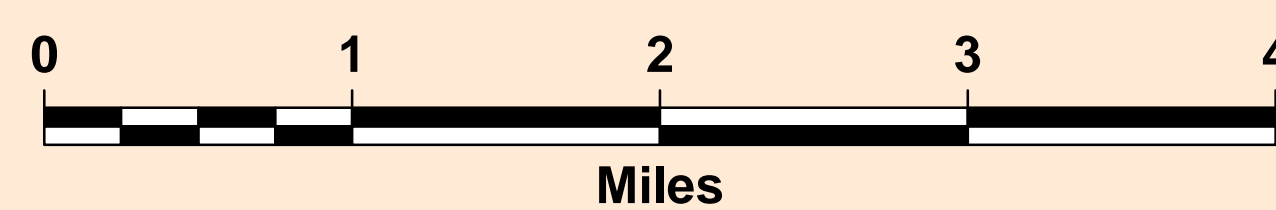
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# Heritage South Sector Land Suitability - Rangeland

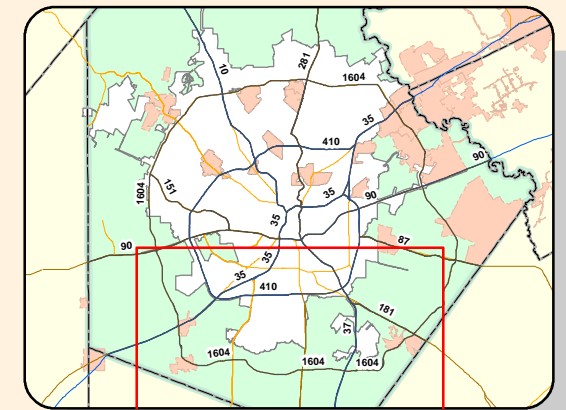
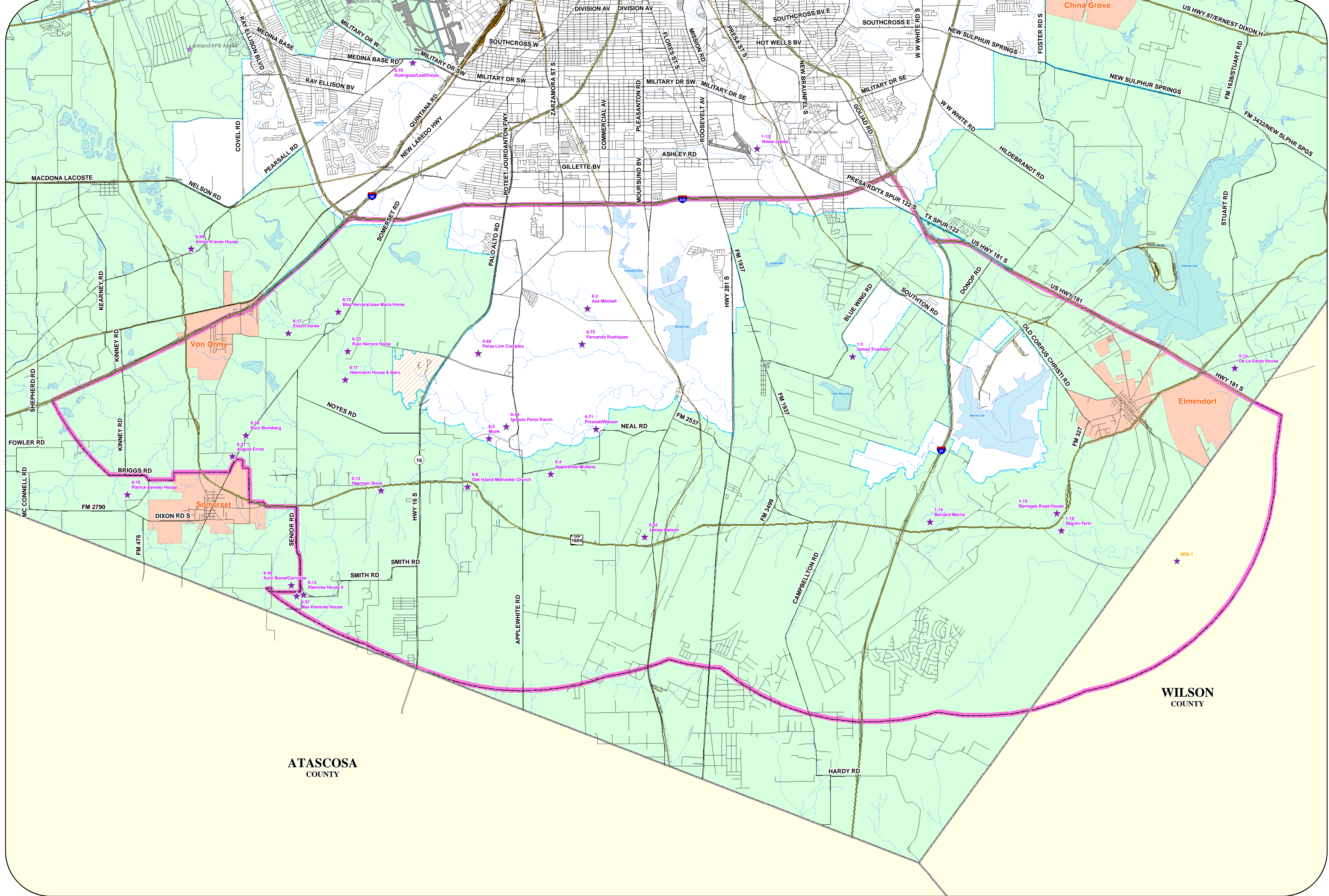
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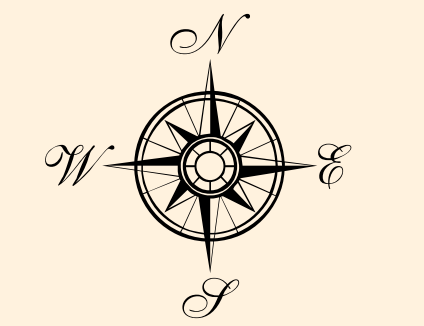
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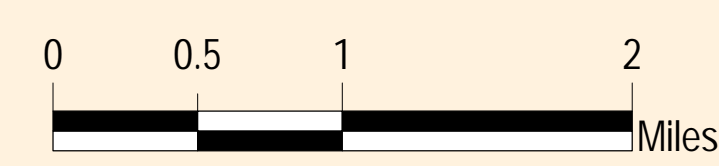
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- 19th Century Vernacular Farm & Ranch Complexes
- City of San Antonio
- Limited Purpose Annexation
- Lakes
- Expressways
- Heritage South Sector
- Cities and Towns
- Bexar County
- Rivers/Streams
- Major Road

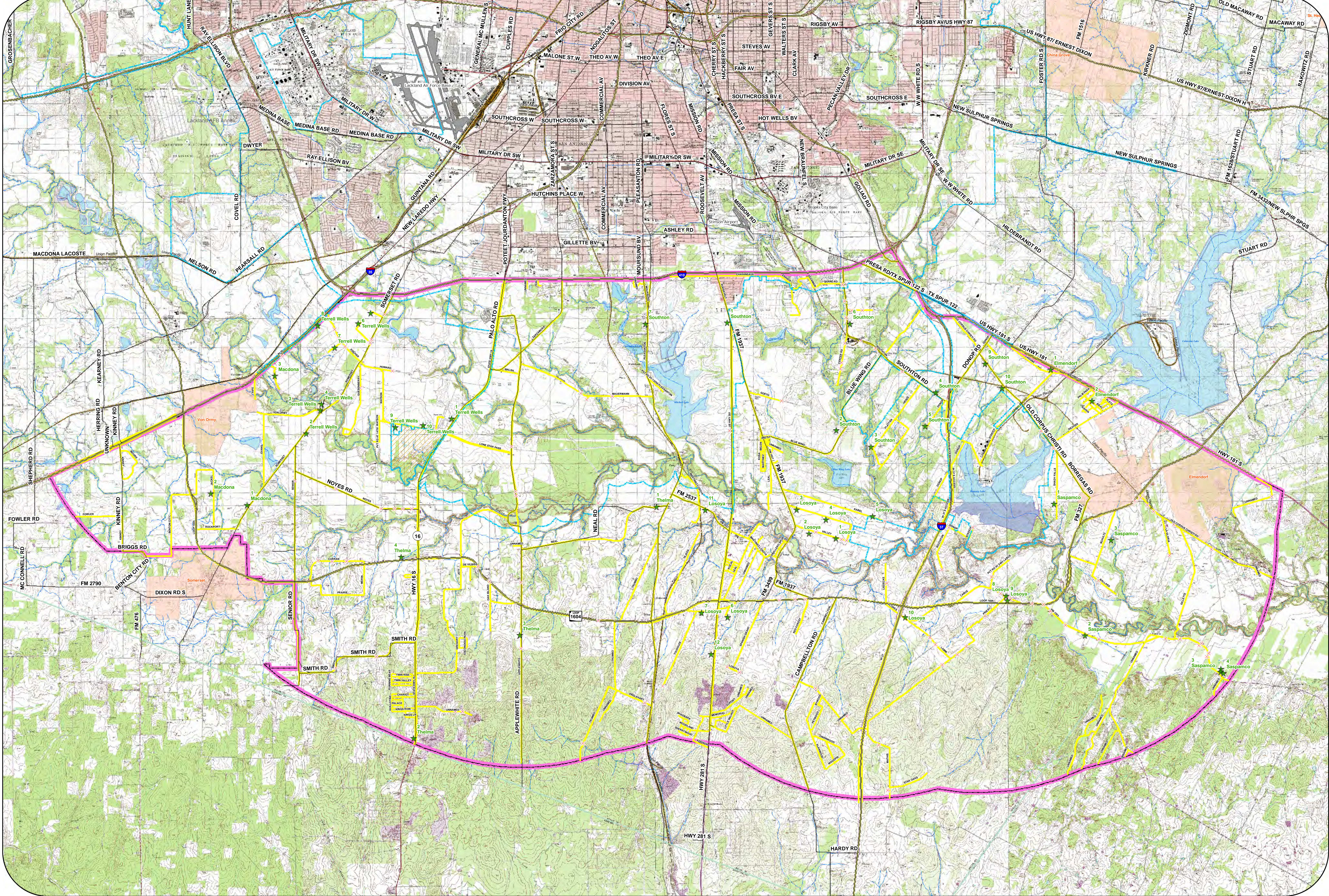


# Heritage South Sector

## 19th Century Vernacular Farm and Ranch



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×	No Access		Traveled Roads		City of San Antonio		Limited Purpose Annexation		Lakes
★	Site		Heritage South Sector		Cities and Towns		Bexar County		Rivers&Streams

## Heritage South Sector

### Late 19th/Early 20th Century Non-Vernacular Farm & Ranch Complexes

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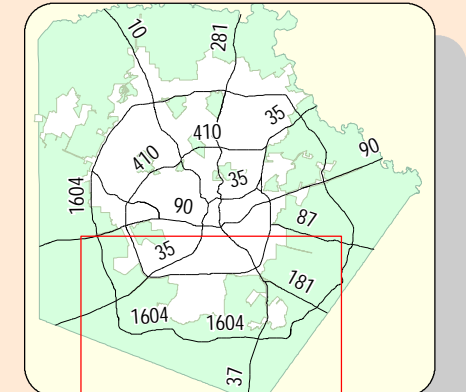
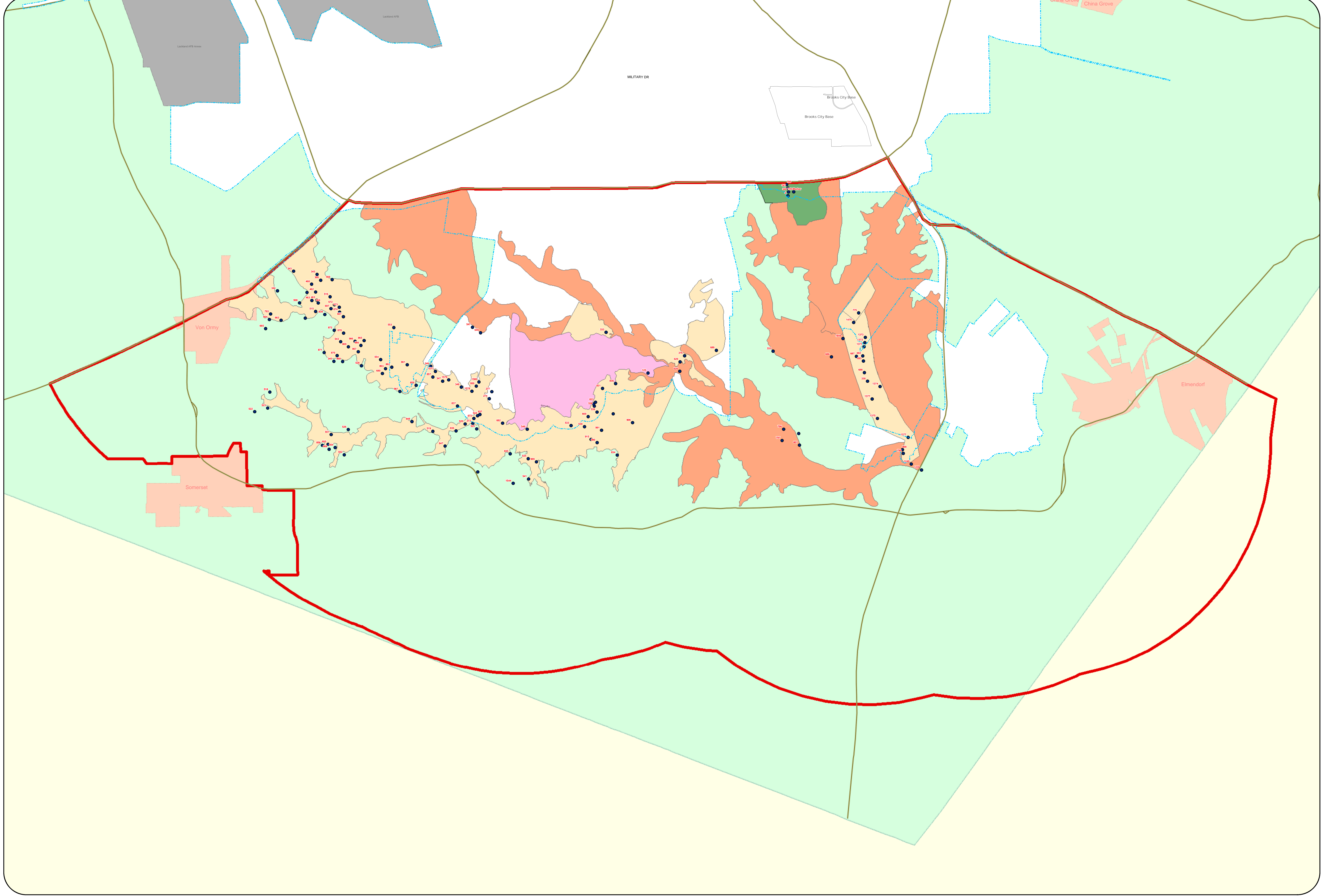
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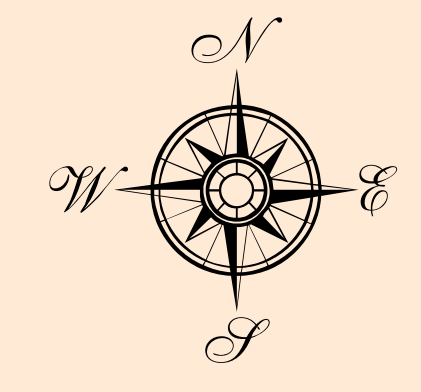
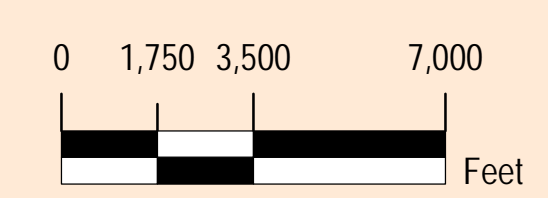


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 Map Created by: Gustavo Gutierrez  
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- Legend**
- Archaeology Sites
  - Cities and Towns
  - Military Bases
  - High Potential Area
  - NPS Lands
  - San Antonio
  - Bexar County
  - ~ Highways
  - Previously Surveyed Area
  - Toyota Properties

# Heritage South

## Archaeology Sites



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 Civil Motion Development and  
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 San Antonio, TX 78204

Table 1: Cultural Resources Located in City South

Site No.	Type of Site Description	Temporal Affiliation	Name Designation	Cultural materials present
41BX1239	not ava x	x	x	x
41BX1240	not ava x	x	x	x
41BX125	P open campsite	x	x	burned rock, mussel, flakes, chips
41BX1307	not ava x	x	x	x
41BX1371	P flaked stone scatter	unknown	x	Burned Rock
41BX1372	P flaked stone scatter	unknown	x	Flakes
41BX1373	P flaked stone scatter	unknown	x	Flakes
41BX1374	P/H farm and ranch complex	Prehistoric--unknown	x	Mason jars, appliances, ceramics, cores
41BX1375	P lithic scatter	x	x	Flakes, Leon Plain ceramics
41BX1377	P/H x	early to mid-20th century-H	x	Sparse lithic scatter; clear glass frag, ceramics, tin can, biface, cores
41BX1395	not ava x	x	x	x
41BX1413	not ava x	x	x	x
41BX1414	not ava x	x	x	x
41BX1415	not ava x	x	x	x
41BX1416	not ava x	x	x	x
41BX1417	not ava x	x	x	x
41BX1418	not ava x	x	x	x
41BX1427	not ava x	x	x	x
41BX1475	P x	x	x	Burned rock, mussel
41BX1544*	P lithic scatter	x	x	lithics, buried hearth feature, snails
41BX1577*	P x	Late Prehistoric/Neo-American		lithic debitage, burned rock, native ceramics
41BX1578*	P/H x	Late Prehistoric, Neo-American, Protohistoric, Historic	x	lithics, burned rock, ceramics, English whiteware, glass, Bone tempered ceramics
41BX1579	P surface scatter	x	x	lithics, burned rock, mussel
41BX1580	P surface scatter	x	x	lithic debitage
41BX226	not ava x	x	x	x
41BX273	H farm and ranch complex	late 19th century	Monk House	x
41BX274 *	P/H farm and ranch complex	Spanish Colonial ca. 1790	Lt. Col. Ygnacio Perez Stone Rancho	majolica, lead glazed wares, English whitewares, stoneware, bone tempered pottery, etc.
41BX330 *	P/H lithic scatter	Prehistoric/Historic	x	flakes, ceramic sherds incl. Native bone tempered ware (Goliad ware)
41BX331	P lithic scatter	x	x	flakes
41BX332	P lithic scatter	x	x	flakes
41BX333	P/H Intense occ./Historic structure	20th century-H	x	flakes, scrapers, biface frags, dart point
41BX340 *	P/H x	Historic Indian	x	burned rock, bone, porcelain, English ceramics, Native bone tempered pottery, chert, flakes, biface frag
41BX341	H x	x	x	Pottery, porcelain, metal, plaster, bone, mussel, glass
41BX343	P lithic scatter	x	x	1 biface frag
41BX344	P x	x	x	Guadalupe tool, uniface, lithic debris
41BX345	not ava x	x	x	x
41BX346	P/H lithic scatter	Early-Middle Archaic; Historic, early 20th century	x	Burned rock, lithic debris
41BX347	P/H lithic scatter	x	x	x
41BX348	P lithic scatter	x	x	lithic debitage, core
41BX350	P lithic scatter	x	x	lithic core
41BX368	P Lithic workshop, occupation	x	x	Native bone tempered pottery, projectile points (Gower and Frio), lithic debris, fire cracked rock, bifaces
41BX4 *	H historic kiln	Spanish Colonial	Espada Mission	x
41BX459 *	P extensive occupation	Archaic/Historic Indian	x	bone tempered ceramics, projectile points, lithic debris, fire cracked rock, bifaces
41BX460	P occupation workshop	x	x	cores, blades, bifaces, flakes
41BX461 *	P x	x	x	lithic debris, flakes, bifaces, bone tempered ceramics similar to Leon Plain
41BX462	P Lithic workshop, occupation	x	x	lithic debris, biface frag, cores, flakes
41BX463	P Lithic workshop, occupation	x	x	Burned rock flakes, cores, mussel
41BX464	P Lithic workshop, occupation	x	x	Burned rock, cores, lithic debris
41BX515	P lithic scatter	x	x	lithics, burned rock
41BX516	P lithic scatter	x	x	chipped stone, burned rock
41BX518	P lithic scatter	x	x	chipped stone, burned rock, possible Guadalupe tool
41BX519	H farm and ranch complex	early 20th century	x	x
41BX520	H dump	late 20th century	originally believed to be associated with Battle of Medina	"musket ball"
41BX522	P lithic scatter	x	x	x
41BX523	H x	mid-20th century, 1950's	x	historic brick scatter, metal, glass
41BX525	P/H x	Archaic	x	flakes, one Montell
41BX526 *	P x	x	x	Guadalupe tool, projectile point, bifaces, core tools, metate frag, lithic debris
41BX527 *	P/H farm and ranch complex	Archaic, Late Prehistoric, Protohistoric, Historic	Theodore Heermann barn and ruins	standing structures, lithics, mussel, ceramics
41BX528 *	P/H open campsite	Protohistoric, Historic Indian	ibid	Guerrero point, end scrapers, aboriginal ceramics, lead glazed ware, conch shell ornament, glass, hearths
41BX529 *	H cemetery	late-19th century	Heermann family cemetery, late 19th century	headstones

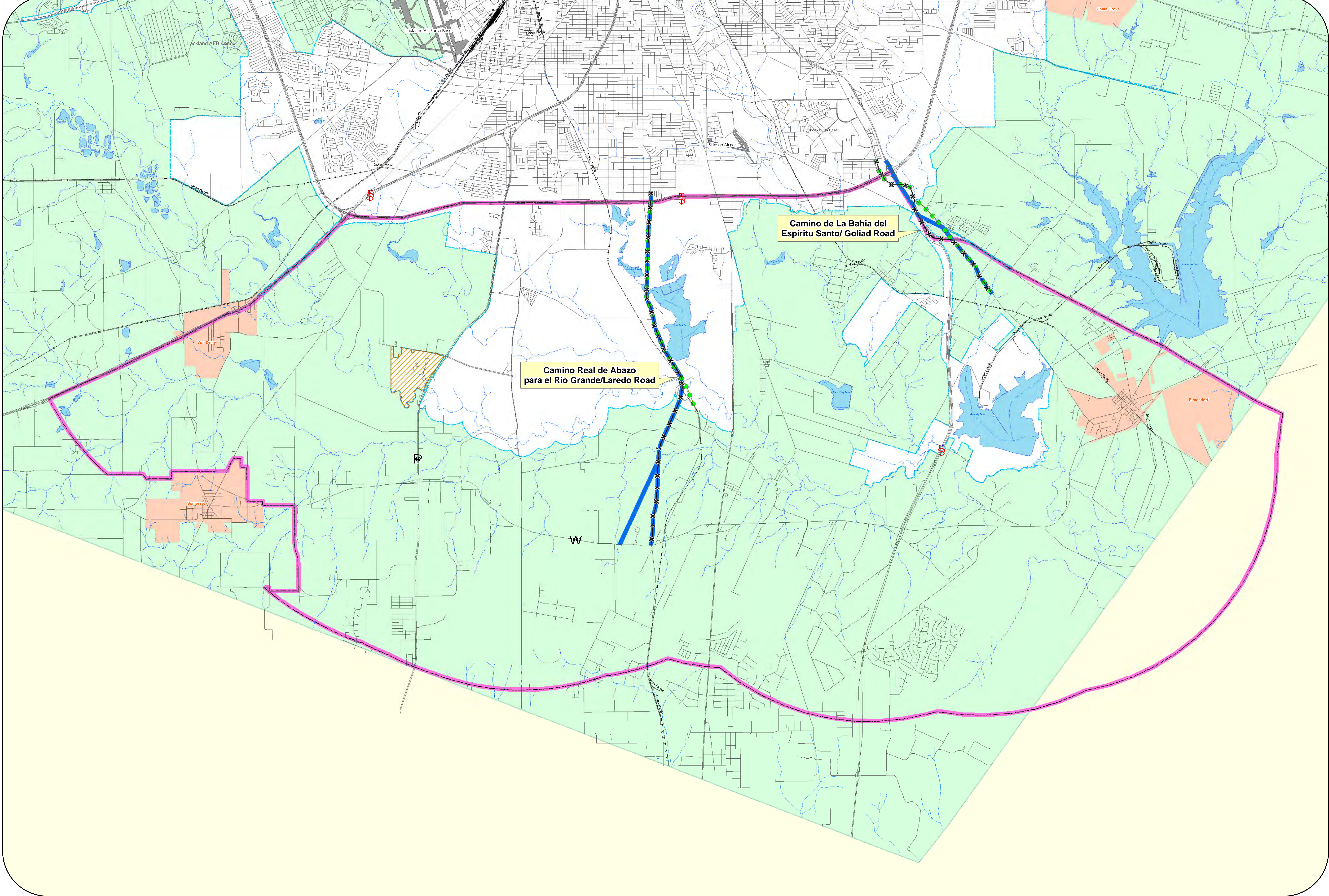
Table 1: Cultural Resources Located in City South

41BX530	P	x	x	x	lithic debris, Native bone tempered ceramics
41BX531	P	x	x	x	lithic debris, sandstone,
41BX533	P/H	x	x	x	x
41BX534	P	occupation site	x	x	ground/pecked stone, lithic debris, projectile point
41BX538 *	H	farm and ranch complex	mid-19th century to early 20th century	Presnall-Watson Complex	standing structures, faunal, ceramics, metal
41BX539	P	intensive occupation	x	x	x
41BX540 *	P/H	multifunctional occupation	H-early 19th century 1830-1860	x	lithic tools, projectile point, burned rock, historic ceramics, metal, glass
41BX541	H	x	x	x	x
41BX542	H	cemetery	late-19th century	Hernandez Cemetery	
41BX543	H	cemetery	late-19th century	Ruiz-Herrera Cemetery	graves of Francisco A. Ruiz, Blas Herrera, et al
41BX544		not ava x	x	x	x
41BX546	P	lithic scatter	x	x	x
41BX547	P	lithic scatter	x	x	x
41BX549 *	H	farm and ranch complex	mid-19th century, ca. 1855	Perez-Linn Complex	ceramics, metal, glass, faunal
41BX551 *	P/Proto	open campsite	x	x	burned rock concentration, chert flakes, mano, cores
41BX552	P	x	Archaic	x	lithic debris, dart point
41BX553	H	ruins	19th century	x	cut limestone and adobe ruins
41BX554	P/H	multi-functional	late 19th century-H	x	lithic debris, Guadalupe tool, ceramics, glass, metal
41BX567 *	P	occupation	Late Prehistoric	x	Clifton, Scallorn, Leon Plain ceramics, lithics
41BX568	P	lithic scatter	x	x	lithic debris, burned rock
41BX569	P	lithic scatter	x	x	lithic debris
41BX628	H	bridge	Bridge erected in 1910; Historic occ. Ca. 1885	Pleasanton Road/Medina River Bridge; Earle	bridge structure
41BX663 *	P	open campsite	x	x	chert cores, chopper, charcoal, snail, mussel
41BX664	H	farm and ranch complex	mid-19th century	Enoch Jones Complex; house 1855; barn may be SC	redware, English whitewares, stoneware, metal, glass, shell
41BX665 *	P	extensive occupation	Late Archaic to Late Prehistoric	x	x
41BX667 *	H	cemetery	mid-19th century	Santissima Trinidad Cemetery early-late 19th century	headstones
41BX668	P	open campsite	Middle Archaic	x	lithic debris, burned rock
41BX669 *	P/H	historic ruins	mid-19th century	Applewhite/Stolte Home	P-lithics, Native ceramics, historic ceramics, glass, redware, shell, bone
41BX670 *	H	farm and ranch complex	early-mid 19th century	Blas Herrera and Maria Josefa Ruiz Herrera Home	adobe palisado house, redware, stoneware, porcelian, glass, metal, faunal
41BX672 *	H	farm and ranch complex	early-mid 19th century	Blas Herrera and Jose Maria Ruiz Herrera houses	standing structures--adobe palisado
41BX673	H	farm and ranch complex	early-mid 19th century	Miguel and Jacoba de la Garza homesite late 19th century	no standing structures
41BX674	H	church location	mid-19th century	Santissima Trinidad Church location	no standing structures
41BX675	H	cemetery	mid-19th century	Louisiana Thompson grave	headstones
41BX680	H	crossing	Spanish Colonial	Paso del Talon	x
41BX682	H/C	crossing	Spanish Colonial	Dolores/Perez/Applewhite Crossing	x
41BX686	P	Quarry resource area	x	x	flakes
41BX687	P/H	Lithic scatter	x	x	lithics, burned rock, projectile point, flakes, horseshoe, glass
41BX688	P/H	Lithic concentration	x	x	Chert, burned rock, lithics
41BX689	P/H	lithic procurement site	x	x	lithic debitage, metal frags, ceramics, glass, stoneware, wire
41BX691	P	Lithic scatter/procurement	x	x	flakes, chert cobbles
41BX692	P	Pleistocene fauna	x	x	horse teeth and other Pleistocene faunal remains
41BX693	P	x	x	x	Fossilized bone frags
41BX697	H	crossing	Spanish Colonial	Paso de la Garza's	x
41BX706	P	open campsite	x	x	x
41BX793	P	x	x	x	flakes, fire cracked rock, snail, organics
41BX796		not ava x	x	x	x
41BX797		not ava x	x	x	x
41BX799		not ava x	x	x	x
41BX800		not ava x	x	x	x
41BX801		not ava x	x	x	x
41BX801		not ava x	x	x	x
41BX830	H	farm and ranch complex	late-19th early 20th century	Miller Complex	
41BX831	P/H	farm and ranch complex	structure ca. early-20th century	x	post 1920's whiteware, stoneware, glass, Mexican lead glazed ware
41BX833	P/H	occupation;possible grave	P-Archaic; H-possible grave	x	projectile point, biface frag
41BX834	P	lithic scatter	Archaic	x	projectile point, biface frags
41BX835	P	lithic scatter	x	x	x
41BX836	H	rock art	ca. 1709	Rock Art Site	petroglyphs, 1704-20th century
41BX837	P/H	campsite; farm and ranch	late 19th to early 20th century	Hiriam J. Thompson Complex	20th ceramics, no standing structure, stonewares
41BX838	P/H	lithic scatter-P; farm and ranch-	early 20th century	x	bottle glass, ironstone, whiteware, metal, marble, shell button
41BX847	P/H	open campsite	x	x	burned rock, mollush shell, heavy lithic scatter
41BX848	P	open campsite	x	x	x
41BX854	P	x	Late Prehistoric, Archaic	x	debitage, sandstone, mussel shell, projectile point
41BX855	P	open campsite	x	x	x

Table 1: Cultural Resources Located in City South

41BX856	P	open campsite	x	x	bifaces, flakes, burned rock
41BX857	H	crossing	Spanish Colonial	Sabinitas/Palo Alto Crossing	
41BX859	H	farm and ranch complex	20th century	McOsker Farmstead	farm items, brick 1924, glass, wire nails, ceramics
41BX861	P	open campsite	x	x	debitage, mussell shell, burned rock
41BX862	P	surface scatter	x	x	burned rock cluster, debitage, possible hearth
41BX863 *	P/H	open campsite; domestic	early to mid 19th century	x	redwares, Mexican lead glazed, unglazed Mexican pottey, glass, metal incl. Lead shot, lead balls, military button
41BX865 *	P/H	farm and ranch complex	Spanish Colonial	x	lead glazed, Bennington, glass, etc. jacal remains
41BX866	P/H	open campsite, farm and ranch	early-mid 20th century on Historic	x	x
41BX867	H	farm and ranch complex	late 19th century	Perrin House	
41BX868	P/H	open campsite	Historic--early 19th century	x	x
41BX869	H	farm and ranch complex	late 19th century		ruins
41BX870	H	crossing	Spanish Colonial	Paso del Talon area	x
41BX871 *	P	x	Late Prehistoric	x	ceramics, shell, debitage
41BX872 *	P/H	occupation	Historic Indian, early 19th century	x	burned rock, possible historic hearth, historic bead, shell, Mexican lead glazed wares
41BX915	P	open campsite	Early Archaic	x	scattered sandstone, chert flakes
41BX916	P	open campsite	Archaic	x	fire cracked rock, chert flakes,
41BX961	P	temporary occupation site	x	x	lithic debris, burned rock frags
41BX986	H	ruins and farm and ranch compl	early-mid 20th century on Historic	x	x
41BX987	H	farm and ranch complex	20th century, 4 bldgs. In 1938, 2 standing in 1989	x	
41BX989	H	farm and ranch complex	mid-20th century	x	20th century ceramics, glass
41BX990	H	x	mid-20th century	x	Depression era glass, whitewares, bottle frags
41BX991	H	farm and ranch complex	early 20th century	x	early pressed brick, cut nails, bottle glass
SHM1192 *	H	church and cemetery	mid-19th century	Oak Island Methodist Church and Cemetery	
x	* H	farm and ranch complex	early-mid 19th century	James Truehard Home	
x	* H	cemetery	mid-late 19th century	Esparaza Family Cemetery	
x	* H	church and cemetery	mid-late 19th century	El Carmen Catholic Church and Cemetery	
x	* H	cemetery	x	Mitchell/Mauerman Cemetery	contains graves of Asa Mitchell and Gus Mauermann family
41BX	* H	mission	Spanish Colonial mission	Espada Mission	
x	* H	irrigation ditches	early 20th century	Medina Irrigation System	irrigation ditches
41BX277 *	H	cemetery	mid-19th century	Perez family cemetery	contains the graves of Perez family members
x	* H	Espada acequia	Spanish Colonial waterway	Espada Acequia	channel





	Heritage South Sector		City of San Antonio		Cities and Towns		Limited Purpose Annexation		Bexar County		Lakes		Rivers & Streams					
<table border="0" style="width: 100%; text-align: center;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;"></td> <td style="width: 33%;"></td> </tr> <tr> <td>1764</td> <td>1835</td> <td>1868</td> </tr> </table>																1764	1835	1868
1764	1835	1868																

8

## Heritage South Sector Historic Trails

Data Source: City of San Antonio Enterprise GIS, Bexar Metro 911, Bexar Appraisal District

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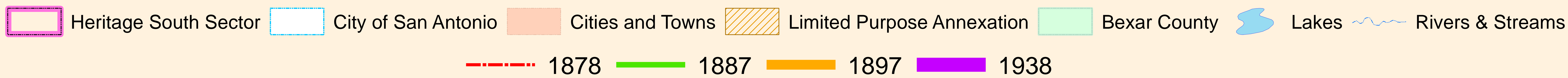
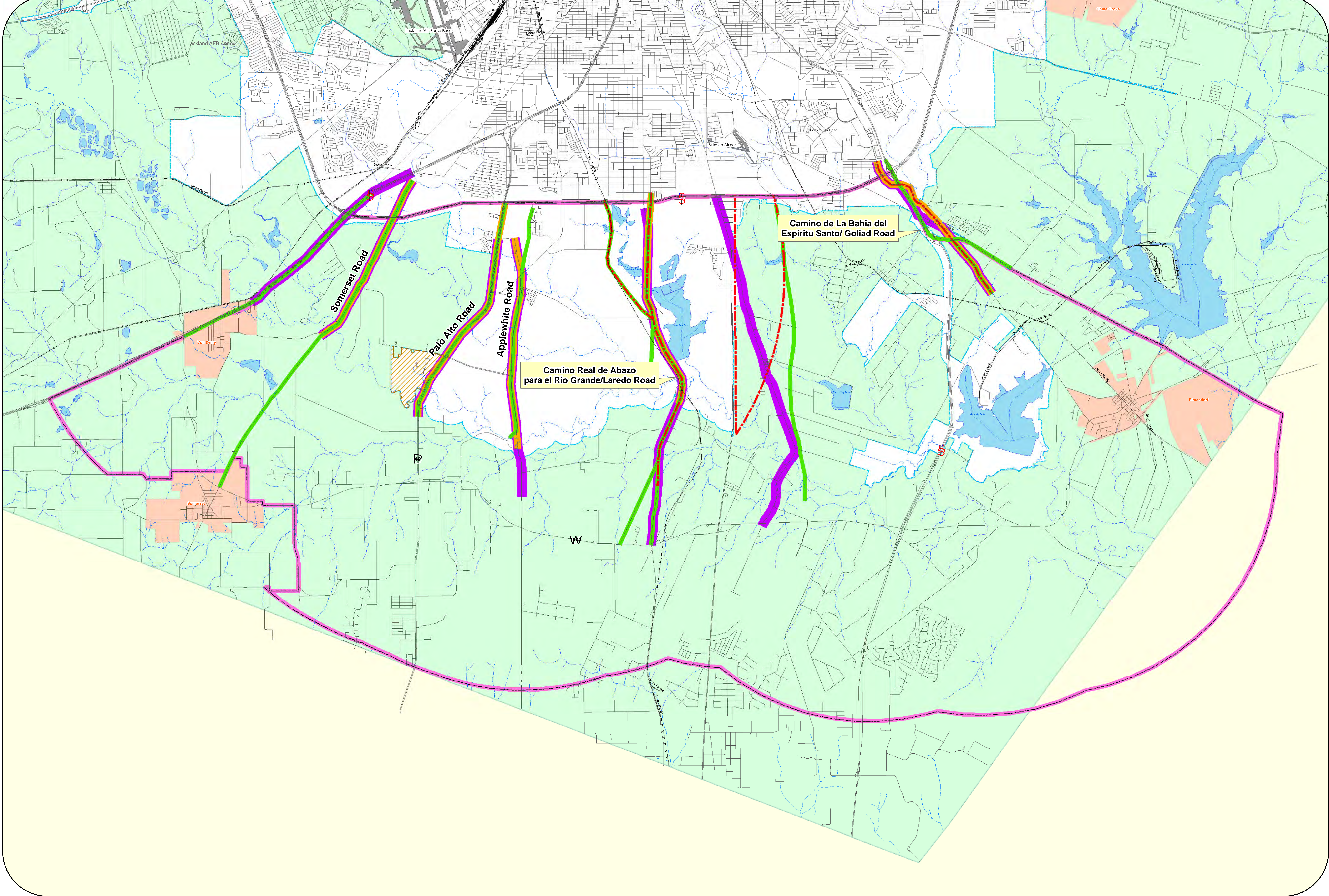
Map may be ordered at (210) 207-8301

Map Creation Date: April 2, 2013

Map File Location: W:\GIS\BIA\BIA\_Historic\_Trails.mxd

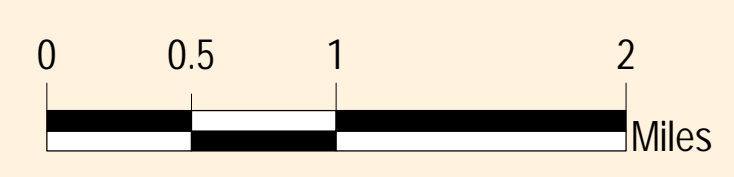
PDF Filename: 1304G001.pdf

**City of San Antonio**  
 Cliff Morton Development and  
 Business Services Center  
 1301 S. Alamo  
 San Antonio, TX 78204



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# Heritage South Sector Historic Trails



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