

**Exhibit 2.5.b Environmental Considerations: Topography**

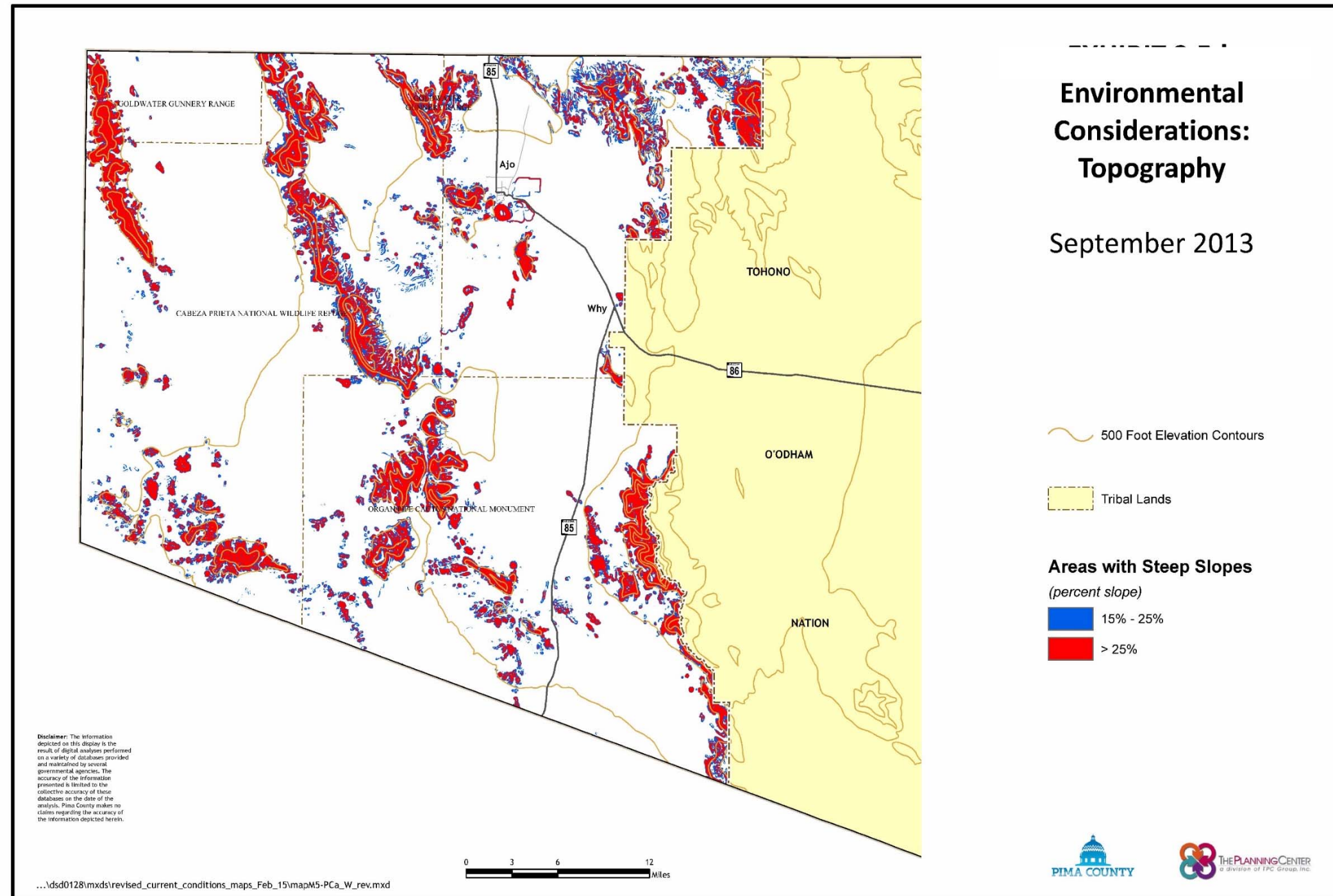
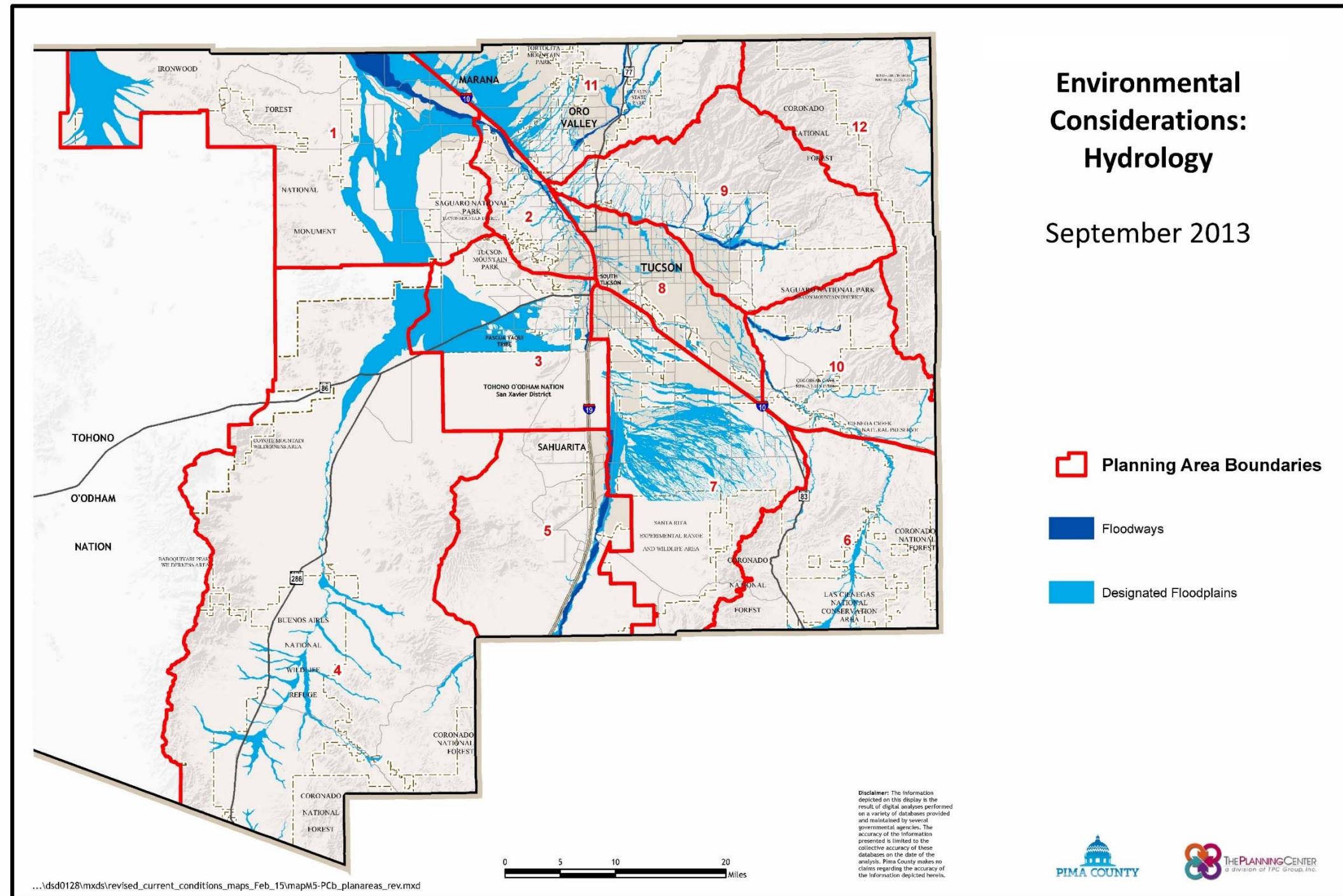


Exhibit 2.5.c Environmental Considerations: Hydrology





**Exhibit 2.5.d Environmental Considerations: Hydrology**

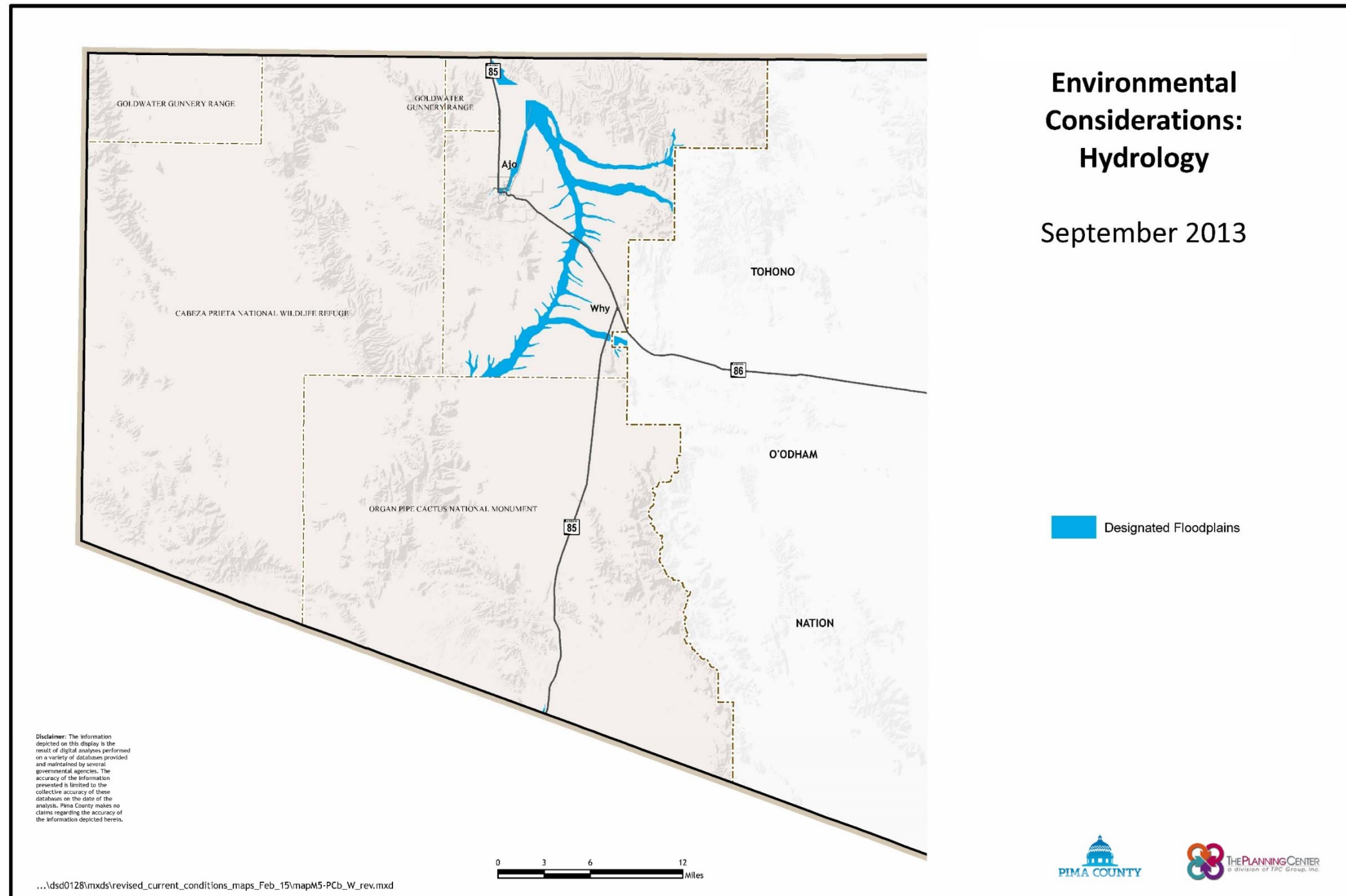
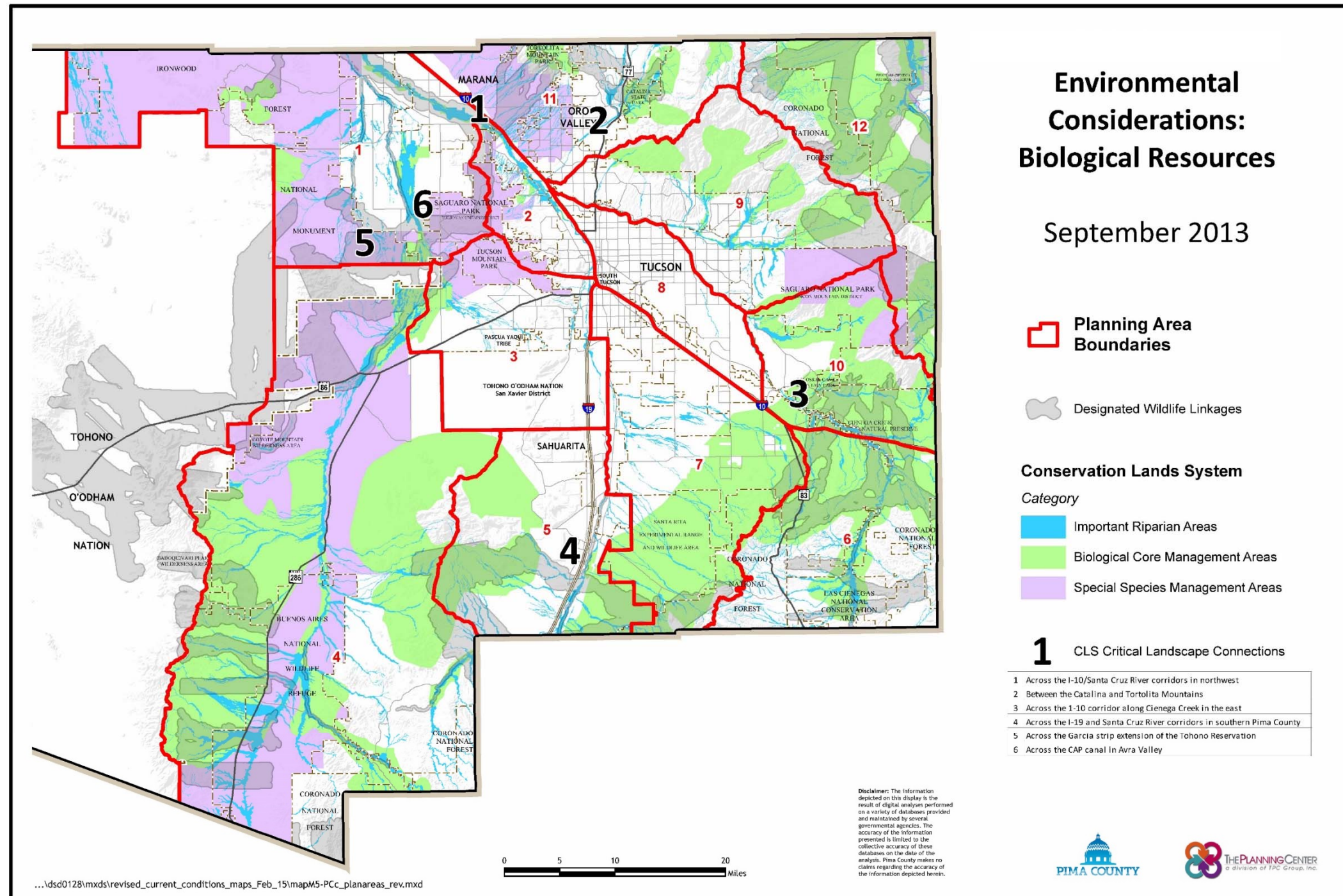
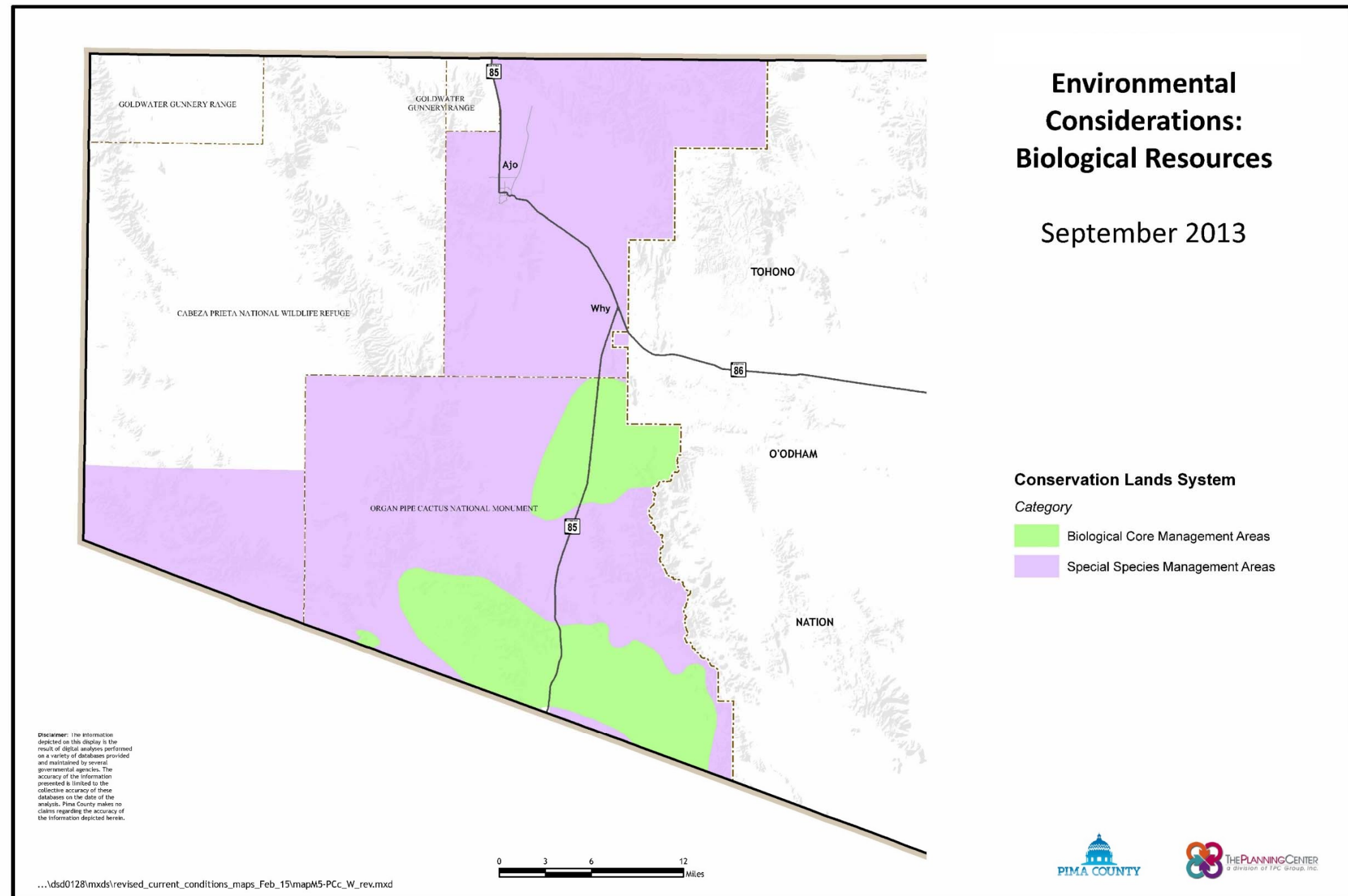


Exhibit 2.5.e Environmental Considerations: Biological Resources





**Exhibit 2.5.f Environmental Considerations: Biological Resources**



# Use of Land

## Chapter 3: Use of Land Distribution, Analysis, and Current Conditions



### Key Subjects:

- ✓ Land Use Distribution
- ✓ Community Development and Neighborhood Capacity
- ✓ Open Space
- ✓ Environmental
- ✓ Housing and Community Design
- ✓ Cultural Resources

### Important Notes:

1. At the time of the preparation of the infrastructure study that served as the core of this background document, the Tohono O’odham Nation was treated as a planning area for statistical purposes only. The Tohono O’odham Nation is a sovereign nation, and though the County recognizes the importance of the Nation to the region, the County has no jurisdiction over the Nation.
2. With the exception of Exhibits 3.1.a and 3.1.b depicting planning areas, all other Exhibits referenced in this chapter are included at the end of this chapter.

### 3.1 Land Use Distribution

Based on 2012 data, this section summarizes existing land use distribution by planning area. The County's 13 planning areas are very diverse. For example, land use in the Avra Valley planning area is dominated by agricultural land, while the Catalina Foothills planning area is made up primarily of single-family homes.

Exhibits 3.1.a and 3.1.b, included in the following pages, show the County planning areas.

Exhibits 3.1.c and 3.1.d, included at the end of this chapter, show existing land uses.



Exhibit 3.1.a: Pima County Planning Areas (East)

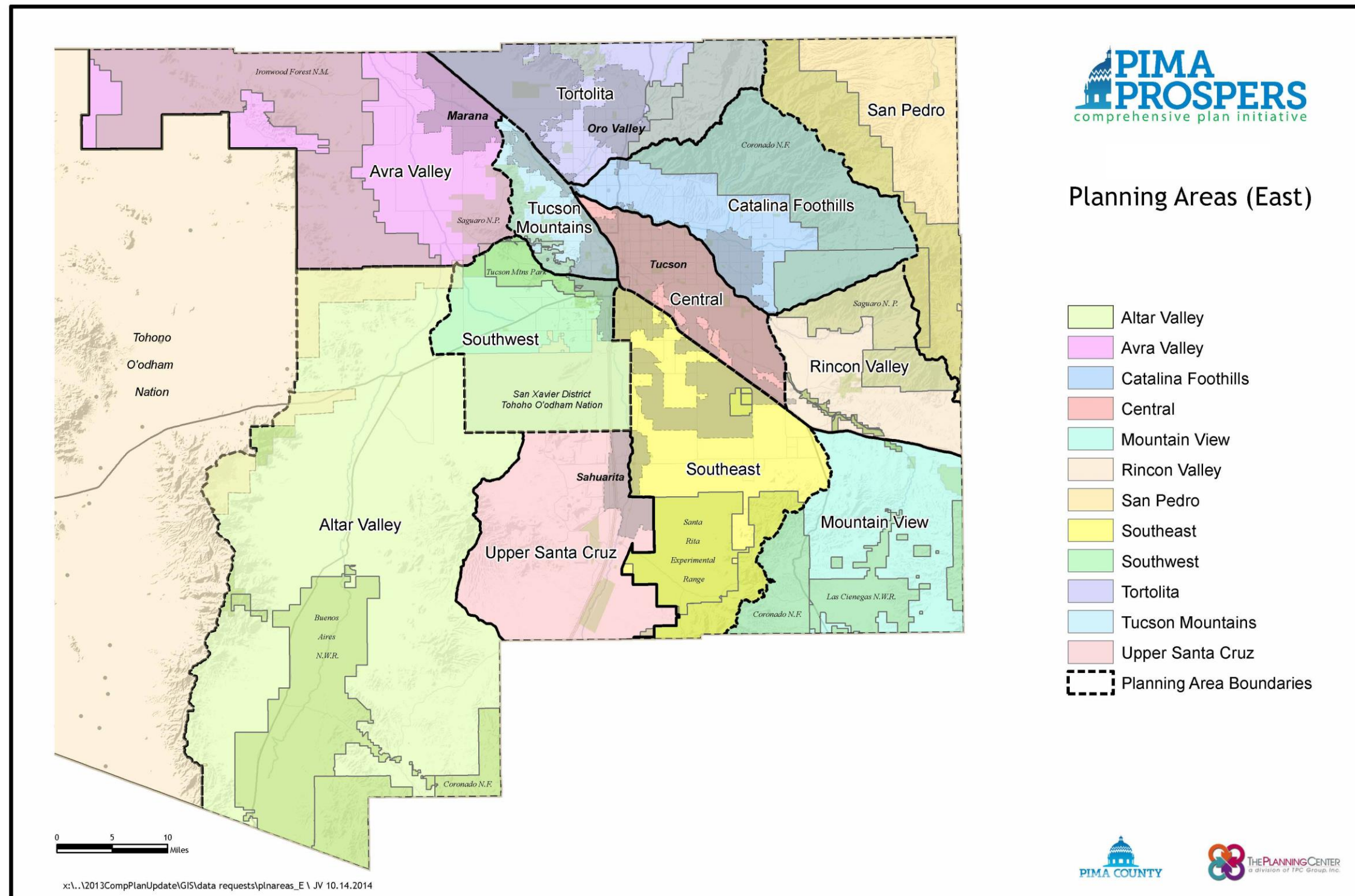
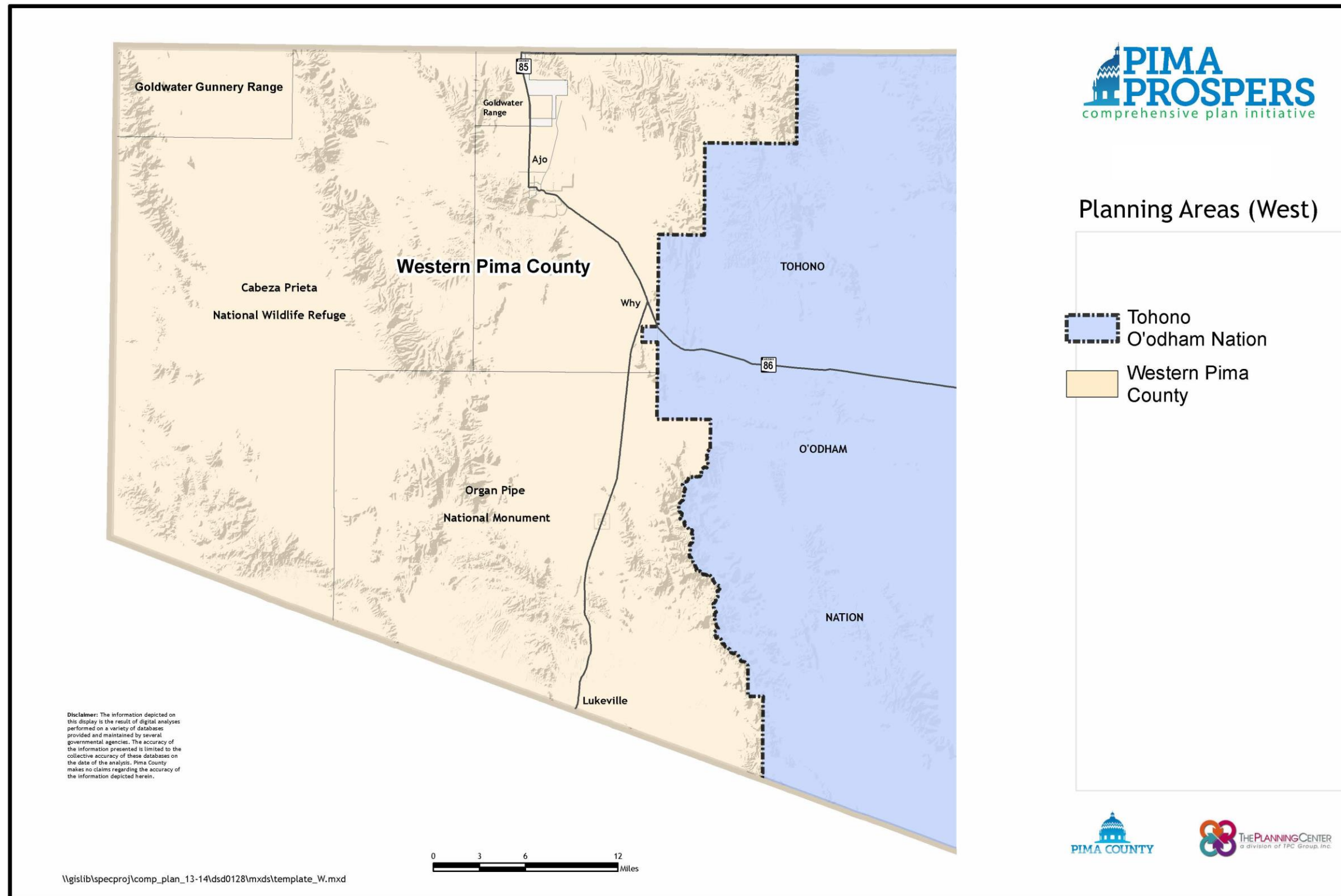




Exhibit 3.1.b: Pima County Planning Areas (West)



## Existing Land Uses by Planning Area

For the purposes of existing land use distribution and analysis, this chapter focuses on the County's 13 planning areas. The totals include the Tohono O'odham Nation for statistical purposes, but that area is not being planned for by Pima Prosper.

**TABLE 3.1.a: Existing Land Use Acreage by Planning Area**

Planning Area	Agricultural	Single-Family Residential	Multi-Family Residential	Manufactured Homes	Commercial and Office	Industrial	Parks	All Other Land Uses
1. Avra Valley	40,911.20	7,002.07	394.19	9,006.04	2,729.09	490.38	4,379.88	6,980.02
2. Tucson Mountains	1,163.78	14,185.37	1,335.96	279.12	1,744.18	812.92	543.28	2,554.25
3. Southwest	1,640.84	8,763.67	591.68	6,755.75	1,776.01	197.96	135.62	3,085.46
4. Altar Valley	67,451.46	9,429.32	5.57	4,263.39	564.36	0.00	11.18	4,592.67
5. Upper Santa Cruz	38,507.89	9,640.61	2,287.82	2,334.99	3,927.63	235.40	21.96	24,810.73
6. Mountain View	7,767.15	3,742.84	2.00	484.71	643.10	0.00	496.68	12,440.04
7. Southeast	17,735.17	8,173.24	2,705.66	6,245.24	4,840.53	1,888.36	96.65	3,477.93
8. Central	162.45	13,510.17	4,174.71	1,754.95	8,365.79	3,219.68	2,143.94	6,789.06
9. Catalina Foothills	781.17	41,284.92	5,201.63	323.45	5,135.25	102.53	428.43	3,034.03
10. Rincon Valley	11,767.89	7,496.90	628.35	1,597.98	983.99	359.43	1,212.12	1,385.25
11. Tortolita	9,206.56	18,868.15	4,557.06	2,324.58	5,472.12	188.78	85.02	2,762.71
12. San Pedro	11,406.96	704.10	0.00	24.80	264.02	0.00	0.00	0.00
13. Ajo-Why	Data not available							
<b>Total All Planning Areas:</b>	<b>208,502.52</b>	<b>142,801.37</b>	<b>21,884.61</b>	<b>35,394.99</b>	<b>36,446.07</b>	<b>7,495.45</b>	<b>9,554.76</b>	<b>71,912.15</b>
<b>Total County:</b>	<b>209,728.46</b>	<b>144,199.14</b>	<b>21,903.23</b>	<b>35,741.58</b>	<b>36,616.68</b>	<b>7,496.63</b>	<b>10,192.71</b>	<b>85,863.91</b>

Source: Pima County Information Technology Department, Geographic Information Systems, 2012

\* The totals include the Tohono O'odham Nation for statistical purposes, but that area is not being planned for by Pima Prosper.

### Avra Valley Planning Area (1)

Within the Avra Valley planning area, 24.3 percent (77,028 acres) is developed (i.e. non-vacant which includes agricultural and ranching lands). Of the 239,520\* acres of vacant land in the planning area, 57.6 percent is federally owned, 31.2 percent is state owned, 6.6 percent is privately owned, 3.3 percent is municipally owned, 1.2 percent is county owned and .12 percent is owned by the Tohono O'odham Nation.



The major undeveloped areas are: 1) federal lands (Ironwood Forest National Monument and Saguaro National Park); 2) large areas of state-owned lands from N. Trico Road and W. Marana Road southeast along N. Silverbell Road, near Avra Valley Road and Sandario Road, two large parcels along N. Anway Road north and south of W. Avra Valley Road, within the Ironwood Forest National Monument and along the Central Arizona Project (CAP); and 3) large parcels owned by the City of Tucson primarily for well fields and other privately owned parcels scattered between the state land parcels.

The unincorporated areas of more intense, existing residential development are surrounding the Picture Rocks Road area, Anway Road and W. El Tiro Road south to W. Avra Valley Road and is low-density residential. The area near N. Anway Road and Manville Road is slightly more dense. The planning area also includes the Central Arizona Project (CAP) and the Marana Regional Airport. There are also higher intensity areas within the Town of Marana west of Interstate 10. Large agricultural areas exist north towards the Pima/Pinal county line.

### **Tucson Mountains Planning Area (2)**

Within the Tucson Mountains planning area, 26,183 acres (51.7 percent) are developed/non-vacant (includes agricultural and ranching lands). Of the vacant land (24,432 acres or 48.2 percent of the total area) 13.6 percent is County-owned, 11.8 percent is federally owned, 4.4 percent is municipally owned, 16.5 percent is privately owned, and 2 percent is state owned. The major undeveloped areas are the Santa Cruz River floodplain, Saguaro National Park, Tucson Mountain Park, Sweetwater Preserve, Greasewood Park, the area surrounding Pima College west, and Sentinel Peak/Tumamoc Hill. The areas of more intense residential development are the Continental Ranch development within the Town of Marana, the Rancho del Cerro and Agua Dulce Subdivisions within unincorporated Pima County, and higher-density development within the City of Tucson, particularly east of Greasewood Road and south of Goret Road, along Silverbell Road, in the Menlo Park area, and at the major intersections of Silverbell Road at St. Marys Road, Speedway Boulevard, and Grant Road.

### **Southwest Planning Area (3)**

The eastern portion of this planning area has been largely developed (typically accounting for eight percent of County permits) yet still has measurable infill potential. The northwestern portions are more prone to flooding issues and difficult to serve with wastewater facilities. Areas along the Ajo Road and Valencia Road corridors can sustain higher densities (flood control and drainage concerns permitting). Land ownership is widespread and diverse, including federal government, the State of Arizona, Pima County, the Arizona Board of Regents, and Tribal Nations. Private land ownership is not significant in terms of large, undeveloped parcels. Some of the owners are anticipated to release all or portions of their property to development. A total of 17,260 existing dwelling units were identified in this planning area.

The planning area includes or abuts several large, national and regional parks such as Saguaro National Park West, Tucson Mountain Park, Saginaw Hill Regional Park and Robles Pass Trails Park. There are also seven neighborhood, district and community parks within the Pima County park system.

### **Altar Valley Planning Area (4)**

Within the Altar Valley planning area, 84,200 acres (11.8 percent) are developed/non-vacant (includes agricultural and ranching lands). Most of the planning area is undeveloped including ranching/agricultural uses or natural open space.

Of the vacant land (628,263 acres) 56.1 percent is state-owned, 29.8 percent is federally owned, 8.6 percent is owned by the Tohono O'odham Nation, 1.8 percent is county owned, and 0.5 percent is municipally owned. Most of the planning area is undeveloped with the following exceptions, which are areas of more intense, primarily residential development:

- Diamond Bell Ranch subdivisions
- Unplatted GR-1 zoned residential areas
- Three Points
- Arivaca

Commercial development is limited to Three Points and Arivaca.

### **Upper Santa Cruz Planning Area (5)**

Within the Upper Santa Cruz planning area, 89,676 acres (51 percent) are developed/non-vacant (includes agriculture and mining lands). Most of the built areas (12 percent of the total area) occur along Interstate 19 (I-19) within the Canoa Land Grant boundary from the Town of Sahuarita extending south and including Green Valley with additional development further east of I-19 in Quail Creek and Continental and at the southern tip of I-19 within the planning area in Amado (a.k.a. Arivaca Junction). Outside of this I-19 corridor is predominantly low-intensity rural land use, mining, and agriculture. Agriculture and mining combined equal approximately 75 percent of the developed/non-vacant land and 38 percent of all land within the planning area. The southern half of the Canoa Ranch land grant on the east side of I-19 is primarily open space.

The areas of more intense residential uses mixed with limited commercial and office uses are: (1) Green Valley on the west side of I-19 within the Canoa Land Grant boundary north of the Escondido Wash, (2) Green Valley and Continental on the east side of I-19 within the Canoa Land Grant boundary beginning at the southern end of the Torres Blancas Golf Course extending north to the Town of Sahuarita, (3) the Town of Sahuarita including the master planned communities of Rancho Sahuarita and Quail Creek, and to a lesser degree, (4) Amado, Montana Vista, and Elephant Head.

### **Mountain View Planning Area (6)**

Within the Mountain View planning area, 16.3 percent (29,884 acres) is developed/non-vacant (includes agricultural and ranching lands). Of the vacant land, (153,928 acres) 53.1 percent is state owned, 36.9 percent is federally owned, 6.1 percent is County-owned, and 3.8 percent is privately owned.



This planning area is very sparsely developed and where developed is by large lot, single-family residential. The areas of such development are along Old Sonoita Highway near E. Mesquite Mesa Trail and near Hilltop Ranch Road. There is an area of SH zoning near I-10 and the Pima/Cochise County line and an area zoned GR-1 near the I-10 and Sonoita Highway intersection. Otherwise the planning area is zoned IR (Institution Reserve) for government owned parcels and RH (Rural Homestead) with a minimum lot size of 4.1 acres. The planning area includes the Las Cienegas National Conservation Area which includes the Empire Ranch and the Coronado National Forest.

### **Southeast Planning Area (7)**

Within the Southeast planning area, 52,940 acres (24 percent) are developed/non-vacant. Most of those developed/non-vacant lands occur north of an east-west boundary established by the Old Vail Connection alignment. North of this alignment, are industrial and urban intensity residential uses. South of the alignment, rural, low intensity residential use is the predominant use. Within this rural area, however, there are significant pockets where more intense residential uses, both built and planned, occur.

Privately-owned lands (70,344 acres) constitute 32 percent of the planning area. Save a few acres within the Tohono O'odham Nation (San Xavier District), the balance of this planning area (30,332 acres; 13.7 percent) is owned by the federal government, specifically the U.S. Forest Service and Bureau of Land Management. By jurisdiction, 20 percent (43,304 acres) is within the City of Tucson, 2 percent (4,639 acres) is within the Town of Sahuarita, and 42 percent (93,214 acres) is within unincorporated Pima County. A negligible amount of this planning area (22 acres) is a small portion of the City of South Tucson.

The areas of more intense residential uses are: (1) Swan Road and Singing Cactus Lane (Swan Southlands Specific Plan), and (2) S. Houghton Road and Camino del Toro (Corona de Tucson, Santa Rita Ranch, Sycamore Canyon, New Tucson). Large, undeveloped tracts of land owned by Arizona State Land and federal land management agencies have significantly influenced the existing development pattern of privately owned property. This influence is not expected to change in the next 20 or more years.

### **Central Planning Area (8)**

Within the Central planning area, 50,862 acres (64 percent) are developed/non-vacant (includes agricultural and ranching lands). Most of the planning area is built with scattered exceptions throughout the planning area. Of the vacant land (29,026 acres), 4 percent is County-owned, 13.4 percent is federally owned, 21 percent is municipally owned, 23 percent is privately owned, and 38.3 percent is state owned. The major undeveloped area is located southeast of roughly Camino Seco and Irvington Road, a large portion (10,800 acres) of which is the Houghton Area Master Plan (HAMP) adopted by the City of Tucson on June 7, 2005. The largest portion (76 percent) of HAMP is owned by the Arizona State Land Department.

The areas of more intense residential development are at main intersections and along major roads, particularly north of Speedway Boulevard and south of 22nd Street including the Rita Ranch development, but with the exception of the area around Davis Monthan Air Force Base (DMAFB) and in the southeastern

portion of the planning area. Commercial development is concentrated along Interstate-10, along major roads particularly Oracle Road north of Grant Road, along Broadway Boulevard from Swan Road to Wilmot Road, and all along Speedway Boulevard.

Within unincorporated Pima County, a relatively intense commercial area exists west of DMAFB and south of 36th Street near Palo Verde Road. Additionally, the University of Arizona Science and Technology Park, the Target distribution center, and a canning facility are located near Interstate 10 and Rita Road.

### **Catalina Foothills Planning Area (9)**

Within the Catalina Foothills planning area, 66,502 acres (33.3 percent) are developed/non-vacant (includes agricultural and ranching lands). Of the vacant land (133,896 acres or 66.8 percent of the total area) 90.2 percent is owned by the federal government (primarily Coronado National Forest), 8.0 percent is privately owned, 3.7 percent is state owned, 1.2 percent is County owned and .5 percent is municipally owned.

The major undeveloped areas are the Coronado National Forest, the major washes (Rillito River, Tanque Verde Wash and Pantano Wash) and their tributaries, Saguaro National Park, and a few isolated, privately-owned parcels.

The Catalina Foothills are predominantly one residence per acre (RAC) development. North of Oracle Jaynes Station and west of Shannon Road are higher 3-4 RAC developments with scattered spots of dense residential development along Oracle Road and Ina Road. East of Oracle Road, the area is overwhelmingly one residence per acre. Higher residential densities of approximately seven residences per acre are found along majors and some cluster-type developments (e.g. Sunrise Ridge and Sunrise Presidio Townhouses, Sabino Springs) are built along major routes. There are some scattered, isolated parcels that remain undeveloped in the planning area, with the exception of some larger parcels of mostly .3 – 1 RAC density located east of Catalina Highway. On the east side of the planning area and south of Tanque Verde Road is mainly .3 – 1 RAC development. There are scattered nodes of commercial development at major intersections throughout the planning area, with the exception of the far eastern portion where commercial development is scarce. Industrial development is essentially non-existent.

### **Rincon Valley Planning Area (10)**

Within the Rincon Valley planning area, 24.8 percent (30,304 acres) is developed (i.e. non-vacant which includes agricultural and ranching lands). Of the 91,858 acres of vacant land in the planning area, 42 percent is federally owned, 39 percent is state owned, 11 percent is privately owned, 8 percent is County owned, and less than 1 percent is municipally owned. The major undeveloped areas are: 1) federal lands (Saguaro National Park and Coronado National Forest (Rincon Mountains)); 2) state lands surrounding the area of Pistol Hill Road and Old Spanish Trail, scattered around Marsh Station Road, and large parcels east of Marsh Station Road; 3) privately-owned parcels including the mostly undeveloped Rocking K project and other lands scattered between state land parcels. The unincorporated areas of more intense, existing residential development are the Garrigans Gulch area, Rancho del Lago and Vail areas.



### **Tortolita Planning Area (11)**

Within the Tortolita planning area, 31 percent (46,163 acres) is developed (i.e. non-vacant which includes agricultural and ranching lands). Of the 104,288 acres of vacant land in the planning area, 43 percent is federally owned, 34 percent is state owned, 17 percent is privately owned, 4.5 percent is County owned, and 1 percent is municipally owned. The major undeveloped areas are: 1) federal lands (Coronado National Forest – Catalina Mountains); 2) state lands particularly north of the Rancho Vistoso development and east of the Lago del Oro Parkway, and to a lesser extent 3) privately-owned parcels planned for low-density residential development located north of Linda Vista Boulevard. The unincorporated areas of more intense, residential development are south of Linda Vista Boulevard.

### **San Pedro Planning Area (12)**

Within the San Pedro planning area, 28,538 acres (16.4 percent) are developed/non-vacant (includes agricultural and ranching lands). Of the vacant land (67,838 acres) 46.5 percent is state-owned, 45.3 percent is federally owned, 4.8 percent is county owned, and 2.8 percent is privately-owned. Development of the planning area is limited to several ranches along the San Pedro River.

San Pedro's population is small compared to all other planning areas. The planning area had a population of 137 and 107 in 2000 and 2010, respectively. This planning area experienced at 22 percent decrease in population in the same time frame. This is the only planning area that experienced a decrease in population from 2000 to 2010.

This planning area is characterized as very rural with mostly ranching, farming and rural-residential uses. It is located on the east side of the Catalina Mountains and disconnected from the metropolitan area. With an area of 272 square miles, this planning area had a population density of one person per square mile in 2000, and in 2010. Accounting for the population decrease in that decade, the population density decreased to 0 persons per square miles according to Bureau of the Census population counts.

### **Ajo-Why Planning Area (13)**

According to the "Ajo Community Comprehensive Plan" prepared by the University of Arizona School of Planning and Community Planning and Design Workshop (April 2001) prepared for the Western Pima Community Council, "Ajo has a distinct land use pattern that is typical of a post-company owned town. Twenty-five percent of private land in Ajo is vacant."

Of the total 981,488 acre Ajo-Why planning area, 98 percent is under federal ownership. Other ownership is as follows: privately-owned/non-mining lands are .6 percent, privately owned/mining lands are .8 percent, county owned are .3 percent, and state owned lands are .3 percent of the total area. Formerly one of the largest copper mines in the world, the New Cornelia Pit in Ajo is over a mile wide.

Existing land uses include agriculture, single-family residential, multi-family residential, manufactured home, commercial and office, and some industrial uses. Ajo is surrounded by 12 million acres of public

and tribal land, which include Organ Pipe Cactus National Monument and Cabeza Prieta National Wildlife Refuge, and tribal lands.

Existing land uses in Why include single-family residential, a few commercial uses including gas stations, a small casino owned and operated by the Tohono O’odham Nation, and RV parks.

### Employment and Employment-related Land Uses

Table 3.1.b shows existing employment and employment-related uses by planning area. Employment and employment-related land uses include commercial, office and industrial uses.

**TABLE 3.1.b: Existing Employment Uses by Planning Area**

Planning Area	Commercial/Office Land Use (Acres)	Industrial (Acres)
Avra Valley	2,729	490
Tucson Mountain	1,744	813
Southwest	1,776	198
Altar Valley	564	0
Upper Santa Cruz	3,928	235
Mountain View	643	0
Southeast	4,840	1,888
Central	8,366	3,220
Catalina Foothills	5,135	102
Rincon Valley	984	359
Tortolita	5,472	189
San Pedro	264	0
Ajo/Why	165	1.2

*Source: Pima County Information Technology Department, Geographic Information Systems, 2013*

### **Avra Valley Planning Area (1)**

Employment is found in commercial areas along I-10, the Town of Marana and the community of Picture Rocks as well as in facilities scattered in various parts of the planning area. Key employers include the Marana Unified School District with two high schools and six elementary schools, the Town of Marana, the Marana Health Center with 195 employees, Trico Electric Cooperative with 130 employees, and Asarco with 175 employees at the Silver Bell Mine. Tucson Water operates the Central Avra Valley Storage and Recovery Project. The Avra Water Co-op is located in Picture Rocks.

The Marana Regional Airport is located inside this planning area. Just across the Pinal County line is the Evergreen Aviation/Marana Aeroscape Solutions, a major aerospace employer.

Overall the area accounts for approximately one percent of area businesses licenses. Where industry data is available, a preponderance of this area's businesses are in residential construction and various types of services.

### **Tucson Mountains Planning Area (2)**

Employment is clustered along I-10 and the higher-density neighborhoods south of Grant Road, with the exception of Pima Community College West Campus and JW Marriott Resort located in the Tucson Mountains.

The northern I-10 corridor contains significant manufacturing/aerospace/defense activity, including Sargent Aerospace and Defense Corp. (275 employees), FLSmidth Krebs (267 employees), and Dover Diversified. Also located along this corridor is Convergys Corporation, a call center (900 employees), Coca-Cola Bottling Company of Tucson (180 employees) and Arizona Portland Cement/CalPortland cement plant (127 employees).

Retail centers are found at the Arizona Pavilions Shopping Center just south of West Cortaro Road, and at the major intersections of Silverbell Road at St. Marys Road, Speedway Boulevard, and Grant Road, with many smaller retail businesses scattered along St. Marys Road, Grant Road and Grande Avenue.

Hospitality and tourism is an important industry for this area, with the JW Marriott Starr Pass Resort and Spa employing 550 workers, as well as numerous motor inns along the I-10 frontage road from Grant Road to 22nd Street.

The southern, inner-city neighborhoods between Grant Road and Congress Street contain significant employment in the government, education, social services and health care sectors. Carondelet Health Network accounts for approximately 2,000 jobs, between administrative offices located on North Forbes off of Grant Road and St. Mary's Hospital located in Menlo Park Neighborhood. Education employers include Marana Unified School District, Tucson Unified School District, Pima Community College West Campus and Community Campus, and Arizona State Schools for the Deaf and the Blind. This area also includes the western terminus of the Tucson Modern Street Car south of Congress Street and west of I-10.

Overall the area accounts for approximately 5 percent of area business licenses. Where industry data is available, a preponderance of businesses are in trade and various types of services.

### **Southwest Planning Area (3)**

The SWIP area includes Ryan Airfield General Aviation Airport, owned and operated by the Tucson Airport Authority. The airfield is currently planning for future expansion to serve the anticipated aviation business needs of the region.



#### **Altar Valley Planning Area (4)**

Employment is found in small businesses along State Route 86, in the communities of Arivaca and Robles Junction, as well as at scattered sites in various parts of the planning area. Key employers include Altar Valley Unified School District - with one elementary and one middle school – and the Three Points Fire District.

Overall, the area accounts for approximately 0.3 percent of Tucson business licenses. Where industry data is available, a preponderance of businesses are in residential construction, landscaping, retail trade, and other services.

#### **Upper Santa Cruz Planning Area (5)**

Copper mining is a major economic activity in this planning area, with employment centers at Asarco on the northern boundary of the area and Freeport-McMoRan west of Green Valley. These employers collectively reported 7,065 jobs in April 2011, according to the Star 200. Senior residential and health care services account for significant employment in the community of Green Valley with 530 jobs at La Posada at Park Centre Inc., and others in smaller, assisted living facilities.

Business license records show 323 businesses listed for zip codes that fall (at least partially) in this planning area. Although industry classification data is incomplete for this dataset, available information indicates a preponderance of enterprises in the construction and service sectors, with approximately 30 percent in construction and 20 percent in retail trade. Census commute times for this planning area show that 37 percent of residents may work within or near this planning area, with travel time to work of 15 minutes or less.

#### **Mountain View Planning Area (6)**

The sparsely-populated planning area contains very limited economic activity, with just five Tucson business licenses. Rosemont Copper's proposed mining operation in the planning area is said to employ 1,000 people during the construction phase, if implemented, and between 400 and 500 ongoing workers during full operation.

#### **Southeast Planning Area (7)**

Employment centers are primarily located in the northern portion of this planning area. Raytheon, Tucson International Airport and associated industries are significant employers. Other employment areas include commercial and industrial uses in the area north of Irvington Road between Interstate 10 and Interstate 19 and correctional facilities along Wilmot Road and Old Vail Connection.

Pima County's One Stop Program (Community Services, Employment and Training Department) has identified significant opportunities for workforce development and training in this planning area. There

are 3,207 business licenses listed for zip codes that fall (at least partially) in this area. One Stop has surveyed 49 companies in these zip codes and identified 960 jobs. Census commute times, which are comparable to countywide data, indicate that 25 percent of residents may work within or near the planning area, with travel time to work of 15 minutes or less.

The aerospace and defense industries are leading contributors to our region's economy. To protect the existing employment base and support future expansion of these industries, an Aerospace-Defense Corridor has been identified that encompasses the Tucson International Airport, Raytheon, and Arizona Air National Guard facilities.

### **Central Planning Area (8)**

Commercial development is concentrated along Interstate 10, along major roads particularly Oracle Road north of Grant Road, along Broadway Boulevard from Swan Road to Wilmot Road, and along Speedway Boulevard. Within unincorporated Pima County, a relatively intense commercial area exists west of DMAFB and south of 36th Street near Palo Verde Road. Additionally, the University of Arizona Science and Technology Park, the Target distribution center, and a canning facility are located near Interstate 10 and Rita Road. The Port of Tucson, an intermodal logistics and distribution facility, is also located within this planning area.

This planning area contains approximately 250,000 or 55 percent of the county's jobs, with employment centers at the University of Arizona, Downtown, along the commercial corridors described above, and scattered throughout the planning area. Based on the 2010 American Community Survey estimated commute times for the City of Tucson as many as 75 percent of residents may work within or near this planning area, with travel time to work of 30 minutes or less.

Business license records show 14,090 businesses listed in this planning area for the fourth quarter of 2011, 51 percent of all current Tucson licenses. The 2009 Economic Census reported 20,547 business establishments countywide. According to that dataset 98 percent of local businesses have fewer than 100 employees; 52 percent have fewer than five.

Although industry classification data is incomplete for the business license dataset, available information indicates approximately 6 percent of local businesses are in construction, 2 percent in manufacturing, 3 percent in wholesale trade and 14 percent in retail trade. Transportation and warehousing accounts for another 2 percent of businesses, information and financial services each 1 percent, respectively, and real estate 9 percent. Of those licenses with an industry classification code, 17 percent are in the professional, scientific and technical services area.

Countywide employment data also shows a preponderance of jobs in service sectors (89 percent of nonfarm jobs) with the biggest concentration - 22 percent - of jobs in government agencies, with business services, health, trade and leisure/tourism each accounting for between 10 percent and 14 percent of local jobs. Notwithstanding this, manufacturing employment - especially Aerospace Products and Parts

- is critically important to the regional economy in terms of its concentration of high-paying jobs, share of exports and competitive advantage. In Pima County, the employment share of Aerospace and Defense is 12 times higher than U.S. average.

### **Catalina Foothills Planning Area (9)**

Employment is clustered along the southern and western edges of the planning area, along arterials such as Oracle Road, River Road, East Speedway Boulevard, East Broadway Boulevard and East 22nd Street. Many of the area's businesses are service-based, with retail centers found at Oracle Road and Ina Road, Grant Road and Tanque Verde Road, La Encantada at Campbell Avenue and Skyline Drive and other major intersections. Hospitality is a significant contributor, with scenic resort properties throughout the Catalina foothills. Top employers are Catalina Foothills School District, Northwest Medical Center, Long Realty Co., Tierra Antigua Realty, Canyon Ranch, and Loews Ventana Canyon Ranch.

Overall the area accounts for approximately 21 percent of Tucson business licenses; where industry data is available, a preponderance of businesses are in trade and various types of services.

### **Rincon Valley Planning Area (10)**

The planning area contains minimal employment, with isolated, service-based enterprises along Old Spanish Trail and a small business district on Colossal Cave Road in Vail. The Vail School District is a major employer, with Cienega High School and Old Vail Middle School and two elementary schools located in the planning area. Overall, the area accounts for less than one percent of Tucson business licenses; where industry data is available, a preponderance of businesses are in trade and various types of services.

### **Tortolita Planning Area (11)**

Employment in this planning area is concentrated along Oracle Road. According to the 2007 Economic Census, the Town of Oro Valley contains 568 businesses and accounts for approximately 8,000 of the County's jobs. Retail trade, hospitality, healthcare/bioscience, and manufacturing account for the preponderance of jobs. Key employers include Roche Ventana Medical Systems, Honeywell, Northwest Medical Center and Hilton El Conquistador Resort. The Census identified 100 establishments and approximately 1,100 jobs (mostly retail and hospitality) in the unincorporated community of Catalina.

Business license records indicate another 1,285 businesses that are in Marana or in the unincorporated area, concentrated in the construction, retail, professional services, administrative services, and landscaping/environmental services industries.

### **San Pedro Planning Area (12)**

Economic activity in this planning area is limited to several ranches along the San Pedro River.



### **Ajo/Why Planning Area (13)**

Public sector employers in the area include the Ajo Unified School District, the US Border Patrol, Pima County, US Postal Service, and National Park Service. Private sector employers in the area include Freeport McMoRan Copper and Global, Inc., International Sonoran Desert Alliance, Desert Senita Community Health Center, the Tohono O’odham Nation, Olson’s Market, and Circle K.

### Current Zoning by Planning Area

Table 3.1.c shows current zoning acreage by planning area.

Exhibits 3.1.e and 3.1.f, included at the end of this chapter, show current zoning.

Exhibits 3.1.g and 3.1.h, included at the end of this chapter, show the County’s Planned Land Use and

Exhibit 3.1.i and 3.1.j, included at the end of this chapter, show existing overlay zones.

TABLE 3.1.c: Current Zoning Acreage by Planning Area

Planning Area	Institutional Reserve	Rural Residential	Suburban Ranch	Single Residence/ Suburban Homestead	Mixed Dwelling/ Multiple Residence	Manufactured and Mobile Home	Trailer Homesite	Transitional	Commercial	Industrial	Multiple Use	Master Planned Community	Golf Course Overlay	Mount Lemmon	Major Resort
1. Avra Valley	133,562	151,923	857	4,268	0	0	0	36	133	1,220	0	0	0	0	0
2. Tucson Mountains	6,916	2,049	18,462	4,298	0	0	89	0	97	197	0	242	0	0	0
3. Southwest	16,749	108,149	5,297	5,450	2,027	867	613	346	680	646	0	2,965	0	0	0
4. Altar Valley	76,911	626,409	283	8,716	0	0	0	9	48	0	0	0	0	0	0
5. Upper Santa Cruz	0	152,783	944	2,860	1,469	170	113	1,539	682	139	0	545	622	0	0
6. Mountain View	66,981	115,755	0	681	0	0	0	0	0	0	0	0	0	0	0
7. Southeast	28,080	123,435	523	5,209	767	139	254	189	426	7,533	604	6,592	0	0	0
8. Central	0	1,196	136	529	249	59	35	16	326	3,974	1,708	536	0	0	0
9. Catalina Foothills	123,289	2	23,664	31,731	2,134	14	95	1,089	784	13	6	545	0	687	0
10. Rincon Valley	51,844	58,753	2,385	2,049	49	58	0	0	92	593	0	5,564	0	0	0
11. Tortolita	41,195	22,164	11,233	5,417	2,694	24	24	415	532	62	0	240	0	18	43
12. San Pedro	83,048	91,137	0	0	0	0	0	0	0	0	0	0	0	125	0
13. Ajo-Why	881,261	90,355	0	4,805	851	78	40	69	234	3,807	0	0	0	0	0
<b>Total All Planning Areas:</b>	<b>1,509,836</b>	<b>1,544,108</b>	<b>63,785</b>	<b>76,013</b>	<b>10,239</b>	<b>1,409</b>	<b>1,262</b>	<b>3,707</b>	<b>4,035</b>	<b>18,185</b>	<b>2,318</b>	<b>17,229</b>	<b>622</b>	<b>830</b>	<b>43</b>
<b>Total Unincorporated County:</b>	<b>1,513,083</b>	<b>3,900,076</b>	<b>63,786</b>	<b>76,017</b>	<b>10,239</b>	<b>1,409</b>	<b>1,423</b>	<b>3,707</b>	<b>4,035</b>	<b>18,185</b>	<b>2,318</b>	<b>17,231</b>	<b>622</b>	<b>830</b>	<b>43</b>

Source: Pima County Information Technology Department, Geographic Information Systems, 2013

### Aggregate Mining Operations

Pima County is endowed with many mineral resources, not only copper mines, but also important products such as sand, gravel, and limestone used every day in supporting the infrastructure of our cities.

While official state maps showing the locations of these operations are not yet available, many sand and gravel operations are located along Tucson's major washes or in alluvial areas such as open spaces on vacant Tucson International Airport and farm lands. At least nine private sand and gravel operations exist for a total of 22,350 acres.

Some of the larger stakeholders have more than one location in Pima County. In general the companies in the County are Vulcan, Granite Construction, Portland Cement, Cemex, Asarco, Freeport-Mcmoran Copper & Gold (Ajo), and Central Arizona Block Company. Arizona Rock Products Association (ARPA) and Arizona Geological Society (AGS) are the industry's resources for sand and gravel operations. Additionally, there is one large sand and gravel operation north of Ajo in western Pima County and the others are scattered in eight of the twelve other planning areas.

**TABLE 3.1.d: Sand and Gravel Operations (Note: These figures are not based on official state maps.)**

Map ID Number	Planning Area	Acres
1.	Avra Valley	1,935
2.	Tucson Mountains	1,435
3.	Southwest	531
4.	Altar Valley	0
5.	Upper Santa Cruz	11,285
6.	Mountain View	0
7.	Southeast	5,722
8.	Central	672
9.	Catalina Foothills	41
10.	Rincon Valley	728
11.	Tortolita	0
12.	San Pedro	0
13.	Ajo/Why	2,546
<b>Total of All Planning Areas</b>		<b>24,895</b>

*Source: Pima County Information Technology Department, Geographic Information Systems, 2013*

See Exhibits 3.1.k and 3.1.l, included at the end of this chapter show sand and gravel operations.



### Military Airports

Davis-Monthan Air Force Base (DMAFB) and the 162<sup>nd</sup> Air National Guard Fighter Wing portion of Tucson International Airport (TIA) are military airports within Tucson city limits. There is a military installation located at the Barry M. Goldwater Air Force Range located north of Ajo, but it is located primarily within Maricopa County. Comprehensive planning and zoning for the environs of these airports includes unincorporated areas of Pima County. In addition to national security, these military airports provide economic benefits to the region. DMAFB is one of the region's major employers with approximately 7,500 (2013) military positions and approximately 2,900 (2013) civilian jobs<sup>1</sup>. Including retiree data, the base circulated approximately \$1.5 billion into the local economy and created approximately 4,400 jobs in 2013<sup>1</sup>.

DMAFB's location within the city presents issues of potential encroachment of incompatible land uses and development patterns, and building construction types which could jeopardize public health, safety, and welfare. In turn, this could endanger the continued viability of DMAFB to carry out its current and future missions, which could result in its closure. The *February 2004 Davis-Monthan Air Force Base/Tucson/Pima County Joint Land Use Study* (JLUS) is intended to guide the decisions made by a variety of public and private entities in relation to compatible land use around DMAFB. In addition to the State of Arizona and its agencies, the Department of Defense, DMAFB, local jurisdictions, and private interests within the area can contribute to the implementation of the recommendations of the JLUS.

The JLUS defines recommended compatible uses and performance standards that are used by Pima County and the City of Tucson to guide development in order to protect public health, safety, and welfare and Davis-Monthan's mission and its economic benefits. Implementation of the JLUS Compatible Use Plan is fundamental to achieving these goals, and integration of land use recommendations into general and comprehensive plans and zoning ordinances is a key element in implementing the JLUS.

Arizona Revised Statutes (ARS) §28-8481(J) requires compliance with requirements applicable to zoning and development in the defined "high noise or accident potential zone" of DMAFB in accordance with the Compatible Land Use Plan of the February 2004 JLUS. In 2004, the Military Airport (MA) comprehensive plan designation was adopted to restrict zoning options to ensure compatible zoning within the high noise (Noise Control Zones) and accident potential (Approach-Departure Corridors) zones of DMAFB in line with the JLUS Implementation Program Strategies. In 2008, the Pima County Zoning Code and the International Building Code were amended to implement the JLUS Compatible Land Use Plan recommendations.

The JLUS Implementation Program provides a number of implementation strategies. Some of the other strategies that have been utilized include land acquisition through bonds and use of the State Military Installation Fund to purchase existing incompatible land use development.

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<sup>1</sup> FY 13 Davis-Monthan AFB Economic Impact Analysis 2014.

See Exhibit 3.1.m for a map of Pima County Military Airports is included at the end of this chapter.

## 3.2 Existing Growth Areas

There are three designated growth areas according to the existing Comprehensive Plan. The areas are an industrially-zoned (primarily) area near the airport, the Flowing Wells area, and the City of Tucson. The existing growth area policies are: 1) The encouragement of mixed use planning, multimodal opportunities and pedestrian and bicycle access; 2) Development should add architectural attractiveness and protect the character and privacy of adjoining residential areas; 3) Residential proposals should increase densities to not less than 8 RAC and include mixed uses and a variety of housing types; and, 4) The encouragement of commercial development that supports area residents and creates multimodal transportation options.

### Community Development and Neighborhood Capacity

The Community Development and Neighborhood Conservation Department utilizes various local, state and federal resources to conduct community development and revitalization activities focusing efforts in the most stressed neighborhoods and unincorporated areas in Pima County. Existing efforts are managed within these specialized programs: Neighborhood Reinvestment; Neighborhood Stabilization Program; Community and Rural Development; Homeless and Special Populations; and Outside Agencies as detailed below. The Community Development and Neighborhood Conservation Department also includes the Affordable Housing program which is found later in this chapter under “Housing and Community Design”.

### Home Repair and Weatherization

This program consists of both Pima County and agency administered efforts that directly provide various grant assistance to qualified low-income homeowners in South Tucson, Marana, Sahuarita, Oro Valley and unincorporated communities. The various grant funded services include: emergency home repair; energy efficient and weatherization upgrades; handicap and accessibility retrofits; housing rehabilitation; and repair or replacement of major systems such as heating and cooling, roof, septic, electrical, gas and water. Owner-occupied conventional, manufactured, or mobile homes are eligible. Elderly; persons with disabilities; families with children; and households with high energy burdens/uses are prioritized to receive funding. Pima County's in house program utilizes specialized County staff and procured job order contractors to execute coordinated home repair and weatherization scopes of work. Multiple funding sources are utilized to provide services to unincorporated Pima County residents. In addition to the County's managed program, HUD Community Development Block Grant (CDBG) funds are utilized to contract and fund complementing emergency home repair, housing rehabilitation, and elderly/handicap accessibility modification programs administered by local non-profits and sub-recipient government agencies including the Town of Marana and the City of South Tucson. Pima County and its local government and non-profit home repair and weatherization partners typically complete over 200 projects per year as reported in [Pima County's Consolidated Annual Performance Evaluation Report \(CAPER\)](#) to HUD.

### **Neighborhood Reinvestment**

The Neighborhood Reinvestment Program promotes stability and revitalizes stressed communities through the funding of small capital improvement projects selected through a community consensus process. The program is bond-funded and revitalizes neighborhoods with small community-based capital improvement projects such as sidewalks, park improvements, and street lighting improvements.

In addition to providing organizing assistance to communities through its community-based project application process, Neighborhood Reinvestment Program staff are also leveraging their community contacts and organizing skills to assist communities at all different capacity levels. To date, 94 projects have been completed as detailed in the [Neighborhood Reinvestment Annual Report](#).

### **Neighborhood Stabilization Program (NSP)**

Congress created the Neighborhood Stabilization Program (NSP) to assist with the community problems that are the result of the mortgage foreclosure crisis. Pima County utilized NSP1 and NSP2 resources to revitalize targeted areas through economic development activities and housing market stabilization. NSP funds may be used for activities which include, but are not limited to:

- Establish financing mechanisms for purchase and redevelopment of foreclosed homes and residential properties;
- Purchase and rehabilitate homes and residential properties abandoned or foreclosed;
- Establish land banks for foreclosed homes;
- Demolish blighted structures;
- Redevelop demolished or vacant properties.

### **Neighborhood Stabilization Program 1 (NSP1)**

The Department of Housing and Urban Development (HUD) began the Neighborhood Stabilization Program (NSP1) to stabilize communities hardest hit by foreclosures, delinquencies, and the decline of housing values. NSP provides emergency assistance to state and local governments to acquire and redevelop foreclosed properties. Pima County received \$3,086,867 in grant monies to purchase foreclosed or abandoned homes and to rehabilitate, resell, or redevelop these homes in order to stabilize neighborhoods and stem the decline of property values of neighboring homes. The program was authorized under Title III of the Housing and Economic Recovery Act of 2008.

### **NSP1 Project Highlights**

- A total of 11 newly renovated homes transferred to the City's El Portal Program and are actively generating program income.
- Non-profit partners have successfully developed new housing in the City of South Tucson
- Ajo Plaza Redevelopment project (the redevelopment of 29,320 SF of vacant commercial space in the south building of the Ajo Plaza) is actively being revitalized by owner and developer,



International Sonoran Desert Alliance (ISDA). Other County supported planning revitalization efforts for the Ajo Plaza include, [Plan for the Revitalization of the Ajo \(Arizona\) Town Plaza](#), conducted with the Conway School Graduate Program in Sustainable Landscape Planning and Design in Deerfield, Massachusetts.

### Neighborhood Stabilization Program 2 (NSP2)

The general stabilization goals of NSP2 are to expand opportunities for homeownership, halt declining home values, and improve neighborhood conditions. Pima County and eight sub-grantees worked together to apply for and implement the NSP2 Grant. The \$22.1 million NSP2 grant is funded by the US Department of Housing and Urban Development (HUD) through the American Recovery and Reinvestment Act (ARRA). The grant is targeted to 30 census tracts covering neighborhoods in south and central Tucson, as well as the City of South Tucson and an unincorporated area of Pima County. In order to determine the effectiveness of NSP2 activities, Pima County contracted with University of Arizona, College of Architecture, Planning and Landscape Architecture (CAPLA), Drachman Institute to complete the following studies and area plans:

- Provide a record of existing conditions in sample neighborhoods from within the NSP2 target area (*NSP2, [Neighborhood Profile and Existing Conditions](#), Volumes I and II*)
- Develop survey instruments and train County interviewers in data collection skills to obtain baseline data from individual residents in the selected neighborhoods and from families that have moved into homes with NSP2 assistance (*NSP2, Residential Data Collection Report, Volume III*)
- Provide a record of existing conditions in five commercial corridors in the NSP2 target area (*NSP2, [Commercial Corridors, Profiles of Existing Conditions](#), Volume IV*).



**Figure 22: NSP2 Target Area**

## Community and Rural Development

This program is primarily responsible for the administration of US Housing and Urban Development (HUD) Community Development Block Grant (CDBG) funds. In addition to planning and administration, typical activities include funding local programs and projects that promote development of: cultural, recreational and public (social) services; community facilities; capital infrastructure; health and fire safety; housing; and economic development initiatives. Eligible activities must benefit low and moderate income individuals, households or communities within South Tucson, Marana, Sahuarita, Oro Valley, and unincorporated Pima County. Federally designated Pima County Community Development Target Areas; Colonia's; Neighborhood Revitalization Strategy Areas (NRSA's); and other identified and highly stressed neighborhoods/communities are prioritized to receive CDBG funding. Approximately 40 CDBG programs and projects are recommended for funding per annum as approved by the Board of Supervisors and identified in the [Pima County HUD Annual Action Plan to HUD](#). Pima County's required Fair Housing compliance efforts are also funded via CDBG.

## **Brownfields and Revitalization**

In communities across the United States, both rural and urban, the legacy of the country's industrial past now lays dormant in areas where once vibrant industrial and commercial districts existed. A brownfields is a site that has actual or perceived contamination; nevertheless, these sites have potential for redevelopment and reuse. Previous uses such as gas stations, manufacturing sites or industrial facilities are now abandoned paved lots, derelict buildings, and home to rusting equipment.

These sites are often deemed a liability due to the "potential" of perceived contamination hindering their reuse and redevelopment; however, the utilization of available federal and state brownfields initiatives can provide local governments, private developers, non-profit agencies, financial institutions, insurance companies, and community activists the tools and resources necessary to successfully redevelop these denigrated areas.

The purpose of the Pima County Brownfields Program is to take advantage of available federal, state, and local resources to promote brownfields revitalization activities. This is accomplished by analyzing the distribution, quantity, and conditions of brownfields sites in Pima County. A fuller understanding of these potential brownfields sites will encourage the reuse of these abandoned, deteriorated, and underutilized properties into productive and viable land uses facilitating community and economic revitalization in targeted areas. The program fosters a broad economic and community development strategy for Pima County and is designed to complement existing and proposed revitalization initiatives. The Pima County Brownfields Program places emphasis on addressing brownfields sites as a mechanism to:

- Establish, implement and expand upon a successful Pima County Brownfields Program.
- Utilize and pursue available brownfields resources to facilitate and expand economic development opportunities specifically focusing in Pima County Community Development Target Areas and proposed Infill Incentive Districts.
- Engage, educate and foster active and interested communities within Pima County to partner and pursue available brownfields resources.
- Continue to work closely with other brownfields programs within Southern Arizona to develop a more regional approach to brownfields redevelopment.
- Incorporate CDBG funds to create commercial facade, demolition and clearance to complement brownfields efforts.

To date the Pima County Brownfields Program has completed 75 Phase I and Phase II Environmental site assessments in Pima County, creating new businesses and development.

## Homeless and Special Populations

This Program is responsible for the consolidated administration of multiple grants that provide various housing and supportive services to the homeless and special populations. Federal grant and general funds are coordinated and managed to fund an estimated 31 agency programs per year. However, HUD Emergency Solutions (ESG), Supportive Housing Program (SHP), and Housing Opportunities for People with AIDS (HOPWA) grants are the primary funding sources. In addition to administrative duties, combined HUD funded eligible activities include, but are not limited to: homeless prevention and rapid re-housing programs; homeless outreach; motel vouchers and emergency shelter; transitional and permanent supportive housing; operations and maintenance; tenant based rental assistance; support services; employment and training; and homeless management information system (HMIS).

In addition to HUD programs, the Homeless & Special Populations division also coordinates and manages Pima County's Federal Emergency Management Agency (FEMA) Emergency Food and Shelter Program.

## Outside Agencies

The Pima County Outside Agency (OA) program provides funding to non-profit organizations which serve economically and socially disadvantaged populations through human service programs. The Pima County Board of Supervisors establishes funding for the OA program and an appointed Committee holds a public process to review requests and make recommendations to the Board. Specific Outside Agency program objectives include the following:

- Direct funds to programs and agencies that have demonstrated a beneficial community impact.
- Identify gaps and community assets to determine an effective systematic approach for allocating funding.
- Identify best practices implemented by agency programs and act as a resource for other agencies to obtain best practice models and information.
- Provide technical assistance to agencies for program enhancement & board/staff development.

The Outside Agency Advisory Committee, with members appointed by the Board of Supervisors and the County Administrator, met throughout the year to review the progress programs have made and discuss issues that the agencies may have including the contractual process, the contractual requirements, the outcomes and outputs and the organizational capacity to deliver quality services.

Programs are organized into service categories and funded on a fiscal year basis. Service categories typically include: Community Support; Emergency Food and Clothing; Senior Support; Support Services, Shelter & Domestic Violence; Youth and Young Adults; and General Services. The amount of funding for each service category is based upon the Committee's determination of community needs. Typically up to 80 local agencies are funded per two year funding cycle as detailed in Outside Agency Annual Impact Reports submitted fiscally to the County Administrator and Board of Supervisors.



### Land Use Corridors

Certain existing and proposed major corridors in Pima County provide significant opportunities to focus commercial, research, industrial employment and other types of development where these uses are the most effective and mutually beneficial. Economic development corridors are defined in the Economic Development Chapter.

## 3.3 Open Space



While the Open Space Element addresses only those lands that Pima County specifically owns in fee, this Background discussion is more expansive and reviews the full scope of the County's land conservation efforts, which include property rights that are more term limited, such as grazing leases. The County currently owns 98,286 acres of parklands and natural areas, and manages over 130,000 thousand acres of grazing leases for conservation.

The reasons underlying the County's land conservation are diverse and reflect the broad scope of community priorities embedded in the Sonoran Desert Conservation Plan. Parklands and natural areas have been acquired to prevent the encroachment of land uses incompatible with maintaining the integrity and long-term viability of Davis-Monthan Air Force Base operations; to protect lands with important archaeological artifacts and cultural resources; to promote public safety and watershed health by removing floodprone lands from development; to enhance the public's opportunities for outdoor recreation; to preserve culturally important land uses and values; and to create a landscape that conserves lands with high ecological value and promotes biological connectivity.

Voter-approved County bonds in 1974, 1986, 1997, and 2004 have generated \$230 million for the acquisition and expansion of parklands and natural areas. These bond dollars have, in many cases, allowed the County to leverage other funding sources, such as grants and federal funds, to effectively increase the amount of funds available. In addition to purchasing properties, donations from private property owners have contributed to the County's portfolio of parklands and natural areas. Since 2004, nearly 1,600 acres have been donated to the County including significant properties adjacent to Saguaro National Park and the Catalina Mountains which would have been very costly to acquire otherwise. These properties are noted in Table 3.3.a

The following are a few examples that illustrate how the County has capitalized on multiple funding sources and made strategic acquisitions to secure parklands and natural areas that respond to the community's needs and priorities:

- ***Davis-Monthan Air Force Base Urban Encroachment Prevention.*** Pima County spent \$10 million approved by voters in 2004 to purchase 461 acres in the vicinity of the base. Uses on these properties are limited to prevent future development and inappropriate uses and to deter large numbers of visitors. Compatible uses such as solar generating facilities are desirable.
- ***Coyote Mountains Archaeological Complex: Old Hayhook Ranch.*** The acquisition of 839 acres was funded using bonds (approx. \$1.4 million) plus a Recovery Land Acquisition Grant from the U.S. Fish and Wildlife Service. The property encompasses high value wildlife habitats and a complex of Hohokam villages which the Tohono O'odham consider ancestral sites; it is also adjacent to the Bureau of Land Management's Coyote Wilderness Reserve. The property is managed to preserve the exceptional natural and cultural resources as well as the biological connectivity with the Coyote Mountains.
- ***Canada del Oro (CDO) Floodprone Land Acquisition.*** The Pima County Regional Flood Control District expended over \$9 million from a variety of funding sources including bond funds, District tax levy, and a \$3 million federal grant to acquire approximately 193 acres that were subject to repetitive flooding. Funds were also used to assist in the relocation of the home owners displaced by the 2003 flooding exacerbated by the Aspen Fire in the upper watershed earlier that year. The CDO is also a significant riparian area where biological diversity is similar to that found only at Cienega Creek. Impacts to the riparian corridor due to groundwater withdrawals from private wells in the area were alleviated with the acquisition as 23 active wells were retired. Stewardship of these lands emphasizes maintenance of the riparian environment and controlling unauthorized uses such as vandalism, trespass, wildcat dumping, and wood cutting.
- ***Marley Ranch Conservation Area.*** Once completed the total acquisition will be 114,400 acres of fee lands, conservation easements, plus state and federal grazing leases. The first phase of acquisition occurred in 2009 and secured 6,337 acres of fee lands at a cost of just over \$20 million funded by the 2004 bond. The balance (17,663 acres in fee, 1,700-acre conservation easement, 85,900 acres state grazing lease, and 2,800 acres BLM grazing permit) is expected to come as future bonds are approved by the voters. This ranch is one of the largest working ranches remaining in

Southern Arizona. Historically, it was a principal focal point for Native American and Spanish settlement. It has had human occupation for the last 10,000 years and contains village sites and other evidence of the Hohokam as well as Historic period ranches such as the Batamote Ranch. Because the size and location of this Ranch Conservation Area allow for a physical connection between the Buenos Aires National Wildlife Refuge and other County open space acquisitions, native wildlife including far-ranging species like jaguar can move through and access the ecologically important mountain systems of Southern Arizona. The size and scope of these lands also supports numerous recreational opportunities including hiking, mountain biking, wildlife viewing, hunting, recreational rock hounding, nature photography, and primitive camping. Drainages within this Ranch Conservation Area also play an important role in aquifer recharge for Tucson and the Green Valley/Sahuarita area.

- **Sweetwater Preserve.** 2004 bond funds were used to acquire this 880-acre property in order to protect a key segment of the Sweetwater Wash as well as high quality recreational opportunities for hikers, mountain bikers, and equestrians. The recreational opportunities and high value natural resources of this property had long-standing prominence in the area. Area residents' response to potential development of the property was decisive. Over 50 neighborhoods, environmental and community organizations publicly supported acquisition and, in an unprecedented move, 180 individuals contributed \$30,000 to defray outstanding property taxes in order for the County to secure an option to buy this property. According to a recent national poll by Singletracks.com released in June 2014, Sweetwater Preserve was voted Number 4 in the list of the *20 Most Scenic Mountain Bike Trails in the Western US*.

In total, these acquisitions are a significant accomplishment. They are testament to this community's desire to be multi-faceted in how it chooses to address future development, fiscal responsibility, community health and safety, quality of life, and our heritage as residents of the Sonoran Desert. Our open space acquisitions have contributed to directing urban growth and expansion to those areas having greater infrastructure support, deterring traditional urban sprawl, and making urban infill more viable. Facilitating a more compact urban form is also fiscally more responsible by maximizing revenues from existing infrastructure and services and by limiting the increased operations and maintenance costs associated with the expansion of sewers, roads, law enforcement, and other services provided by the County. Additionally, protecting and conserving the long-term viability of natural and cultural assets is an important investment in one of the region's most important economic drivers, geo-tourism. Maintaining our rural communities and ranching economy, as well as protecting the ecosystems of the Sonoran Desert also enhances quality of life, creates life-style diversity, and improves environmental health for current and future generations.

One area of concern going forward is how those land use projects that are authorized by Federal approvals such as mining, electrical transmission corridor development, and natural gas pipeline construction will affect the long-term integrity of County parklands and natural areas. These types of projects are subject to few, if any, of Pima County's regulatory authorities. This consequently leaves the County in a less than

desirable position to control impacts on parklands and natural areas when federal authorizations approve such projects. Furthermore, these authorizations typically do not provide adequate consideration of or mitigation for the County's obligation for long-term management and maintenance of parklands and natural areas. Examining the locations of known projects (some of which are listed below) that require federal authorization reveals that such projects are already creating significant footprints across County parklands and natural areas. This implies that impacts associated with the construction and long-term operation of these projects will continue to plague the County's ability to maintain and protect those resources for which parklands and natural areas were acquired.

Known Projects Requiring Federal Authorization that Cross Pima County Parklands and Natural Areas:

- SunZia Southwest Transmission Project
- Southline/Western Area Power Administration (WAPA) Transmission Line
- Sierrita Gas Pipeline Project
- Rosemont Mine

Conserving parklands and other natural areas is an important ingredient in the appeal and livability of any community and is an index of a community's identity. It is one of those attributes that gives a destination its personality and sense of place. Preserving parkland and other natural areas also attracts high-quality businesses and employers, increases property values, and draws residents who want to enjoy an enhanced quality of life. Open space can be an economic development driver creating corridors of opportunity that provide connectivity to urban and exurban areas and make our region healthier and more attractive to residents, visitors, and entrepreneurs and employers looking to relocate their industries.





*Table 3.3.a: Pima County Parklands & Natural Area Acquisitions*

<b>Pima County Parklands &amp; Natural Areas</b>	<b>Acres</b>
A7 Ranch	41,252.0
Rancho Seco	37,113.2
Diamond Bell Ranch	30,757.7
Tucson Mountain Park	19,706.4
Sopori Ranch	15,485.2
Six Bar Ranch	13,602.4
Bar V Ranch	13,494.3
M Diamond Ranch	10,201.6
Marley Ranch	6,348.0
Sands Ranch	5,033.5
FLAP (multiple sites)	4,900.9
Canoa Ranch	4,853.9
King 98 Ranch	4,330.2
Cienega Creek Natural Preserve	4,267.8
Tortolita Mountain Park	3,924.8
Buckelew Properties	3,035.2
Empirita Ranch	2,713.6
Colossal Cave Mountain Park	2,219.0
Cienega Corridor	1,686.9
Oracle Ridge	1,173.4
Buehman Canyon	1,050.3
Sweetwater Reserve	890.8
Clyne Ranch	880.2
Old Hayhook Ranch	838.5
Honey Bee Biological Corridor	676.3
Lords Ranch	638.7
Arthur Pack Regional Park	513.1
Walden	447.3
Brawley Wash/Manville-Garcia	395.8
36th Street Corridor	373.5
Madera Highlands	373.3
Agua Verde Creek	353.9
Ajo	350.7
Drainageway	292.5
Cochie Canyon	286.0
Tumamoc	277.0
Bingham Cienega Natural Preserve	267.9
Tanque Verde Creek	216.6
Los Morteros	210.0
Rancho Del Cielo	162.4
Bee	160.2
Andrada	158.0
Segurson Donation	150.8
Southeast Corridor	141.4
Arivaca Open Space	122.1
Lower Santa Cruz Replenishment	104.6
Rocking K	103.6
Starr Pass Resorts Easements	103.1
Roy Drachman Agua Caliente Regional Park	100.6
Trico	96.6
Elephant Head Sec.15 Mit. Lands (Kreutz)	79.2

<b>Pima County Parklands &amp; Natural Areas</b>	<b>Acres</b>
Tanque Verde & Houghton Partners LLC	77.7
Malcolmson Donation	73.8
Marana Cottonwoods	72.5
Terra Rancho Grande	72.1
Valencia Site	68.2
PCDOT Mitigation Land	67.8
Avra Valley I-10 Wildlife Corridor	66.2
Dos Picos	55.8
Cultural Resource Parcel	54.1
Southeast Regional Park	52.8
Canoa Ranch Phase II	52.5
Cortaro-Hartman	49.0
Elephant Head Sec.15 Mit. Lands (Easely)	43.8
Manzanita Park Extension	40.4
Park?	40.2
Esther And David Tang	40.1
Elephant Head Sec.15 Mit. Lands	39.9
Picture Rocks District Park	37.9
South Wilmot LLC	35.5
Robson Quail Creek Parcel	28.7
Agua Caliente Creek	24.4
Dakota Wash	23.0
Doucette	22.0
DOT Section 7	19.6
Habitat 36Th/Kino	19.4
Holden Donation	18.4
Reay Rezoning - CLS Off Site Mitigation	18.0
Bear Creek Ranch	17.8
Steam Pump Ranch	15.3
Continental Ranch Development, LLCc	15.2
Sneed Parcel	14.0
San Domingo Flood Prone Area	14.0
Honey Bee Village Preserve	13.0
Treehouse	12.5
Robles Ranch	11.2
Tucson Mountain Park Biological Corridor	9.9
Linda Vista/Patrick Property	9.3
Mission & 36th Subdivision	7.6
Reid Parcel	7.3
Coronado National Forest	5.4
Mission Gardens	4.5
Lazy C Ranch Estates	3.3
CDO Hazard Mitigation	2.5
Dunbar School	2.5
San Pedro Chapel	2.2
Ina Overlook	1.1
Ajo Train Depot	0.9
Wal-Mart Conservation Easement	0.9
West Branch Santa Cruz	0.5

Source: Pima County Infrastructure Plan, 2013

### 3.4 Environmental

#### The Maveen Marie Behan Conservation Lands System

The Maveen Marie Behan Conservation Lands System (CLS) was adopted as part of the Environmental Element of the Pima County Comprehensive Plan 2001 Update in December 2001 and was updated June 21, 2005. In 2009, it was renamed as the Maeveen Marie Behan Conservation Lands System to commemorate Dr. Behan's extra-ordinary contribution in bringing the CLS to fruition.

The CLS identifies and maps those areas where priority biological resources occur within Pima County. It also establishes policy guidelines for the conservation of these resources; guidelines are to be applied to certain types of land use changes that require approval by the Board of Supervisors. Other elements include definitions of seven priority biological resource categories, conservation guidelines, implementation strategies, and a map.

The Board has applied the CLS to well over 80 requests for land use changes since 2002. The Board and County Administrator's Office also negotiate with mining corporations and others not regulated by the County but doing business here to mitigate voluntarily for their project-related impacts to lands and resources within the CLS. A tribute to the soundness of the CLS is that the policy has been in place for 13 years with only one update to allow for the incorporation of new scientific information. The CLS was constructed according to the most current tenets of conservation biology and biological reserve design. The CLS:

- perpetuates the comprehensive conservation of vulnerable species;
- retains those areas that contain large populations of focal vulnerable species;
- provides for the adjacency and proximity of habitat blocks;
- preserves the contiguity of habitat at the landscape level; and
- retains the connectivity of reserves with functional corridors.

The collective application of these individual tenets produces a CLS that retains the diverse representation of physical and environmental conditions, preserves an intact functional ecosystem, minimizes the expansion of exotic or invasive species, maximizes the extent of roadless areas, and minimizes fragmentation. Implementation of the CLS not only conserves those biological resources that exist today but, because of its landscape focus, preserves the future ebb and flow of resources essential to a healthy functioning ecosystem. The seven CLS conservation land categories reflect relative values of biodiversity for various lands across the landscape.

Adherence to Conservation Lands System Guidelines will accomplish the following:

- Protect against the loss of conservation values and landscape integrity through in-place preservation and restoration or enhancement of degraded or otherwise compromised natural resources.
- Create development that retains conservation values at both the micro and macro landscape scale by minimizing impacts to site-specific sensitive conservation values, maximizing landscape continuity, facilitating the movement of native fauna and pollination of native flora across and through the landscape, promoting the long-term diversity of native flora and fauna, and preserving the viability of the CLS.

Based on the science of the SDCP with participation and oversight by the SDCP Science Technical Advisory Team (STAT), seven CLS conservation land categories (CLS categories) were created, defined, and mapped. Each category has an associated conservation guideline policy (conservation guidelines can be found in Chapter 3 – Land Use Policies). The seven categories are: (See Glossary for definitions).

**Important Riparian Areas** are critical elements of the Sonoran Desert where biological diversity is at its highest. These areas are valued for their higher water availability, vegetation density, and biological productivity. They are also the backbone to preserving landscape connectivity.

**Biological Core Management Areas** have high biological values. They support large populations of vulnerable species, connect large blocks of contiguous habitat and biological reserves, and support high value potential habitat for five or more priority vulnerable species.

**Special Species Management Areas** are crucial to the conservation of three species of special concern to Pima County: the cactus ferruginous pygmy-owl, Mexican spotted owl, and southwest willow flycatcher.

**Multiple Use Management Areas** support significant biological values, but these values do not attain the level associated with Biological Core Management Areas. They support populations of vulnerable species, connect large blocks of contiguous habitat and biological reserves, and support high value potential habitat for three or more priority vulnerable species.

**Scientific Research Areas** are lands within the Tucson Basin that are managed for scientific research: the Santa Rita Experimental Range and the University of Arizona's Desert Laboratory at Tumamoc Hill.

**Agricultural In-Holdings within the CLS** are areas where active, or abandoned, agriculture lands exist within the Conservation Lands System.

**Critical Landscape Connections** are six broadly-defined areas where biological connectivity is significantly compromised, but where opportunity to preserve or otherwise improve the movement of wildlife between major conservation areas and/or mountain ranges still persists. Roads, other infrastructure services, and residential and commercial land uses within these areas, depending on configuration, can result in habitat loss and fragmentation that inhibits the movement of native fauna and interrupt the pollination processes



of native flora. These six areas generally focus attention on maintaining connectivity with the Santa Cruz River in northwest Tucson and southern Pima County, between the Catalina and Tortolita Mountains, between the Tohono O’odham Nation and Tucson Mountains, along the Cienega Creek corridor, and through Avra Valley.

As the CLS created a new paradigm for development of privately-owned property in unincorporated Pima County, a great deal of initial effort was devoted to developing and implementing procedures and requirements that promote implementation of the CLS. Significant accomplishments include:

- Modification of Site Analysis inventory requirements for rezoning applications to better identify the presence of conservation values and identify areas most suitable for development;
- Modification of comprehensive plan amendment submittal requirements to include information on conservation values;
- Modification of Biological Impact Report requirements for rezoning and conditional use permit applications to standardize information necessary to assess potential impacts to conservation resources and the integrity of the CLS;
- Standardized the review process for comprehensive plan amendment and rezoning applications to determine the application’s conformance with CLS, consistency with existing or logical expansion of infrastructure, and long-term conservation of highly valued natural resources; and
- Promulgated a new zoning ordinance to allow for the transfer of development rights.

Exhibit 3.4 provided at the end of this chapter, shows the County’s Transfer of Development Rights (TDR) Sending and Receiving Areas.

## Climate and Emerging Environmental Issues

### **Climate**

Changes in the climate will continue to negatively affect the environment. The Assessment of Climate Change in the Southwest United States observes that the regional climate is already becoming warmer, with severe droughts becoming more common. This trend is expected to continue, and may be coupled with greater precipitation extremes in winter, decreased summer precipitation, and more intense flooding.

As a result of climate change, the western electric grid becomes vulnerable as demands for energy increase. The reliability of transportation systems is expected to decrease; water supplies will become increasingly stressed; the local economy may suffer as a result of decreased tourism and recreational opportunities; and the health of vulnerable populations will likely suffer.<sup>2</sup> Wildfires are projected to

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<sup>2</sup> EPA (2013). *Southwest Impacts & Adaptation*, <http://www.epa.gov/climatechange/impacts-adaptation/southwest.html>

increase. Both natural and managed ecosystems in the southwest look to be affected by climate change<sup>3</sup>. The extent to which communities are negatively impacted by climate change will depend heavily on their adaptive capacity and proactive actions taken to prepare for its impacts.

Greenhouse gases are gases that trap heat in the atmosphere. Greenhouse gases include carbon dioxide (CO<sub>2</sub>) which is produced through the burning of fossil fuels, solid waste, trees and wood products and through certain chemical reactions; methane (CH<sub>4</sub>) which is released during the production and transport of coal, natural gas and oil, as well as from livestock and other agricultural practices and from landfills through the decay of organic waste; nitrous oxide (N<sub>2</sub>O) which is produced through agricultural and industrial activities including fossil fuels and solid waste; and fluorinated gases (hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride) which are synthetic and are emitted from a variety of industrial processes. Fluorinated gases are powerful greenhouse gases. Carbon dioxide is removed from the air when it's absorbed by plants (called sequestration). The effect of each type of gas on climate change depends on how much gas is in the atmosphere, how long they remain in the atmosphere, and how strongly the type of gas impacts global temperatures.<sup>4</sup> Addressing climate change through the reduction of greenhouse gases can occur on a local scale. Reducing vehicle miles traveled (VMT) is a key strategy which can be done by making other modes of travel such as walking and biking viable. Greenhouse gases can be reduced by investing in electric, hybrid, and natural gas transportation methods.

Pima County has taken a number of steps to plan for and mitigate the negative effects of climate change and increase the resilience of the human and natural dimensions of the environment to climate-induced changes including:

- Increasing the production of renewable energy to replace fossil fuels;<sup>5</sup>
- The development and adoption of plans and strategies to improve water quality and insure the availability of an adequate water supply;<sup>6 7 8 9 10</sup>
- The development of drought response preparedness plans;<sup>11</sup>
- Efforts to reduce vehicle travel and increase the use of alternative modes of transportation;<sup>12</sup>
- Increasing energy efficiency standards in both County owned and privately owned buildings;<sup>13 14</sup>

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<sup>3</sup> Regional Climate Impacts: Southwest, Global Change Research Program

<sup>4</sup> Climate Change – Overview of Greenhouse Gases, US Environmental Protection Agency

<sup>5</sup> Pima County Sustainability Resolution: Resolution No. 2007-84, Renewable Energy Requirements

<sup>6</sup> 2011-2015 Action Plan for Water Sustainability, Water Supply: pg. 20

<sup>7</sup> 2007 RWRD, Regional Optimization Master Plan

<sup>8</sup> Drought Response Plan and Water Wasting Code of Ordinances: Chapter 8.70

<sup>9</sup> Pima County Local Drought Impact Group

<sup>10</sup> 2007 BOS Sustainability Resolution Requirements, Reduction requirements for water consumption by county operations

<sup>11</sup> Drought Response Plan and Water Wasting Code of Ordinances: Chapter 8.70

<sup>12</sup> Travel Reduction Ordinance: Chapter 17.40

<sup>13</sup> 2007 BOS Sustainability Resolution Requirements: LEED Silver Building Standard for County facilities

<sup>14</sup> International Energy Conservation Code: Ordinance 2012-34

- Reducing the risk of negative effects on public health resulting from climate change impacts;<sup>15 16</sup>
- Improving stormwater management strategies to minimize runoff and flooding in urban areas;<sup>17 18</sup>
- Adoption of diverse strategies to reduce loss of life and property from flooding and erosion;
- Acquisition and long-term retention of natural open space. In their natural, vegetated state, grassland and riparian areas can absorb excess carbon from the atmosphere relative to developed areas and can mitigate some of the urban heat island effect;
- Acquisition priorities for habitat protection are geographically diverse and biased toward acquisition of riparian habitat to preserve watershed and ecological function;
- Diversity in latitude and elevation of land acquisitions that expand existing reserves or assist in retaining ecosystem connectivity;
- Identification and protection for areas that have served as ecological refuge for species during time of past climatic variability (riparian areas, talus, limestone);
- Sponsorship of Natural Resources Conservation Services (NRCS) drought assistance to achieve temporary reductions in stocking rates on ranches not owned or managed by Pima County;
- Modifications of stock-watering systems to provide safer and more lasting access to water for wildlife; and
- Buffelgrass management in County preserves and along County roadways to reduce the threat of wildfire and loss of native species.

## Emerging Environmental Issues

### Buffelgrass and Other Invasive Species

Currently Pima County is involved in various programs to eradicate invasive species such as buffelgrass, fountain grass, and giant reed along with many others from our natural slopes, washes, preserves, and urban areas. Buffelgrass, in particular, is an aggressive species and a significant fire threat. The grass spreads fast and burns hot, endangering native species including the iconic saguaro. The non-profit organization, Southern Arizona Buffelgrass Coordination Center, <http://www.buffelgrass.org> is very active in leading the “Beat Back Buffelgrass” campaign. Many volunteer groups go out into the natural and urban areas to eradicate invasive species. It is a regionally important concern to the preservation and conservation of the unique flora and fauna of the Sonoran Desert.

### Wildfire

There are years when drought in Tucson causes high fire danger risks. Climate change and invasive species such as buffelgrass are adding to the wildfire threat. Fire can change the natural composition of the desert

<sup>15</sup> Pima County Community Wildfire Protection Plan

<sup>16</sup> Runoff Detention Systems: Ordinance 16.48

<sup>17</sup> Runoff Detention Systems: Ordinance 16.48

<sup>18</sup> Low Impact Development

from the diversified, green Sonoran Desert to grasslands. Wildfires are a major threat to the Sonoran Desert and especially the native saguaros as well as outlying residential areas. The Pima County Community Wildfire Protection Plan 2013 is a local planning effort to integrate state and federal level fire planning, identify high risk lands, improve fire prevention and suppression activities, enhance firefighter safety, identify funding needs and opportunities, and improve public education and outreach.

### Air Quality

Another issue facing Pima County is the potential to exceed air quality standards for ozone. Ozone is a colorless form of oxygen (O<sub>3</sub>) that occurs both naturally in the Earth's upper atmosphere and at ground-level primarily as a result of human activities. Ground-level ozone is formed when two types of pollutants react in the presence of sunlight and heat and is often called smog. These pollutants are known as volatile organic compounds and oxides of nitrogen. They are found in emissions from fuel combustion sources such as motor vehicles. Pima County is currently meeting the ozone standard set by the US Environmental Protection Agency, but the standard may be revised to between 0.06 and 0.07 parts per million. If this happens, Pima County is likely to be designated as a non-attainment area, which can require costly control measures and affect federal funding for transportation projects. Even if the standard is not made more stringent for the protection of human health, future choices for transportation and industry Pima County needs to be aware of potential problematic levels of ozone.

### Water Quality

"Emerging contaminants" are present in a growing number of water sources that are used for human and animal consumption. These contaminants include certain pharmaceutical compounds (hormones), cosmetic, and personal care products that are released into the nation's watercourses and aquifers primarily through urban runoff, municipal sewage, and industrial discharges. Pima County's ongoing improvements to the wastewater treatment systems are the single most effective step that can be taken here at the local level to minimize the impact of emerging contaminants on public health and the environment. However, new compounds will continue to be created in the future and may change with time. Public education, additional research, monitoring, and support of new programs by the Pima County Board of Supervisors will be needed.



## 3.5 Housing and Community Design

### Housing Affordability

Housing affordability represents not just the cost of rent or mortgage. Affordability is the cost or benefit of living in a community that's accessible to good jobs, quality schools and healthcare; that's safe, adequately served by local utility companies, public infrastructure; that's furnished with grocery stores, and many other factors that meet the current and future needs of any household. As stated in the County's Five Year HUD Consolidated Plan, "effective local housing policies and priorities reflect the needs and desires of households and families."<sup>19</sup>

The average household size in Pima County is 2.54 people and ranges from a low of 2.41 in Oro Valley, primarily a retirement-oriented community, to a high of 3.06 in South Tucson, a primarily family-oriented community.<sup>20</sup> Sixty percent of households include only one or two people; younger families reside in the urban communities of Tucson and South Tucson, while older families reside in suburban and rural communities, and more than half the workforce is employed in five primary industries including healthcare/social assistance, retail trade, educational services, public administration and accommodation/food service. Wages remain low despite a growing economy with the average Tucson resident earning 88 percent of what the average U.S. worker earns.<sup>21</sup>

The following tables include average housing costs, gross rent as a percentage of household income, year structure built, and average household income per planning area and provide an assessment of housing affordability based on national affordability standards from HUD.

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<sup>19</sup> City of Tucson and Pima County Consortium 2010-2015 HUD Consolidated Plan, Pg. 14, ("ConPlan"), <http://cms3.tucsonaz.gov/files/hcd/Tucson%20Pima%20County%202010-2014%20Consolidated%20Plan.pdf>

<sup>20</sup> Ibid

<sup>21</sup> The American Dream Lost: Foreclosures in Pima County, Arizona, Southwest Fair Housing Council ("Dream Lost"), prepared by Richards Rhey and Ari Posner, September 20, 2004, Pg.13, <http://www.docstoc.com/docs/38383492/The-American-Dream-Lost-Foreclosures-In-Pima-County-Arizona>

**TABLE 3.5.a: Housing Affordability 1990**

Place/ Planning Area	Average Household Income
Arizona	\$27,540
Pima County	\$25,401
<b>Planning Areas</b>	
Avra Valley	\$28,146
Tucson Mountains	\$34,876
Southwest	\$28,839
Altar Valley	\$28,302
Upper Santa Cruz	\$37,351
Mountain View	\$32,458
Southeast	\$22,856
Central	\$25,655
Catalina Foothills	\$46,955
Rincon Valley	\$41,715
Tortolita	\$41,285
San Pedro	\$46,010
Ajo/Why	\$18,531

Source: US Bureau of the Census, 1990

**TABLE 3.5.b: Housing Affordability 2000**

Place/ Planning Area	Average Household Income
Arizona	\$40,558
Pima County	\$36,758
<b>Planning Areas</b>	
Avra Valley	\$47,096
Tucson Mountains	\$53,885
Southwest	\$41,567
Altar Valley	\$40,164
Upper Santa Cruz	\$52,387
Mountain View	\$53,704
Southeast	\$35,028
Central	\$36,800
Catalina Foothills	\$66,306
Rincon Valley	\$62,482
Tortolita	\$63,409
San Pedro	\$79,594
Ajo/Why	\$32,459

Source: US Bureau of the Census, 2000

**TABLE 3.5.c: Housing Affordability 2010**

Place/ Planning Area	Average Household Income
Arizona	\$50,448
Pima County	\$45,521
<b>Planning Areas</b>	
Avra Valley	\$60,485
Tucson Mountains	\$68,841
Southwest	\$52,253
Altar Valley	\$51,834
Upper Santa Cruz	\$63,665
Mountain View	\$55,236
Southeast	\$49,550
Central	\$46,100
Catalina Foothills	\$78,669
Rincon Valley	\$99,897
Tortolita	\$78,035
San Pedro	\$94,050
Ajo/Why	\$38,608

Source: US Bureau of the Census, 2010

## The Foreclosure Crisis in Pima County

Foreclosures have affected all income levels and areas in Pima County. Since 2008, there have been 55,531 Notice of Sales (NOS), and 32,169 Trustee Deeds filed. Trustee Deeds indicate households went all the way through foreclosure, short sale, or deed in lieu. Recovery continues to be a major priority for affordable housing, as studies show Low-Moderate Income (LMI) households are the most affected. Although housing values have increased and homes are gaining equity, housing values in the LMI areas are slower to recover.

A 2005 study (The American Dream Lost: Predatory Lending and Foreclosures in Pima County) conducted by the Southern Arizona Fair Housing Council identified a trend in predatory and sub-prime lending targeting LMI and minority neighborhoods.<sup>22</sup> These same neighborhoods were hardest hit with foreclosures in 2008-2013. Another report titled “Wasted Wealth” (How the Wall Street Crash Continues to Stall Economic Recovery and Deepen Racial Inequity in America May, 2013) examines the ongoing impacts of the foreclosure crisis on the country and in particular on people of color.<sup>23</sup> It found that wealth was lost across the board from the Recession, but significantly more so for people of color. One reason

<sup>22</sup> Wasted Wealth, How the Wall Street Crash Continues to Stall Economic Recovery and Deepen Racial Inequity in America, by Benn Henry, Jill Reese and Angel Torres, Alliance for a Just Society, May, 2013) Pg. 1, [http://allianceforajustsociety.org/wpcontent/uploads/2013/05/Wasted.Wealth\\_NATIONAL.pdf](http://allianceforajustsociety.org/wpcontent/uploads/2013/05/Wasted.Wealth_NATIONAL.pdf)

<sup>23</sup> Wasted Wealth, How the Wall Street Crash Continues to Stall Economic Recovery and Deepen Racial Inequity in America, by Benn Henry, Jill Reese and Angel Torres, Alliance for a Just Society, May, 2013), Pg. 7, [http://allianceforajustsociety.org/wpcontent/uploads/2013/05/Wasted.Wealth\\_NATIONAL.pdf](http://allianceforajustsociety.org/wpcontent/uploads/2013/05/Wasted.Wealth_NATIONAL.pdf)

was directly linked to the foreclosure crisis. The Federal Reserve reported in March of 2013 that “Families of color hold significantly higher percentages of wealth in home equity, with 52 percent of total assets for Latino families and 49 percent for Black families, compared to just 28 percent for White families”.<sup>24</sup> While households who directly experienced foreclosure lost all their equity, the entire LMI community has seen their equity wealth lost due to decline in property values of foreclosed homes.

In a report published by the Federal Reserve Bank of San Francisco – District 12 (including Arizona), the demand for rental housing has increased during the foreclosure ‘crisis’. The fastest growing part of the rental market is the share of single-family units – an increase of 7.6 percent between 2007 and 2012 (Choi\*, pg 5). Related to this increased inventory is the rise in absentee ownership which “raises important community development questions and issues around neighborhood stabilization, rental costs, property maintenance, and lost asset building opportunities for potential first-time homebuyers.” (Choi\*, pg. 2) The only bright side to this trend is the impact on rents particularly for LMI households. Rents have decreased somewhat in Pima County during the period of 2007 to 2012 from 45.0 percent to 44.5 percent, respectively (Choi\*, pg. 7).

*\*Community Development Research Brief: The Rise of Single Family Rentals in Arizona, California and Nevada, Federal Reserve Bank of San Francisco, Laura Choi, Community Development Department, September 2014.*

Affordable housing through homeownership and safe decent affordable rental units continue to be a priority. The Housing Program of the Community Development and Neighborhood Conservation department offers a comprehensive one-stop housing center where Pima County residents can find resources, information, and direct services for housing. As an example, The Pima County Housing Center offers the public classes on financial education that include credit repair and debt management through a small grant received from Freddie Mac to help residents recover from foreclosure. Though the market has reduced the cost of housing, low wages, tighter credit restrictions and increased down payment requirements make it difficult for LMI residents to buy a home. In the past, federal funding provided the gap needed for homebuyers to purchase their first home. With federal funds shrinking by 48 percent over the past 3 years, it makes it more difficult for affordable housing developers who used these funds to reduce the price of housing for LMI households.

From 2000 to 2008 single family housing stock nearly doubled and 98 percent was single family.<sup>25</sup> Renters and lower income households often choose multi-family or manufactured housing which accounts for 65 percent of unincorporated, rural Pima County housing stock. Housing stock that is 30 years or older represents 45 percent of Pima County stock and over 75 percent of that in South Tucson. The need for rehabilitation, replacement, historic preservation and energy-efficiency improvements is great.<sup>26</sup>

<sup>24</sup> City of Tucson and Pima County Consortium 2010-2015 HUD Consolidated Plan, (“ConPlan”), Pgs. 15 & 16, <http://cms3.tucsonaz.gov/files/hcd/Tucson%20Pima%20County%202010-2014%20Consolidated%20Plan.pdf>

<sup>25</sup> Ibid, Pg. 21

<sup>26</sup> Ibid, Pg. 22



Ownership increases with household income. While 79 percent of middle and high income households are owners, the rate declines to 54% for low and moderate income households, 46 percent for very low income households, and 35 percent for extremely low income households.<sup>27</sup>

Government programs define cost burden as paying more than 30 percent of gross household income for total housing cost (rent or mortgage and utilities). For lower-income households, the burden is magnified by having less income to afford essentials such as clothing, food, transportation and childcare.

While 11 percent of owners and 26 percent of renters have some housing problem, the percentages are much greater among minority populations. Sixteen percent of Black or African American owners and 15 percent of Hispanic owners have greater housing problems and among renters, 31 percent of Black or African Americans and 29 percent of Hispanics have serious housing problems.<sup>28</sup>

### Household Characteristics

#### **Household Characteristics 1990, 2000, and 2010**

The following tables show total population, total housing units, average household size, total occupied units, renter occupied and owner occupied, vacant units and housing for seasonal, recreation or other use for 1990, 2000 and 2010 by planning area. Planning Area 14 is included for statistical purposes only. Pima County has no jurisdiction over the Tohono O’odham Nation.

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<sup>27</sup> Ibid, Pg. 23

<sup>28</sup> City of Tucson and Pima County Consortium 2010-2015 HUD Consolidated Plan, (“ConPlan”), Pg. 24,  
<http://cms3.tucsonaz.gov/files/hcd/Tucson%20Pima%20County%202010-2014%20Consolidated%20Plan.pdf>

**TABLE 3.5.d: Household Characteristics 1990**

Place/Planning Area	Total Population	Total Households	Total Housing Units	Average Household Size	Occupied Housing Units	Owner Occupied Households	Renter Occupied Households	Vacant Units
<b>Arizona</b>	3,665,228	1,437,551	1,368,843	2.62	1,368,843	878,561	490,282	290,587
<b>Pima County</b>	666,880	298,207	261,792	2.49	261,792	159,467	102,325	36,415
<b>Planning Areas</b>								
1) Avra Valley	9,890	3,913	3,458	2.86	3,458	2,883	575	455
2) Tucson Mountains	30,724	11,960	10,879	2.68	10,879	7,381	3,498	1,081
3) Southwest	51,324	20,967	17,990	2.85	17,990	13,842	4,148	2,977
4) Altar Valley	3,759	1,743	1,418	2.65	1,418	1,199	219	325
5) Upper Santa Cruz	17,547	11,654	8,858	1.96	8,858	7,656	1,202	2,796
6) Mountain View	678	320	260	2.55	260	214	46	60
7) Southeast	72,361	25,458	21,966	3.16	21,966	14,123	7,843	3,492
8) Central	279,082	132,053	117,639	2.29	117,639	56,325	61,314	14,414
9) Catalina Foothills	140,837	65,685	58,021	2.41	58,021	39,377	18,644	7,664
10) Rincon Valley	1,549	640	560	2.75	560	463	97	80
11) Tortolita	47,906	19,439	17,328	2.76	17,328	13,545	3,783	2,111
12) San Pedro	54	65	18	3.00	18	2	16	47
13) Ajo/Why	3,401	2,056	1,445	2.35	1,445	1,064	381	611
14) Tohono O'odham	7,768	2,254	1,952	3.98	1,952	1,393	559	302

Source: US Bureau of the Census, 2000 Population Counts Aggregates by Place and Planning Area

**TABLE 3.5.e: Household Characteristics 2000**

Place/Planning Area	Total Population	Total Households	Total Housing Units	Average Household Size	Occupied Housing Units	Owner Occupied Households	Renter Occupied Households	Vacant Units
<b>Arizona</b>	5,130,632	1,901,327	2,189,189	2.64	1,901,327	1,293,556	607,771	287,862
<b>Pima County</b>	843,746	332,350	36,6737	2.47	332350	213603	118,747	34,387
<b>Planning Areas</b>								
1) Avra Valley	16,922	5,783	6,318	2.85	5,784	4,895	889	534
2) Tucson Mountains	46,211	16,955	18,466	2.61	16,955	12,506	4,449	1,511
3) Southwest	69,186	23,451	26,238	2.94	23,451	18,094	5,357	2,787
4) Altar Valley	6,923	2,495	2,924	2.77	2,495	2,101	394	429
5) Upper Santa Cruz	24,586	12,544	16,031	1.94	12,544	10,947	1,597	3,487
6) Mountain View	1,152	456	523	2.50	455	407	48	68
7) Southeast	92,940	27,293	30,187	3.21	27,293	17,887	9,406	2,894
8) Central	309,344	130,150	141,506	2.29	130,150	64,062	66,088	11,356
9) Catalina Foothills	171,595	73,555	80,147	2.31	73,554	50,792	22,762	6,593
10) Rincon Valley	3,808	1,334	1,431	2.85	1,333	1,221	112	98
11) Tortolita	89,597	34,539	37,794	2.58	34,539	27,956	6,583	3,255
12) San Pedro	126	55	106	2.29	56	40	16	50
13) Ajo/Why	3,903	1,754	2,621	2.22	1,754	1,359	395	867
14) Tohono O'odham	7,453	1,986	2,445	3.73	1,987	1,336	651	458

Source: US Bureau of the Census, 2000 Population Counts Aggregates by Place and Planning Area

**TABLE 3.5.f: Household Characteristics 2010**

Place/Planning Area	Total Population	Total Households	Total Housing Units	Average Household Size	Occupied Housing Units	Owner Occupied Households	Renter Occupied Households	Vacant Units
<b>Arizona</b>	6,392,017	2,380,990	2,844,526	2.68	2,380,990	1,571,687	809,303	463,536
<b>Pima County</b>	980,263	388,660	440,909	2.46	388,660	248,970	139,690	52,249
<b>Planning Areas</b>								
1) Avra Valley	22,853	8,193	9,327	2.73	8,194	6,712	1,482	1,133
2) Tucson Mountains	63,422	24,164	26,283	2.53	24,164	16,867	7,297	2,119
3) Southwest	89,341	29,813	34,021	2.99	29,813	22,230	7,583	4,208
4) Altar Valley	7,062	2,714	3,446	2.60	2,714	2,253	461	732
5) Upper Santa Cruz	49,822	22,918	29,279	2.17	22,919	19,406	3,513	6,360
6) Mountain View	1,334	547	630	2.42	547	456	91	83
7) Southeast	116,512	34,847	39,246	3.17	34,846	22,969	11,877	4,400
8) Central	321,216	133,717	150,614	2.31	133,717	63,633	70,084	16,897
9) Catalina Foothills	176,907	79,360	88,481	2.21	79,360	54,078	25,282	9,121
10) Rincon Valley	12,861	4,521	4,970	2.84	4,521	3,969	552	449
11) Tortolita	108,154	44,272	49,560	2.44	44,271	33,776	10,495	5,289
12) San Pedro	103	43	85	2.40	43	30	13	42
13) Ajo/Why	3,524	1,630	2,389	2.15	1,630	1,135	495	759
14) Tohono O'odham Nation	7,152	1,921	2,578	3.60	1,921	1,456	465	657

Source: US Bureau of the Census, 2010 Population Counts Aggregates by Place and Planning Area



## Housing and Community Design

In 2012, Imagine Greater Tucson engaged the community in a discussion regarding community design and growth pattern scenarios. The Preferred Future Scenario depicts a region that is more compact, efficient, walkable, bikeable, greener and transit-oriented than it would be if we were to continue with a business-as-usual approach to growth. This future emphasizes creating areas with increased density and greater mix of land uses. The building blocks include centers, neighborhoods, transportation corridors, and employment areas. Large regional centers (Downtown Tucson or Marana and Oro Valley) will anchor the region with employment, higher density housing, shopping, and institutional uses. Town Centers will anchor transit corridors, walkable commerce areas and feature low to midrise buildings. Neighborhood centers will honor the adjacent residential neighbors with scaled form and use.

### **Compact and Mixed Use Development**

Compact development means that buildings, parking areas, streets, driveways, and public spaces are developed in ways that shorten trips, and lessen dependence on the automobile, thereby reducing levels of land consumption, energy use, and air pollution. Compact development promotes full utilization of urban services, such as water lines, sewers, streets, and emergency services, by taking advantage of existing public facilities and minimizing the need for new facilities.

Mixed-use development is appropriate in neighborhood-oriented centers, regional activity centers, high transit corridors, transit nodes, some community commercial centers, redevelopment and areas adjacent to urban areas. Locating stores, offices, residences, public services, and recreation spaces within walking distance of each other in these locations promotes:

- Healthy activities such as walking and biking;
- Independence of movement, especially for the young and the elderly who can conveniently walk, cycle, or ride transit;
- Safety through around-the-clock presence of people;
- Reduction in auto use, especially for shorter trips;
- Support for those who work at home, through nearby services and amenities; and
- A variety of housing choices, so that the young and old, singles and families, and those of varying economic ability may find places to live.

Examples of appropriate mixed-use include a corner store in a residential area, an apartment near or over a shop, and a lunch counter in an industrial zone. For increased compatibility with surrounding areas, mixed-use development can be horizontal or vertical. Horizontal forms consist of one story development combining commercial at appropriate locations while vertical mixed-use provides retail or services at ground level defining the public realm and feature office and residential on subsequent floors. Auto- or truck-dependent uses, such as heavy industrial, distribution, automobile sales lots, and some drive-up or

drive-through facilities should not be located in centers, nodes, or other compact, mixed-use areas because of their negative impact on nearby residences and the pedestrian environment.

Commercial and mixed-use design standards, in tandem with mixed-use zoning, overcomes incompatibility. Additionally, limitations on commercial functions, such as hours of operation and delivery truck access, may be necessary. More fundamentally, to gain the full benefits of a mix of uses, buildings must have convenient access to a connected system of streets and paths. Otherwise, people will still be encouraged or required to use cars, even for the shortest trips.

In Pima County, community centers are becoming multi-use places providing a variety of services. It is anticipated that this trend will continue, taking advantage of horizontal and vertical mixed-use land patterns allowing for the provision of a variety of services in community centers. Pima County has commercial and mixed use design standards for certain types of development but lacks urban design expertise to fully promote this type of development. It also has landscape design manuals that need updating to provide the best practices in creating walkable areas.

### Green Building Materials

Green buildings seek to reduce energy use, water use, material use and create a healthier indoor environment. The principles of affordability and green building coincide since the subsequent reduction in operating costs and the potential for reduced health costs make building more affordable. Green building seeks to promote efficiencies and sustainability in six areas: Location and Linkages, Site Development, Water Use, Energy Use, Material Resources and Indoor Air Quality.

- **Location and Linkages:** Seeks to reduce automobile dependence, achieve housing and jobs proximity, compact development and diversity of uses. Based on a study by the Center for Neighborhood Technology, when considering transportation costs, the number of affordable homes in the greater Tucson area is reduced from 73 percent to 21 percent.<sup>29</sup> Historic land use patterns and current development do not achieve most green building measures in this area.
- **Site Development:** Seeks to decrease the heat island effect and reduce water run-off.
- **Water Use:** Seeks to reduce irrigation water use and indoor water use. Xeriscape landscaping and the use of drip irrigation are locally acceptable and common green building principles. In contrast, a Pima County-adopted requirement for waterless urinals in all new construction continues to receive resistance. There remains a general reluctance even with projects seeking green building certification to use ultra-low flow water fixtures.
- **Energy Use:** Energy Star for Homes is a popular element of sustainability. All but one of the national builders as well as several local builders in the Pima County market build to the Energy Star for

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<sup>29</sup> See for example the Seattle area: [http://greenworksrealty.com/e-cert\\_report/Jan-2012-ECert-Graphic.pdf](http://greenworksrealty.com/e-cert_report/Jan-2012-ECert-Graphic.pdf)

Home standard.<sup>30</sup> There is no current estimate of market penetration for Energy Star homes however in the past, research by TEP has indicated a participation rate as high as 60 percent.<sup>31</sup> Comparatively, one of the largest single sources of energy savings is to “right size” air conditioners in both new construction and replacements, but the industry remains reluctant to adopt this practice.

- **Material Resources:** Local material for building is limited to adobe and concrete. Pima County was instrumental in developing and later adopting a building code to facilitate adobe construction however, adobe remains a specialty material. Concrete block is used in some commercial projects and very seldom in residential work.
- **Indoor air quality:** Seeks to reduce indoor air pollution by use of materials that have reduced volatile organic compound (VOC) emissions. Low VOC materials have become common place in the market since the creation of green building rating systems brought the issue to the forefront. Use of these materials in mainstream building, however, is still limited.

Many of the green building measures noted above have a slight, first-cost increase over the similar “brown” building measures. Even though there is demonstrated overall positive return on investment for green building,<sup>32</sup> the building industry acceptance of green building is low. This is due to the split incentive: the benefits of the energy efficient, water efficient, healthier building do not accrue to the developer.<sup>33</sup> The Energy Efficient Mortgage was designed to help offset the split incentive but has very limited if any use in Pima County.<sup>34</sup> Energy Efficient Mortgage was designed to help offset the split incentive but has very limited if any use in Pima County.<sup>35</sup>

Certified green homes that achieve efficiencies and sustainability in all six areas noted above have had limited success in the Pima County market place. Fifty-two homes were certified by Pima County in the Regional Green Building program between 2008 and 2013. As of January 2015, 349 homes in Pima County have been certified by the County in the national LEED for Homes program. Local market recognition of the value of certification does not yet exist when compared to more mature, sustainable building markets in other areas of the country. For example, research in King County Washington reports a 23 percent increase in the resale value of certified green homes.<sup>36</sup>

<sup>30</sup> Richmond American does not participate in Energy Star for Homes see [http://www.energystar.gov/index.cfm?fuseaction=new\\_homes\\_partners.showAreaResults&s\\_code=AZ&msa\\_id=3](http://www.energystar.gov/index.cfm?fuseaction=new_homes_partners.showAreaResults&s_code=AZ&msa_id=3) for list of energy star builders.

<sup>31</sup> Verbal communication with Dan Hogan, TEP Residential Account Manager.

<sup>32</sup> Center for Neighborhood Technology Affordability Index accessed 9/3/2013 <http://htaindex.cnt.org/map/>

<sup>33</sup> See for example: <http://www.usgbc.org/Docs/Archive/General/Docs1992.pdf> and <http://www.lexology.com/library/detail.aspx?g=6d193295-389d-48b8-881e-f393aa9a5d74>

<sup>34</sup> Personal communication with Eric Painter, Nova Home Loans; Jan Anderson, Long Realty and others

<sup>35</sup> Personal Communication with Eric Painter, Nova Home Loans; Jan Anderson, Long Realty and others.

<sup>36</sup> [http://greenworksrealty.com/e-cert\\_report/Jan-2012-ECert-Graphics.pdf](http://greenworksrealty.com/e-cert_report/Jan-2012-ECert-Graphics.pdf)

### Housing Rehabilitation and Redevelopment

While assisting first-time homebuyers to enter the homeownership market is one important community sustainability strategy, assisting existing homeowners to maintain their housing is equally important. Cost burdened owners are often challenged to maintain their properties and deferred maintenance may lead to deterioration of major housing systems, neighborhoods, and communities.

Existing homeowners may experience cost burden (paying more than 30 percent of household income for housing) or severe cost burden (paying more than 50 percent of household income for housing). While owners at all income levels experience cost burden, it is more prevalent among lower-income owners. Sixty-nine percent of extremely low income owners are either cost burdened or severely cost burdened. Fifty-seven percent of very low income, 39 percent of low and moderate income, 37 percent of middle income, and 13 percent of higher income households are also cost burdened.<sup>37</sup>

Housing affordability extends beyond the relationship of housing costs to income. Just as transportation costs impact housing affordability based on location, utilities directly impact housing affordability. The standard measure for affordable rental housing and monthly rent subsidies includes an allowance for utilities derived from average utility costs by unit size. Low and moderate income households and large families occupying older structures are especially impacted by high utility costs. Improving housing affordability and reducing operating costs through improved energy efficiency and sustainable design is an important strategy.<sup>38</sup>

### **Housing Condition**

The more poorly a structure is built, the more costly it is to operate in the long run. The overall goal of energy efficient and sustainable building practices is to provide for long-term affordability and sustainability. Some of the objectives are to recognize transit and transportation accessibility, improve indoor air quality, and positively impact the health and well-being of residents. Energy efficiency has many household and community benefits. The movement is towards long-term cost savings, decreased emissions, increased health, and ultimately increased productivity. Incorporating appropriate materials and techniques into public and nonprofit facilities can also reduce organizational operating expenses, providing for lower overhead and increasing opportunities to serve the community.<sup>39</sup>

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<sup>37</sup> City of Tucson and Pima County Consortium 2010-2015 HUD Consolidated Plan, ("ConPlan"), Pg. 31, <http://cms3.tucsonaz.gov/files/hcd/Tucson%20Pima%20County%202010-2014%20Consolidated%20Plan.pdf>

<sup>38</sup> Ibid, Pg. 24

<sup>39</sup> Ibid, Pg. 24

## Age of Housing

Older housing units may be less energy efficient, resulting in higher utility costs for occupants. In addition, some materials such as lead paint (in units built prior to 1978) and asbestos may represent health hazards to occupants. The age of the housing stock is one indicator of housing quality. While many older housing units have been well-maintained and lovingly restored, other older housing units may have been built to outdated building codes using materials and construction techniques that are no longer considered safe or sustainable. Older units are the most likely to require rehabilitation or replacement, historic preservation, and energy-efficiency improvements.

Almost half (45 percent or 199,606 units) of the housing stock in Pima County is 30 years old or older. The majority of older units are located in Tucson, where 49 percent of the stock is more than 30 years old, and in South Tucson where 75 percent of the stock is more than 30 years old. One third of older housing stock was built prior to 1960 when local building codes were not yet adopted or enforced in many areas. Much of the oldest housing stock is in Tucson and South Tucson:

- In Tucson, 53,666 units or 23 percent of the stock was built before 1960 and another 83,345 or 36 percent of the housing stock was built between 1960 and 1980.
- In South Tucson 1,002 units or 47 percent of the stock was built before 1960, and another 807 or 38 percent of the housing stock was built between 1960 and 1980.<sup>40</sup>

## Material and Labor Costs

One argument against energy efficiency improvements and sustainable building has been that material and labor costs are high. However as demand has increased, costs have decreased putting many improvements within the reach of households and builders alike. In fact, many energy efficiency improvements have zero or very low cost. According to Pima County Community Development staff, LEED silver certification costs approximately 2 percent more than standard construction and can result in significantly lower utility bills and community impacts.

Both the University of Arizona Drachman Institute and the Arizona State University Stardust Center for Homes and the Family have been working towards building models of energy conservation and sustainable design. The Drachman Institute has developed design guidelines and model units that are readily available to nonprofit builders.

The Stardust Center has developed standards (AZ5 ReGreen) that provide energy efficiency retrofit guidelines. Both the AZ5 ReGreen and LEED guidelines provide a menu of techniques and materials that

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<sup>40</sup> Ibid, Pg. 22



range from zero -cost to high-cost, making it possible for those who are not well-versed in all of the techniques and materials to choose the most efficient and sustainable improvements and building techniques.

Local government has also played an important role in energy efficiency and sustainable building. Pima County is the only recognized local government to provide LEED certification. This certification places energy efficiency and sustainable development expertise within local government, where partnerships and relationships with the affordable housing and community development industry are readily sustained. One success that demonstrates the effectiveness of in-house expertise is the adoption of Green rehabilitation standards by jurisdictions throughout the County. The standards are coordinated with a Certification program for rehabilitation contractors.<sup>41</sup>

**TABLE 3.5.g: Pima County Owner Housing Activities, 5-Year Goals And Performance Measures** <sup>42</sup>

Activity	5-year Goal & Performance Measure	Funding Source(s)
Owner-occupied Housing Rehab, including Lead Abatement and Historic Preservation	450 units	CDBG, HOME
Acquisition, Rehabilitation, Resale	200 units	HOME
Handicap Accessibility Improvements	150 units	CDBG
Demolition/Reconstruction	30 units	CDBG, HOME

*Source: Pima County Development Services Department, 2013*

## Substandard Housing

This section provides an inventory of substandard housing in need of rehabilitation or demolition by planning area based on census indicators and on best available data. Indicators include:

- **Year Structure was built:** A distinction is made between units built before 1940 and units built thereafter. Research has demonstrated that units built before 1940 are much more likely to be in substandard condition. This factor is probably the most dominant factor in estimating the condition of the housing stock.
- **Persons per Room:** 1.01 or more persons per room is an index of overcrowding.
- **Plumbing Facilities:** Inadequate plumbing facilities are indicated by either a lack of exclusive use of plumbing facilities or incomplete plumbing facilities.
- **Kitchen Facilities:** Inadequate kitchen facilities are indicated by shared use of a kitchen or the lack of a sink with piped water, a stove or a refrigerator.
- **Heating or Cooling:** Inadequate or no heating or cooling.

<sup>41</sup> Ibid, Pg. 25

<sup>42</sup> Ibid, Pg. 76

- **Structure:** Structural repairs needed

**TABLE 3.5.h: Substandard Housing by Planning Area 2010**

Planning Area	Lacking Plumbing	Lacking Kitchen	Total Housing Units
Pima County	1,257	2,948	444,349
Avra Valley	401	279	9,297
Tucson Mountains	110	177	26,917
Southwest	241	412	34,645
Altar Valley	443	350	4,555
Upper Santa Cruz	289	383	24,862
Mountain View	119	74	2,515
Southeast	716	709	37,543
Central	1,790	2,571	150,989
Catalina Foothills	332	1,194	89,602
Rincon Valley	19	57	3,484
Tortolita	327	396	48,005
San Pedro	73	56	1,569
Ajo/Why	124	202	2,300
<b>Totals</b>	<b>1,257</b>	<b>2,948</b>	<b>444,349</b>

Source: US Bureau of the Census, 2010

### County Designated Colonias

Section 916 of the Cranston-Gonzalez National Affordable Housing Act of 1990 requires the State of Arizona to set aside up to 10 percent of their annual Community Development Block Grant (CDBG) allocations. Pima County has eight colonias that are eligible contenders for Arizona’s 10 percent CDBG set-aside funds.

A “colonia” as defined by Section 916 of the Cranston-Gonzalez Act is any identifiable community that meets the following criteria:

- Is located within 150 miles of the United States and Mexico border, except within any standard metropolitan statistical area that has a population exceeding 1,000,000;
- Is designated by Pima County as a colonia for eligibility of Arizona CDBG funds;
- Is a colonia based on the objective criteria such as a lack of potable water supply, lack of adequate sewage systems, and lack of decent, safe, and sanitary housing;
- In existence and generally recognized as a colonia before the enactment of the National Affordable Housing Act of 1990.

Additionally, the State of Arizona Department of Housing (ADOH) has developed their own colonia certification list and developed a process to certify Arizona colonias to ensure that they comply with

Section 916 of the Cranston-Gonzalez Act of 1990 and Federal Housing and Urban Development's (HUD) Office of Community Planning and Development (CPD) notice 11- 001 to set-aside funds in meeting the colonia residents' needs regarding health and safety in terms of water, sewage, and housing.

A community, county, or tribe wishing to obtain ADOH colonia certification must meet all four of the criteria and must demonstrate eligibility through extensive historic documentation. In order to be considered an eligible colonia it is important to recognize and document evidence that water, sewer, and/or housing issues were in existence in the community in question, prior to November 1990.

Communities, counties, or tribes wishing to obtain state CDBG funding for colonia projects must first complete the certification process prior to being eligible to participate in a colonia set-aside competitive funding round.

Pima County will continue to work with the federally-designated USDA colonias to certify them under the ADOH guidelines, thereby making such communities eligible for State of Arizona CDGB 'set-aside' funding.

See Exhibit 3.5.a and 3.5.b for maps of Pima County Designated Colonias.

**TABLE 3.5.i: Designated Colonias in Pima County**

Sub-region	Colonias
Avra Valley	Avra Valley Water Co.
	Marana Town
	Marana Water District
	Rancho del Conejo
	Red Hill Water Coop
Tucson Mtns	Town of Marana
	Rillito
Altar Valley	Sierrita Mountain
	Arivaca
	Three Points
Upper Santa Cruz	Sierrita Mountain
	Sahuarita Town
	Elephant Head
Mountain View	None
Southeast	Littleton
	Old Nogales Highway
	Sahuarita Town
	South Tucson
Central	Littleton
	Marana Town
	South Tucson
Catalina Foothills	None
Rincon Valley	None
Tortolita	Marana Town
San Pedro	None
Ajo/Why	Ajo

Source: Arizona Department of Housing, 2013

### 3.6 Cultural Resources

This section identifies priority site complexes, priority archaeological sites, and cultural resources on County Conservation Land, existing deficiencies and potential remedies by planning area based on data provided in the Pima County Infrastructure Study, 2013.

Pima County has a long-term commitment to protect its cultural resources, beginning with Board of Supervisors Resolution 1983-104, which provides protection for archaeological and historic sites on County projects. Various existing County ordinances and policies also require the consideration and protection of cultural resources on projects permitted by the County. The County also ensures that appropriate State and Federal cultural resources requirements are met, as required on a project-specific basis; for example, if a Clean Water Act, Section 404 Permit is required, then the County will implement compliance to the federal standard as well as meeting the County standard.

The following County, State, and Federal legal authorities can apply in different situations and give guidance to compliance actions:

- Federal Antiquities Act 1906
- Arizona State Antiquities Act 1927
- Historic Sites Act [NHL, HABS, HAER] 1935
- National Historic Preservation Act 1966
- National Environmental Policy Act 1969
- American Indian Religious Freedom Act 1978
- Archeological Resources Protection Act 1979
- Native American Graves Protection: Repatriation Act 1990
- Arizona Historic Preservation Act 1982
- Pima County Board of Supervisors Resolution 1983-104 (and other BOS resolutions, see below)
- Pima County Board of Supervisors Policy C3.17, 2008
- Arizona State Burial Act 1990
- Pima County Comprehensive Plan 2002
- Pima County Zoning Code, Title 18

The National Register of Historic Places and the Arizona Register of Historic Places provide historic properties and districts cultural significance and guidance for preservation planning and the appropriate treatments and mitigation.

Following a goal set forth in the regional policies of the current comprehensive plan, as amended June 2012, Pima County has adopted a list of Priority Cultural Resources (PCR) as part of the 2001 Sonoran Desert Conservation Plan. Identification of cultural resources for inclusion on this List was conducted under the oversight and direction of the Sonoran Conservation Plan Cultural and Historic Resources Technical Advisory Team and 20 experts in historic preservation and archaeology. The List is divided into



two general categories of cultural resource types, one consisting of 91 archaeological sites and site complexes, and the other consisting of 138 historic sites and structures.

The List includes, and will continue to include, a balanced collection of cultural resources of exceptional value that are representative of the County's diverse cultural history regardless of current jurisdiction. The List primarily serves as a planning tool for development, and designation as a PCR will help ensure that these significant places are provided the highest consideration prior to any county public works project, as well as in select cases, private development. A secondary function of the List, and arguably equally as important, is to encourage through education the stewardship of these exceptional resources by providing for their immediate conservation, and long term preservation, so as to illustrate and commemorate the history and prehistory of Pima County.

In 2004, Pima County voters approved bond funding for projects to preserve cultural resources. Public-approved historic preservation bonds have been used to acquire conservation easements for the repair, rehabilitation, and preservation of significant cultural resources and historic properties listed in the National Register of Historic Places. Many of these bond projects include an education component and serve to educate the public on Pima County's cultures and history, which benefit the public and local communities. Examples of Bond projects include the *Anza National Historic Trail*. The Anza Trail runs for 60 miles through Pima County and is part of the greater 1200-mile trail that was used in 1775 by Spanish explorers looking for a land route from Sonora to San Francisco.

Other bond projects that have made a substantial difference in the rehabilitation of historic buildings include the Canoa Ranch Buildings Rehabilitation, Steam Pump Ranch, Ajo Train Depot, and Dunbar School. Bond projects focusing on preserving archaeological sites include Dakota Wash Site, Coyote Mountains, Honey Bee Village, and Pantano Townsite. Preservation of archaeological sites and rehabilitation of historic buildings in Pima County provides economic benefits to local businesses due to tourism and helps maintain and reinforce a local community's sense of place. Pima County shall continue to support the public's interest in cultural resources and historic preservation projects through the County Bond program. See Pima County's website for information on bond projects:

<http://webcms.pima.gov/government/bonds/>

### Cultural Resources Background Evaluation

Research and predictive modeling has enabled the characterization of Pima County lands into three basic categories (low-medium-high) of archaeological sensitivity. Based on these categories, priority Cultural Resources (archaeological and historic sites) are places of such extraordinary importance to the history and culture of the people of Pima County that their conservation is of utmost concern. These documented resources are significant places on the landscape and known to contain material remnants of ancient and/or historic cultures. The assessment that follows addresses the specific cultural resources needs identified by the Pima County Infrastructure Study by planning area.

Identified significant cultural resources on County conservation lands require management. Without care, these resources are subject to erosion processes, inadvertent impacts, and benign neglect. To maintain the long-term value of the community's investment to acquire these resources, the County currently employs a volunteer program through Arizona State Parks, called the Arizona Site Stewards Program where volunteers monitor significant cultural resources on lands owned by Pima County. Site stewards are currently monitoring previously recorded sites on a regular basis and record and subsequently report to the County and State Parks. Such monitoring information is fundamental to informing County management strategies.

Current deficiencies in terms of cultural resources in the planning areas could include any of the following depending upon the specific planning area:

- The inadequacy of the level of current inventory status.
- The quality of our current inventory status.
- The lack of knowledge of significant cultural resources on a large proportion of County conservation lands or lands proposed for County conservation in the future.
- The lack of resources to manage known, significant cultural resources on County conservation lands
- The lack of preservation of significant cultural resources through development which cannot avoid impacts to sites.
- Only a portion of the planning area has been inventoried for cultural resources and most surveys were conducted in the 1980s. In many cases, these surveys would be considered outdated by current regulatory standards due to changes in geological processes over time and field techniques. The majority of these surveyed lands were those planned for potential development in the 1980s. Although archaeologists can estimate the probability of finding cultural resources in areas not previously investigated, at present, little is known about the cultural resources status on unsurveyed land, or lands proposed for County conservation in the future.

An example of potential remedies are those listed for the Altar Valley planning area:

- Supporting conservation and designating conservation areas are efforts that would make a substantial difference in cultural resources preservation.
- One example includes County efforts in nominating historic buildings for listing in the National Register for Historic Places (NRHP) and rehabilitating the historic ranches, such as Robles Ranch. The Pima County conservation area includes a portion of the Coyote Mountains Site Complex but the nomination as the Coyote Mountains National Register Archaeological District has not yet been submitted to the Keeper of the Register.
- Listing significant standing historic structures and archaeological and historic districts is an important step in the preservation and management of historic properties.

### Potential Remedies and Projects Per Planning Area

Of most urgency is the need to conserve, restore, document, and rehabilitate known historic sites and buildings and known archaeological sites located within the Tucson Downtown Priority Archaeological Site Complex. The County is actively rehabilitating buildings it has acquired and has conservation easements through at least portions of important archaeological and historic sites associated with the history of Tucson. Greater funding is required to preserve, restore, and rehabilitate buildings. Funding from future bonds and collaborating with nonprofit and private owners and the City of Tucson will continue to be a necessary part in successful conservation of Downtown Tucson.

Sometimes development cannot avoid impacts to significant archaeological sites. In order to remedy this situation, a greater understanding of the cultural resources within a region is helpful in being able to make development decisions that can avoid or lessen the impacts early in the planning process of a development project. Promoting greater use of restoration and rehabilitation in standing structures and conservation easements in sites in the Central planning area (downtown Tucson) is important. One excellent approach that begins to address the needs for programmatic ways of recognizing and treating the significant historic and archaeological sites in the downtown Tucson area is the City of Tucson Historic Preservation Office's identification of "Sensitivity Zones". The City of Tucson sensitivity zones are defined with specific programmatic requirements designed to mitigate effects of construction in those zones. In general, additional systematic surveys conducted to modern standards would be the optimal approach to improve our understanding of the spatial distribution, quantity, and type of cultural resources.

### **Avra Valley Planning Area (1)**

This planning area includes Ironwood Forest National Monument, Brawley Wash, and Saguaro National Park. Small portions of the planning area have been surveyed for cultural resources. The largest of the surveys were carried out over 20 years ago, some of which are associated with the ASARCO mine. Others were conducted in the southeastern most corner of the planning area.

In general, cultural resources survey in this planning area is limited. However, several small, systematically placed block survey areas conducted by the University of Arizona in the past 15 years resulted in the identification of numerous archaeological sites in the Ironwood Forest National Monument.

With the exception of the southeastern most portion of the planning area, areas where cultural resources surveys were conducted have resulted in the identification of cultural resources.

### **Priority Archaeological Site Complexes**

- Tucson Mountains B Priority Archaeological Site Complex
- Los Robles Priority Archaeological Site Complex

### **Archaeological Districts Listed in the National Register of Historic Places**

- Cocoraque Butte Archaeological District
- Los Robles Archaeological District

### **Priority Archaeological and Historic Sites**

- Pig Farm Site (Hog Farm Ballcourt Site)
- Saguaro Springs
- Santa Anna del Chiquiburitac Mission
- Camp Pima (CCC)
- Cocoraque Butte
- Producer Cotton Gin
- Tucson Mountain Park

### **County Conservation Lands**

At present, no significant cultural resources are known to be located on County conservation lands. However, portions of several sites (Camp Pima CCC, Cocoraque Butte, Pig Farm Site, Saguaro Springs, and Santa Anna del Chiquiburitac) are located in Federal land preserves.

### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in this planning area primarily concern conservation and cultural resources surveys.

- The lack of resources to conserve and protect known archaeological sites.
- The lack of current survey data.
- The lack of preservation of significant cultural resources through development which cannot avoid impacts to sites.

### **Potential Remedies and Projects**

This planning area encompasses significant historic and prehistoric cultural resources. Potential remedies that would make a substantial difference in cultural resources preservation would include the County acquisition of conservation lands, supporting conservation efforts and designating conservation areas.

## **Tucson Mountains Planning Area (2)**

This planning area includes land owned by Pima County, Town of Marana, City of Tucson, Tucson Mountain Park, other local parks, Saguaro National Park West, and State Trust Land. The northern half of the area and much of the area along the Santa Cruz River have been surveyed. The surveyed portions also have been characterized as a zone of high archaeological sensitivity (SDCP). The Northern Tucson Basin Survey (Arizona State Museum) 1981-174.ASM, was the largest block survey conducted in this planning area. Fewer surveys have been conducted west of the Santa Cruz River floodplain and in Saguaro National Park West and Tucson Mountain Park. Less is known of the area in the southwestern portion of the area, characterized by low archaeological sensitivity.

Over one hundred archaeological sites are known to exist in the Tucson Mountain planning area. The large majority of the previously identified sites are part of four Priority Archaeological Site Complexes (SDCP).

### **Priority Archaeological Site Complexes**

- Tucson Mountains A Complex
- Los Morteros Complex
- River Confluence Complex
- Middle Santa Cruz Complex

### **Priority Archaeological Sites**

- Los Morteros
- Cortaro Fan Site
- Dairy Site
- Saguaro Springs
- Linda Vista
- Bojorquez-Aguirre Ranch
- Yuma Wash
- Roland
- Picture Rocks
- Costello-King
- Hodges Ruin
- Sunset Lime Kiln
- Rabid Ruin
- Los Pozos
- Sweetwater Lime Kiln
- Santa Cruz Bend
- Stone Pipe
- San Augustin/Clearwater



- Solomon Warner/Mill
- Black Sheep Cave

### **County Conservation Lands**

Cultural resources on County conservation lands include Black Sheep Cave, Linda Vista, Los Morteros, San Augustin/Clearwater, and Tumamoc Hill.

### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in this planning area primarily concern conservation and management.

- The lack of resources to conserve known archaeological sites.
- The lack of resources to manage known, significant cultural resources on County conservation lands.
- The lack of preservation of significant cultural resources through development which cannot avoid impacts to sites.
- Need to conserve National Register-listed sites which are chosen for utility corridors.

### **Potential Remedies and Projects**

This planning area encompasses significant historic and prehistoric cultural resources. The area is characterized by diverse cultural resource types. Supporting conservation efforts and designating conservation areas are efforts that would make a substantial difference in cultural resources preservation.

As large portions of the planning area are already known to contain significant cultural resources, projects and programs supporting the management of the resources and the lands are necessary projects. One good example of how many significant archaeological sites are currently being managed by Pima County, is through the Arizona Site Stewards Program.

### Southwest Planning Area (3)

The Southwest planning area has been identified as a major growth area by the Pima County Southwest Infrastructure Plan (SWIP). As part of the development review process, it is anticipated that cultural resources will be assessed on a project by project basis as development occurs within this area.

The planning area includes the San Xavier District of the Tohono O’odham Nation and the Pascua Yaqui Tribe Reservation. Cultural resources records are unavailable for these areas, however, important cultural and historic resources are present. For instance, the San Xavier del Bac Mission is the oldest intact European structure in Arizona and is a National Historic Landmark and a UNESCO World Heritage Site. The remaining portions of this planning area range between high and low archaeological sensitivity zones, with high sensitivity zones associated with the Santa Cruz River and Black Wash systems. Very little of the planning area has been inventoried for cultural resources, and correspondingly little is known about the cultural resources status in unsurveyed areas. Even so, several large prehistoric sites are known, including National Register-eligible sites, like the prehistoric Hohokam villages of the Valencia Site and Dakota Wash. The Valencia Site is the only prehistoric priority cultural resources site in the area and three Priority Archaeological Site Complexes are associated with the West Branch of the Santa Cruz River. Much of Tucson Mountain Park is incorporated within this planning area; it is designated a Priority Historic Site in the Sonoran Desert Conservation Plan. There are no sites listed on the National Register of Historic Places.

#### Priority Archaeological Site Complexes

- West Branch Complex
- Valencia Complex
- Middle Santa Cruz Complex

#### Priority Archaeological Sites

- Valencia Site
- Tucson Mountain Park Priority Historic Site

### Altar Valley Planning Area (4)

At least half of the land in this planning area is State Trust Land. Significant portions of land are also within the Buenos Aires National Wildlife Refuge and the Tohono O’odham Nation. Coronado National Forest, private land, Bureau of Land Management, and Pima County lands are also included in the planning area. Very little of the land (less than 10 percent) in the area has been surveyed for cultural resources, and, a similarly low percentage has been developed. The landscape includes a portion of the Baboquivari Wilderness Area, Brawley Wash, and the Altar Valley containing braided and dissected wash systems which create diverse natural habitats. The valleys at the bases of canyon mouths of the steep Coyote Mountains provided protected settings suitable for prehistoric human occupation.

Although only a major few surveys (e.g. Dart et al. 1980, Brack 2011) have been conducted, it is expected that cultural resources exist in this planning area that have yet to be recorded. Previously recorded cultural resources and sites are clustered within identified Priority Archaeological Site Complexes (SDCP).

#### **Priority Archaeological Site Complexes**

- Brawley Batamote Complex
- Coyote Mountain Complex
- Gunsight Mountain Complex

#### **Priority Archaeological Sites**

- Cocoraque Butte
- Blackstone Ruin
- Robles Ranch

#### **Historic Properties Listed on the National Register of Historic Places**

- Cocoraque Butte
- Robles Ranch House

#### **Traditional Cultural Property**

The Altar Valley planning area also encompasses a portion of the Baboquivari Mountains and Kitt Peak, which is located on Tohono O’odham Nation Indian Reservation lands. Kitt Peak is a Traditional Cultural Property and known to the Tohono O’odham as I’toi’s Garden. As I’toi is the creator of the Universe and the Tohono O’odham, Kitt Peak is a sacred place to the Tohono O’odham Nation.

#### **County Conservation Lands**

A portion of the Coyote Mountain Priority Archaeological Site Complex exists within County conservation lands located in T17S, R8E, Sections 3, 9, and 10. Pima County owns approximately 804 acres that contain four archaeological sites located in South Mendoza Canyon and White Rincon Canyon, and a portion of the historic Hay Hook Ranch.

#### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in this planning area primarily concern conservation and management.

- The lack of resources to acquire conservation lands.
- The lack of current survey data.
- The need for managing and monitoring significant cultural resources so that archaeological sites are not destroyed through pot-hunting and historic buildings are not

neglected and destroyed. Survey assessments conclude that a large majority of the archaeological sites have been impacted by looting, particularly from the ground surface.

### **Potential Remedies and Projects**

This area is characterized by diverse cultural resource types. Supporting conservation and designating conservation areas are efforts that would make a substantial difference in cultural resources preservation.

One example includes County efforts in nominating historic buildings for listing in the National Register for Historic Places (NRHP) and rehabilitating the historic ranches, such as Robles Ranch. The Pima County conservation area includes a portion of the Coyote Mountains Site Complex but the nomination as the Coyote Mountains National Register Archaeological District has not yet been submitted to the Keeper of the Register.

Listing significant standing historic structures and archaeological and historic districts is an important step in the preservation and management of historic properties.

### **Upper Santa Cruz Planning Area (5)**

Although cultural resources (archaeological and historic sites) have been identified throughout this planning area, survey has shown that cultural resources tend to be concentrated in certain areas. The high archaeological sensitivity zone occurs mostly in areas associated with the Santa Cruz River. Other locations that have been previously surveyed just west of the Sierrita Mountains have been designated with moderate sensitivity. The remaining portions of land within this planning area represent low archaeological sensitivity.

Previous research offers a picture of the lifeways of populations that inhabited the land. Surveys have also generated reports on site type and in some cases additional research (e.g. excavation and intensive inventory projects) on significant archaeological and historic sites. Survey in this planning area has resulted in the identification of approximately 200 archaeological and historic sites.

### **Priority Archaeological Site Complexes**

- Eastern Sierrita Complex
- Canoa Ranch Complex

### **National Register of Historic Places Sites**

- Canoa Ranch
- Missile Site 8 - Air Force Facility Missile Site 8 (571-7) Military Reservation in Green Valley, Arizona, is the only remaining on alert Titan II Intercontinental Ballistic Missile (ICBM) complex during the Cold War between 1963 and 1987 (National Park Service). The missiles were built to survive and retaliate on a nuclear attack from the Soviet Union.

Titan II carried the largest single warhead used in the ICBM program and was constructed in response to the "missile gap" panic of the late 1950s and early 1960s.

#### **Potential Remedies and Projects**

- Additional systematic surveys conducted to modern standards would be the optimal approach to improve our understanding of the spatial distribution, quantity, and type of cultural resources in this area.
- One critical element for management is having an inventory of cultural resources on County conservation lands. The County's cultural resources staff is currently preparing a cultural resources long-term management plan. This plan will include differing levels of proposed survey and inventory on County lands.
- For future planning purposes and management, it may be beneficial to have an understanding of where the significant cultural resources are located with respect to the Conservation Lands System categories. It is important to have at least an initial assessment or a sample survey of proposed County conservation areas to determine the importance of conservation of cultural resources in parallel with other County conservation goals (e.g. natural resources). This enables planning for future Bond projects and would benefit the public to a greater extent.
- There are some cases in which development cannot avoid impacts to significant archaeological sites. In order to remedy this situation, a greater understanding of the cultural resources within a region is helpful in being able to make development decisions that can avoid or lessen the impacts early in the planning process of a development project.



### **Mountain View Planning Area (6)**

Pima County, Cienega Creek Natural Preserve, Coronado National Forest, and Las Cienegas National Conservation Area lands comprise the majority of this planning area. Very little of the land in this planning area has been formally surveyed for cultural resources, and, a similarly low percentage has been developed. The larger block surveys have been completed in the Santa Ritas west of SR 83 as part of the cultural resources compliance process for the continuing development and expansion of the Anamax and Rosemont mines over the past 40 years.

One north-south linear survey (SWCA 1999) running from the northern planning area boundary to the southern boundary resulted in the identification of archaeological sites. Cultural resources likely exist in the canyons along tributaries between mountain ridges, such as in Apache Canyon. These restricted areas of possible prehistoric land use between high ridges are defined as areas of high and moderate archaeological sensitivity (SDCP). Previously recorded cultural resources are clustered within identified Priority Archaeological Site Complexes (SDCP), also defined as areas of high archaeological sensitivity (SDCP). These areas with habitation sites and larger clusters of sites are found in the valleys.

The SDCP predicts a strong positive correlation between Important Riparian Areas (CLS) and archaeological sites in this planning area.

#### **Priority Archaeological Site Complexes**

- Davidson Canyon Complex
- Upper and Lower Cienega Creek Complexes

#### **Priority Archaeological Sites**

- Greaterville
- Rosemont Townsite
- Donaldson Site
- Total Wreck Mine
- Marsh Station Road

#### **Priority Historic Sites**

- Kentucky Camp
- Empire Ranch

#### **Historic Properties Listed on the National Register of Historic Places**

- Kentucky Camp
- Empire Ranch
- Empirita Cattle Ranch Rural Historic District

### **Traditional Cultural Property**

This planning area also encompasses a portion of the Santa Rita Mountains, located in the Coronado National Forest that is known to the Tohono O’odham Nation as Ce:wi Duag, “Long Mountain”. Ce:Wi Duag is considered a Traditional Cultural Property to the Tohono O’odham Nation. The State Historic Preservation Office has determined Ce:wi Duag eligible for listing on the National Register of Historic Places as a Traditional Cultural Property.

At present a portion of Marsh Station Road, approximately four acres, is within Pima County preserve lands in T17S, R17E, Section 1.

### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in this planning area primarily concern conservation and management

- The lack of resources to acquire conservation lands.
- The lack of current survey data.
- The need for managing and monitoring significant cultural resources so that archaeological sites are not destroyed through pot-hunting and historic buildings are not neglected and destroyed.
- The need to conserve significant cultural resources (traditional cultural properties, historic sites, and archaeological sites) and protect these resources from being destroyed.

### **Potential Remedies and Projects**

This area is characterized by diverse cultural resource types. Supporting conservation and designating conservation areas are efforts that would make a substantial difference in cultural resources preservation.

Submitting the research and documentation needed to list significant standing historic structures, archaeological and historic districts, and Traditional Cultural Properties in the National Register of Historic Places is an important step in the preservation and management of cultural resources.

### **Southeast Planning Area (7)**

The Southeast planning area has been populated for many thousands of years. Prehistorically, populations peaked during the period between A.D. 200 and A.D. 1300. Certain parts of the landscape appear to have been more heavily utilized than others. The degree of archaeological sensitivity within this planning area varies across the landscape. Archaeological sensitivity is based on a variety of factors including the presence of documented archaeological and historic sites and Priority Cultural Resources. Based on what is known from cultural resources surveys, the area with the greatest archaeological sensitivity and prehistoric occupation is associated with the Santa Cruz River, where surface water was historically available.

Only about a third of the planning area has been surveyed or inventoried for cultural resources. Previously surveyed areas were conducted on non-contiguous portions of land and little is known about the cultural resources status in un-surveyed areas. For those areas that have been surveyed, most were inventoried over 20 years ago and, on the whole, were motivated by the need to inventory cultural resources in advance of development. Within the area, 643 archaeological or historic sites have been identified. Priority Cultural Resources (archaeological and historic sites) have also been identified within the area.

#### **Priority Archaeological Complexes**

- Zanardelli Priority Archaeological Site Complex
- Middle Santa Cruz Priority Archaeological Site Complex
- Continental Madera Priority Archaeological Site Complex
- Santa Rita Priority Archaeological Site Complex.

#### **Priority Historic Sites**

- The Historic Community of Sahuarita (1911)
- The Ghost Town of Helvetia (1899)
- Old Nogales Highway. This historic road was significant during the late Historic (A.D. 1900 – 1950) time period

### **Central Planning Area (8)**

Within this planning area, the high archaeological sensitivity zone occurs in association with prehistoric and historic settlement near the Rillito River, Santa Cruz River, and in the immediate vicinity of downtown Tucson where settlement has been continuous for 4,000 years. The settlement pattern throughout history shows that these localized areas were intensively occupied. To the east and south of these major rivers, the majority of the land included in this area is within a moderate or low archaeological sensitivity zone.

The planning area includes the origins of the modern city of Tucson, first identified by Spanish missionary Fr. Eusebio Francisco Kino in the 1690s as San Cosme del Tucson, named after the Piman village of

“stjukshon” that he encountered at the base of Sentinel Peak. With the establishment of a mission at stjukshon and a military presidio east of the Santa Cruz River, Tucson became the northernmost outpost of New Spain and what has become the core of downtown Tucson today. This planning area evidences both archaeologically and through its historic neighborhoods, the initial settlement, sequential development, and expansion of the City as it spread northward and southward along the Santa Cruz River and eastward encompassing virtually the entire Tucson valley. Today, there are 30 City historic districts listed in the National Register of Historic Places that reflect the development of Tucson as shown in the attached table and map.

There has been a great deal of research over the past 20 years on the archaeological and historical settlements characterizing the areas associated with the Rillito River, Santa Cruz River and downtown Tucson. Many of these significant sites evident in the built environment or with substantial surface indicators had been previously identified and recorded even prior to the extensive use of systematic survey in contract archaeology. As modern downtown Tucson development increased, however, more surveys, archaeological investigations, and historic property inventories were conducted. The majority of the significant cultural resources are found within localized areas. At least half of the area, between downtown Tucson and the Rillito River, is within a zone of low archaeological sensitivity. Fewer surveys have been conducted and few significant sites have been recorded in this low sensitivity region. The southernmost portion, which accounts for approximately 1/3 of the total area of this planning area, is within a zone of moderate archaeological sensitivity. Priority Cultural Resources (archaeological and historic sites) within the area are places of such extraordinary importance to the history and culture of the people of Pima County and that their conservation is of utmost concern. These previously documented resources are significant places on the landscape and known to contain material remnants of ancient and/or historic cultures.

#### **Priority Archaeological Site Complexes**

- River Confluence Complex
- Middle Santa Cruz Complex
- Downtown Tucson Complex

#### **Priority Historic Sites and Priority Archeological Sites**

A total of 115 priority historic sites and six priority archeological sites have been identified in this planning area. These sites are listed in the Pima County Infrastructure Study.

#### **County Conservation Lands**

County conservation lands in the planning area primarily consist of relatively small areas of land areas focused on historic buildings and conservation easements within historic and archaeological sites. Some of these conservation areas include Hodges Ruin, Dunbar School, Roy Place building, 1927 County

Courthouse, Wilmot Library, School for Performing Arts, San Pedro Chapel, and future acquisition of the Chicanos por la Causa building.

#### **National Register of Historic Places- Historic Districts**

- Feldmans (Speedway-Drachman)
- Sam Hughes Residential
- West University
- John Spring Neighborhood
- University of Arizona Campus
- Indian House Residential
- El Montevideo Residential
- El Encanto Estates Residential
- Pie Allen Residential
- El Encanto Apartments
- Iron Horse Expansion
- Colonia Solana Residential
- Fort Lowell Multiple Resource Area
- El Presidio
- Armory Park Residential
- Barrio Libre
- Aldea Linda Residential
- Barrio El Hoyo
- Barrio El Membrillo
- Blenman-Elm
- Catalina Vista
- Barrio Santa Rosa
- Harold Bell Wright Estates
- Jefferson Park
- Rincon Heights
- San Clemente
- Winterhaven
- Tucson Warehouse
- El Presidio
- Barrio Anita

#### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in the planning area primarily concern conservation.



- The lack of resources to conserve, restore, document, and rehabilitate known historic sites, buildings, and archaeological sites on both County-owned and non-County-owned lands in Downtown Tucson.
- The lack of resources to manage known, significant cultural resources on County conservation lands
- The lack of preservation of significant cultural resources through development which cannot avoid impacts to sites
- The inadequacy of the level of our current inventory status in the low and moderate sensitivity areas and a need for continued documentation or research in high sensitivity areas.

### **Potential Remedies and Projects**

- Of most urgency is the need to conserve, restore, document, and rehabilitate known historic sites and buildings and known archaeological sites located within the Tucson Downtown Priority Archaeological Site Complex. The County is actively rehabilitating buildings it has acquired and has conservation easements through at least portions of important archaeological and historic sites associated with the history of Tucson. Greater funding is required to preserve, restore, and rehabilitate buildings. Funding from future bonds and collaborating with nonprofit and private owners and the City of Tucson will continue to be a necessary part in successful conservation of Downtown Tucson.
- There are some cases in which development cannot avoid impacts to significant archaeological sites. In order to remedy this situation, a greater understanding of the cultural resources within a region is helpful in being able to make development decisions that can avoid or lessen the impacts early in the planning process of a development project. Promoting greater use of restoration and rehabilitation in standing structures and conservation easements in sites in this area is important. One excellent approach that begins to address the need for programmatic ways of recognizing and treating the significant historic and archaeological sites in the downtown Tucson area has been developed by the City of Tucson Historic Preservation Office. This approach includes the identification of "Sensitivity Zones" that include both archaeological and historic sites: some of the earliest settlements in Tucson and major historic sites dating to the founding of Tucson as a Spanish settlement. The Sensitivity Zones within Area 8 include the Court Street Cemetery Zone, the Downtown Tucson City Center Zone, the Hardy-Fort Lowell Zone, and a portion of the Stone Pipe Zone.
- In general, additional systematic surveys conducted to modern standards would be the optimal approach to improve our understanding of the spatial distribution, quantity, and type of cultural resources.

### **Catalina Foothills Planning Area (9)**

Approximately half of the planning area includes land in the Coronado National Forest. The area also includes Pima County, Saguaro National Park (Rincon Mountain District), and private land. Much of the area has not been surveyed for cultural resources. Out of the surveys that have been conducted, the largest of the block surveys were conducted over 30 years ago. The area is characterized by the rugged terrain in the Coronado National Forest and two major watersheds—Tanque Verde Wash and Sabino Creek. Geological processes have likely altered the land surface over the past 30 years enough to change the nature of the archaeological sites that can be seen on the surface. The existing survey data may now be considered somewhat outdated, but many priority historic and archaeological sites that were identified as a result of surveys have been part of comprehensive investigative projects.

Over one hundred archaeological sites are known to exist in the planning area. The large majority of the previously identified sites are part of Priority Archaeological Site Complexes (SDCP) and in areas which have been previously surveyed.

#### **Priority Archaeological Site Complexes**

- Tanque Verde Creek Complex
- Rincon Mountains Complex
- Rincon Creek Complex.

#### **Priority Archaeological and Historic Sites**

- Sabino Canyon Ruin
- Whiptail Ruin
- Agua Caliente Ranch
- University Indian Ruin
- 49er's Site
- Houghton Road Site
- Bosque Site
- Tanque Verde Wash Site
- Emkay Site
- A7 Ranch
- Tohono Chul Park
- Catalina Foothills Estates
- St. Phillips in the Hills
- Agua Caliente Ranch
- Binghampton Rural Historic Landscape
- Campbell Avenue Farm
- Gallery in the Sun

### **Historic Properties Listed on the National Register of Historic Places**

- Lemmon Rock Lookout House
- Lowell Ranger Station
- Rillito Racetrack
- Charles Todd House
- Deep Well Ranch
- Fort Lowell Park/Hardy Site
- Ramada House
- Saint Phillip's in the Hills Episcopal Church

### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in the planning area primarily concern conservation and management.

- The lack of resources to conserve known archaeological sites and acquire conservation lands.
- The lack of current survey data.
- The lack of preservation of significant cultural resources through development which cannot avoid impacts to sites.
- The need for managing and monitoring significant cultural resources so that archaeological sites are not destroyed through pot-hunting and historic buildings are not neglected and destroyed.

### **Potential Remedies and Projects**

The area encompasses significant historic and prehistoric cultural resources. The area is characterized by diverse cultural resource types. Supporting conservation and designating conservation areas are efforts that would make a substantial difference in cultural resources preservation.

One example includes County efforts in nominating historic buildings for listing in the National Register for Historic Places (NRHP). For instance, multiple properties (The Architecture and Planning of Josias Joesler and John Murphey in Tucson, Arizona, 1927-1956) have been listed on the NRHP.

Historic property types include single and multifamily residences, commercial projects, institutional buildings, and districts. One example is the Catalina Foothills Estates, a project which began in 1928 with the purchase of 7,000 acres of land to be developed into hacienda style homes with open patios and stylistic features that used the topography, view, and vegetation to best advantage. Additional buildings designed by Joesler are currently being nominated for listing in the NRHP. Listing such significant standing structures is an important step in the preservation and management of historic properties.

### **Rincon Valley Planning Area (10)**

This planning area includes land owned by Saguaro National Park, State Trust Land, National Forest, private lands, and Pima County lands. Archaeological research has defined the areas of high archaeological sensitivity (SDCP) along the Pantano Wash, Cienega Creek, and Rincon Wash.

Portions of the planning area have been surveyed for cultural resources. The largest of the surveys in the area were carried out over 20 years ago. These include the Saguaro National Monument, Rocking K Ranch, Coyote Creek, Vail, and Colossal Cave surveys. Several hundred archaeological sites are known to exist in this area. The large majority of the previously identified sites are in Priority Archaeological Site Complexes (SDCP). Three Priority Archaeological Site Complexes (Rincon Mountains, Rincon Creek, and Lower Cienega Creek) are within this planning area. Two districts listed on the National Register of Historic Places, the southern portion of the Rincon Mountain Foothills Archaeological District and the Colossal Cave Preservation Park Historic District are found in the planning area.

#### **Priority Archaeological Site Complexes**

- Rincon Mountains Priority Archaeological Site Complex
- Rincon Creek Priority Archaeological Site Complex
- Lower Cienega Creek Complex

#### **Priority Archaeological and Historic Sites**

- Loma Alta Site
- Pantano Townsite
- Cienega Stage Station
- Marsh Station Road
- Manning Camp
- Colossal Cave
- Cienega Bridge

#### **County Conservation Lands**

At present, the Cienega Stage Stop, Marsh Station Road, and Pantano Townsite are on County Conservation lands.

#### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in this planning area primarily concern conservation and management, as well as heritage education and public interpretation.

- The lack of resources to conserve and protect known archaeological sites.

- The lack of resources to manage known, significant cultural resources on County conservation lands.
- The lack of preservation of significant cultural resources through development which cannot avoid impacts to sites.

### Potential Remedies and Projects

The planning area encompasses significant historic and prehistoric cultural resources. The sites have information that can reveal large-scale and long-term patterns of economic, social, and cultural processes. Potential remedies that would make a substantial difference in cultural resources preservation would include the acquisition of conservation lands, supporting conservation efforts and designating conservation areas.

As large portions of the area are already known to contain significant cultural resources, projects and programs supporting the management of the resources and the lands are necessary projects. At present, site steward volunteers with the Arizona Site Stewards Program monitor significant archaeological sites in the Lower Cienega Creek Priority Archaeological Site Complex on a weekly basis (between four and six sites in one day). They report their results in a database managed by Arizona State Parks and send written reports to the Regional Coordinator and the Pima County cultural resources coordinator for the sites stewards program. Site stewards also volunteer their time in outreach programs and education to the public to enhance awareness for the importance of site preservation.

### Tortolita Planning Area (11)

This planning area includes land owned by Pima County, Town of Marana, Coronado National Forest, Oro Valley, Catalina State Park, and Tortolita Mountain Park. Diverse landscapes including the Santa Cruz River floodplain, the Cañada del Oro Wash, piedmont or bajada, and the more rugged uplands of the Northern Tucson Basin characterizes an area that has also been intensively occupied for thousands of years. Archaeological research has defined a large portion of this planning area as a zone of “high archaeological sensitivity” (SDCP), especially areas associated with prehistoric settlement along Santa Cruz River and in the uplands. At least 30 years of research conducted through both cultural resources surveys and more focused investigations on archaeological settlements have been carried out in the area.

In contrast to other areas in Pima County, the great majority of land in the area has been covered by cultural resources survey—particularly by extensive and large block surveys conducted over 20 years ago. Topographic restraints and focused research interests may have resulted in slightly less than 100percent coverage; however, surveys have contributed greatly to our understanding of the settlement patterns and history in the planning area. More recently, a block survey covered 1,422 acres of ASLD state trust land in the rugged terrain of the Tortolita Mountains, likely to be auctioned in the near future and potentially acquired for conservation purposes. As expected in the outcrops and hills of this portion of the planning



area, a variety of sites spanning prehistoric through the historic period were identified during this survey (O'Mack, et. al. June 2012) conducted by William Self Associates, Inc.

Several hundred archaeological sites are known to exist in the planning area. The large majority of the previously identified sites are in Priority Archaeological Site Complexes (SDCP).

#### **Priority Archaeological Site Complexes**

- River Confluence Complex
- Middle Santa Cruz Complex
- Marana Mound Complex
- Los Morteros Complex
- Wild Burro Canyon Complex
- Honey Bee Complex
- Upper Sutherland Wash Complex

#### **Priority Archaeological Sites**

- Sutherland Wash Site
- Marana Mound
- Honeybee Village
- Romero Ruin
- Steam Pump Ranch
- Cortaro Fan Site
- Dairy Site
- Las Capas

#### **County Conservation Lands**

- Steam Pump Ranch Site – Conservation Easement on site owned by Oro Valley
- Sutherland Wash Site – Coronado National Forest
- Honey Bee Village – Fee Simple – owned by Pima County
- Romero Ruin– Catalina State Park – owned by Coronado National Forest

#### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in the planning area primarily concern conservation and management, as well as heritage education and public interpretation.

- The lack of resources to conserve known archaeological sites, such as the Marana Mound site.
- The lack of resources to manage known, significant cultural resources on County conservation lands.

- The lack of preservation of significant cultural resources through development which cannot avoid impacts to sites.
- Need to conserve prehistoric settlement systems, such as Marana Mound complex, which also exists along a popular utility corridor.
- The lack of resources for completing rehabilitation of Steam Pump Ranch for use as a public facility.
- The lack of resources for walking trails and interpretation of Honey Bee Village and Los Morteros as heritage education sites.

### Potential Remedies and Projects

The planning area encompasses significant historic and prehistoric cultural resources. This area is unique, however, in that entire prehistoric settlements on a regional level still exist. The sites have information that can reveal large-scale and long-term patterns of economic, social, and cultural processes in the Northern Tucson Basin. Potential remedies include purchasing of vast open space lands for preservation purposes. If acquiring large blocks of land is not possible, supporting conservation efforts and designating conservation areas are efforts that would make a substantial difference in cultural resources preservation.

As large portions of the area are already known to contain significant cultural resources, Pprojects and programs supporting the management of the resources and the lands such as the the Arizona Site Stewards Program are necessary. At present, site steward volunteers monitor significant archaeological sites such as Sutherland Wash, Honey Bee Village, and Los Morteros on a bi-weekly basis. They report their results in a data base managed by Arizona State Parks and send written reports to the Regional Coordinator and the Pima County cultural resources coordinator for the sites stewards program. Site stewards also volunteer their time in outreach programs and education to the public to enhance awareness for the importance of site preservation.

### San Pedro Planning Area (12)

This planning area is bounded on the north and east by the Cochise, Graham, and Pinal County lines and on the west by the Coronado National Forest ridge line. Much of the land is controlled by the Coronado National Forest, Arizona State Land Department, and Saguaro National Park. Very little of the area has been surveyed. Most of the surveys in the area have focused on the Redington area and Oracle Ridge Mine.

Low archaeological sensitivity areas are associated with the western portion of the area in the Coronado National Forest. Previously identified archaeological sites also cluster along the banks of the San Pedro River.

### **Priority Archaeological Site Complex**

- Redington Complex

The Redington Priority Archaeological Site Complex is focused on three large Hohokam village sites that represented prehistoric communities that developed along the San Pedro River during prehistoric times. The sites are Second Canon, Bayless/Redington, and Reeve/Davis. Second Canyon is located on the western terrace overlooking the San Pedro, north of Redington and opposite Bollen Wash. The site was occupied from early in the Hohokam sequence starting around A.D. 700 to approximately A.D. 1300 and contains an Early Classic Period platform mound and an associated compound enclosure occupied by northern Puebloan migrants to the San Pedro Valley. Bayless/Redington is located near the modern town of Redington on terraces lining the east side of the San Pedro River. This very large site group contains a ballcourt at Redington and a small platform mound at Bayless, suggesting that Redington was a primary village in Pre-Classic times and that Bayless was its Classic Period successor. The Reeve/Davis site group represents two Classic period occupations between A.D. 1200 and A.D. 1450 situated on opposite terraces overlooking the San Pedro, just south of Redington. A subterranean kiva of Western Anasazi design on the Davis site indicates that it too was occupied by Puebloan migrants from the Four Corners area in northeast Arizona during the Classic Period. Smaller settlements, fields systems, and special activity sites have also been identified in association with each of these three main village groups.

This area also includes the historic A-7 ranch, which is owned and operated by Pima County.

### **Priority Archaeological Sites**

- Redington Ruin
- Davis Ruin
- Reeve Ruin

### **County Conservation Lands**

A-7 Ranch Pima County conservation lands include 41,252 acres of fee lands. Pima County owns 652 acres and leases 34, 287 acres.

#### **Existing Deficiencies**

Current deficiencies in terms of cultural resources in the planning area primarily concern conservation of archaeological sites and management of historic ranches.

- The lack of resources to acquire conservation lands.
- The lack of current survey data.
- The need for managing and monitoring significant cultural resources.
- The need to conserve significant cultural resources (traditional cultural properties, historic sites, and archaeological sites) and protect these resources from being destroyed.