City of Bisbee General Plan Update

Volume I: Data and Analysis

Prepared for:

The City of Bisbee

Prepared by:

The Bisbee Planning and Zoning Commission

Original Data and
Analysis compiled
in 2003 by:

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City of Bisbee General Plan 2015
Bisbee, Arizona

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THE CITY OF BISBEE GENERAL PLAN

The City of Bisbee (the "City") General Plan provides overall direction to the City's Mayor and Council regarding future growth and facilitates the preparation of redevelopment, historic preservation, strategic, specific, subdivision, neighborhood, area, and development plans.

The Data and Analysis Volume of the City's General Plan serves as foundation for the formulation of goals, policies, and implementation strategies presented in this volume of the City's General Plan.

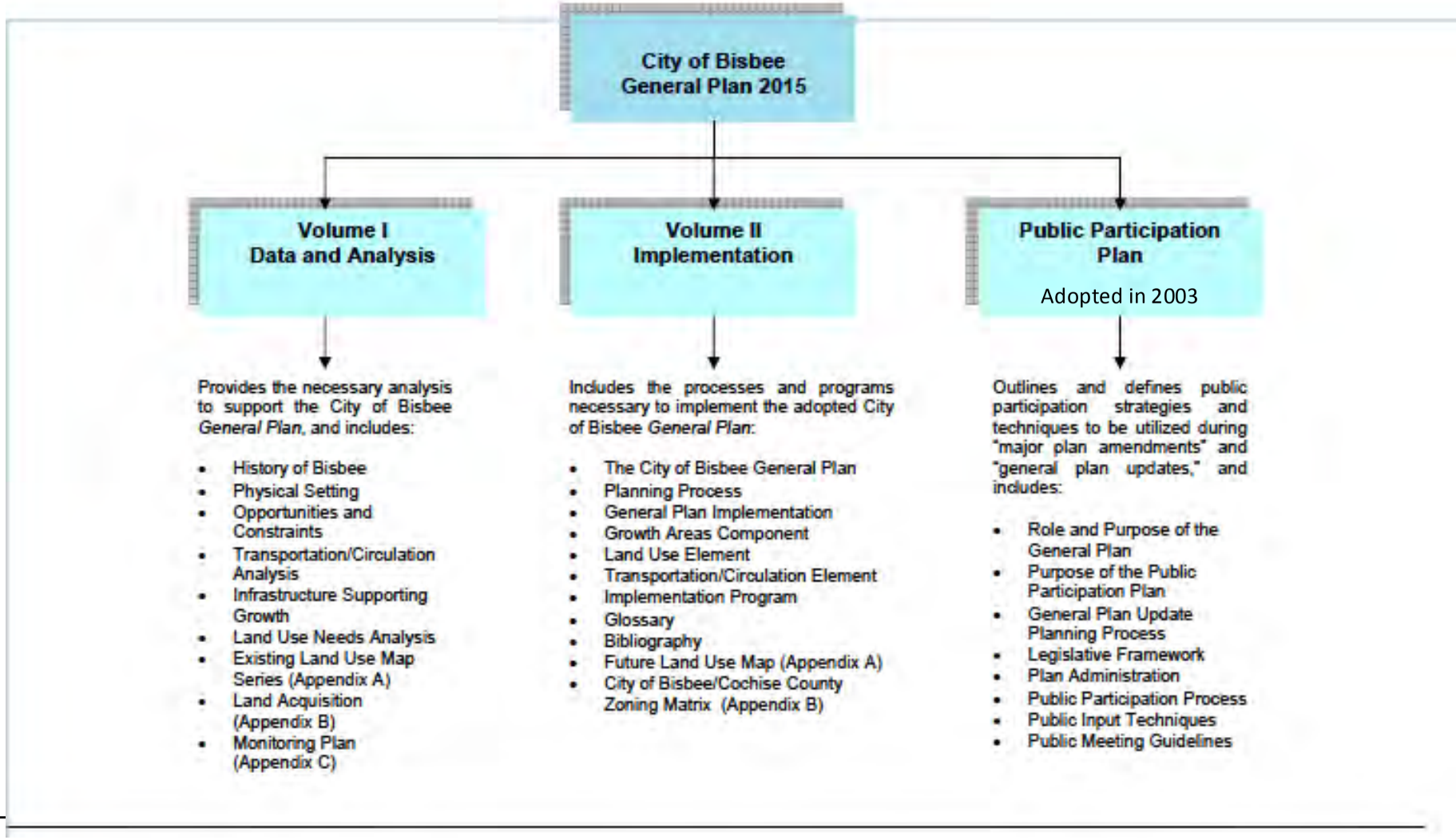
The City's General Plan constitutes a land use policy statement based on community input, prevailing and anticipated needs, growth patterns and development trends, analysis of opportunities and constraints, and accepted planning practices.

HOW TO USE THIS DOCUMENT

This document, Volume I, Data and Analysis, of the City's General Plan 2015 includes an analysis of existing land uses, describes the physical characteristics of land and its suitability for development, identifies opportunities and constraints, assesses current infrastructure supporting development, provides an existing and future land use needs analysis, assesses the impact of adjacent land on future planning, and identifies land acquisition and mitigation strategies.

Volume II, Implementation, of the City's General Plan Update 2015 includes development precepts, land use plan, and broad policy for growth management.

The Implementation volume of the City's General Plan must be consulted prior to initiating a submittal for proposed development. Proposed development within the City of Bisbee must conform to the Implementation volume of the City's General Plan 2015.


City of Bisbee
General Plan 2015
Volume I
Data and Analysis
Volume II
Implementation
Public Participation
Plan
Adopted in 2003
Provides the necessary analysis to support the City of Bisbee *General Plan*, and includes:
History of Bisbee
Physical Setting
Opportunities and Constraints
Transportation/Circulation Analysis
Infrastructure Supporting Growth
Land Use Needs Analysis
Existing Land Use Map Series (Appendix A)
Land Acquisition (Appendix B)
Monitoring Plan (Appendix C)
Includes the processes and programs necessary to implement the adopted City of Bisbee *General Plan*:
The City of Bisbee General Plan
Planning Process
General Plan Implementation
Growth Areas Component
Land Use Element
Transportation/Circulation Element
Implementation Program
Glossary
Bibliography
Future Land Use Map (Appendix A)
City of Bisbee/Cochise County Zoning Matrix (Appendix B)
Outlines and defines public participation strategies and techniques to be utilized during "major plan amendments" and "general plan updates," and includes:
Role and Purpose of the General Plan
Purpose of the Public Participation Plan
General Plan Update Planning Process
Legislative Framework
Plan Administration
Public Participation Process
Public Input Techniques
Public Meeting Guidelines

ROLE AND PURPOSE OF THE GENERAL PLAN

In 1973, the Arizona Legislature passed the Environment Management Act which formalized planning in Arizona and required municipalities to adopt comprehensive, long-range general plans to guide the physical development of communities. In 1998, the Arizona Legislature passed the Growing Smarter Act and in 2000 the Growing Smarter Plus Act, which broadened the planning requirements for municipalities and counties.

The City developed its General Plan in the mid 1980's. An update process began in 1995, which resulted in the City's 1996-2006 General Plan Update. The General Plan was updated again in 2004. Per Arizona Revised Statutes, General Plans are to be updated every ten years. However, in June 2010, the Arizona Legislature passed House Bill 2145 that extended the timeframe for cities and towns to adopt an updated or new General Plan to July 1, 2015. In order to reflect changes in the community, both physically and conceptually, it is necessary to periodically evaluate and update the City's General Plan.

The purpose of developing a plan is to focus on a comprehensive process that determines the best possible future for the community. The primary purpose of the City's General Plan is to enhance the City's character and increase its livability to ensure that future growth proceeds in a manner consistent with the vision of the community. The vision, goals, policies, implementation strategies, and map series included in the Implementation Volume of the City's General Plan are intended to provide guidance for future decisions related to land use, transportation/circulation infrastructure, and other related issues.

The City's General Plan serves as a guide for appointed and elected City officials in evaluating proposals for development, in scheduling community improvements and/or capital improvements, and in developing more specific studies. In addition, the City's General Plan provides a policy framework for the refinement of existing implementation tools and for the designation of zoning districts.

The City's General Plan is designed to be flexible and serves as the backbone for the preparation and refinement of implementation tools such as the Bisbee Zoning Ordinance, land development regulations, historic development guidelines, streets and routes guidelines, development standards and design guidelines, capital improvement plans, recreation and natural resource preservation plans, transportation plans, airport plans, and flood control and storm water management ordinances. These implementation tools should mirror the vision, goals, and policies of the City's General Plan.

Preparation of Volume I: Data and Analysis

Through the collection of pertinent data, and its corresponding analysis, the physical, demographic, and socio-economic characteristics of the City are identified, as well as major trends and future annexation needs. Based on the resulting needs assessment, suitability for development is identified. Volume I includes the following sections.

Opportunities and Constraints

This section of the Data and Analysis Volume includes the identification of environmentally sensitive areas, topography, hydrology, and other opportunities and constraints, and results in the development of the constraints and opportunities map of the Master Land Use Plan.

Transportation/Circulation

This section of the Data and Analysis Volume assesses existing and future transportation/circulation infrastructure required to support existing and future land uses, and identifies opportunities for multi-modal transportation.

Infrastructure Supporting Growth

This section of the Data and Analysis Volume addresses wastewater, water, solid waste collection, utilities and other major infrastructure supporting growth.

Land Use Needs Analysis

This section of the Data and Analysis Volume assesses the current and/or immediate needs for land, including determination of acreage required to meet current needs. It also assesses future needs for land, including determination of acreage required to meet future needs. The future land use needs analysis is based on availability of vacant land, population projections, and household size.

Impact of Adjacent Use of Land on Future Planning

This section of the Data and Analysis Volume provides an inventory of land owners on adjacent lands, including federal, state, county, municipal, and privately owned lands, and existing land use inventory of adjacent lands.

Land Acquisition

This section of the Data and Analysis Volume identifies land acquisition mitigation strategies including land swaps and exchanges, auction purchases, and other economically feasible alternatives. In addition, this chapter provides an annexation strategy, which identifies areas viable for annexation.

HISTORY OF BISBEE

Bisbee, Arizona is located 90 miles southeast of Tucson. Bisbee is the Cochise County seat. Founded in 1880, and named after Judge DeWitt Bisbee, a financial backer of the Copper Queen Mine, this Old West mining camp proved to be one of the richest mineral sites in the world, producing nearly three million ounces of gold and more than eight billion pounds of copper, not to mention the silver, lead and zinc that came from the Mule Mountains.

By the early 1900's, the Bisbee community was the largest city between St. Louis and San Francisco. It had a population of 20,000 and had become the most cultured city in the Southwest. In 1908 a fire ravaged most of Bisbee's commercial district along Main Street.

Reconstruction began immediately and by 1910 most of the historic district had been rebuilt and remains completely intact today. Activities began to slow as the mines played out and the population began to shrink; mining operations, on a large scale, shut down in 1975.

Bisbee has since evolved into an attractive artist, holistic health center, and retirement community emphasizing monthly special events, a wide variety of general and alternative health practices, and tourism. Travelers from all over the world come to Bisbee to savor "its unique charm, an uncommon blend of creativity, friendliness, style, romance, and adventure all wrapped in the splendor of the Old West."

PHYSICAL SETTING

Bisbee, Arizona is located in Cochise County, southeast Arizona, approximately four miles from the international border with Mexico and the State of Sonora. Bisbee is located approximately 50 miles from Interstate 10 and 90 miles southeast of Tucson. State Highways 80 and 92 meet at the center of the City. The community is located in the Madrean Evergreen Woodland and Chihuahuan Desert-scrub Biotic Communities, characterized by oak and juniper woodlands in the higher elevations; shrubs and grasslands in the lower elevations like in the San Jose District.

Bisbee development started in the Mule Mountains, which are rich in copper, turquoise, and other ores. The City prospered originally because of the copper industry which also shaped the City's land uses and types of construction. Development, then, spread to the surrounding plains. The physical constraints as well as the geology and topography of the area have made the three developed sections of the City (Old Bisbee, Warren, and San Jose) somewhat isolated from each other. Phelps Dodge had a strong mining company presence throughout Bisbee until Freeport McMoRan bought out Phelps Dodge Mining Company in 2007 in what was touted as the world's largest mining takeover ever.

The original incorporated area of the City encompassed only the Old Bisbee area. Warren and San Jose were annexed into the City limits in the early 20th century. The City has not aggressively annexed areas over the years. A total of 38 acres off of Naco Highway have been annexed since 2004.

Old Bisbee resembles a European hamlet more than a 1800s Old West town. Originally called the "Queen of the Copper Camps," Bisbee has a rich history from humble beginnings as a mining camp to boom town in the 1880s. Nestled in the mile high Mule Mountains of southern Arizona, Bisbee has maintained an Old World charm seldom found in the United States.

The Warren neighborhood is home to the oldest, continuously operating ball field in the US, the Warren Ballpark. In addition, Warren was Arizona's first planned community and was originally designed to be the bedroom community and center of commerce for the upper income families of the mining district. While commerce in Warren currently takes a backseat to Old Bisbee, it is still home to City Hall, Vista Park, the Bisbee Farmers' Market, Greenway Elementary and Bisbee High School, along with several mansions and numerous Craftsman-style bungalows. Recent improvements to Warren's Arizona Street, with all-access pedestrian walkways, solar lighting and improved on-street parking have set the stage for future commercial

redevelopment. The Warren Historic District has been inventoried and proposed and is being processed by the State Historic Preservation Office for listing on the National Register of Historic Places. Once listed, an overlay zone will need to be created to apply standards that protect its historic designation.

Bisbee's perfect location in the Mule Mountains (5300 ft) of southern Arizona protects it from extreme summer heat and winter cold. Summers are noticeably cooler than in Phoenix and Tucson. Winters are crisp and short with plenty of sunshine and daytime highs are often in the 60s. The air is always crystal clear throughout the year. The average daily high temperature during Fall/Winter (October–March) is 63 degrees (F). The average daily high temperature for Spring/Summer (April-September) is 82.5 degrees. The average daily low temperature during Fall/Winter (October-March) is 36 degrees (F) and the average daily low temperature during Spring/Summer (April-September) is 55 degrees. Annual rainfall is an average of 18.3 inches per year.

With its fine lodging, dining, history, art, culture, alternative health care, shopping and entertainment, Bisbee is the perfect base location for exploring the diversity of Cochise County. The Apache Wars were fought in the area. The close proximity to Mexico allows visitors to enjoy border culture. Natural and historical attractions include the Chiricahua National Monument, Cochise Stronghold, San Pedro Riparian National Conservation Area, Southeastern Arizona Bird Observatory, Whitewater Draw Wildlife Management Area, Slaughter Ranch, Ramsey Canyon Nature Preserve, Coronado Memorial, Camp Newell in Naco, Fort Huachuca, Gleeson ghost town, the City of Tombstone, Montezuma Pass and the Coronado National Forest.

PHYSICAL CHARACTERISTICS OF LAND AND SUITABILITY FOR DEVELOPMENT

Study Area

The study area for the City of Bisbee General Plan is depicted in the Ownership map provided in the Appendix. The study area encompasses approximately 46,016 acres of land area. It expands beyond the ultimate City boundary of the City or the Proposed Cochise County Growth Boundary for Bisbee shown in the Growth Boundary map provided in the Appendix. This area includes three planning areas and two growth areas. The planning areas are Historic Old Bisbee, Saginaw, and Historic Warren, which includes Lowell, Galena, Briggs, Bakerville, and Tintown. In addition, two growth areas have been identified. The two growth areas are San Jose and the City of Bisbee Municipal Airport. Planning areas and growth areas are delineated in the Opportunities and Constraints map included in the appendix section.

Table 1 shows approximate extent of the study area within current City corporate boundaries and within the ultimate City limit or Proposed Growth Area for Bisbee.

TABLE 1

CITY OF BISBEE STUDY AREA

Planning Area	Acreage within Current City Limits	Percent within City Limits	Acreage within Ultimate City Limit or Proposed Growth Area for Bisbee
Old Bisbee Planning Area	777	100%	777
Warren/Saginaw Planning Areas	713	100%	713
San Jose Growth Area	2,376	21%	11,418
Airport Growth Area	0	N/A	6,373
Totals	3,866	20%	19,281

Source: Cochise County Planning Department, 2003

As shown on Table 1, the study area includes the entire proposed growth boundary for the City shown on Growth Boundary map provided in the Appendix section, or a total of approximately 19,281 acres. Of this total, approximately 3,866 acres, or 20 percent, are located within the City of Bisbee corporate boundary; and approximately 15,415 acres, or 80 percent, are located within the proposed growth boundary.

Opportunities and Constraints

The first step to determine suitability for redevelopment, infill, and new development is to identify major opportunities and constraints within the study area. This is achieved by analyzing existing physical and environmental data such as topography, hydrology, geology, soil associations, vegetation, and water, environmental and cultural resources.

Such opportunities and constraints summarize baseline information regarding the physical characteristics of the land that will serve as a foundation to formulate the goals, objectives, policies, and implementation strategies contained within Volume II: Implementation, of the City of Bisbee General Plan 2015.

The Opportunities and Constraints map, included in the Appendix, shows opportunities and constraints within the study area. This map includes extent of the 100-year floodplain, major washes, topographic contours, mining pits, and other relevant features identified within the study area.

Topography

The City of Bisbee is located in the Mule Mountains and the surrounding plains to the south. These mountains have been greatly altered over time by the mining activity and are honeycombed with tunnels. In addition, the Lavender Pit to the west of State Highway 80 greatly altered the landscape of the area. The study area encompasses more than a dozen distinct, and in many cases, geographically separated boroughs or neighborhoods each with distinctive character.

Old Bisbee

Old Bisbee was the site of the original mining camp and most of the buildings started up Tombstone Canyon and Brewery Gulch. Then, these progressed up the steep Mule Mountain slopes in the late 1800's. Retaining walls, stair networks and narrow winding roads are characteristic of this area.

Development covers the mountain sides and will most likely continue to do so as infill takes place on vacant lots. The terrain is rocky and in many areas sewer and gas lines are above the ground.

Drainage flows from the mountains down the Mule Gulch adjacent to Tombstone Canyon and Main Street in Old Bisbee. There is also drainage from the east of Old Bisbee down Zacatecas Canyon and Brewery Gulch, intercepting the Mule Gulch drainage-way near Goar Park and Lyric Plaza.

Development in the Old Bisbee area clearly follows the form of the land giving the area a very distinct character. However, this did not free the turn-of-the-century population from the hazards of rapidly flowing run-off from the steep rock inclines of the mountains or from the problem of serious fires. Water courses consisting of sub-level ditches have long been in place to alleviate the flooding. Fires still pose a serious threat, both in the town as well as wildfires in the uplands around Bisbee.

Warren, Bakerville, Saginaw, Lowell, Galena, Briggs and Tintown

Warren, Bakerville, Saginaw, Lowell, Galena, Briggs and Tintown follow the arc at the base of the Mule Mountains where the slopes are gentler.

The Warren area was developed following the City Beautiful movement in the early 1900's. The park areas, neighborhood layout, uniformity in housing types, and lot size give this area a quieter, slower paced feeling.

Bakerville, Saginaw, Lowell, Galena, Briggs and Tintown are also developed with a neighborhood concept. Some basic services are incorporated within Bakerville-Warren area including the Copper Queen Hospital, gas stations and several restaurants. There are areas for infill within these neighborhoods.

Much of Lowell was torn down or relocated to make way for the Lavender Pit. There are areas for infill within this neighborhood. In a renewed mining scenario, because of Lowell's location on the edge of the Pit, this neighborhood will be the closest business area to the mining activity. In order to manage mining impacts to this area, Freeport McMoRan has acquired some properties in Lowell. The Company's policy, which is likely to be in effect throughout the planning period, is to manage these properties by leasing them to local business. In cases where the properties were derelict or a fire hazard, the properties have been demolished.

During torrential monsoon rains, the areas of Lowell around the Traffic Circle and Saginaw have been subject to highly erosive water run-off in the past. However, recent remediation activities by Freeport McMoRan have kept corrosive run-off from mixing with flood drainage in Mule Gulch, which follows Highway 80 from Old Bisbee down to the Traffic Circle then east along Highway 80 adjacent to Saginaw. Developments in these areas were established according to a very specific layout and plan to avoid conflicts with drainage ways. Dump sites from the pit development and tailings or leach rock areas occupy many acres of land, significantly impacting the views and development in the Saginaw and Lowell areas. However, Freeport McMoRan has completed a number of reclamation and remediation projects in this area with regard to past mining activities.

San Jose

San Jose, the most southwesterly portion of Bisbee, was the last to physically develop. The area is relatively flat, sloping gently upward north toward the Mule Mountains. The neighborhood of Don Luis represents an older plat similar to the type of development described above. Most of the remaining area developed after World War II in response to the demand for housing mine personnel due to the increased market for copper.

Lots are larger and streets are wider following the more traditional development found in most Arizona cities today. This area offers the most opportunity for growth because of the large unplatted parcels of land in all directions. For the most part, development is not hindered by difficult and steep terrain but in some areas the ground is extremely rocky.

Capacity for growth exists with system improvements and the new Sequence Batch Reactor that is processing an average of 400,000 gallons of sewage a day. There are three streams in the area and the flood areas naturally follow along these paths. A section of the developed

residential area is impacted by the floodplain.

Given the relatively flat land, development follows the two highways, Naco Highway and Highway 92, with commercial development abutting the highways and residential fanning out behind. A week-long planning charrette was held in San Jose in 2008 to develop guiding principles and recommendations for potential development in this area that have subsequently been incorporated by reference into the Zoning Regulations.

Bisbee Municipal Airport

The Bisbee Municipal Airport is located approximately two miles south of Historic Warren and two miles east of San Jose. To the south of Historic Warren going down Airport Road toward the airport, the land is relatively flat and open for development.

The topography of the rest of the study area reflects the same physical characteristics as the city limit area that it surrounds. In the county area around Old Bisbee the mountains continue to slope upward. The undeveloped areas surrounding Historic Warren, Tin Town, and Briggs contain a variety of Freeport McMoRan operations, including reclamation and restoration activities.

Geology

Arizona has three physiographic regions. Bisbee sits within the Basin and Range Physiographic Province. This area is characterized by low rugged mountains surrounded by valleys. The valleys are dissected by drainage systems. The elevation of the planning and growth areas ranges from 5,700 feet above sea level with mountains that top 7,300 feet in the Old Bisbee area down to 4700 feet above sea level in San Jose. Most of the study area is located within the Bisbee Quadrangle of the Unites States Geological Survey topographical map system. The remainder of the area can be found on the Bisbee NE, Bisbee SE, and Bisbee Junction Quadrangles.

The Mule Mountains host the Warren Mining District. The copper deposits here made Bisbee, also known as “Queen of the Copper Camps,” into one of the world’s great copper camps. The Mule Mountains had abundant copper and by-products of the copper mines such as lead, zinc, manganese, gold, and silver deposits. The commercial development of the rich lodes of these ores was the primary economic base of the Bisbee area for approximately 100 years. Over eight billion pounds of copper were mined from 1880 to 1975.

The study area embraces a series of known ground faults. The area has been designated as UBC2 (Universal Building Code 2) which requires construction to conform to standards based on criteria which include an evaluation of earthquake risk zone.

According to U.S. Geological Survey records, some faults in the area include the Dividend Fault, which parallels Tombstone Canyon and ends at Saginaw along Highway 80. The Quarry Fault, which extends south southwest from the Dividend through Naco Limestone to the east and Escabrosa limestone to the west, intersecting the Escabrosa Fault.

The Escabrosa Fault runs roughly west northwest and east southeast, terminating at Don Luis. About one mile south southwest of the Escabrosa is the Abrigo Fault, which terminates at the edge of the Espinal Plain one mile west of Don Luis.

Southeast of Warren, an arching fault runs east of Black Gap foothill, and on the southerly side of Gold Hill, turning in a southerly direction into Mexico east of monument 85, benchmark 4443. East of Gold Hill is the Glance Overthrust Fault, a semi-circle around the peak southeast of Black Knob Hill.

Hydrology

Bisbee is located in the mountains which result in run-off that is carried through washes. In the early years Old Bisbee flood waters rushed through the streets. Conveyance of flood waters is now handled by way of the municipal drainage ditch (or subway) along Tombstone Canyon. Construction of the ditch began as early as 1910 and has been extended and rebuilt with the Works Progress Administration (WPA) program in the 1930's. Keeping the ditch clear of debris and vegetation is a challenge and over the years floodwaters have taken their toll causing walls to be undermined and erosion in areas where the bed of the channel is unlined. The flatter areas of Warren and San Jose do not experience this same flood intensity. The City of Bisbee uses the Flood Insurance Rate Maps (FIRM) developed by the Federal Emergency Management Agency (FEMA).

Flood Management

Cochise County Highway and Floodplain Department handles the City floodplain management. The Highway Operations Division of Cochise County Highway and Floodplain Department is charged with constructing and maintaining certain designated public roadways in Cochise County. This does not include roads within the incorporated cities and towns, State highways and certain public roads not constructed to County standards and not approved by the County Board of Supervisors. The Opportunities and Constraints map included in the appendix shows the extent of the 100-year floodplain, as delineated by FEMA and as provided by Cochise County Highway and Floodplain Department.

The existing FEMA maps need to be revised to delineate current floodplain conditions. A letter of map revision process needs to be initiated with FEMA to delineate current floodplain extent within the study area.

Drainage

According to the Arizona Floodplain Management Association (AFMA) and City of Bisbee records, historically, Old Bisbee has faced recurrent flood problems. Rapid growth into the canyons situated much of the town directly in the floodplain. The town was regularly plagued with floods particularly during the summer monsoons. The problem was exacerbated by the extensive removal of vegetation that could have helped in retarding the ferocity of the monsoon run-off. Many of the trees lining the gulches and in the canyons were removed for mining, to construct buildings or simply for fuel consumption

By 1900, the community saw the necessity for flood control. The first attempt at flood control involved the construction of a massive wooden floodgate on Main Street (essentially Mule Gulch). The gate was designed to divert floodwater, as it rushed down Main Street, into an earthen channel behind the commercial district.

The system, however, was dependent upon a "spotter(s)" located up Tombstone Canyon who would signal for the closing of the floodgate. If, for some reason, the spotter(s) or others passing the signal along the line failed to execute their duty, or if the signals could not be heard over the din of the storm, the floodgate would not be closed in time and the downtown area

would be flooded. It is not known how effective this flood control system was, but by 1903, the citizens of Bisbee determined that a more reliable form of flood management was necessary.

By February 17, 1904 a new "subway" or wood-covered flood control channel was constructed that ran through the downtown district. The subway, constructed by the Copper Queen Mining Company, was completed just prior to the August 6, 1904 flood. The channel was successful in protecting the town from serious flooding. However, the storm waters brought huge boulders and a large quantity of sediment debris, which was deposited throughout the lower reach of the channel.

On August 24, 1908, Bisbee was struck with its most devastating flood. This flood nearly destroyed the entire downtown area. As recorded in the Bisbee Review (Aug 25, 1908) “wooden top, loaded with several tons on the surface of the street, was hurled like a barricade across Main Street."

On December 8, 1908, a $53,000 contract was awarded to the El Paso and Southwestern Railroad Company, to construct a new concrete channel that would control the flood waters more effectively. A portion of this new concrete channel would run underground behind the buildings on the south side of Main Street, connect with an inlet located on the street surface that collects the flows coming down Brewery Gulch, and continue in the underground channel down along Naco Road (now Highway 80). This nearly century-old channel, the Mule Gulch Channel, still exists today and is the primary means of flood protection for the historic downtown area of Old Bisbee.

On July 14, 1986, Bisbee was declared a State Disaster Area after the town was pummeled with three-quarter inch hail and three inches of rain, in less than one hour. The town suffered damages throughout the downtown area. The storm claimed a human life when an individual was swept down Brewery Gulch and into an underground culvert, by the rapid moving floodwaters. As a result of the 1986 flood, the City of Bisbee made a request for the U.S Army Corps of Engineers to initiate a study to investigate the town's flooding problems. Subsequent studies by the Corps and the City of Bisbee revealed that the channel was undersized, severely deteriorated and poses a high probability of failure. In 1999, the City of Bisbee solicited emergency funding from the state and federal government after monsoon rains caused flooding and damaged the channel. With $1.4 million in funding obtained, the City began construction of the initial phase of channel rehabilitation in April 2001.

The need for immediate reconstruction couldn't be more imperative. On Jan. 18, 2001, a portion of a parking lot in the historic district collapsed into the underground channel. A rotted support beam of the covered channel shattered, dropping a section of the Busy Bee parking lot into the Mule Gulch drainage channel. Fortunately, no one was hurt in the recent collapse. However, without rehabilitation, future failures of the channel could potentially be catastrophic.

The Mule Gulch Drainage Channel restoration project along Tombstone Canyon-Main Street was completed in 2002. Currently, the City Public Works Department's duties include the cleaning and maintenance required for the many drainage structures located within the City corporate boundaries.

Additional flooding areas have been identified within Saginaw as part of the Saginaw Revitalization Plan, and in the San Jose area. The Opportunities and Constraints map located in the Appendix section shows the extent of the 100-year floodplain within the study area.

Water Resources

Water supply for the majority of the study area comes from wells located in the northeast quarter of section 13, Township 24 south, Range 23 east, which is to the west of Naco, Arizona. The only source of potable water at this time is groundwater. The first well was drilled to a depth of 400 feet in 1903 and is still in operation today.

Water service is provided by Arizona Water Company. Their plant is located west of Naco by the wells. The company currently has three wells in operation. The underground water source is in the San Pedro Basin. Static level is approximately 90 feet, but may vary depending on which well it is measured from.

Areas around the Bisbee Junction area use local or private wells. Mine shafts areas may be flooded with large quantities of water. This condition also exists in the Glance area south of Gold Hill and at the edge of Espinal Plain. There is only sporadic flow in the gulches and arroyos in the Bisbee area, rising to extremely fast and fairly deep run-off typical of torrential storms (flash floods) in an arid area. Drainage from the westerly Mule Mountain slopes provides sporadic recharge to the San Pedro River to the west. Easterly runoff benefits the Sulphur Spring Valley recharge in the Douglas Basin.

Water Quality and Quantity

Although certain areas face more immediate issues than others, water is a limited and limiting resource throughout Cochise County. Arizona Revised Statute §§ 11-804.B.3 and 11-823 allows all counties to specifically plan for development and approve subdivisions as they relate to water availability. The Cochise County Comprehensive Plan presents goals and policies to address the anticipated effects of proposed development on water quantity and quality. These goals and policies are designed to have county-wide applicability and impact future development trends in those areas adjacent to the City.

The Cochise County Comprehensive Plan water conservation goal is to sustain an adequate, safe water supply through water conservation measures; incentive programs; education; conservation and enhancement of natural recharge areas; and cooperative, multi-jurisdictional planning. In order to achieve this goal, the County uses its most current water resources inventory of available surface water, groundwater, and effluent supplies to evaluate the potential impacts to local water supplies from master development plans, rezonings, special uses, major amendments to the County Comprehensive Plan. The County Comprehensive Plan requires that major developments indicate the design features that will be incorporated into the development to:

- Minimize overall water use through water conservation measures such as drought-tolerant landscaping, low-flow fixtures, re-use, water harvesting, deed restrictions and other conservation methods.

- Address accelerated run-off due to construction and impervious surfaces.

- Conserve and enhance recharge through methods such as the use of detention basins, protection of open space and minimizing disturbance of soils and other methods.

The Cochise County Comprehensive Plan defines major development as all subdivisions; and non-residential, multi-family and mobile home park developments of one (1) acre or larger. Cochise County works with incorporated areas, agencies and organizations throughout the County, as necessary, to address regional water issues as they relate to growth and protection of natural resources.

Soil Associations

According to the United States Department of Agriculture Natural Resources Conservation Service Soil Survey of Cochise County, soil cover in all but the southern-most boroughs is shallow and generally a mixture of retrograde rock and humus common to its location. These soils are interlaced or atop a calcereous matrix called caliche, or hard pan.

To the southeast, Old Bisbee sits atop a granite incline and Pinal Schist to the northwest and over Escabrosa Ridge to the south and over "B" mountain (Chihuahua Hill) to the southeast. Intrusive upthrusts of granite-prophyry surface sporadically in Brewery Gulch and to the slopes northward from there to Juniper Flats.

Saginaw, on Highway 80, rests primarily on a Pinal Schist formation of fine grained Fissile Quartz and Sericite Schists, which run westward like a horse-shoe intrusion into the copper lode near Jones Canyon. To the south of Saginaw lies a large tailing mesa consisting of mine debris rock. Below, Warren and Bakerville, sit atop Glance Conglomerate, which consists of schist, limestone, and some shale.

To the east of Old Bisbee and adjacent to the easterly edge of the Lavender Pit lies Lowell and part of Galena. Lowell and Galena sit atop Glance Conglomerate. Along Highway 92 to the south southwest, Briggs and South Bisbee sit atop Limestone. Tintown, on the southeast side of Highway 92, sits about three quarters of a mile north of a large, disused tailings pond which occupies almost a section of land. Reclamation and revegetation on this tailings pile has been conducted by Freeport McMoRan.

Additional soil types and situations have been introduced to the area to add to the original soil types because of the mining operations. Since 2008, Freeport McMoRan has undergone an active and robust soil replacement program throughout Old Bisbee to replace soils that may have been contaminated by lead and arsenic from past mining activities such as smelting.

Don Luis on the north side of Highway 92, is in the Espinal Plain, which primarily consists of imperfectly rounded pebbles, gravels and sands named fluviatile deposits. These extend to Naco, Arizona, to the southwest and to the lower reaches of the Mule Range along Highway 92.

Table 2 describes major soil series within the study area based on the Soil

Survey Geographic (SSURGO) database for Cochise County, Arizona, Douglas-Tombstone Part, Area Symbol # AZ671, Bisbee NE Quadrangle (s3110934), Bisbee Quadrangle (s3110933), and the Bisbee SE Quadrangle (s3110942), U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey Data Access Division.

The digital soil survey database is generally the most detailed level of soil geographic data developed by the National Cooperative Soil Survey. The map data are in a 7.5 minute quadrangle format and include a detailed, field verified inventory of soils and non-soil areas that normally occur in a repeatable pattern on the landscape and that can be cartographically shown at the scale mapped.

TABLE 2

SOIL ASSOCIATIONS
WITHIN THE STUDY AREA

Association Number	Association Name	Characteristics
Soils of the Foothills		
D1	Kimbrough-Cave Association	Shallow, well-drained, nearly level to moderately steep, medium textured soils over a Lime-cemented hardpan.
Soils of the Mountains		
E2	Bakerville-Gaddes Association	Very shallow to moderately deep, steep to very steep, cobbly and gravelly, medium to moderately fine textured soils over granite.
E3	Tortugas Association	Shallow and very shallow, dark colored, steep to very steep cobbly and stony loams over limestone.

Source: National Cooperative Soil Survey Official Series Description, U.S. Department of Agriculture Soil Conservation Survey, 1971.

Vegetation

Juniper and oak trees were formerly abundant in the Bisbee Quadrangle, particularly on Juniper Flat and Escabrosa Ridge. The neighboring hills were dotted with shrubs. By 1904, as development occurred, these disappeared as they were used for a variety of purposes, including mining, smelting, building construction, and fuel.

Over the years, secondary regrowth has begun a sparser, but definite re-establishment of native oaks and shrubs on the mountain sides around Old Bisbee. In addition, there are many native grasses on the hills and plains. The tailing piles remain fairly barren of any vegetation.

Salt cedars are known to accept the near sterility of tailing piles and Desert Broom has made a few footholds here and there. The aridity of the climate is suspended once a year, just after the summer rains, and the countryside experiences, for a brief period, a belated spring. Grasses wave over many of the hill slopes and bright multi-hued flowers appear among the rocks. The change is transient, and the greenery soon fades into the neutral tints of aridity common to the high desert.

The Old Bisbee area is gifted with the regenerating softwoods and other sparse green bushes, which provide a softer mountainous scene toward the Mule Pass on the west where Old Bisbee nestles below in Tombstone Canyon and the surrounding slopes to the north.

Climate

Bisbee enjoys an annual average temperature of 59.2 degrees Fahrenheit, with extremes ranging from 3 to 100+ degrees Fahrenheit over the seasons. Precipitation averages 18.3 inches per year, which helps to alleviate the more arid climate common among other communities in the region. However, since 1971, climate variability has led to a slight decrease in average high temperatures, while average low temperatures have increased by over one degree Fahrenheit. Overall annual average precipitation has also decreased since 1961 by over 6 inches a year. (source: Western Regional Climate Center/NOAA National Climatic Data Center (NCDC) 1981-2010, 1971-2000 and 1961-1990 Monthly Normals)

TABLE 3

AVERAGE TEMPERATURES AND PRECIPITATION
WITHIN THE STUDY AREA

Month	Average Temperature (F)		Average Total Precipitation (Inches)
	Daily Maximum	Daily Minimum	
January	56.6	30.6	1.27
February	60.5	33.1	1.20
March	66.4	36.7	0.94
April	73.8	42.6	0.55
May	81.6	49.8	0.32
June	89.0	58.0	0.89
July	87.6	61.6	4.07
August	84.4	59.6	4.16
September	82.1	54.8	1.92
October	74.6	45.9	1.33
November	62.3	35.6	0.84
December	56.6	31.1	1.45
Year	73.2	45.1	18.92
(Based on a 30-year average 1981-2010)			

Source: Western Regional Climate Center/NOAA National Climatic Data Center (NCDC) 1981-2010 Monthly Normals.

Air Quality

Bisbee's air quality is a resource to be protected. Prevailing winds, high altitude and low population contribute to keeping the air clean. The concern over the air quality lessened when the smelter was closed down around 1904 and relocated to Douglas.

Minimizing use of the automobile by encouraging the use of and providing for other modes of transportation will help to preserve the clean air. The design and mixed uses through a majority of the city limits provides an atmosphere that encourages walking and/or biking.

Noise and Vibration

In order to enhance the quality of life of the community, it is necessary to identify areas where noise and vibration are or will be present. This effort should be accompanied with the establishment of planning controls designed to minimize incompatible land uses. Such planning controls include, but are not limited to:

- Designation, adoption, and enforcement of compatible zoning districts;
- Preparation, adoption, and enforcement of development standards and design guidelines; and
- Establishment, adoption, and enforcement of planning tools such as buffer zones, transitional uses, linear park development with integrated multi-modal transportation (pedestrian/bike) to minimize the impact of high density/intensity uses on residential areas.

Mining Operations Noise and Vibration

It is not anticipated that mining operations will resume during the planning period. Should this happen, several community issues need to be addressed to minimize some of the negative impacts of mining operations.

An increase in noise and vibration due to trucks, crane, power shovel, bulldozer, front end loader or scraper and other machinery entering and leaving mining operation sites most likely will accompany mining activities. In addition, an increase of noise and vibration from areas where mining operations include blasting, movement of earth, and heavy equipment operation may also be anticipated, if mining operations resume.

The establishment of buffer requirements in the Zoning Code may protect existing residential development from excessive noise, traffic, glare, dust, and vibration. Buffer requirements can include appropriate setbacks for the operation of heavy equipment and development of linear parks along boundaries of mining sites directly abutting residential land uses.

Additional measures may include the establishment of hours of operation to help minimize noise nuisances.

The designation of compatible land uses and the establishment of compatible zoning districts offering good transition from high density/intensity to lower density/intensity uses will help the City prevent future nuisances. For instance, new residential areas should not be located adjacent to areas with high mining potential.

Traffic Generated Noise and Vibration

Noise and vibration from heavy traffic, such as that associated with the state highways (92 and 80), is minimal in Bisbee. Currently, the road and street systems are not developed to carry significant traffic loads at high speeds.

Mining operations, if resumed, may increase commuting traffic along Highway 92 and Highway 80. It is anticipated that if mining operations are ever resumed, mining company employees will commute from place of work to residential areas located in Sierra Vista and in San Jose.

Noise abatement features such as the development of linear park amenities that include multi-modal transportation for bikers and pedestrians is a planning tool that may help provide a buffer to existing residential areas located along highway 80, specifically in the area of Saginaw, where the highway is not elevated.

Appropriate setback and buffer requirements, linear park development that includes multi-modal transportation for bikers and pedestrians, the implementation of a shuttle system, and the designation of zoning districts with higher intensity along the highway corridor are planning tools appropriate for Highway 92.

Bisbee Municipal Airport Generated Noise and Vibration

The Bisbee Municipal Airport is an area where noise and vibration will have a significant impact on future growth. The Airport is located within one of the two Cochise County designated growth areas for the City of Bisbee.

With the exception of some low density residential development to the south, this growth area is undeveloped. Undeveloped lands include some State land and large Freeport McMoRan holdings. Current activity at the airport consists primarily of small private and government plane activity for delivery, banking, government operations, and private recreational use.

According to information provided in the Bisbee Municipal Airport Master Plan, noise analysis is not required by the Federal Aviation Administration for airport proposals which involve utility or transport airports whose forecast annual operations within the period covered by an Environmental Assessment do not exceed 90,000 annual propeller operations or 700 jet operations.

The Airport Master Plan also indicates that propeller activity will remain below this threshold level during the period under study. However, activity by jet aircraft may exceed 700 annual operations during the planning period. The forecasts do not distinguish between jet and turboprop operations, but indicate the possibility of as many as 1900 operations by turbine-powered fixed wing types. Therefore, a noise analysis was undertaken.

The Federal Aviation Administration defines 65 Ldn as the threshold of significance for noise exposure impacts, and requires that the Integrated Noise Model (INM) computer program be used to define noise exposure levels. The "Ldn" noise metric ("day-Night Average Sound Level" – sometimes called "Dnl") is defined as the 24 hour average of an energy summation of A-weighted decibel levels (dbA), with night operations weighted by a 10 decibel penalty.

The Department of Housing and Urban Development (HUD) has published noise abatement and control standards in its circular 1390.2 in an effort to separate uncontrollable noise sources from residential and other noise sensitive uses, and to prohibit HUD support for construction within sites determined to have unfavorable noise exposures and conditions.

A rating of less than Ldn 65 is considered acceptable for residential development. Ldn 65 to 75 is defined as discretionary and rating of more than Ldn 75 is considered unacceptable for residential development.

The 65 Ldn noise contours are illustrated on Sheet 7 of the Airport Layout Plan (Airport Land Use Drawing) in the Airport Master Plan. As of 1999, the 65 Ldn noise contour is located primarily on airport property, but extends to the north about one mile over City owned land that is used for sewage treatment lagoons. The contour also extends to the south about ½ mile over undeveloped land on Bisbee Junction.

According to information provided on the Airport Master Plan, in the ultimate scenario (2020), the 65 Ldn contour over Runway 17-35 will not change significantly from the 1999 contour. However, because of improvements on the planned Runway 2-20, the 65 Ldn contour will extend along the approach surface to the northeast and southwest about one mile. In all cases, the 65 Ldn is located over undeveloped land.

There are no current significant noise impacts evident according to the results of the INM analysis. Based on the noise analysis and on review of the land use adjacent to the airport, there are presently no existing adjacent incompatible land uses affecting the airport.

Cultural Resources

An important component of cultural heritage is cultural resources, which are artifacts and places that have significance to people. Cultural resources include archaeological sites, historic buildings and structures, rock art, shrines, trails, human made artifacts (such as pottery, metal objects, tools, projectile points, and grinding stones), traditional cultural places, and traditional cultural landscapes.

Traditional cultural places and traditional cultural landscapes are places and areas that have significant meaning to one or more cultural groups, and often incorporate aspects of the natural and the human-made worlds. For example, a traditional cultural landscape may include a mountain that contains archaeological sites, human burials, herb gathering places, and other important cultural resources. Human burials are a special type of cultural resource, which are usually, but certainly not always, found in archaeological sites or graveyards.

Cultural heritage planning has four primary goals: conservation, protection, public education, and preservation of the historic fabric. These four goals are addressed in the goals and policies section of this General Plan.

General location of archaeological sites is provided by the Arizona State Museum based on descriptions provided in Arizona State Museum archaeological surveys. An archeological site's general location consists primarily of identification of township, range, and section, making the location too generalized for map generation purposes.

Table 4 identifies historical resources within the City of Bisbee registered in the National Register for Historical Resources Information System.

TABLE 4

HISTORICAL RESOURCES NATIONAL
REGISTER OF HISTORIC PLACES
2003

Resource Name	Address	Date Listed
Douglas Walter House	201 Cole Avenue	2000
St. Patrick's Roman Catholic Church	Oak Avenue on Higgins Hill	1995
Treu John House	205 W. Vista, Warren Townsite	1995
Bisbee Women's Club Clubhouse	74 Quality Hill	1985
Bisbee Historic District	US 80	1980
Muheim House	207 Youngblood Avenue	1979
Phelps-Dodge General Office Building	Cooper Queen Plaza, intersection of Main Street and Brewery Gulch	1971

Source: National Register Information System,
National Register of Historic Places, 2003

All residential and commercial properties in Old Bisbee are included in the Bisbee Residential Historic District as administered by the State Historic Preservation Office (SHPO). Bisbee's Design Review Board (DRB) reviews applications for alterations, additions and renovations to existing structures that are listed as either contributing or non-contributing properties of the Bisbee Residential Historic District, to ensure that the integrity of the district is maintained.

Parks, Recreation, and Open Space

Although Bisbee is not required to update the Recreation Element of the City of Bisbee General Plan, this section addresses recreation needs as a major component of the quality of life desired by community members. This section provides background information regarding parks, recreation, trails, and open space. It also includes information of existing parks and recreation programs. The intent of this section is to guide planners, landscape architects, developers, and staff when securing and developing parks, trails, and open space to meet community needs.

This section provides guidelines for the establishment of appropriate levels of service (LOS) standards for parks and recreation facilities. Different parks provide different recreational opportunities and services. Parks can be classified into one of five general categories: neighborhood, community, tot lot, specialty, and linear parks. A park can be a combination of these park types.

Park and Recreation Standards

The National Recreation and Park Association (NRPA)—an independent, nonprofit organization whose purpose is to advocate quality parks—developed a widely used set of park standards. In 1995, the NRPA issued a set of national LOS standards entitled Park, Recreation, Open Space, and Greenway Guidelines.

Although widely accepted in the past, there is increased recognition that national-based standards may not result in what communities really need. A growing number of planners argue that these standards: (1) emphasize “how much” rather than “how good,” (2) reflect past desires and expectations rather than today’s needs, (3) do not recognize the unique conditions, resources, and needs of different communities; and (4) often are unrealistic and difficult to implement.

Although national-based standards may not equally meet the needs of all communities, they can serve a useful purpose. Standards can be used to justify the need for additional parkland acquisition and/or annexation of additional lands in areas that are inadequately served. National-based standards, which are legitimized by a national organization, may be even more persuasive to funding agencies. They may lead to a more equitable distribution of park resources by identifying inadequately served

neighborhoods. Such standards provide guidance and are simple and straight forward to apply. They provide a yardstick for measuring the performance or effectiveness of a park acquisition and development program.

To assure that standards serve the needs of the City of Bisbee, they should be the product of a process to determine community needs rather than the starting point. Park and recreation standards are more likely to serve the needs of a community if they meet certain criteria such as relevance, cultural patterns, performance standards, feasibility, and practicality. Standards from the NRPA are included in the following section. When considering these standards, keep the discussion of the pros and cons in mind.

Parks by Type

This section provides definitions for the different types of parks and the types of recreational activities, facilities, and or equipment appropriate for each category of park, including tot lots, neighborhood parks, community parks, regional parks, specialty parks, and linear parks.

Tot Lots

Tot lots provide recreation designed for young children. Structures such as sandboxes, slides, swings, spring toys, and the like are located in this type of facility. This park's primary function is to provide an active play area for the preschool to early grade-school-age children of the neighborhood. Tot lots are frequently located in neighborhood or community parks. Ideally, a lot should be located central to its service area, within a quarter-mile walking distance of its users, and should avoid the crossing of busy streets since it primarily serves small children.

Tot lots should be located in pocket parks within neighborhoods, address safety issues, and provide gathering space for adults accompanying their children.

On a per-acre basis, tot lots are expensive to construct and maintain, and generally serve a fairly limited population. There are no national standards for tot lots. However, these small parks should be encouraged within all neighborhoods. Tot lots should be provided at a minimum ratio of 0.25 to 0.50 acre per 1,000 people.

Neighborhood Parks

Neighborhood parks provide a combination of active and passive recreation

opportunities for all age groups in a defined neighborhood. The park should be centrally located within a neighborhood and provide some forms of passive recreation, such as picnic areas, shade trees, or walking areas. However, the primary emphasis of neighborhood parks is to provide open space for active play areas to be used by neighborhood residents. Neighborhood parks should include at least one ball field, but are frequently not large enough to accommodate a field. The NRPA recommends that neighborhood parks be approximately 15 to 20 acres each and be provided at the ratio of one to two acres per 1,000 people.

Community Parks

Community parks provide a wide range of passive and active recreational opportunities for an entire community, in this case the City of Bisbee. An important asset for a community park is a focal point to attract users and provide a special identity to the park. Community parks are more intensely developed than other types of parks, and therefore require buffer zone spaces between active recreation areas and surrounding neighborhoods. Good multi-modal access (vehicular, bicycle, transit, and pedestrian) and parking must be provided. The park should be developed and maintained for intensive use. The NRPA recommends that community parks be approximately 25 to 30 acres in size and be provided at the ratio of five to eight acres per 1,000 people.

Regional Parks

Regional parks service entire jurisdictions or regions. Activities available in regional parks may include picnicking, fishing, swimming, camping, trails, golf, etc. Regional parks tend to be large (over 200 acres) and should be provided at a ratio of five to ten acres per 1,000 people. Because of their regional nature, regional parks are usually not located in the core but more at the periphery of a jurisdiction.

Specialty Parks

Specialty parks provide special type of recreational opportunity that capitalizes on a unique natural feature, or on a population that is large enough to support a special type of recreational demand. Examples are golf courses, historic sites, zoos, dog parks and sports complexes.

Linear Parks

Finally, linear parks are corridors of land that provide access between different locations for recreational or transportation purposes. Improvements

can include facilities to aid walking, hiking, horseback riding and bicycling.

Level of Service Standards for Parks

Table 6, provides LOS standards for open space, regional, community, and neighborhood parks recommended by the NRPA Park, Recreation, Open Space, and Greenway Guidelines. These standards should be used only as a measuring yardstick for the development of a system of park standards that addresses more appropriately the City of Bisbee park's needs.

TABLE 6

RECOMMENDED LOS STANDARDS FOR PARKS
NATIONAL RECREATION AND PARK ASSOCIATION

Park or Recreation Facility Type	LOS Standard
Tot Lots	0.25 to 0.50 acre per 1,000 residents
Neighborhood Parks	One acre per 1,000 residents
Community Parks	One and one-half acres per 1,000 residents within a 3-mile service radius
Regional Parks	Ten acres for every 1,000 residents within a 1-hour drive service radius
Open Space	Ten acres for every 1,000 residents within a 10-mile service radius
Bicycle Trails	One mile for every 1,000 residents
Camping (RV, trailer, and tent)	One acre of camp area for every 5,600 residents
Picnicking	One picnic table for every 500 residents

Source: Park, Recreation, Open Space, and Greenway Guidelines, National Recreation and Park Association, 1996.

LOS Standards for Recreation Activities

Table 7 includes LOS standards recommended by NRPA for user-oriented outdoor recreation activities such as golf, equipped play area, tennis, baseball/softball, football/soccer, handball/racquetball, basketball, and swimming (pool).

TABLE 7

LOS STANDARDS FOR USER-ORIENTED RECREATION ACTIVITIES
NATIONAL RECREATION AND PARK ASSOCIATION

Recreation Activity	LOS Standard
Golf	One 9-hole golf course for every 32,500 residents
Equipped Play Area	One play area for every 10,000 residents
Baseball/Softball	One ball field for every 7,500 residents
Football/Soccer	One field for every 15,000 residents
Handball/Racquetball	One court for every 10,000 residents
Basketball	One court for every 4,000 residents
Swimming (pool)	One pool for every 10,000 residents

Source: Park, Recreation, Open Space, and Greenway Guidelines, National Recreation and Park Association, 1996.

Current and Future Park, Recreation, and Open Space Needs

This section identifies current and future parks, trails, recreation, and open space needs for the City of Bisbee.

Recreation Programs

Recreation programs enhance the quality of life through personal, community, and economic benefits. An individual that is active has the best health insurance one can buy. Recreation programs help people live longer, prolong independent living for seniors, reduce the risk of heart disease, and enhance overall health and well-being. Recreation reduces stress, builds self-esteem, and reduces self-destructive and antisocial behaviors in youth.

Recreation programs produce leaders, reduce isolation and loneliness, reduce crime, and build strong families and healthy communities. Recreation also creates social bonds, encourages the development of social skills, and increases community participation. Recreation builds pride in a community and enhances perceived quality of life. It also reduces health care costs, thus adding to the economic benefits of the community.

Community recreation programs help reduce social services and law enforcement costs, improve work performance, reduce costs associated with crime, and build stronger and healthier communities. In economic development terms, recreation programs generate tourism expenditures, bring money into the community, and are an investment in the future. The City of Bisbee supports numerous art, culture and recreation programs throughout the year which include:

- The Bisbee Farmers' Market. Held every Saturday throughout the year in Vista Park in Warren, the market is a venue for local growers selling produce, as well as demonstrations and special community events like solar cook-offs, mesquite milling and featured local musicians.

- Spring Arts Festival. This annual event includes a Plein Air Paint-a-thon Contest, Art-in the Park, live music, an Art Car Show and a gallery walk through the art galleries and artisan shops in Historic Bisbee.

- Fiesta de las Aves. This annual birding festival held at the San Pedro House in celebration of International Migratory Bird Day, includes birding tours in Southeastern Arizona and Northern Sonora, Mexico, birding seminars and birding vendors.

- Fourth of July in Bisbee. Every 4th of July, Bisbee starts the day with the Coaster Races from the Highway 80 underpass at West Boulevard down through Tombstone Canyon and into the historic district of Old Bisbee, and includes a parade in Warren and culminates with fireworks.

- Brewery Gulch Daze. Events such as the "Old Miz Biz" contest, the Waterball tourney and the Waiter and Waitress Challenge make up this unique event celebrating Bisbee's bawdy past as a mining center.

- Gem and Mineral Show. More than 100 vendors display lapidary arts and stones in Bisbee's Elks Park in an open-air market each year.

- Fiber Arts Festival. Fiber artists of all kinds gather at the Copper Queen Plaza in Old Bisbee to display their handiwork at the annual Fiber Arts Festival.

- Bisbee Stair Climb. Sheer muscle power propels participants in the annual Bisbee Stair Climb, with over 2000 people of all ages participating. Part of a 5K run through historic Bisbee, this unique fitness challenge dares participants to run, walk and climb up the 1,034 stairs that are sprinkled throughout the city. Cash prizes are awarded in the Barco Ice Man Competition, which features contestants carrying eight-pound blocks of ice with old-fashioned tongs up 153 stairs.

- The annual Bisbee Blues Festival held in September draws in music aficionados from all over southern Arizona.

- Second Saturdays are opportunities for local galleries to stay open later in the evening and host special art events on the second Saturday of every month.

- Other events in Bisbee include Sidepony Express, annual Garden Tour, Home Tour, as well as Wine and Beer Tasting. Bisbee hosted its first international film festival in 2014.

The City of Bisbee Parks and Recreation Coordinator coordinates summer swimming pool and basketball programs, and Boys & Girls Club summer youth programs. The Building Inspector and Groundskeeper address parks and grounds maintenance. The Parks and Recreation Commission advises the Community Development Director and makes recommendations to the City Council on matters pertaining to the Parks and Recreation facilities and programs.

Finally, recreation is an excellent means of increasing ecological and cultural understanding and sensitivity. For example, trail systems save energy and protect air quality. They also may serve the purpose of nature or cultural studies by providing appropriate signage describing archeological sites and/or vegetative communities typical to the area.

The Bisbee Traffic Circle enhancement project completed in 2004 includes pedestrian and bicycle links that provide multi-modal access to the different areas within the City of Bisbee, public art in the form of large compass bearings, and landscaping. In addition, the development of a linear park system will improve access and connectivity to parks, open spaces, residential neighborhoods, community activity centers, commercial and service-oriented uses, and governmental facilities.

Recreation Facilities

This section identifies existing and planned recreation facilities within the City of Bisbee. The City Parks and Recreation plan provides for neighborhood parks that include picnic areas, play lots, and basketball courts.

Bisbee has 11 parks plus a Senior Citizen Center (operated independently).

1. Briggs Park (to be developed)
2. City Park
3. Galena Park
4. Garfield Park
5. Goar Park
6. Grassy Park
7. Higgins Park and Pool
8. Saginaw Park
9. Sherman or Paul St. Park
10. Tintown or Ruben T. Garcia Park
11. Vista Park

Park Land Acquisition

Acquisition of land for future park sites is vital to ensure the availability of land for park development. The establishment of pocket parks in neighborhoods should be encouraged, if needed for the overall park and recreation program, and if the land is physically suited for park and recreation use.

The design of neighborhood pocket parks should incorporate features such as trail connectivity, access by more than one mode, tot lot areas and picnic areas, and should encourage community gathering, giving the neighborhood community identity.

As a way to ensure that future park needs are met, new development within growth areas should include recreation and open space or provide fees for the provision of park and open space.

Working with Local, State, and Federal Agencies

In order to provide adequate park, open space, and recreation facilities, the City works closely with other local, regional, state, and federal agencies. Any future parks that benefit Bisbee residents, as well as Cochise County residents, would provide excellent opportunities for acquisition, development, and maintenance of partnerships between the City and the County. Intergovernmental agreements addressing land use development within growth or planning areas should include provisions for the establishment of joint planning efforts between the City and the County.

Opportunities for Linear Park Development

Rails-to-Trails Conservancy (RTC) creates a nationwide network of public trails from former rail lines and connecting corridors. The federal Transportation Enhancements program is the largest source of funding for trail development. The growing popularity of outdoor recreation activities, such as cycling, inline skating, walking and running, combined with the loss of community open space, has increased the need for quality recreational facilities such as rail-trails.

Rail-trails provide places for cyclists, hikers, walkers, runners, inline skaters, and physically challenged individuals to exercise and experience the many natural and cultural wonders of rural environments. Rail-trails not only serve as independent community amenities, they also enhance existing recreational resources by linking neighborhoods and schools to parks, recreational centers and other community services and facilities.

The City of Bisbee can apply for grants to convert abandoned rail lines into linear parks providing connectivity to different areas of the City.

Linkages and trail corridors could also be provided between the Old Divide Road, Juniper Flats and the downtown area of Old Bisbee, taking advantage of existing trails, as part of an urban trail system. However, this idea entails a lot of work regarding maintenance and private property issues.

TRANSPORTATION AND CIRCULATION

Southeastern Arizona Governments Organization Transportation Planning Program

The Transportation Planning Program conducts both long and short range transportation planning to improve the current street and transit systems and to ensure that the future transportation needs of local governments within the Southeastern Arizona Governments Organization (SEAGO) are met. This program, through its contract with the Arizona Department of Transportation (ADOT), establishes priorities for roads under local government control which are eligible for Surface Transportation Program (STP) funds and Highway Safety Improvement Program funds (HSIP) Requests for projects to be added to the State Highway Five-Year Highway Construction Program are solicited, reviewed, ranked, and submitted to ADOT.

The program also acts to coordinate, Bridge Replacement and Rehabilitation, Transportation Alternatives Program (TA). Transit services are also planned for by the SEAGO transportation planning program. Transit needs of the elderly and disabled are addressed through Title 49 USC and section 5310 (application process, and additional public transit needs are addressed through Title 49 USC and section 5311 application process. Planning assistance is provided to transit operators and applicants to encourage the integration of all routes and schedules. SEAGO develops and updates the Regional Human Services Transportation Coordination Plan each year. This plan helps identify the future needs of each transit service area, and how we can better serve the region through transit programs. In addition, SEAGO operates a Regional Mobility Program. The programs purpose is to maximize area transit resources in the areas of training, resource sharing, ridership tracking, and procedure development.

History and Background of the Program

SEAGO has been assisting member entities with Transportation and Transit Planning since the formation of the COG in 1972. The POPTAC was established in 1977, by Executive Order, to review and approve the official population projections for Arizona. In 1988, a new Executive Order was issued which expanded POPTAC's responsibilities to include both population estimates and projections, and which required the POPTAC to review and make advisory recommendations on both estimates and projections to the

Department of Economic Security (DES) director. At that time, the decision was made by the SEAGO Executive Director to assign the State Data Center Affiliate relationship to the SEAGO Transportation Planning Program Section.

Cochise County Highway Operating Division

The Highway Operations Division of Cochise County Highway and Floodplain Department is charged with constructing and maintaining certain designated public roadways in Cochise County. This does not include roads within the incorporated cities and towns, State highways and certain public roads not constructed to County standards and not approved by the Board of Supervisors for maintenance.

Funds used to maintain and construct County roads are not derived from property taxes but from State Highway User Revenue Funds (HURF). These funds are collected by the State of Arizona and diesel fuel tax and the vehicle license tax. The State Legislature then allocates these funds to the Arizona Department of Transportation (ADOT), Arizona cities and Arizona counties using a very complicated formula.

The order of priorities set by the State for distributing HURF is: ADOT, Arizona cities, the two metropolitan counties (Maricopa and Pima) and finally, the thirteen rural counties. The County Board of Supervisors, therefore, does not determine the amount of HURF coming in to the County each year. However, the Board does control how these funds are spent within the County.

The Arizona Association of County Engineers recently contracted with TASK Engineering to update the Roadway Needs Study for all the counties within the State. Their analysis shows that Cochise County should be spending $8,404,600 annually for maintenance and $130,000,000 for capital improvements in order to bring County maintained roads and bridges up to modern standards. Comparing these funding needs with available HURF, the County will spend about 55% of what is needed annually on maintenance and less than 1% annually on what is needed for capital improvements.

City of Bisbee Public Works Department Streets Division

The primary function of the City of Bisbee Public Works Department Streets Division is maintenance of City streets, alleys, stairs, drainage structures, and right of ways. Typical duties consist of patching and repairing streets, repainting traffic control markings and pedestrian signing, controlling vegetation which may impede vehicular or pedestrian traffic, or the visibility of traffic, signs or markers, grounds maintenance at the airport, and cleaning and maintenance of drainage structures.

Bisbee Municipal Airport

The City of Bisbee Municipal Airport is managed by a contracted Fixed B Operator, and overseen by the City's Public Works Department. Future development of the site is laid out in the Airport Master Plan adopted by the City Council. Grant applications through ADOT and the Federal Aviation Administration (FAA) have been based upon the direction provided in the adopted Airport Master Plan.

There is an Airport Advisory Committee, which meets on a regular basis and submits ideas and requests to the City concerning the operation and planning of the airport.

Existing Roadways and Traffic Volumes

This section includes data in tabular and graphic form, identifying the current traffic counts for existing roads and illustrating the existing transportation system based on data provided by SEAGO. Table 8 shows approved traffic counts for roadways within the City of Bisbee for the year 2013.

TABLE 8

AVERAGE DAILY TRAFFIC COUNTS (ADT)
FOR ROADWAY SEGMENTS WITHIN THE CITY OF BISBEE

Area	Location	DIR	ADT
Bisbee	Tombstone Canyon Rd. E/O Hwy 80 Interchange	NB,SB	1733
Bisbee	Tombstone Canyon Road S/O Curve Street	NB, SB	3545
Bisbee	Tombstone Canyon Road S/O Quality Hill	NB, SB	4589
Bisbee	Clawson Street E/O Maxfield Avenue	EB, WB	268
Bisbee	Brewery Avenue S/O Taylor Avenue	NB, SB	770
Bisbee	Brewery Avenue N/O Walsh Avenue	NB, SB	500
Bisbee	Main Street W/O Brewery Avenue	EB, WB	8425
Lowell	Erie Street	NB, SB	493
Lowell	Old Douglas Road	EB, WB	349
Saginaw	Warren Cut-Off Road S/O HWY 80	NB, SB	669
San Jose	San Jose Drive S/O HWY 92	NB, SB	1301
San Jose	Naco HWY S/O Avenida Feliz	NB, SB	4147
San Jose	Hereford Road E/O Nighthawk Avenue	EB, SB	889
San Jose	Santa Cruz Drive W/O Cochise Drive	EB, SB	345
San Jose	Naco Highway S/O Della St.	NB, SB	3192
Warren	School Terrace Rd S/O High School	NB, SB	2384
Warren	School Terrace Rd N/O High School	NB, SB	2467
Warren	Bisbee Road S/O Traffic Circle	NB, SB	6076
Warren	Bisbee Road S/O Cole Ave.	NB, SB	4588
Warren	Douglas Street S/O Center Avenue	NB, SB	870
Warren	Cole Avenue W/O Arizona Street	EB, WB	498
Warren	Cole Avenue E/O Arizona Street	EB, WB	368
Warren	Arizona Street S/O Cole Avenue	NB, SB	713
Warren	Arizona Street S/O Hoatson Ave.	NB, SB	875
Warren	Ruppe Road W/O Arizona Street	EB, WB	2581
Warren	Arizona Street S/O Ruppe Road	NB, SB	856

Source: Cochise County Traffic Counts and
Approved Traffic Counts, SEAGO, 2013.

Traffic Circulation

This data and its corresponding analysis provide the foundation for the Future Transportation and Circulation Plan, and will assist the City of Bisbee in planning for future motorized and non-motorized traffic circulation systems. This section provides definitions, locations, and functional classifications for arterial and collector roadways within the study area.

The functional classification of roadways is based on the concept that each roadway has a predominant purpose. A road is either intended to access property (which serves local traffic) or allows movement through an area (which serves through traffic). With the exception of limited access facilities or interstate roads, all highways and roads generally serve both functions. However, one function is usually predominant and is the intended use or designated function of that particular roadway.

ADOT established and defined the following functional classifications:

1. Arterial Roads. A roadway providing service which is relatively continuous and or relatively high in traffic volume, long average trip length, high operating speed, and high mobility importance. United States numbered highways are examples of arterial roadways.

2. Collector Roads. A roadway providing service, which is of relatively moderate average traffic volume, moderate average trip length, and moderate average operating speed. Such a roadway also collects and distributes traffic between local roads or arterial roads and serves as a linkage between land access and mobility needs.

The Federal Highway Administration Approved (FHWA) Functional Classification map provided in the appendix section shows the ADOT FHWA-approved functional classifications for functionally classified roadway segments within the study area.

TABLE 9

FHWA APPROVED FUNCTIONAL CLASSIFICATION
FOR FUNCTIONALLY CLASSIFIED ROADWAY
SEGMENTS WITHIN THE BISBEE URBAN AREA

ROAD NAME	FROM:	TO:	FUNCTIONAL CLASSIFICATION
Highway 80	Bisbee City Limits	Bisbee City Limits	Principal Arterial Other-Urban
Highway 92	Intersection with Naco-Bisbee Highway	Intersection with Highway 80	Principal Arterial Other-Urban
Highway 92	Bisbee City Limits	Intersection with Naco-Bisbee Highway	Minor Arterial-Urban
Naco-Bisbee Highway	Bisbee City Limits	Intersection with Highway 92	Minor Arterial-Urban
Bisbee Jct. Road	Cochise County	Bisbee City Limits	Minor Collector-Rural
Warren Cutoff Road	Bisbee City Limits	Highway 80	Minor Collector-Rural
Tombstone Canyon Road	Highway 80	Highway 80	Collector-Urban
Bisbee Road	Highway 80	Arizona Street	Collector-Urban
School Terrace Road	Highway 92	Bisbee Road	Collector-Urban
Arizona Street	Bisbee Jct. Road	Warren Cutoff Road	Collector-Urban
Hereford Rd	Naco-Bisbee Highway	End of Segment	Collector-Urban
Washington Avenue	Highway 92	End of Segment	Collector-Urban
Naco Highway	Cochise County	Bisbee City Limits	Mayor Collector-Rural

Sources: Arizona Department of Transportation, Federal Highway Administration Approved Functional Classification Maps for Cochise County and Bisbee Urban Area, 2001 and Southeastern Arizona Governments Association (SEAGO) 2001.

Planned Transportation Improvements

This section includes planned transportation infrastructure expansions and improvements within the study area based on data provided by the City of Bisbee, Cochise County Department of Transportation, ADOT, and SEAGO.

Bisbee Traffic Circle Improvements

The Bisbee Circle located at the confluence of State Route 80 (Milepost 343.7) and State Route 92 (Milepost 329.4) and its 10 accompanying islands are all property of ADOT. Positioned astride two major arteries on the southernmost state system, the circle catches the attention of travelers as they enter or leave Bisbee, one of the most unique visitor destinations in Southeastern Arizona. Constructed in 1947, this circle is certainly the oldest and most historic in Arizona and is one of the few on the State System. In addition, this facility is more than 50 years old, which makes it eligible for the National Historic Register.

The Bisbee Circle recently underwent renovation as part of safety improvement project by the ADOT Safford Engineering District to address safety concerns. Limited District funding did not provide for scenic improvements or landscaping at the conclusion of this project. The City of Bisbee applied for an Arizona Transportation Enhancement Program grant and was awarded a $316,489 grant to preserve and landscape the Bisbee Traffic Circle in 2002. The beautification project consisted of a compass design, with plants lined along the axis and a functional and directional art form graphic providing guidance to motorists transiting the circle.

Bisbee Transit Service Improvements

A wheelchair-accessible bus has been purchased by the City of Bisbee and is in service. The Bisbee Bus service is operated jointly by the City of Bisbee and Catholic Community Services.

Other Transportation Issues

This section addresses other transportation issues such as multi-modal transportation. Multi-modal transportation includes alternate modes of transportation and supports Bisbee's livable goals by providing a response to: traffic congestion and air pollution.

Multi-Modal Transportation

This section identifies existing and/or planned programs and facilities within the study area that encourage citizens to use alternate modes—walking, biking, public transportation, or combining two or more alternate modes. In addition, this section addresses short-range and long-range transit planning needs, bicycle and pedestrian planning, and inter-modal planning.

The Bisbee Public Transit System

The Bisbee Route starts at the top of Tombstone Canyon, travels through Old Bisbee to Warren (except for the first trip in the morning), from there it runs to the San Jose area. The San Jose short route travels West along Highway 92 down next to the Cochise County Health Department on Melody Lane to Hereford Rd where it connects to Naco Highway then back towards Safeway or the extended route which travels South down Naco Highway where it loops through Naco, Arizona and then North back to Hereford Rd. From there it travels down Melody Lane and loops down Highway 92 to Safeway. It returns to Old Bisbee through the Warren, Bakerville then Lowell town sites. The service is available Monday through Friday with ten runs. On Saturdays the services are available with four runs through the community.

The Bisbee bus has been in operation since 1986, with services provided through Catholic Community Services of Southern Arizona (CCS). Since October 1998, the City of Bisbee became the sponsoring agency and contracts for transit services with CCS. The program uses 5311 funds for its deviated fixed route service with additional support to elderly and disables riders from SEAGO Area Agency on Aging.

Bisbee Bus Transit System has a Five Year Transit Plan for Bisbee Bus Public Transit System which will be updated in 2014. It provides community profile, defines the service area, includes an inventory of services, estimates transit demands and needs, and evaluates the existing services. The City of Bisbee Transit Advisory Committee (TAC) meets at minimum quarterly. The TAC along with the City Staff Liaison provides recommendations to the City Council regarding public transit system in Bisbee. In addition, City Staff, as

required by the 5311 program, participates in the Cochise County Transit Coordination Group, Douglas TAC, Sierra Vista TAC and Benson TAC. Currently the Bisbee Bus coordinates with Douglas Rides to provide expanded service. The Douglas Connections allows Bisbee passengers the opportunity to ride to Cochise College Douglas Campus or down to Douglas, Arizona on Monday through Thursday each week.

Pedestrian and Bike Pathways

There is a need to interconnect the different areas of the City through the construction of additional pedestrian trails and bike routes. Pedestrian and bike pathways are depicted on the Future Transportation & Circulation Plan map. The map shows existing and proposed pedestrian and bike pathways within the study area.

Airport Growth Area

There is a need to provide enhanced transportation corridors to efficiently serve the Airport Growth Area while preventing the increase of commercial trucking traffic through Historic Warren's residential areas. Two existing roads have been identified in the Proposed Transportation/Circulation map provided in Volume II: Implementation within the appendix section. These roads are Purdy Lane and Bisbee Junction Road. Joint planning efforts with the County, the regional agency and ADOT are recommended in order to find the most feasible solution.

WATER, WASTEWATER & SOLID WASTE

Water System

This section provides water system modification based on data provided by the City of Bisbee Public Works Department. According to information provided by the City, Arizona Water Company supplies drinking water to the entire City and fire suppression water to Warren and San Jose sections.
For years, the City reservoir storing Old Bisbee's fire suppression water had leaked. As of this time the Main 2.9 million gallon reservoir has been sealed. The Bisbee Fire Department also makes sure its 2,000 gallon water tender is available in Old Bisbee in case there is fire in areas not serviced within the proximity of the fire suppression system. The three (3) other reservoirs located on the fire suppression system overlooking Old Bisbee are in need of upgrading.

Wastewater Treatment System

In 2003 and 2004 design was started on a new Wastewater Treatment Facility (WWTF) and the major Interceptor, Trunk and Collection Sewers in Old Bisbee, Warren and San Jose sections of the City of Bisbee. The improvements were completed in 2006. At present the city is served by a sewer collection system that varies widely in age and condition and in time the lateral sewers in each section of the city will need to be replaced. Currently, wastewater from the three (3) sections of the city is collected and transmitted to the San Jose Wastewater Treatment Facility and a Preliminary Engineering Report and Environmental report are being started to address the replacement of the lateral sewer lines in Old Bisbee. Once Old Bisbee is complete, the lateral sewer lines in Warren and San Jose will need to be assessed.

Old Bisbee Area

The collections system in the section of Old Bisbee and area of Lowell and Saginaw serve approximately 1,800 residents. These areas of the city consist of a system of varied material types consisting of vitrified clay, transite (asbestos cement), and cast iron pipes. The approximate 15 miles of pipes in Old Bisbee range in size from 4-inch to 12-inch in diameter and flow to a 12-inch trunk line leading to the Mule Gulch Lift Station from where sewage is pumped to Cole Avenue and Arizona Street after which it flows by gravity to the San Jose WWTF. These pipes were originally installed in the early 1900's and much of the lateral sewer system is heavily deteriorated and undersized to meet existing requirements. Additionally, much of the sewer line in the Old

Bisbee section is laid on steep grades, many more than 30 percent. The depth or the majority of sewer lines is less than 3.0 feet.

Warren Area

This system serves approximately 2,000 residents of the Warren area. The wastewater collection system in the Warren area of the city consists of approximately 18 miles of pipe ranging in size from 4-inches to 12-inches in diameter. Grades in Warren are in the 5 percent range, although some pipe areas laid on flat grades, resulting in cleaning problems.

Most of the pipes in this area are constructed of vitrified clay, although some of the smaller sections of pipe are cast iron. As in Old Bisbee, most of the system is too small to meet existing Arizona Department of Environmental Quality (ADEQ) requirements. Approximately 70 percent of the existing collecting system in the Warren area is comprised of the 4-inch or 6-inch diameter pipe.

Additionally, in the Warren area, approximately 25 percent of the system has domestic water mains placed over sanitary sewer lines in the same trench, posing, a potential health hazard, difficult maintenance, and additional source of inflow/infiltration. The sanitary sewer pipes lead to a 12-inch trunk line that conveys the sewage to the San Jose WWTF approximately 2.5 miles southwest of Warren.

San Jose Area

This system serves approximately 1,000 residents of the San Jose area. Sanitary Sewer transmission pipes in this area range in size from 4-inches to 6-inches in diameter and connect to a 10-inch or a 15-inch trunk sewer that leads to the San Jose WWTF. Pipes are constructed of asbestos cement and are laid on fairly gentle grades.

The San Jose WWTF is located on a 59-acre property owned by the City. This site is bordered by land owned by Freeport McMoRan and other private owners on all sides. Construction of the San Jose WWTF was completed in 2006. The new WWTF is a Sequencing Batch Reactor (SBR) Plant sized to treat 1.2 million gallons per day of sewage per day.

Sanitation and Solid Waste

The City of Bisbee Public Works Department Sanitation Division oversees the refuse pick-up, recycling, and yard debris needs of the city. Residential garbage is picked up four days a week, and commercial is picked up five days a week. Recycling is picked up five days a week and bailed four days a week. The city sanitation division collects yard debris on Wednesdays. This also includes special fee pickups based on oversized loads.

The sanitation division has dedicated one employee to yard debris and dumpster repair and maintenance. Currently the division utilizes a nine person Department Of Corrections crew to assist with recycling and refuse collection in Old Bisbee. The employee assigned to dumpster maintenance and yard debris also utilizes one D.O.C. inmate. There are three (3) fulltime city employees dedicated to Recycling and they use six (6) D.O.C. inmates. The garbage collection in Old Bisbee utilizes two D.O.C. inmates. There are three (3) full time city workers dedicated to driving the city's fleet of garbage trucks.

The City of Bisbee truck fleet includes three (3) thirty (30) yard barrel side loading trucks. These trucks are used for the ninety five (95) gallon rollouts and the city's dumpsters. A seven (7) yard rear loader truck is used for hand pickups to service Old Bisbee.
The fleet also includes a thirty foot flatbed truck to haul recycling to the Tucson and Phoenix markets.
Recycling utilizes two (2) 3/4 ton four (4) door pickups that pull two (2) auto car enclosed cages to collect recyclables.
The division holds an enclosed twelve person van, a five yard side loading refuse truck and a ¾ ton pickup truck in reserve, to accommodate vehicle service down time.

Cochise County Solid Waste Department

Cochise County Solid Waste Department operates public facilities for the safe and sanitary disposal of solid waste generated within Cochise County under authority from the State of Arizona (ARS 49-741).

Further, the State of Arizona (ARS 49-742 et. seq.) allows the establishment of solid waste user fees to cover the costs of development, construction, operation, administration, and financing of public solid waste management activities, and broadly controls those activities.

Cochise County Recycling Program

The purpose of the Cochise County Recycling Program is to reduce the amount of solid waste that ends up in the landfill. The County and City jointly manage recycling stations in San Jose, Warren, Lowell, and Old Bisbee, serving the City of Bisbee. Materials accepted in recycling stations include: newspaper, white paper, magazines, cardboard, aluminum and metal cans and plastics (#1 and 2). A free pick up of trimmings and yard waste can also be arranged. Waste reduction programs that could be helpful to the city include Classroom Programs for Waste Reduction Education, Zero Waste Lunch and Compost Program, Tour of the Landfill in Whetstone, and Materials Exchange Program.

Cochise Materials Exchange Program

The purpose of the Cochise Materials Exchange Program, sponsored by Cochise County Lets Talk Trash Recycling Program, is to prevent reusable products from entering the waste stream and landfill. This materials exchange program creates a means for Cochise County residents, businesses and non-profit organizations to exchange, any type of materials except those classified as hazardous waste. This materials exchange is operated by volunteers and is a free service to all participants. Potential users of the materials listed should contact the individual, organization or business directly to arrange pickup or delivery of the material.

UTILITY SERVICES

Electric Utilities

Arizona Public Service Company (APS) provides electric utility services to the City of Bisbee, meeting the electricity needs of both residents and businesses. In addition to providing electric utility services, APS partners with the City in numerous community and economic development programs such as the Bisbee Strategic Plan for Community and Economic Development.

Telephone/Television

Currently Century Link, formerly Qwest Communications, provides local phone and broadband internet service to residents of Bisbee and the surrounding area. Cable One provides cable television, and broadband internet. In addition, Dish Network and Direct TV provide television and broadband internet services to the residents of Bisbee.

Gas Service

Southwest Gas Corporation is principally engaged in the business of purchasing, transporting, and distributing natural gas to residential, commercial, and industrial customers in the southwestern United States. Southwest Gas provides natural gas service to the residents of Arizona.

Fire Protection

The Bisbee Fire Department responds to all types of emergency situations. These incidents include fire response within the city limits, wildland fires for the Arizona State Land Department, as well as hazardous material incidents. The Fire Department also provides Advanced Life Support Ambulance Service, which includes 400 square miles throughout Cochise County as well as inter-facility transports from hospital to hospital.

The Fire Department is also responsible for enforcement of the Uniform Fire Code and inspection of all businesses and public access areas. The Fire Department is charged with investigating for cause and origin any and all fires when necessary. The Fire Department employs 18 personnel that are trained and certified at different levels to include, Level 1&2 Firefighter, Fire Inspector, Arson investigator, Wildland Firefighter and Fire Instructor.

As an EMS provider personnel is certified as EMT's and Paramedics. The Fire Department staff includes 1 Fire Chief, 2 Captain EMT's, 1 Captain Paramedic, 2 Lieutenant EMT’s, 5 Firefighter Paramedics, and 7 Firefighter EMT's.

The Bisbee Fire Department not only responds to emergency situations but also provides other services which include, free blood pressure clinics daily, home courtesy inspections (fire and overall safety), CPR classes twice a month (Health Care Provider and Heartsaver) offered at a nominal fee, continuing fire prevention education to school age children and the entire community, the Fire Explorer program, future immunization clinics in conjunction with Cochise County Health Department and fire extinguisher training for corporations, companies, and the general public.

Law Enforcement/Police

The Bisbee Police Department responds to a variety of calls for service each year. They include enforcement of City Codes and Ordinances; state laws, criminal and civil traffic, misdemeanor and felony violations; along with federal law. The Bisbee Police maintains Intergovernmental Agreements with Cochise County, Arizona Department of Public Safety, D.E.A, F.B.I., U.S. Border Patrol, and Naco and San Jose Fire Districts for support assistance involving calls for service. With this enforcement comes records retention and reporting to City, County, State and Federal jurisdictions; providing reports to attorneys for City, State and Federal prosecutions; and for courts in City, Sate and Federal justice systems.

The Bisbee Police Department maintains a 24-hour dispatch and 9-1-1 service center. The department dispatches for police, fire and ambulance, as well as after-hour handling of Public Works calls. Our 9-1-1 center handles all of the "432" telephone prefix, serving not only Bisbee but Naco and Bisbee Junction as well.

The Bisbee Police Department maintains the Animal Control service and shelter, presently maintaining a "no kill" facility

The Police Department has 17 full time positions and 8 part-time positions, consisting of 1 Police Chief, 2 Patrol Sergeants, 2 Administrative Sergeants, 1 School Resource Officer, 9 uniformed Patrol Officers (1 Part-time), 1 Animal Control officer, 1 part-time Administrative Assistant/Records Clerk, 2 full time Dispatchers and 5 part-time Dispatchers. Two of the uniformed officers also function as Detectives. Each position requires different state certification and on-going mandatory training to hold their certifications.

The Police Department offers other special services to the community, including House Watch, Crime Prevention Programs, Neighborhood Watch programs, Bicycle Safety programs, Kids I.D. program, Adopt-a-School program and the Bisbee Police Explorer Post #455.

EXISTING LAND USE ANALYSIS

This section provides an inventory of existing land uses based on aerial photographs and information provided by the City of Bisbee Community Development Department. The purpose of this inventory is to: (1) provide a basis for future acreage needed per land use category; (2) identify available vacant land; (3) define areas where infill development is a priority; (4) establish priority or target areas for future growth; (5) identify target areas for annexation; and (6) define future land use distribution.

Residential Construction

According to information provided by Cochise College Center for Economic Research, new home construction within the City of Bisbee has been slow over the past few years, following the Great Recession in 2008. For the ten full years for which data has been provided, there has been an average of 3.7 homes built per year; an increase over the last planning period where the average number of homes built was two per year. Table 11 shows total single family housing permits issued by the City from 2003-2012.

TABLE 11

SINGLE FAMILY HOUSING PERMITS
2003-2012

YEAR	# of Permits
2003	4
2004	4
2005	5
2006	5
2007	8
2008	2
2009	1
2010	3
2011	3
2012	2

NEW HOME PERMITS, SINGLE FAMILY RESIDENTIAL (CITY OF BISBEE)	
2003	4
2004	4
2005	5
2006	5
2007	8
2008	2
2009	1
2010	3
2011	3
2012	2
Source: U.S. Census Bureau and Cochise College Center for Economic Research	

Source: US Census Bureau;
Cochise College Center for Economic Research, 2002.

Commercial Construction

For the period January 2008 through August 2013, there were a total of three commercial building permits issued. Table 12 shows commercial construction permits 2008 to 2013.

TABLE 12

COMMERCIAL CONSTRUCTION PERMITS
2008 to 2013

Year	Total Number of Permits	Total Valuation
2008	0	$0
2009	1	$1,425,000
2010	1	$1,901,849
2011	0	$0
2012	0	$0
2013 (Jan-Aug)	1	$1,120,577

Source: City of Bisbee;
Cochise College Center for Economic Research, 2014.

Existing Land Uses

The Existing Land Use map provided in the Appendix section depicts existing land uses within the City of Bisbee current corporate boundary and within portions of the Proposed Growth Area Boundary for the City of Bisbee. The total acreages for existing land uses within the City corporate boundaries are shown in Table 13. Vacant and/or undeveloped lands are also shown on the Existing Land Use map. The total acreage for vacant lands located within the City of Bisbee corporate boundary is also provided in Table 13.

TABLE 13

EXISTING LAND USES
CITY OF BISBEE 2014

Existing Land Use Category	Approx. Acreage
Agricultural	0
Mining	0
Industrial [1]	2
Commercial/Office	210
Residential	781
Public/Quasi Public (includes school, Bisbee Municipal Airport, and right-of-way)	484
Recreation	24
Vacant/Undeveloped	2,370
TOTAL	3,871

Source: City of Bisbee Community Development Department, 2014.

[1] Industrial land uses within the City encompass a total of approximately 2 acres. In addition, there are 24 acres of existing industrial land uses adjacent to the City boundary within the Lowell area.

According to Table 13, an approximate increase of thirty-two (32) acres of residential land, primarily in the San Jose area, and five (5) acres of commercial land have occurred since 1996 within the City corporate boundaries.

Table 14 shows land use acreages within the Existing Cochise County Designated Growth Boundary for Bisbee.

TABLE 14

EXISTING LAND USES WITHIN THE EXISTING COCHISE COUNTY GROWTH BOUNDARY FOR BISBEE
2014

Existing Land Use Category	Acreage Inside City Limits	Acreage Inside Cochise Growth Boundary for Bisbee
Agricultural	0	0
Mining	0	2,970
Industrial [1]	2	43
Commercial/Office	205	0
Residential	781	294
Public/Quasi Public (includes school, Bisbee Municipal Airport, and right-of-way)	484	500
Recreation	24	0
Vacant/Undeveloped	2,370	1,106
City of Bisbee Total	N/A	3,866
TOTAL	3,866	8,779

Source: City of Bisbee Community Development Department, 2014.

[1] Industrial land uses within the City encompass a total of approximately 2 acres. In addition, there are 24 acres of existing industrial land uses adjacent to the City boundary within the Lowell's area.

As provided in Table 14, of the total 8,779 acres within the existing Cochise County Growth Boundary for Bisbee, approximately 2,970 acres, or 34 percent, of the existing designated growth boundary are owned by Freeport McMoRan and includes tailings and potential mining areas. The existing growth boundary needs to be revised to reflect a more realistic scenario.

Density and Intensity of Current Uses

Estimated average density of residential land use (total housing units per total residential acres) is currently approximately four dwelling units per acre in most areas with the exception of Old Bisbee. Estimated intensity of commercial and industrial land uses was calculated as an average floor area ratio of 0.50 and 0.35, respectively.

Floor area ratio is the relationship between the area of floor space in a structure and the area of the parcel on which it is situated. For instance, a floor area ratio of 1.0 represents a one story building covering the entire parcel, a two-story building on 50.0 percent of the parcel, a four-story building on 25.0 percent of the parcel, and so on. Intensity is essentially an urban concept. Since the existing commercial and industrial land uses within the City of Bisbee are urban, the estimated intensity of use has utility as a measure of development activity.

CURRENT OR IMMEDIATE NEEDS FOR LAND

The following is an analysis of the preceding land use data. This analysis discusses existing land use patterns and identifies future land needed.

The narrative, tables, and illustrations included in this analysis depict the character and magnitude of existing land uses and projections for future land uses to aid the proper placement of development and redevelopment activity within the City of Bisbee through the year 2030. This analysis considers the availability of public facilities and services; the character of vacant or undeveloped land and its suitability for development; the amount of land needed to accommodate the projected population; need for redevelopment (which also addresses any inconsistent existing land use pattern); and suitability of flood-prone areas for development.

The statistical data presented is based on U.S. Census Bureau.

Population Distribution

TABLE 15

POPULATION DISTRIBUTION BY AGE GROUP
CITY OF BISBEE
2000

Population Category	Population Number	Percent
Total Population	6,090	100
Under 5 years	362	5.9
5 to 9 years	358	5.9
10 to 14 years	355	5.8
15 to 19 years	366	6.0
20 to 24 years	291	4.8
25 to 34 years	628	10.3
35 to 44 years	842	13.8
45 to 54 years	951	15.6
55 to 59 years	397	6.5
60 to 64 years	347	5.7
65 to 74 years	611	10.0
75 to 84 years	431	7.1
85 years and over	151	2.5

Source: Profile of General Demographic Characteristics,
2000 Summary Tape File 1, US Census Bureau.

As shown on Table 15, of the total 6,090 persons residing in the City of Bisbee in 2000, approximately 1,075 persons, or 17.65 percent, were 14 years of age or younger; approximately 657, or 10.79 percent, were between the ages 15 and 24; approximately 3,165 persons, or 51.9 percent, were between the ages 25 and 64; and approximately 1,193 persons, or 19.58 percent, were 65 years of age or older. Despite the drop in population, these demographics have not shifted significantly in the period between 2000 and 2010 as shown in Table 16.

TABLE 16

POPULATION DISTRIBUTION BY AGE GROUP
CITY OF BISBEE
2010

Population Category	Population Number	Percent
Total Population	5,575	100
Under 5 years	286	5.1
5 to 9 years	238	4.3
10 to 14 years	275	4.9
15 to 19 years	315	5.7
20 to 24 years	276	5.0
25 to 29 years	268	4.8
30 to 34 years	268	4.8
35 to 39 years	268	4.8
40 to 44 years	298	5.3
45 to 49 years	377	6.8
50 to 54 years	470	8.4
55 to 59 years	505	9.1
60 to 64 years	576	10.3
65 to 69 years	404	7.2
70 to 74 years	275	4.9
75 to 79 years	197	3.5
80 to 84 years	145	2.6
85 years and over	134	2.4

Source: Profile of General Population and Housing Characteristics, 2010 Demographic Profile Data
2010 Census Bureau
(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1)

TABLE 17

POPULATION DISTRIBUTION BY SEX
CITY OF BISBEE
2010

	Population	Percent
Total	5, 575	100
Female	2, 806	50.3
Male	2,769	49.7

Source: Profile of General Population and Housing Characteristics, 2010 Demographic Profile Data
2010 Census Bureau
(http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1)

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Of the total 5,575 persons living within the City of Bisbee in 2010, approximately 50.3 percent are female; and approximately 49.7 percent are male.

City of Bisbee Population Projections 2010–2030

The main source used to establish population trends for the City of Bisbee for the 2010–2030 planning horizon was the Arizona Department of Administration, Office of Employment and Population Statistics 2013 Sub-County Population Projections. The 'forecast' modeling method was used. Regional councils of government and several jurisdictions reviewed the preliminary projections. Local knowledge about planned economic development, resource constraints, and demographic patterns in specific areas guided adjustments to the preliminary projections. Several rounds of consultation were conducted before the sub-county projections were finalized. Adjustments to the preliminary sub-county projections were made on a case-by-case basis to create a reasonable picture of population change within each county.
(Source:
http://www.workforce.az.gov/pubs/demography/SubCountyProjMethodology.pdf)
Projections for the City of Bisbee show a downward trend in population until the year 2014, then a continual upward trend until 2030, growing at an average of less than 1% a year. See Table 18.

TABLE 18

CITY OF BISBEE POPULATION PROJECTIONS
2010-2030

Year	Cochise County	City of Bisbee
2010	131,346	5,560
2015	134,166	5,472
2020	142,398	5,711
2025	150,247	5,877
2030	157,693	5,973

Source: Arizona Department of Administration
Office of Employment and Population Statistics
2013 Sub-County Population Projections:
http://www.workforce.az.gov/population-projections.aspx

TABLE 19

POPULATION AND HOUSING UNITS COCHISE
COUNTY AND INCORPORATED AREAS
US CENSUS BUREAU ESTIMATES
2014

JURISDICTION	Population	Total Housing Units
Cochise County Total	132,088	59,904
Benson	5,105	2,987
Bisbee	5,498	3,355
Douglas	17,270	5,560
Huachuca City	1,822	1,106
Naco	1,046	312
Pirtleville	1,744	645
St. David	1,699	696
Sierra Vista	46,351	19,666
Sierra Vista Southeast	14,797	6,622
Tombstone	1,358	899
Whetstone	2,617	1,398
Willcox	3,757	1,837
Remainder of County	29,024	14,821
Inside Incorporated Areas	81,161	35,410
Outside Incorporated Areas	50,927	24,494

Source: US Census Bureau, American Fact Finder,
http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml#none

Current Housing Inventory

TABLE 20

HOUSING UNITS AND AVERAGE HOUSEHOLD SIZE
CITY OF BISBEE
2014

Total Housing Units	Occupied Housing Units (households)	Vacant Housing Units	Percent Vacant	Total Persons	Average Household Size (Owner Occupied)	Average Household Size (Renter Occupied)
3,355	2,528	827	25	5,498	2.00	2.12

Source: US Census Bureau, American Fact Finder,
http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml#none

ANALYSIS OF FUTURE LAND USE NEEDS

Residential Land Use Needs

As provided Table 18, the population of the City of Bisbee is projected to be approximately 5,571 persons by the year 2020 and approximately 5,973 persons by the year 2030;. This population increase is based solely on general demographic trends and does not reflect factors such as annexation. An analysis based in population and household size trends is necessary to determine the amount of land needed for residential development in the City of Bisbee.

Table 23 shows numbers of persons living in households, occupied housing units, and the average household size based on 1990 and 2000 U.S. Bureau of the Census counts.

TABLE 21

PERSONS IN HOUSEHOLDS,
OCCUPIED HOUSING UNITS,
AND AVERAGE HOUSEHOLD SIZE
2000 AND 2010

2000 Census	
Category	Population
Total Persons in Households	6,090
Total Occupied Housing Units	2,610
Average Household Size	2.15
2010 Census	
Category	Population
Total Persons in Households	5,498*
Total Occupied Housing Units	2,528
Average Household Size	2.06

Source: US Census Bureau, American Fact Finder,
http://factfinder2.census.gov/faces/nav/jsf/pages/community_facts.xhtml#none
* 2012 estimate

According to Table 21, the total number of persons in households decreased from 6,090 persons in 2000 to 5,498 persons in 2012; the total number of occupied housing units also decreased from 2,610 in 2000 to 2,528 in 2010; and the average household size decreased from 2.15 persons per household in 2000 to 2.06 persons per household in 2010.

Housing Needs Methodology

Additional housing needs for the entire planning period can be calculated as a function of projected population and average household size. For the purpose of calculating future housing needs, the average household size for the planning period has been rounded to 2 persons per household and is expected to remain constant throughout the planning period.

As provided in Table 22, the total amount of projected housing units is calculated by dividing the projected number of people by the average number of persons per household. Since the total number of housing units within the City of Bisbee as of 2010 as reported by the US Census Bureau is 3,355 units and the projected number of housing units needed for the 2030 population is 2,986 units, no additional housing is needed based on current population trends. However, a variety of economic, social and climatic factors could change the current population trend negatively or positively.

TABLE 22

ESTIMATED HOUSING UNITS 2015–2030

Year	Projected Population	Constant Average Household Size	Total Needed Housing Units
2015	5,472	2.0	2736
2020	5,711	2.0	2855
2025	5,877	2.0	2938
2030	5,973	2.0	2986

Source: The Planning Center estimates based on
U.S. Bureau of the Census, 1990 and 2000 Summary File 1.
(Housing units are rounded to the nearest five.)

Future Land Uses

The Future Land Use map provided in Volume II of the City's General Plan depicts proposed land uses within the City of Bisbee corporate boundaries and its planning and growth areas.

As shown in the Future Land Use map, the City is moving towards the establishment of area plans to better manage growth. The Saginaw planning area has already adopted an area plan. The City needs funds for the preparation of area plans for the Historic Bisbee and the Historic Warren planning areas, and for the San Jose and the Airport growth areas. Planning charrettes were conducted in 2006 and 2008 in Old Bisbee and San Jose respectively. The recommendations from these charrettes can provide the basis for future area plans and policies.

While the General Plan sets forth the overall land use policy direction for the City, particular sub-areas of the City benefit from Area Plans. Area Plans provide more detailed direction for land use, development, urban design, neighborhood revitalization, infill development, historic preservation, redevelopment or other topics. Area and neighborhood plans are to be used in combination with the City General Plan and when appropriate with the Airport Master Plan to determine land use policy for property within the City.

As provided earlier in this document, each planning or growth area presents unique challenges and very distinct needs. The Area Plan planning approach allows the City to better manage growth. Table 23 shows the planning and growth areas of the City and the recommended approach to manage growth within these areas.

The Specific Plan is recommended as the tool to implement the plan within those areas designated mixed-use in the San Jose Growth Area. The Specific Plan overlay will establish criteria for the provision of open space, schools, recreational facilities, employment centers and a diversity of residential densities and housing types integrated with transit, pedestrian and bike circulation systems in order to create a more livable and sustainable community. Volume II: Implementation provides a sample Specific Plan district in the Appendix section for the implementation of this overlay.

TABLE 23

PLANNING AND GROWTH AREAS
RECOMMENDED APPROACH

Planning Area	Approximate Acres	Recommended Approach	Recommended Joint Planning Efforts
Saginaw Planning Area	23	Saginaw adopted the Saginaw Neighborhood Revitalization Plan, which is the area plan directing redevelopment efforts and new development within the Saginaw planning area.	Since plan adoption, Saginaw has developed partnerships with the City, the County, and the Arizona Department of Commerce. Numerous grants have been received that are currently being used for improvements within this planning area.
Historic Old Bisbee Planning Area	730	Infill mixed-use development in character with the historic heritage of this planning area has been identified as the most appropriate use of the land for this planning area. In addition, Historic Old Bisbee will benefit from revitalization and redevelopment efforts as well as from historic preservation. A large portion of the vacant land within this area is not suitable for development due to topographic constraints. There is, however, a prime area for development within the northwestern portion of this planning area that may support a mix of residential and resort oriented uses. This planning area will benefit from the establishment of an area plan in order to better address the specific needs of the area.	Work with the City, community grassroots organizations, existing neighborhoods, the Arizona Department of Commerce, the Bisbee Chamber of Commerce and Cochise County to identify funds necessary for the establishment of an area plan for Old Bisbee. A charrette was held in July of 2006 with a team of experts including the State Historic Preservation Office and several days of public input that resulted in a variety of design ideas for mixed-development in the Old Bisbee Historic District. Those recommendations can be found at http://www.cityofbisbee.com/documents/BisbeeCharette2006.pdf

TABLE 23 (Continued)

PLANNING AND GROWTH AREAS
RECOMMENDED APPROACH

Planning Area	Approximate Acres	Recommended Approach	Recommended Joint Planning Efforts
Historic Warren Planning Area	486	Due to the small amount of vacant land within the Historic Warren planning area, infill mixed-use development in character with the "city beautiful" layout and historic heritage of this planning area has been identified as the most appropriate use of the land for this planning area. It is anticipated that infill within the residential areas will sustain primarily additional residential land, with neighborhood commercial opportunities at the intersection of collector roads. Commercial uses as well as the revitalization and redevelopment of existing commercial areas are more appropriate for those areas along existing commercial corridors such as Bisbee Road. Historic Warren will benefit from revitalization and redevelopment efforts as well as from historic preservation. The largest amount of vacant land within this planning area is located southeast of the Bisbee High School. This area currently includes primarily single family residential uses and some multi-family. Therefore, this more is more suitable for residential development. This planning area will benefit from the establishment of an area plan in order to better address the specific needs of the area.	Work with the City, community grassroots organizations, existing neighborhoods, the Arizona Department of Commerce and Cochise County to identify funds necessary for the establishment of an area plan for Old Bisbee.

TABLE 23 (Continued)

PLANNING AND GROWTH AREAS
RECOMMENDED APPROACH

Planning Area	Approximate Acres	Recommended Approach	Recommended Joint Planning Efforts
San Jose Growth Area	11,453	San Jose has been identified as one of Bisbee's growth areas. Most of the new growth is currently taking place within this area. The San Jose area caters to a binational economy serving as the closest U.S. gateway to Naco, Mexico. Due to infrastructure availability, it is anticipated that San Jose will become the residential, commercial, and employment center hub of Bisbee offering commerce-oriented services and tourist opportunities to visitors from Mexico and the U.S. San Jose currently serves as the shopping area for Bisbee. In addition, San Jose is the gateway to Sierra Vista. Recommended future land uses for the San Jose Growth Area include a balanced mix of Commercial Highway Corridor along Highway 92 and Naco Highway. Residential development is recommended for those areas in proximity to existing residential development. The rest of this growth area includes mixed-use/Specific Plan or Master Planned land uses which will provide a mixture of livable uses within this area. Of the total 11,453 acres encompassed by the San Jose Growth Area, approximately 8,009 are designated Development Reserve Area. The San Jose Growth Area will benefit from the preparation of an Area Plan.	Work with the City, community grassroots organizations, existing neighborhoods, the Arizona Department of Commerce, the Chamber of Commerce, and Cochise County to identify funds necessary for the establishment of an area plan for San Jose. The San Jose Charrette was held in May of 2008 with a team of experts and week-long public input. Recommendations were made for the application of a hybrid form-based code as well as sustainable development standards. Those recommendations can be found at: http://www.cityofbisbee.com/documents/SanJoseGuidingPrinciples_001.pdf

TABLE 23 (Continued)

PLANNING AND GROWTH AREAS
RECOMMENDED APPROACH

Planning Area	Approximate Acres	Recommended Approach	Recommended Joint Planning Efforts
Airport Growth Area	6,360	The Bisbee Municipal Airport is located in Cochise County. Currently, airport compatible development requires a variance process at the County .The preparation of an area plan for the Airport Growth area is recommended in order to identify airport compatible uses that will help sustain the airport, infrastructure needs such as the upgrade of either Purdy Lane or Bisbee Junction Road in order to direct commercial traffic from this area from the established residential areas. The area plan for this area must take into consideration the following issues: Infrastructure necessary to support airport compatible commercial uses; Impact to adjacent rural areas; Future expansion needs of the airport; and Noise contours. Currently, the Airport Growth Area constitutes primarily a development reserve area.	Work with the City, the Arizona Department of Commerce, the Chamber of Commerce, The Federal Aviation Administration, and Cochise County to identify funds necessary for the establishment of an area plan for the Bisbee Municipal Airport.

Table 24 includes approximate land use acreage for future land uses per planning area/growth area as shown in the Future Land Use map provided in the Appendix section of Volume II: Implementation.

TABLE 24

LAND USE ACREAGE PER PLANNING AREA/GROWTH AREA
AS PROVIDED IN THE FUTURE LAND USE MAP

Planning Area/ Growth Area (Area Acreage)	Land Use Category	Approximate Acreage
Historic Old Bisbee Planning Area (730 acres)	Due to the small amount of vacant land suitable for development, the entire planning area has been designated for mixed-use infill compatible with existing development, and a revitalization, redevelopment, historic preservation area as well.	730
Historic Warren Planning Area (486 acres)	Due to the small amount of vacant land available within this area and the "city beautiful" layout, the entire planning area has been designated for mixed-use infill compatible with existing development, and a revitalization, redevelopment, historic preservation area as well.	486
Saginaw Planning Area (23 acres)	Infill development within the Saginaw area as per the adopted Saginaw Revitalization Plan or Saginaw Area Plan.	23

TABLE 24

LAND USE ACREAGE PER PLANNING AREA/GROWTH AREA
AS PROVIDED IN THE FUTURE LAND USE MAP

Planning Area/ Growth Area (Area Acreage)	Land Use Category*	Approximate Acreage
San Jose Growth Area		
Inside Existing City Limits (2,376 acres)	Mixed Use/Specific Plan	1,503
	Residential	401
	Commercial	255
	Public Quasi-Public (Existing)	82
	Industrial	24
	Right-Of-Way	111
	Total Inside City:	2,376
Outside Existing City Limits	Mixed Use/Specific Plan	560
and Inside Designated	Residential	462
Growth Area	Commercial	46
(9,077 acres)	Development Reserve Area	8,009
	Area Outside City:	9,077
	Total San Jose Growth Area	11,453
Airport Growth Area		
Airport is in Cochise County	Bisbee Municipal Airport	385
(6,360 acres)	Development Reserve Area	5,976
	Total Airport Growth Area	6,360

* Notes:

1. Recreation and open space uses are provided within Residential and Mixed Use areas at those ratios discussed in the Recreation section of this document.
2. Schools and churches are permitted in residential areas.
3. Future public uses are permitted within any land use and require Mayor and Council approval
4. Until the adoption of an Airport Area Plan, airport compatible development within the Airport growth area requires a variance process at the County.

Impact of Adjacent Use of Land on Future Planning

This section contains three major subsections: (1) inventory of land owners of adjacent lands; (2) inventory of existing land uses adjacent to the City of Bisbee based on Cochise County information; and (3) designated and/or proposed future land uses on adjacent land, based on a review of existing neighborhood, area, municipal, county, and state adopted plans, and pending rezoning cases.

LAND OWNERS INVENTORY

The land owner inventory includes federal, state, major land owners, and other public and privately owned lands within the study area. The Property Owners map included in the Appendix section shows major property owners within the study area. Major property owners within the study area include lands owned by Freeport McMoRan, the Bureau of Land Management (BLM), the State Land Department, and Arizona Water Company. Table 24 includes major property owners within the study area.

As shown in Table 24 the study area encompasses approximately 46,016 acres. Of this total, approximately 12,560 acres, or 27 percent, are lands owned by Freeport McMoRan; approximately 5,579 acres, or 12 percent, are lands owned by the Bureau of Land Management; approximately 4,575 acres, or 10 percent, are lands owned by the Arizona State Land Department; approximately 422 acres, or 1 percent, are lands owned by Arizona Water Company; and approximately 22,881 acres, or 50 percent, are other privately and/or publicly owned lands.

TABLE 24

MAJOR PROPERTY OWNERS
WITHIN THE STUDY AREA

Owner	Acres	Percent
Other Public/Private	22,881	50
Freeport McMoRan	12,560	27
Bureau of Land Management	5,579	12
State Land Department	4,575	10
Arizona Water Company	422	1
TOTAL	46,016	100

Source: GIS Data Layers Arizona State Land Department and Cochise County Planning Department.

Table 25 shows major property owners within the San Jose Growth Area. As shown on Table 25, the San Jose Growth Area encompasses approximately 11,453 acres. Of this total, approximately 976 acres, or 9 percent, are lands owned by the State Land Department; approximately 940 acres, or 8 percent, are lands owned by the Bureau of Land Management; approximately 422 acres, or 4 percent, are lands owned by Arizona Water Company; approximately 75 acres, or 1 percent, are owned by Phelps-Dodge Corporation; and approximately 9040 acres, or 78 percent, are other privately and/or publicly owned lands.

TABLE 25

MAJOR PROPERTY OWNERS WITHIN
THE SAN JOSE GROWTH AREA

Owner	Acres	Percent
Other Public/Private	9040	78
State Land Department	976	9
Bureau of Land Management	940	8
Arizona Water Company	422	4
Freeport McMoRan Corporation	75	1
TOTAL	11,453	100

Source: GIS Data Layers Arizona State Land Department and Cochise County Planning Department.

Impact of Adjacent Use of Land on Future Planning

Table 26 shows major property owners within the Airport Growth Area. As shown on Table 26, the Airport Growth Area encompasses approximately 6360 acres. Of this total, approximately 1127 acres, or 17 percent, are lands owned by Phelps-Dodge Corporation; approximately 887 acres, or 14 percent, are owned by the State Land Department; approximately 34 acres, or 1 percent, are lands owned by the Bureau of Land Management; and approximately 4312 acres, or 68 percent, are other privately and/or publicly owned lands.

TABLE 26

MAJOR PROPERTY OWNERS WITHIN
THE AIRPORT GROWHT AREA

Owner	Acres	Percent
Other Public/Private	4,312	68
Freeport McMoRan Corporation	1127	17
State Land Department	887	14
Bureau of Land Management	34	1
TOTAL	6373	100

Source: GIS Data Layers Arizona State Land Department and Cochise County Planning Department.

ZONING OF ADJACENT LANDS

Table 27 shows Cochise County zoning districts within the study area.

TABLE 27

EXISTING COCHISE COUNTY ZONING
WITHIN THE STUDY AREA

Location within the Study Area	Cochise County Zoning District	Cochise County Zoning District Definition
Old Bisbee Planning Area (Surrounding City Limits)		
North	RU-4	Residential Rural 1 DU/4acre
East	RU-4	Residential Rural 1 DU/4acre
South	RU-4	Residential Rural 1 DU/4acre
West	RU-4 RU-36	Residential Rural 1 DU/4acre and Residential Rural 1 DU/36 acre
Saginaw Planning Area (Surrounding City Limits)		
North	RU-4	Residential Rural 1 DU/4acre
East	RU-4	Residential Rural 1 DU/4acre
South	RU-4	Residential Rural 1 DU/4acre
West	RU-4	Residential Rural 1 DU/4acre
Historic Warren Planning Area (Surrounding City Limits)		
North	RU-4	Residential Rural 1 DU/4acre
East	RU-4	Residential Rural 1 DU/4acre
South	RU-4	Residential Rural 1 DU/4acre
West	RU-4	Residential Rural 1 DU/4acre

Source: Cochise County Planning Department, 2014.

TABLE 27 (Continued)

EXISTING COCHISE COUNTY ZONING
WITHIN THE STUDY AREA

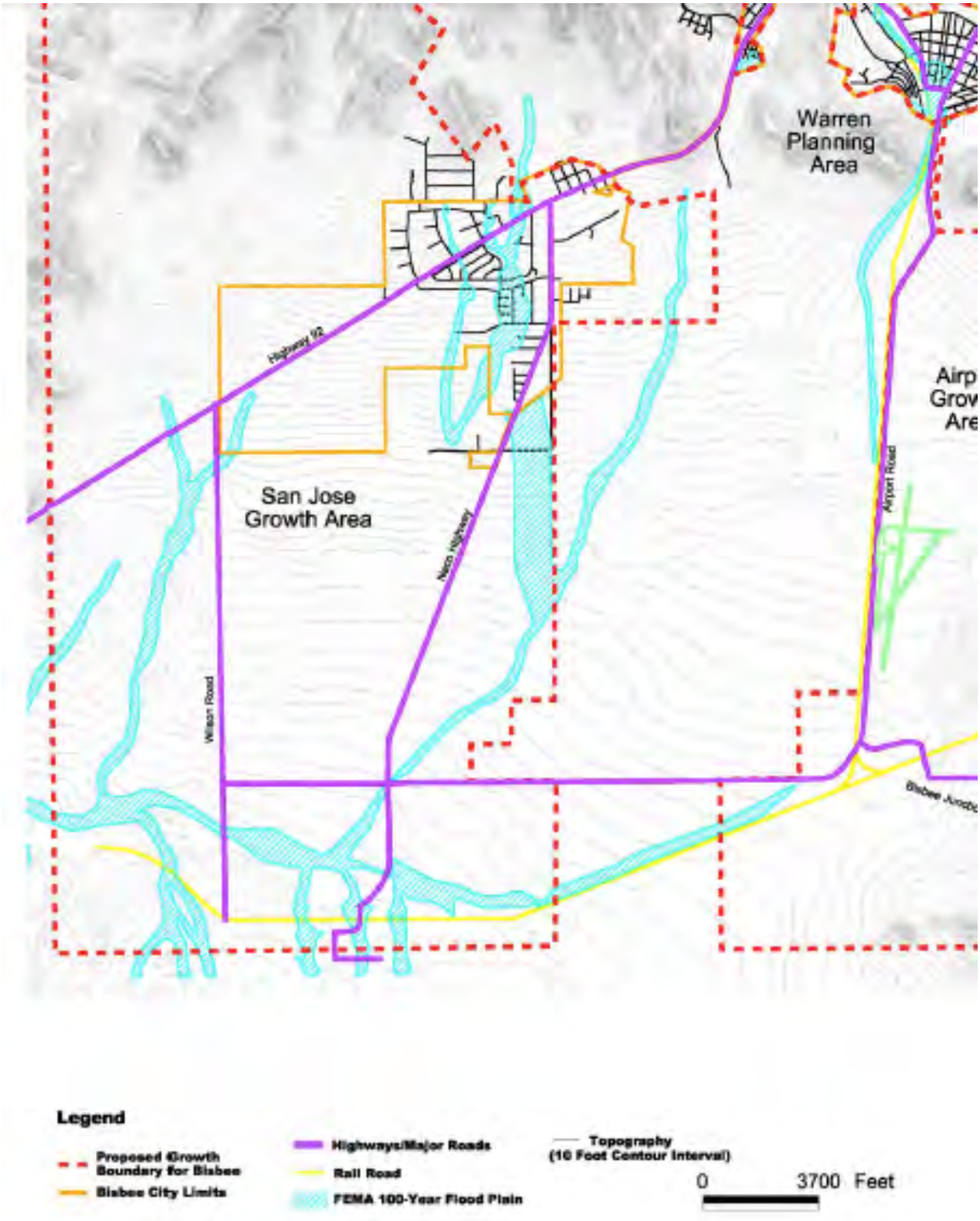
Location within the Study Area	Cochise County Zoning District	Cochise County Zoning District Definition
San Jose Growth Area (Surrounding City Limits)		
North	RU-4	Residential Rural 1 DU/4acre
	SR-22	Single-Household Residential (Minimum lot size 22,000 sq.ft.)
	GB	General Business
East	RU-4	Residential Rural 1 DU/4acre
	SR-8	Single-Household Residential (Minimum lot size 8,000 sq.ft.)
South	RU-4	Residential Rural 1 DU/4acre
	SR-8	Single-Household Residential (Minimum lot size 8,000 sq.ft.)
	TR-18	Transitional Residential (Minimum lot size 18,000 sq.ft.)
	GB	General Business
	LI	Light Industry (general light industrial uses e.g. wholesale and warehouse operations, manufacture, repair services)
	HI	Heavy Industrial (general heavy industrial uses, e.g. manufacturing, recycling centers, junkyards)
West	RU-4	Residential Rural 1 DU/4acre
Airport Growth Area (Surrounding Airport)		
North	RU-4	Residential Rural 1 DU/4acre
East	TR-36	Transitional Residential (Minimum lot size 36,000 sq.ft.)
	TR-18	Transitional Residential (Minimum lot size 18,000 sq.ft.)
South	TR-36	Transitional Residential (Minimum lot size 36,000 sq.ft.)
	GB	General Business
West	RU-4	Residential Rural 1 DU/4acre
	HI	Heavy Industrial

Source: Cochise County Planning Department, 2014

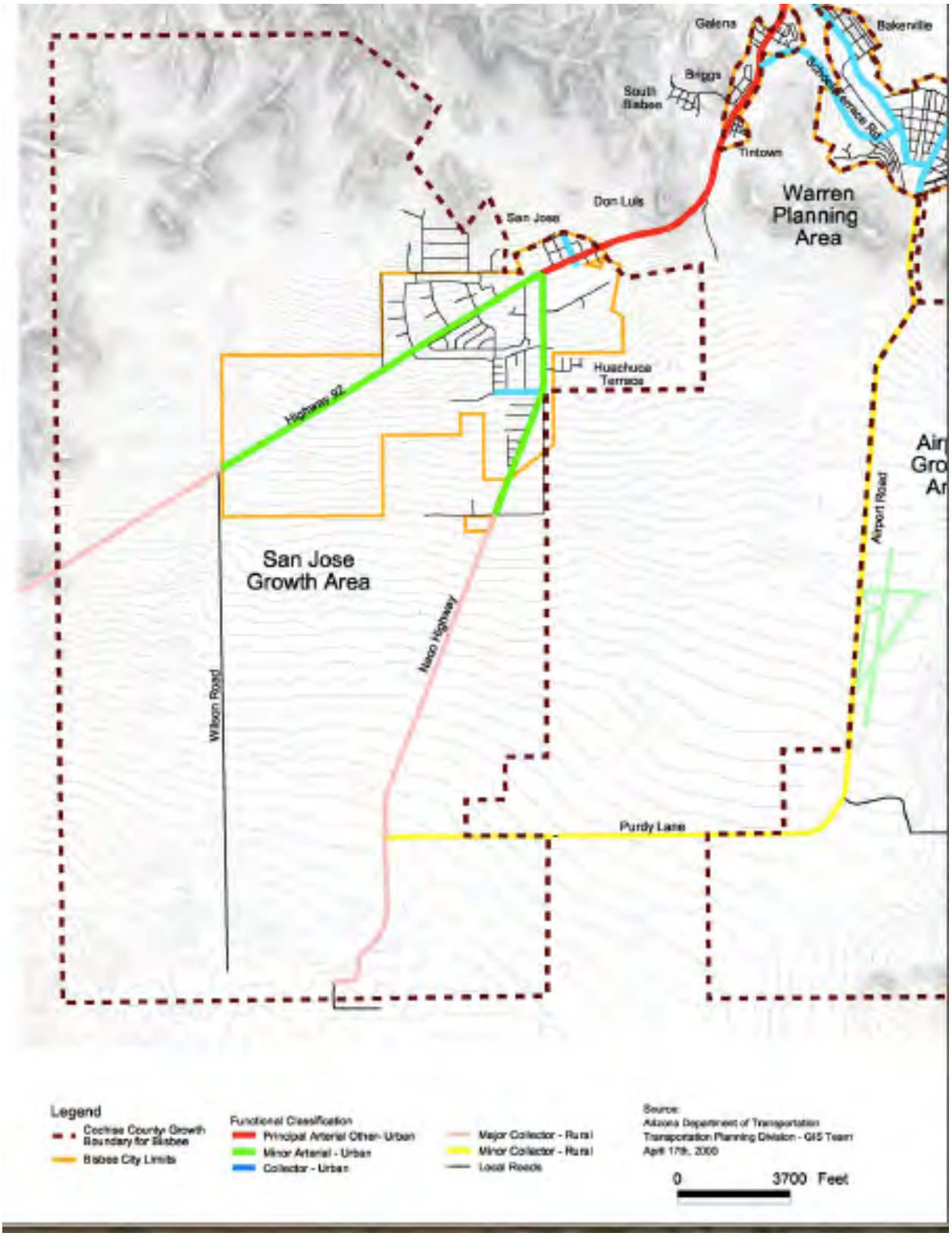
Appendix A:
Existing Land Use Map Series

List of Maps

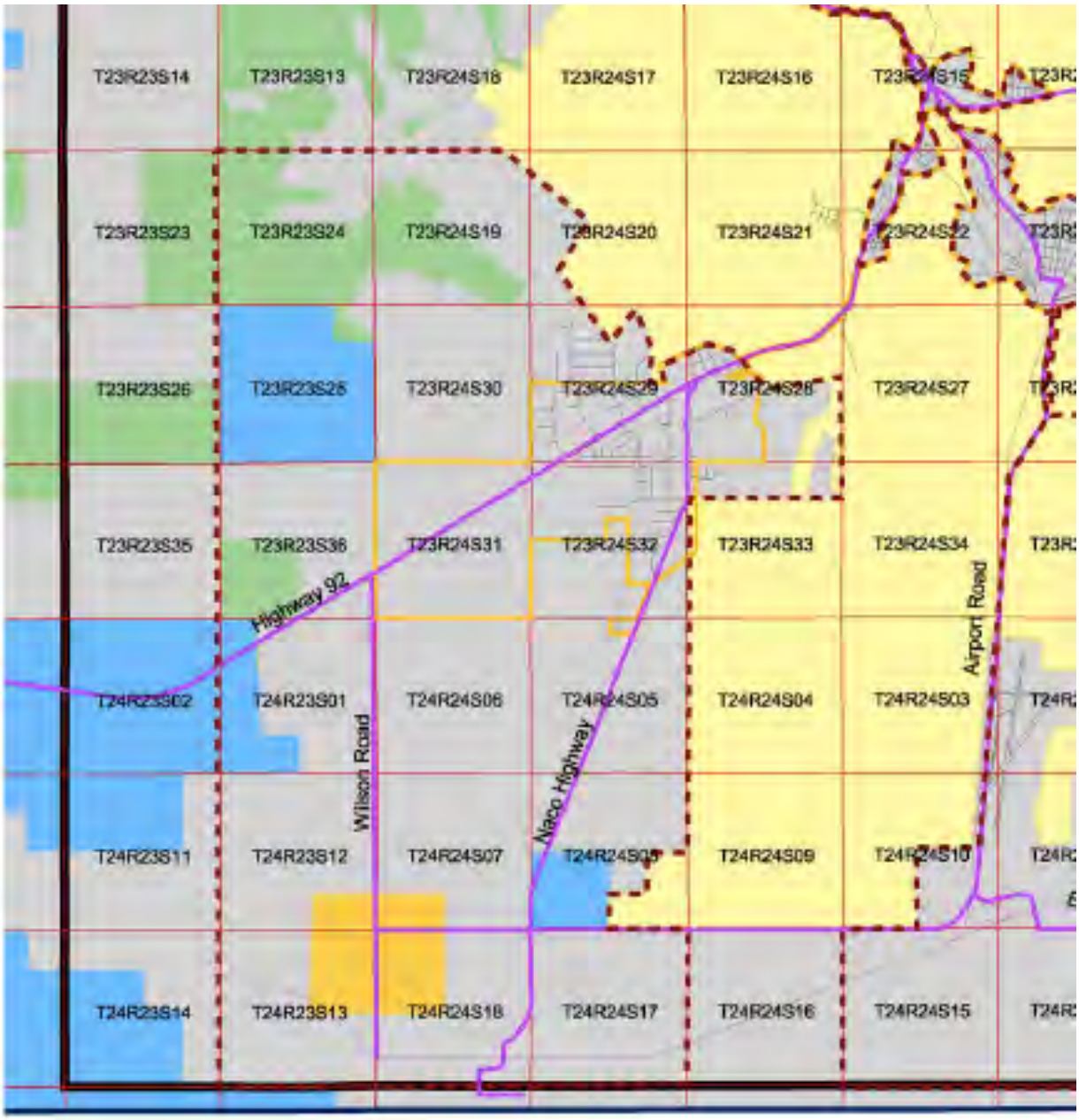
Appendix A:
Existing Land Use Map Series



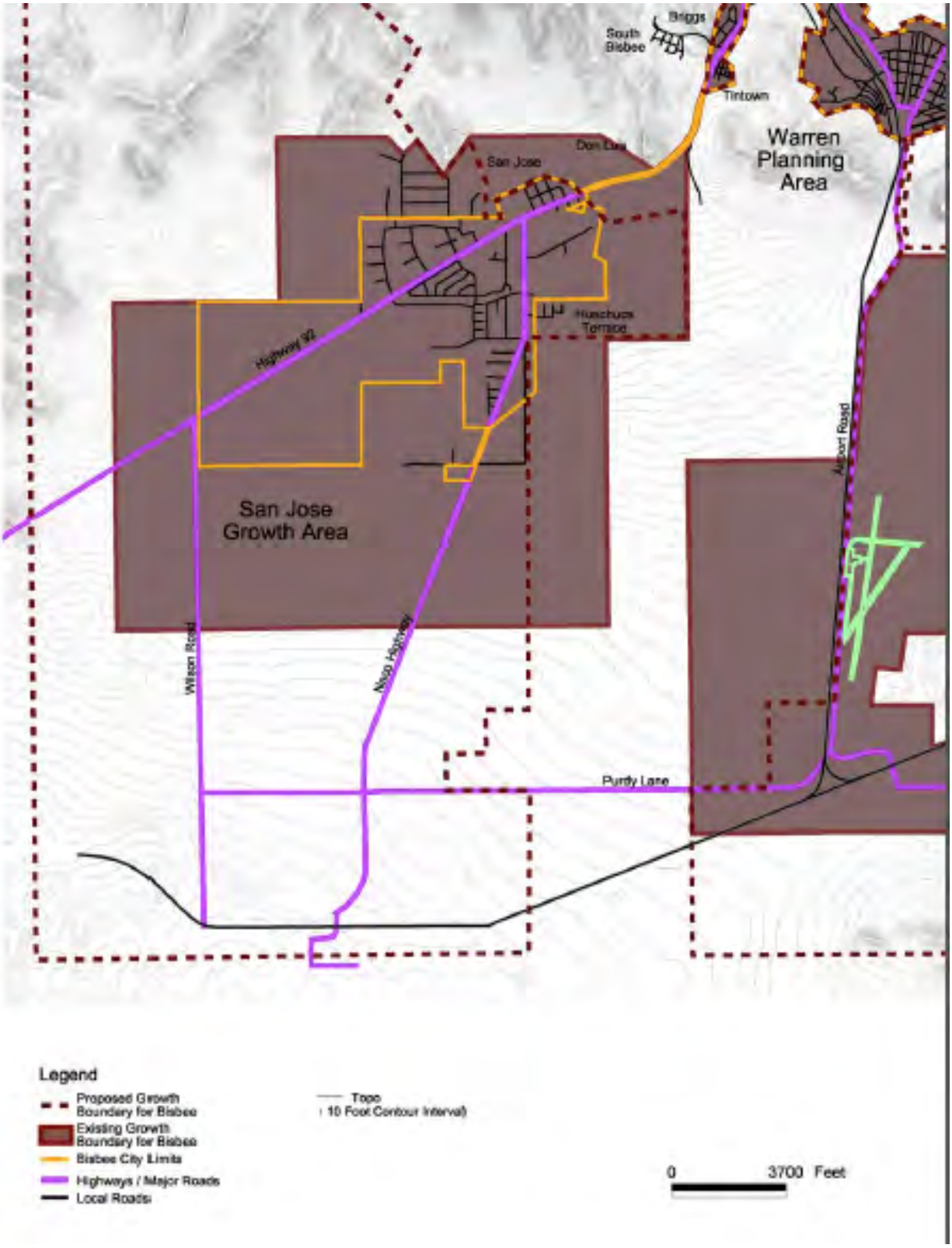
Appendix A:
Existing Land Use Map Series



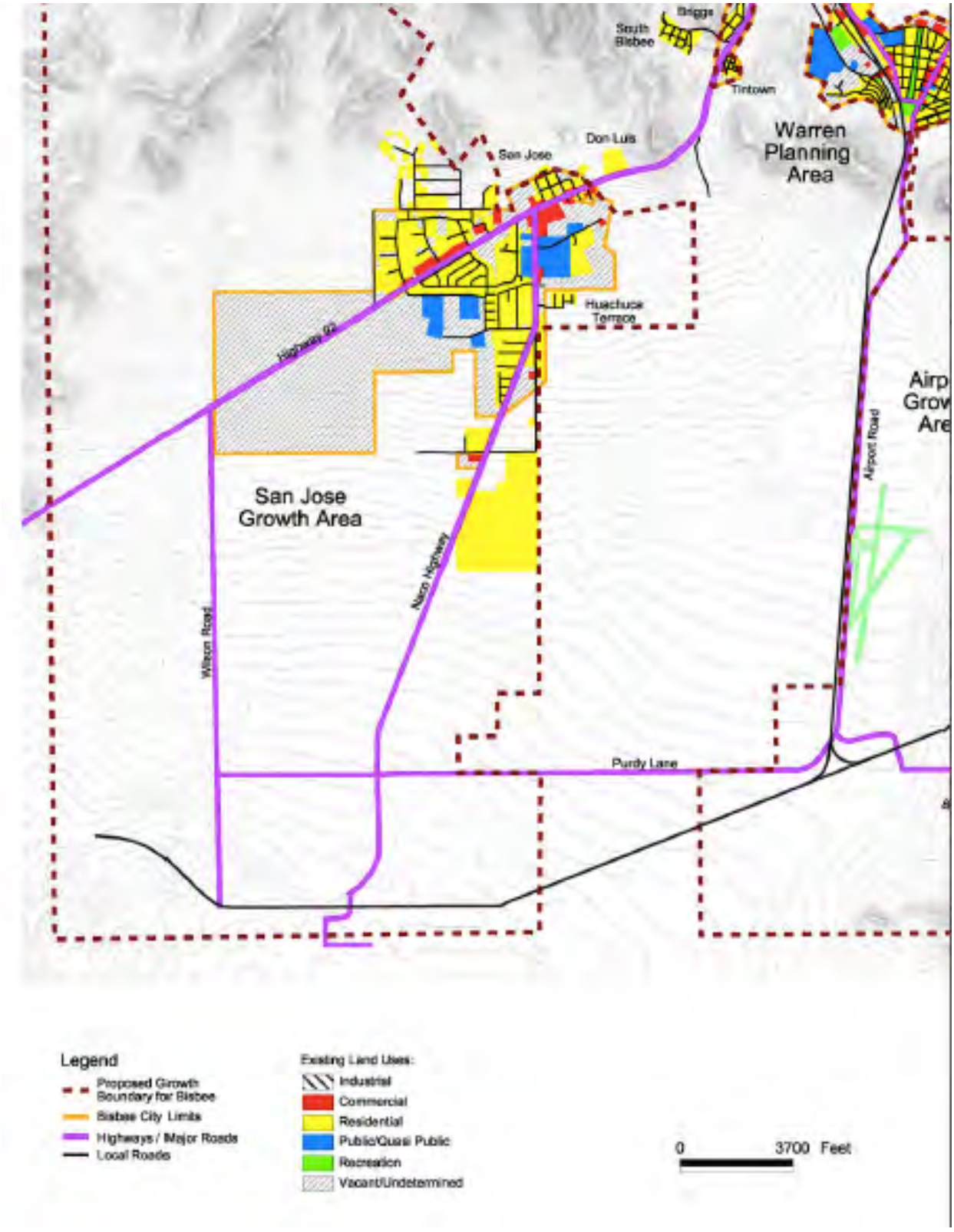
Appendix A:
Existing Land Use Map Series



Appendix A:
Existing Land Use Map Series



Appendix A:
Existing Land Use Map Series



Appendix B:
Land Acquisition

LAND ACQUISITION STRATEGIES

Introduction

Bisbee's wellbeing, viability, and feasibility are the primary goals of the City's General Plan. In order to successfully achieve these goals, it is important to understand land acquisition strategies that may help in the implementation of the General Plan while minimizing the impact of incompatible land uses. This section identifies and defines various land acquisition strategies, provides a critique for each strategy identified, and discusses implementation issues.

One alternative to acquisition of undeveloped property is to exchange the property for public property through land swaps. Acquisition is only one type of land mitigation strategy. Acquisition may remove properties entirely or in part from the tax rolls, depending on the type of acquisition program used. However, the cost of losing tax revenues from the properties may be low in comparison to the cost of providing periodic funds for rescue and recovery. The following is an evaluation of existing tools or growth management techniques designed to direct development while minimizing incompatible land uses.

DIRECTING DEVELOPMENT UTILIZING ZONING TECHNIQUES

Specific Plan and Area Plans

Definition: A master plan, specific plan or an area plan may be required by jurisdictions for new development, following specific guidelines to address the needs of the City and to ensure compatible development. These are the most comprehensive forms of area plans and apply to larger areas with multiple properties and multiple ownerships. They address allowable land uses; development intensities; community character; urban design; transportation improvements and implementation; and library, recreation, park and open space needs. This type of plan typically addresses infrastructure needs in greater depth and also explores financing options.

The City's General Plan provides a compendium of adopted goals and policies which guide development in the City. The City's General Plan identifies the need to establish Area Plans and Specific Plans.

Redevelopment or Revitalization Plans supplement of the City's General Plan. While both sets of plans provide land use guidance for future development within the City, Redevelopment and Revitalization plans tend to be more detailed and smaller in geographic scope. The Saginaw Revitalization Plan is an example of a revitalization plan addressing the needs of the Saginaw neighborhood. Historic Bisbee and Historic Warren Planning areas may benefit from the establishment of revitalization plans.

While the General Plan sets forth the overall land use policy direction for the City, particular sub-areas of the City such as the San Jose Growth Area and the Airport Growth Area may benefit from area plans. Area Plans provide more detailed direction for land use, development, urban design, neighborhood revitalization, or other topics. Area and neighborhood plans are to be used in combination with the City's General Plan to determine land use policy for property within the City.

Specific Plans provide a set of regulations that supersedes the City Zoning Ordinance and a mixture of land uses within a specific area. This type of plan provides specific guidelines and development standards for new development within a specific parcel or parcels of lands.

Critique: A drawback is that jurisdictions may not desire to establish area plan and or specific plan requirements that require additional support staff for compliance purposes.

Limiting Risk through Acquisition

Easements

Definition: The owner of an easement has one or more of the rights in a property, leaving the rest of the "bundle" in the hands of the land owner. Easements either grant an affirmative right to use property, such as right of access, or restrict the land owner's right to use the property in a particular way. Local governments can prevent development by purchasing a negative easement against building.

Critique: Easements that prevent development may be nearly as expensive to acquire as fee simple rights. Many local governments also prefer to own land in fee simple because easements must be policed. Many local governments offer to lower the tax burden for properties that cannot be developed due to an easement. As a result, the local government would see

its property tax rolls decrease with each donation. Easements have not frequently been used for mitigation purposes.

Implementation Issues: Easements can be written either to allow public access or to prohibit it. Easements are flexible, in that they can be treated to apply to only some portions of a property. They must be clear about the restrictions placed on the property. They should also allow inspection by public officials to ensure compliance with the easement provisions. An administrative process for policing easements should be established.

Purchase of Development Rights (PDR)

Definition: Purchase of a PDR is similar to acquiring a negative easement against development. Local governments can use this technique as an alternative to fee simple purchase or easements when the only purpose is to prevent development.

Critique: The PDR may not be significantly less expensive than fee simple acquisition. By owning development rights, the local government assumes a very high level of control over property without being responsible for its maintenance. However, the local government does lose money in making the purchase and subsequently reducing tax burden on the property. PDR may not be cost-effective because the development rights may be very expensive.

Implementation Issues: PDR is particularly suited to land that is being used for open space and/or agriculture, where the current use is compatible with flood hazard-mitigation goals. In this case, PDR can prevent the land from changing into a higher-risk use. PDR is generally implemented through a formal program that sets criteria for prioritizing purchases. Such a program might give preference to the purchase of development rights in hazard-prone areas. Some communities find it helpful to “lease” the development rights for a certain period of time (until a purchase can be made) rather than purchasing them outright.

Transfer of Development Rights (TDR)

Definition: Like PDR, TDR programs treat development as a commodity separate from the land itself. The local government first awards each property owner in the sending area a set of development rights based on the value of acreage of land. The sending area contains land the local authority seeks to protect. The local government then establishes a receiving area for these rights that is a preferred site for development. Landowners in the sending area are typically prohibited from developing their land; however, they can

sell their rights to developers in the receiving areas. Developers who acquire development rights can build to higher densities than would otherwise be permissible.

Critique: TDR is a complex system, which is difficult for planning staff to implement and for land owners to understand and accept. It is frequently unpopular with residents in the receiving zone, who are subject to development that exceeds the apparent zoning limits. Most importantly, a region must have a significant amount of development pressure to make the rights marketable.

Implementation Issues: TDR could be used for mitigation purposes by delineating high risk flood hazard-prone areas as sending zones. The development rights for parcels within this zone would be targeted at a receiving zone located outside the hazard area. In jurisdictions with limited available space, the program could be aimed at redevelopment rather than new development.

Advanced Site Acquisition and Land Banking

Definition: This technique involves the purchase of land by the government for future public facilities or for resale to the private sector. The goal is to influence the character and/or timing of growth.

Critique: Private landowners may have several objections: first, the public sector, rather than private land owners, receives the benefits of increases in the property value between the purchase and development. Second, the value of the land outside the land bank may be reduced because the local government may sell land below market prices. This technique requires a high level of expertise on the part of the planning staff.

Implementation Issues: County and regional governments may be the most appropriate users of this technique, since land markets are often regional and therefore beyond the power of local jurisdictions.

Purchase Sellback/Leaseback

Definition: A jurisdiction can control the use of its land by selling or leasing it to the private sector with restrictions, covenants, or negative easements. This approach allows the jurisdiction to maintain control of the property or prevent its development without having to actually manage it.

Critique: Jurisdictions responsible for leasing or selling property must monitor compliance with the terms of the contract, which is probably less of a burden than maintaining the property. If the jurisdiction sells a property with restrictions, those limits must be reflected in the tax burden on the new owner. As a result, sellback may not be the most lucrative way of returning properties to the tax rolls.

Implementation Issues: The sellback/leaseback option allows the jurisdiction to recover some of the cost of acquisition and can be done in conjunction with acquisition, or as a condition of acquisition. Negative easements should be used to prevent development on hazard-prone property sold or leased to the private sector, since allowing intensive uses is contrary to the original intent of the public purchase.

Local authorities could use this technique, where appropriate, to permit the type of compatible land uses and activities that are more suitable. These techniques can help jurisdictions that want to retain businesses to widen their jurisdictions.

Directing Development Using Other Public Spending Measures

Capital Improvements Programming (CIP)

Definition: Capital improvement programs are timetables that define when, where, and what level of municipal services a local government will supply. Typically a part of the comprehensive or general plan, the CIP sets public spending on improvements for the ensuing five to ten years. Timetables can be effective at managing growth because it is rarely feasible for a developer to provide water, sewer, and other services without a public subsidy.

Critique: CIP is less expensive and less likely to face legal challenges than many other growth management techniques because budgeting is a recognized function of a local government. The drawback is that municipalities often ignore their own capital improvements programs. Developers are sometimes willing and able to provide infrastructure. CIP should not be a community's sole land-use policy because although it directs the location and timing of development, it does not address its type or quality.

Implementation Issues: If a local government CIP does not extend infrastructure into under-served areas, development in those areas should be limited. The CIP budgeting structure can be used for tracking and using impact fees and exactions, which may be dedicated for mitigation purposes.

Capital improvements can be addressed more narrowly than at the community-wide scale. A focused public investment plan (FPIP) is a capital improvement plan for a specific small area. Like a community capital improvements program, an FPIP coordinates public investments in water, sewer, streets, schools, and parks.

Service Areas

Definition: Local governments, under their taxing authority, can designate areas that will receive services and ones that will not, and tax the former at a higher rate. Local governments could use this technique to provide differing levels of services to higher and lower risk areas.

Critique: Ironically, under-served areas may be more attractive to residents because of their lower tax rate. This would run counter to the intent of a program that limits services in hazard-prone areas. This technique may face uniform taxation legal challenges under the uniformity of taxation provision.

Implementation Issues: This technique should be used in conjunction with a regulatory program, such as zoning, that actively limits development in areas with lower, more appealing tax rates.

Appendix B:
Land Acquisition

Adequate Public Facilities (APF) Requirements (Concurrency)

Definition: These measures are designed to match the pace of new growth (which requires public spending on roads, water, and sewer services, etc.) to the community's ability to pay for infrastructure. Public services must be concurrent with the demand. "Adequate Public Facilities" is a measure of the level of municipal services that must exist when a development is completed or within a certain period afterward.

Critique: These requirements can have the effect of encouraging development in areas already served by public facilities. This may lead to higher densities in developed, hazard-prone areas. On the other hand, it may shift development to hazard-prone areas with lower service requirements.

Development timing measures such as these must have the support of the community or they are likely to be ignored. Development timing has been challenged in court in states where local government is limited to powers specifically granted by the state. Within city limits, a municipality may be required to provide the same service to everyone. Foreclosing on private provision of facilities by, for example, limiting septic permits may be legally problematic.

Implementation Issues: Communities should be aware that these programs can redirect development into unexpected places. Jurisdictions should be especially careful when promising or extending services outside their jurisdictional boundaries that they do not provide services to hazard-prone areas. Creating an urban service district may help define where these services will and will not be provided. Clarifying the long-term development expectations this way may help shift the direction of development toward more acceptable locations.

APF programs can also require that an adequate degree of mitigation is provided for new development. APF or concurrency requirements are often written into comprehensive plans as a means of timing development.

Marginal Cost Pricing

Definition: Under this system, new development is responsible for the incremental cost of the service needs it creates. This is opposed to average cost pricing, which refers to charging everyone the same price regardless of any difference in real cost. Average cost pricing makes it less expensive to develop further from existing services because new development shares the cost with higher density, more central development.

Critique: True marginal costs can be very difficult to estimate on a case-by-case basis. This may lead some jurisdictions to create price districts rather than pricing each development. Problems will arise at the district borders when property owners (understandably) ask why they have to pay more than their next-door neighbor.

Implementation Issues: Marginal cost pricing is best used to contain development within a given area. This technique is most effective when existing development is already concentrated, preferably in a hazard-resilient location. It can be used to make development that sprawls onto hazard-prone areas pay higher cost.

Limiting Government Expenditures in High-Hazard Areas

Definition: Regional and local governments should limit their expenditures for roads and other infrastructure in high-hazard areas such as flood prone areas. This technique will discourage development in these areas, which can greatly reduce disaster-related damage and recovery costs. Government facilities, especially those housing emergency services, should not be located within flood prone areas. By avoiding these areas, jurisdictions can help ensure these facilities will function during and in the immediate aftermath of an emergency. They can also reduce the cost of post-disaster repairs of public structures, or retrofitting.

Critique: Restricting public services will not be popular with property owners who require public services in order to develop their land. Local governments may feel obligated to limit the geographic scope of the program to make it more acceptable politically. Local governments may also count on receiving federal support to rebuild non-critical public facilities in the event of an accident impacting those facilities, and therefore have little reason to spend their own funds on protecting them. Relocating these structures in advance may have little effect on the overall pattern of development.

Implementation Issues: To be effective, expenditure limitations should be used in tandem with other land-use programs and tax policies to discourage incompatible development in hazard-prone areas. Local governments should make sure that policies present a consistent measure of opposition to development in unwanted locations. All high-hazard areas must be specifically identified and mapped.

Directing Development with Taxes and Incentives

Special Assessment Districts

Definition: Special assessment districts apply to property owners who directly benefit from a specific public improvement. These owners of both new and existing development in the district are charged a fee that is proportional to the benefits received from the improvement.

Critique: This technique shifts the financial burden for improvements from the general public to those directly benefiting. The revenues are more predictable than sources that depend on development cycles, which make it easier to issue bonds for the improvement. Since this is not a tax, special assessment districts are free from constitutional requirements requiring uniformity, equality, and double taxation. However, communities should be prepared for the cost estimates on which any assessment is based.

Implementation Issues: There are a number of ways to apply this technique, from temporary assessment that raises revenue for a specific improvement to indefinite assessment that funds independent, special purpose governmental entities. The former could be used to fund specific projects, while the later can be used to establish a regional management organization. These charges may or may not have the effect of discouraging development in the assessment district. However, they do transfer some of the cost of doing business in a hazard-prone area to those who choose to do so.

Appendix B:
Land Acquisition

Impact Fees and System Development Charges

Definition: Impact fees require new development to share in the financial burden that their arrival imposes on a jurisdiction. These assessments are typically one-time, up-front charges (although some jurisdictions allow payments over time) against new development to pay for offsite improvements. The fees can also be set up to allow new development to buy into existing services with excess capacity. Impact fees are typically based on ratios that show what services the average new use or activity will require.

Critique: Impact fees can be applied to a wider variety of services than either exactions or special assessment districts. Unlike land dedications, these can be payments that cover the full costs of needed improvements. They are typically used in place of negotiated exactions because they take less time and are more predictable and equitable. Impact fees do not help with maintenance costs.

Studies show that local governments have little interest in assessing hazard-zone impact fees, even when public facilities are damaged in the course of serving hazard-prone areas. Communities have preferred to insure against losses than to pass the cost of service along to developers.

Implementation Issues: Every impact fee must meet a three part legal test. First, the need for improvements funded by the fee must be created by the new development. Second, the amount charged the new development must be proportionate to the cost of its use. Third, all revenues must be spent in proximity to the new development and within a reasonable period of time. If any of these conditions are not met, the community may face legal action. Communities should have a comprehensive plan and capital improvements program in place to defend their use of impact fees or exactions.

Development Impact Tax and Improvement Tax

Definition: These are taxes on new construction, including alterations to existing structures, usually paid while applying for a building permit. Unlike an impact fee, this charge does not need to be in proportion to the cost of improvements, and there are fewer restrictions on how the revenues can be spent.

Implementation Issues: Because these funds are collected on new development, they should be used to mitigate the impact of that development.

Developer Exactions

Definition: Unlike impact fees, which are a use-based charge, exactions are direct private investments in the public infrastructure needs created by new development. Exactions can take the form of onsite or offsite improvements, land dedication, or grants to the community. Unlike impact fees, exactions are negotiated on a case-by-case basis. They are often a condition for development approval.

Critique: There must be a rough proportionality between the impact of development and the negotiated exaction. Negotiated exactions can be very specific, but they also create problems: they usually reflect the needs of individual developments and not the community as a whole; they are not predictable far in advance; particular conditions of a project or the bargaining ability of the negotiators may make some exactions appear inequitable, small developments may not be subject to the same kind or degree of exactions as large ones, even though they can have the same or greater cumulative effect; and exactions do not cover maintenance costs. Land dedication, a common form of exaction, does not pay for improvements.

Implementation Issues: Communities should be explicit about the importance of mitigation efforts when negotiating exactions. Land dedications are generally a preferable form of exaction because they have a close proportional relationship to the development. Unfortunately, dedications of open space may not be an appropriate mechanism for mitigation since a lower intensity use may be less compatible than a low-employee density, high-intensity industrial use.

Tax Abatements, Subsidies, Low-Interest Loans, and Other Incentives

Definition: Incentives (such as tax abatements and low-interest loans) can be used to encourage landowners and developers to integrate mitigation into the process of building new developments or retrofitting existing properties.

Implementation Issues: These tools can be especially effective at encouraging the mitigation of existing structures. These techniques may be appropriate mitigation tools if utilized as an economic development strategy to attract compatible development to the area.

Appendix C:
Sample Monitoring Plan

DEVELOPMENT MONITORING PROGRAM

Purpose

These Development Monitoring Program and procedures are intended to provide the City with an accurate record of the type, size, status and timing of various development projects within Bisbee and a systematic method for assessing the impacts of these development proposals on the City's infrastructure. This, in turn, will allow proper advance planning by the City staff in terms of design of infrastructure improvements and capital financing.

The monitoring program and associated data base will also assist the City ensure that a degree of development flexibility can be exercised as the City of Bisbee General Plan 2003 is implemented, but that overall density can still be maintained.

Scope of the Monitoring Program

The following infrastructure systems are included in the monitoring program:

(1) Traffic and roadway facilities
(2) Water and sewer facilities
(3) Storm drainage systems

Development monitoring questionnaires have been prepared for each of the above topics and are included as Tables C-1 through C-4 in this section.

Specifically, the monitoring program will address the following infrastructure information:

Traffic

(1) Traffic demands and roadway requirements associated with development proposals within planning and growth areas, which will include traffic forecasts resulting from completed development, as well as forecast traffic for those projects which have been approved but not constructed.
(2) Timing of roadway improvements based upon a given level of development in the project area.
(3) Signalization needs at key intersections.

Water and Sewer

(1) Cumulative water and sewer demand in system prior to requests for development review, including demands from projects approved but not yet constructed.
(2) Water and sewer demand for the development proposal in question based on standardized generation factors.
(3) New cumulative water and sewer demand, including the development being considered along with assessments for system improvements to accommodate total demands.

Drainage

(1) Cumulative existing water run-off at the boundaries of the project area, prior to consideration of individual development proposals.
(2) Cumulative water run-off at project boundaries considering the latest development increment being reviewed, as well as all other previously approved development projects, completed or not, to establish the theoretical maximum outflow of any one concentration point.

Program Input Requirements

The monitoring program requires the input of accurate development-related information in order to provide a credible database and deliver accurate forecasts. This data, to be collected as part of the monitoring questionnaires, includes:

(1) Project location within the City.
(2) Existing land use data for the project location.
(3) Proposed land use type and density/intensity.
(4) Daily trip generation rates, AM and PM peak hour trips for adjacent street source (traffic portion only).
(5) Identification of drainage areas affected by the proposed project and estimate of both existing (pre-project) 100-year storm run-off and with construction of the project (drainage portion only).
(6) Estimated water consumption and sewage generation rates as a result of the project in question (water and sewer only).

In each instance, applicants are required to use standardized City generation rates for traffic, water and sewer usage and water run-off unless alternative arrangements are made with the City Public Works' Director.

Appendix C:
Sample Monitoring Plan

Program Outputs

The following types of output can be achieved from the monitoring program.

(1) Traffic demand forecasts, including a summary for background (existing) traffic plus approved development traffic plus proposed project traffic. The forecast demand volumes can be summarized by traffic component, such as increase in City-wide traffic, increase in regional through traffic and City traffic. Results of this output function can be compared with base traffic demand forecasts (background traffic plus approved development traffic) to determine specific impacts resulting from development of proposed projects.

(2) Roadway improvement phasing summaries and estimates regarding the level of remaining development which could occur prior to the need for additional improvements.

(3) Signalization needs.

(4) Estimated water and sewer demand for all linkages and key facilities in the City's water and sewer system.

(5) Storm water run-off estimates for each drainage basin compromising the project area and impacts on major surface and subsurface drainage facilities.

Cycle of Activity

The following general cycle of activity described the proposed day-to-day functioning of the monitoring program.

(1) The City Community Development Department will distribute monitoring packets to potential development applicants consisting of:

- Blank monitoring questionnaires (traffic, water, sewer, drainage).
- Instruction forms, including standardized infrastructure generation rates.

(2) Completed questionnaires are returned to the Planning Department along with development plan submittals. This is the "input" phase of the monitoring process. The City Council will establish a processing fee, by resolution, to recover costs.

(3) Information contained in the questionnaires are reviewed and evaluated by City staff. City staff inputs this data into the various computer models (traffic, water, sewer, drainage).

(4) Results of the modeling runs are reviewed by City staff to determine the type and level of infrastructure improvements that are needed to accommodate development caused by background conditions plus previously approved projects plus development. Appropriate conditions of approval are placed on approval of development project.

(5) If project is approved, impact information is added to the base conditions of the various infrastructure models.

Appendix C:
Sample Monitoring Plan

TABLE C-1
General Plan Monitoring Program
Traffic Analysis Questionnaire

Please complete the following questions regarding the proposed project. This questionnaire must be submitted to the City Community Development Department along with a copy of any required traffic impact analysis for the proposed project.

1. Project Name: _____

2. City File No. (Tentative Parcel Number, Specific Plan, etc.) _____

3. Project Location and Size (include a detailed description of the location and boundaries of the project site, including assessor parcel numbers, if available and major abutting streets):

   _____

   _____

   _____

   Traffic Analysis Zone (City Zone):

   _____

   _____

4. Land Uses – Provide a summary of the proposed land uses, unit of measure (dwelling units, units, acres, etc.), and amount of each use. For residential uses, provide density classification. For commercial uses, please be as specific as possible regarding proposed land uses comprising the commercial site (i.e., specialty retail, restaurants, etc.).

Land Use	Unit	Amount

5. Provide project trip generation by land use. Use the approved trip generation rates provided by the City.

Total Project:

If necessary, attach additional sheets to answer the above questions.

TABLE C-2
General Plan Monitoring Program
Water Analysis Questionnaire

Please complete the following questions regarding the proposed project in relationship to usage of water. The completed questionnaire must be submitted to the City Community Development Department along with any supporting material from the Arizona Water Company or any other supplier of potable water.

1. Project Name: _____

2. City File No. (Tentative Parcel Number, Specific Plan, etc.). _____

3. Project Location and Size (include a detailed description of the location and boundaries of the project site, including assessor parcel numbers, if available and major abutting streets):

   _____

   _____

   _____

   _____

   _____

4. Land Uses – Provide a summary of the proposed land uses, unit of measure (dwelling units, units, acres, etc.), and amount of each use. For residential uses, provide density classification. For commercial uses, please be as specific as possible regarding proposed land uses comprising the commercial site (i.e., specialty retail, restaurants, etc.).

Land Use	Unit	Amount

5. Calculate estimated water demand by land use type. Use water demand factors provided by the City. Attach additional sheets if necessary.

Land Use	Unit	Est. Water Demand
Total Project:		

6. Describe any additional characteristics of the project, which may influence or affect water demand for the project (i.e., special water conservation measures, etc.).

TABLE C-3
General Plan Monitoring Program
Drainage Analysis Questionnaire

Please complete the following questions regarding the proposed project in relationship to usage of water. The completed questionnaire must be submitted to the City Planning Department along with any supporting material.

1. Project Name: _____

2. City File No. (Tentative Parcel Number, Specific Plan, etc.). _____

3. Project Location and Size (include a detailed description of the location and boundaries of the project site, including assessor parcel numbers, if available and major abutting streets):

   _____

   _____

   _____

   _____

   _____

4. Indicate the drainage area or areas in which the project is located.

   _____

   _____

   _____

   _____

5. Describe existing uses located on the project area and give the best estimate of the length of time this condition has existed. Also estimate amount of impervious (i.e., paved, asphalted or concrete) existing within the project boundary:

_____

_____

_____

_____

6. Provide a summary of proposed land uses, unit of measure (dwelling units, square footage, acreage, etc.) and amount of each type of land use.

Land Use	Unit	Amount

7. Calculate estimated 100-year water run-off for the proposed development area for existing conditions. Impervious area includes building area, concrete or asphalt paved areas and other covered structures such as patio covers, garages, etc. Pervious areas include orchards, lawns, gardens and natural, undeveloped area:

a. Pervious area (acres): _____
b. Pervious area run-off in cfs (1.3 X line a): _____
c. Impervious area (acres) _____
d. Impervious area run-off cfs (2.6 X line c): _____
e. Total area (acres) (line a + line c): _____
f. Total estimated run-off (line b + line d): _____

8. Calculate estimated 100-year water run-off from the proposed development project. Pervious and impervious covers are as described in Question 7. Please use standard City coverage values for different types of land uses:

   a. Pervious area (acres): _____
   b. Pervious area run-off in cfs (1.3 X line a): _____
   c. Impervious area (acres) _____
   d. Impervious area run-off cfs (2.6 X line c): _____
   e. Total area (acres) (line a + line c): _____
   f. Total estimated run-off (line b + line d): _____

9. Describe any additional characteristics of the proposed project which may influence or affect estimated water run-off (i.e., construction of detention or retention ponds, etc.):

TABLE C-4
General Plan Monitoring Program
Sewage Analysis Questionnaire

Please complete the following questions regarding the proposed project in relationship to usage of water. The completed questionnaire must be submitted to the City Planning Department along with any supporting material.

1. Project Name: _____

2. City File No. (Tentative Parcel Number, Specific Plan, etc.). _____

3. Project Location and Size (include a detailed description of the location and boundaries of the project site, including assessor parcel numbers, if available and major abutting streets):

_____

_____

_____

_____

_____

4. Land Uses – Provide a summary of the proposed land uses, unit of measure (dwelling units, units, acres, etc.), and amount of each use. For residential uses, provide density classification. For commercial uses, please be as specific as possible regarding proposed land uses comprising the commercial site (i.e., specialty retail, restaurants, etc.).

Land Use	Unit	Amount

5. Calculate estimated water demand by land use type. Use water demand factors provided by the City. Attach additional sheets if necessary.

Land Use	Unit	Est. Water Demand
Total Project:		