

Technical Appendix

1. Existing Conditions Technical Appendix

A. Planning Area & Historical Summary

Planning area. The Planning Area covers approximately 105 square miles of land within and adjacent to the Benson City Limits. The majority of the land is privately owned, however, substantial areas outside the City Limits are in federal and state ownership.

Until 1988, the City of Benson corporate limits encompassed 6.3 square miles. In the years since 1988, the City has undertaken a series of annexations of adjacent lands in all four directions increasing the size of the incorporated area to its present size of 41.4 sq. mi (26,496 acres).

Regional setting. The City of Benson is located in the San Pedro Valley of the western portion of Cochise County, at an elevation of 3,585 feet above sea level. Cochise County is bordered by Graham County to the north, Pima County to the west, Santa Cruz County to the southwest, a small portion of Greenlee County to the northeast, the Mexican state of Sonora to the south and Hidalgo County, New Mexico to the east. The City of Benson serves as a major transportation point for southeastern Arizona. Interstate 10 (I-10) passes through the northern section of the City, and serves as a primary connector between the east and west coasts of the United States. I-10 links Los Angeles, California to Jacksonville Florida via the major metropolitan areas of Phoenix, Tucson, El Paso, Houston and New Orleans.

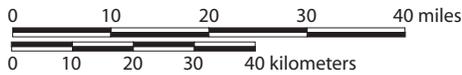
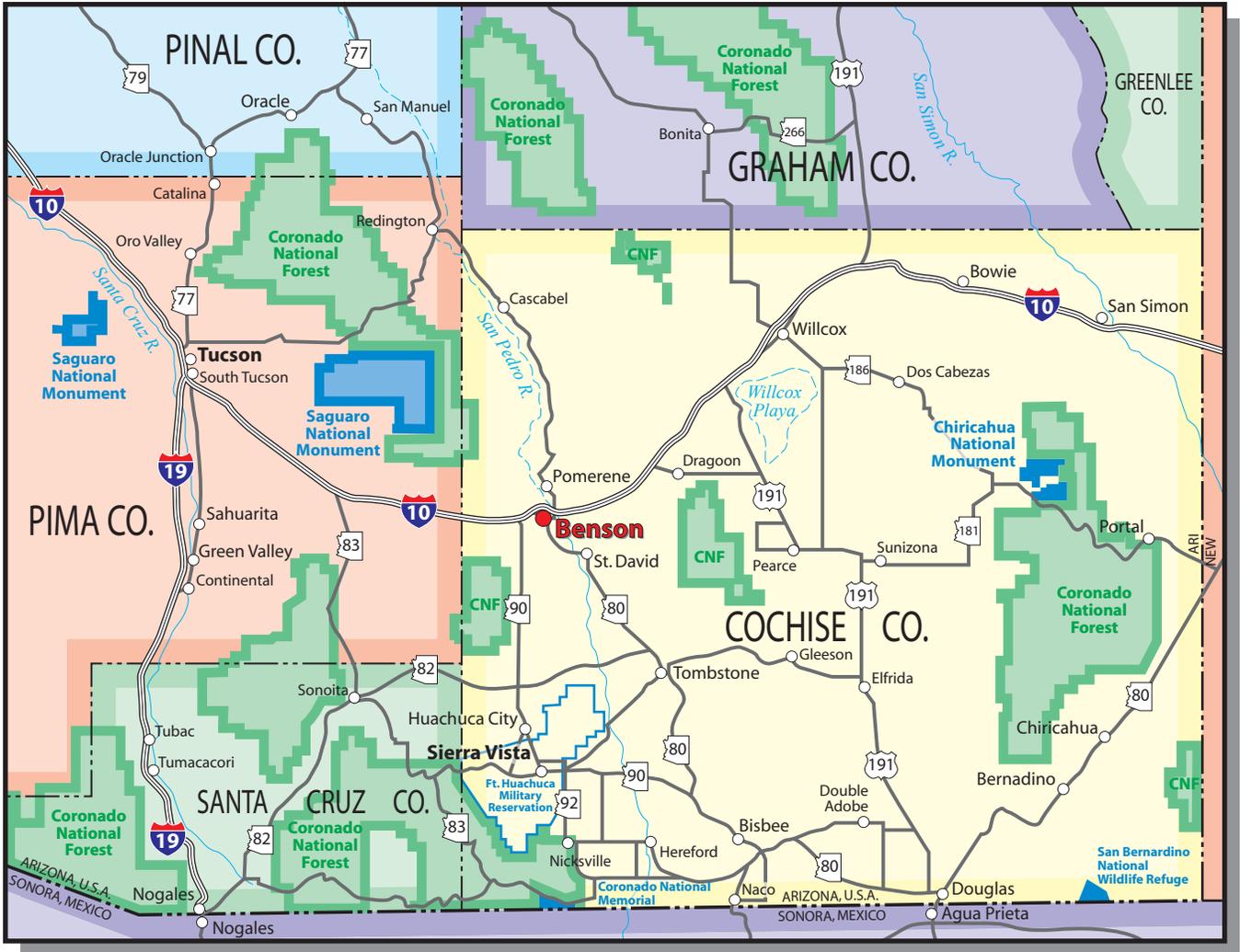
State Route 80/Fourth Street—which also serves as Benson’s “Main” Street—connects Benson to Tombstone (19 miles to the southeast) and passes through St. David. State Route 90—originating on the west end of Benson at Exit 302—connects Benson to Sierra Vista and Fort Huachuca, 35 miles to the south. SR 90 also connects Benson to Kartchner Caverns State Park. Both SR 80 and SR 90 connect Benson to the southern communities of the county including Bisbee, Douglas, Sierra Vista and on to Mexico.

Table 1: Distance to Major Cities and International Border Crossings

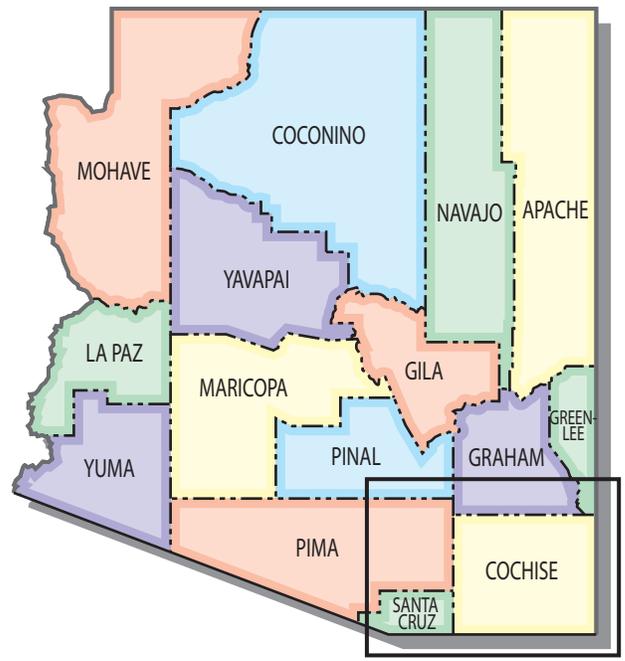
Source: Arizona Department of Commerce

	Miles	Kilometers
Agua Prieta, Sonora, Mexico	88	141
Albuquerque, New Mexico	544	870
Dallas, Texas	894	1430
Denver, Colorado	840	1344
El Paso, Texas	268	429
Flagstaff, Arizona	301	482
Los Angeles, California	564	902
Naco, Sonora, Mexico	71	114
Phoenix, Arizona	156	250
Salt Lake City, Utah	980	1568
San Diego, California	458	733
San Francisco, California	945	1512
Tucson, Arizona	45	72
Yuma, Arizona	284	454

Figure 1: The City of Benson and its surrounding region



- Coronado National Forest**
- Other Federal Lands**
- International boundary**
- State boundary**
- County boundary**
- River**
- Intermittent river**
- Interstate**
- Federal highway**
- State highway**



Area of main map above

Technical Appendix

Historical summary. Benson is located in the pristine San Pedro Valley and served as a regional gateway long before its incorporation as a city in 1924. Born of the union of the Southern Pacific Railroad and the mining regions of the San Pedro Valley, Benson became a rail-shipping hub for the majority of southern Arizona.

The San Pedro River contains traces of human activity dating back to 11, 000 A.D. including mammoth hunting sites and evidence of Hohokam culture habitation. The “modern” era of European contact and influence began with the arrival of the Spanish explorer Coronado, who led an expedition along the San Pedro in 1540. The Spanish presence through present-day southern Arizona increased gradually from the 1600s through the 1800s with the establishment of military posts, missions and ranches. The area was part of the Republic of Mexico from 1821 until 1853 when the United States assumed control of land south of the Gila River through the Gasden Purchase.

Following the Civil War (1861-1865) Benson began to grow. The Ohnesorgen State Stage Depot was established in 1871, and William Ohnesorgen erected a toll bridge over the San Pedro in 1878 helping to link the city to the developing mining camps to the south. By 1900, Benson emerged as a key regional transportation hub with an east-west rail line and the north-south overland trails.

Benson was named in honor of Judge William A. Benson, a friend of Charles Crocker, president of the Southern Pacific Railroad. The original 160-acre city was laid out in the traditional square street pattern which was bisected by the rail line. Six avenues, each named for the principal mountain ranges and rivers in the area were intersected by streets numbered one through eight. Fourth Street immediate south of the Southern Pacific rail line became the main commercial street of the young city.

The early 1900s were a period of transition for Benson and the entire vicinity. In 1910, the Santa Fe Railroad constructed a line from Nogales to Tucson moving their hub further to the north and west. In 1913, the El Paso and Southwestern Railroad merged with Southern Pacific and decreased their use of Benson as a hub, instead moving their activity to Tucson. Although Apache Powder, a former dynamite manufacturer for southwestern mines (now known as Apache Nitrogen Products and a manufacturer of nitric acid and ammonium nitrate products) began operations near Benson and never reduced its payroll, the city lost numerous businesses and subsequently saw its population drop during the years of the Great Depression.

This transitional period did, however, result in a renaissance of ranching and farming activity to the area as well as the introduction of industry. New civic activities evolved simultaneously with the emerging economic expansion and diversification. Benson’s formal incorporation as a city in 1924 brought improvement such as a municipal water system, city-franchised electric power and a jail facility. In 1926, a new elementary school was constructed followed by a new high school in 1929.

Benson emerged after its loss of prominence as a railroad center with the development of ranching, farming, and industry. These activities remain important components of Benson’s economy and of the surrounding region. The period of Benson serving as a local cattle town

Technical Appendix

drew to a close around the end of World War II with the emergence of post war development and extensive highway construction.

During the 1930s, the Sunset Trail was built from Lordsburg, New Mexico, running through Bowie, Willcox and Benson. This trail proved to be a revitalization of the “transportation hub” context of the city with the introduction and subsequent increase of vehicular traffic. Gas stations, restaurants, auto courts and garages arose on the main street. Highway improvements started during this time resulting in the overpass to the east of Benson in 1941 and contributed to Benson’s revival as an important regional transportation hub. The transportation network remains a key feature for the City, as I-10, SR 80, SR 90, the Union Pacific Railroad and Amtrak service connects the City to the rest of the United States.

B. Physical Setting & Local Environment

Topography summary. Benson is located within the San Pedro River Valley, at 3,585 feet above sea level with the San Pedro River flowing along the eastern boundaries of the corporate limits. The river enters the city limits on the south side and exits on the northeast flowing northward toward its confluence with the Gila River in Pinal County. Benson lies between the Dragoon and Little Dragoon Mountains to the east and the Whetstone Mountains on the west. Alluvial fans extend from these mountains spreading out through the valley. Due to past erosion the river channel has been lowered and the alluvial deposits have eroded away leaving the valley varying from one to three miles in width. Within the valley, knolls and ridges composed of alluvial fan and ancient lake-bed sedimentary materials are also undergoing gradual erosion.

The edge of the San Pedro Valley is marked by a steep line of bluffs ranging 50 to 100 feet in height. This line is very irregular and deeply cut by both narrow and steep side-canyons and drainage channels extending back several miles toward the mountains.

Climatic data summary. Benson has the general climate conditions of a arid region. The City’s elevation provides for cooler temperatures than are found in the Sonoran Desert environment to the west. The following table summarizes Benson’s monthly and annual temperature and precipitation.

Technical Appendix

Table 2: Average Monthly Weather Characteristics

Source: Benson Economic Outlook 2013

Month	Avg. Daily Max. Temperature	Average Daily Min. Temperature	Average Total Precipitation in Inches
January	65°	30°	1.18"
February	68°	32°	1.20"
March	73°	35°	0.90"
April	81°	40°	0.36"
May	91°	47°	0.31"
June	100°	56°	0.30"
July	99°	65°	2.66"
August	96°	65°	2.66"
September	93°	58°	1.30"
October	84°	46°	0.99"
November	73°	35°	0.68"
December	64°	29°	1.18"

Archaeology. Due to the extent of human habitation in the vicinity (including indigenous, early European and resident American transient and settlement activities) there is a high probability of archaeologically significant sites in the area; particularly in the San Pedro River Corridor. The Arizona State Museum maintains a full inventory of known sites in the state and should be consulted as the primary source of information on archaeological resources in and adjacent to Benson.

Soils summary. Alluvial deposits, which consist of water-worn grade and finer soil material, overlay earlier lake-lain deposits. The depth of this material near the river is a few feet, but increases in depth toward the mountains.

The ridge to the south of the city was formed by the cutting of the San Pedro River and its tributaries and serves as the boundary of the Illonian alluvium fan and the Kansan valley-filled deposit. The valley is covered with material ranging in depth from 0 to 50 feet near the lower section of the ridge, while the depth ranges from 10 to 30 feet thick near the upper section.

There are 20 broadly defined soil groups within the City of Benson area, according to the soil survey conducted by the U.S. Department of Agriculture, Soil Conservation Service. These soils are listed by type in the following table:

Technical Appendix

Table 3: City of Benson Soils

Group	Description	Texture	Character	Slope
1A	Silt loam	Fine textured sub-soil	Saline	0 to 2% slope
1B	Silty clay loam	Fine textured sub-soil	Saline	0 to 2% slope
1C	Silt loam	Fine textured sub-soil	Saline	2 to 5 % slope
1D	Silty clay loam	Fine textured sub-soil	Saline	2 to 5 % slope
2A	Gravelly loamy sand	--	Overflow	2 to 5 % slope
3A	Gravelly sandy loam	--	--	2 to 5 % slope
4A	Silt loam	Reddish brown fine textured sub-soil	Saline-alkali	0 to 2% slope
4B	Silty clay loam	Reddish brown fine textured sub-soil	Saline-alkali	2 to 5 % slope
5A	Clay loam	Dark grayish brown fine textured sub-soil	Saline-alkali	0 to 2% slope
5B	Clay loam	Dark grayish brown fine textured sub-soil	Saline-alkali	0 to 2% slope
6A	Silt loam	Moderately deep over clay	Saline-alkali	0 to 2% slope
6B	Loam	Moderately deep over clay	Saline-alkali	0 to 2% slope
7A	Silt loam	--	Saline-alkali	0 to 2% slope
8A	Gravelly loamy sand	--	--	5 to 20% slope
9A	Gravelly sandy loam	Moderately fine textured sub-soil	--	2 to 5 % slope
10A	Gravelly loam	Moderately fine textured sub-soil	--	2 to 5 % slope
11A	Rough broken land	--	--	--
12A	Gullied land	--	--	--
RV	River wash	--	--	--

Technical Appendix

Table 4: City of Benson, Soil Group Development Constraints

Group(s)	Septic tank absorption field	Sanitary landfill suitability	Limitation for foundations	Corrosion potential
1A, 1B, 1C, 1D	Unsuitable	Unsuitable	Severe	High
2A	Slight to moderate	Slight to moderate	Severe	Slight
3A, 3B	Slight to moderate	Slight to moderate	Severe	Slight
4A, 4B	Unsuitable	Unsuitable	Severe	Severe
5A, 5B	Unsuitable	Unsuitable	Severe	Severe
6A, 6B	Unsuitable	Unsuitable	Severe	Severe
7A	Unsuitable	Unsuitable	Severe	Severe
8A	Unsuitable	Unsuitable	Moderate to Severe	Slight
9A	Moderate	Suitable	Moderate	Light
10A	Moderate	Suitable	Slight	Slight
11A	Unsuitable	Unsuitable	Severe	Slight
12A	Unsuitable	Unsuitable	Severe	Slight
RV	Unsuitable	Unsuitable	Severe	Slight

Technical Appendix

Vegetation. The USDA Soil Conservation Service classifies this area under the broad description of “Southern Desert Scrub”. The San Pedro Valley is included in this category, with the higher valley areas classified as “Grassland”. The mountainous areas defining the San Pedro Valley are of the “Juniper-Pinyon or Oak-Woodland” category. Within the mountainous areas, pockets of “Northern Desert Scrub” are also present.

Southern Desert Scrub. The category includes species of mesquite (*Prosopis velutina*) and various grass species. Areas of grassland, specifically in the cooler, higher regions include sagebrush (*Artemisia filifolia*, *Artemisia tridentata*), shadscale (*Atriplex confertifolia*, *Artiplex canescens*) and wild rye (*Leymus racemosa*, *Leymus triticoides*). Emory Oak (*Quercus emori*) and agave (*Agave*) plants can also be found.

Juniper-Pinyon. This category includes the juniper (*Juniperus deppeana*, *Juniperus monosperma*), pinyon (*Pinus edulis*), scrub oak (*Quercus tubinella*), and sumac (*Cercocarpus montanus*). “Northern Desert Scrub” areas are a broad mixture of scrub oak and other vegetation from the “Oak Woodland” and “Grassland” associations.

In addition to these specific vegetative associations, there are also multiple species within Benson and the San Pedro Valley area. Cottonwoods (*Arctostaphylos patula*, *Arctostaphylus pungens*) and other tree, bush and grass species flourish in areas receiving more water.

C. Population & Demographics

Analysis of current and future demographic trends is crucial to understanding the composition of the existing and developing housing market. Review of existing conditions and future trends aid in estimating the demand for varying types of housing at varying costs and conditions that may impact housing quality.

Population. The trend for the past 40 years in the City of Benson has been one of moderate growth, with the City experiencing a net growth of 2,266 inhabitants between 1970 and 2010. This growth, however, has not been continuous; the city lost population (a loss of 366 inhabitants) between 1980 and 1990. The city’s population rose to 5,105 by Census 2010, and is projected to continue to increase.

Between Census 2000 and Census 2010, the City of Benson had a lower level of growth than that experienced by the State of Arizona and Cochise County. Between 2000 and 2010, the city’s population increased by approximately 8.36% in comparison to the state’s rate of 24.59% and Cochise County’s 11.54% increase. Excepting Sierra Vista, all other local jurisdictions had a lower growth rate than Benson.

Table 5 illustrates the past population (1970 through 2010) and several future population projection scenarios through the year 2040. One projection was provided by the State of Arizona Department of Economic Security (2006) and the three scenarios (high, moderate and low) were generated internally. The **high** projection is based on the 40-year growth trend from 1970-2010 (approx. 20% per decade); the **moderate** projection is based on the most recent 2000-2010 growth rate of approximately 8% per decade; and the **low** projection is ½ of the 2000-2010

Technical Appendix

growth rate (4% per decade). Clearly, the City of Benson has already surpassed all the State's long-term projections as estimated in 2006.

Table 5: City of Benson: Population & Projections, 1970-2040

	1970	1980	1990	2000	2010	2015	2020	2025	2030	2040
AZ Dept. of Commerce (2006 projection)	2,839	4,190	3,824	4,711	4,769	4,795	4,818	4,838	4,856	4,883
High	2,839	4,190	3,824	4,711	5,105	5,618	6,130	6,745	7,360	8,840
Moderate	2,839	4,190	3,824	4,711	5,105	5,320	5,535	5,765	5,995	6,500
Low	2,839	4,190	3,824	4,711	5,105	5,208	5,310	5,418	5,525	5,750

Future trends. The high, medium and low projections are all significantly higher in absolute numbers than the State projection. One factor to bear in mind in reviewing these projections is that they are simply mathematical calculations based upon linear regression analysis. The figures presented in no way determine the fixed future population numbers for a given municipality, but are to serve as a guideline and indicator based on past trends and existing data availability.

The table below illustrates the past and projected growth of the City of Benson in comparison to other Cochise County communities, the counties of Cochise and Pima, and the State of Arizona in terms of net population change and percent population change from 1970 through 2040.

Table 6: Surrounding Communities & Counties, Population 1970-2040

Sources: US Census; 2013 Arizona Department of Administration Population Projection Medium Series

	1970	1980	1990	2000	2010	2020	2030	2040
State of Arizona	1775399	2716633	3665321	5130632	6392017	7485163	8853645	10218407
Pima County	351667	531443	666880	843776	980263	1100021	1243099	1379622
Cochise County	61918	85686	97625	117755	131346	142398	157693	173377
City of Bisbee	8328	7154	6288	6090	5575	5711	5973	6107
Town of Huachuca City	1241	1661	1782	1751	1853	1835	1858	1883
St. David CDP	---	---	1468	1744	1699	1836	2074	2318
City of Sierra Vista	6689	24937	32983	37775	43888	49399	54303	59333
City of Tombstone	1241	1632	1220	1504	1380	1350	1350	1350
City of Willcox	2568	3243	3122	3733	3757	3853	4081	4315
City of Benson	2839	4190	3824	4711	5105	5742	6707	7766

Technical Appendix

Table 7: Surrounding Communities & Counties, Net Population Change 1970-2040

	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020	2020-2030	2030-2040
State of Arizona	+941,234	+948,688	+1,465,311	+1,261,385	+1,093,146	+1,368,482	+1,364,762
Pima County	+179,776	+135,437	+176,896	+136,487	+119,758	+143,078	+136,253
Cochise County	+23,768	+11,939	+20,136	+13,591	+11,052	+15,295	+15,684
City of Bisbee	-1,174	-866	-198	-515	+136	+262	+134
Town of Huachuca City	+420	+121	-31	+102	-18	+23	+25
St. David CDP	---	---	+276	-45	+137	+238	+244
City of Sierra Vista	+18,248	+8,046	+4,792	+6,113	+5,511	+4,904	+5,030
City of Tombstone	+391	-421	+284	-124	-30	0	0
City of Willcox	+675	-121	+611	+24	+96	+228	+234
City of Benson	+1351	-366	+887	+394	+636	+962	+1,059

Table 8: Surrounding Communities & Counties, Percent Population Change 1970-2040

	1970-1980	1980-1990	1990-2000	2000-2010	2010-2020	2020-2030	2030-2040
State of Arizona	+53.0%	+34.9%	+39.9%	+24.6%	+17.1%	+18.3%	+15.4%
Pima County	+51.1%	+25.5%	+26.5%	+16.2%	+12.2%	+13.0%	+10.9%
Cochise County	+38.4%	+13.9%	+20.6%	+11.5%	+8.4%	+10.7%	+9.9%
City of Bisbee	-14.1%	-12.1%	-3.1%	-9.2%	+2.4%	+4.6%	+2.2%
Town of Huachuca City	+33.8%	+7.3%	-1.7%	+5.8%	-.97%	+1.3%	+1.3%
St. David CDP	---	---	+18.8%	-2.6%	+8.1%	12.9%	11.8%
City of Sierra Vista	+272.8%	+32.3%	+14.5%	+16.2%	+12.6%	+9.9%	+9.3%
City of Tombstone	+31.5%	-2.5%	+23.5%	-8.9%	-2.2%	0%	0%
City of Willcox	+26.3%	-3.7%	+19.6%	+6.4%	+2.6%	+5.9%	+5.7%
City of Benson	+47.6%	-8.7%	+23.	+8.4%	+12.5%	+16.8%	+15.8%

Comparison to regional trends. The decade from 1980 to 1990 saw growth at the state and county levels; however, the small and moderate sized cities in Cochise County (including Benson, Bisbee, Tombstone and Willcox) all experienced a downturn in population during this decade. An exception to this trend was the continued, pronounced growth of the City of Sierra Vista. The City of Sierra Vista's dramatic expansion is due primarily to its annexation of Fort Huachuca in 1971 and its continued growth. The following decade of 1990-2000 saw moderate growth for most communities in Cochise County, as well as for the State and Cochise County. Only Bisbee and Huachuca City lost population between 1990 and 2000. The most recent decade of 2000-2010 saw growth across the State and County while individual jurisdictions had highly varied growth and loss rates. Benson had the most growth, in terms of both absolute numbers and percentage, in Cochise County, excepting the City of Sierra Vista.

Technical Appendix

Population summary. Even without the presence of master planned communities, the City of Benson is projected to experience continued population growth in the coming years. Though there are no master planned communities currently proposed, Benson certainly has the land area to develop multiple master planned areas. Any development of master planned areas will certainly serve to change Benson from its present position as a traditional small-southwestern town to a key regional center for northern Cochise County and will certainly set the stage for the development of new retail, commercial, industrial and recreational growth.

Demographic trends. Another factor in examining population is the composition and demographic structure of the population. Anticipated changes in the age structure often require increased need or demand for different types of housing, school and municipal facilities, day care/child care, elderly care facilities and related programs

The table below reveals the absolute number, net change and percent change of five age groups for the City of Benson from the 2000 and 2010 Census.

Table 9: City of Benson, Demographic Structure 2000-2010

Source: US Census

	2000	2010	Net Change	Percent Change
Age 24 and under	1235	1233	-2	-0.2%
Age 25 to 34	347	483	+136	+39.2%
Age 35 to 54	1083	1007	-76	-7.0%
Age 55 to 64	665	785	+120	+18.0%
Age 65 and older	1381	1597	+216	+15.6%
Total Population	4711	5105	+394	+8.4%

Despite the overall growth in population, inhabitants aged 35 to 54 experienced a net decline. All other age brackets either increased or remained very stable. The following trends—common to many areas of rural Arizona—may be inferred about the City of Benson from this data. .

The City of Benson is experiencing a **net gain of inhabitants between ages 25 and 34:**

Young adults may be having difficulties obtaining employment and so may be remaining in the family home longer, either while searching for work or obtaining education. There may be more entry-level opportunities locally, where potential employers may personally know an individual applicant. The current economic situation may be limiting young adults' financial ability to move out on their own and the boomerang phenomenon may also be at play, moving young adults back into their parents' home. Young adults may also be starting their own families and deciding to remain in Benson rather than move to the "big city."

The City of Benson is experiencing a **net loss of inhabitants between ages 35 and 54:**

This age bracket is during the prime working years and implies adults may be leaving to follow mid-level and higher employment opportunities elsewhere.

The City of Benson is experiencing a **net gain of inhabitants ages 55 and older:**

Older adults, nearer to or in retirement, may be attracted Benson's warm climate and lower cost

Technical Appendix

of living. Multi-generational families are also becoming more common, with older adults moving in with their adult children and grandchildren.

Demographic impact of master planned communities. As is well known in Arizona, master planned communities tend to attract upper-middle to high-income couples and families. Additionally, substantial numbers of people seeking master planned community properties are retirees. While the development of master planned communities along State Route 90 would serve to be a tremendous benefit to the city in economic terms, it must also be understood that the city needs to retain the viability of the existing city core. As identified above, the city has experienced a net loss of 35 to 54 year olds—one of the prime working age and family age categories. Concurrently, there has been a pronounced increase in residents 55 and over. The development of the master planned communities may serve to accelerate these trends if the communities focus on residential, rather than job creating master plans, and could potentially leave Benson drained of a working-age population. In terms of housing, master planned communities infrequently offer low income homes, as elite homes command larger prices. This may hinder the younger, entry level 25-34 year old demographic who often have a lower income working-family's ability to secure housing within their price range and cause them to seek residency elsewhere.

Race and ethnicity. The following table delineates the racial breakdown of the City from the past two Census counts.

Table 10: City of Benson, Racial Composition, 2000-2010

Source: US Census

	2000	2010
White (incl. Hispanics)	4,208	4,481
African-American	34	51
American Indian, Eskimo, Aleut	61	49
Other Asian	22	9
Chinese	1	0
Filipino	12	14
Japanese	3	3
Korean	5	9
Vietnamese	0	2
Native Hawaiian / Pacific Islander	1	8
Other	268	296
Two or more races	112	183

D. Municipal Facilities & Services

Public services and facilities for the City of Benson include public safety, city administration, education, parks and recreation and municipal utility service. Existing facilities and services are discussed below.

Municipal water system. Domestic water is presently provided throughout the developed portions of the City of Benson. Twelve (12) storage tanks are distributed throughout the city with a total storage capacity of 3,746,000 gallons. Current pumping capacity is 4,100 gallons per

Technical Appendix

minute from 8 active wells (five potable water wells 3400gpm, one irrigation wells 200gpm, two transient non-public wells 500gmp). The average well depth is approximately 1,000 feet. Trunk lines range between 6” to 18” diameter. New lines are continually being added to the system. In March 2009, the City of Benson acquired the Sue Juan distribution system which served 76 customers in the San Pedro Addition subdivision in Benson. The City improved the Sue Juan infrastructure during the year 2009.

Gas and electricity. Among others, electricity is presently generated and supplied by Arizona Electric Power Cooperative, Inc. which is headquartered in Benson. Distribution services are provided by Sulphur Springs Valley Electric Cooperative, Inc., which maintains a branch office in Benson.

Natural gas is provided to the City of Benson by Shell Corporation via KinderMorgan with prices locked in for a set duration.

Police protection. The City of Benson Police Department is headquartered with the Fire Department in central Benson. The department employs 14 sworn officers including the police chief, three detectives, two sergeants, two corporals and one canine unit. Non-sworn personnel include 5 full-time dispatchers, 2 administrative personnel and 2 animal control officers. The Department maintains a fleet of 21 vehicles, including 3 off-road vehicles. The Benson Police Department maintains two temporary holding facilities. Jail facilities are located at the county seat in Bisbee.

Fire protection. The City of Benson Fire Department operates as a combination fulltime/volunteer department with 1 paid Fire Chief and 26 volunteers. The department maintains nine emergency apparatus: 2 structure engines, ladder company, rescue vehicle, 2 brush engines, tender, support vehicle and command vehicle. The department responds to all fire related emergencies in the City of Benson including emergency medical calls, structure fires, brush fires and hazardous materials calls. The department also responds to road emergencies surrounding the community. The Fire Department participates in the Cochise County mutual aid program, which includes all the fire departments within the county. The City of Benson holds an ISO 5 Fire Protection rating.

Hospital service and medical facilities. Benson is currently serviced by a 22-bed, 24-hour service hospital. Three primary care physicians are on rotation at the hospital, of which two also maintain private practice hours. Hospital affiliated specialists in cardiology, podiatry, orthopedics and renal care provide service on a weekly or as-needed basis. Additionally, specialists in audiology, vision, chiropractic care, and laboratory work in private practice. Two dentists provide care for city residents. Cenpatico and Community Bridages operate mental health clinics in Benson.

Benson is served by Healthcare Innovations for ambulance service. Lifeline Air Ambulance is dispatched from St. David as needed.

Library. The Benson Public Library began its existence in 1928, serving Benson and the surrounding communities. The library currently has 18 public computers with Internet connectivity and wi-fi available for personal computers. The library offers story hours for

Technical Appendix

children ages 18 months to preteens. Current circulation includes over 34,000 items including books, audios and movies. The circulation count for fiscal year 2013-2014 was 77,422 items to over 65,800 registered patrons. The library offers interlibrary loans from libraries around the county. With an expansion in 1998, total library square footage stands at 8,175.

Education facilities. The Benson Unified School District oversees the traditional K-12 primary, middle and high schools, one charter school and an online academy with total enrollment of approximately 1,300 students as of August 2014. There is one charter school in Benson that is not affiliated with the school district offering grades K-8. The neighboring communities of St. David and Pomerene offer K-12 and K-8 education respectively. Vocational courses are available from Benson High school, often in conjunction with Cochise College. Cochise College opened their 13,000 sq. ft. Benson Campus in 2000 and holds many classes and special courses throughout the calendar year.

Community center. The Benson Community Center is owned and operated by the City of Benson. It serves as a recreational outlet for residents, particularly for seniors and school age children during the summer. The facility is approximately 2,000 sq. ft. and provides space for activities, seminars and provides food service. The community pool was constructed next door to the Community Center in 2007 and is available for adult swim, swimming lessons and open community swim during the summer months. The Community Center is staffed by two full-time employees who coordinate activities between the various groups using the Center.

Wastewater treatment. The City of Benson has two wastewater treatment plants. The primary plant has a capacity of 1,200,000 gallons per day with about 700,000 gallons per day in growth capacity. The City also has a developer financed percolation plant with a capacity of 250,000 gallons per day with about 245,000 gallons per day growth capacity. The primary treatment plant effluent is used to irrigate the City's golf course.

E. Recreation and Tourism

Recreation summary. The City of Benson hosts a range of community facilities including parks, an 18-hole golf course, a community swimming pool and community center, a bowling alley, several baseball and football fields, a running track and a soccer field. Currently there are three parks within the city limits: Apache Park is approximately 2 acres in size and is a traditional neighborhood park, while Lion's Park, covering nearly forty acres, is a community park just north of downtown. Facilities located within Lion's Park include little league baseball/softball fields, multi-use fields, volleyball courts, horseshoe pits, playground area and restrooms. Future plans call for Lion's park expansion. The third park, Veterans Park, is a linear park along the railroad tracks with monuments honoring veterans.

The City of Benson has an active recreation program for children, particularly during the summer months. The City maintains a 3 person park maintenance department and one Parks and Recreation Coordinator and an Assistant.

An intergovernmental agreement with the school district provides facilities for many of these activities, such as access to the running track and weight room, as well as fun summer classes held on

Technical Appendix

campus.

Tourism summary. Tourism is a key element in the economy of Benson, the San Pedro Valley and all of Cochise County. Tourism activity in Cochise County has slowed considerably recently due to national economic events. Much of the tourism is based on old West history, with Benson acting as the gateway to much of Cochise County. Kartchner Caverns State Park, a living cave hidden by its discoverers for 14 years, opened in 1999 and continues to act as a draw for Benson.

As of August 2014 a combination of 8 motels and hotels provided 312 rooms within the city limits. There are 16 recreational vehicle (RV) parks with 1,100 spaces available for long-term and short-term rental in Benson. During calendar year 2013, the Benson Visitor Center received an average of 770 walk-ins, 120 phone calls and 250 mail requests (usually related to the state-wide Official Visitors Guide), as well as hundreds of emailed requests for information per month.

Kartchner Caverns State Park. Discovered approximately nine miles south of the city in 1974, the Kartchner Family sold the site to the State of Arizona for designation and protection as a state park. In 1988, the Arizona Legislature approved the creation of Kartchner Caverns State Park. The 550-acre park site features the wet “live” cave where water percolates from the surface and calcium carbonate features are still growing. The cave includes one of the world’s largest “soda straw” formations at 21.16 feet in length. Additionally, the park features the development of 5 miles of hiking trails, a handicapped accessible loop trail, picnic facilities, access to Coronado National Forest trail networks, camping facilities, on-site interpretive programs and exhibit area. The cave system also provides natural refuge and roosting area for between 1,000 to 2,000 *Myotis velifer* bats which roost from late April to mid-September. Kartchner Caverns averages 145,000 visitors annually, all of whom must pass through Benson.

Local Festivals and activities. In addition to the national and state parks and other tourism sites in the vicinity, Benson and the surrounding region is also host to numerous events and festivities throughout the year. These include Territorial Days (February), July Fourth (July), and Butterfield Stage Days (October) in Benson. Most nearby communities also have festivals such as Rex Allen Days (Willcox), Cascabel Christmas Fair (Cascabel), and Fiesta de la Primavera (St. David Monastery), and Helldorado (Tombstone).

Technical Appendix

2. Land Use Technical Appendix

Existing land use. In January 2012 an inventory of existing land use conditions was conducted in the City of Benson. The survey involved the mapping of existing land use activity on parcels of land within the City Limits. The purpose of the survey is to provide a “snapshot” of existing conditions as of early 2012 and to establish a base line of measurement for future land use studies so changes and trends can be better understood. Each of the categories was then mapped to illustrate their concentration and distribution within the City as is shown on the map on the following page.

All land use activities in the City were designated within one of the following five categories: commercial, residential, institutional, industrial and uncommitted/undeveloped.

Table 1: City of Benson, Existing Land Use

Land Use Category	Acreage	Square miles	Percentage
Commercial	656.5 ac.	1.0 sq. mi.	2.42%
Industrial	0.0 ac.	0.0 sq. mi.	0.0%
Residential	2,406.0 ac.	3.8 sq. mi.	9.18%
Institutional	1546.6 ac.	2.4 sq. mi.	5.79%
Uncommitted / Undeveloped	21,145.8 ac.	33.0 sq. mi.	79.71%
Major right of way	741.1 ac.	1.2 sq. mi.	2.90%
Total	26,496 ac.	41.4 sq. mi.	100.0%

Commercial. Commercial land was designated as any area or parcel containing mercantile, retail or other business activity, including associated parking and ancillary structures. Areas designated as “Commercial” are highlighted in red on the City of Benson Existing Land Use Map.

Commercial land use activity in Benson can be categorized into five main areas:

A. The traditional “Main Street-style” commercial core. This area extends along Fourth Street. Fifth street is also available for commercial uses, though there are few existing commercial entities at this time. The western end of Fourth Street is characterized by several strip mall type shopping centers, two of them anchored by large grocery or discount stores. East Fourth Street contains the historic downtown and is more easily accessible to pedestrians from both the northern and southern residential areas.

B. The Ocotillo Avenue commercial area. Extending from just north of Exit 304 southward toward Union Street. This area is characterized by “highway commercial” stores, national franchise operations, gas stations and retail concerns. Benson’s medical facilities are located at the southern end of Ocotillo Avenue.

C. The Exit 302 nodal area. The area at the junction of I-10 and SR 90 has emerged as another “highway commercial” site with franchise stores, motels and gas stations. This site has

Technical Appendix

additional space and considerable potential for new commercial development.

D. SR 80 Corridor /Fourth Street. Nearly the entire length of SR 80—especially Fourth Street—through the corporate limits contains some type of commercial activity with the exception of the final 1.5 mile stretch that exits the City to the southeast.

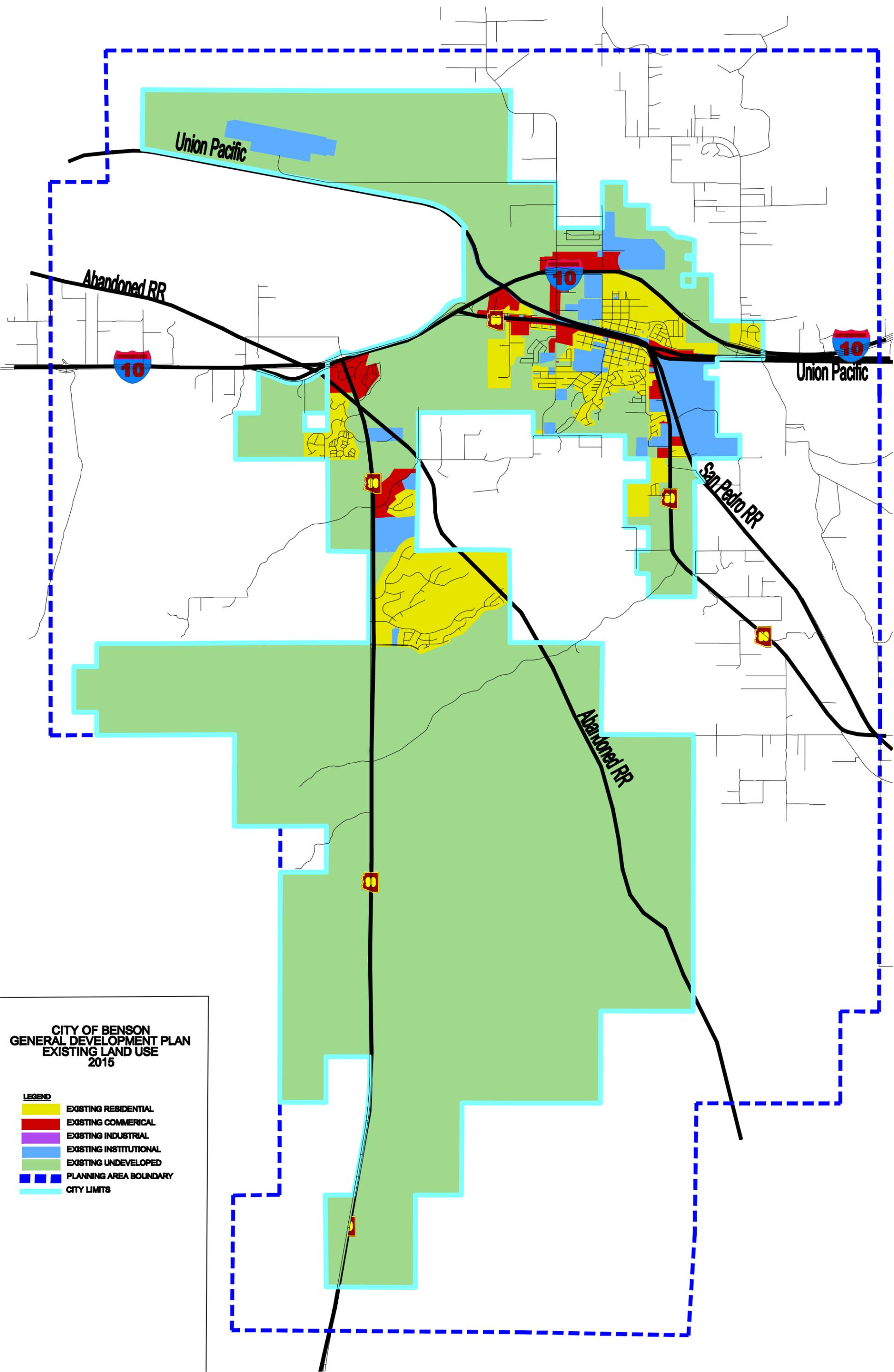
E. East End Corridor. Leading eastward out of the city on Fourth Street, this district contains numerous businesses including vehicle sales and auto repair businesses.

Undeveloped. These areas were categorized as any area or parcel presently designated undeveloped. Areas designated as “Undeveloped” are highlighted in green on the City of Benson Existing Land Use Map. As is clearly illustrated in the table, Uncommitted/Undeveloped land is by far the largest category within the City Limits. This is due to the substantial annexations undertaken by the City.

Residential. These areas were designated as any area or parcel containing single-family and multi-family dwellings, manufactured homes and their adjacent lands and ancillary uses and structures. Areas designated as “Residential” are highlighted in gold on the City of Benson Existing Land Use Map. In general, the City’s residential areas are centered around and radiate from the traditional city center and Fourth Street thoroughfare. A traditional Pre-War “grid pattern” of streets and avenues radiates out from the main thoroughfare of Fourth Street (SR 80) to the north and south. Post-War (after 1945) residential development has extended from the grid into a series of curving streets and cul-de-sacs. Entirely new residential neighborhoods are visible on SR 90.

Institutional. These areas were designated as any area or parcel containing municipal and/or utility structures (natural gas fixtures, electric power substations, water tanks, wastewater facilities, etc.), municipal buildings, libraries, government structures, municipal garages, churches, schools, medical facilities and their ancillary uses and structures. Areas designated as “Institutional” are highlighted in blue on the City of Benson Existing Land Use Map. Institutional lands include areas in use by the City, the school district and related government agencies as well as lands designated for utility fixtures, municipal infrastructure, medical facilities, churches and miscellaneous land holdings which do not fit into conventional definitions of residential, commercial or industrial use. The largest contiguous institutional lands are those associated with the Benson School District (Union and Patagonia Avenue), the City’s municipal wastewater treatment plant, the golf course and the railroad land holdings. Additional lands in the institutional category include the City’s cemeteries, the land holdings of various church groups and governmental agencies within the city and land owned by Southern Pacific Railroad.

Industrial. At this time, there are no areas or parcels currently performing industrial activities.



**CITY OF BENSON
GENERAL DEVELOPMENT PLAN
EXISTING LAND USE
2015**

- LEGEND**
- EXISTING RESIDENTIAL
 - EXISTING COMMERCIAL
 - EXISTING INDUSTRIAL
 - EXISTING INSTITUTIONAL
 - EXISTING UNDEVELOPED
 - PLANNING AREA BOUNDARY
 - CITY LIMITS

Technical Appendix

3. Circulation Technical Appendix

The following table details the traffic counts taken by the Arizona Department of Transportation for major traffic areas within and around the City of Benson. Of note, these counts are an average of two-way traffic taken within discrete 24-hour periods.

Table 1: Average Daily Traffic Counts in the Benson vicinity, 2004-2008.

Source: Cochise College Center for Economic Research Benson Outlook 2013, State Highway Traffic Logs

	2005	2006	2007	2008	2009	2010
I-10 Recording Sites						
1: Between Exits 302 & 303	25,400	26,088	27,631	25,221	25,500	28,000
2: Between Exits 303 & 304	16,800	17,440	16,871	16,601	17,500	18,000
3: Between Exits 304 & 306	14,900	17,000	17,831	17,546	17,000	17,500
SR 90 Recording Sites						
5: Near Kartchner Caverns entry	9,400	9,670	9,660	9,515	10,000	10,500
SR 80 Recording Sites						
6: Between Business I-10 & Country Club Rd.	9,100	10,095	10,448	10,291	10,000	10,500
7: Between Country Club Rd. & Apache Powder Rd.	6,400	7,351	7,585	7,471	7,400	7,100
8: Between Apache Powder Rd. and Sibyl Dr.	6,100	6,584	6,972	6,867	6,800	--

Table 2: Net and Percentage Change in Average Daily Traffic Count, 2005-2010.

	Net Traffic Change	Percent Traffic Change
I-10 Recording Sites		
1: Between Exits 302 & 303	2,600	9.28%
2: Between Exits 303 & 304	1,200	6.66%
3: Between Exits 304 & 306	2,600	14.86%
SR 90 Recording Sites		
5: Near Kartchner Caverns entry	1,100	10.48%
SR 80 Recording Sites		
6: Between Business I-10 & Country Club Rd.	1,400	13.33%
7: Between Country Club Rd. & Apache Powder Rd.	700	9.86%
8: Between Apache Powder Rd. and Sibyl Dr.	--	--

Technical Appendix

4. Economic Development Technical Appendix

Table 1: Employment by Category: Cochise County & City of Benson, Non-Farm Payroll

Source: Cochise College Center for Economic Research Benson Outlook 2013

Sector	Cochise County	Percentage	Percentage
Government	12,500	34.67%	9.3%
Other Services	950	2.64%	43.4%
Trade , Transportation, Utilities	6,100	16.92%	11.3%
Construction	1,350	3.74%	--
Professional, Health, Education, and Leisure Services	13,150	36.48%	25.6%
Manufacturing	625	1.73%	--
Finance, Information	1,375	3.81%	10.4%
Total Non-Agricultural Employment	36,050	100%	100%

Table 2: Number of Business Establishments, City of Benson and Vicinity

Source: Cochise College Center for Economic Research Benson Outlook 2013

Sector	Number of Firms
Services	
Educational Services	4
Health & Social Services	24
Hotels, Lodging and Food Services	32
Recreation & Amusement	7
Business Services: Management, Information , Prof/Tech	16
Other	29
Retail	
Retail Trade	35
Finance, Insurance & Real Estate	
Real Estate / Rental/Leasing	13
Finance & Insurance	7
Transportation, Warehousing & Public Utilities	14
Construction	22
Government	--
Manufacturing	5
Wholesale Trade	2
Agriculture & Forestry	2
Total	212

Technical Appendix

Table 3: Estimated Households by Income in Benson

Source: 2012 American Community Survey

Household Income	Number of Households
Total Households	2,312
>\$200,000	20
\$150,000 to \$199,999	30
\$100,000 to \$149,999	118
\$75,000 to \$99,999	165
\$50,000 to \$74,999	402
\$35,000 to \$49,999	339
\$25,000 to \$34,999	464
\$15,000 to \$24,999	377
\$10,000 to \$14,999	197
<\$10,000	200

Technical Appendix

5. Housing Technical Appendix

The following information is provided as supplemental resource material to the Housing Element of the plan.

A. Housing Overview

As of Census 2010, the City of Benson had 2,941 housing units, reflecting an increase of 119 units from 2000. Of this total, 1,646 are owner-occupied, 723 are renter-occupied with an additional 572 listed as vacant. The relatively high rate of vacancies is attributed to the Census being conducted after many of the winter visitors to Benson had already departed.

Housing projections to 2030. As illustrated in Table 1, low, moderate and high housing unit projections for the City of Benson all indicate various rates of growth over the coming 30-year period. The **high** projection is based on the 2000-2010 housing unit growth rate of approximately 4%; this rate measures the number of housing units constructed and is irrespective of the population rate. The **moderate** projection is based on the average historical population growth of 20% per decade as occurred between 1970-2010 (Table 5 Population & Projections, high rate). The population figures were divided by the 2010 Census value of 2.18 average household size. The **low** projection is based on the projected population growth of 8% per decade as occurred during the 2000-2010 decade (Table 5, Population & Projections moderate rate). The population figures were divided by the 2010 Census value of 2.18 average household size.

Table 1: City of Benson: Housing Projections for Benson, 1990-2040

Source: US Census

	1990	2000	2010	2020	2030	2040
Total Housing Units (high model)	1,872	2,822	2,941	3,065	3,190	3,325
Total Housing Units (moderate model)	1,872	2,822	2,941	2,812	3,376	4,055
Total Housing Units (low model)	1,872	2,822	2,941	2,539	2,750	2,982

Clearly, the high projection model based strictly on housing unit construction shows consistent growth; this model does **not** rely on any population projections to determine how many persons may require housing. The moderate model, based on the 1970-2010 historical population growth rate of 20% per decade shows dramatic increase in housing units toward the end of the projection period (2040) to house the large projected population. The low model, based on the most recent measure of population growth at 8% per decade estimates the lowest number of housing units as neither the population nor the construction rate increases significantly over time.

In very broad terms, there are four types of “housing group” categories in Benson and its outlying area, these include:

- Established home-owners who are maintaining their permanent residence in the area. These residents generally work in Benson or commute to Sierra Vista, Tucson or

Technical Appendix

elsewhere for their primary employment.

- Young, low- to middle-income individuals/families in rental units who may be working toward the purchase of their first home.
- Young, low- to middle-income individuals/families purchasing starter homes.
- Seniors/retirees of middle-income purchasing a seasonal/recreational or retirement home; this is part of a larger trend of seniors/retirees moving to Arizona from outside the state. This group is seeking not only middle- to high-end quality housing units, but housing with immediate access to recreational amenities (golf courses, recreational sites) and with scenic attributes (panoramic views, mountain/open space views, access to acreage).

The development of any master planned communities will dramatically increase the housing stock in Benson; however, at this time, no master planned communities have been proposed.

B. Housing Occupancy

Housing occupancy. As is illustrated in Table 2 below, owner-occupied housing units comprise the largest percentage of total housing units in the City of Benson. Compared to 2000 data, owner occupied housing increased dramatically, perhaps in response to the subdivisions--particularly Kartchner Vista, Cottonwood Bluffs, and Cottonwood Canyon--that were built between 2000 and 2010. At the same time, renter occupied units also increased in both absolute numbers and percentage of occupied housing. The rental occupation may also be in response to the increased number of housing units available due to the new subdivisions and due to the decrease in vacancies.

Table 2: City of Benson, Housing Occupancy

Source: US Census

	2000	% of Total	2010	% of Total
Total-occupied housing units	2,084	73.8%	2,369	80.6%
Owner-occupied	1,570	55.6%	1,646	69.5%
Renter-occupied	514	18.2%	723	30.5%
Vacant housing units	738*	26.2%	572*	19.4%
Total	2,822	100.0%	2,941	100.0%

** The rate of vacancies is partially attributed to the Census being conducted after many of the winter visitors to the area had already departed.*

Technical Appendix

C. Housing Unit Characteristics

Unit characteristics. Tables 3 and 4 below illustrate the number of units per structure and the number of rooms per structure respectively. The most common type of dwelling unit in Benson is a single-unit detached structure—the traditional single family home—which comprised just under one-half of the city’s units in 2010 (46%), despite the percentage decrease of single family dwelling units between 200 and 2010. The second most common dwelling unit is a mobile/manufactured home, which also decreased as a percentage of total housing.

In 2010, just over one-half (53.4%) of all housing units have between four and six rooms, nearly one-third (31.2%) have one to three rooms while only 15% have seven or more rooms. The number (and percentage) of dwellings with 2 rooms grew most dramatically in the decade

Table 3: City of Benson, Units in Structure

Source: US Census and 2012 American Community Survey

	2000	% of total	2012	% of total
1, detached	1292	48.4%	1271	42.55%
1, attached	35	1.3%	39	1.3%
2	53	2.0%	15	0.50%
3 or 4	51	1.9%	106	3.5%
5 to 9	20	0.7%	55	1.8%
10 to 19	12	0.4%	100	3.3%
20 or more	55	2.1%	272	9.1%
Other	309	11.6%	241	8.1%
Mobile/Manufactured home or trailer	843	31.6%	888	29.7%
Total	2670	100.0%	2987	100.0%

Table 4: City of Benson, Housing Units, Number of Rooms

Source: US Census and 2012 American Community Survey

	2000	% of total	2012	% of total
1 room	64	2.4%	19	0.64%
2 rooms	178	6.7%	401	13.4%
3 rooms	462	17.3%	386	12.9%
4 rooms	539	20.2%	636	21.3%
5 rooms	587	22.0%	542	18.1%
6 rooms	425	15.9%	568	19.0%
7 rooms	256	9.6%	280	9.4%
8 rooms	93	3.5%	58	1.9%
9 or more rooms	66	2.5%	97	3.2%
Total	2670	100.0%	2987	100%

Technical Appendix

Age of structure. Table 5 below illustrates the eras in which the housing stock of the City of Benson were built. By 2010, more than one quarter (29.4%) of the housing stock was built in 1959 or earlier. Just over one-third of all homes (35.7%) were built between 1960 and 1989, and the remaining homes (35%) have been constructed since 1990.

Table 5: City of Benson, Year Structure Built

Source: US Census and 2012 American Community Survey

Year Structure Built	2000	% of total	2012	% of total
2000 and later	91	3.4%	768	25.7%
1990-1999	636	23.9%	514	17.2%
1980-1989	571	21.4%	244	8.2%
1970-1979	540	20.2%	598	20.0%
1960-1969	304	11.4%	165	5.5%
1950-1959	--	--	170	5.7%
1940-1949	385	14.4%	296	9.9%
1939 or earlier	143	5.4%	232	7.8%
Total	2670	100.0%	2987	100.0%

Building permits. Table 6 below shows the number of building permits issued by the City of Benson from 2009 through the year 2013. Assuming all residential permits were built and manufactured home permits were installed, on average, only 17 new residences per year were constructed in Benson from 2009 to 2013. Table 7 details the number of demolition permits issued by the City of Benson.

Table 6: City of Benson, Building Permits Issued 2009-2013

Source: City of Benson records

Permit Year	Commercial (New building)	Residential (New building)	Manufactured Home
2009	4	38	10
2010	0	29	10
2011	1	16	3
2012	0	1	0
2013	0	2	3
Total	5	86	26

Table 7: City of Benson, Demolition Permits Issued, 2009-2013

Source: City of Benson records

Permit Year	Commercial	Residential
2009	3	6
2010	0	3
2011	1	5
2012	1	0
2013	0	1
Total	5	15

Technical Appendix

D. Vacancy Characteristics

Vacancy summary. From 2000 to 2010, the City of Benson reported a decrease of 166 units defined as vacant. The number of units for sale or rent increased as did the number of housing units which are abandoned. The only subcategory of vacant housing units to have decreasing numbers was seasonal, recreational or occasional uses, which decreased dramatically. This decrease may partially account for the increase in housing units for sale, for rent or abandoned.

Table 8: City of Benson, Vacancy Status, 2000 and 2010

Source: US Census

	2000	2010
Vacant housing units	738	572
For sale	51	104
For rent	137	138
Rented or sold; not occupied	27	11
For seasonal, recreational or occasional use	433	196
For migrant workers	1	1
Other vacant / boarded up / abandoned	89	122

E. Household Characteristics

Households. Presently, the City of Benson has 2,369 households, representing an increase of 285 from Census 2000. Despite having more households, the average household size decreased slightly from 2.22 in 2000 to 2.12 in 2010. The increase in households reflects the increase in total population. The national trend of new intergenerational households as well as non-related individuals living together for economic purposes help explain the increase in the number of households. Additionally, the new subdivisions along SR90 may be attracting households from the traditional military housing.

Reasons for the decrease in average household size may include fewer children in households, smaller household size due to an increase in single-parent households, and the general on-going trend of smaller households. Another possibility is that larger families with children are choosing to live on larger, rural properties outside the city limits.

Family households comprise over one-half of all households in the city at 59.3 percent. While family households comprise the largest share of households, non-family/single person households and households containing individuals aged 65 and older have all reported increases since 2000. As the City's population ages, the needs and demand for housing may change away from traditional 4, 5, and 6 room single-family homes to smaller housing units such as townhouses, apartments and other compact dwelling units. Note that Table 4 Housing Units, Number of Rooms shows two room units have increased dramatically between 2000 and 2010.

Technical Appendix

Table 9: City of Benson Households, 2000 & 2010

Source: US Census

	2000	% of total	2010	% of total
Number of households	2,084	--	2,369	--
Persons per household	2.22	--	2.12	--
Family households	1,374	64.6%	1,404	59.3%
With own children under 18	394	18.9%	401	16.9%
Married-couple family	1073	51.5%	1071	45.2%
With own children under 18	249	11.9%	240	10.1%
Female householder; no husband present	191	9.2%	230	9.7%
With own children under 18	94	4.5%	102	4.3%
Male householder; no wife present	110	5.3%	103	4.3%
With own children under 18	--	--	59	2.5%
Non-family households	737	35.4%	965	40.7%
Householder living alone	625	30.0%	830	35.0%
Householder 65 years and older	363	17.4%	479	20.2%
Households containing individuals aged 65 and over	944	45.3%	1118	47.2%

Table 10: City of Benson Households by Age of Householder, 2000 & 2010

Source: US Census

	2000	% of total	2010	% of total
Total population	4,711	100.0%	5,105	100.0%
Persons in households	4,620	98.1%	5,031	98.6%
Persons in group quarters (non-household)	91	1.9%	74	1.4%
Householders (owner-occupied units)	1,570	---	1,646	---
15 to 24 years	11	0.1%	20	1.2%
25 to 34 years	66	4.2%	98	6.0%
35 to 44 years	151	9.6%	122	7.4%
45 to 54 years	255	16.2%	194	11.8%
55 to 64 years	309	19.7%	343	20.8%
65 to 74 years	431	27.5%	443	26.9%
75 to 84 years	279	17.8%	316	19.2%
85 years and older	68	4.3%	110	6.7%

Technical Appendix

Table 11: City of Benson, Household Type and Relationship

Source: US Census

	2000	2010
Family householder	1347	1404
Male	1054	1174
Female	293	230
Non-family householder	737	965
Male, Living alone	274	372
Female, Living alone	351	458
Total Households	2084	2369
In group quarters	91	74

Table 12: City of Benson, Family Type by Presence of Children

Source: US Census

	2000	2010
Total Families	1347	1404
With own children under 18 total	394	401
Married-couple families	1073	1071
With own children under 18 years	249	240
Female householder families, no husband present	191	230
With own children under 18 years	94	102
Male householder families, no wife present	93	103
With own children under 18 years	51	59

F. Housing Value

Housing value. Table 13 lists the median home value of owner-occupied housing units. The median value of home prices across the city, county and state all rose between 2000 and 2010. The median value of a home in Benson in 2010 nearly reached the median value of a 2000 Cochise County home and 2010 Cochise County median values surpassed the 2000 median state value.

Table 13: Average Housing Value

Source: US Census and 2012 American Community Survey

	Median Value of Home (2000)	Median Value of Home (2012)
City of Benson	\$72,800	\$94,000
Cochise County, Arizona	\$88,200	\$151,800
State of Arizona	\$121,300	\$175,900

Technical Appendix

The majority of homes sold between July 2013 and July 2014 in the City of Benson averaged a sale price of \$86,412 (*flexMLS*). The median sale price of a home in the City of Benson during the same period was \$87,750 (*flexMLS*).

Table 14: City of Benson, Housing Values

Source: US Census and 2012 American Community Survey

	2000	2012
Owner-occupied housing units	778	1665
Less than \$50,000	161	527
\$50,000 to \$99,999	471	402
\$100,000 to \$149,999	140	189
\$150,000 to \$199,999	6	338
\$200,000 to \$299,999	0	133
\$300,000 to \$499,999	0	0
\$500,000 to \$999,999	0	76
\$1,000,000 or more	0	0
Median	\$72,800	\$94,000

Table 14 shows that the vast majority of housing in Benson is valued at under \$99,999 (1002 units versus 614 units valued at \$100,000 or above). That makes 2/3 (67%) of the owner occupied housing values affordable to the families having an income at or above the Cochise County mean family income of \$61,380.

Table 15: Home Sales by Price in Benson Area

Source: flexMLS

Price Range	2000	2010	7/13-7/14
\$29,999 and below	14	1	10
\$30,000 to \$39,999	13	1	2
\$40,000 to \$49,999	16	0	3
\$50,000 to \$59,999	12	1	3
\$60,000 to \$69,999	12	1	2
\$70,000 to \$79,999	15	4	0
\$80,000 to \$89,999	16	1	1
\$90,000 to \$99,999	11	2	3
\$100,000 to \$119,999	16	5	3
\$120,000 to \$139,999	7	3	6
\$140,000 to \$159,999	6	4	5
\$160,000 to \$179,999	2	8	2
\$180,000 to \$199,999	2	3	1
\$200,000 to \$249,999	2	1	1
\$250,000 to \$299,999	0	1	0
\$300,000 to \$399,999	0	0	0
\$400,000 and over	1	0	0

Technical Appendix

Table 16: City of Benson, Gross Rent

Source: US Census and 2012 American Community Survey

	2000	2012
Specified renter occupied units (cash)	515	621
Less than \$200	85	0
\$200 to \$299	78	76
\$300 to \$499	205	103
\$500 to \$749	102	288
\$750 to \$999	12	70
\$1,000 and over	0	84
Median (dollars)	\$351	\$653

Table 17 below summarizes sales data from the MLS, indicating that in the past several years, an increasing percentage of homes sold in Benson were sold less than \$100,000.

Table 17: Number and Percentage of Houses Sold under \$100,000

Source: flexMLS

	2010	2014
Total houses sold	36	42
Houses sold sales price below \$100,000	11	24
Percent of total homes sales price below \$100,000	30.6%	57%

G. Real Estate Survey

The City of Benson conducted a real estate survey in August 2014. In the survey, thirteen real estate firms/agents actively selling property in the City of Benson were polled on the demand they were seeing for purchase of homes, house rental and apartment rental as well as how well they can meet the needs of their customers based on the existing housing stock of the City of Benson. The following tables illustrate the results of this survey:

Table 18: Real Estate Survey: Home Value Demand

In the City of Benson, people are looking to buy a home for:

Rank	
1	\$50,000 to \$100,000
2	Under \$50,000
3	\$100,001 to \$150,000
4	\$150,001 to \$200,000
5	Over \$200,000

Technical Appendix

Table 19: Real Estate Survey: House Rental Demand

In the City of Benson, people are looking to rent a home for:

Rank	
1	<i>\$500 to \$1,000 per month</i>
2	<i>Less than \$500 per month</i>
3	<i>Over \$1,000 per month</i>

Table 20: Real Estate Survey: Apartment Rental Demand

In the City of Benson, people are seeking to rent an apartment for:

Rank	
1	<i>Less than \$500 per month</i>
2	<i>\$500 to \$1,000 per month</i>
3	<i>Over \$1,000 per month</i>

Technical Appendix

6. Water Resources Technical Appendix

Based upon Arizona Department of Water Resources Data, water use categories in the San Pedro River Basin (inclusive of all tributaries and washes flowing into the San Pedro in the United States and Mexico) are as follows:

Table 1: Annual Groundwater Budget in the Benson Sub-area

Source: Upper San Pedro Basin AMA Review Report 2005-AZ. Dept of Water Resources

Outflow from Groundwater	Acre-Feet
Riparian use	9,650
Agricultural use	5,000
Stock Demand	160
Industrial	800
Municipal	3,300
Underflow and baseflow out	200

Water supply. Fluid Solutions of Phoenix completed a groundwater study for the City of Benson in October 2000, *Groundwater and the City of Benson*. The following narrative summarizes the findings of this report.

Estimates indicate that the existing water service area will require up to 3,000 acre-feet of water (977,553,000 gallons) per year, with an additional 12,000 acre-feet per year (3,910,212,000 gallons) required to serve the annexed lands if they were developed as residential communities.

The Arizona Department of Water Resources administers the Assured and Adequate Water Supply Program. In areas outside of existing active management areas, new subdivisions must conduct hydrologic investigations to demonstrate that there is a 100 year supply of water for planned developments. Should these demonstrations either fail or not be performed, prospective purchasers of the real estate must be informed that inadequate water resources exist to serve the development.

The *Groundwater and the City of Benson* report also indicates studies conducted on behalf of local landowners have demonstrated to the Arizona Department of Water Resources satisfaction that in addition to the water currently being served to the City core there is a 100-year supply totaling at least 15,000 acre-feet (4,887,765,000 gallons) per year.

Future basin-wide water usage. According to the Climate and Social Vulnerability Study (Liverman, Merideth, Holdsworth, *University of Arizona*) there are approximately 40 private water companies and municipal systems using water in the entire San Pedro Basin. The City of Sierra Vista is the major water user as it is the largest incorporated area.

Sierra Vista, including Fort Huachuca, are identified as the most important influence on water in the San Pedro Basin-having increased in population by 16 percent from 2000 to 2010. Much of the growth in and around Sierra Vista is due to Fort Huachuca personnel and related industries. However, Branch Realignment and Closure restructuring expected to occurred in 2013 and 2015

Technical Appendix

that will likely affect the Fort. It is unknown if the Fort would close, have a reduction of missions or be assigned new units. It is well understood that water supply is a major issue for Fort Huachuca and the Sierra Vista area.

The San Pedro River System. The San Pedro River Valley consists of alluvial deposits eroded from the surrounding mountain ranges. The upper (most recent) alluvium deposits form the current San Pedro River floodplain. Older alluvial materials—deposited under different tectonic and climatic conditions—lie beneath this younger alluvium and are exposed as eroded hills between the San Pedro River floodplain and the adjacent mountain fronts. The older alluvial material is believed to be in excess of 2,000 feet thick in the center of the valley.

All existing and currently planned future wells for the City of Benson will draw water from underground reserves found in the alluvial sediments eroded from the mountain fronts. Groundwater in this portion of the basin flows generally to the northeast.

The City of Benson currently maintains six wells for its potable water supply. Wells within Benson produce water from a confined basin fill aquifer found beneath a thick clay layer. This aquifer unit contains both sand and boulders. The confining clay layer varies from 400 feet to 800 feet thick. To the west, decomposed granite, sand and boulders are deposited on top of the confining clay. Along the San Pedro River, an unconfined floodplain aquifer likely exists, but is difficult to accurately define based upon existing descriptions.

Additionally, there are two wells at the Benson airport which serve the airport facilities.

There is one well in the Whetstone Ranch area, which serves existing residences. As the area continues to develop, more wells may be necessary within the Whetstone Ranch. At this time, the existing Whetstone Ranch well is not connected to the water system in Benson proper and is therefore considered a separate water system from the City of Benson, though city personnel operate and maintain the Whetstone Ranch facilities.

The San Pedro River, in the vicinity of the City of Benson, is identified as an “intermittent” stream; flowing seasonally in response to extended periods of precipitation and drying up during the dry seasons of the year. Intermittent streams go dry when withdrawals made from the river system (including the subsurface floodplain aquifer) are greater than the in-flows to the river system.

Existing withdrawals from the San Pedro River system include:

- The St. David and Pomerene diversions
- Groundwater pumping from the floodplain aquifer
- Natural water loss such as evaporation and evapo-transpiration of riparian vegetation

Inflows to the San Pedro River system include:

- Surface flow from upstream areas
- Run-off from local precipitation
- Underground flow (from the upstream floodplain aquifer)
- Groundwater flow (from the basin fill aquifer into the floodplain aquifer)

Technical Appendix

After the withdrawals of surface flow by the St. David and Pomerene diversions, there is commonly not enough water left to support the river flow north of the existing service area except during the times of the year receiving the most precipitation.

Impact of City of Benson pumping on the intermittent nature of the San Pedro River. As mentioned above, the San Pedro is an intermittent stream flowing only after extended periods of precipitation. The presence of the St. David clay isolates the groundwater in the basin from the San Pedro River. Leakage of groundwater from beneath the clay layer may be present; however, it is not substantial enough to support flow in the San Pedro River. The existing city wells draw water from beneath this clay layer and it is therefore possible that the City may generate increase inflow to the San Pedro via leakage from water and wastewater pipes, percolation from irrigation (of lawns, golf courses, gardens, parks, etc.) and through percolation from irrigation with reclaimed wastewater near the treatment plant. In brief, the presence of this clay layer—which serves to isolate the city’s wells from the San Pedro River—current and future pumping by the city is presumed to not alter the existing intermittent flow patterns of the river.

7. Public Participation Summary

Comments from Public Workshops. Throughout the duration of the General Plan's development, numerous opportunities were offered for the public to contribute their ideas, critique and commentary to the Plan's development process. The comments of the public serve as a prime mover of the General Plan, as they form the direction of the plans goals, objectives and ultimately policies and implementation. The following list represents the comments fielded at the public input sessions held during calendar years 2011, 2012 and 2014.

City of Benson Vision Statement Comments

remove the word "progressive"

encourage people to want to live in Benson

Cost of Development Related Comments

Have developments pay for parks, pools, trails or set aside open land.

Create a teen hangout

Growth Area Related comments

Do not pursue additional annexations

Encourage community revitalization

Develop historic overlay zoning

Water conserving landscaping

Coordination between city, utilities and developers

Economic Developed Related Comments

Acknowledge railroad next to airport

Create overlay district for downtown

Coordinate with utilities

Rails to Trails

Open Space Related Comments

Develop parks master plan

Pedestrian access to recreation areas

Rails to Trails and work with landowners for access

Water Resources Related Comments

Encourage water conservation in new developments-goal of "x" gallons

Perform water testing

Environmental Planning Related Comments

Monitor ground water sources

Encourage alternative energy

Encourage gray water use

Enhance city pool so people don't need private pools

Technical Appendix

Housing Related Comments

Encourage people to clean up/maintain their houses and yard via community-wide coordination and volunteer clean up days

Try to preserve historic properties, but be able to remove them if necessary

Encourage rational housing ordinances

Try to secure grant funding for city and residents

Circulation Related Comments

Instead of promoting public transportation, encourage walking or bicycling

When considering walking connectivity, connect Lions Park to school

Consider a truck bypass around city

Keep truck traffic within city, but make safer

Consider turning 4th and 5th streets into one-way streets with diagonal parking

Land Use Related Comments

Don't limit city-wide design to southwestern look

Consistently update and enforce codes and regulations

Pursue grant funding for historic structures

Relax regulations for historic buildings/districts

Comments from Survey Questionnaires. The following public commentary was collected via Survey Questionnaires distributed at the public work sessions.

What are the greatest challenges facing the City of Benson?

stray dogs, vacant homes, junky yards, trailers w/out skirting

What are your proposed solutions?

Enforce laws to clean up town

How can the City strive to reach those solutions?

have City employees make lists of problem areas/places

How do you conceptualize Benson?

Prefer rural

Rural-spread out

What needs to change in Benson to create that ideal concept?

Force homeowners to follow laws

What are some concrete steps to implement those changes?

Letter to owners and fines

Technical Appendix

Best things about Benson

Bedroom community to Tucson and SV

Friendly

Worst things about Benson

Run down homes near park

Dirty

Key Words to describe ideal vision and goals

Old Benson as nice as new Benson