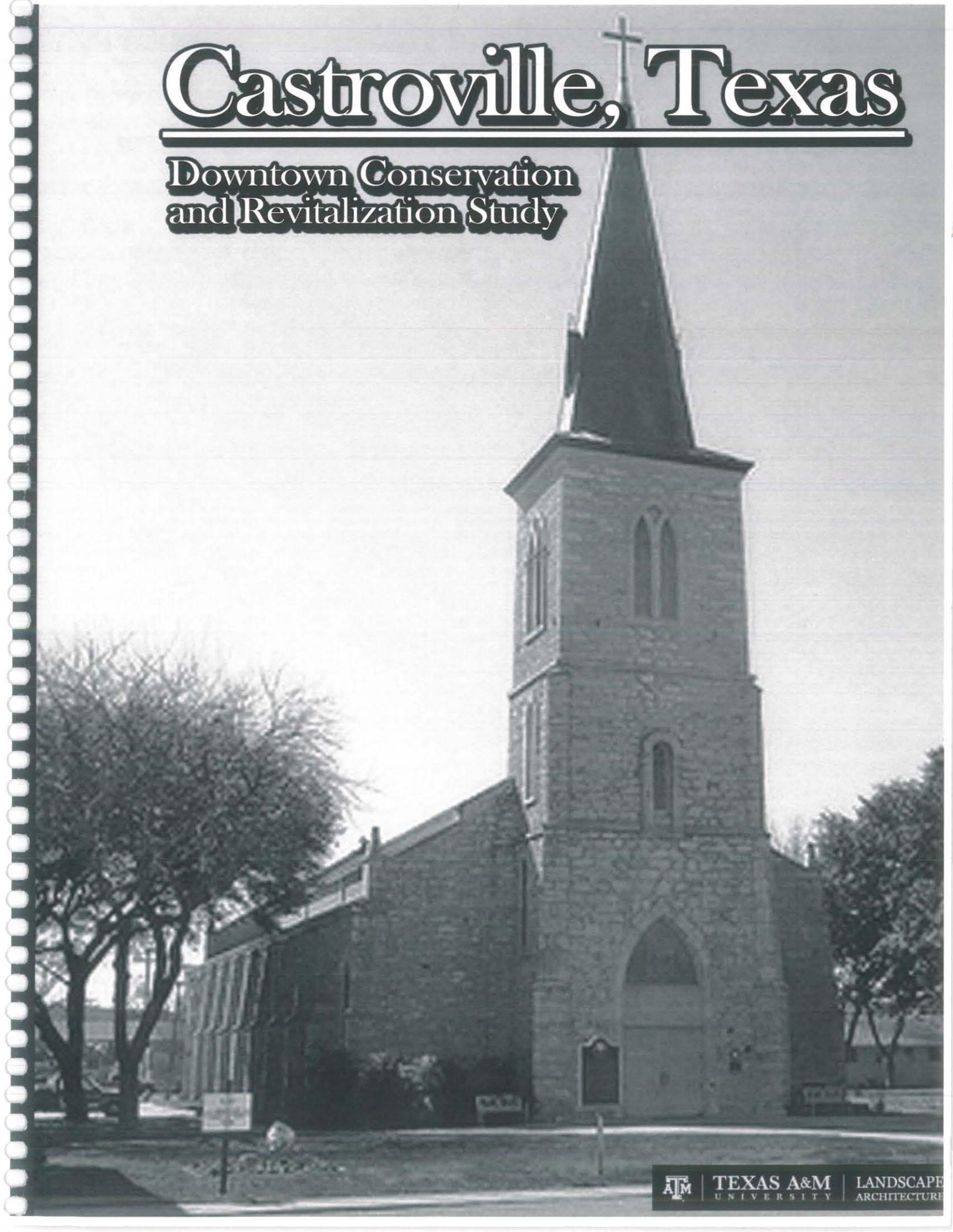
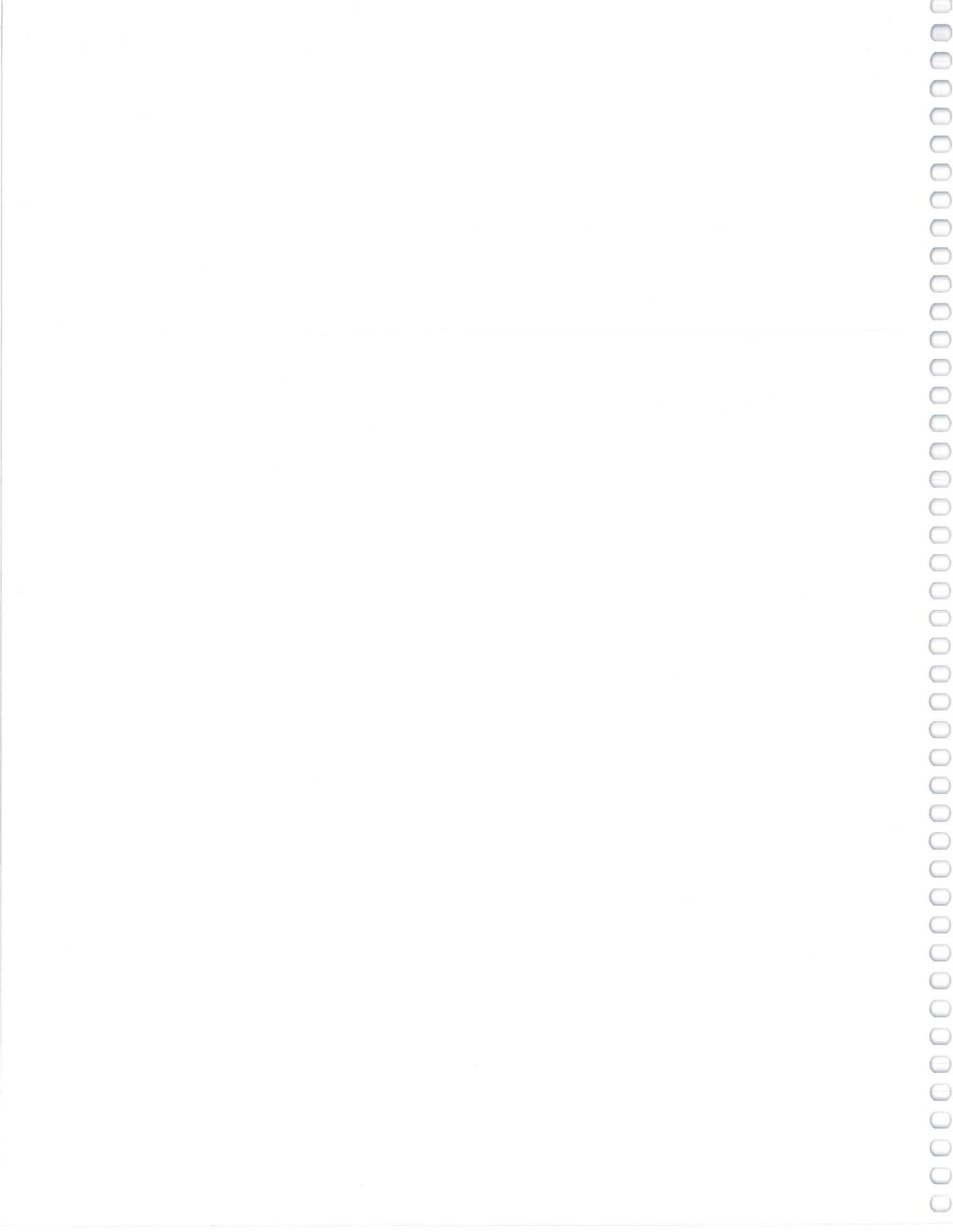


# Castroville, Texas

## Downtown Conservation and Revitalization Study





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**Castroville, Texas:  
Downtown Conservation  
and Revitalization Study**

**Prepared by: Partnership for Community Outreach**

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Our thanks also are extended to the all citizens too numerous to name who participated in our general inquiry meeting early in the process, to those who attended the final presentation, and especially to the families who so graciously opened their homes to members of the class during our stay in Castroville. The charms of Castroville that may be seen in its distinctive architecture, culture, and environment are only pale reflections of the hospitable and generous people who make up the community.



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## Introduction

The purpose of this collaboration between the City of Castroville, Texas, the Partnership for Community Outreach, Department of Landscape Architecture and Urban Planning, College of Architecture, Texas A&M University, with the advisement of Mr. Henry Ortega and Ms. Juana Salazar of Paul Anthony + Associates, Architects of San Antonio, Texas is to conduct an exploratory investigation of the City and its immediate environs to establish guidelines for the restoration and revitalization of the downtown and its context through historic conservation and urban redevelopment. The City of Castroville is rich with historical, architectural, and cultural resources to be preserved as the permanent heritage of the community. An investigation of strategies for the preservation, conservation, and adaptive reuse of historical and community resources, in concert with actions to satisfy existing and future needs of the community, are the primary objectives of this investigation. The impetus for future redevelopment is to consolidate and optimize the use of the community's available resources to improve the potential for tourism as an integral component of the City's future economic base.

The investigation was conducted by fourth-year Landscape Architecture students at Texas A&M University. The educational benefits of the collaboration derive from the exposure of students to the complexities of community redevelopment and revitalization planning and design. This exposure and the experience of conducting an investigation to identify and address the planning and design issues involved are the primary educational considerations of the undertaking.

The benefits accruing to the City of Castroville result from the documentation of the City's available resources and historic conservation sites, and to propose preliminary planning and design studies that exploit those resources to satisfy current and future needs of the community.

The primary benefit of this agreement is to collaboratively investigate ways to realize the goals of the community through faculty and student participation in the process. The educational aims of the study are:

- Enhance the learning experience of the student through service learning opportunities;
- Prepare students with the abilities and skills necessary to deal competently with the physical, social, cultural, economic, and technical complexities and challenges embedded in community redevelopment planning and design;
- Provide useful service and assistance to the City in support of its internal decision-making process.



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## Scope of the Work

The purpose of this investigation is based on a mutuality of interests among the City of Castroville, The Department of Landscape Architecture and Urban Planning, and Paul Anthony + Associates who provided project assistance and monitored the progress of the work with support from its licensed architects and planning professionals. The scope of the work for the project described herein included:

- 1. Inventory of existing community resources to include the documentation of land use, circulation patterns, historic resources, community structure, and open space.**
- 2. Analysis of existing and proposed conditions in the community that must be considered prior to the preparation of plans for future conservation and redevelopment activities.**
- 3. Determination of future goals for downtown redevelopment, historic and open space resources conservation, adaptive reuse of existing facilities, and urban expansion.**
- 4. Development of broad concepts for the future of the existing downtown and related growth areas at the margins of the community.**
- 5. Development of alternative design scenarios for the future disposition of Design Emphasis Areas in the downtown and related areas.**
- 6. Final Report documenting the findings of the investigation, alternative Urban Development Scenarios, and the Design Emphasis Areas outlined above.**



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## Project Intent

### Mission Statement:

Assist the city of Castroville, Texas in creating a vision to guide the economic development and physical rejuvenation of the community while preserving and celebrating its cultural and architectural heritage. This vision is to insure that all future building and redevelopment efforts contribute to the holistic improvement and long-term viability of the city.

To achieve this, the following goals have been established to guide this investigation.

### Project Goals:

#### 1. Identity

Maintain the authentic character and identity of the City by protecting the community's cultural and historic resources, preserving or adaptively reusing the historic buildings in the community, preserving the downtown historic district, preserving and promoting the Alsatian heritage, and unifying the community now physically divided by US Highway 90.

#### 2. Tourism

Create an attractive tourist destination by providing venues for a variety of community activities, continuing development of the City by employing architecture reflective of the distinctive architectural character of the community, providing attractions with culturally relevant signage to inform and direct visitors, and exhibiting the unique architecture and traditions of Alsatian heritage.

#### 3. Economic Viability

Create a sound economic base for the community by encouraging economic development, promoting local tourism, using the area's natural, cultural, and agricultural resources wisely, and providing new opportunities such as living accommodations and support services for area retirees.

#### 4. Accessibility

Provide convenient, non-conflicting access within the community by coordinating regional thoroughfare development, eliminating conflicts between vehicular and pedestrian traffic, and providing convenient and pleasant pedestrian access throughout the community

#### 5. Function

Provide effective functional organization of the community by providing commercial areas,

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services, and facilities for the population groups most likely to exist in the future, locating city facilities for optimum availability to the community while avoiding conflicts between commerce, City services, and other activities or circulation.

#### **6. Safety**

Foster a safe and secure environment by providing safe pedestrian crossings at US Highway 90 intersections throughout the corridor, providing visibility and accessibility to the Medina River, creating opportunities for regular activity and visibility within the downtown, providing safe and visible parks and recreation facilities, and offering secure living areas for citizens, to include the aging population.

#### **7. Aesthetic Quality**

Assure a high aesthetic quality in the community by providing shady, tree-lined environments along City streets, provide protection for the health and viability of the wooded uplands and Medina River corridor, providing visual and physical access to the uplands and the Medina River, maintaining a consistent heritage based architectural style for buildings and signage, and maintaining the historic buildings and sites within the community.

#### **8. Healthy Community**

Provide a healthy community by making community services and shopping opportunities convenient for pedestrians, providing non-motorized transportation paths throughout the City and surrounding area, providing opportunities for growing and marketing local produce, reducing air and water pollution through the regulation of waste and chemical control agents.

#### **9. Healthy Environment**

Protect and enhance the City's unique environmental setting by protecting the fertile farmland and scenic resources surrounding the Medina River, protecting the area's natural water and land resources, protecting wildlife and vegetation, and expanding the City's influence through extraterritorial jurisdiction and annexation.

#### **10. Quality of Life**

Improve quality of life in the community by encouraging a vibrant economy to support a diverse range of housing options for all stages of life, providing parks, walkways, public gathering areas and recreational opportunities, and planning and managing community growth consistent with community traditions and values.

## Planning Process and Schedule of Work

The work of this investigation was undertaken with a series of related steps. The first task was to investigate the existing conditions of Castroville to determine whether changes were desirable, and if so, what changes might be made that would lead to the satisfaction of the project goals.

Once the initial data had been collected the class undertook an analysis of what had been learned to clarify the existing conditions, to identify any unresolved problems with the physical setting of the community, and to reveal areas of potential for realization of the project goals.

To determine the resources available to the community, a series of studies were conducted. From these it became clear what the community had to work with and what opportunities presented themselves for future improvements in the City's physical, functional, and ecological infrastructure.

To assess the potential for comprehensive resolution of the project's integrated goals, alternative Urban Development Scenarios were developed for the community to establish the areas of future design emphasis and their interrelationships among one another and the community at large. The Urban Development Scenarios provided both a framework for future growth of the community and to establish the relationships for short-term development projects within the historic downtown.

The Design Emphasis Areas were investigated in detail to establish the areas of change to be addressed through future redevelopment and revitalization efforts. Upon conclusion of the investigation of the Design Emphasis Areas, this final report was prepared to convey the information collected to the citizens of the City of Castroville.

	1 19-Jan	2 25-Jan	3 1-Feb	4 8-Feb	5 15-Feb	6 22-Feb	7 1-Mar	8 8-Mar	9 15-Mar	10 22-Mar	11 29-Mar	12 5-Apr	13 12-Apr	14 19-Apr	15 26-Apr	16 3-May
Inventory																
Analysis																
Programming																
Urban Design																
Pres Prep																
Site Design																
Final Doc																
Field Trip to Castroville																
Client visit to A&M																
Collaborators visit to A&M																
Final Pres to Castroville																



## Inventory of Community Resources

An analysis of existing conditions has been determined by investigation of the below-listed factors. From these investigations, a determination of existing problems and opportunities related to the existing urban and environmental structure as it pertains to future growth and redevelopment is provided. Areas of Investigation:

### **Cultural Factors**

1. History and Culture
2. Social and Economic Conditions
3. Community Services
4. Circulation and Traffic
5. Utilities and Services
6. Land Use
7. Zoning and Ordinances

### **Environmental Factors**

8. Geology and Soils
9. Topography
10. Hydrology
11. Vegetation
12. Wildlife
13. Climate
14. Visual Quality







## Introduction

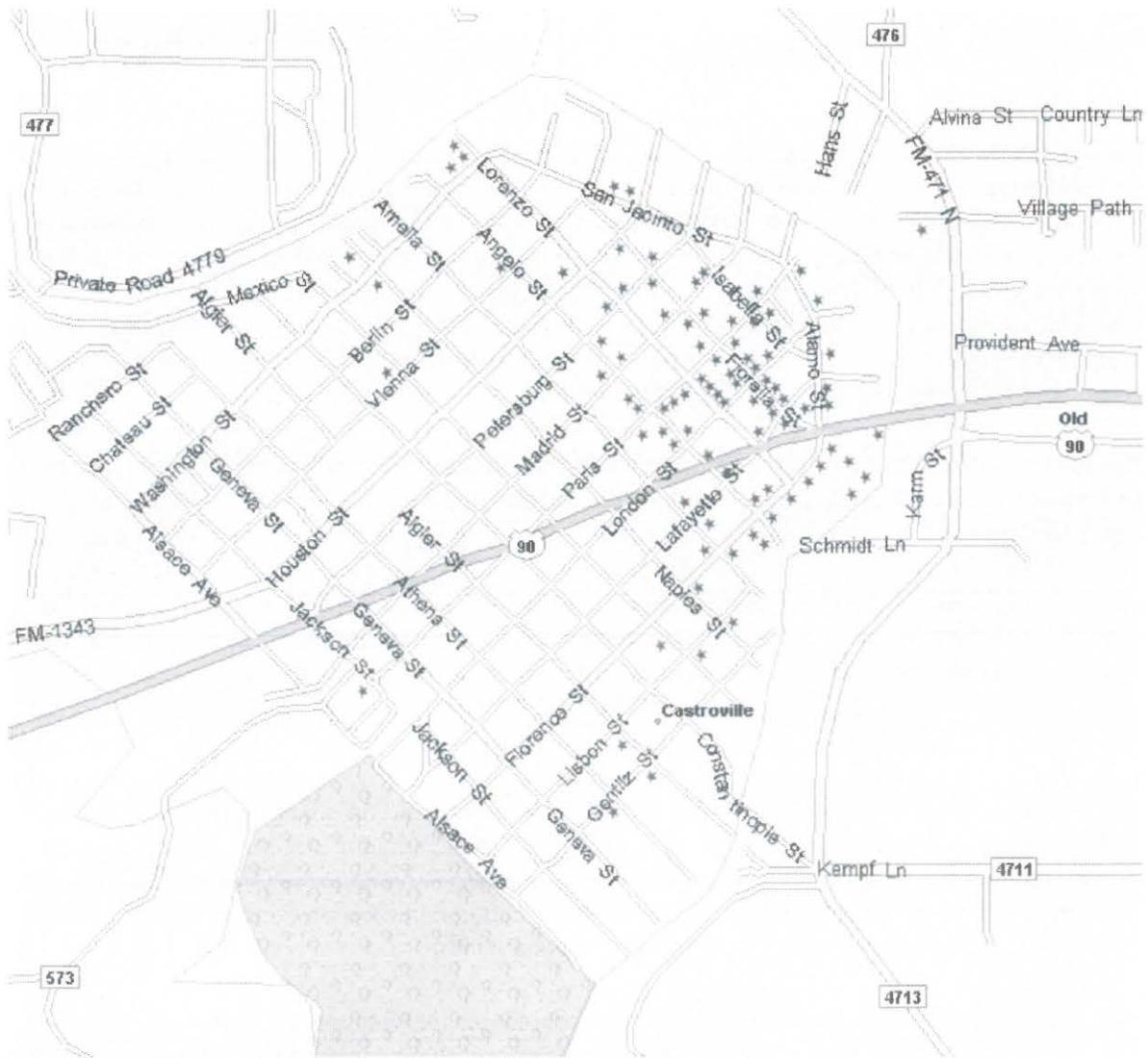
Castroville is located on the Medina River and U.S. Highway 90 twenty-five miles west of San Antonio in eastern Medina County. The town was named after its founder Henri Castro, a Franco-American who sought to settle uninhabited land in Texas. Henri Castro negotiated an impresario contract on January 15, 1842 with the Republic of Texas and established the first of his land grants. The grant began four miles west of the Medina River and encompassed a wide range of frontier lands in Comanche territory running along the Medina River. He personally purchased sixteen leagues from John McMullen of San Antonio and soon began to colonize along the Medina River.

To aid his colonization, Castro went on to campaign in Europe in search of possible settlers. He returned to his native home and recruited citizens within the surrounding towns of France. Several Alsatian farmers joined Castro on his journey back to Texas, in hopes to settle the newly claimed land. On September 2, 1844, Castro set out from San Antonio with his colonists, accompanied by Texas Ranger John C. Hays and five of his rangers, to decide upon a site for settlement. Throughout their journey they were plagued by cholera, invaded by locusts, and raided by Indians. Located on a level, park-like area covered with pecan trees, they crossed the Medina River and made their first camp on what is presently known as September Square. Tucked in a sharp bend on the Medina River, Castroville was established. (Weaver, D. B.)

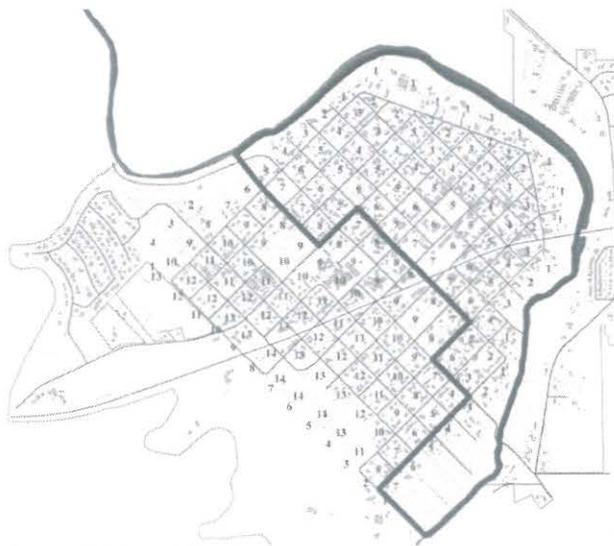
Castro patterned his town after European villages. His city was organized in a grid pattern with a strong town center and lots surrounded by small individual farming plots radiating out from the center. The streets were named after capitals of Europe and in honor of Castro's relatives and friends. In 1844 the citizens of Castroville built St. Louis Catholic Church, the first church in Medina County. The community raised corn, cattle, horses, hogs, poultry, and cotton. (Weaver, D. B.)

Castroville's architectural style was modeled after the European architecture of Alsace, France. The house builders used rough-cut stone and timber combinations that were covered in limestone plaster. The houses were not arranged along parallel lines but rather, spread out over many acres and separated by the grid-patterned streets. Stores were established around Houston Square and St. Peters Church. "In 1848 the Texas legislature established Medina County and designated Castroville its county seat. In 1853 Castro donated two lots for the site of the new courthouse, which when completed in 1855, served as a school. A rock dam, still in place today, was built in 1854 to furnish power for the gristmill. During the Civil War, wagon trains loaded with freight stopped overnight at Castroville on their way to Mexico where goods could be shipped, and the town thrived. By the mid 1860s Castroville was the twelfth largest city in Texas. In 1884, Castroville reached a population of 1000. Hondo became the county seat in 1892. Castroville citizens voted to divide their town, and it remained unincorporated until 1948." (Germann, J. John)

Castroville has been recognized as a National and Texas Historic District. The historic walking tour displays many of the ninety-seven Historical American buildings in Castroville including the Landmark Inn, the St. Louis Catholic and the Zion Lutheran churches, the Moye Center, the Tarde Hotel, and Henri Castro's original homestead. The image below highlights these locations.



Historic Tour <http://castrovilletx.com/castroville-texas-historic-homes.htm>



National Historic District

## Existing Conditions

According to current surveys of historic resources conducted in 2000 and 2001, 446 historic properties were identified within the city limits, of which one half are from the 19<sup>th</sup> century. The myriad of historic resources range from medium significance to landmark priority. The majority of historic structures are domestic, and amongst these are the most dilapidated within the community. The City's historic restoration is directly linked with the high expense of revitalizing these structures. The majority of the people moving to Castroville are living within the newer subdivision surrounding the community rather than taking on the tedious projects of restoring the historic sites. The number of documented historic homes is almost overwhelming and due to the economic resources within the town, remain impractical to repair. The homes included along the historic walk and surrounding areas are the few exceptions to this.

The City of Castroville enacted a local historic preservation ordinance along with the historic districts in 1975. The historic district has changed the zoning map to include three contiguous districts, 2 residential and 1 commercial. The boundaries of these districts match those of the National Register District. The local district boundaries cut through half blocks and zigzag along individual lots, diminishing the continuity of the district. While the ordinance was intended to protect the designated district, it only had jurisdiction over properties identified in a 1969 survey completed by the Texas Historical Commission.

Currently there are two organizations that oversee the development and preservation of historical and cultural resources in Castroville. These organizations are the Medina County Historical Commission and the City of Castroville. Their current preservation activities include various zoning and ordinance implementation, as well as erecting plaques and markers such as the Pioneer Castroville Home, Special Castroville Marker, and Texas Historical Markers. The Medina County Historical Commission has not been in the forefront of the Castroville residential preservation efforts; however, they support it from the sidelines.

The current Historical Preservation Organizations and Activists within the community include:

- Castroville Conservation Society
- The Castro Colonies Heritage Association
- Castroville Garden Club
- The Alsatian Club
- St. Louis Church
- Alsatian Dancers

The strong cultural divide between the new and the old residents hinders the City from progressing past their current state. Their social divide between historic preservation and new economic development only further enhances the stunted growth of the movement towards a more culturally and historically cohesive town. The existing conditions must be revitalized and new economic enhancements implemented to bring about the full potential of a redevelopment of Castroville.

### Cultural Traditions, Festivals, and Gatherings

- The Alsatian Dialect in Castroville

Although there are only a handful of people that still speak the Alsatian dialect, it still plays a critical role in Castroville's history. The Alsatian spoken in Castroville was derived from the emigrants who came from Haut-Rhine (Upper Rhine). The dialect spoken in this region is slightly different from Bas-Rhine (Lower Rhine), from Colmar to the Strasbourg area. In Castroville, the Alsatian language has scarcely changed since 1844, except for the occasional English word where there is no Alsatian word.

On average, more men tend to speak the dialect than do women. This was perhaps established years ago intended by the men to keep women from knowing certain things. The language can most certainly be heard especially during special events such as St. Louis Day, holidays and other events, and more so if beer and food are involved. Libby Tschirhart, custodian to the Landmark Inn and 4<sup>th</sup> generation Castrovillian remembers when the language was spoken at the Tschirhart ranch: "I specifically remember times during hunting season when everyone gathered at the camp house after coming in from "making a hunt"...friends and family (mostly male) would "hang out" (wait) to see what was killed, "bagged"...brought in. Whether or not anything was shot, the eve after hunt would begin (and continue way into the night ...even wee hours of the morning...) with a card game called "pitch" and as the night progressed so would the drinking, fun and Alsatian spoken ... at times even humorous tempers (Swearing in Alsatian) around the table might flare but almost always with no harm intended."(Tschirhart, L.)

Over the years, there have been many attempts to preserve the language. The most notable perhaps was the Alsatian Dictionary written by Ralph "Blackie" and Annette Tschirhart, with the help of their daughter, Connie Tschirhart Balmos, and granddaughter, Cathy Rihn Lester. They started with a small handbook and then later wrote the 90 page "Wordbuch". There has also been a group of citizens who gather monthly to speak the language, though this is on the decline.

- St. Louis Day

This annual festival is held on the Sunday closest to August 25, under the shady pecan trees of Koenig Park on Angelo Street. The festival's roots run deep, with the first church picnic being held over 122 years ago. Visitors travel thousands of miles to attend this event, which has been dubbed the "Homecoming for the State of Texas" by the Texas Tourist Agency. The festival features heaping Alsatian-style sausage and barbecued beef plates, live entertainment including Alsatian dancers, kiddy rides and games, a silent auction, craft booths, bingo, a raffle and more. The event begins with a 9:00 a.m. Mass in the historic St. Louis Catholic Church. St. Louis Day is perhaps the most culturally significant holiday to the people of Castroville. It is a day of festivities all in honor and welcoming of the people of Alsace and the people within Castroville.

- **Pilgrimages to the Cross- Rogation Days and the Blessing of the Fields**

Beginning at St. Louis Church, the priest and congregation would recite the rosary from the doors of the chapel to the cross on the hill. The pilgrimage that traveled to Cross Hill in this tradition would pray over the agricultural fields of Castroville's in hopes to bless the new season of crops. This would take place not only on Rogation Days but on the days of Lent as well. This tradition was said to bring rain and prosperity to the people of the town.
- **Tuesday's were Wedding Days**

Traditionally in the early days of Castroville, Tuesday's were the days for weddings. Although the reasoning is unclear, it still remains an interesting aspect of Castroville's culture.
- **All Saints Day and All Souls Day Luminaries**

One of the newer traditions of Castroville, this is held November 1<sup>st</sup> and 2<sup>nd</sup> to commemorate the Catholic celebration of the Day of the Dead. Many residents and visitors attend the graves of their loved ones and leave flowers as remembrance. In recent times, luminaries introduced by the Mexican influence have also been placed at the grave sites.
- **St. Nicholas Feast Day- Stockings, "More important than Christmas Morning" (Henderson)**

Prominent within the Catholic culture, December 6 marks the feast of St. Nicholas in which children would hang stockings to be filled with candy and small toys. The children would deem this day more important than Christmas morning.
- **New Years Bread- God Parents**

Using recipes passed down from previous generations, holiday cooks make New Year's Bread, a slightly sweetened yeast concoction and pastette, which is a hearty marinated pork pie. Using a mix with various spices, raw pork, cheese and onions, God children would give this bread to their God parents on New Year's Day. This is also sold in the Haby Alsatian Bakery.
- **Home-made wine**

The colonist who arrived in Texas in 1844 found their new fields more suitable for corn but they did make wine from the wild mustang grapes along the Medina River and the sweet red berries of the Agarita bush. Gerald Kempf and several locals still pick those fruits carrying on the 150 year old home made wine tradition. Crushing his fruit with a baseball bat, he uses his figs, pears, and pomegranates to ferment a unique wine blend.
- **Hospitality- Rodeo Trail Rides**

In the mid-1900s, trail ride reenactments from the west to the San Antonio rodeos would stop in the town of Castroville. The people of the town would open their homes to the trail riders to rest and feast before continuing on their journey.
- **Sausage Making**

Families gather together to make authentic Alsatian sausage with families in their community. They make the sausage primarily for St. Louis Day and other similar events in the city of Castroville.

- **Fiorella Fridays**

The First Friday of every month, people gather in September Square and along Fiorella Street for wine tasting, live music, artisans and other local attractions.
- **Sister Cities- Eguisheim, Ensisheim, Alsace**

March 21<sup>st</sup> 2009, Castroville became sister city's with Ensisheim. Over thirty-two Alsatians traveled from the region of Ensisheim to embark on the twining ceremony of Ensisheim and Castroville. Eguisheim was the first sister city. Many Castroville residents can trace their lineage back to the town of Eguisheim. Both cities remain a strongly rooted connection to the City of Castroville today.
- **The Stork**

In the months of spring, storks migrate from Africa to France to breed. Making nests on the chimney stacks and trees of Alsace, storks were thought to bring happiness and faithfulness to the lives in which they appeared. Often children would place sugar on the window sill in hopes of an exchange with a baby brother or sister. This folk tale carried on tradition in the "little Alsace of Texas" where synthetic storks were given from the sister cities of Ensisheim and Eguisheim to Castroville. Storks reproductions can be found atop much of the Texan architecture around the city of Castroville as symbolic reminders of the town's roots.
- **Alsatian Dancers**

Begun in 1980 when a musician and instructor from Strasbourg, Alsace visited Castroville, he formed the Alsatian Dancers group. Through dance and costume, they perform at various festival celebrations throughout Texas and the U.S. such as the annual Texas Folk Life Festival. In 2000, they celebrated their 20<sup>th</sup> anniversary. Although the group is no longer active, they continue to be a remnant of the culturally rich past of Castroville.
- **Heritage Day**

Held annually the second Sunday of October at the Moyer Center. The Sisters of the Divine Providence host a day of heritage celebration with desserts, hand-made arts and crafts, live music, and children's events, to which all profits go to support the Church and the Moyer Center.
- **Market Trail Days**

(March-December) Held the second Saturday of every month in Houston Square. Local handiwork is exchanged among the craftsmen and people of the town. It serves as a place of cultural connection and community heritage.
- **Friday Night Fever**

(Second Friday of every month from March-November). Monthly event that takes place at Lundquist Automotive on Highway 90 where the people of Castroville and surrounding areas gather to display their vintage cars, bikes, and trucks. The festival includes live music, and food.

## Historic Landmarks or Buildings

- The Henri Castro Homestead (PCH)-



The Henri Castro Homestead - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

Henri Castro selected an entire block of land for his homestead. Castro had a stone house built on his property in 1845 along with another dwelling, two stables, an outdoor kitchen and other buildings. In 1861 the property and homestead was deeded to Castro's adopted son Lorenzo Castro, after the death of both Henri and Amelia Castro. The right half of the existing house is the original two-bedroom house built for Henri Castro. The stone foundation of the kitchen can be found in the back along with a rock lined well. In 1872, Lorenzo sold the eight lots in 1975; the home received a Texas Historical Marker. In addition, the homestead has a National Marker and a Pioneer Castroville House (PCH) marker.

- Landmark Inn and Grist Mill (PCH)-



The Landmark Inn and Gristmill - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

Originally a general store and home of Cesar Monod, the Landmark Inn was located on the freighting route from San Antonio to Mexico, then on Main Street, now known as Fiorella Street. The proximity of the building to the Medina River was extremely profitable for commerce and the buildings on the site are situated in a way to take full advantage of the natural landforms and climate. In 1853, John Vance bought the property and opened his own general store. He later rented rooms to travelers and the place soon became known as the Vance Hotel. Vance built most of the additions including a story and a half residence for his family and a dining room and kitchen. The lead lined tank in the two-storied bathhouse was melted down for the Confederate Amory during the Civil War. In 1925 the entire property was purchase by Jordan T. Lawler and was renamed the Landmark Inn. The Landmark Inn received the National Register of Historic Places in 1972, Historical American Buildings Survey and Texas Archeological Landmark. The Landmark Inn also has two PCH markers, one for the Inn and one for the site of the old kitchen.

- Vance Property

In 1845, George L. Haass and Laurent Quintle bought the riverfront portion of the Vance property. They were responsible for building a stone grist mill and a wood and stone dam across the river to generate water power. Citizens no longer had to go to San Antonio to grind their corn. In 1876, the Courands bought the mill and Vance Hotel. They enlarged and modernized the mill offering lumber milling and cotton ginning, which continued in operation until the 1920's. When Lawler bought the property in 1925, he converted the mill to an electrical generating plant which provided Castroville's first electricity. The property was donated in 1974 to the Texas Parks and Wildlife Department as a State Historic Site. The park contains the dedication site of Castroville and the camp site of the first Castro Colonists.

- Old Standby on Fiorella Street (PCH)



Old Standby - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

The Old Standby was built by Frederick Huechling in 1856-1857 and was established as a saloon/residence space. The 1970's brought major renovations to the building. When the building was sold in 1975 to Mike Hodge, Freda Hensley, and Fred Williams, restoration was underway. Since then, the Old Standby has endured a fire, was turned into a family home, and serves presently as a bed and breakfast.

- Hotel Tarde' on Fiorella Street (PCH)



Tarde' Hotel - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

The Alsatian styled structure was a favorite place to stay from 1852 until 1854. It was noted by Frederick Law Olmstead as the "best Inn," that he saw in Texas. It was originally owned and built by Victor Tarde who entertained a host of famous men

including Robert E. Lee, J.B. Hood, and Earl Van Dorn. The building has had several owners since the Tarde's. The FitzSimon family owned the house from 1898 to 1990. Extensive restorations began in 1990 when the MacPherson's bought the home. The Hotel Tarde has a Pioneer Castroville Home marker and was featured on the Castro Garden Club Sesquicentennial Home Tour on September 3, 1994.

- Moyer Center on London Street (PCH)



The Moyer Center - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

In 1866 Bishop Dubuis of Galveston brought two sisters from Europe to Castroville in order to start a school. By 1870 a two-story, four-room schoolhouse located in the southeast corner of the Moyer center was constructed. The building served as a free public school known as St. Louis School until 1925. The first Convent and Motherhouse was built here in 1873. The Providence Academy was established at the Motherhouse in 1890. Later, the Moyer Military Academy began under the direction of the Sisters of Providence in 1938 at the site. The institution was known as one of the best in the State and served for 21 years. Before the Moyer became a retreat center, it also served as a convent and formation center. The first Catholic Church of St. Louis Parish is also on the Moyer Grounds.

- The Carle Store (PCH)



The Carle Store - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

Built around 1865 by Joseph Krust, the original structure was probably just a single room and cellar now part of the rear wing. In 1873 Catherine Krust sold the property to Joseph Carle for \$1,600. Carle agreed to build a “one room house with porch and kitchen,” to be rented to Catherine for \$1 a year for life. Joseph Carle operated a general store in the building for many years, then “went west” to D’Hanis.

The Belchers bought the property in 1972, and it is now an antique shop in the front, a restaurant in the rear and living quarters on the second floor.

- Das Hiesle

Das Hiesle is the Alsatian term for “*that cottage*”. It was built in the late 1800’s with board and battens construction and was assembled with lumber from another building. Ed A. Tschirhart and his son Blackie Tschirhart are some of the few who have lived within the cottage, built the home.

- The Joseph Courand House



The Joseph Courand Store and Home - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

The store was built by Joseph Courand in 1861 and enlarged in 1868. Courand and then later, his son operated the store until the 1920's. Since then the property has had several owners who always operated as a grocery and general merchandise store--Ed. A. Tschirhart and Son, Frank Keller Grocery and Sonny Mann's Grocery Store. In 1975 Edith Boubel restored the building and converted it to an antique business. Present owners Patricia and Royce Groff continue to lease the store to antique dealers.

- September Square (PCH)



September Square - Photo taken by Leslie B. Snyder

Owned by City of Castroville, this historic plot of land commemorates the location where Henri Castro and his settlers first camped. The pioneers who founded Castroville made a communal shelter on this site shortly after Henri Castro and the first settlers arrived on September 3, 1844. The center monument, erected in 1931 by the Order of the Alhambra of San Antonio, commemorates that event. The two side monuments were installed after World War II, honoring those servicemen who fought and died in defense of their country in World War I and World War II. In September 1994, the sesquicentennial celebration included placing a State Historical Marker honoring Henri Castro, founder of Castroville. Patriotic services are conducted here on Memorial Day and Veterans Day by the American Legion Post 460.

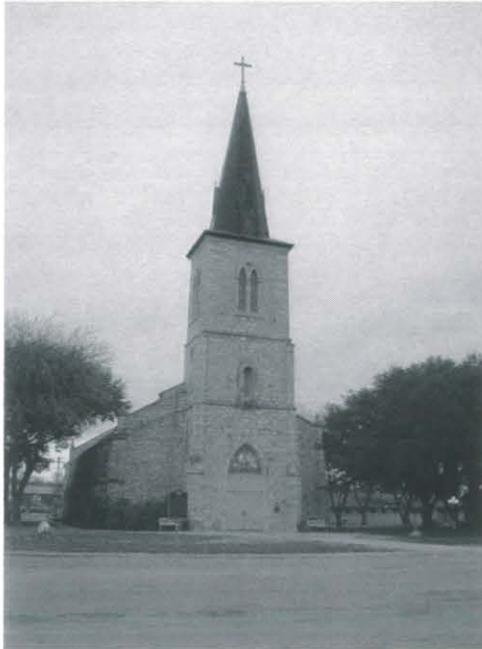
- Houston Square (PCH)



Houston Square-Photo taken by Leslie B. Snyder

Situated in the center of the historic business district, this square has had many uses since 1844. It serves the city as a restful park and is used for many community and historic events. Market Trail Days are held on the second Saturday each month from March to December. On the first Saturday in December, the Castroville Chamber of Commerce hosts "Old-Fashion Christmas." The Square has always been used for parking by St. Louis Church and the businesses surrounding the square. Earlier days saw it used as a baseball diamond, a lighted softball field and a football field by St. Louis Catholic High School in 1947. The beautification efforts of Houston Square were developed through the efforts of the Garden Club, private contributions and the City of Castroville. On the west side six flag staffs were installed by the City, however, it remains a dilapidated fountain with invasive vines overgrowing the area.

- St. Louis Catholic Church



St. Louise Church-Photos taken by Leslie B. Snyder

Father Peter Richard was largely responsible for the design and construction of the third and present St. Louis Catholic Church. The parish had outgrown the second church built in 1850 (on this same block) and began construction on a third church in 1867. When Father Richard was assigned to St. Louis in February, 1868 he found the building under construction too small and proposed to the parish a larger church. He went to Galveston and obtained approval to build a larger church from Bishop Dubuis. The cornerstone was laid July 2, 1868. Constructed in Gothic style of native limestone and hand-hewn cypress the building measured 150 ft. long and 52 ft. wide, it was at that time, one of the largest churches in Texas. The men of the parish contributed most of the labor under the guidance of Joseph Schorp and Franz Steinle, local masons and carpenters. By the summer of 1870 the church was complete. In 1908 the original spire was replaced with a taller one and stained glass windows were installed. Through the years the church has undergone minor repairs and redecoration and in 1972-73 it was completely renovated. The roof was replaced and the stonewalls repainted and re-plastered. The original pine floor was replaced with tile. Central air-conditioning and heat was installed. The original wood altars were retained as were the statues and the pews. New Stations of the Cross were added and other small renovations have all been a part of the upkeep of this historical site.

- First St. Louis Church



First St. Louis church- <http://images.google.com/imgres>

This small church, facing Angelo St. stands on the grounds of Moye Center, was the first Catholic Church built in Medina County and west of San Antonio. The cornerstone was laid September 12, 1844 by Jean-Marie Odin, first bishop of Texas, who visited just nine days after the first colonists arrived at the site to establish the town of Castroville. He celebrated Mass and placed the community under the patronage of St. Louis of France. The church was completed two years later and the formal dedication was conducted November 9, 1846 by Bishop Odin. This tiny building served the parish of St. Louis for only four years. Rev. Claude Dubuis, the first pastor, with the help of his assistant, Abbe Emmanuel Domenech and the men of the parish, built a larger second church on the block north of this location. The first church was thereafter used as a classroom for a school and religion lessons. The building was awarded a Texas state historical marker in 1966 through the efforts of the Castro Garden Club and the congregation of the Sisters of Divine Providence. Repairs were made at various times through the years, and following the last restoration, the little church was rededicated in a ceremony by Bishop Bernard Popp November 9, 1984. The church is now used for Mass only on special occasions, but is open to the public with access on the Moye Center grounds.

- St. Louis Society Building



St. Louis Society Building - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

This building on the corner of Fiorella and Paris streets has always served a commercial or civic purpose; it has never been used as a home. It is believed to have been built in the 1850's on property originally owned by Theodore Gentilz, artist and Castro's surveyor. Some of the early St. Louis Day celebrations, when they were just local affairs, were held on the grounds. During much of its history the building has been used as a saloon and pool parlor. The story is told of one of the early barkeepers who was a one-eyed man. When he had to leave his post he would extract his glass eye and set it on the bar near the cash drawer, with instructions to "Watch things for me." They say he never lost a dime. The building now houses the La Normandie Restaurant.

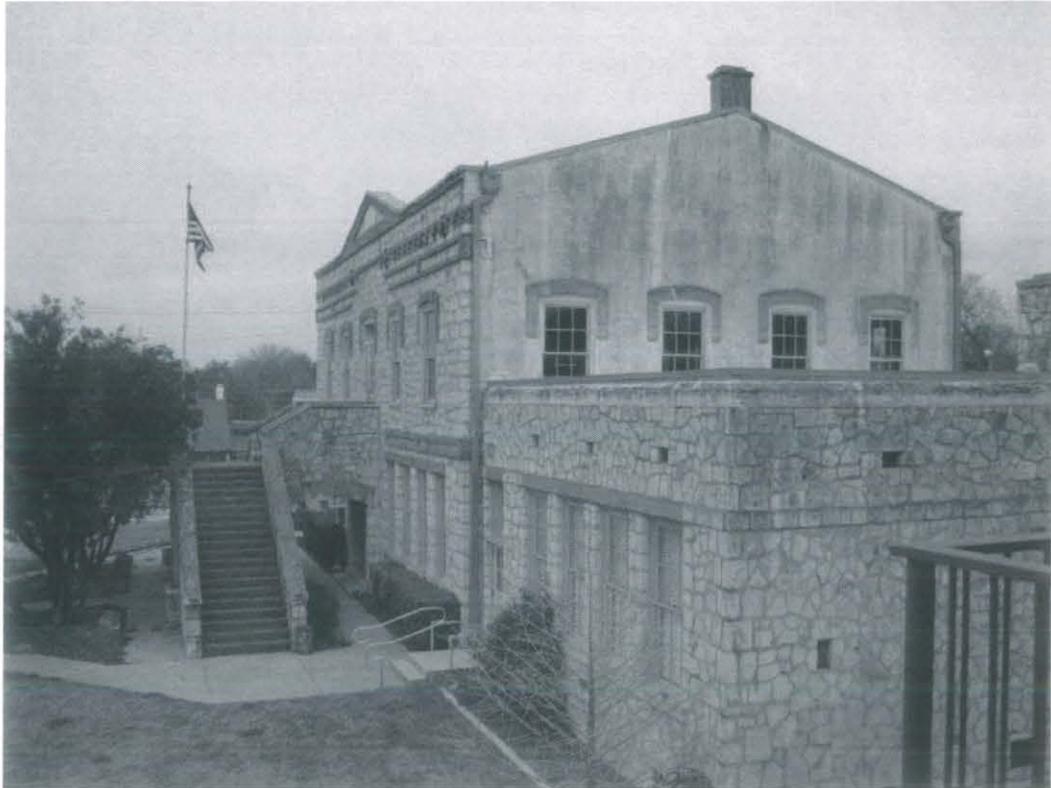
- Zion Lutheran



<http://www.zion-castroville.org/>

Zion Lutheran Church organized in 1852 to serve the mostly German Lutheran population of Castroville. The first Lutheran Church was built in 1853. Later, a parsonage was added. This church is believed to be the first Lutheran Church in Texas built of stone. The second and present church, built on the same site, dates from 1939.

- Old County Court House (City Hall)



Old County Courthouse (City Hall)-Photo taken by Leslie B. Snyder

When Medina County was organized in 1848, Castroville was designated the county seat, and it retained that status until 1892 when the results of the county election transferred the county seat to Hondo, 16 miles west. The first stone courthouse measuring 54' x 23' was completed in September 1854. It was used until 1878, when the second courthouse was constructed. R. Hollub was the architect for the 1878 courthouse, and the general contractor was Blasius Kieffer. A large jail was built behind the courthouse in 1886. (The jail building was razed around the turn of the century by Alex Tondre, who used the stone to build a home and the old post office on Lorenzo St., both still standing). The vacated courthouse was sold by the county to private owners. In 1915 the County Board of Education purchased the building from Jacob & Theresa Mangold and converted it into a public school for the Castroville area. The Civilian Conservation Corps renovated the building in 1939, adding two side wings and the exterior staircase. The original exterior plaster was removed from the building, exposing the limestone. When Medina Valley ISD was formed in 1961, the building was again vacant. The City of Castroville purchased the property from the school district for the city administrative offices. The state historical marker in front incorrectly identifies the building as the first courthouse.

- Steinbach House



Steinbach House-Photo taken by Leslie B. Snyder

Brought to Castroville from Wahlbach, this small Alsatian house was originally built between 1618 and 1648. It was formerly owned by the Steinbach Family. It was disassembled and relocated to Castroville as a gift of gratitude from the Association Jardin des Racines. It landed at Houston and came by truck to Castroville in January 1998. The framework of the house was erected in 1998 and the following year brick and mortar added to enclose the fachwerk. In 1999 the association arranged for the roofing tiles to be shipped to Texas. On February 7, 2000 the students and faculty of the Agricultural School with director Danielle Utard and the president of Association Jardin des Racines Andre Hartmann, arrived in Castroville to complete the roof and the landscaping at the garden. Today it serves as a main entry point into the city located across the street from the famous Sammy's Restaurant.

- Old Blacksmith Shop



Old Blacksmith Shop - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

Wagon freighting, a lucrative occupation for many local men in the 1800's, generated other businesses such as blacksmith and wheel wright shops, but the advent of the iron horse and automobile caused the demise of both. All the shops have disappeared save this 1920's blacksmith shop of Frank Tschirhart. Current location of Albros Casa y Garden, quaint garden shop owned and operated by Tot and Ward Albros.

- Old Highway Filling Station



Old Highway Filling Station - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

Built by Anton Beetz, the property was purchased by Charles W. Suehs in 1925. It was a bustling place back in the days when Charles Suehs and his four sons operated the Magnolia Station here. It was also a liquor store from 1934 to 1955, and for over 60 years it was the Painter Bus Station for Castroville. Gene Suehs purchased the property from his father in 1946 and has leased it to various businesses since he retired. The original home of Henri Castro stood on this property before Beetz razed it in 1893.

- The Hans' Meat Market



The Hans' Meat Market - [http://www.castroville.com/walking\\_tour\\_2005.pdf](http://www.castroville.com/walking_tour_2005.pdf)

The Hans' Meat Market sits on a corner lot on the old Main Street of Castroville. Other original buildings on this property include the Dolch House, a well house, smokehouse and barn. The meat market, the first brick retail building in town, was built by Ed Hans in 1910. Molly Hans, his wife, was active in Castroville and the Catholic parish. She was in charge of the kitchen for St. Louis Day for many years, and in 1923, she drove her buggy throughout the community collecting donations to build a parish hall for St. Louis Church. After the death of her husband Ed, Molly married Louis Schott of Devine, and they resided on this property until their deaths. At present the home is Castroville Pottery..

- Dan's Meat Market



Dan's Meat Market & Saloon-Photo taken by Leslie B. Snyder

Built in the 1920's by Frank Burell. His son Dan added a saloon and continued the meat market business, followed by his son Jimmy. The saloon and meat market still operate under present owner Jessie Frank Caseres.

- Cross Hill

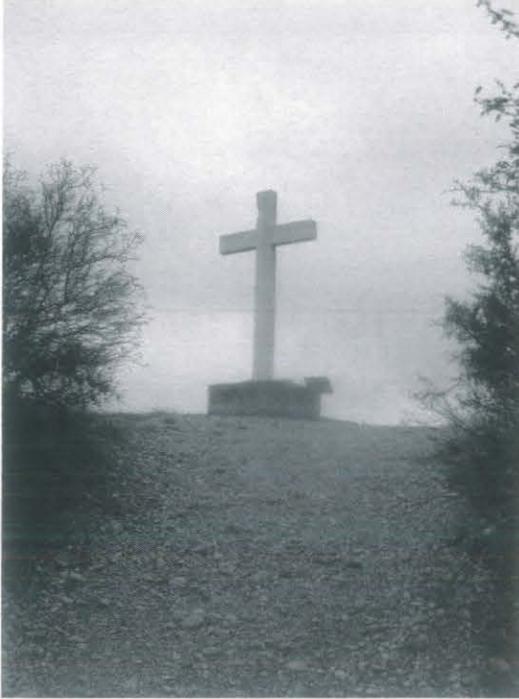


Photo taken by Leslie B. Snyder

Also called Gentilz Hill, Cross Hill is one of the most prominent landmarks in Castroville. Residents first placed a cross on the hill in 1849. In the past, members of the Catholic faith would climb the hill during Rogation Days and Lent to pray. Today, visitors to the hill have a panoramic view of Castroville and the Medina Valley.

### Historic Architecture Characteristics

Castroville is known for its unique architecture that was influenced by the Alsace Region of France. Castroville's historic resources have been surveyed and documented by the Historic American Buildings Survey, and the National Register of Historic Districts. Homes and other buildings in Castroville were constructed in much the same way that Alsatian structures were built, but not necessarily with the same materials.

The Alsatian/Texan frontier vernacular style of architecture that is found in Castroville is historically and culturally significant as the forerunner to the Texas vernacular. Below is a list of characteristics that are distinctive to most of the historic Texas Alsatian homes.

### Characteristics of Typical Alsatian Vernacular Homes in Castroville

- Small and low Scale
- Rectangular in shape
- Low-pitched, asymmetric, gable roofs

- Shed roof (Steep mono-pitched Alsatian)
  - This type of roof was designed for snow and is a direct influence from Alsace, France.
- Unusual and sparse placement of chimneys and exterior openings
  - Usually placed over windows or doors with flues traveling around obstructions
- Battered and sloped chimney tops
- Dormers and casement windows
- Asymmetric arrangement of windows
- Wood shutters over the windows
  - This detail could be found more prominently in the earlier days of Castroville and is reminiscent of architecture in Alsace.
- Stencil painting above windows
- Both one- and two- story homes had masonry north walls to protect them from northern winds
- Porches are typical and were added to protect against the harsh climate in distinction from Alsatian homes which typically lack porches.

## Typical Materials

- Lime Plaster cover the rough outer walls for protection
- 18" Limestone blocks support the structure
- Galvanized tin roofs
- Wood frames for windows
- Timber frame

## Typical Construction Method

- Homes were built systematically over an extended period of time
- Vertical logs set into the ground with spaces filled with mud and straw
- Vertical logs set into timber with the spaces filled with stone
- Combination of both stone and logs, or stone and frame
- Two-story houses used stone for the first floor and vertical log arrangement.

Other Historic architectural styles exist within Castroville. Many reflect the time period in which the style was most popular. Below is a list of some of the different architectural styles that can be found in Castroville.

- Queen Ann
  - Popularized in the 1880's and 1890's
- Bungalows
  - Early 20<sup>th</sup> century
  - This style makes up 22% of all residential buildings
- Pyramidal cottages
- Classical Revival
  - 1900-1920
- Sears & Roebuck Catalog homes
  - 1900-1940
- Tudor Revival
  - Early 20<sup>th</sup> Century

- Craftsman homes  
Late 1900s and early 20<sup>th</sup> Century

### Outbuildings

- 114 structure within city limits
- 30% marked as high or medium priority
- Structures include barns, sheds, wells, cisterns.
- Provides significant configuration and definition of property.
- Arranged to reflect the agrarian communities of Alsace.

### Urban Form and Historic Development Patterns

- Henri Castro's Original Grid pattern
- Historic Western boundaries are clear
  - Cemeteries
  - Irrigation canal
  - Rise to upland plateau
  - Cross on Mt. Gentilz
- Historic Eastern boundaries suffer
  - Commercial outlets
  - Traffic
  - Uncharacteristic bridge
  - Medina River lacks visual presence
- Town streets
  - Narrow
  - Pedestrian accessible
  - No curbs or gutters
  - Intimate scale
- U.S. 90
  - Diverted commercial zone
  - Transforms the small town scale of the community
- Old market square
  - Intact
  - Lacks activity
  - Residential density low

### Cultural Landscapes, Farmland and Scenic Vistas

Landscapes that emphasize Interaction between humans and nature over time

- Vernacular Alsatian Homes
- Barns and outbuildings
- Many date to 1850's
- Open agrarian landscape adjacent to Castroville most endangered property in Texas
- Hundreds of acres sold along highway

- 600 unit subdivision
- Large car dealership transformed the entry experience of scale
- Medina Canal
  - Excellent potential for preservation and resource for nature, recreation, and heritage tourism
  - Constructed in 1912
  - Largest irrigation project west of Mississippi River (at the time)
- Scenic routes
  - North on 471
  - River Road from Mexico Street and
  - Lower Lactose Road and Constantinople Street
- Medina Dam

## Settings of Historic events

- Medina River Flood
  - The Medina River is prone to major flooding. In August of 1978, an unprecedented record-breaking rainfall of forty-eight inches fell on the North Prong in twenty-four hours. This in turn created what is popularly referred to as a 500-yr flood. The damage was severe with twenty two lives lost, millions of dollars in property damage and countless cypress and pecan trees uprooted.
- The Castroville Pecan Tree/First Settlement
  - Located on the grounds of the Landmark Inn Historical State Park is the site of the first settlement of Castro's Colonist who arrived to the area in September of 1844. The Castroville pecan tree marks the place where Bishop John M. Odin said mass under its canopy and dedicated the town. Unfortunately, this tree has since been struck by lightning and died.
- Regional Park- "Garden of Roots"
  - Dedicated on February 18, 2000, the "Garden of Roots" or "Jardin Des Racians" was planted in the shape of Alsace. French students from the agricultural college of Rouffach designed and planted a garden of roots in Castroville's Regional Park. It was the basis of a generous gesture by the Region of Alsace. The plan was to plant a tree for every village within Alsace using funds provided by the people from each village. Today it remains a cultural connection within the Regional Park.

## Identification of Prehistoric Cultures

- Comanche and Lipan Indians

## Identification of Historically Significant Personalities from the Area

- Henri Castro



Henri Castro [www.castroville.com](http://www.castroville.com)

Henri Castro was of Portuguese decent, Jewish by Faith, and Frenchman by birth. He was born on July 17, 1786 in Bayonne. Castro immigrated to the United States and became a citizen in 1827. The King of Naples appointed him Consul at Providence, Rhode Island. Returning to France in 1838, he became an associate for the banking house of Laffite and Company. While there, he came to Texas in order to research the possibility of a Loan to the new Republic. While in Texas, he fell into association with several prominent Texans, including Gen. James Hamilton and President Sam Houston. On February 12, 1842, Henri Castro along with a fellow agent of Laffitte and Company, Jean Jassaud, signed a contract with Sam Houston to establish a colony in Southwest Texas. The terms required them to bring "600 families or single men over the age of seventeen years, within three years from the date of this contract...." If the conditions of the contract were not met within the allotted time, Castro would have to forfeit the settlement.

- Father Dubuis

Claude Marie Dubuis was born in Teche, France on March 8<sup>th</sup>, 1817. He was recruited by Bishop Odin to serve in Texas and was assigned to minister to the German and Alsatian speaking people of Castroville and the surrounding areas. He was instrumental in the development of the Cemetery, a new house and school, and he placed the Cross on Cross Hill.

- Father Domenech

Father Domenech was sent to help Dubuis, the two priests were in charge of the D' Hanis, Fredericksburg, and New Braunfels in addition to Castroville.

### Culturally Important Settings for Contemporary Events

- Houston Square (Old Fashioned Christmas)
- Moyer Center (Heritage Days)
- Koenig Park
- Fiorella Street

## Culturally Significant Settings – Holy Sites and Burial Areas

- The St. Louis Cemetery

The St. Louis Catholic Cemetery is the oldest in Castroville and has been used since the cities founding. The oldest existing tombstone dates back to 1849. Henri Castro's wife, Amelia was buried there. The cemetery received a Texas Historical Marker from the Texas Historical Commission in 1980.



Photo taken by Leslie B. Snyder



<http://www.zion-castroville.org/>

- **The Zion Lutheran Cemetery**

The Zion Lutheran Cemetery consists of two cemeteries referred to as the new and the old. Henri Castro deeded the land for the cemetery and the first burial took place in the old Lutheran Cemetery in 1853.
- **Unmarked Cemetery**

In the 1968, several unmarked graves were discovered outside of the St. Louis Cemetery. These were believed to be unsanctified graves for those who have been excommunicated or have committed suicide. Both of which would have been excluded from a Catholic burial in the early days of the church.
- **Private Cemeteries**

Several small, private cemeteries can be found in Castroville, one of which is the Ihnken Family Cemetery. Marie Becker Ihnken was the first to be buried there when she died in 1847. It is located on private land across from the Regional Park. The cemetery has been awarded an Official Texas Historical Marker in 1998. Another small family cemetery can be found in the Regional Park. Even though it has deteriorated over the years, the headstones are still readable and its original perimeter wall is intact.

## Archeological and Paleolithic



Photo taken by Leslie B. Snyder



- **Civil War Artifacts- The Old Alsatian Steakhouse**  
During the Civil War, wagon trains sustained the town after the U.S. Army abandoned their forts. Although many from Castroville served in the Confederate forces, most of the European settlers sympathized with the Union. In 1861, Medina County voted against the secession, 207 to 140. Presently an archaeological dig can be found behind The Old Alsatian Steakhouse, which has uncovered a cache of artifacts from the Civil War.

## Historic and Cultural and Conclusions and Recommendations

To foster a foundation for economic prosperity, tourism, managed growth, and an excellent quality of life through the conservation of historic buildings and places, along with the preservations of authentic character and aesthetic quality of the community.

- To preserve and revitalize the historic integrity of all essential buildings, landscapes, landmarks, and sites within Castroville.
  - Impose the use of zoning ordinances and revitalization efforts to improve existing sites and enact city codes to preserve their historic integrity
- Provide a cohesive, easy to follow historic experience by establishing an accessible route to all vital historic locations including sites not currently mapped on the existing historic walk, a well organized documentation of knowledge and information, a centrally located space for the display of Castroville artifacts, and an interactive (audio/visual) experience for tourist attraction.

- Create a cohesive signage theme to denote the various historic sites located on the Historical Walk.
- Provide a stronger entrance point to the historic center to better introduce the tourist walking experience.
  - Establish a specific starting point for the Historic Walk
    - Steinbach House
      - Historical Walk maps
      - Historical Information
    - Landmark Inn
      - Historical Artifacts
    - September Square
      - Beginning of Historical Walk
- Create a distinctive pathway to better delineate the historic walk and sites within Castroville.
  - On street revitalization to better define the Historical District
- Create uniform signage and maps to better accommodate the tourist experience.
- Manage the annual influx of tourism by providing better parking organization for the seasonal festivities.
- Insure historic integrity through the proper enforcement of City requirements and ordinances for historic and cultural preservation.
- Create a cohesive and unique adaptive reuse design by integrating new implementations into the established community with sensitivity to its existing surroundings.
- Use Alsatian/Texas colonial characteristics in architectural detail, spatial boundaries, and design materials to maintain the historical veracity of Castroville.
- Better incorporate the landscape and existing open spaces into the historical experience.

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Prepared by: Aragon & Wu

### Demographic Data

It is important to understand the demographic conditions of Castroville, Texas in order to better guide its growth and redevelopment. To further understand the local population, the following charts and tables depict important data, such as population trends in past decades (compared to the City of San Antonio), age by sex percentages (compared to Texas averages), education attainment, race and ethnicity (compared to previous decades), and religious affiliation (compared to Texas).

The following chart (Figure 1) shows the percentage change in population for Castroville and San Antonio from 1950 to 2008.

*Population Trend: Castroville to Texas comparison*

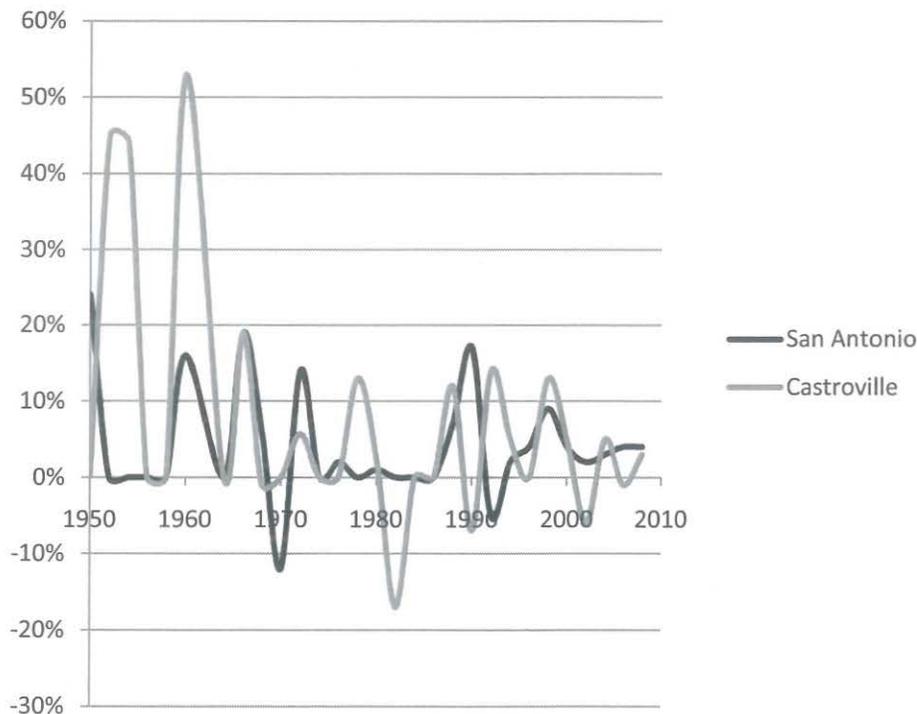


Figure 1

Sources: U.S. Census, 2000

In the earliest decades (before 1960), Castroville had staggering population changes – up to 50% change in a one-year period. Since Castroville was a small community from its beginnings, even mild changes in the economic and social environments, in Castroville and surrounding areas, greatly influenced migration – as reflected in the chart above. In the late 1960’s to the late 1980’s, the changes in population start stabilizing. In the mid 1990’s, the percent change for population ranges from 8% decrease to 13% increase, becoming more constant in the later years. Also, from 1990’s and beyond, Castroville mimics the population changes of San Antonio, meaning that San Antonio’s population changes affect the population change for the City of Castroville.

The Following chart (Figure 2), further breaks down the population by age and sex in the City of Castroville for the year 2000, and is compared to Texas averages.

*Age Distribution by Sex, 2000: Castroville, TX to State of Texas Comparison*

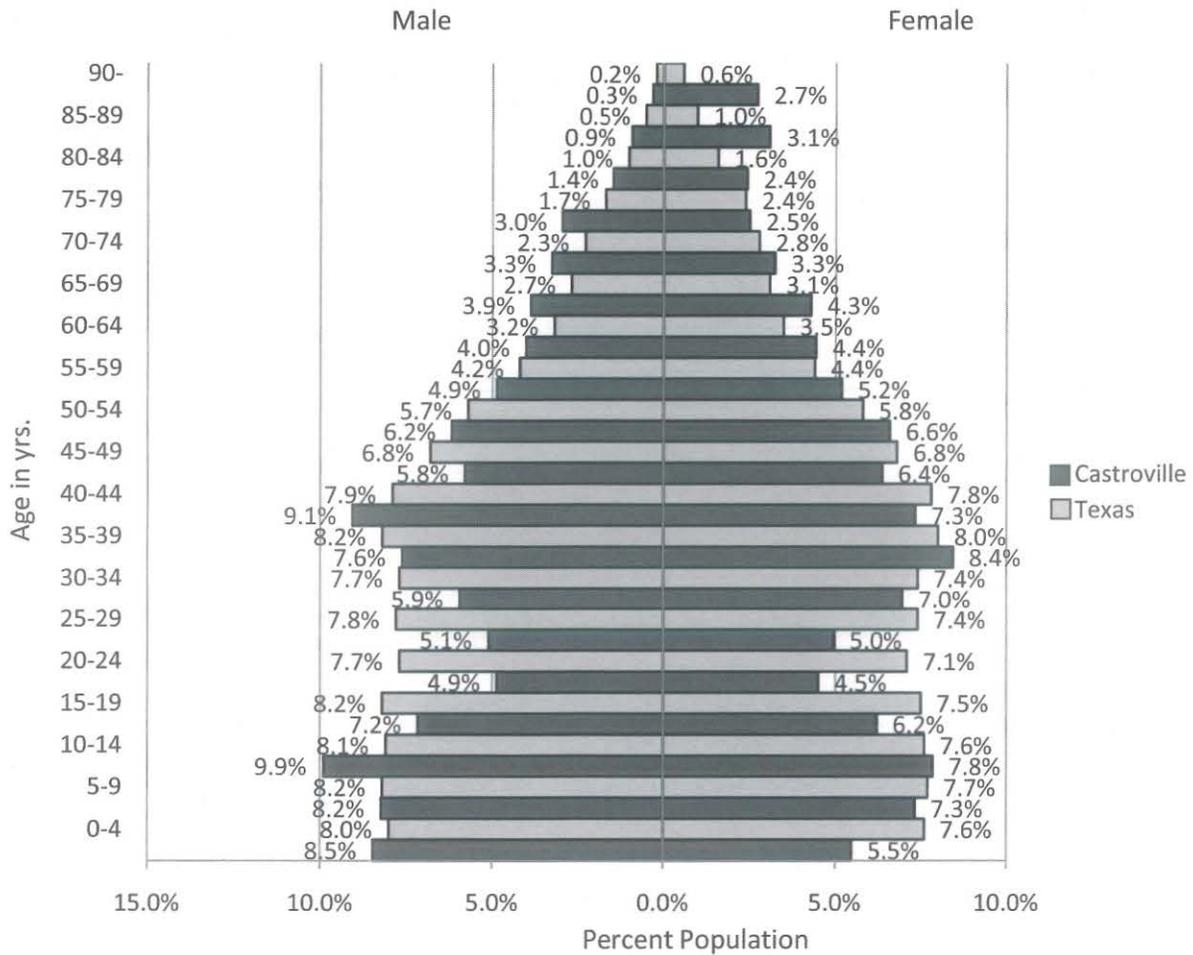


Figure 2

Sources: U.S. Census Bureau

As shown in the previous chart (Figure 2), Castroville has consistently higher percentages of people 50 years of age and older; while having lower percentages of people between the ages 0 to 34 years old, compared to Texas' average. Castroville also has a significantly higher percentage of women over the age of 50, compared to that of Texas' average.

The following chart (Figure 3), demonstrates the education attainment in the City of Castroville compared to State of Texas.

*Education Attainment:* Percent of population 25 years and over

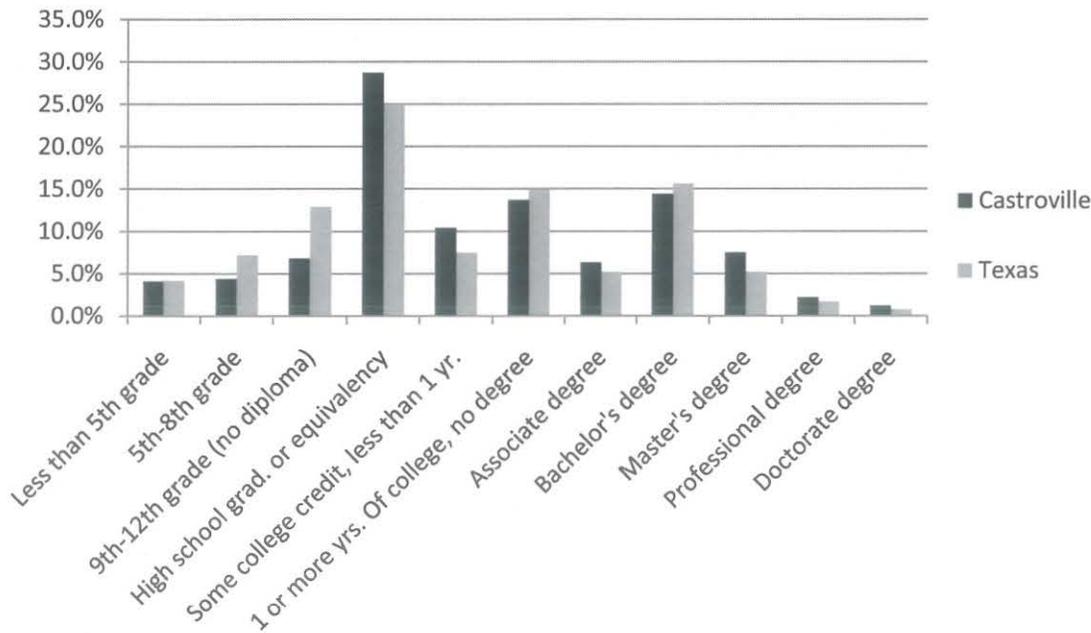


Figure 3

Sources: U.S. Census, 2000

In Castroville, the percentage of people completing up to 12<sup>th</sup> grade (without a diploma) are lower than that of the state of Texas. Castroville has a higher percentage of people completing high school, high school and up to one year of college, as well as a higher percentage of people with an associate’s degree, than that of Texas averages. The percentage of people in Castroville with a bachelor’s degree is slightly lower than the Texas average; however, Castroville has consistently higher percentages of people completing a master’s degree – or higher, than that of Texas’ averages.

Race and Ethnicity:

Castroville, TX, 2000

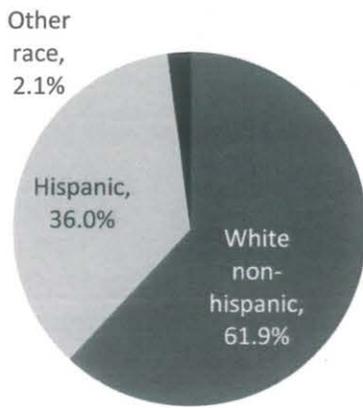


Figure 4 Sources: U.S. Bureau, 2000

Medina County, TX

	1980	1990	2000
White	54.0%	86.4%	51.4%
Black	.3%	.3%	2.1%
Asian	.2%	.2%	X
Hispanic	45.2%	44.4%	45.5%
American Indian	X	.4%	X
Other	.6%	12.5%	1.0%

Figure 5 Sources: Texas Almanac

According to Figure 4, Castroville is composed by 61.9% white non-Hispanic, 36% Hispanic, and 2.1% other (in the year 2000). Data on previous decades for the City of Castroville are not available; as a result, Medina county data were used to analyze the population race and ethnicity composition of previous decades. Figure 5, shows no significant change of population race and ethnicity for Medina County in the last three decades (from 1980 to 2000), except, a large increase (of about 30%) of white percent population in 1990; then decreased (by about 30%) in the year 2000.

Religious Affiliation:

Castroville, TX, 2000

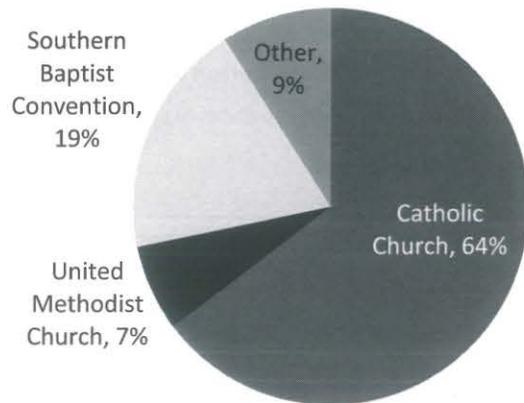


Figure 6

Sources: U.S. Census, 2000

State of Texas, 2000

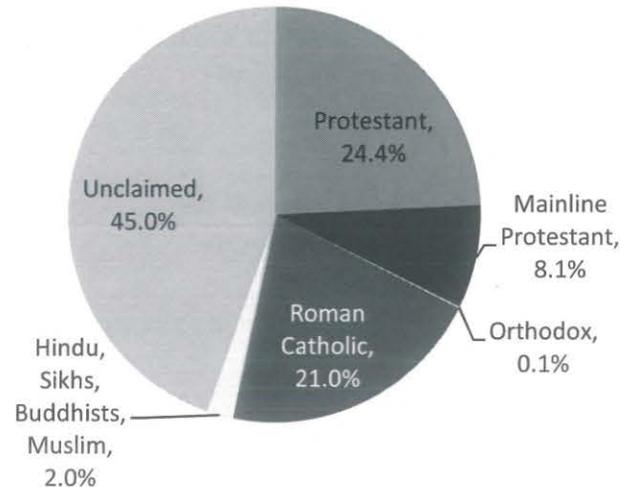


Figure 7

Sources: U.S. Census, 2000

According to Figure 6, 64% of people in Castroville are affiliated with the Catholic Church, which is the religion with the highest affiliation percentage. Whereas, in the State of Texas (Figure 7), Protestant is the religious denomination with the highest affiliation percentage, followed by Catholicism. Note: the percentages represented in figure 6, are taken from the total population with religious affiliation; it does not take into account the non-affiliated part of the population.

### Social Characteristics

The City of Castroville has many on-going events, as well as seasonal and annual events. Some of the weekly activities in Castroville are, Fiorella Fridays (celebrated first Friday of each month), farmers market (which meets every Friday), live music at Cora's (every Thursday), movie nights, computer classes (twice a week), and support groups (as *teen mom* and *breast cancer*). Some of the seasonal events are the *bluebonnet walk* (weekends in March), *Friday Night Fever*, *pumpkin patch*, *military uniform show*, and *Christmas toy show*. Some of Castroville's annual events are *Chamber wine fest* (held in April), *Relay for life car show* (in March), *Nip & Tuck silent auction* and *city wide yard sale* (in May and November), *Castroville bicycle tour* (in May), *Old iron trail ride* (May), *Tractor show* (July), *Octoberfest*, and one of the most important events in Castroville, *St. Louis day celebration* (August).

The City of Castroville also depends on numerous active groups and organizations, such as:

- Friends of the Landmark Inn
  - Friends of the Library
  - Friends of the Castroville Regional Park
  - Medina County Historical Commission
  - Medina Valley Amateur Radio Club
  - Medina Valley Art Society
  - Medina Valley
  - Moose Lodge
  - Rotary Club of Medina Valley
  - Steinbach House Committee
  - Threads of Love
  - American Legion Weiss-Wurzbach Post
  - American Legion Auxiliary
  - Castro Colonies Heritage Association
  - Castro Garden Club
  - Castroville Airport Association
  - Castroville Area Chamber of Commerce
  - Castroville Beautification Committee
  - Castroville Conservation Society
  - Castroville Line Dancers
  - Castroville Nip & Tuck
  - Castroville Quilters & Stitchers
- 460

### Evaluation

According to the data gathered, the population growth for the City of Castroville is slowly increasing; however, it is prone to San Antonio's changes in population, as well as urban sprawl - mainly from San Antonio. According to Figure 2, Castroville has an aging population, and the percentage of young adults and teenagers is significantly lower than that of Texas. According to the social characteristics of Castroville, the City depends on numerous organizations that sponsor activities throughout the year. Many of these are fundraisers, as well as volunteerism and social interaction within the community.

### Conclusion and Recommendation

By analyzing the demographic and social data, conclusions can be drawn and further used for establishing design performance requirements that would benefit the City of Castroville as a whole.

#### Conclusion 1

Castroville has a significantly higher percentage of senior citizens than that of the State of Texas.

Design Performance Requirements:

- Provide services for an aging population.
- Promote healthy living by providing nodes and interest points within walk-able distances.
- Provide places to stop and rest.
- Most social needs are being met by currently providing opportunity for involvement in different organizations and classes; however, make available safe routes for walking to these meeting places to provide the user with an alternative choice of transportation – other than driving.
- Provide housing to meet the progressive dependency of the elderly.

**Conclusion 2**

*A great number of historic houses require high maintenance. Because a high percentage of the population is over 60 years of age, many citizens may not be able to maintain these houses.*

Design Performance Requirements:

- Seek self-help volunteer groups such as Habitat for Humanity
- Take advantage of local volunteer groups to aid the elderly perform house maintenance
- Recognize that historic buildings are a community resource and provide City sponsored support

**Conclusion 3**

*The history and culture of Castroville are its most important resources. Therefore institutionalized historic preservation is vital to the City.*

Design Performance Requirements:

- Preserve and restore historic landmarks and important buildings.
- Construct new buildings that fit or complement the existing architecture; however, do not replicate the historic structures – otherwise, the importance of the historic buildings may be diluted and lost.
- Establish and enforce architecture codes to ensure appropriate building form.

**Conclusion 4**

*San Antonio's population growth rates affect the City of Castroville. Castroville's population is increasing slowly, but is at risk of urban sprawl from San Antonio.*

Design Performance Requirements:

- Design for existing population.
- Design for future population growth.
- Decide how big Castroville needs to be in order to maintain their historic and cultural values, yet be sustainable.

## References

*Castroville Area Chamber of Commerce*. Castroville, Texas. Web. Feb. & March 2010. <<http://www.castroville.com/>>.

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## Introduction

Economic research for the City of Castroville, Texas provides information about how the City is structured and how it functions. The research offers an overview of the economic structure of the City and it also presents the City’s resources and potential opportunities for the future. The research categories include income level, poverty level, employment, housing, and vehicle/commuting percentage.

## Existing Economic conditions

### Economic conditions Overview:

Table 1. Economic overview

	Castroville	San Antonio	Texas	United States
Median Home Value in 1999	<b>42,308</b>	36,214	39,927	41,994
Median Household Income in 1999	<b>51,007</b>	41,331	45,861	50,046
Per Capital Income in 1999	<b>20,615</b>	17,487	19,617	21,587
Individuals Below Poverty in 1999	<b>9.1 %</b>	17.3%	15.4%	12.4%

Sources: U.S Census 2000

According to Table 1, the City of Castroville is in good economic condition. Castroville has higher median home value, median household income, and per capital income compared to the City of San Antonio and the State of Texas. Moreover, it has a lower poverty population rate. However, the data does not necessarily reflect the City itself that all the citizens are doing well economically.

### Poverty Level

Chart 1. Individual below poverty level

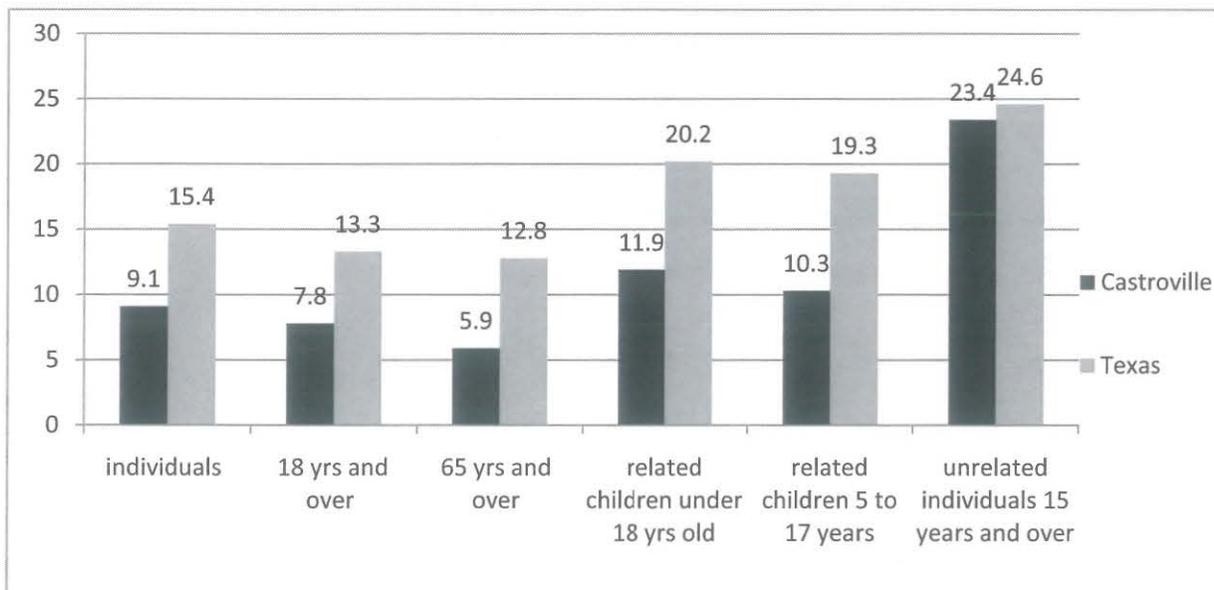


Table 2. Families below poverty level

	Number Below Poverty Level	Percent Below Poverty Level
With related children under 18 years	29	7.5
With related children under 5 years	19	12.7
<b>Total</b>	<b>38</b>	<b>5.4</b>

Sources: U.S Census 2000

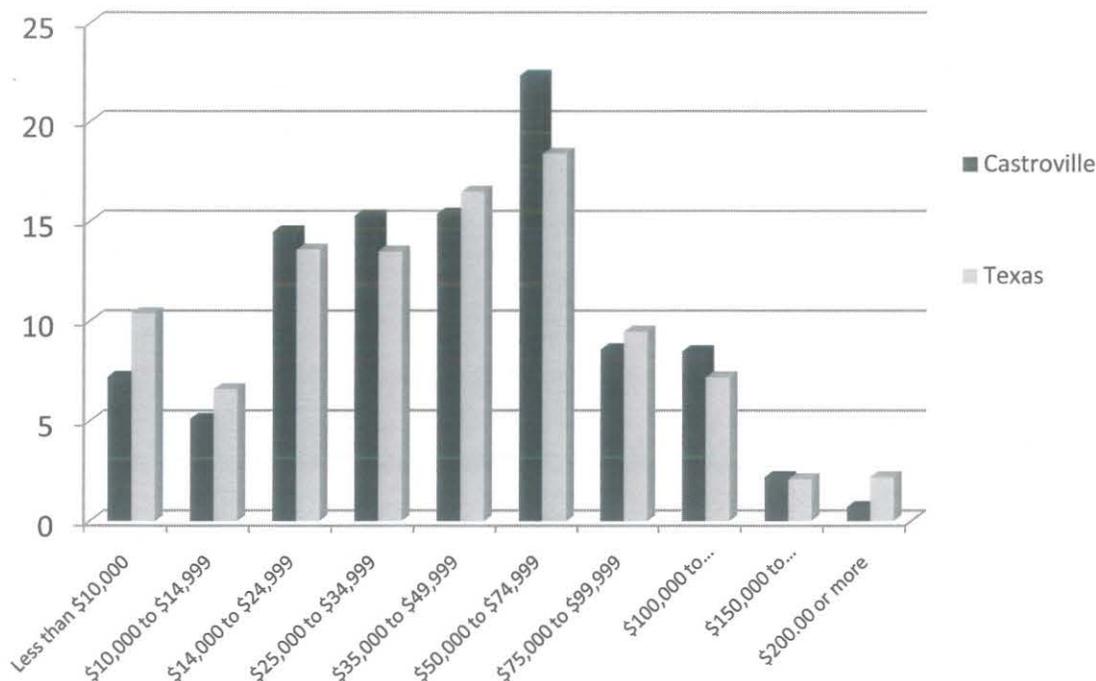
Table 3. Families with female householder, no husband present

	Number Below Poverty Level	Percent Below Poverty Level
With related children under 18 years	10	14.9
With related children under 5 years	3	30
<b>Total</b>	<b>15</b>	<b>15.3</b>

Sources: U.S Census 2000

Household Income in 2000

Chart2. Castroville's income level compared to Texas



As for the poverty level, the City of Castroville has an overall lower percentage, 9.1 % of the population is below the individual poverty level. This is relatively low compared to the individual poverty level of Texas. The largest category for the individual poverty level is “unrelated individuals 15 years and over,”

with 23.4%; however, it is still slightly lower than Texas' average of 24.6%. There are a total of 38 families that are under the poverty level in Castroville - 28 families with related children under 18 years old, and 19 families with related children under 5 years old. The majority of the individuals and families in the City of Castroville have a sound economic foundation.

Chart 2 shows the income level of the City of Castroville. About 23% of the residents earn between \$50,000 and \$74,999 per year, which suggests that the majority of residents are earning more than average. Castroville's income level is also higher than that of Texas' average.

Moreover, Castroville's elderly population has only 5.9 percent under the poverty level, which means that the majority of the elder population has the economic support to have decent lives and also suggests that they are retirees with a good financial plan for the future. While individuals are economically secure, the City lacks production capacity to pay for community development and construction. With retail trade, manufacturing, and construction being part of the greatest wage area, community development is not happening during the current recession.

Employment: Employed civilian population over 16 and over

Chart 3. Castroville Job Industry Compared to Texas (percentage)

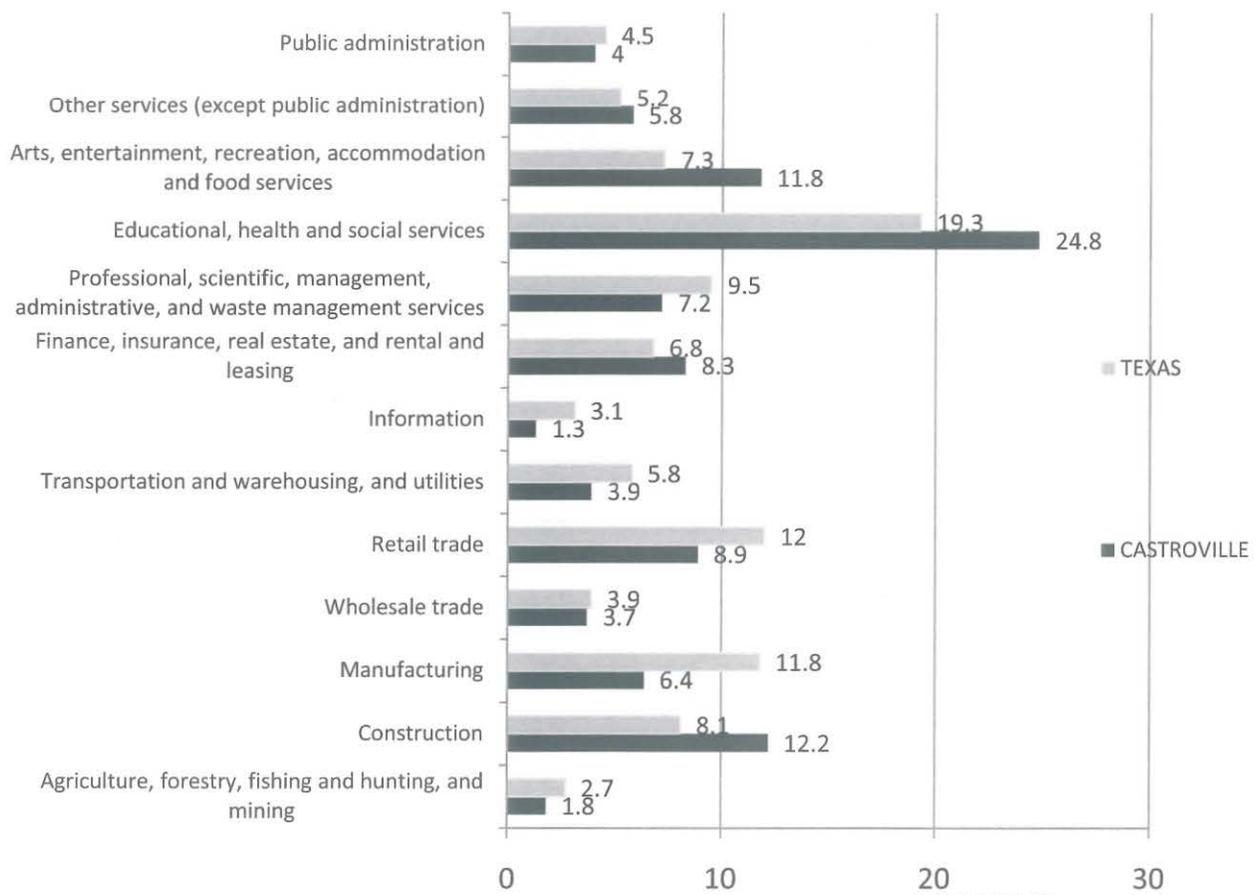


Table 4. Occupation

	Number	Percentage
Management, Professional, and Related Occupations	488	39.3%
Service Occupations	158	12.7%
Sales and Office Occupations	287	23.1%
Farming, fishing, and Forestry Occupations	7	0.6%
Construction, Extraction, and Maintenance Occupations	189	15.2%
Productions, Transportation, and Material Moving Occupations	113	9.1%
<b>Total</b>	<b>1,242</b>	<b>100</b>

Sources: U.S Census 2000

As for the industry and occupation of the City of Castroville, there is high percentages of people in the health, social and education services industry, with 24.8% of the working population being 16 years of age and older. The second highest percentage of people in the industry is construction, composed of 12% of the working population. However, those industries with the highest percentages of employment do not produce a high income compared to other industries, such as retail trades. Furthermore, the most popular occupation type is “management, professional and related occupation.”

Housing:

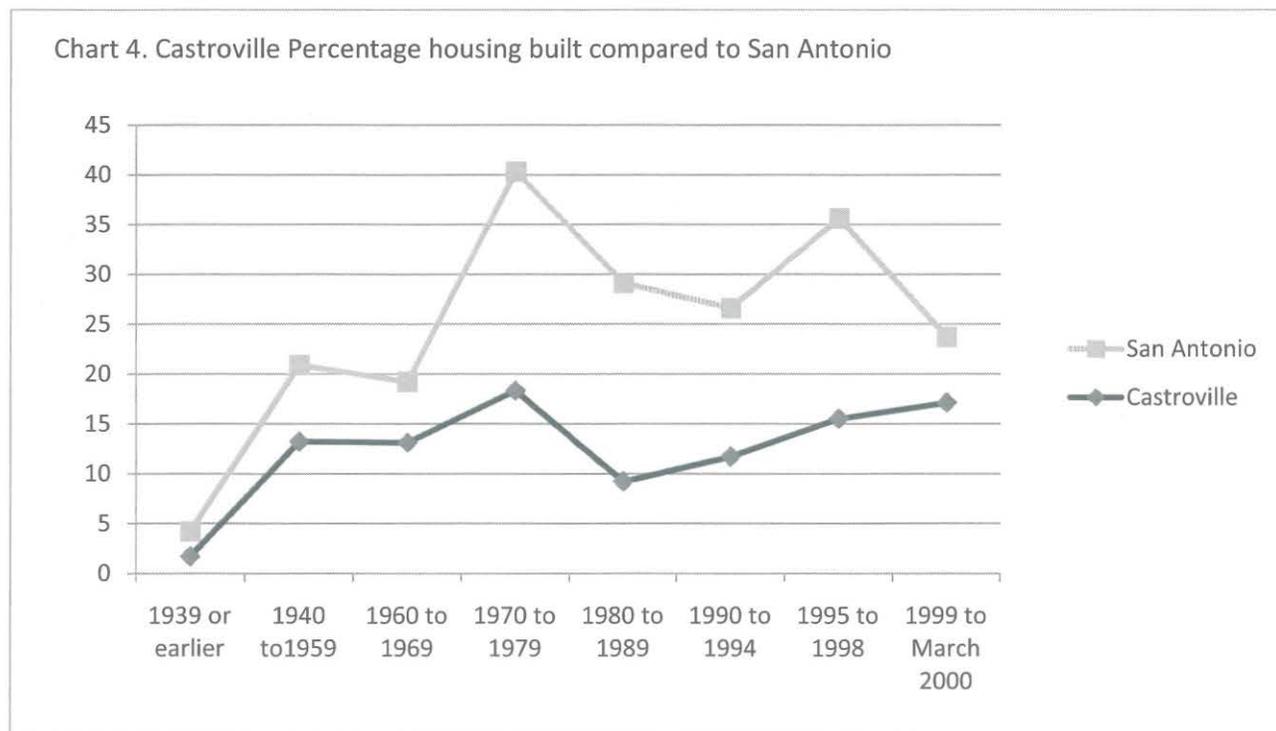


Table 5. Castroville Numbers of Houses Built Compared to San Antonio

	<i>Castroville</i>	<i>San Antonio</i>
1999 to March 2000	18	11,044
1995 to 1998	136	33,539
1990 to 1994	135	26,577
1980 to 1989	189	95,427
1970 to 1979	95	86,155
1960 to 1969	121	64,428
1940 to 1959	160	87,229
1940 to 1959	176	28,709

Sources: U.S Census 2000

From 1939 to 2000, Castroville continued to build houses at a steady increasing rate, except for two time periods. From 1990 to 1994 and from 1970 to 1979, Castroville experienced decreasing housing development. Chart 4 indicates a clear similarity of growth trend between the City of Castroville and San Antonio. The housing development has a direct effect on the City of Castroville.

Chart 5. Workers 16 and Over Commuting to Work in 2000

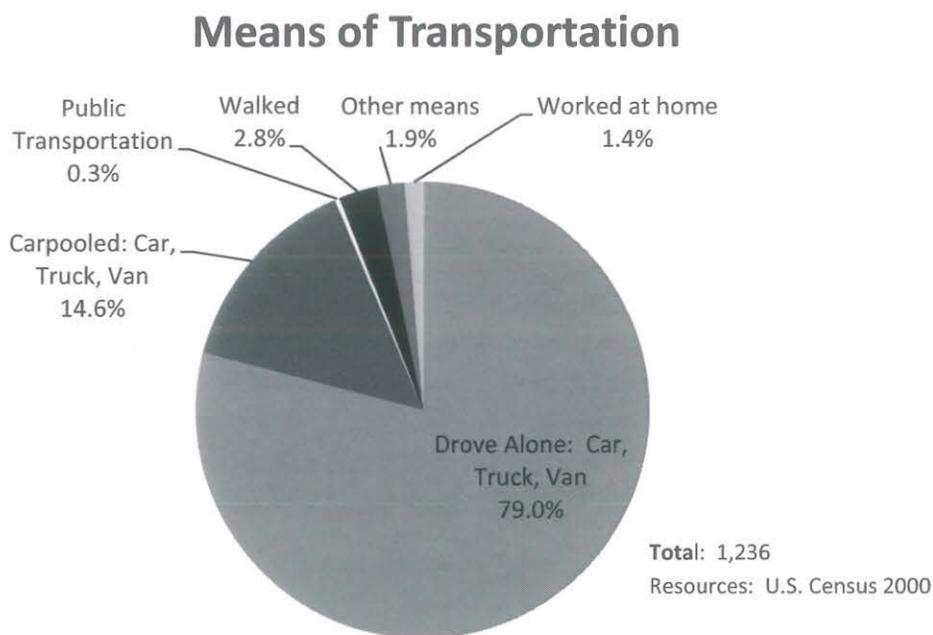


Chart 5 shows that 79% of the residents in the City of Castroville drive to work. Moreover, according to the U.S. Census of 2000, the average time traveled to work is 27.9 minutes. This means that the majority of the working population drives almost 30 minutes to work every day, which demonstrates that most of the working population commutes to their job sites in the City of San Antonio - about 30 minutes away from Castroville.

## Funding Opportunities

### *Heritage Tourism Grants*

This grant program offers help to communities to fund projects that enhance tourists' and visitors' experience through cultural and historic sites and events. The program provides *Heritage Tourism Partnership Grants* for communities in the Texas Lakes, Mountain, Plains, and Tropical Trail Regions. The grant emphasizes education, research, and training activities in these sites. The available budget is up to \$30,000. ("Heritage Tourism Grants." *Texas Historical Commission*)

### *Main Street Program*

This program is specifically designed to help a community's downtown economic development. It offers help through local organizations dedicated to downtown revitalization and management by hiring a full-time professional coordinator to help with the revitalization. The three main purposes of this fund are to enhance community development, infrastructure, and land and buildings. Main Street Program funding can grant up to \$115,000 over a 5-year time period.

("Main Street Program." *Pennsylvania State of Innovation*)

### *Certified Local Government Grants (CLG)*

The purpose of this grant is to preserve local historic resources in the City and county. It sustains an effective local preservation program critical to preserving local historic resources. The grants can be used on historic districts/properties, preparation of nominations of the National Register of Historic Places and other related community-based preservation projects. There are a variety of activities that can be eligible for CLG funding, such as writing and amending preservation ordinances, development of walking and driving tours, and development of architectural drawings and specification. Any cities or counties that have been certified by the National Park Service as CLGs can apply for this grant.

("Certified Local Government Grants." *Texas Historical Commission*)

### *Outdoor Recreation Grant*

This grant is sponsored by the Texas Parks and Wildlife. Its purpose is to develop parkland, or to renovate existing public recreation areas. However, the projects must be finalized in three years. The budget is up to \$5,000,000 per application - \$1 million total per project. This is a state-wide program, and can apply for it twice a year. ("TPWD Grants and Assistance." *Texas Parks and Wildlife*)

### *Small Business Administration Loans*

This is a loan provided by the Small Business Association (SBA); and offers a variety of financing options for small businesses in the Main Street communities. The financing options include a general working capital loan, a revolving line of credit, and micro-loans and long-term loans for machinery and equipment. The loans help small businesses that are having financial trouble through a normal lending channel. ("Financial Assistance." *Small Business Association*)

## Evaluation

The City of Castroville demonstrates sound individual economic standards and stable but limited job industries. The jobs are mostly in the educational or construction industries. The occupations in the City of Castroville are mostly management and professional related. There is a large working population with jobs in the City of San Antonio that commutes to work every day. San Antonio provides significantly larger work opportunities than Castroville; as a result, Castroville's individual economic standards are high. However, as a City, the economy is not doing so well. Castroville has strong historic and cultural characteristics, which are significant attributes to tourism attraction; consequently, enhancing the economy of the City.

The City of Castroville has housing construction trends similar to the City of San Antonio. Therefore, the growth expansion has direct impact on the City of Castroville - urban sprawl of San Antonio being a potential problem for the City of Castroville in the near future.

## Conclusion and Recommendation

According to the U.S. Census of 1990, the City of Castroville had a higher economic level overall in comparison to the State of Texas, as well as to the City of San Antonio. The median household income level is significantly higher than that of the City of San Antonio, as well as that of Texas – Castroville's median household income is \$51,007; San Antonio's is \$41,331, and Texas' is \$45,861. Furthermore, its poverty level is low (9.1%). Although the majority of residents in the City of Castroville are in good economic condition, due to higher income from working in San Antonio and secure retirees moving into the community, there are some actions the City of Castroville can take to bring the City's economy to the next level.

### Conclusion 1

*The City of Castroville has limited budget for the maintenance and beautification of the town and to preserve and restore the historic sites and buildings.*

Design Performance Requirements:

- Apply for state and national government grants, such as Texas Leverage Fund and Capital Access Fund. Such funds emphasize economic development and tourism. There are also Texas Heritage Tourism Partnership Grants, which are focused on heritage tourism-oriented projects. These include interpretation, signage, publications and websites, curriculum development, educational programs, and workshops and training (Texas Historical Commission).

### Conclusion 2

*City of Castroville is targeting tourism to improve its economy. The City has unique historic and cultural buildings of Alsatian heritage to offer and educate the tourists.*

#### Design Performance Requirements:

- Develop good “networks” to promote Castroville’s culture and publicize it to other cities to increase tourism. Use vacant or underused buildings in the historic downtown area to recruit local businesses that fit-in with the demographic and cultural theme of the town; such as local art, food, quality antique shops, etc. Also, develop the pedestrian environment and streets for safety and enjoyment of all.

### Conclusion 3

*Some of the features in Castroville are not used to maximum potential; such as the river, regional parks, and downtown areas. Increasing the use of these areas may enhance the economy of the City.*

#### Design Performance Requirements:

- Create easy access to the river for tourists and residents for recreational purposes. Moreover, beautify the downtown areas and improve the attractions’ signage to demonstrate the town’s identity and also increase tourism. Furthermore, provide better connectivity and signage to guide tourists to different historic attractions.

### Conclusion 4

*About twenty-five percent of the working population of Castroville drives to work 15 minutes or less.*

#### Design Performance Requirements:

- Provide alternative transportation (safe walking and biking networks).

### Conclusion 5

*More than fifty percent of the working population of Castroville drives to work 30 minutes or more.*

#### Design Performance Requirements:

- For this portion of the population, keeping traffic continuous on highway 90 is important. However, design safe thoroughfares that are safe for motorized vehicles, as well as for pedestrian and bike use. Provide safe road crossing, walking and biking paths, and clear signage.

**Conclusion 6**

*Aging population percentage doubles that of Texas' average.*

## Design Performance Requirements:

- Provide services and housing for the elderly.

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## Introduction

The city of Castroville offers many services typical of other Texas cities its size. These services accommodate over 3,000 residents and include basic conveniences such as an airport, animal control, education, fire, local government, healthcare, library, parks and recreation, public safety, and waste management.

## Existing Conditions

### Airport

The Castroville Municipal Airport is located 2 miles southeast of the city of Castroville on Farm to Market Road 471. The airport boasts a 4,600' x 75' asphalt runway that is listed in good condition. The weight bearing capacity for a single wheel is 15,000 pounds. The runway is lighted from dusk until dawn. An attendant is on duty Monday through Friday, 8:00 am to 5:00 pm. Fuel is accessible 24 hours of the day. Both tie-downs and hangars are available for rental. Tie-downs can be rented for a monthly fee of \$30.00. Airport services include a passenger terminal and lounge, courtesy cars when given notice 24 hours in advance, rental cars through Enterprise Rent-A-Car for pick up and drop off, computerized weather tracking by Automated Weather Observing Systems (AWOS), flight training, aircraft rental, aerial tours and sightseeing, and aircraft maintenance. Inside the terminal are snack machines, restrooms, and computers for pilots' use.



Figure 1. Castroville Municipal Airport. Source: <http://www.castrovilleairport.com/>

### Animal Control

Animal control is enforced by the Animal Control Officer (Billy Torres). Tasks performed by animal control include animal registration, lost animal relocation, adoption, and combating animal abuse. All animals within the city limits must be licensed. The annual fee for licensure is \$10.00. A lifetime fee for neutered animals is \$10.00 as well. Registration and tags can be purchased at the Castroville City Hall during normal business hours. Lost animals are kept at the impound facility for 3 days. At the end of the 3<sup>rd</sup> day, the animal is available for adoption. There is no fee for animal adoption, but it is required that the adopted pet be given a rabies vaccination and be either spayed or neutered.

### Education

8449 FM 471 S

The residents of Castroville are serviced by two secondary educational systems, one public and one private. The public institution is the Medina Valley Independent School District and services the communities of not only Castroville, but also LaCoste and Potranco. Approximately 3,000 students attend. Their mascot is the panther. Three elementary schools educating pre-K through 5<sup>th</sup> grade include Castroville Elementary, LaCoste Elementary, and Potranco Elementary. Medina Valley Middle School serves 6<sup>th</sup> through 8<sup>th</sup> grade and Medina Valley High School houses 9<sup>th</sup> through 12<sup>th</sup> grade education. Extracurricular activities offered include football, basketball, baseball, softball, soccer, powerlifting, tennis, track, cross country, band, and choir. Medina Valley Independent School District operates nearly 30 buses and does not offer transportation to students living within 2 miles of their enrolled campus. St. Louis Catholic School accepts children for pre-K through 5<sup>th</sup> grade. Current attendance is approximately 150 students. St. Louis Catholic School does not offer transportation for its students.



Figure 2. St. Louis Catholic School. Source: Travis Ward

**Fire**

807 Paris Street

The city of Castroville is offered fire protection by the Castroville Volunteer Fire Department. Equipment used by the fire department includes a Chevrolet Suburban, one brush tanker, 3 large fire trucks, one pumper truck, and one military-style vehicle. The station is constructed of a metal and brick face building with 3 vehicle bays.



**Figure 3.** Castroville Volunteer Fire Department. *Source: Travis Ward*

**Government**

1209 Fiorella

Castroville City Hall operates Monday through Friday, 8:00 am to 5:00 pm. City council and board meetings are held here, as well as municipal court with the Honorable Thomas Cate presiding and Debby Riser as the court clerk. Robert Lee is the mayor of Castroville.



**Figure 4.** Castroville City Hall. *Source:*

<http://www.texasescapes.com/TexasHillCountryTowns/CastrovilleTexas/CastrovilleTxFormerMedinaCountyCourthouse0504BG.jpg>

### Healthcare

Little Alsace Urgent Care Center  
1501 Houston

Medina Valley Health and Rehabilitation Center  
913 Hwy 90 W

Medina Valley EMS  
800 Madrid Street

Castroville boasts an urgent care center, a nursing home, and an EMS service. The Little Alsace Urgent Care Center is located west of town on old Highway 90. Services offered include urgent care, EKG, X-ray, lab, physical therapy, worker's comp, and physicals all under the supervision of 3 licensed medical doctors. Medina Valley EMS serves the area of Castroville, Hondo, and Devine. Approximately 35 emergency professionals are employed by the service. Their resources include 4 ambulances that are in service 24 hours per day, 1 ambulance that is in service 12 hours per day, and 2 wheelchair vans for non-emergency transport. Medina Valley Health and Rehabilitation Center in Castroville furnishes services for citizens that need 24 hour personal care. Physical therapy, occupational therapy, speech therapy, wound care, activities program, social services, beauty salon, 24 hour skilled nursing, and therapeutic diets are available. They are certified for Medicare and Medicaid insurance programs. As of February 2010, 87 of the 116 beds were occupied. 92 people are employed by the Medina Valley Health and Rehabilitation Center. The center uses Methodist Hospital in San Antonio for services not offered on site.



**Figure 5.** Medina Valley EMS station. *Source: Travis Ward*

### Library

802 London Street

The Castroville Public Library offers a wide range of literary works to the public, as well as computers with internet access for research, book club events, tai chi classes and a lecture series. The library has seven librarians available for assistance.



**Figure 6.** Interior of Castroville Public Library. *Source:* <http://www.castrovillelibrary.org/about.html>

### **Parks and Recreation**

There are a variety of parks available for use in Castroville. The biggest and most versatile is the 126 acre Castroville Regional Park and Pool on the south side of town bordering the Medina River. Amenities include RV hookups, swimming pool, tent camping, covered pavilions, picnic tables, bbq pits, bird watching, butterfly watching, tennis courts, volleyball courts, soccer fields, playgrounds, hiking trails, fishing, and DSL internet. Houston Street Park is a sports field complex located in the center of the city and offers two baseball fields and soccer fields. Houston Street Square is a multi-use space in the central business district that is highlighted by the St. Louis Catholic Church to the southwest. Large paved spaces make this area a premiere spot for festivals and mass gatherings. September Square is a small memorial park bordering the Medina River on the west side near US Highway 90. Within the park are three memorials recognizing Castroville history and war veterans. Koenig Park is a private park located on the north side of town on the Medina River and is owned by the St. Louis Parish. It is the home of Castroville's largest celebration, St. Louis Day Festival.



**Figure 7.** Houston Street Square. *Source:* Travis Ward

### **Public Safety**

411 London Street

Public safety is offered by the Castroville Police Department. Employees include a police chief, a lieutenant, one detective, six patrol officers, and an administrative assistant. Resources available to the police department are nine patrol cars, one bus, and one travel trailer. Preliminary plans are set to move the station away from the city center to municipal property near the Castroville Municipal Airport.

### **Waste**

4730 SE Loop 410, San Antonio, TX

Refuse collection for the city of Castroville is currently contracted to Waste Management. They also offer a residential recycling program that has a scheduled pick up of once per week.

## **Conclusions and Performance Requirements**

### **Conclusion 1**

Many recreational opportunities are present within the parks operated by the city of Castroville and other private entities, but may not be utilized to their fullest potential. The health of citizens can be improved by making more outdoor spaces accessible by all and capitalizing on the natural landforms that are offered. By better developing open space within the core of the city, more efficient and accommodating facilities can be available for local festivals and celebrations.

- Improve health of citizens by utilizing park and recreational spaces to their fullest potential.

### **Conclusion 2**

Access to the Castroville Volunteer Fire Department and Medina Valley EMS may be impeded by occasional flood waters. Land and construction features that generate flooding near these facilities must be addressed.

- Address flooding near the Castroville Volunteer Fire Department and Medina Valley EMS.

### **Conclusion 3**

The more city services are concentrated in the core of the city, the greater their role will be to retain the vitality of the historic downtown area of Castroville. The dispersal of city services can reduce normal community interaction and limit community viability. For example, the Little Alsace Urgent Care Center is located away from the city center on W. Houston Street. This may cause important healthcare opportunities to be inaccessible to many citizens of Castroville. By re-establishing an urgent care center that is more centralized within the community, more citizens can better access essential healthcare needs.

- Establish an urgent care center near the core of the city with better accessibility.

**Conclusion 4**

Heavy traffic on Hwy 90 impedes emergency vehicles from entering or crossing in a timely or efficient manner. The exploration of alternative routes for moving thru-traffic in and out of town to allow better access by emergency vehicles may be necessary.

- Explore alternative routes from moving thru-traffic in and out of town to allow better access by emergency vehicles.

**Conclusion 5**

Castroville Public Library and local schools are separated by US Highway 90. School buses only pick up children living greater than 2 miles from school, St. Louis Catholic School does not offer transportation, and US Highway 90 prevents children from crossing safely. Pedestrian safety needs to be addressed along US Highway 90 to allow safer and more accessible crossing options.

- Address pedestrian safety along US Highway 90 to allow safer and more accessible crossing options.

**Conclusion 6**

To establish and emphasize the desired image of Castroville as a “unique” Little Alsace, buildings under city ownership can be modified to express the scale, materials, form, and detail of structures that display the charms of Castroville.

- Adopt and enforce ordinances that create and protect the aesthetics that are considered historically and culturally important.

## References:

<http://castroville.com/>

<http://www.castrovilletx.com/>

<http://www.castrovilletx.us/>

<http://www.castrovilleairport.com/>

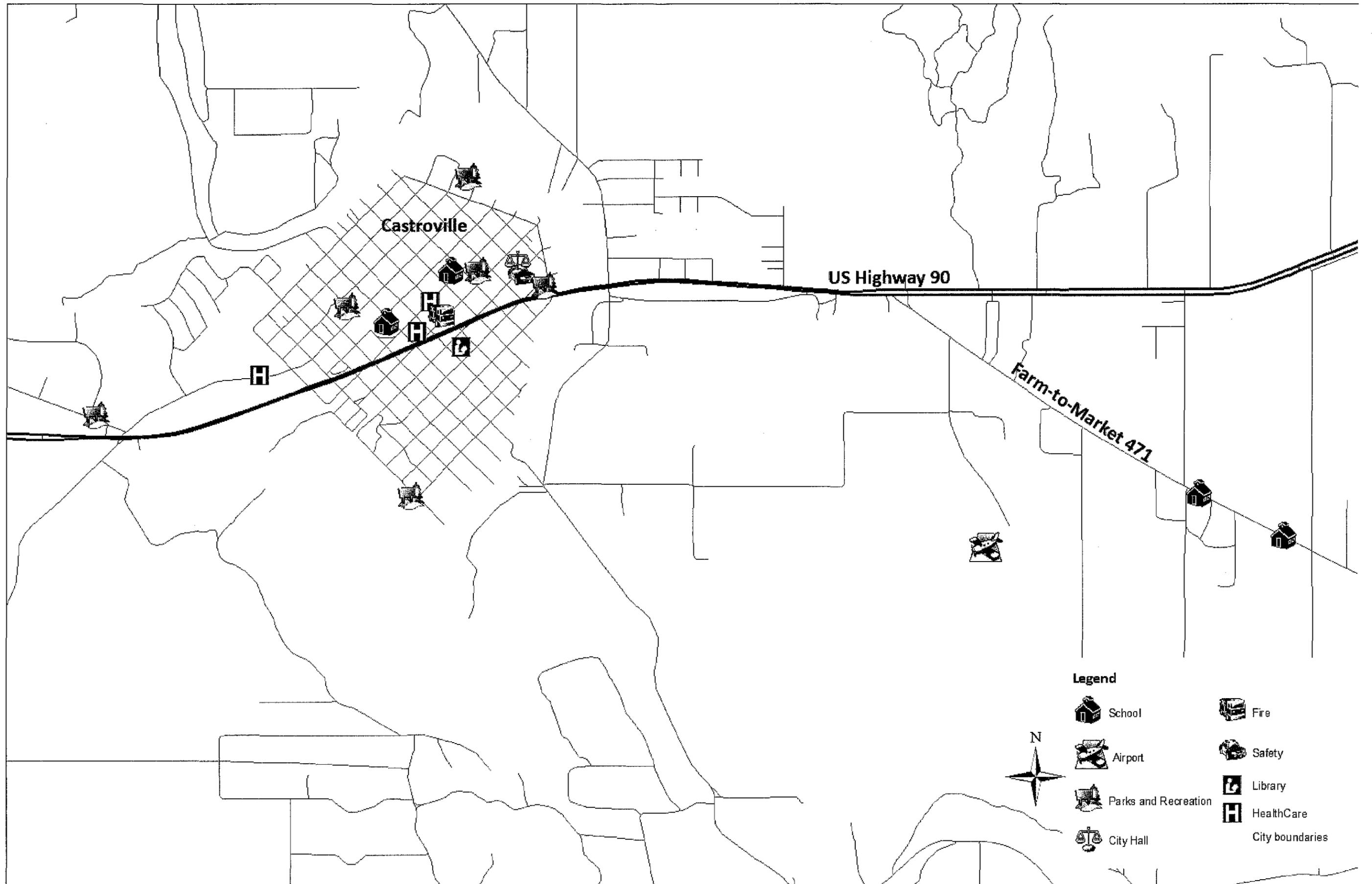
<http://www.castrovillelibrary.org/>

<http://www.mvisd.com/>

<http://www.wm.com/>

Gary Lally, Director of Public Works, City of Castroville





**Legend**

- |  |  |
|--|--|
|  School               |  Fire       |
|  Airport              |  Safety     |
|  Parks and Recreation |  Library    |
|  City Hall            |  HealthCare |
|  | City boundaries  |

## Introduction

Traffic & Circulation focuses on the function and accessibility of pathways throughout Castroville. These paths include roadways for automobiles, bikeways for bicycles and other wheeled methods of transportation, and walkways and sidewalks for pedestrian movement through town. Each path has specific characteristics that must be met to be functional and comply with TXDOT standards.

The circulation of people and automobiles can be both facilitated and regulated through the strategic use of signs as well as the location of parking. Signage can help visitors and residents find their way through town and locate points of interest. Congestion within a city can be reduced by providing effective parking. This section will cover the specifications of elements that create a more cohesive and efficient circulation system.

## Existing Conditions

When Castroville was founded, the city road system was organized in a grid pattern. The introduction of Highway 90 interrupted this organizational scheme. Highway 90 now intersects the city and effectively divides Castroville into two halves. This condition (*see Figure 1*), coupled with the approximately 20,000 vehicles that pass along Highway 90 each day, makes it extremely difficult to travel from the north side of town to the south, and vice versa (TXDOT). The difficulty arises from the lack of safe pedestrian and automobile crossing points along Highway 90. There are currently only two traffic lights within the core area of Castroville, and the only crosswalks in town are located at those two traffic lights. The crosswalks that do exist at these two intersections are barely visible (*see Figure 1 and Figures 2a & 2b*), and there is not sufficient time for a person to cross the road safely.

Castroville's character is currently dominated by commercial buildings along Highway 90. It is almost impossible to recognize any historic or cultural significance within the City. The signs that are currently present along Highway 90 do not illustrate the historical significance of locations within Castroville (*see Figure 1 and Figures 3a-3d*), and those that exist are too small to be easily seen by passing motorists. While the historic walk is marked with signs, there is no specific circuit that has been established to effectively guide tourists along the walk, and there is insufficient signage within Castroville to highlight important locations.

Parking is too heavily located in Houston Square. The February 19, 2010 town meeting revealed that citizens feel the amount of parking in Houston Square is unnecessary, and could benefit from reduction in parking space (*see Figures 4a & b*). Parking space is needed for large Castroville events that cannot be accommodated by Houston Square's lot. Informal parking areas along building fronts is problematic in areas due to their screening effect, and can create unsafe pedestrian passageways, or eliminate them altogether (*see Figure 4c*).

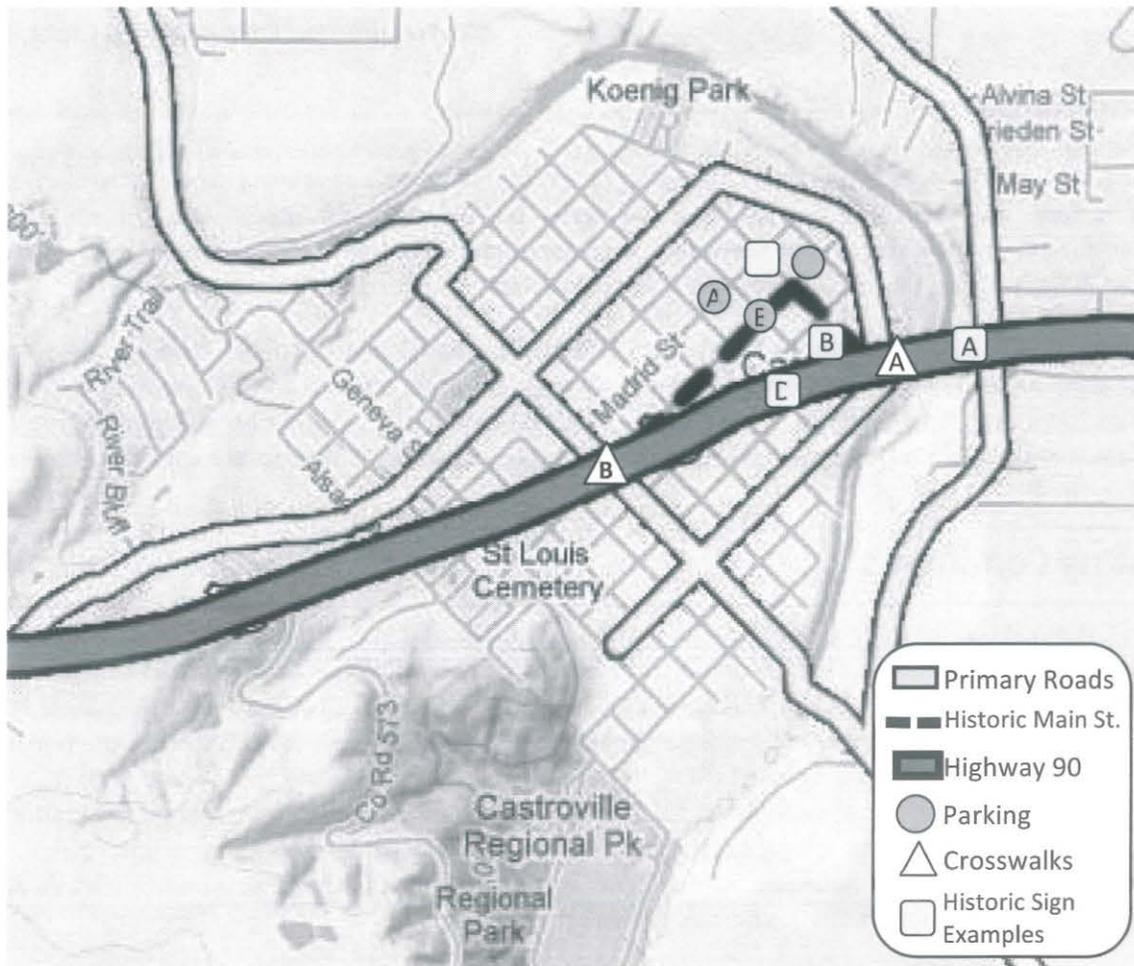


Figure 1. Map of Castroville. Location of highlighted conditions. Source: Google Maps



Figure 2a. Crosswalks; September Square, Corner of Highway 90 and Fiorella. Source: Google Maps



Figure 2b. Crosswalk; Corner of Highway 90 and Constantinople. Source: Google Maps



Figure 3a. Highway 90; Entrance into Castroville from the East. Source: Google Maps



Figure 3b. September Square, Corner of Fiorella and Lafayette; Showing small signage. Source: Google Maps



Figure 3c. Corner of Fiorella and Madrid; Showing small signage. Source: Google Maps



Figure 3d. Corner of Highway 90 and Angelo; Showing small signage. Source: Google Maps



Figure 4a, Madrid; Showing Houston Square parking lot. Source: Google Maps



Figure 4b, Corner of Angelo and Paris; Showing Houston Square parking lot. Source: Google Maps



Figure 4c, Paris; Showing blocked building entrance. Source: Google Maps

## Evaluation

The existing conditions that have been highlighted in the previous section may require the consideration of various alterations. These conditions include:

- Crosswalk safety and visibility across Highway 90
- Timing for crossing as designated by the crossing lights
- Ease of navigation and way-finding within the city of Castroville
- Ability to find historic locations, historic districts and other points of interest
- Adequate parking distribution for downtown Castroville

These specifications should guide the decision making for traffic and circulation related topics during the design phase of this project.

#### Crosswalks:

- Basic Crosswalk Requirements
  - 8' minimum width
  - Cross slope cannot exceed 2%
  - Slope cannot exceed 5% in the direction of pedestrian travel (street cross slope)
- Detectable Warnings on Curb Ramps
  - Light reflective contrast
    - Color options
  - Texture contrast
    - Truncated domes
    - Grooves discontinued
- Pedestrian Crossing Signals
  - Timing:
    - 3.0 ft/sec maximum for calculating pedestrian crossing time.
    - Distance used must include entire length of crosswalk plus length of one curb ramp
  - Accessibility:
    - Audio and vibrotactile indication of WALK interval
    - Audible signal can be voice or tone
    - Tactile and visual signs required
      - Crosswalk direction
      - Name of street served by pedestrian signal
  - Push Buttons (see Figure 5):
    - Locator tone required during DON'T WALK intervals (solid & flashing)
    - Locate pushbutton within 5-10' of crosswalk and 30" of curb line and at least 10' separation between buttons.
    - Landing required at button
    - 2" min. size and contrast visually with housing
    - Optional features permitted on extended button press

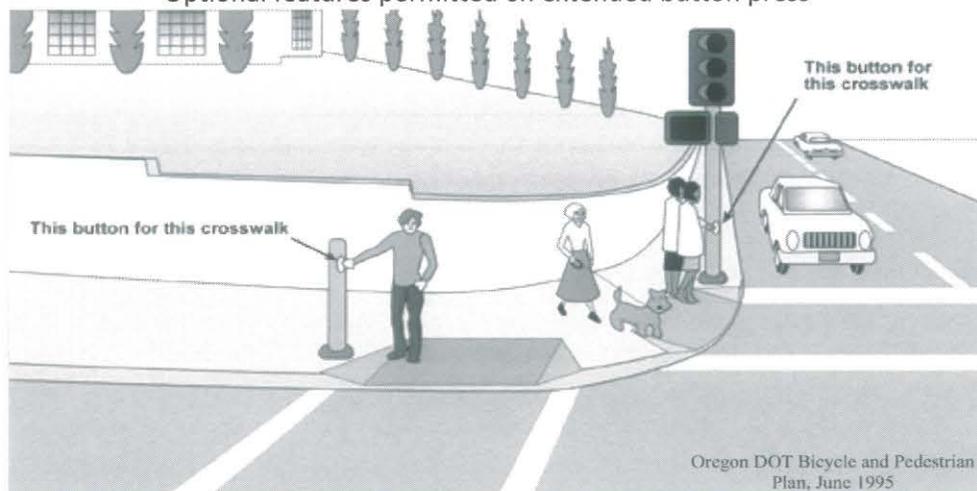


Figure 5. Acceptable crosswalk button locations. Source: Oregon DOT, June 1995

### Curb Ramps:

- Ramps must connect to the street within the width of the crosswalk
- One curb ramp is required for each individual crossing lane
- Requirements for Curb Ramp Landings:
  - 5' x 5' landing for turning
  - Max. 2% cross slope in any direction
  - Landings also needed at push buttons (4' x 4' okay)
- Types of Curb Ramps (in order of preference):
  - Perpendicular
  - Parallel
  - Blended Transitions & Diagonal
- Basic Requirements for Perpendicular Curb Ramps:
  - Ramp must cut through the curb or cross the gutter at right angles (*See Figure 6*)
  - The ramp must be in between a 2% and 8.3% slope
  - The cross slope of the ramp cannot exceed 2% (except at mid-block locations)
  - The standard landing dimension are 5' x 5' with a 2% maximum slope (4' x 4' min. allowed)
  - Flares cannot exceed a slope of 10%



Figure 6. Perpendicular curb ramp. Source: TXDOT

- Basic Requirements for Parallel Curb Ramps:
  - The ramp must be between a 2% and 8.3% slope
  - The cross slope of the ramp cannot exceed 2%
  - 4' x 4' landing at bottom with 2% maximum slope (*see Figure 7*)
  - Diverging sidewalk drop-offs must be protected with a barrier

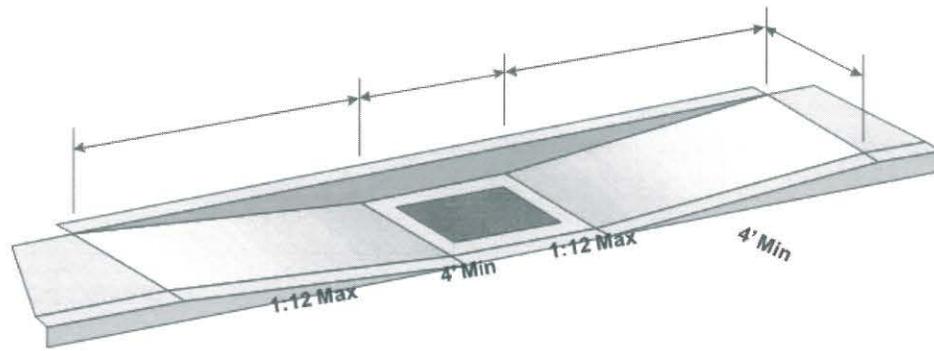


Figure 7. Parallel curb ramp. Source: TXDOT

- Basic Requirements for Blended Transitions (see Figure 8):
  - The grade and cross slope of the ramp must not exceed 2%
  - Must comply with requirements for all common elements of curb ramps



Figure 8. Blended transition curb ramp. Source: TXDOT

- Common Elements of Curb Ramps (see Figure 9):
  - There must be a 4' width clear for the ramp (excluding flares)
  - A detectable warning where curb ramp, landing or blended transition connects to the street is required
  - Grade breaks are not permitted within the curb ramps.
  - A smooth surface is required where grade breaks occur and meet
  - Changes in level are not permitted on elements (see Figure 10a and 1c for incorrect element)
  - A 4' x 4' clear space is required beyond the curb line and outside of the parallel travel lane
  - Counter-slope cannot exceed 5% (see Figure 10b for incorrect element)

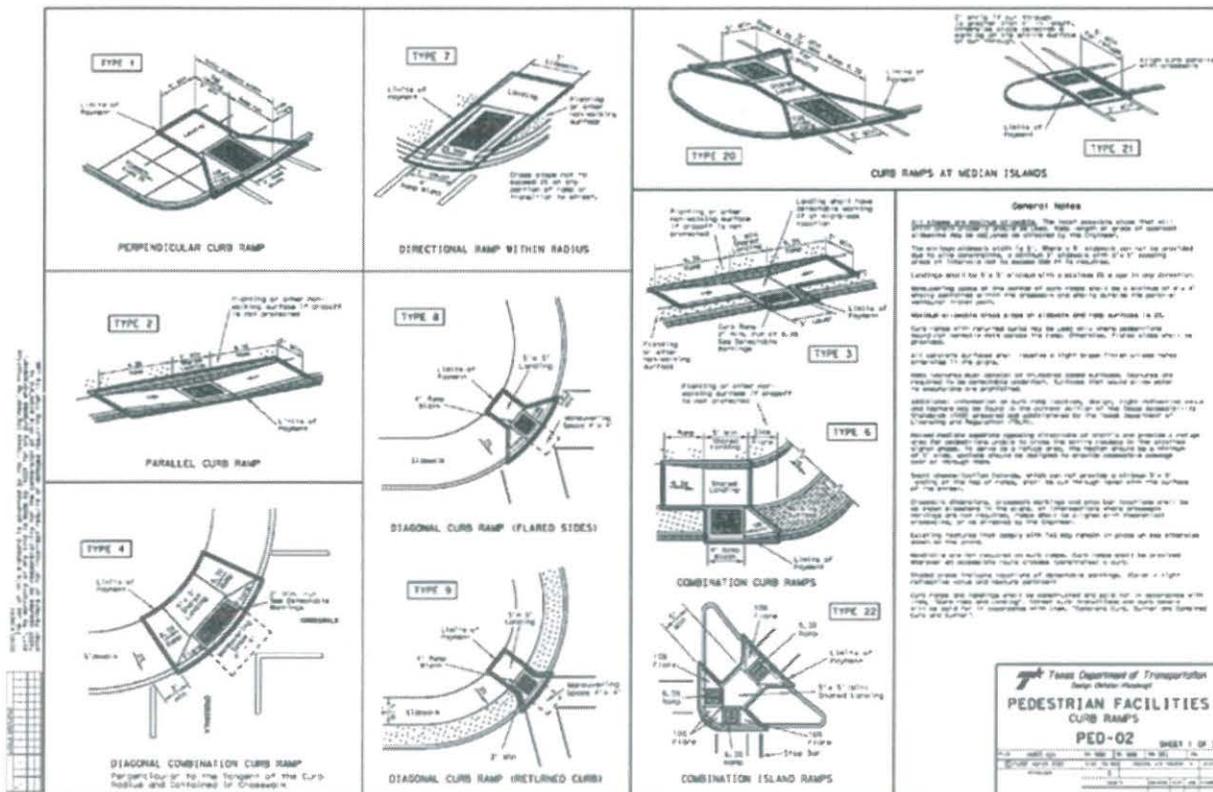


Figure 9. Common specifications of curb ramps; See TXDOT Standard Detail PED-02 for enlarged image. Source: TXDOT

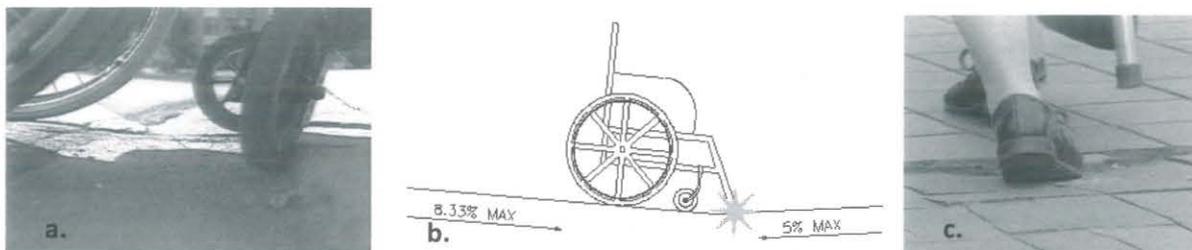


Figure 10. Common elements of curb ramps. Source: TXDOT

- Pedestrian Overpass/Underpass:
  - Must contain an access route to and from ramp
  - Ramp grade for and overpass or underpass cannot exceed 5%
  - Stairs and escalators must comply with ADAAG requirements

**Signage:**

- For in depth sign specifications regarding dimensions, text size, mounting procedures and placement requirements according to TXDOT please see for a complete list:
  - <http://www.dot.state.tx.us/insdot/orgchart/cmd/cserve/standard/toc.htm>
- No signs may be constructed over Highway 90
- Site visit revealed that the signage is small and scarce throughout the city

**Parking:**

- Current Parking Locations:
  - Houston Square
  - Behind City Hall
  - Street Side Parking on front lawns
- Other Parking Options to Consider:
  - External Parking
    - Air Port
    - Vacant Lots
    - Shuttle Service
  - Extra locations for Street Side Parking
- Basic Parking Lot Specifications (see Figure 11):

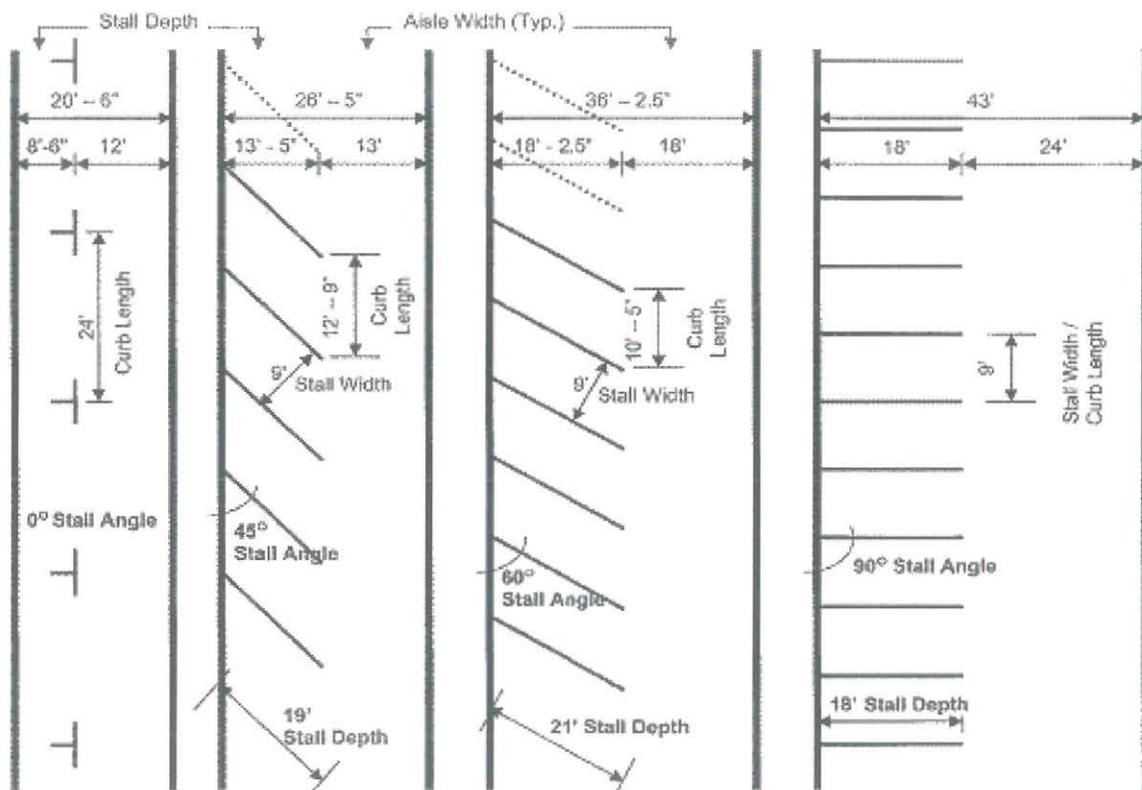


Figure 11. Basic parking lot specifications. Source: TXDOT

### Conclusion

**Conclusion 1:** State Highway 90 brings regional traffic through the center of Castroville, effectively disrupting and dividing the City.

- Provide alternative routes for regional traffic
- Reduce the speed of traffic along State Highway 90
- Reduce the scale of the road width along State Highway 90

**Conclusion 2:** There are inadequate safe and visible crosswalks over Highway 90

- Improve the access across Highway 90 by providing more and safer crosswalks.
  - Wider crosswalks
  - Different paving along the crosswalk to increase visibility
  - Increase the allotted time for crossing at all crossing lights

**Conclusion 3:** There is no effective signage to direct tourists into the historic center of the city

- Post signage for Castroville at the entrance and exit portals of the City
  - “Welcome to Castroville” signs that illustrate the culture and heritage of the city
- Post additional signage to better locate points of interest
  - Historical Sites
  - Historical District
  - Other Points of Interest
    - i.e. Houston Square, September Square, etc.
- Replace existing historical site signage with larger signs for easier identification by tourists
- Post large street signs along Highway 90 to create easier navigation throughout Castroville
- Alter existing street signs to allow roads with historically significant sites to be easily recognized
  - Color
  - Size
  - Text
  - Form

**Conclusion 4:** There is inadequate parking within the downtown area of the city

- Redesign Houston Square to appropriately accommodate parking
- Establish additional parking lots and services to accommodate large events
  - Vacant lots
  - Lot outside of the city
  - Shuttle service
- Establish formal street side parking in downtown Castroville

### Sources

- Texas Department of Transportation
- Sign Standards. Texas Department of Transportation. <<http://www.dot.state.tx.us/insdtdot/orgchart/cmd/cserve/standard/toc.htm>>. 2002-2008
- Accessibility Requirements in the Public Right of Way. TXDOT. 2004

- Acceptable Crosswalk Button Locations. Oregon Department of Transportation. 1995
- Castroville Master Plan. <[www.castrovilletx.us](http://www.castrovilletx.us)>. 2010
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Wilson, Will

## Introduction

Utilities serve a vital role in whether or not a city efficiently operates and functions appropriately. Although the subject of utilities gathers little public attention when things are running efficiently, the general public certainly notices when elements such as pipes, electrical lines, pumps, sewer drains falter, break or do not fulfill their intended use. Therefore the best approach to handling the utilities of a city is to ensure that materials, methods and procedures constantly meet updated standards and requirements set forth by City, State and national regulations.

Currently, the City of Castroville holds utility accounts for water, sewer, electric, gas and solid waste. There are 1192 water accounts, 1110 sewer accounts, 1362 electric accounts, 857 gas accounts and 1051 solid waste accounts. The majority of utility uses are provided by the City of Castroville with the exception of a small portion of electric services provided by the City of San Antonio.

It is crucial to understand the importance utilities play in ensuring a healthy, functional and efficient city. In a way, utilities serve as the backbone to a city. Simply stated, a city could not run or even exist in today's society without a wide variety of public utilities. If the City of Castroville is to expand as forecasted, an increase in utility services would be mandatory in ensuring high quality service. In understanding utilities, a further inquiry will be taken into specific areas such as electrical lines, electrical systems, wastewater management systems, sewer lines, manholes, fire hydrants, sanitation, water lines, water pumps, water wells. Also, both current conditions and proposed developments will be explored.

## Existing Conditions

Several conditions throughout Castroville dealing with utilities raise areas of concern. For one, the location of the Public Works facility on the corner of Paris St. and Amelia St. has proven problematic. Not only does it stand out visually in comparison to its surrounding areas deeply rooted in Alsatian style, it is an area prone to flooding. Consequently, the Public Works headquarters is currently located in two elevated trailers within the site boundaries. In addition, the old Alsatian-style home and store on site are no longer in use. The Public Works headquarters is currently located on the same site on elevated trailers. In addition, the majority of the town is lined with overhead electrical lines. Power outages occur frequently. Overgrown trees growing into the electrical lines, drooping electrical lines and weathered materials could be the causes to such frequent outages. Several storm drains existing near or along Highway 90 appear outdated. Due to exposed rebar and excessively large inlets, these storm drains appear unsafe, especially for children. The River Bluff subdivision is one of the few areas in town with underground electrical lines. Due to poor installation and unstable soils, both electrical boxes and units are unlevel and prone to future problems. Water wells are functioning well throughout the City. However, the pump and well just north of the airport shows signs of overflow and leakage. The wastewater management system currently stores its excess water in two storage tanks and sells the rest to a local farmer. However, the City will drain both the storage tanks, stop selling the excess water to the local farmer and will begin to dump the excess wastewater into the Medina River at the end of March of the year 2010. Several of these conditions are well documented in the following images, maps and informational charts. The information provided covers both existing conditions as well as proposed conditions.



Figure 1

Figure 1. Drain Inlet, Location: Corner of Lorenzo St. & Hwy. 90. Source: Will Wilson



Figure 2

Figure 2. Wastewater Management System: Purifier/Chlorinator Tank, Location: West of Castroville Regional Park. Source: Will Wilson



Figure 3a

Figure 3a. Proposed Site for 12" PVC overflow pipe from wastewater management system into Medina River. Source: Will Wilson



Figure 3b

Figure 3b. Proposed site for channeling overflow from 12" PVC overflow pipe into Medina River, Location: Creek bed on the southern edge of Castroville Regional Park. Source: Will Wilson



Figure 3c

Figure 3c. Proposed Site for wastewater channel entry into Medina River, Location: Southeast corner of Castroville Regional Park. Source: Will Wilson



Figure 4



Figure 5

Figure 4. Typical Water Well, Location: North of Castroville Airport. Source: Will Wilson

Figure 5. Typical Water Well, Location: Corner of Isabella St. & Paris St. Source: Will Wilson



Figure 6



Figure 7

Figure 6. Backup Water Pump Station, Location: North of Castroville Airport, 40' west of water well Source: Will Wilson

Figure 7. Castroville Municipal Airport: Proposed regional area for Public Works Facilities. Source: Will Wilson

**Proposed Water Upgrades:** (Don McCrary and Associates Inc., 2009)

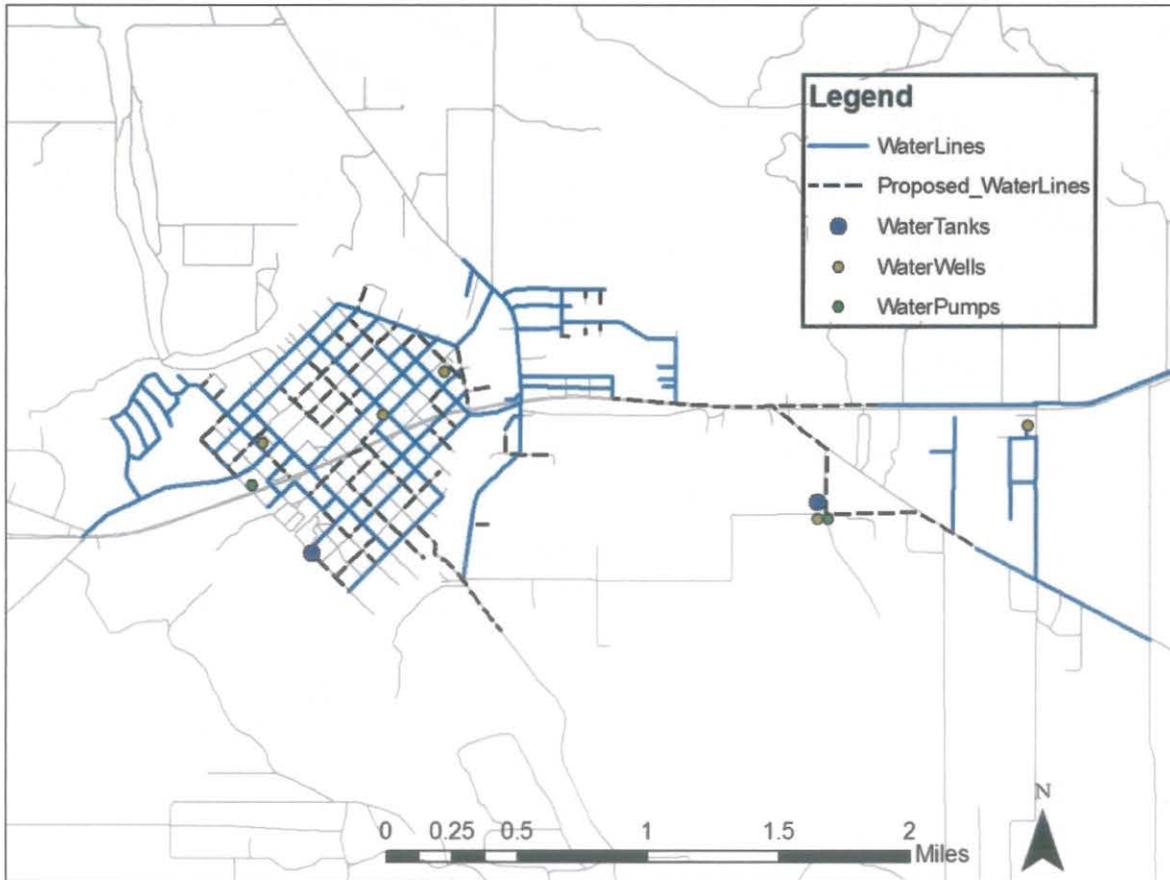
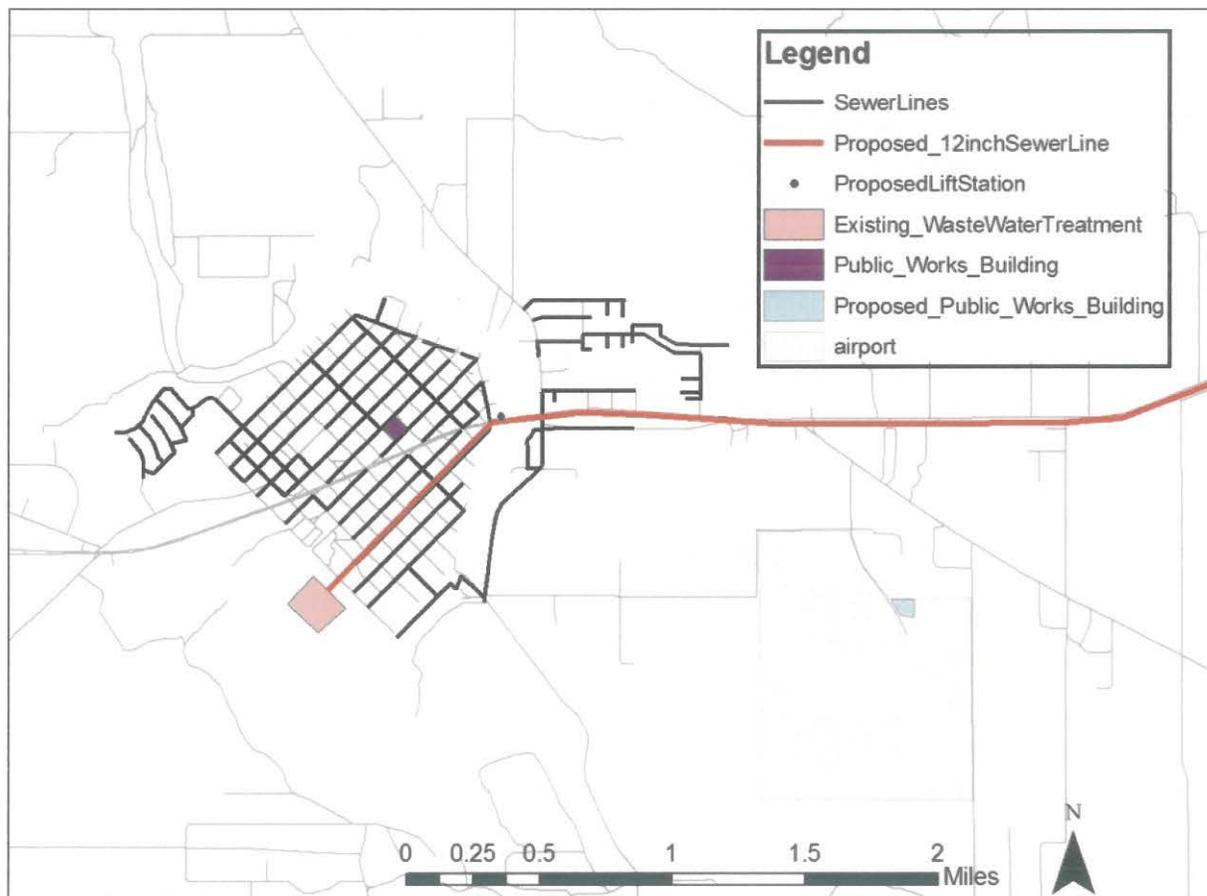


Figure 8. Water: Lines, Wells, Tanks, and Pump Information. Source: City of Castroville

- Storage Tank
  - Cost: \$2,781,016
  - Description: A one million gallon elevated storage tank to be located near the existing Airport and Medina Valley Systems. This project allows the City to stabilize existing pressures and provide service for future growth to the east of the City.
- Medina Valley Interconnect and Pump Upgrades
  - Cost: \$114,112
  - Descriptions: A 12" water line and appurtenances to interconnect the currently isolated Medina Valley Well System buried under Hwy 90. Additionally replace the existing undersized pump with a more efficient modern pump.
- Line Size Upgrades
  - Cost Estimate: \$1,447,605
  - Descriptions: Upgrade all water lines within the City that are smaller than 6" in diameter. Increase in size will result in higher and more stable water pressure and fire flow capacity.

- Variable Frequency Pump Drives
  - Cost Estimate: \$70,000
  - Description: Install new variable frequency drives (VFD's) on all well pumps. The result will be reduced wear on electrical components and reduce line drainage from water hammer created by "hard" starting the pumps.
- Highway 90 Looping:
  - Cost Estimate: \$85,576
  - Description: A 12" water line completing the loop of the existing line under Hwy 90 with the main network ending at Sharp St. This will provide more consistent and higher pressures within the region.
- Chlorinator System Replacement
  - Cost Estimate: \$40,000
  - Description: Replace the existing chlorinator system servicing the City. The current system is functioning but is outdated and in need of replacement. The proposed system will help insure consistent chlorine levels to prevent spread of water borne bacteria.

**Proposed Sewer System Upgrades:** (Don McCrary and Associates Inc., 2009)



**Figure 9.** Sewer Lines, Waste Water Management, & Public Works Locations. *Source: City of Castroville*

- **New Waste Water Treatment Plant**
  - Cost estimate: \$3,335,000
  - Description: A 945,000 gallon per day plant to replace the existing plant. The existing plant is outdated and operating near its maximum capacity. The permit for the proposed plant was submitted to the State of Texas in 2007 and should be approved in February 2009. The proposed plant will allow for future growth in the region and result in significantly cleaner effluent discharges.
- **Lift Station and Force Main**
  - Cost Estimate: \$2,516,735
  - Description: A lift station and force main to pump untreated sewage to the waste water treatment plant. The lift station is to be located east of the current City limits and will serve the future growth areas of the City as well as existing outlying businesses and residences.

### **Proposed Facilities Upgrades:** (Don McCrary and Associates Inc., 2009)

- **Public Works**
  - Cost Estimate: \$940,821
  - Description: Relocate the existing public works building and yard from its current location to the Airport. This is necessary since the existing building and yard are flooded and inaccessible in moderate rainfall events. This limits the City's ability to respond in emergency situations.

### Proposed Drainage Upgrades: (Don McCrary and Associates Inc., 2009)

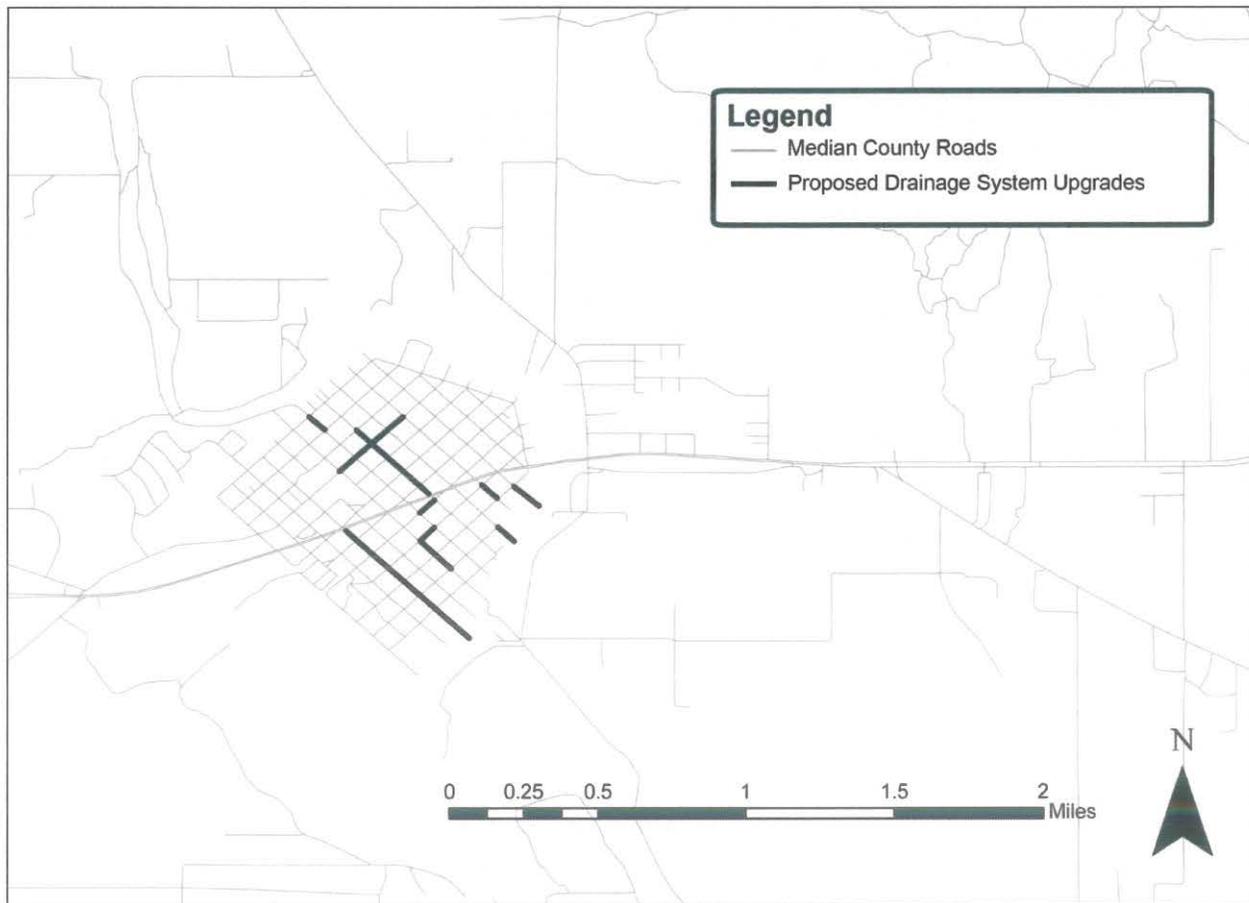


Figure 10. Proposed Drainage System Upgrade Locations. Source: City of Castroville

- Athens Street
  - Cost Estimate: \$1,500,000
  - Description: An inlet and culvert system designed to minimize localized flooding in the northern quadrant of the City. Currently, the entire residential area is inundated with up to 2' of water in moderate rain events. The proposed culverts will remove much of this water and carry it directly to the river.
- Medina River Improvements
  - Cost Estimate: 20,000,000
  - Description: Clean, widen, and otherwise improve capacity of the Medina River to prevent excessive localized flooding. Currently 147 lots are in the 100 year floodplain and suffer losses in major storm events. Additionally, the elevated river levels prevent most of the City streets from draining which results in approximately 1' of standing water throughout large portions of the City.
  - Effects: Proposed river improvements should enhance the overall visual quality of the river and provide more carrying capacity for water flow in flood situations. However, widening the river will lead to loss in vegetation along the existing river edge. Removal

of such vegetation could lead to erosion and a downgrade in visual quality along the river.

- Small Projects
  - Cost Estimate: \$195,750
  - Descriptions: Small localized drainage improvements: Constantinople & Florence, 800 Block of London Street, 1300 Block of London Street, Houston Street between Angelo and Constantinople, Naples Street from Vienna Street to Hwy 90, Alsace Street south of Madrid Street, Angelo Street between Lafayette and Florence Street, Mexico Street between Berlin and Washington, Amelia Street between Lisbon and the Medina River, and Lorenzo Street Right-of-way between Florence Street and the Median River.

**AEP Uvalde-to-CPS Energy Transmission Line Project: (ETT, 2009)**

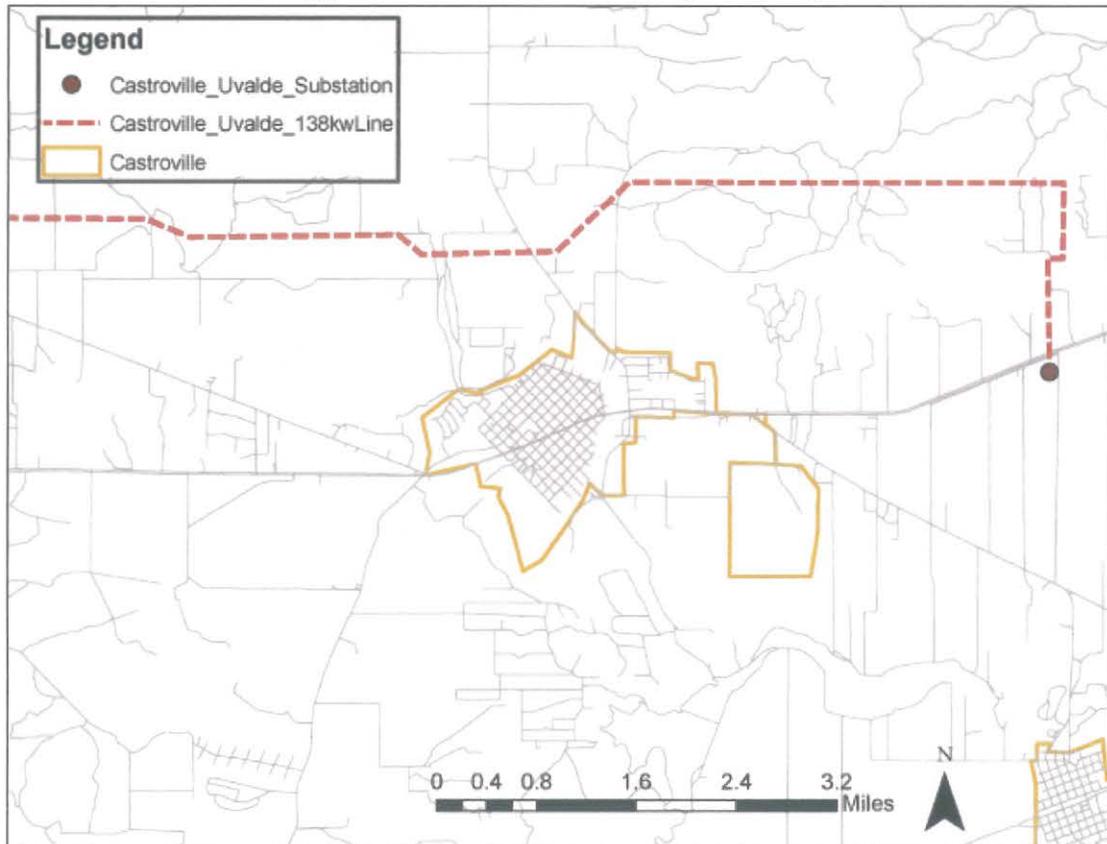
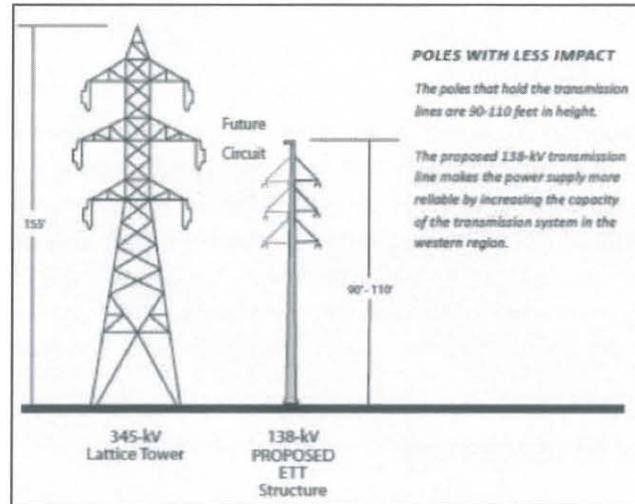


Figure 11. Castroville-Uvalde 138 Kilowatt Transmission Line and Substation. Source: Electrical Transmission Texas (ETT)



**Figure 12.** Castroville-Uvalde 138 Kilowatt Transmission Line and Substation. *Source: Electrical Transmission Texas (ETT)*

- Electric Transmission Texas (ETT) and CPS Energy are proposing to route and build a new 138-kilovolt (kV) transmission line in Uvalde, Medina and Bexar counties. The new line will connect the existing AEP Uvalde Substation in Uvalde County to CPS Energy's Texas Research or Castroville Substation. CPS Energy will build and own the portion of the line within its retail electric service area and ETT will build the remainder of the line to the Uvalde Substation. The AEP Uvalde-to-CPS Energy Project is scheduled to be completed by June 2011.

### **Proposed Electrical System Upgrades:** (Don McCrary and Associates Inc., 2009)

- Country Village Subdivision:
  - Cost Estimate: 1,035,402
  - Description: Replace the existing underground primary electrical distribution wiring and transformers to eliminate continuing power outages due to a fault system.
- River Bluff Subdivision
  - Cost Estimate: \$1,406,312.80
  - Description: Replace the existing underground primary electrical distribution wiring and transformers to eliminate continuing power outages due to a fault system.

### Evaluation

#### Water

Currently many of the water lines are old and out of date. As a result, many pipes are undersized causing regulating water pressure and adapting to future growth difficult. The City has plans to upgrade a significant portion of the water system. The upgrades in the system include a new chlorinator system, a new storage tank, a 12" interconnect and pump upgrade and increasing the line size in older pipes. The result of these upgrades will allow more stabilized water pressure, improved fire flow capacity and cleaner drinking water with the ability to accommodate future growth. The main obstacle to these upgrades is lack of funding.

#### Sewer & Waste Water Management

The City has plans to build a new wastewater treatment plant. The location is between a site near the airport and Castroville Regional Park. The new treatment plant will accommodate future growth of Castroville and result in cleaner effluent water. The current state of the project is in the preliminary design stage but permits have been approved. The City currently sells the treated waste water to a local farmer; however, the contract will expire March of 2010. The new plan for the City is to discharge treated wastewater into a tributary of the Medina River through a 12" overflow pipe. Currently the City uses a lift station and force main to pump waste up to the treatment plant. Power outages and temporary stoppages in the lift station will result in waste entering the Medina River. In evaluating both current and proposed systems for sewer and waste water management, it would be in the City's best interest to use the excess amount of water to benefit the City. Consequently, this would involve an alternative use to discharging water into the Medina River such as irrigating public properties, selling excess water to interested buyers or storing and purifying wastewater in alternate locations throughout the City of Castroville.

#### Public Works Facilities

The location of the Public Works facility on 703 Paris Street has frequent problems with flooding. As a result the public works faculty works out of two temporary office trailers. The flooding problems and the unsightly equipment yard in the historic district of Castroville give the City several reasons to build a new Public Works office elsewhere. The City is currently discussing the construction of a new Public Works facility and police station near the airport property owned by the City. However, it is important to note that the dispersal of city functions such a relocating such buildings has the potential to decentralize town services. On the other hand, moving the Public Works facility would free open the existing space for new development. Due to its prime location and historical significance, this site could be used as a vital economic resource for the City of Castroville.

#### Drainage

The inadequate drainage system in Castroville results in frequent flooding in moderate rain events. Although there are 147 lots within the 100 year floodplain of the Medina River, most of the flood concerns are a result of a poor inlet and culvert system. The current infrastructure is not adequately set up to handle the collecting sheet flow within the City during moderate rain events. The City is currently planning to install an inlet and culvert system to remove most of the storm water and carry it directly to the Medina River. The City also has a long term Medina River Improvements Plan that will clean and

widen the river resulting in an increased carrying capacity, reducing flood events. The City should seriously consider efforts to purify, clean and mitigate water runoff before entering Medina River by establishing such standards in its Medina River Improvements Plan. Various uses of vegetation, detention ponds, retention ponds and rain gardens are examples in which this could be conducted.

## Electric

With exception of two new residential developments, overhead transmission lines run throughout most streets in Castroville. These overhead structures are visually distracting, particularly in the historic district. The City has expressed interest in burying utilities lines. However, cost will very likely limit this from happening. Other minor visual concerns beside overhead electrical lines exist. A new substation a few miles east of Castroville has recently been built by CPS Energy. Although located near Highway 90, the substation did not seem to have a significant visual impact from the highway. Another frequent maintenance problem is the Bluffs residential development. Buried lines in this development have needed frequent maintenance due to poor installation practices and problematic clay soils. The City has planned to replace the existing underground electrical wiring and transformers to eliminate continuing power outages.

## Summary

Due to the information conveyed in this report, several conclusions can be made about the City of Castroville. From this information, problems can be identified, goals can be framed, objectives can be targeted, design requirements can be established and overall conclusions can be made. In other words, design requirements act as way of measuring whether or not specific goals have been reached or can be reached over a specific period of time. Since, progress towards these goals cannot be measured immediately, these design requirements provide a long term vision for how the City of Castroville can progress and thus measure its own progress as a City. The closer the City of Castroville sticks to these goals and the means to reaching them, the more the City will be able to function as a sound, functional and well planned community.

Although all goals established at the beginning of this document are addressed, four goals in particular are specifically incorporated into setting the framework for a successful approach to organizing, maintaining, and constructing utilities throughout Castroville. In addition, a set of design requirements are formatted to ensure the progress of the City towards these four goals. Two specific examples of manhole covers and street lighting in the historic district are displayed to illustrate alternate ways of achieving a visually pleasing appearance. Ironically, utility features are not commonly thought of as a visually pleasing subject. Alternative solutions such as these are just a few examples of ways the City can deal with conventional problems in a unique, efficient and appealing manner. In conclusion, closing reflections, tested ideas and recommendations are recorded for the purpose of pointing Castroville in the best direction towards becoming a sound and well-established community from a utilities standpoint.

### Goals Incorporated:

- Provide accessibility: Structure the City in such a way that all citizens have efficient access to facilities for both current and future conditions.
- Safety throughout the community: Ensure safety through adequate handling of wastewater, clean drinking water, quickly removing storm water, preventing hazardous electrical lines and removing dangerous outdated drainage inlets.
- Economic Viability: Structure the upgrades and development to the City of Castroville in such a way that effectiveness is maximized while costs are appropriately minimized.
- Functional organization: Organize infrastructure in a way that optimizes the functional utility through the most efficient means and/or processes.

### Conclusions & Design Requirements

- **Conclusion 1:** Basic utilities are out of date and therefore unsafe.
- **Design Requirements:**
  - Use materials for underground utilities that are not affected by corrosion from soils, carefully located and placed, ensure durability and are economically efficient.
  - Upgrade all water lines within the City that are smaller than 6" in diameter.
  - Utility lines should be kept inside ROW to facilitate ease of maintenance
  - Meet design requirements for pipe size, ROW size and fire hydrant offsets.
- **Conclusion 2:** Unsightly overhead utilities are visible on a majority of streets in the historic area.
- **Design Requirements:**
  - Establish a consistent, unique and recognizable appearance for utilities (ex....man holes, street lighting, utility poles, street lights, signage) throughout the historic area.
  - Use materials for underground utilities that are not affected by corrosion from soils, carefully located and placed, ensure durability and are economically efficient.
  - Due to the immediate cost and inconvenience of burying electrical lines, it would be in the City's best interest to conduct burial in separate phases over periods of time. To avoid a surplus of labor and to maximize efficiency, it would be in the City's best interest to bury the lines at the same time the adjacent roads are being reconstructed and repaved. Of the streets where electrical lines would be buried, Madrid Street, Paris Street and Fiorella Street would be of the highest priority due to improving the quality of the experience of tourists and increasing the unique culture by the removal of visually obstructive electrical lines.

- **Conclusion 3:** Underground utilities in the River Bluff development on the southwest portion of town have proved troublesome due to the cracking/separation of roads, unstable soil conditions, unlevel electrical boxes and unstable foundations of homes.
- **Design Requirements:**
  - Provide stricter standards regarding the installation of buried utility lines in order to prevent future maintenance from poor installation practices.
  - Use materials for underground utilities that are not affected by corrosion from soils, carefully located and placed, ensure durability and are economically efficient.
  
- **Conclusion 4:** Improvements and recommendations require a dramatic increase in funding and economic resources
- **Design Requirements:** New development or upgrades should incorporate feasibility studies to ensure that the most economic methods and materials are being used. Development phases should be implemented to maximize development opportunities without jeopardizing the budget of the City.
  
- **Conclusion 5:** Relocation of the Public Works facilities out of the downtown area would free up space to beautify the downtown area and act as a potential source of revenue.
- **Design Requirements:**
  - Ensure a both practical and efficient location for new Public Works facilities to effectively serve the City as a whole.
  - New development on existing Public Works site should
    - maximize the economic opportunities of the site's ideal location
    - serve a purposeful function both to the downtown and its people
    - reflects the unique identity of downtown Castroville.
  
- **Conclusion 6:** Drainage inlets along Highway 90 are old, out of date and have exposed rebar that poses dangerous situations for the community, particularly children.
- **Design Requirements:**
  - New, standard drainage inlets should replace all existing dangerous drainage inlets
  - Provide storm drains in the lowest part of downtown region to collect sheet flow and to prevent flooding.

- **Conclusion 7:** At the end of March, Wastewater Management will stop providing excess treated wastewater to a local farmer. This treated wastewater will be deposited through a 12" PVC overflow pipe into a channel on the edge of Castroville Regional Park that will flow into the Medina River
- **Design Requirements:**
  - Contrary to dumping it into the Medina River (proposed plan that will be effective at the end of March, 2010), the City should explore more viable and economical uses for excess water from wastewater system.
  
- **Conclusion 8:** Lack of tree maintenance along property lines and ROW's have led to overgrown trees interfering with the electrical lines. Such conditions pose serious threats if an ice storm, rapid winds, tornado or hurricane were to occur.
- **Design Requirements:**
  - Avoid planting trees directly underneath or near power lines
  - Maintain and properly prune existing trees that interfere with utility lines
  - Low-growing trees or shrubs can be planted rather than large-growing trees that interfere with electrical lines
  
- **Conclusion 9:** Explore alternate locations of the proposed new wastewater management system
- **Design Requirements:**
  - Location should be closer to town to minimize cost of excess piping and to avoid problems such as low, inadequate pressure.
  - Reinforce, maintain and expand the waste management system to effectively adapt to the future needs of the community.
  - Ensure proposed water line, electrical line and sewer upgrades meet standards provided by standing contract development
  
- **Conclusion 10:** Utilities impair the visual quality in the historic district
- **Design Requirements:**
  - Provide alternate solutions for utilities impairing the visual quality in the historic district
  - Overhead vs. buried electrical units
  - Provide screening for utilities that would be highly problematic in relocating
  - Relocate utility components to enhance the aesthetic quality of the City
  - Locate utilities to promote design conditions and prevent adverse affects to physical and functional integrity of the community.

- **Conclusion 11:** Medina River functions as a drainage, ecological and scenic corridor
- **Design Requirements:**
  - Ensure all proposals, improvements and plans before development regarding utilities carefully consider that the effects on Medina River
  - Explore opportunities to use detention/retention ponds to limit pollution and control water volume in order to prevent flooding from the Medina River.
  - Provide storm drains in the lowest part of downtown region to collect sheet flow and to prevent flooding.
  - Explore low elevations along the bank of Medina River that could be built up to prevent flooding into the town

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## Introduction

The purpose of evaluating land uses is to gather essential data about how the land is managed, used, and what the future landscape conditions could be. Understanding the land uses in and around Castroville, Texas can be an important element of social policy and future economic vitality. It is important to ensure that the land will be used efficiently for the benefit of the current and future residents as well as protecting the environment. With the information gathered, proper design recommendations and policies can be proposed that will benefit the community as a whole.

For this analysis, survey data maps that include the existing conditions, local zoning, local ordinances, and extraterritorial jurisdictions were collected and cataloged. A general inventory was taken of the major civic, residential, commercial, and recreational activities within and near the city. Knowing the patterns of social organization and activity can allow for management for future growth. To get a deeper understanding of the relationship Castroville shares with the immediate surrounding areas, San Antonio land uses and extraterritorial jurisdiction (ETJ) maps were also analyzed. It is important to understand the relationship Castroville has with San Antonio to properly design for future changes.

## Existing Conditions

Within the city limits of Castroville, which covers a total of 1,915.79 acres, the majority of the land uses are residential, commercial, and institutional (Figure 1 below). At 29%, single family homes make up the largest percentage of land use within the city limits. Within that residential zoning 74% of those homes are located north of Highway 90. There are several locations within Castroville's ETJ (Figure 2 below), which covers an additional 11,679.43 acres, where homes are concentrated such as the Star Oak Ranch, Los Altos, and the Medina River West and New Alsace subdivisions. The remainder of single family residential land use is dispersed sparsely on plots of land with large acreage within the ETJ. Multi Family Residential makes up less than 1% of Castroville's land use. This area includes Country Village (132 units), Village Apartments (40 units) and Little Alsace Apartments (12 units). Included in the residential land use, manufactured homes occupy less than 1%. The manufactured homes are located on subdivisions on Houston St. by the Houston Sports Complex and FM 471 N.

Public and institutional land use makes up 27% of the existing land use in Castroville. This includes the Castroville Municipal Airport, City facilities, public safety facilities, public and private schools, churches, cemeteries and community centers, the Moye Center, Landmark Inn, Steinbach House, post office and Medina County facilities. The City of Castroville also owns many vacant lots or lots that are in need of refurbishing. Most of the public and institutional land is tax exempt. There are no existing industrial land uses.

Within Castroville's total land acreage, 10% is vacant land. This includes distributed lots within residential areas and along Highway 90. The lots within residential areas are suitable for infill development while the ones along Highway 90 are zoned for commercial development. The majority of the land use outside of the city limits and within Castroville's ETJ is farmland. An additional 18% of the city's total land use is right-of-way. This consists of paved streets and land set aside for future streets.

Commercial use comprises 7% of the total land use in Castroville, which also includes retail and office buildings. The majority of the existing commercial areas are located along Highway 90 and around Houston Square in the historic downtown. The downtown central business district is a developed, mixed-use area in which the focal point is Houston Square. This district is surrounded by retail, government, professional offices, restaurants and churches. The trend for commercial growth along Highway 90 is towards San Antonio on the East side of Castroville. The majority of incoming commercial along Highway 90 consists of chain restaurants and stores.

Parks and open space form 7% of the total land use within the city limits. The existing parks within Castroville include Castroville Regional Park, Koenig Park, Houston Square, September Square and Houston Sports Park. Koenig Park is privately owned and is used for special events. Houston Square is primarily used for parking for the town. Regional Park on the South side of Castroville offers many amenities, which includes many hiking trails and scenic paths.

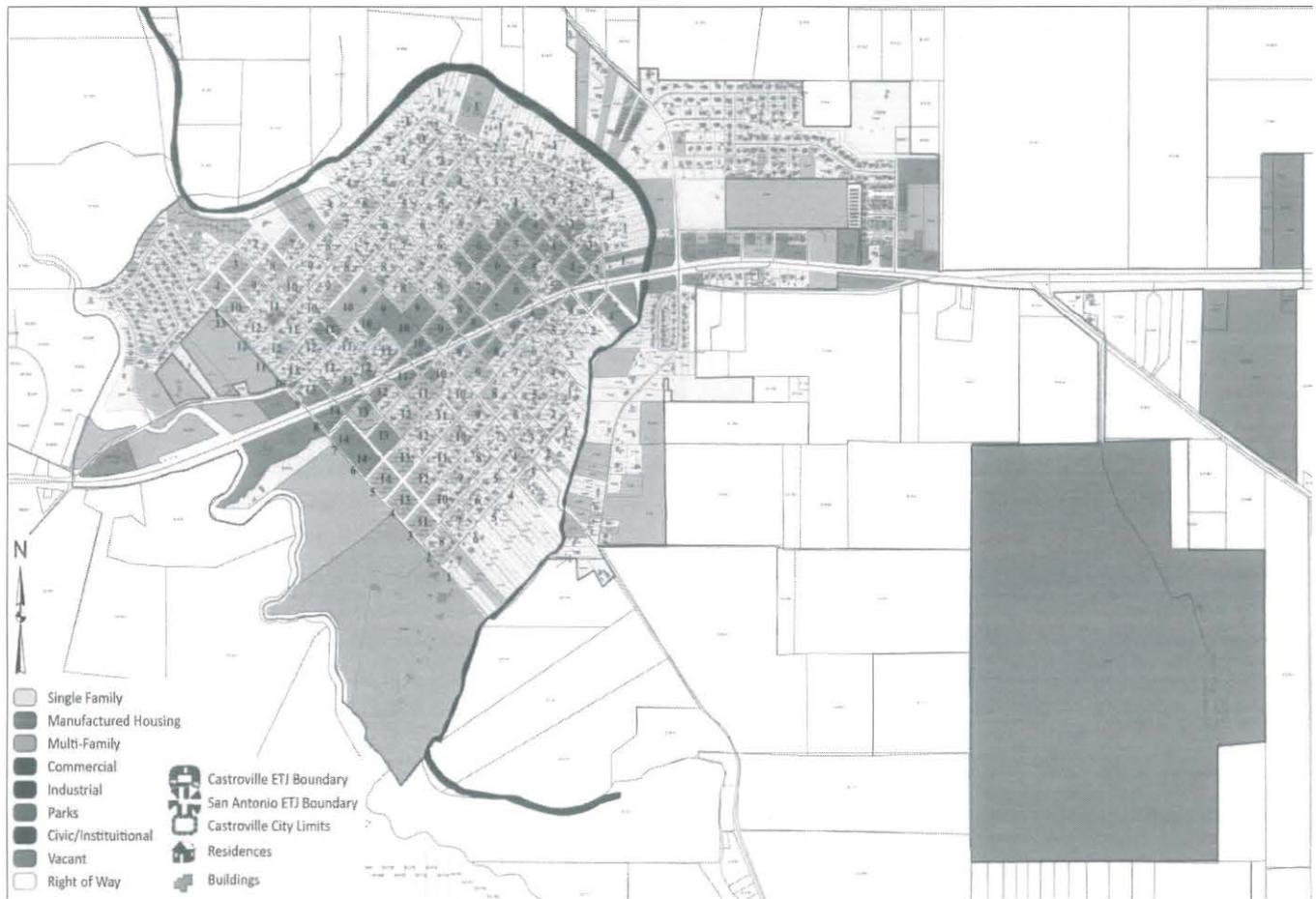


Figure 1: Existing Land Use in Castroville City Limits. Source: Frie Planning & Development

Figure 2 shows where San Antonio’s ETJ is in relation to the east side of Castroville and how it is approaching Castroville’s ETJ at the Medina County line.

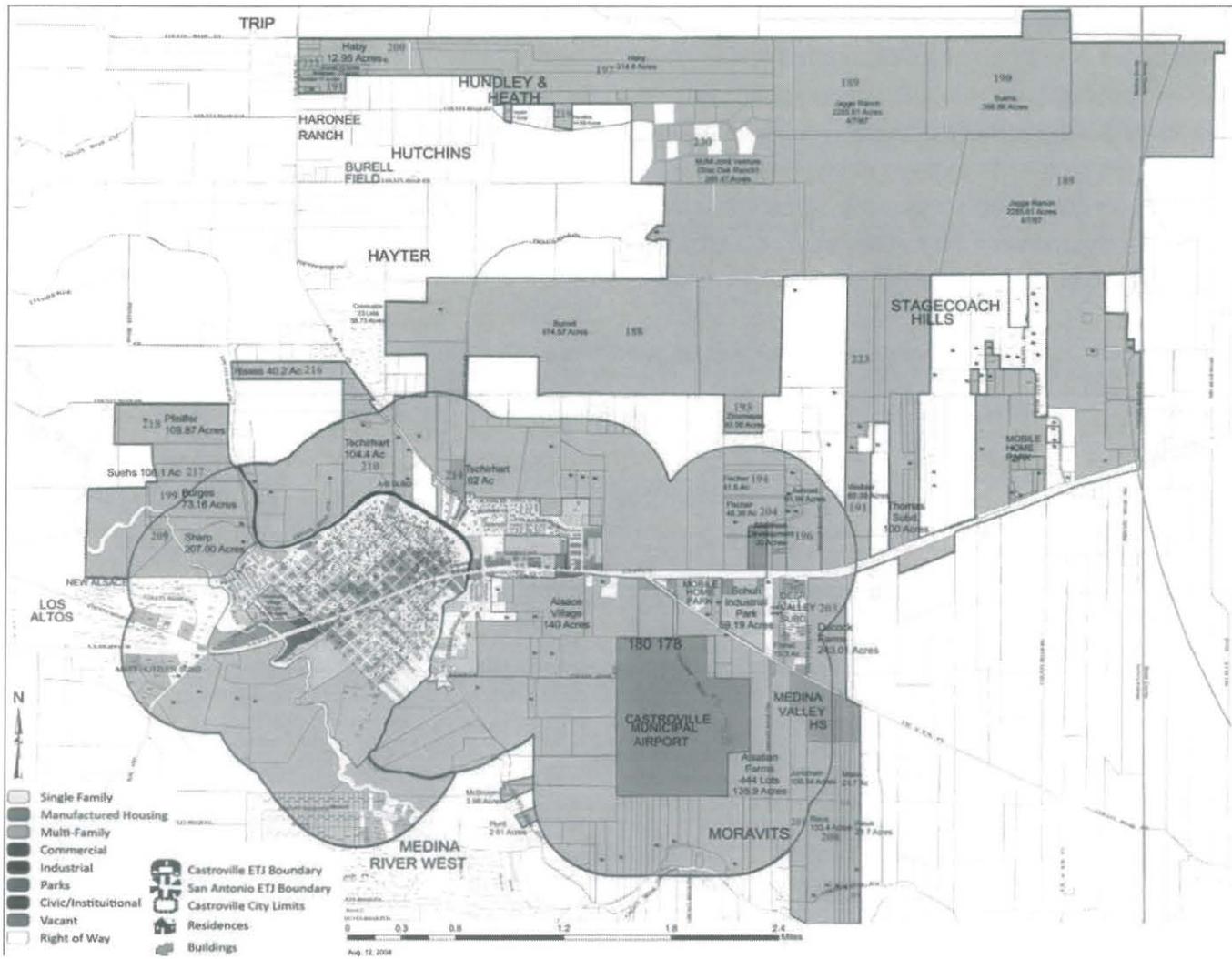


Figure 2: Existing Land Use in the Castroville ETJ. Source: Frie Planning & Development

	Within City Limits		Within Castroville ETJ	
	Acres	Square Miles	Acres	Square Miles
Single Family	549.337	0.858	347.953	0.543
Manufactured Housing	5.830	0.009	89.310	0.139
Multi Family	9.694	0.015		
Commercial	144.515	0.255	54.031	0.084
Park Open Space	135.853	0.212		
Public/Institutional	527.010	0.822	99.216	0.154
Vacant	202.010	0.316	11088.94	17.322
Right of Way	340.874	0.536		
<b>Totals</b>	<b>1915.787</b>	<b>2.993</b>	<b>11679.426</b>	<b>18.242</b>

Figure 3: Existing Land Use Summary. Source: Frie Planning & Development

Figure 4 shows San Antonio as it currently exists. It is important to note how expansive San Antonio's ETJ is and how it is flowing into other counties and approaching many small towns. This map also illustrates how San Antonio increases with size every ten years. As of 2008 it was growing primarily along highway 281 and I-10. But there are many low cost housing developments along Highway 90 that are slowly approaching Castrovilla. In order to understand how Castrovilla is changing and growing it is important to know how San Antonio is growing. San Antonio is experiencing rapid growth due to its growing job market. At this moment it is expected that the growth rate of population will not slow down in the next 30 years.

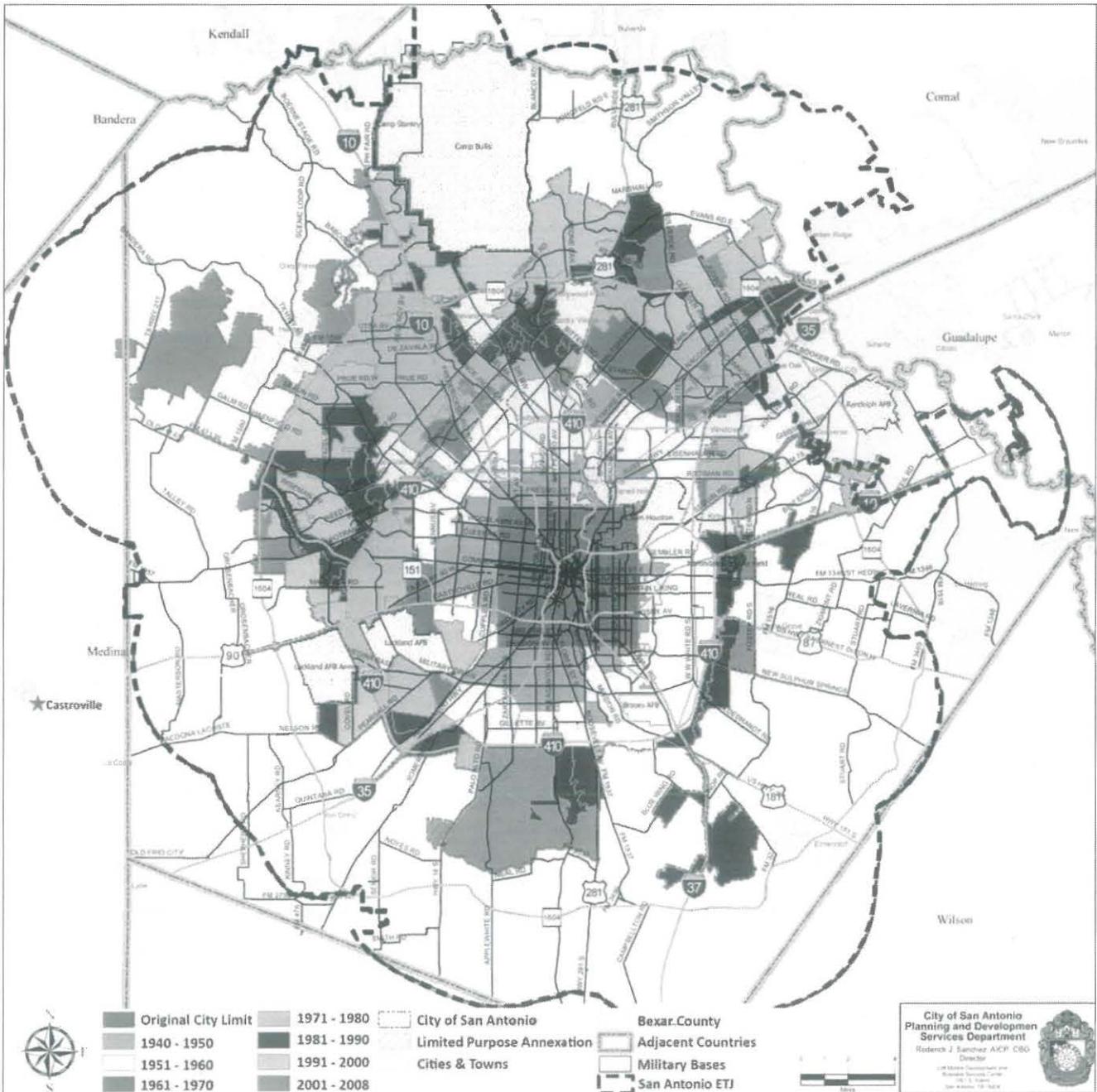


Figure 4: Growth by Annexations by Every Tenth Year & Current San Antonio ETJ. Source: <http://www.sanantonio.gov>

Figure 5 shows the Frie's plan for future thoroughfares throughout the Castroville ETJ. These proposed roads are for the purpose of handling the future growth of the area due to future housing developments and incoming populations from San Antonio.

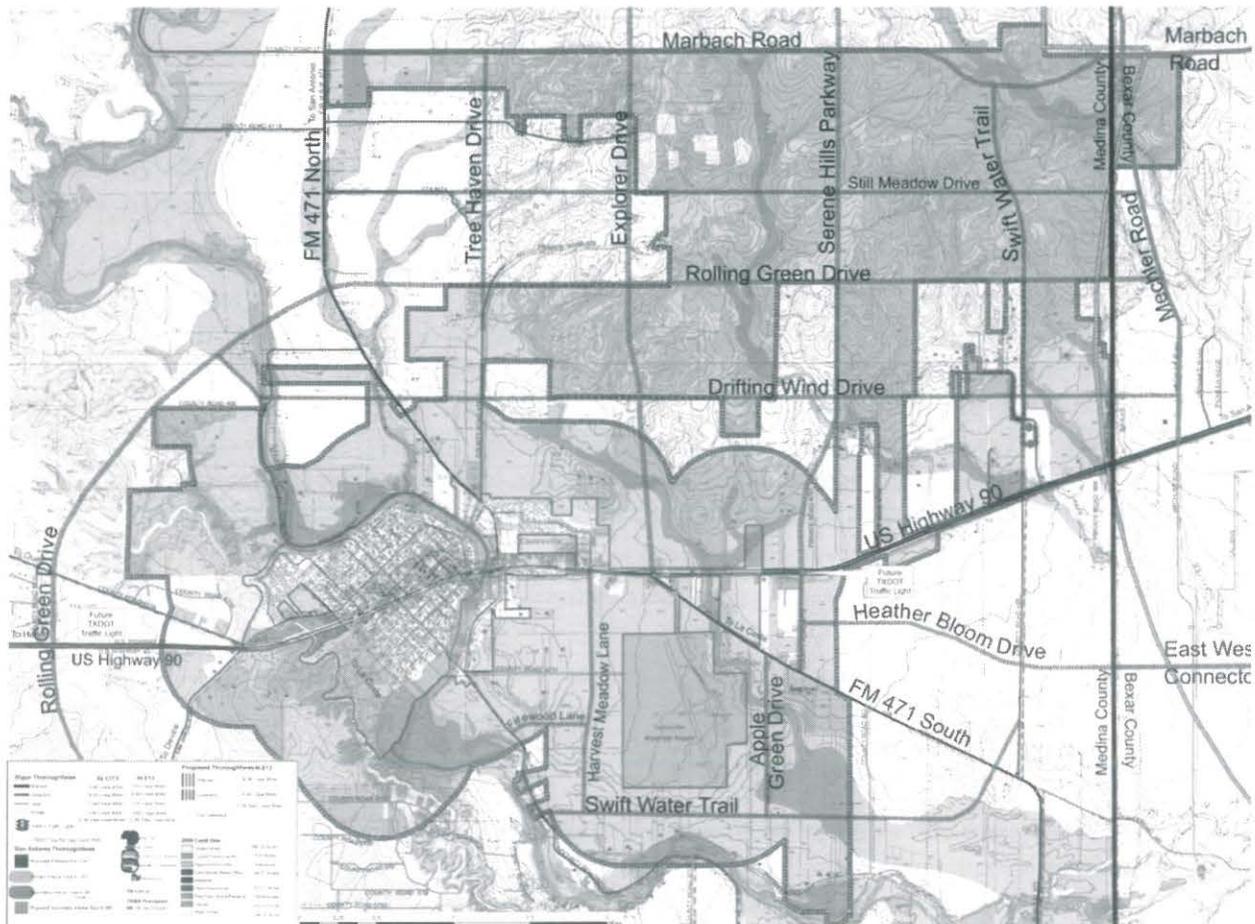


Figure 5: Proposed Major Thoroughfare in Castroville ETJ. Source: Frie Planning & Development

## Evaluation

With the gathered data and various land use maps, land use trends become apparent that are within the City of Castroville today. The majority of the land use in the City is residential which is located heavily towards the outskirts of town behind the commercial areas along Highway 90 and near the Medina River. The properties along the Medina River are private property and don't provide much change. Single family residential is located right behind the commercial district along Highway 90 and could be prone to many problems such as noise and litter. There is no clear transition from one land use to the other.

There are a number of commercial uses along Highway 90. These retail stores and restaurants include such chains as McDonalds, Church's Chicken, Dairy Queen and Bill Miller. The commercial area in the town center around Houston Square is dotted with antique stores and restaurants. Houston square by itself is under-utilized and has primarily become a large parking lot. The commercial activity along

highway 90 also blocks the view into downtown and prevents visitors from knowing what lies within the town center.

The majority of land uses in Castroville's ETJ are agricultural farmlands that consist of wheat and corn fields with single family homes scattered sparsely on plots of land. Castroville's ETJ on the east side extends up to the north and actually overlaps with San Antonio's ETJ which could cause a problem in the future when more developments want to come into the area. San Antonio could also try to acquire more ETJ before Castroville does, allowing larger retail stores and cheap development to come into the area outside of Castroville's jurisdiction. The ETJ provides room for the City of Castroville to grow in accordance to its own ordinances. The current land use adds no definite edge to the city to mark exactly where it begins and where it ends.

The existing land use for parks and open space is located mainly on the outskirts of Castroville near the Medina River with the exception of Houston Street Park which is located north of the elementary school. Houston Street Park consists of a baseball field and a soccer field. The Regional Park southwest of Castroville consists of a playground and an RV park. Koenig Park on the northeastern side of Castroville is relatively small and is occupied by a large pavilion, but it is also privately owned. There are few parks in Castroville, but there is a sufficient amount of land for the residents of Castroville to gather for various activities.

## Conclusions

**Conclusion 1:** With commercial area spread thinly along Highway 90, it makes it difficult for visitors to look within the City to view its unique culture.

- Develop a growth barrier enforced along the City to limit the amount and the time of growth
- Ordinances should be enforced to maintain the quality of developments
- Discourage commercial development on land directly around the Medina River and across the river

**Conclusion 2:** Castroville is in danger of being overwhelmed by the growth of San Antonio and losing its character.

- A more clearly defined edge needs to be established outside of the City of Castroville using land use as a tool
- Mark where the city begins and ends
- Acquire more ETJ outside of Castroville before San Antonio so as to further maintain the quality of incoming developments
- The ETJ and zoning ordinances should be strictly enforced to maintain the quality and character of Castroville

**Conclusion 3:** Vacant land within the residential districts of Castroville is primed for development.

- New development focused on reusing the existing vacant lots and buildings should renew focus on the core of the city
- Create facilities for the growing population of elderly people in Castroville
- Assisted living facilities

- Nursing home facilities
- Avoid developing parkland in these areas
- Create new connections to important areas within the town including historical areas

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## Introduction

Castroville has a reasonable amount of information available on the City's website ([www.castrovilletx.us/](http://www.castrovilletx.us/)) regarding the zoning and other ordinances currently in place. Upon further searching and gathering data from our visit to Castroville, we obtained more in-depth information about the subject. We began our task by familiarizing ourselves with the current zoning and ordinances Castroville has in place; including the Design Guidelines (Draft), Design Criteria for Highway 90, as well as the Comprehensive Zoning Ordinance.

In order to gauge how to address the codes and ordinances of a small, historical town, we investigated at documents from other successful towns including Fredericksburg TX and Santa Fe NM. We looked at the various contents of their ordinances to help draw ideas for what contributes to the achievement and preservation of these historic towns. These cities' official government websites contributed additional information on their codes and how they have been successfully carried out.

## Existing Conditions

### International Code Council & Historic Preservation

The City of Castroville adheres to the International Building Code; "Codes provide minimum safeguards for people with regard to building safety and fire prevention. Codes protect health, safety and welfare as they relate to the residential and commercial built environment." (International Code Council)

All new construction and renovations to buildings both along highway 90 and within the City of Castroville have design ordinances that fit the historic nature of the town. All of the criteria for building along highway 90 (Mass & Size, Building & Roof Form, Building Setback, Exterior Design Standards, Pedestrian Systems, Positive Open Space, Automobile Circulation & Parking, Service Areas, Corporate & Franchise Design, and Architectural Character) have limitations that are drawn from the Alsatian/Texan history of the town. The preservation of historic atmosphere in the area along Highway 90, the commercial zone, is important because it acts as the gateway to the City. In addition, historic guidelines are continued throughout the Castroville Design Guidelines (Drafted by the Castroville Landmark Commission) act as the underlying theme in all areas of focus.

### Design Guidelines & Criteria

The majority of focus within the Design Guidelines (Draft) pertained to the physical appearance of the buildings in the City and the importance of staying within certain parameters for all scales including existing structures, additions, and new construction. Another key aspect of the Design Guidelines was the Signage used in Castroville (excluding signage along Hwy 90). There are guidelines restricting sign design, sign placement, and general information, all of which have to be approved by The Castroville Landmark Commission.

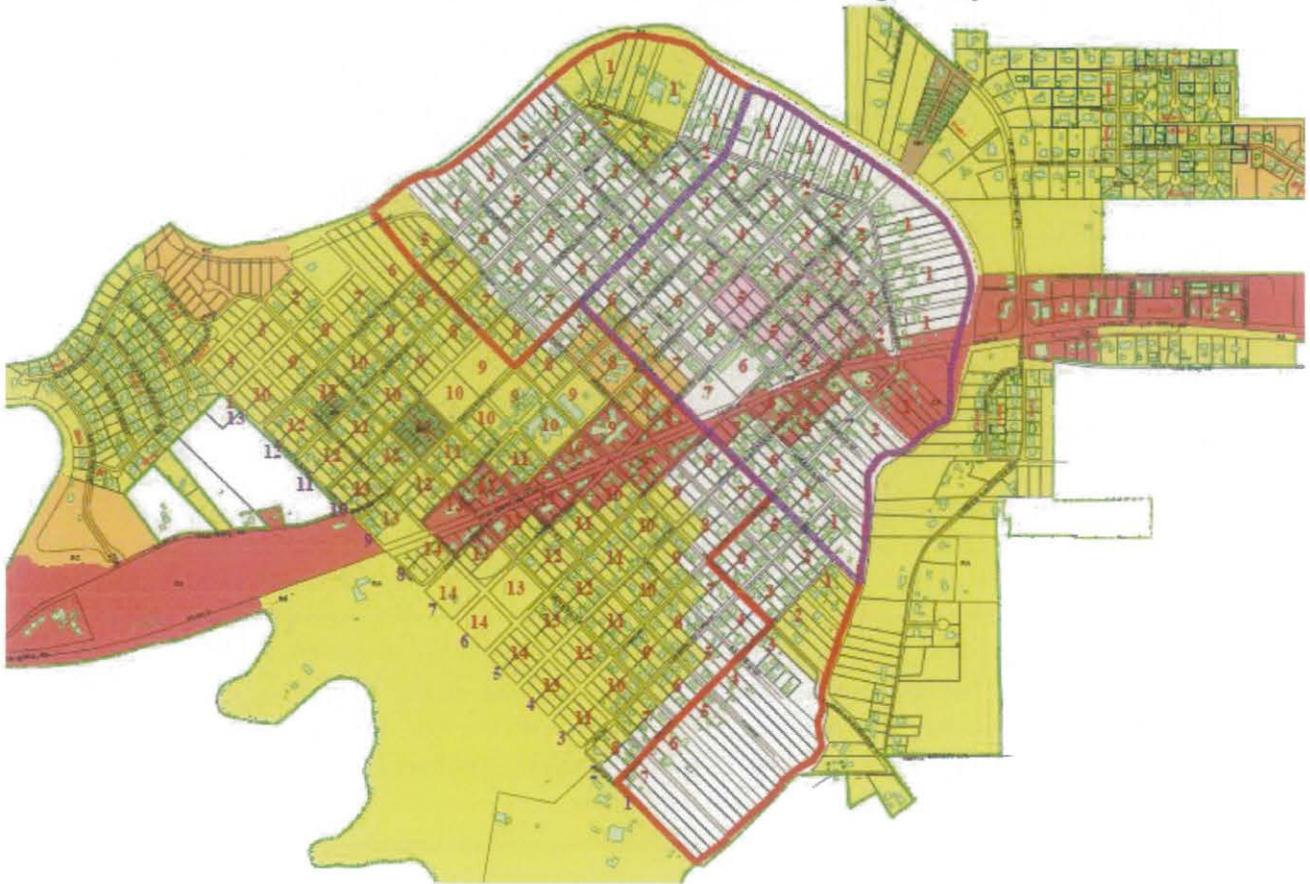
The document addressing the Design Criteria along Highway 90 describes the aesthetics of the structures as well as the building materials and there is a small section about the Landscaping Design.

There is some additional information regarding the buildings' surroundings, including parking, open space, and circulation.

**Zoning**

“The Zoning Regulations and Districts as herein established have been made in accordance with a comprehensive plan for the purpose of promoting health, safety, morals, and the general welfare of the City, and for the protection and preservation of places and areas of historical and cultural importance and significance therein “ (CZO-1).

**Downtown Castroville Zoning Map**



**2008 Zoning Districts**

- |                                 |                                |   |
|---------------------------------|--------------------------------|---|
| RA Single Family Dwelling       | CG Central Business (Historic) | National Historic District                |
| RC General Residence            | CF Neighborhood Business       | Proposed Local Downtown Historic District |
| MH Manufactured Home Park       | II Industrial                  | City Limits                               |
| HE Historical                   | PD Planned Development         | 2003 Buildings                            |
| CH West Central East Commercial |                                |   |

## Additional Historical Town Conditions

Santa Fe, New Mexico and Fredericksburg, Texas are two examples of historical towns much like the city of Castroville. Both cities can attribute their success to their strict implementation and enforcement of sustainable preservation ordinances.

### Fredericksburg, Texas

The City of Fredericksburg links all areas of interest in the town together by implementing such features as “Open space, sidewalks, pedestrian and/or bicycle paths [that] should be included in the transportation elements that connect all residential areas of the city to major destinations.” (Dunkin) This thriving historical town realizes the importance of putting the natural features that define the city limits to good use. “The City should use its planning, development regulation, signage and infrastructure improvements to ensure that the major entries into the community are clearly defined.” (Dunkin) Since these features are so vital, focus is placed on the protection and enhancement of the natural boundaries. Maintaining the distinctive historic culture of the city is very important and therefore it is required that “public investments in community design (including the creation of gateways, landmarks and other civic features) should include elements that reflect Fredericksburg’s history and heritage.” (Dunkin)

### Santa Fe, New Mexico

Santa Fe does not focus on what is or is not allowed, they give most of their attention to the future and state specifically what the end product will be and give a variety of paths to choose from in order to reach that result. Giving multiple alternatives to accomplish a specified goal is how Santa Fe always keeps the future in mind. In order to maintain the appearance, as well as the structural integrity of their buildings, the city offers “incentives to builders for performance significantly above the mandatory” minimums set in place. (City of Santa Fe) Santa Fe has come to realize that in order to preserve their historic character, their ordinances also need to include things such as rainwater harvesting and renewable energy. Educating the public about these problems is also being taken into consideration. They have found that “City support and funding towards educational materials development and training, and when appropriate, towards organizations that offer needed solutions” is crucial to the survival of the character of their city along with the preservation of their historical features. (City of Santa Fe)

## Conclusions

Without improvement, Castroville is leaving itself vulnerable to many negative occurrences such as deterioration; physically, economically, socially and in many other ways. It should be understood that if change is not implemented, the current conditions will continue to worsen and multiply. For the City of Castroville this means permanent loss of historic character and therefore a great deal of its charm, quality of life, and one of its main tourist attractions. Currently, the town is a pleasant mixture of different architectural styles. This will all change without proper enforcement of codes and ordinances and the city could lose its cohesive appearance. Change is inevitable, therefore, Castroville should step in and lead the changes happening around them in a positive direction.

## Recommendations

- Adopt a conservation easement ordinance to help maintain Castroville’s Agrarian culture and prevent possible loss due to future expansion.
- Adopt an ordinance to protect Bald Cypress (*Taxodium distichum*) and Pecan (*Carya Illinoensis*) trees, which are important to the character and cohesive appearance of Castroville (Reference vegetation section) through the protection of their habitat.
- Uphold current zoning ordinances and design guidelines and keep them up to date in order to prevent new development from taking away from Castroville’s strong character.
- Finalize and implement the drafted version of the Castroville Design Guidelines currently being developed.

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## Introduction

This research investigates the geological conditions of Castroville, Texas. The current conditions will determine design performance criteria to guide future development and revitalization. The report identifies the strata of bedrock and other geological characteristics.

## Existing Conditions

The Balcones Fault caused the geological formations of the area. Figure 1 shows the Edwards Aquifer in relation to Texas and Figure 2 is a diagram of a cross section through the different zones of the aquifer. Figure 3 shows growth faults near Castroville, located about 2.5 miles to the northeast and northwest. Growth faults are normal faults that occur as sediments are deposited on and above the fault scarp. The zone has been known to be inactive for millions of years.

Castroville is located in the Artesian Zone of the Edwards Aquifer. Three types of zones make up the Edwards aquifer system. The catchment zone is where precipitation falls and flows toward the recharge zone. The recharge zone is where the water flows into the aquifer and is unconfined. Most of the Edwards aquifer is artesian. This is where the water is confined between impermeable layers of rock. Flowing artesian wells and springs exist because of the pressure build-up in this confined zone.

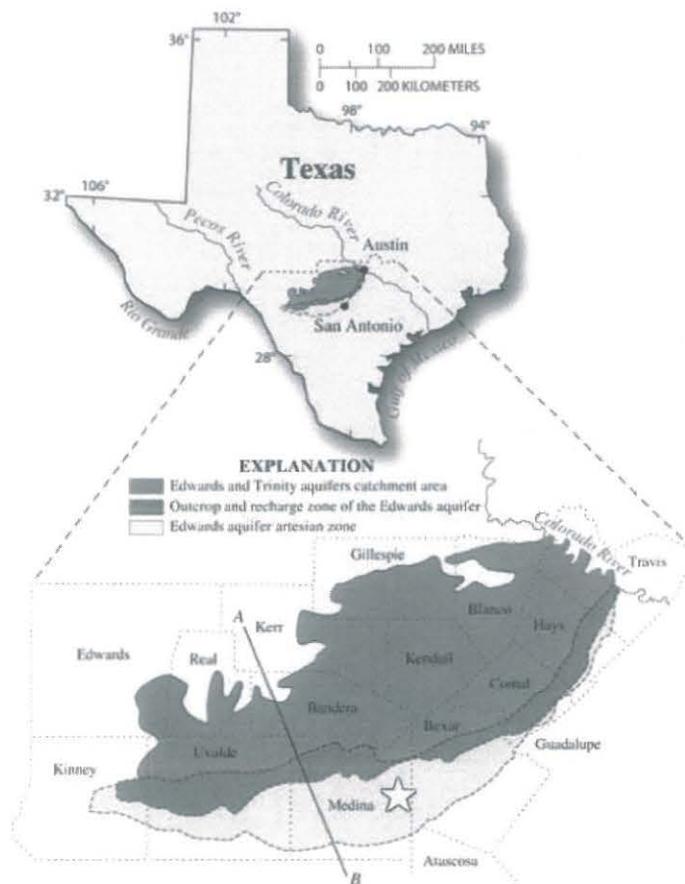
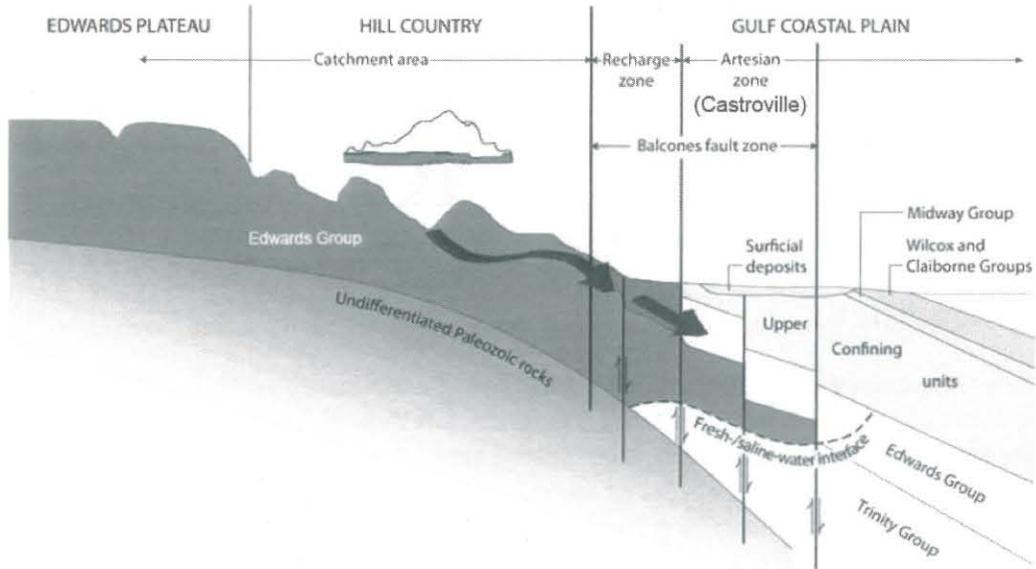
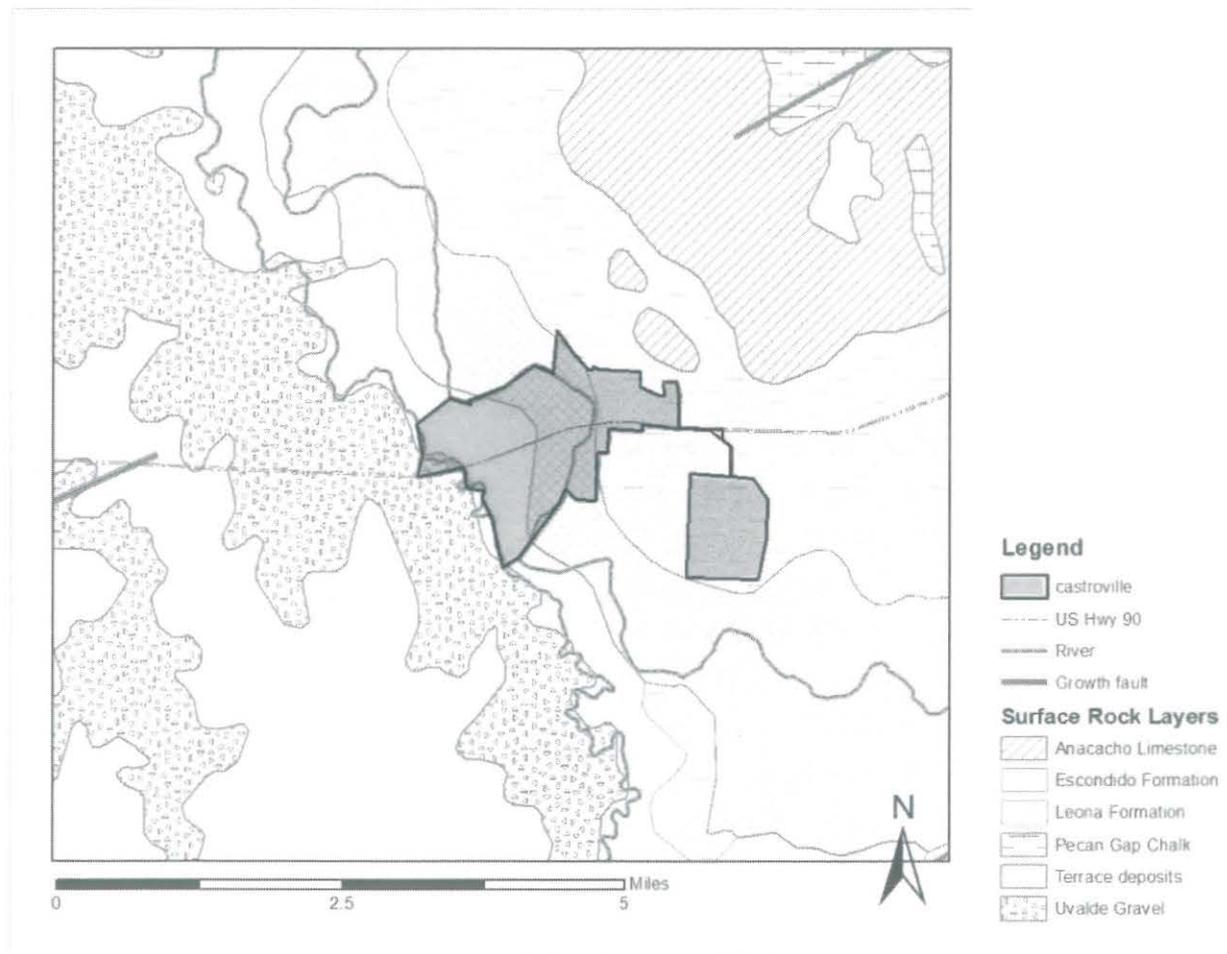


Figure 1. Distribution of the Edwards aquifer. Source: Blome, Charles D.

# Geology



**Figure 2.** Cross section of Figure 1 to show geological structure. Castroville is in the Artesian zone. *Source: Blome, Charles D.*



**Figure 3.** This map shows which rock layers appear at the surface. *Source: Jennifer Kelliher (Data: USG)*

The following are characteristics of geological features that appear at the surface in the surrounding Castroville area and are represented in the Figure 3 map.

**Anacacho Limestone**

*Thickness:* 240-500 feet

*Components:* Limestone and marl; Grain-rich limestone is common; fossil fragments

*Characteristics:* Light gray to white; Thin to thick bedded

**Escondido Formation**

*Thickness:* 550 – 900 feet

*Components:* Contains mudstone, siltstone, sandstone and silty limestone

*Characteristics:* not commonly outcropped (visual on surface)

**Leona Formation**

*Thickness:* a few feet to 80 feet; Thickest near stream channels or older abandoned meander channels.

*Components:* Composed of lenticular beds of sand, gravel, silt, and clay; pebbles and cobbles mostly contain limestone with some chert

*Characteristics:* Course at bottom of formation with increasing silt upwards; is a prolific ground-water source and has variable (low to high) porosity because of poor sorting of

**Pecan Gap Chalk**

*Thickness:* 100-400ft

*Components:* Chalk and chalky marl

*Characteristics:* Yellow-yellow brown

**Terrace Deposits**

*Thickness:* N/A

*Components:* Contains unconsolidated gravel, sand, silt and clay

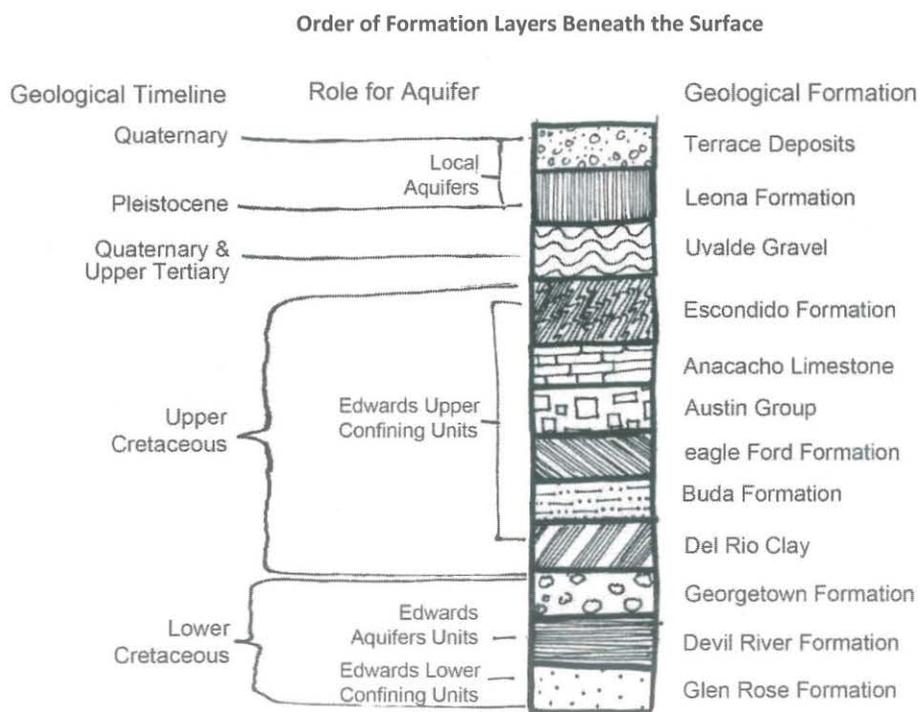
*Characteristics:* Mostly occurs above flood level and along streams and rivers.

**Uvalde Gravel**

*Thickness:* several feet to more than 10 feet

*Components:* Mostly gravel and sand with some silt and clay, well-rounded, pebble to cobble sized gravel are common with few boulders, mostly chert and limestone, commonly cemented

*Characteristics:* Typically cap topographically high areas



**Figure 3.** This diagram shows the order of geological formations beneath the surface, their age, and role in the Edwards Aquifer. Layers closest to the bottom are older. *Source: Jennifer Kelliher*

## Evaluation

Based on the research findings, there are inactive growth faults near Castroville. The terrace deposits show remnants of past flood plains. Castroville falls within the Artesian Zone of the Edwards Aquifer and the bedrock have porous characteristics.

## Conclusion

**Conclusion 1:** The porous characteristics of the bedrock allows for potential contamination of groundwater resources.

- Ordinances and codes should be put into place to regulate the use of fertilizers, pesticides and herbicides for residential and agricultural uses
- Bioswales should be used to minimize the absorption of pollutants from street runoff into the groundwater

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## Introduction

Soils are an important part of land planning for several reasons affecting constructability and agricultural development on site. Understanding of the geologic forces that caused the origination of soils can contribute to proper land planning by improving understanding of potential resources and potential hazards of the site. As most people will not possess an understanding of soil formation and processes a brief description of the processes that occurred in the Castroville area as well as descriptions and definitions that help to better explain the effects of these processes on land planning are provided.

This report will provide research based on empirical evidence provided in part by the United States Geological Service (USGS), Natural Resources Conservation Service (NRCS), and other sources for soil data for the area within and adjacent to Castroville Texas. The survey range was done between the Medina and Bexar County line in the east to just over one mile west of Cross Hill, and north from Medina Lake past the south boundary of the Medina River within the Medina County border.

This report will provide conclusions about the soil medium in the study area and provide examples of design requirements that should be taken into consideration for future land use planning.

## Brief Overview

### Soil Profile

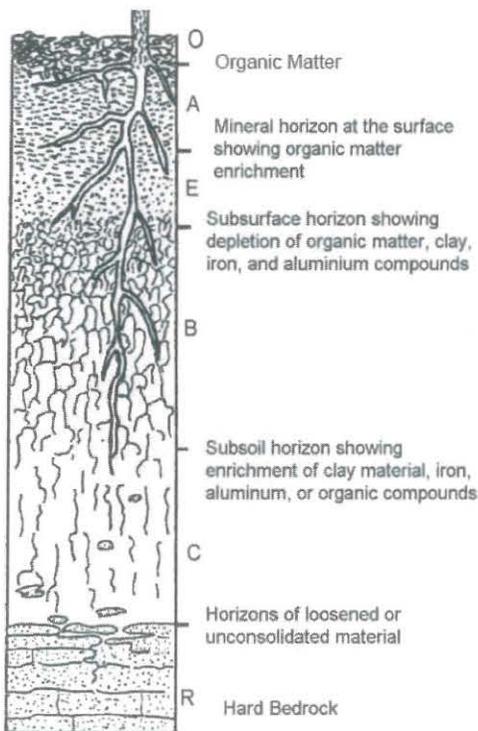


Figure 1 Soil Horizons  
<http://ag.arizona.edu/pubs/garden/mg/soils/soils.html>

To understand the potential effects of design requirements on future land planning practices it is imperative to understand a few facts about soils and their forming processes. Soils are generally classified into profiles that are descriptive of the contents that make up the soils. These soil profiles are delineated by horizons which are differentiated by several properties, the most common methods for differentiation are by the relative color changes through the depth of these horizons as well as the change of contributing particle sizes or mineral content, (T. Cooper 2000).

Figure 1 shows a typical soil profile. At the top of the horizon is the "O" layer named for the high amounts of organic material (leaf litter, and other biodegrading organic material), followed by the "A" horizon named as such because this is the zone of accumulation of organic material being leached through the mineral soil medium. The "A" horizons is also commonly referred to as the top-soil region. The "B" horizon, generally referred to as sub soil, falls directly under the "A" horizon. This area is generally made of smaller particles such as clays that settled through the different horizons and have become more consolidated than those of the "A" horizon. The "C" horizon begins just below the "B" horizon and is generally made of the smallest particle sizes as well as some smaller rocks that have not been decomposed fully. The "A", "B",

and “C” horizons are generally referred to as the Solum of the profile, which are the areas affected by vegetation and climate, (T. Cooper, 2000). The final layer in the soil profile is the “R” horizon that is the immediate bedrock or parent material layer.

## Existing Conditions

The soils found in and around Castroville come from several sources, and therefore must be studied for different uses and potential hazards for land use planning. This section is broken into three portions, first the Alluvials, and then the soils formed under extreme topographic conditions called here generally Kincheloes, and then the remaining outlying lands called the Clay Uplands. These three diverse areas show many differences that must be studied individually in order to comprehend their benefits and limitations.

There are a few factors that are constant throughout the Castroville region. The soils formed in this region are generally very alkaline, having a high Ph value. They were created during the Pleistocene epoch, in geological history, a period over 12,000 years old. These soils are covering Cretaceous era rock, which is over 60 million years old. This means that the soil was transported to the area from a location that formed much later in history.

### Alluvial Soils

Around the river and throughout the City of Castroville are alluvial soils deposited by sedimentation of water eroded granules from further north along the Medina River. These soils have formed in this area over thousands of years of deposition along the historic flood plain of the Medina River.

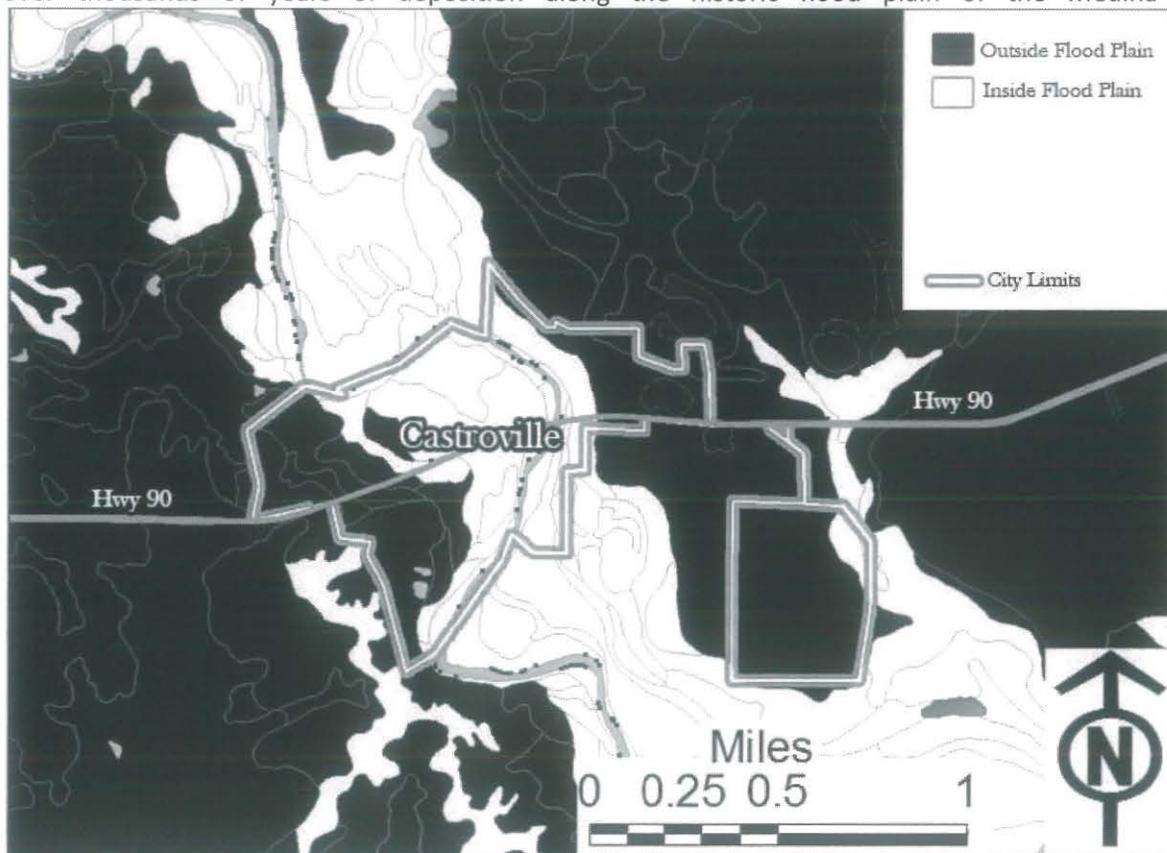


Figure 2 Alluvial Plain Map showing The Areas of River Sedimentation and Historic Flood Plain

They are comprised mainly of well composed, highly leached, and highly organic loams and clay loams found throughout the City especially in the areas directly along the river. They comprise several soil families such as Atco loams, Divot clay loams, and Castroville clay loams. The alluvial plain can be seen in Figure 2 in white while everything outside of the alluvial plane can be seen in black. While these soils are relatively stable and highly fertile they are prone to flooding because of their position along the river. Most of these areas within the alluvial plain are well drained, being able to transmit between .2 and .57 inches of water per hour through semi dry soils (NRCS web soil survey).

### Kincheloe Soils

Kincheloe is a general name given in this report to the soil and rock formations that are formed on relatively steep topography, between 15% and 30%. These soils are found in two places within the general vicinity of the City of Castroville. The most notable of these formations is directly west of the City, along the ridge that contains Cross Hill shown in Figure 3 in white. Soils in this area are considered Kincheloe. The Kincheloe soil series is most typical to Medina County, is considered well drained because of its steep inclines, but has very poor soil percolation due to its extremely fine soil structure being made generally of decomposed clay and shale. There is generally a very shallow solum depth within these soils, usually between 20" and 40", with most of its solum depth being composed of the "C" horizon. This soil is highly erodible, due to its steep topographic relief, and its granules can be found in the layers of deposits that have been deposited along valley outflows along the alluvial plain. While this soil is relatively stable, very low lateral shifting or shrinks swell potential, its extreme slope and erosive potential make it highly unsuitable for development of any kind, aside from park and preserve land.

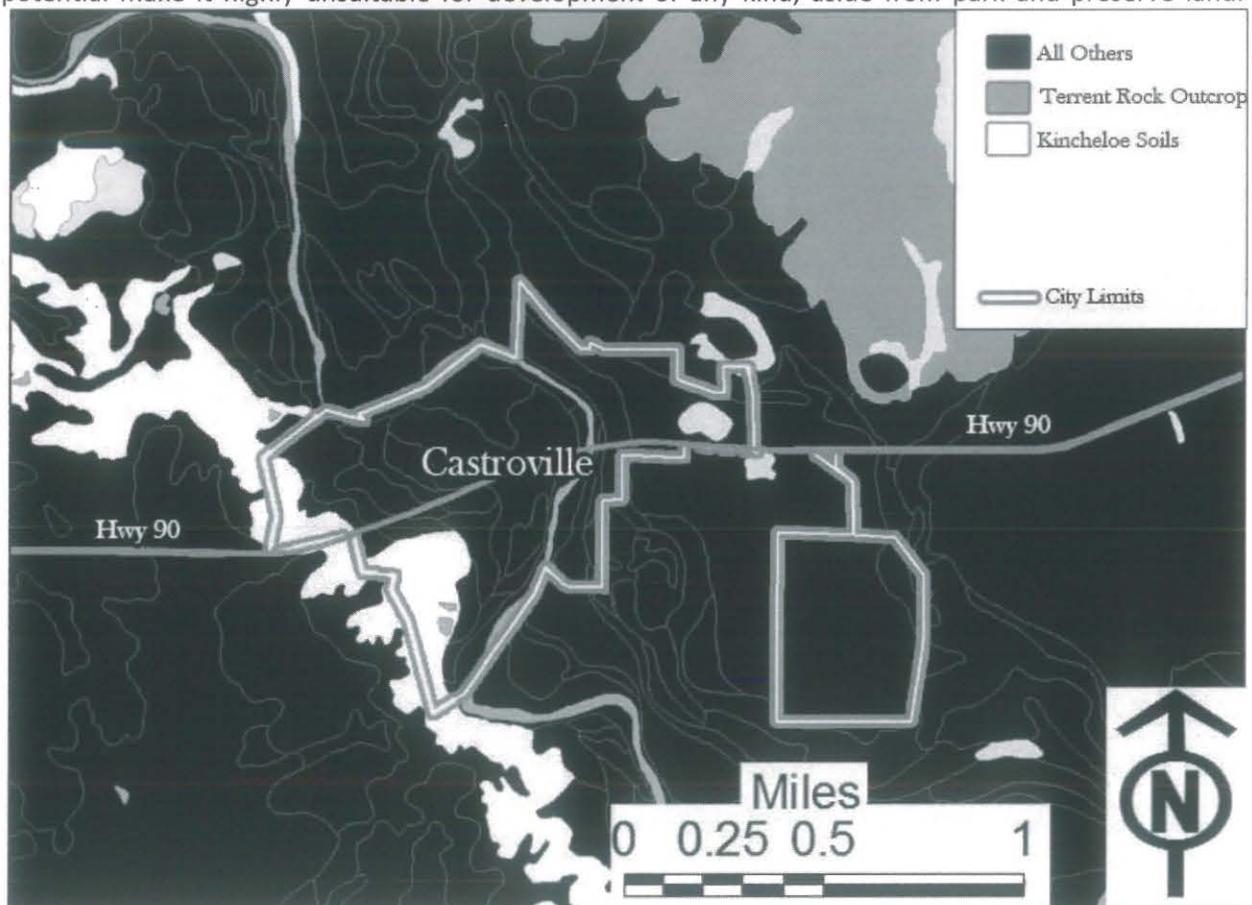


Figure 3 *Kincheloe Soil Formations* Map Showing Highly Topographically Influenced Soil Formations

Another soil type under these same conditions is the Terrent rock outcrops, shown as gray in Figure 3, that are formed along the hillside approximately one mile to the northeast of Castroville. This area is formed under much of the same conditions as the Kincheloe soils. This area is a steep topography ridge with little to no formed soil. Due to its stable condition this area is relatively developable however its extreme topographic nature would make it difficult where it is possible to develop.

### Clay Uplands

The outskirts of Castroville and its extraterritorial jurisdiction contain many families of clays that are currently being used as agricultural lands. These Clay areas extend westward from the alluvial plain to the Rock outcroppings on its eastern edge, and north and south parallel to the alluvial plain. There is also a very gravelly clay area to the west of the city that runs parallel to the Kincheloe formation. These two areas are markedly different in both physical characteristics as well as the developable characteristics. The eastern clay area is generally made up of Victoria and Knippa clays that have high lateral expansion rates and shrink swell potential and for this reason these areas are generally poor for development,

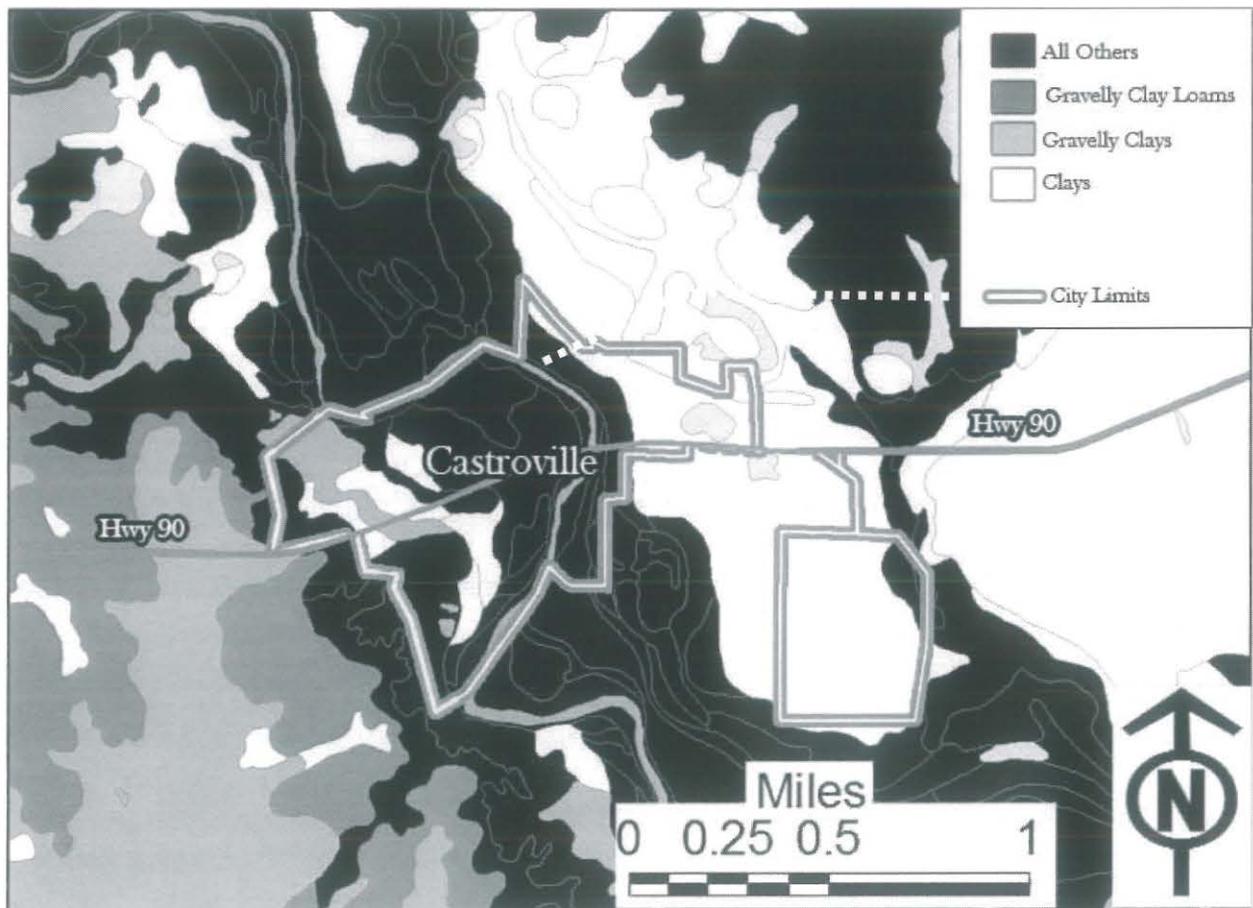


Figure 4 Clay Uplands Map Showing Clay Soils Around Castroville

as these lateral expansions tend to cause foundation cracking in concrete, and masonry structures. Highly expansive clay soils have also been shown to be detrimental to underground utilities such as large sewage and domestic water lines, as the lateral expansion can pull the piping apart at its connections.

In some instances these forces can cause pipes to rupture, especially in light PVC applications. These clays however have moderately low erosive potential for clay structure soils making them, from the stand point of erosion, ideal for agriculture. While common agriculture practices including open furrow, such as, the production of corn, still pose as a detrimental practice as open ground created in the furrow still has a high potential for erosion, especially in clays.

The clays found west of the City have a high gravel content that makes them much more stable than the more laterally expansive clays in the east. Thus these clays are much more suitable for development. Also, due to the gravel content of the western clays, these areas are much less susceptible to erosion. However the gravel content of these areas shows a markedly lower cation exchange capacity "CEC", which is a measure of soils fertility. Because of this the clays on the western edge of town would not be suitable for agricultural production.

## Evaluation

To understand what These data mean it is easiest to look at maps showing suitability of soils for certain purposes. We will look at these maps based on suitability for use in agriculture and general development using common practices, along with other facets concerning land planning.

### Agriculture

To be able to provide a sustainable agricultural enterprise in this area we need to look at several factors including; erodibility, fertility, ability for soil to retain moisture, and solum depth. Because agriculture land use is dictated by the interrelationships of multiple factors with different criteria's for different land uses an overlaid suitability map will not be provided.

Erosion is a problem in many soils used for agriculture. Soil erosion is caused by many forces including climate, wind, water, and land use practices. A general practice in development is to predict the estimated amount of soil loss by using the Universal Soil Loss Index, (Schorst et. Al 2007). The universal soil loss index is written  $A=R*K*LS*C*P$ , where A= soil loss in tons per acre, R= the rainfall factor based on 2 year 6 hour rainfall, K=soil erosion factor, LS= length of the slope of topography, C=vegetation factor, and P= erosion control practice factors. For the sake of this report the remaining factors of erosion potential addressed by the Universal Soil Loss Index will not be dealt with. Figure 5 demonstrates the K factor for the area around Castroville. The K factor for erosion is a scale factor ranging from .02 at its lowest through .64 at its highest, (Schorst et. Al 2007). As you can see from Figure 5 even the most erodible soils found around Castroville are in truth only moderately erodible.

What the erosion map of Figure 5 shows is that the most erodible lands are within the alluvial plain, this is so due to the soils that comprise the alluvial plain being highly unconsolidated, notice that the

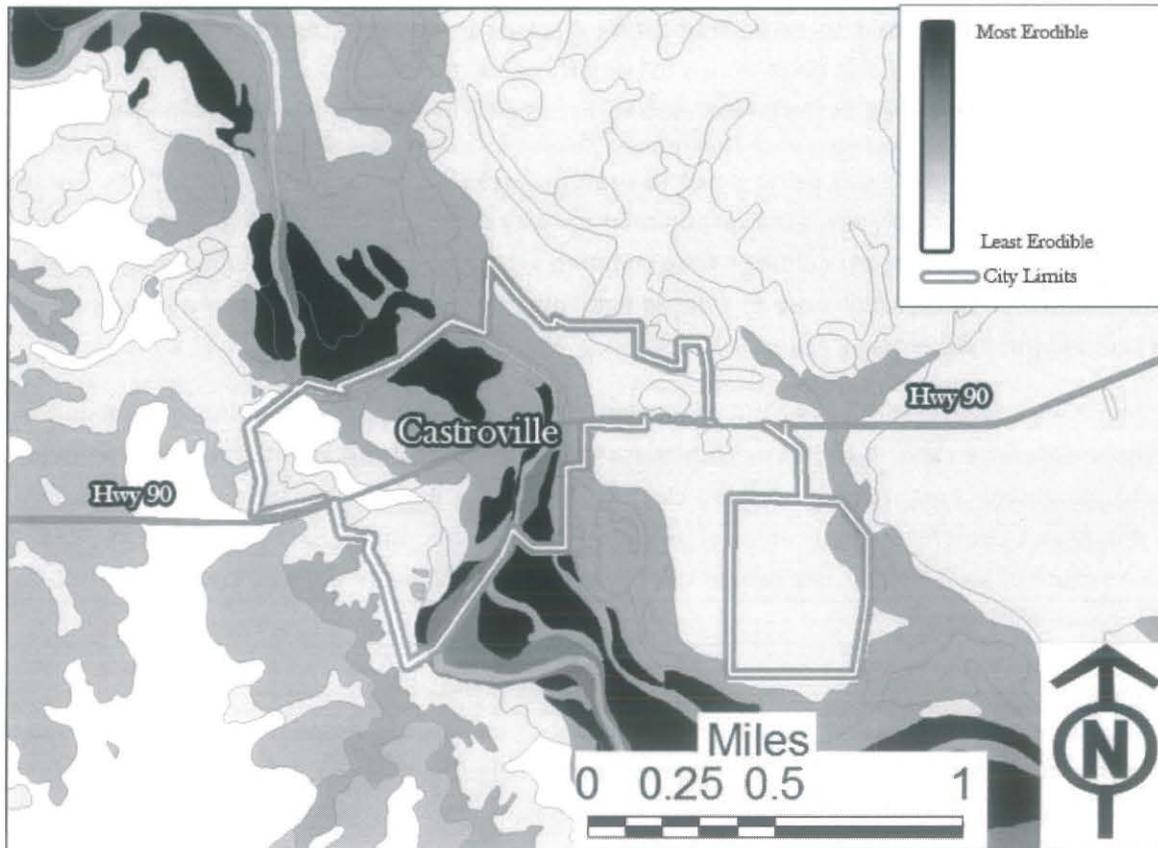


Figure 5 Relative Erodibility Map Showing The Erodibility of Soils Based on The Universal Soil Loss Equations K-Factor

position of the Castroville city center is along this area of moderately high erosion. Figure 5 also indicates that the clays west of the Kincheloe Ridge and Cross Hill, are not very erosive.

Fertility in agriculture is a function of many variables including; crop, cation exchange capacity, depth of solum and that solums ability to both transmit and hold moisture. For this study we will not observe crop type as crop type recommendation is a decision that should be made with other climactic and economic considerations. However the remaining factors can be observed due to the fact that they will change little until after decisions of crop type use can show their effects. Cation exchange capacity is a measure of a soils fertility based on its ability to exchange soil nutrients with plant roots. As a general rule, clays tend to have a very low CEC while loams and sands have moderate and high CEC capacities respectively. This can be interpreted in a few different ways. CEC does not measure soils overall fertility, but measures a soils ability to exchange mineral nutrients between the soil and the roots of plants, (H. Schor, 2007). While clays trend to have lower CEC's than do sands, clay soils tend to be more fertile overall. This is due in part to a clays inability to transmit moisture quickly, making it very difficult to leach nutrients through soil horizons. Therefore clay areas with high organic material content will tend to be the most fertile. Lower CEC soils typically need higher amounts of chemical fertilizers to maintain a certain level of fertility than do higher CEC soil. Therefore soils such as clays that have a low CEC and highly impermeable surfaces will cause marked spikes of fertilizer runoff that can potentially infiltrate the Medina River. Figure 6 demonstrates CEC rates around Castroville.

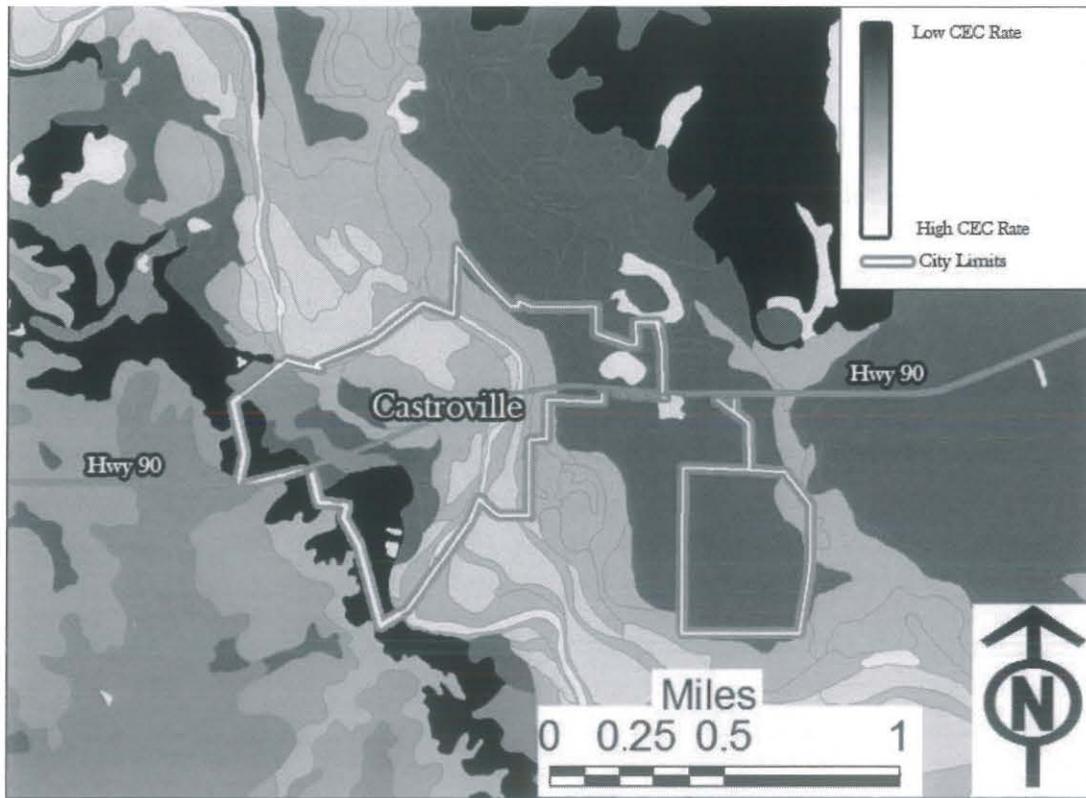


Figure 6 CEC Rate Map Showing Soils Ability to Readily Exchange Nutrients with Plant Life

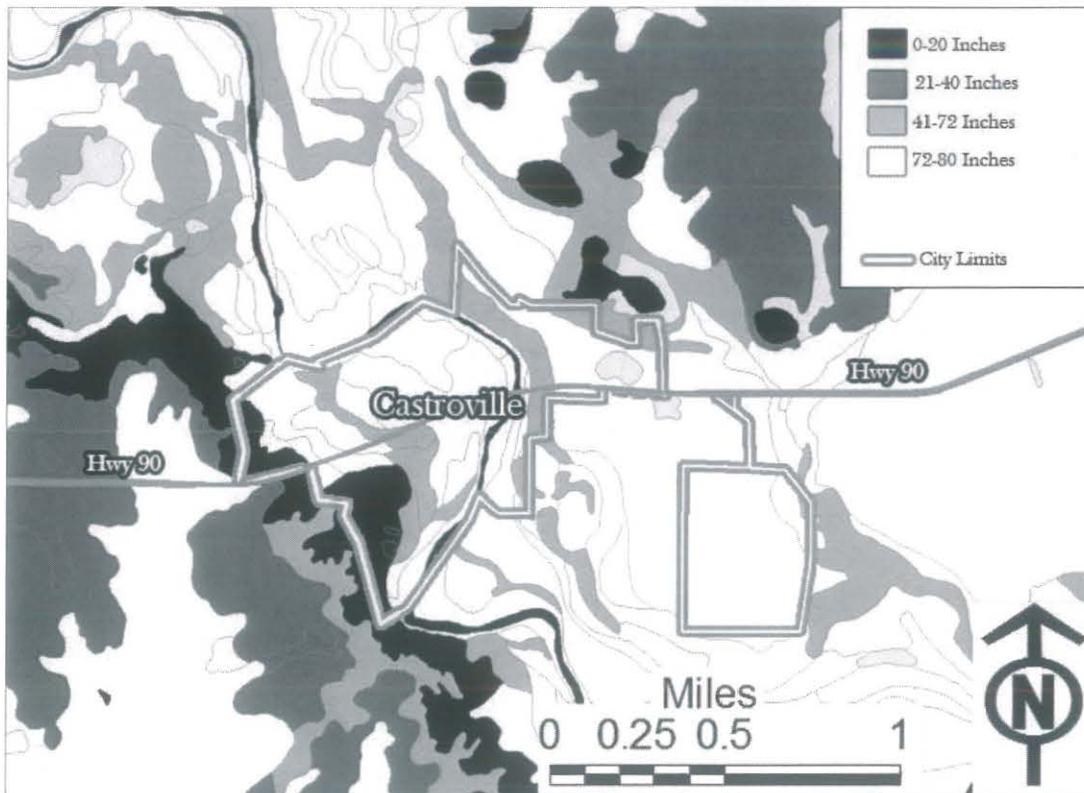


Figure 7 Solum Depth Depth of Soils to "C" Horizon

## Soils

Depth of solum can greatly impact the decisions that an agriculturalist makes on the crop types that will be available to grow on a certain soil. Some crops will tolerate soils with less depth than others; therefore Figure 7 can be used to determine approximate rates of soil depth for the choosing of certain types of agriculture industries.

Permeability is a large factor for the decision of how to best implement agricultural practices. If a soil is not permeable then its ability to retain water as well as transmit water through its surface are greatly diminished. However if a soil is very permeable then retention of water becomes a limiting factor in its ability to be viable for agricultural production. Figure 8 demonstrates the ability of the soils around Castroville to retain and transport water through its upper layers.

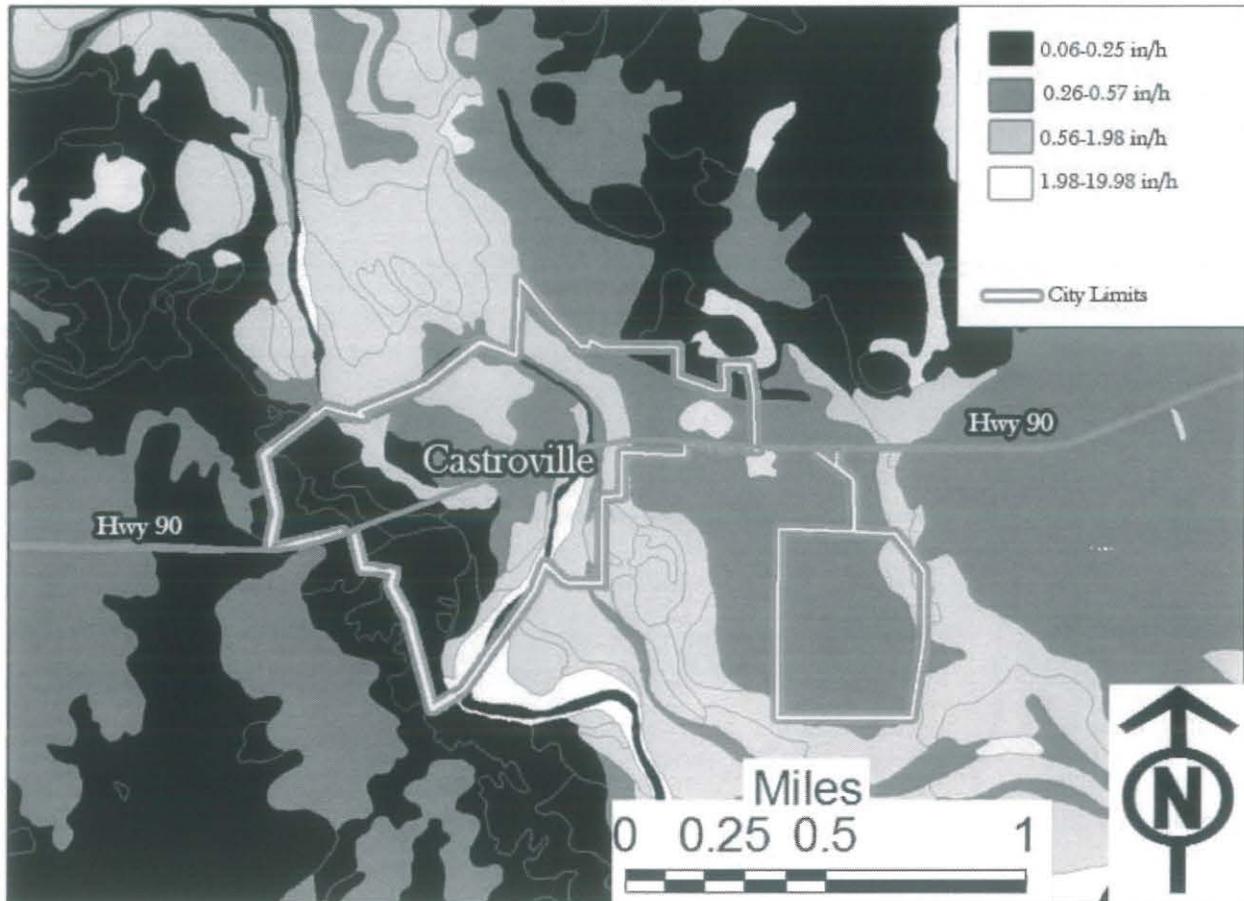


Figure 8 *Permeability* Soils Ability to Transmit and Retain Moisture

### Development

This section provides a view of general development as the ability to develop both residential and commercial areas around Castroville. Suitability for development is determined by several factors including erosion potential, lateral expansion, soil stability and loading capacity, and their effects on general construction practices. Figure 9 shows an overlain map of the factors of erosion, lateral expansion, soil stability, and loading capacity. It helps to show that the area around Castroville is ideally suitable for development. This is generally due to the high lateral expansion rates throughout the clay

areas. The two darkest strips are the locations of the Kincheloe soils that are generally very rocky and thus not easily developed through general construction practices. What this means to developers is that if a lasting development is to be undertaken, there must be extensive engineering in the expansive clays around Castroville, as well as a change from generally accepted construction processes and practices.

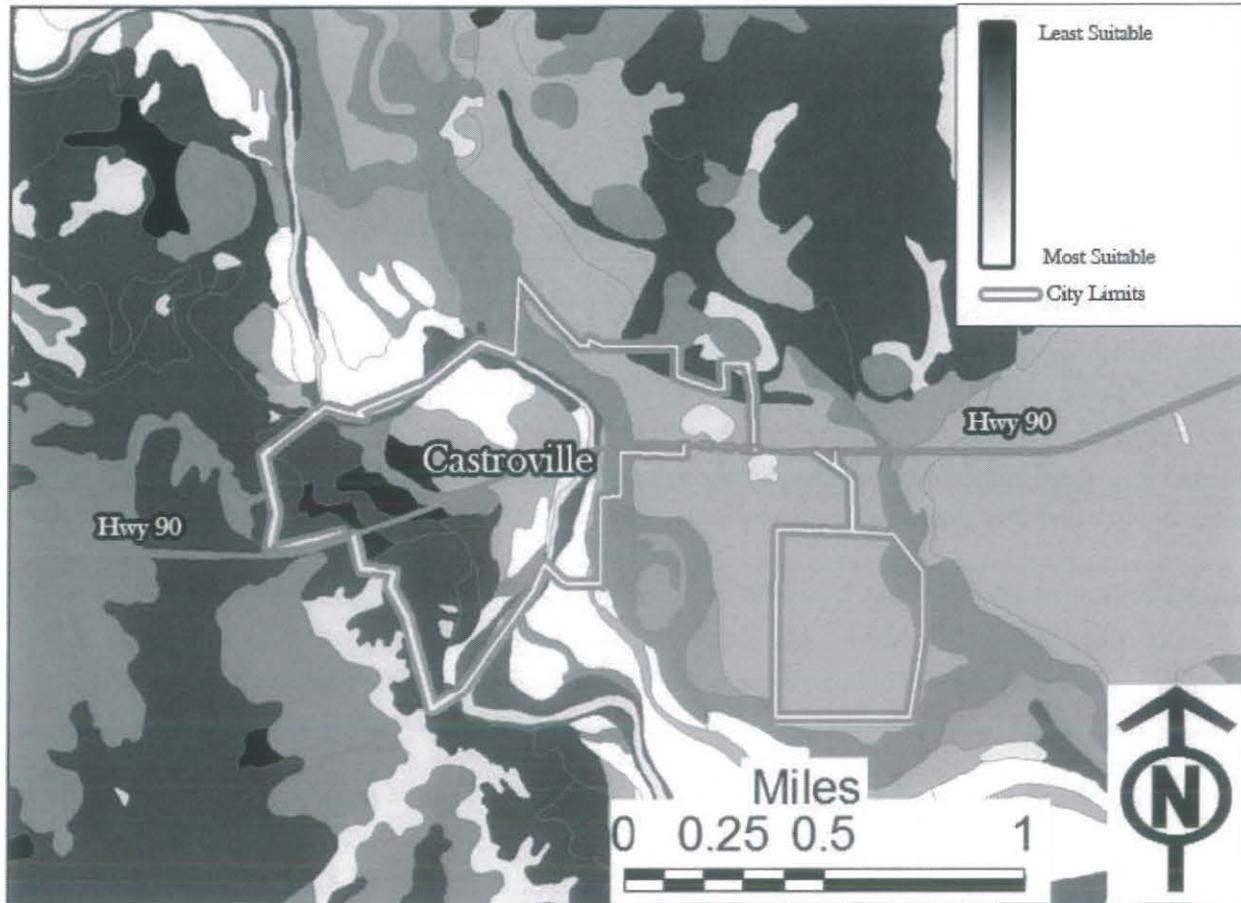


Figure 9 Suitability for Development Map Showing Suitability of Development of Residential and Commercial Areas

## Conclusions and Design Requirements

### Agriculture

It is generally thought that the use of common practices in agriculture is best management practice, typically because it has the greatest immediate return on cost from input. However many agricultural practices have proven seriously detrimental to the landscape, (T. Cooper, 2000). The open furrow farming system has been demonstrated to increase the amounts of erosion of surface soils rendering infertile farmland and increased sedimentation in waterways. For a sustainable agricultural system the factors of erosion, permeability, fertility, and solum depth should be looked at individually and as a whole in order to determine the best practice for particular soils and land parcels. By considering these factors agriculturalist can reduce the amount of chemical fertilizer needed to sustain crop production, as well as decreased soil erosion and its potential for sedimentation and its influence on adversely impacting riparian systemsk.

The recommendations for agricultural production can be considered as the use of alternate farming methods in the clay area around Castroville, such as strip farming, that would reduce the potential for soil erosion. Using the individual maps in Figures 5 through Figure 8 to better specify crop standards and a soil parcels ability to produce a certain crop, would greatly increase the sustainability of each agricultural site. Also the use of planting materials that are well suited to alkaline soils will greatly reduce the cost of maintenance in both agricultural lands as well as private and public developments

### Development

The suitability map in Figure 9 shows that when several forces of development are combined the area of Castroville is less than ideal for development based on critical soil factors. This is not to say that development is a poor decision in this area, as proven by the many suburban developments surrounding Castroville. However some design recommendation for future growth would be to develop chiefly within the gravelly clay areas west of the city along Highway 90. These soils show the least lateral expansion and the highest load bearing capacity. While construction within the expansive clay areas to the east is inevitable, proper engineering of foundation soils as well as proper foundation engineering will be necessary to maintain future stability of the structures in this area.

Construction of roads and underground utilities should be paid special attention, in particular in the expansive clays to the east, where the extent of Castroville's extraterritorial jurisdiction lies, as the expansive nature of these soils will dislodge and dismantle these emplacements.

**Conclusion 1:** The use of Open Furrow Farming systems causes extensive damage to the Medina River and associated Riparian Areas

- Changes in the agricultural systems could reduce erosion, increase permeability, increase fertility
  - Use of Strip Agriculture in clay soils east of Castroville
  - Prevention of farming in riparian areas should be encouraged

**Conclusion 2:** Use of more highly adapted crop types will lower cost of agricultural production

- Native and adapted crops require less irrigation and chemical fertilizer to grow
  - Crops types should be matched to specific soil conditions
  - Crops should be specialized for us in Alkaline soils

**Conclusion 3:** The expansiveness of clay soils in the area can cause problems in foundation

- Development outside the Clay areas can be more effective with less cost
  - Primary develop in the gravelly clay areas west of the City
- Development in Clay soils should be designed to move with soils
  - Installation of utility lines and underground electrical lines should be designed to withstand the expansive soils onsite
  - Building foundations should be designed to withstand the expansive soils

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## Data Resource

- Data resources are referenced from map data and are not directly interpreted by the publisher of the data
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- <<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>>.



## Introduction

This research focuses on the topographic relief of Castroville, Texas. The topographic conditions include existing land features, both natural and built. The most striking and unique natural features of the area are the hills and the Medina River running through the City. All of the currently existing buildings in the town are also considered to be existing topographic features. The research was guided by the method of using topography as a site analysis factor. The base data consisted of maps showing buildings, contour intervals, and natural features in relief. Several maps were created from the original contour map (Figure 1) to further analyze the available information.

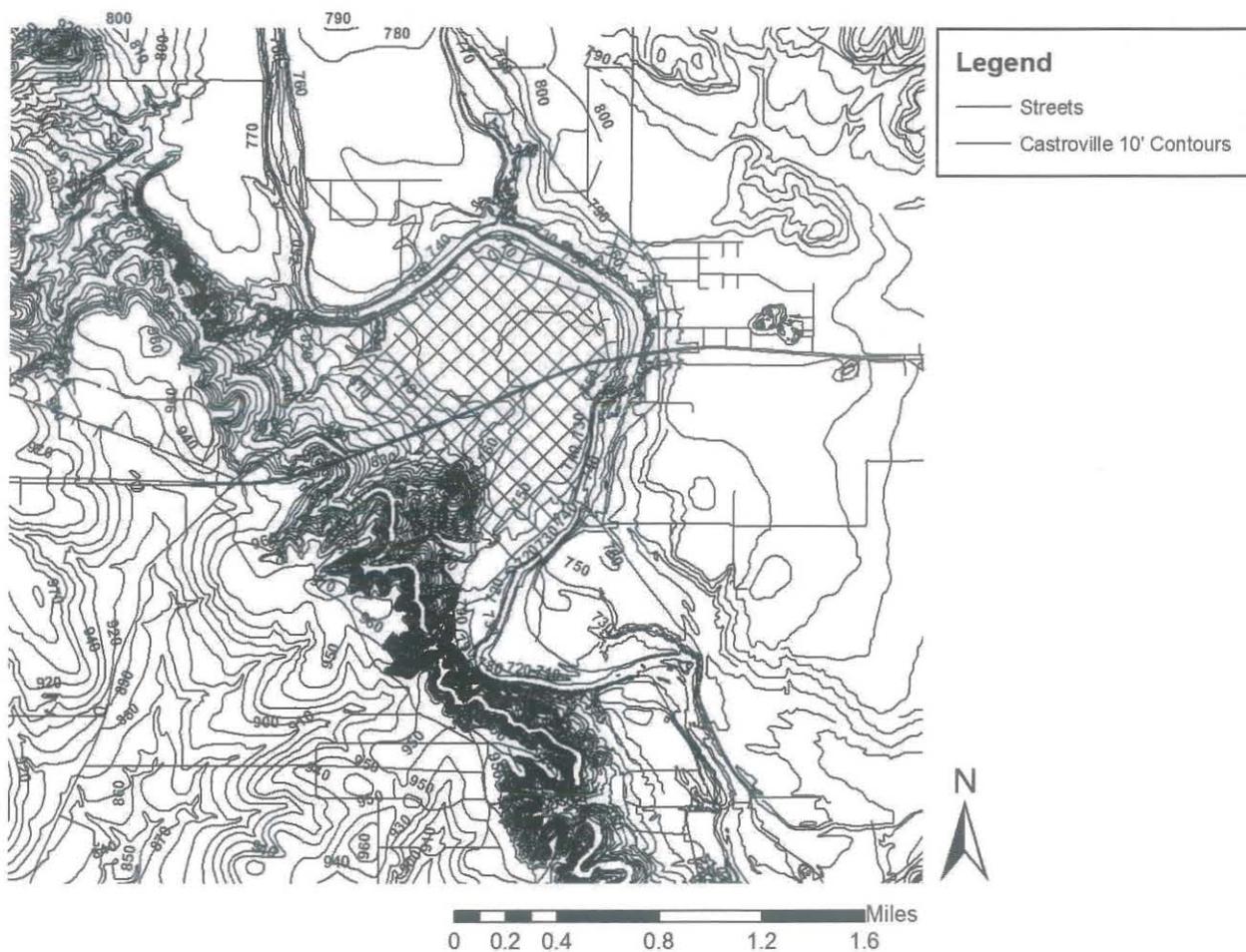


Figure 1. Contour map of Castroville, TX with 10' intervals. Source: <[www.tnris.state.tx.us](http://www.tnris.state.tx.us)>.

Site analysis from the base data included:

- Mapping the intensity of slopes throughout the site (steep, moderate, gentle)
  - Determining best ways to utilize slopes
  - Determining difficulties in utilizing slopes
  - Determining possible influences on handicapped user accessibility
  - Determining potential hazardous conditions
- Study of watersheds, drainage patterns, and areas that frequently flood
- Visibility and visual exposure resulting from site relief
- Wind and solar exposure resulting from site slope and aspect
- Mapping of locations of currently existing buildings

The intent of this research is to provide useful information that will contribute to successful planning and guidance for future development, restoration, and preservation of the city of Castroville.

### Existing Conditions

Maps of the existing topographic conditions need to be closely examined in order to gather all necessary information for evaluation of the impact that the topography can have on the future growth and development of Castroville.

From the contour map (Figure 1), it can be inferred that the location chosen for Castroville most likely was influenced by the topography. The hills form a natural border along the southwest edge of Castroville and the Medina River forms a natural border along the northwest, northern, and eastern edges of the City. The main part of the City enclosed by these natural features is relatively low and level.

Using the program ArcGIS, many maps can be created from the contour map of Medina County (Figure 1). These contour lines can provide information about the elevations, slopes, and directions of slopes on the map.

While the contour map showing 10' intervals of elevation change indicates the general elevation conditions of the site, converting that into a contour map with 1' intervals shows much more of the topographic detail (Figure 2). The contours indicate the existing elevation of the land, which ranges from a high of 1004 feet above sea level on the western side of the city to a low of 730 above sea level where US Highway 90 crosses the Medina River. The river bed, of course, reaches lower elevations, dipping as low as 689 feet above sea level.

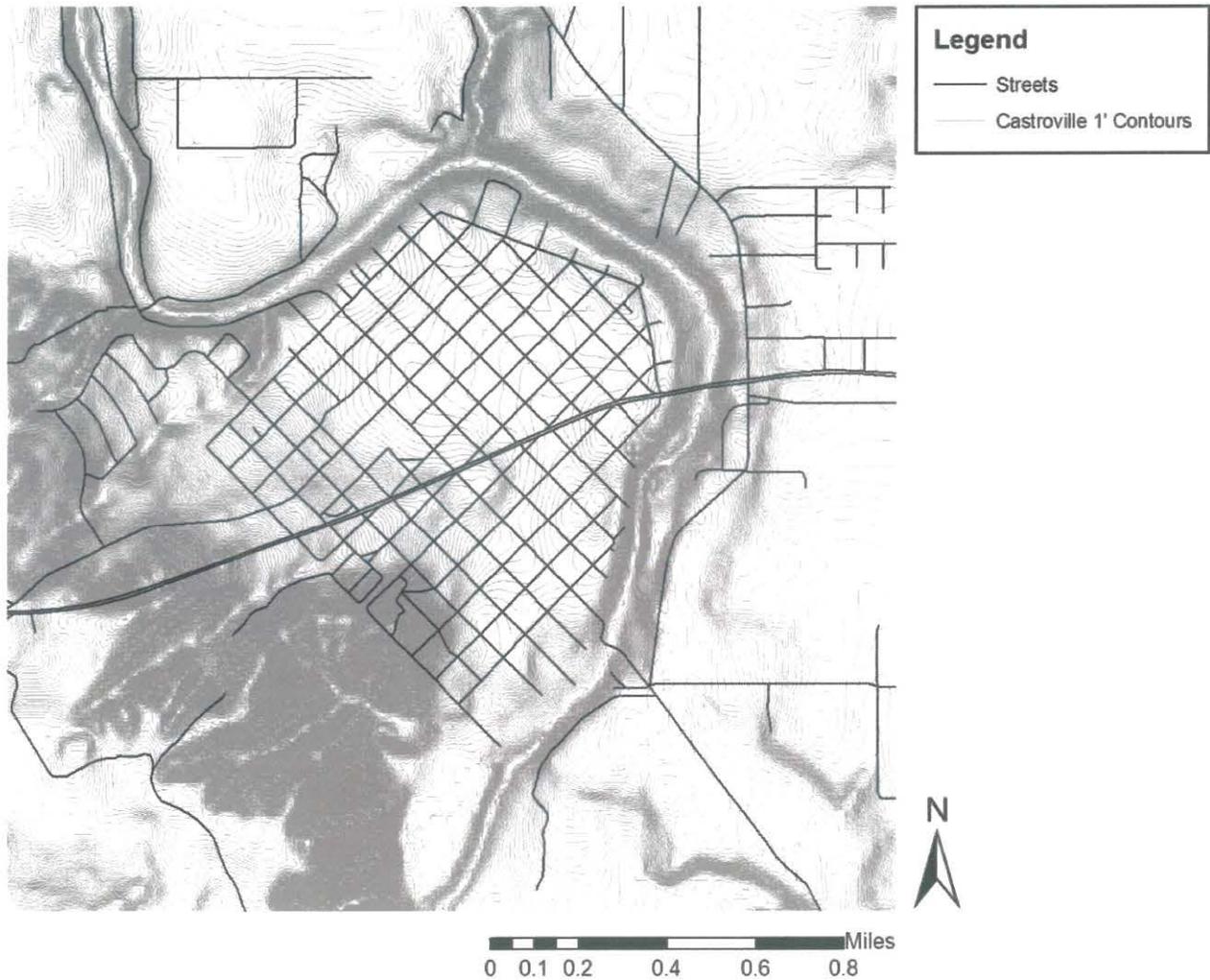


Figure 2. Contour map of Castroville, TX with 1' intervals. Source: Based on contour map from <[www.tnris.state.tx.us](http://www.tnris.state.tx.us)>.

## Topography

Converting the contour map into a form that categorizes elevations in feet above sea level by shades of gray makes the map easier to read and infer information from more quickly (Figure 3). This map makes it clear that the highest elevations are all along the southwest side of Castroville, reaching a peak of 1,010 feet above sea level. The elevation tapers down to a range of 750-775 feet above sea level across most of the central part of the City and on either side of the Medina River. The land around the Medina River dips from that range down to 689 feet above sea level. The elevation then begins to rise again on the northeastern side of the Medina River, but with less intense hills than on the southwestern side of the City.

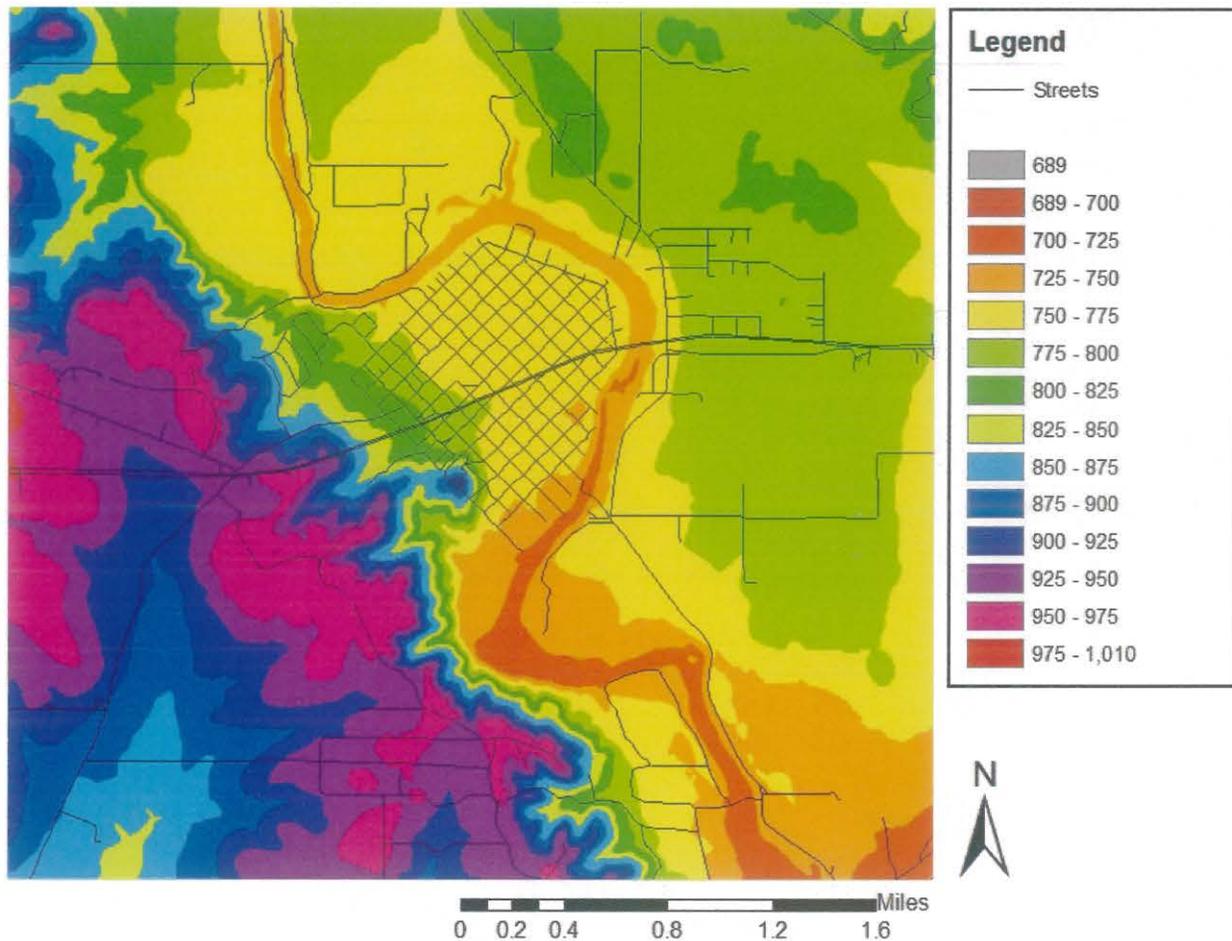


Figure 3. Elevation map of Castroville, TX. Source: Based on contour map from <[www.tnris.state.tx.us](http://www.tnris.state.tx.us)>.

A map indicating slope (Figure 4) was also created from the contour map. The slope map categorizes the slopes by intensity into 4 categories. The most intense slopes, from 5-50%, occur along the southwestern edge of the City, in the hills and along the canal. There are also some moderately intense-to-intense slopes, from 5-30%, along the edges of the Medina River. Much of the land in and around the central area of Castroville has a very moderate slope, if any.

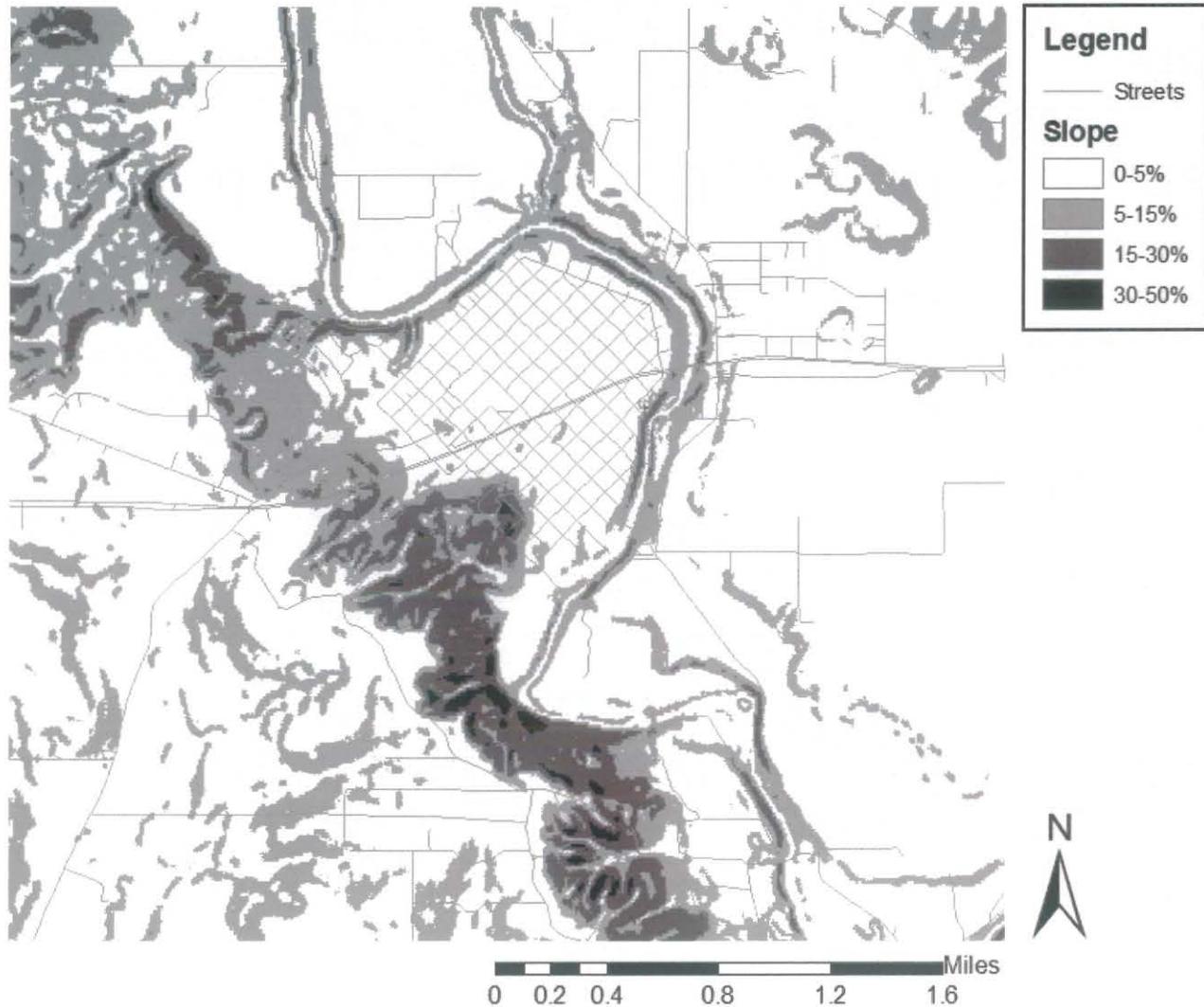


Figure 4. Slope map of Castroville, TX. Source: Based on contour map from <[www.tnris.state.tx.us](http://www.tnris.state.tx.us)>.

## Topography

The aspect map (Figure 5) that was created from the contour map indicates the directions that each of these slopes are facing. This map shows that there are slopes facing every direction, and scattered all throughout Castroville.

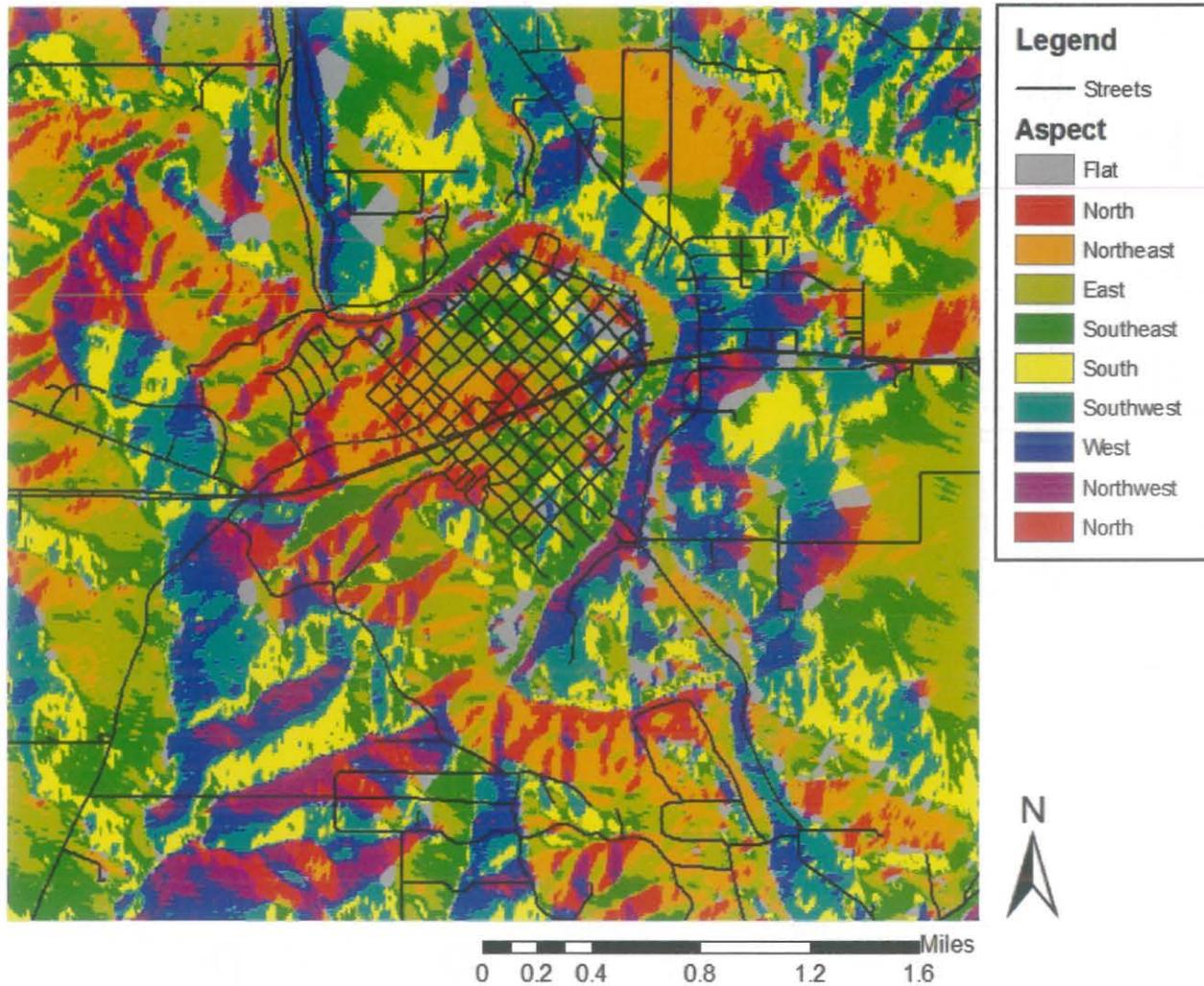
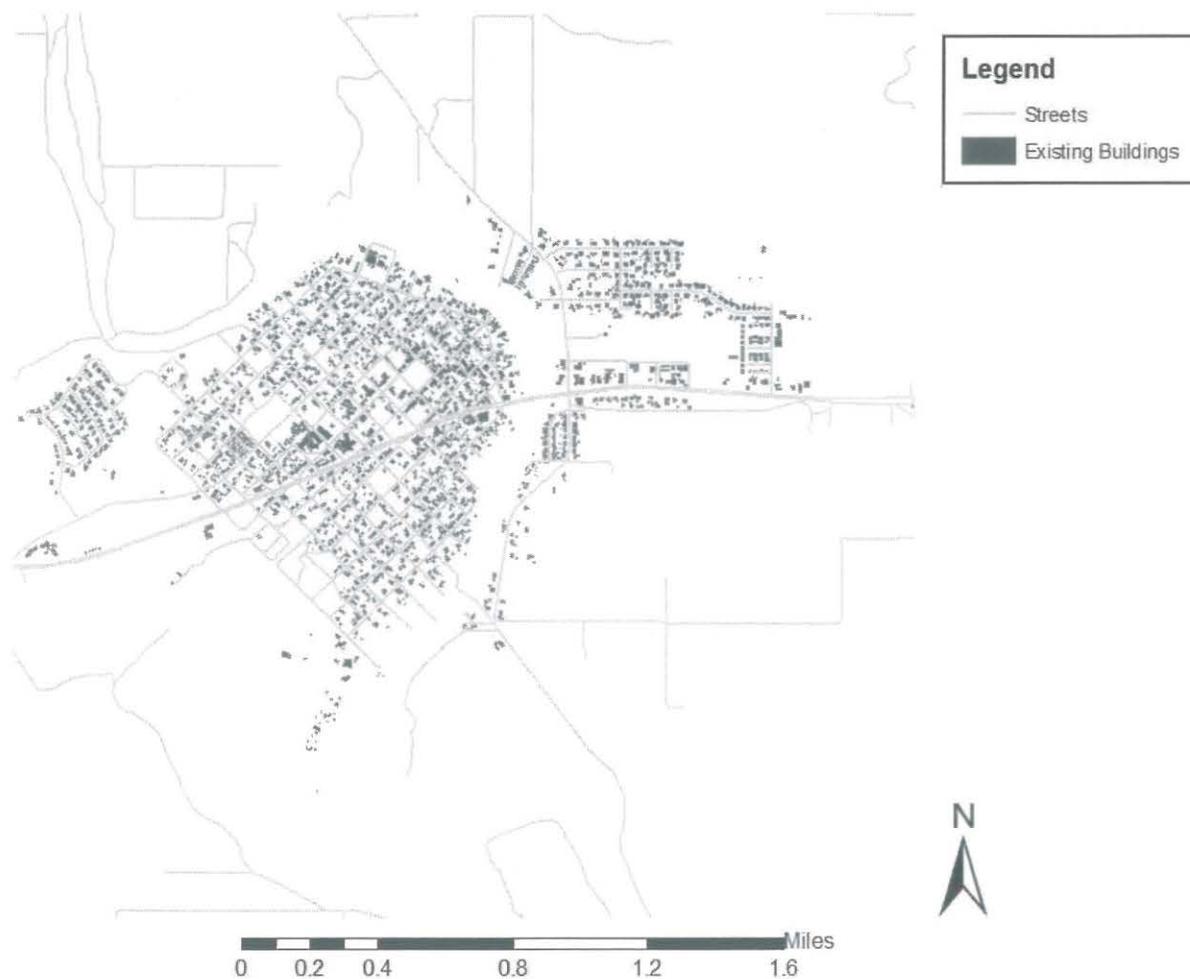


Figure 5. Aspect map of Castroville, TX. Source: Based on contour map from <[www.tnris.state.tx.us](http://www.tnris.state.tx.us)>.

The map of existing buildings in Castroville (Figure 6) shows where the most and least amounts of development have occurred. The map indicates that the majority of development has occurred in the level inner part of Castroville. Smaller amounts of development are also spreading into the hills, along the Medina River, and along Highway 90. The mapping of these buildings is based upon information in the Castroville Horizons City Master Plan and upon a site visit to the city of Castroville.



**Figure 6.** Map of existing buildings in Castroville. Source: Based on maps of existing land use in Castroville from *Castroville Horizons: City Master Plan*.

## Evaluation

The topographic conditions of Castroville present several potentially hazardous situations. First, they intensify the effects of flooding within the town. Most of the flooding is caused by the Medina River, with a majority of the water apparently coming in from several low points around the northwest corner of the town. The expanse of flat land within the town does not allow the water to move very quickly over the land as it makes its way back into the Medina River on the eastern side of the city. During

heavy rains, water runs down the hills along the southwestern side of Castroville and into the City. This can lead to flooding, especially at the base of the hills, as well as erosion along the slopes. Second, steeper slopes may prove difficult for people to travel on. Handicapped users will not be able to safely and easily travel by foot or wheelchair on roads or sidewalks if they exceed a slope of 8%, according to ADA regulations. Some roads in the hills of Castroville, such as the road leading to the top of Cross Hill, are so steep that even some vehicles may have trouble driving up or down them.

Building along slopes is known to be more expensive than building on level ground. This is due in part to the increased amounts of cut and fill during construction, the need for extra reinforcement for stability on slopes, and the increased costs of running roads and utilities up into the hills. Despite the added costs, people often prefer to develop on slopes. Higher elevations often afford desirable views and distance from the busier parts of a town, as is the case in Castroville. From atop the hills of Castroville, viewers can see out across most of the city below, as well as into what is now open land around the City. These elevated spots can also provide favorable exposure to sunlight and wind. The amount and intensity of sunlight a place receives is affected by the direction it faces, which can be determined through examination of a map showing the aspect of the site. Hills can also block sunlight from surrounding areas of lower elevation. Wind exposure of an area is affected by the direction it faces, as well as its elevation, in relation to its surroundings. Depending on the direction from which the wind is blowing, hills may block the wind from reaching the land below.

## Conclusions

Based upon investigation of the evidence, several conclusions have been reached. Specific design recommendations have been developed in response to each of these conclusions. These recommendations should be considered when planning the future development of Castroville, so that the City's goals can best be met.

### Conclusion 1

*The highest elevations and steepest slopes occur along the southwest edge of Castroville. This can lead to problems with erosion and increased stormwater runoff.*

#### Design Recommendations

- Avoid development on and directly at the base of the hills.
- Do not increase the amount of impervious surfaces in the hills.
- Do not allow new development to block the existing drainage patterns down the hills.
- Retain existing vegetation for slope stabilization.
- Use hills for minimally-invasive forms of passive recreation, such as walking, hiking, and nature observation.

### Conclusion 2

*The higher elevations and steeper slopes surrounding the central area of Castroville will be the most expensive areas to develop.*

#### Design Recommendations

- Avoid development on hills.

- Concentrate development on level areas, such as within the central area of Castroville.

### Conclusion 3

*The most level land is in the central part of the City. This can create drainage problems if the water is not able to move efficiently across the land.*

#### Design Recommendations

- Do not allow new development within the City to block the existing drainage pattern of surface water from the northwest corner to the eastern side of Castroville.
- Maintain streets as open drainage channels.

### Conclusion 4

*The land on the hills and along the Medina River will be the most desirable places for new development, as they are the most striking and unique topographic features of Castroville. Development in these areas will lead to a loss of the most beautiful, historic, and characteristic views of the City.*

#### Design Recommendations

- Avoid new development on the hills and along the Medina River.
- Maintain existing vegetation in hills and along the Medina River.
- Do not allow new developments to block existing views of the hills and the Medina River.

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Prepared by: (Benson &amp; Suleimanji)

## Introduction

Water is an important part of all life functions. It creates streams, rivers, lakes and oceans. Water weathers rocks and soils reshaping the landscape. Therefore, to provide a holistic approach to studying and preserving the City's many aspects of Castroville's hydrology have been. These topics include the Edwards Aquifer, wells, groundwater quality, the Medina River, the canal, the Medina Dam, flooding and currently proposed solutions to existing drainage problems.

## Existing Conditions

### The Edwards Aquifer

The Edwards Aquifer delivers water to a large portion of Texas. (Edwards Aquifer Authority) The aquifer system is divided into many zones. The artesian zone, an area within the aquifer of pressurized water, covers most of Medina County including Castroville. Water does not need to be pumped because of the pressure and naturally flows to the surface if tapped. The zone ranges between 5 to 30 miles in width and covers 3,600 square miles in six counties. The water of the artesian zone is accessed through wells and natural springs. Castroville draws water from the aquifer.

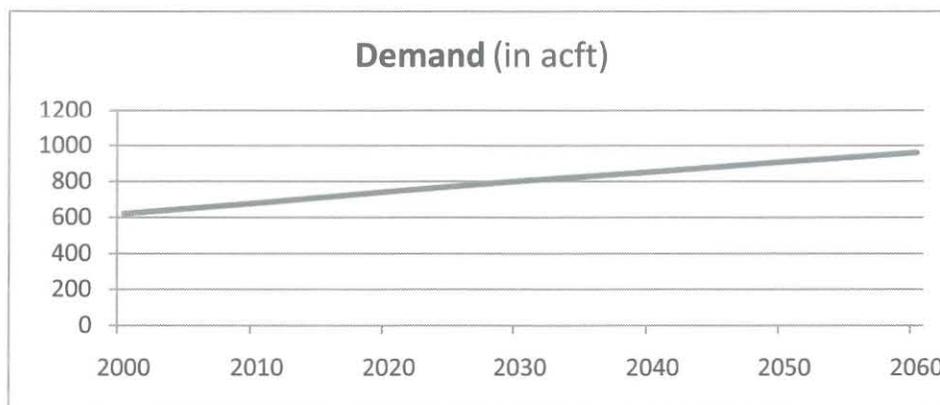


Figure 1 City Water Demand Projections 2000 – 2060 (Source: TWDB: Groundwater Data Base)

Figure 1 illustrates the project demand for the City, shown in acft, which is the amount of water it takes cover one acre with one foot of water that also equals 325,851 gallons. The City expects that current water supplies will meet the needs projected by the Texas Water Development Board (TWDB) based on Census data.

### Wells

The drinking water for the City of Castroville comes from three wells, which reach a maximum depth of 717 feet. (TWDB) The annual testing for these wells looks at fourteen possible contaminates: Bromodichloromethane, Bromoform, Chloroform, Dalapon, Dibromoacetic acid, Dibromochloromethane, Dichloroacetic acid, Monobromoacetic acid, Monochloroacetic acid, Nitrite, Total haloacetic acids (HAAs), Total trihalomethanes (TTHMs), and Trichloroacetic acid. Since 1977, the water quality has been tested twenty-two times. Nitrate levels continually remain high and in 1978, 1980, 1981 and 2000, the levels exceeded 10, which is the health and legal limit. High levels of Nitrate

in drinking waters usually come from fertilizer runoff, leaching septic tanks, and erosion of natural deposits. (New York Times) Therefore, monitoring the causes of Nitrate, especially fertilizer use, should be vigilant to protect surface, river and ground water quality.

### The Medina River

The Medina River is a significant part of the Castroville community. It springs from the Edwards Plateau in northwest Bandera County and joins the San Antonio River in southern Bexar County, totaling a distance of 120 miles traveled. Features along the river include the Medina Dam in Northeast Medina County, which restrains Lake Medina. (TPWD: An Analysis of Texas Waterways) The lake is owned and operated by the Bexar–Medina Atascosa Water District to provide irrigation services to farms and ranches.

The general character of the Medina River below Lake Medina is a slower moving, meandering stream. In the lower section of the river, the waterway is relatively narrow and shallow, creating less impressive feature than that found above Lake Medina. Lacking rapids, log jams and naturally formed dam create smaller pools of water along the river.

La Coste is 6.5 miles (by road) south of Castroville and the chart below illustrates the peak water flow for the Median River. This information is useful when determining average water depth and potential recreational uses for the Medina River in Castroville. Fluctuation in water depth at La Coste ranges approximately 15 feet, with a low at 7.34 feet in 1988 and a high at 24.05 feet in 1987. Assuming the range in water levels is similar in Castroville, site planning must address these wide ranges of water depth and river carrying capacity especially when considering river side development.

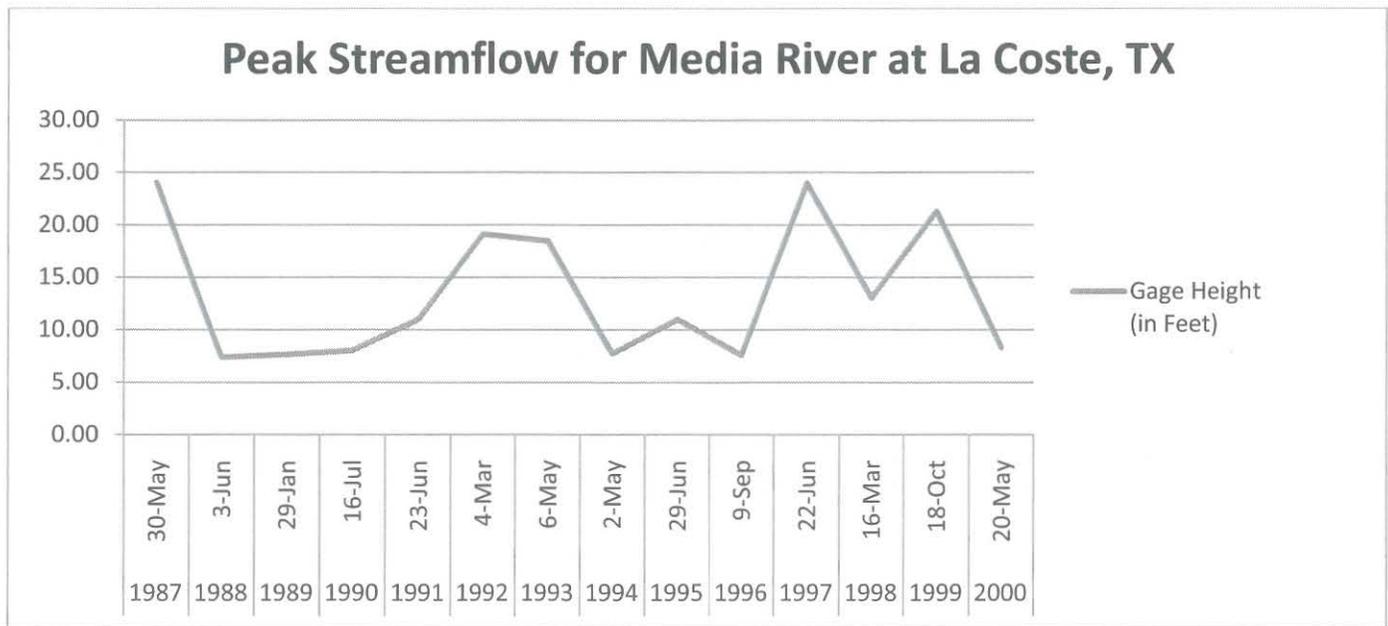


Figure 2 Peak Stream Flow (Data Source: USGS)

The river banks are heavily vegetated. Multiple road crossings divide the river into segments ranging in length from one-half mile to five miles. The dams and segmentation of the river limit recreational use.

Currently, a major source of pollution for the river is agricultural runoff. With increase in population and development agricultural pollutants will lessen, causing new problems to arise. With more urban areas affecting water quality, the runoff from newly urbanized watersheds will contain other contaminants such as oil, grease, sediment, pesticides, excess nutrients, bacteria, salts, heavy metals, and thermal pollutions that would easily affect the streams, rivers and aquifers. (EPA)

### The Medina Dam and Canal System

Medina Lake was constructed as an irrigation reservoir. (Edwards Aquifer Authority) The canal system comes from the lake, which delivers water to nearly 3,400 acres of backland prairie farmlands below the Balcones escarpment around Castroville. This lake is constructed on an outcropping of Edwards limestone. Therefore, the lake is able to contribute water to the Aquifer. In 2004, the United States Geological survey completed a water budget analysis and concluded that an average of about 3,083 acre feet of water returns to the aquifer each month from Lake Medina.

The canal runs along the southern edge of Castroville. The canal water is not used by the City or its farmlands.

In 2002, the Medina dam was called into question during flood. Water more than twelve feet deep spilt over the floodway and the water level at the dam was inches from the top.

In 2004, a state ordered study concluded that the dam could topple-over or slide downstream if water levels ever exceed more than six feet over the top of the dam. In 2006, the estimate for the repair was \$11 million. As of 2009 the money has been gathered and work is being planned to start immediately.

In 2002, the flood also affected Castroville. If the dam had spilt over, then more water would have made its way down to Castroville, which was already experiencing record flooding. Repairing the dam is important for the safety and stability of the community. The risk is high enough to make it a concern for the Medina county community.

Additionally, in Castroville, a dam at the junction of highway 90 and the Medina River makes canoe or tubing recreation difficult, unless an alternate route is provided.

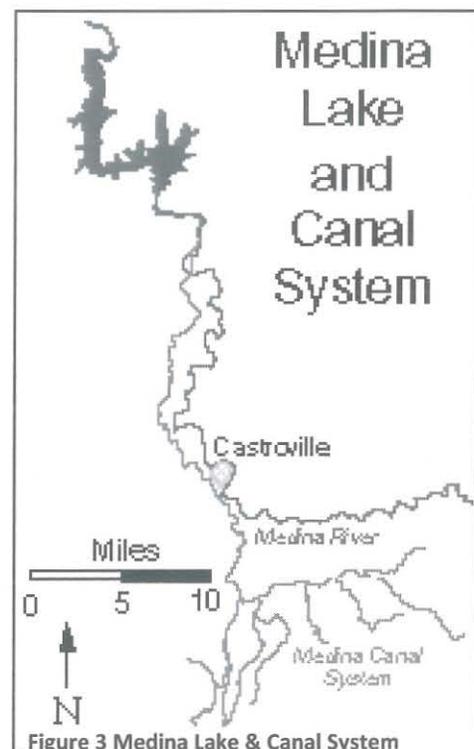


Figure 3 Medina Lake & Canal System  
(Source: Edwards Aquifer Authority)

Currently Proposed Drainage and Flood Mitigation Projects

Location	Current Stage	Current Status	Cost Estimate
Constantinople & Florence	Designed	Inactive: Pending Funding	\$102,500.00
800 Block of London Street	Designed	Inactive: Pending Funding	\$48,000.00
1300 Block of London Street	Designed	Inactive: Pending Funding	\$45,000.00
Houston Street between Angelo & Constantinople	Designed	Inactive: Pending Funding	\$18,000.00
Naples Street From Vienna St to Highway 90	Designed	Inactive: Pending Funding	\$5,250.00
Alsace Street south of Madrid St	Designed	Inactive: Pending Funding	\$2,000.00
Angelo St between Lafayette and Florence Street	Designed	Inactive: Pending Funding	\$10,000.00
Mexico Street between Lisbon and Medina River	Designed	Inactive: Pending Funding	\$6,000.00
Lorenzo St right of way between Florence St and the Medina River	Designed	Inactive: Pending Funding	\$9,000.00
Amelia St Between Lisbon and the Medina river	Designed	Inactive: Pending Funding	\$42,000.00
Medina River Improvements	Conceptual Design	Inactive	\$20 million
Athens Street	Designed	Inactive: Pending Funding	\$1,500,000.00

Chart 1 Proposed Drainage (Source: Don Mccrary and Associates INC)

Surface Drainage Patterns

Water flows over the surface of the earth perpendicular to the existing contours. (Tarbuck) Over time ridges, valleys, rivers and streams are formed. For readability, not every feature is shown but the more distinctive characteristics are displayed to highlight the general patterns of water movement. By looking at the topographical data, the map below illustrates these changes caused by surface water flow.

New construction and development alters the contours and current surface flow. If neglected, flood waters can potentially be blocked from leaving the city, or further encouraged to enter the city. The drainage map shows flood waters entering the city from a slight valley between high points on the northern side of Castroville and exiting by following a southern to southeasterly path back to the river.

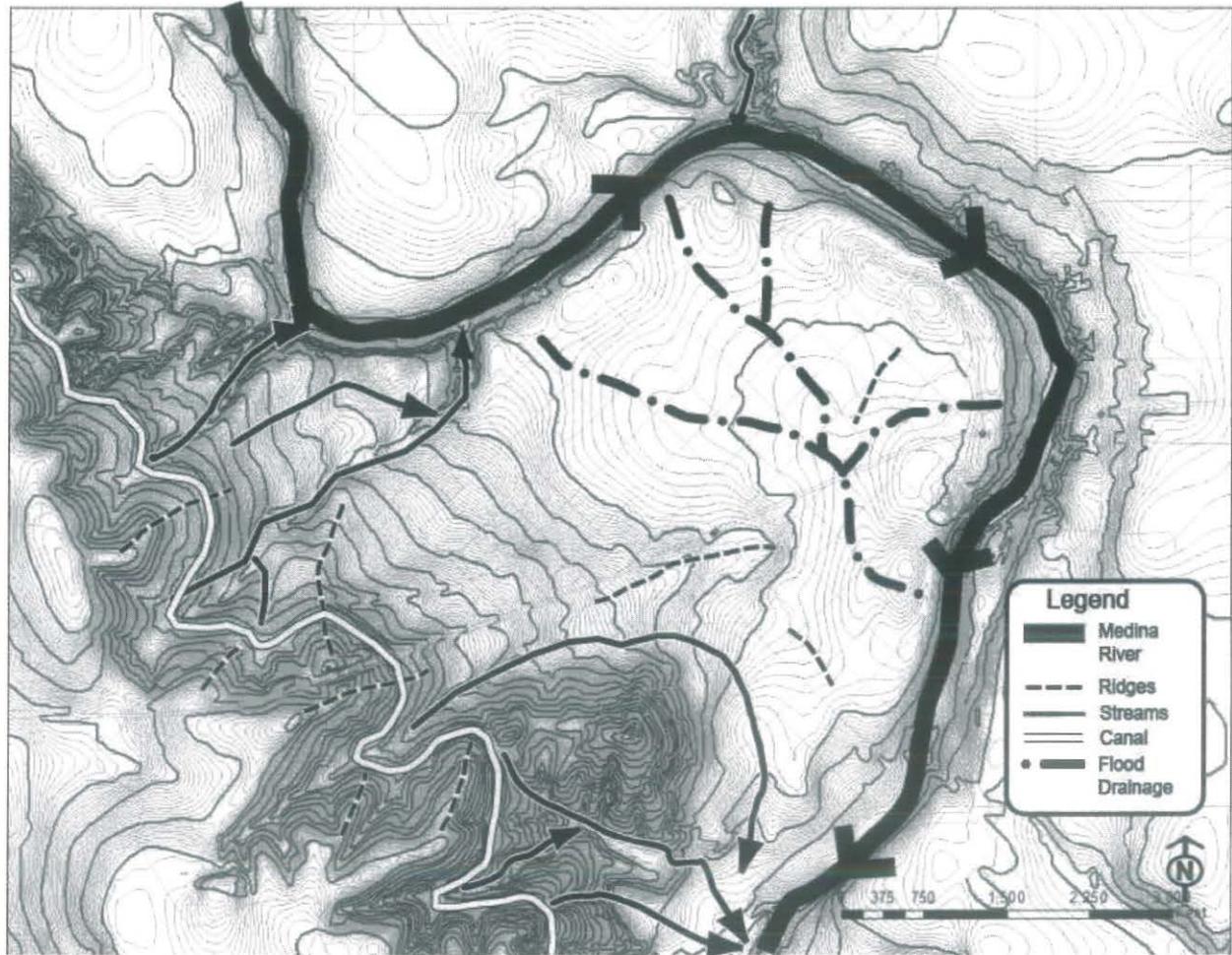


Figure 4 Surface Water Flow

### Flooding

The flood plain of the Medina River extends in to Castroville. There have only been two floods that have flooded inside the city, once in 1900 and once in 2002. (Visitor Guide Committee) The floods entered the city on the North side near Mexico St., and Constantinople St. then followed the natural contours of the land towards Regional Park where the waters re-entered the Medina River.

Below is the current flood plain map of Castroville provided by FEMA:

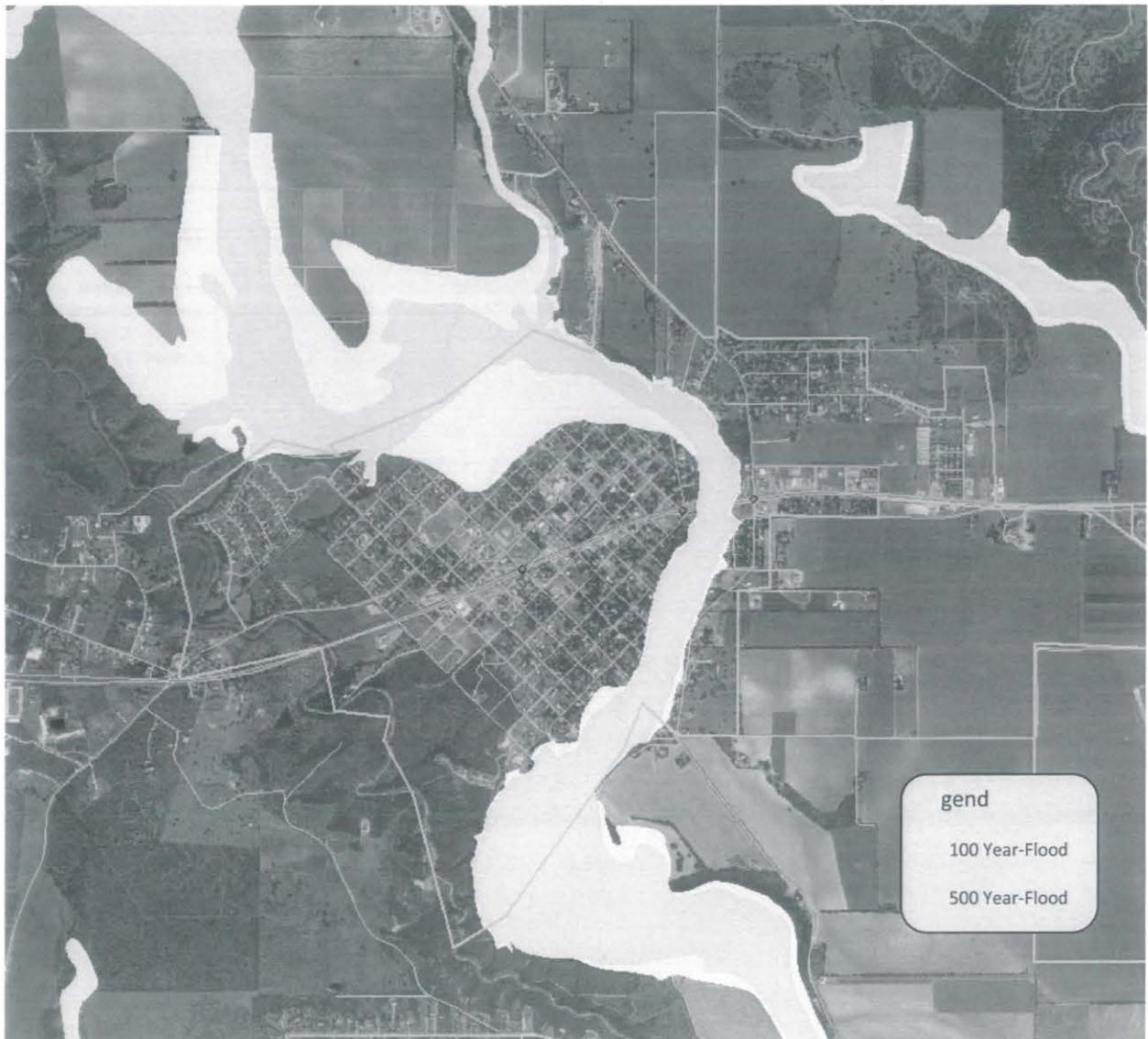


Figure 5 Castroville Flood Plain (Source: FEMA)

## Analysis

### Conclusions

The river water quality is important to the health of the environment and to the health of the people living in the area. In order to protect the river as a resource, reducing the harmful effects of pollutants in all areas of the watershed should be encouraged. When considering the health of the aquifer, water is coming from wells more quickly than it is recharging. Additionally, flooding is a problem in Castroville. Currently, certain drainage solutions for problems sites have been identified and designed. Yet, the government still needs funding to carry out these changes. Major considerations for future flooding need to be taken into consideration. Also, the residents of Castroville are disputing the FEMA map so it would be useful to understand the topography and soil data to make conclusions. The river is a beautiful feature for the town but not all recreational activities are currently appropriate due to river depth and smaller dams. The river has the potential to become a tourist attraction. In summary, the main conclusions for the hydrologic systems are as follows:

- The river surrounds Castroville on three sides, making it an important feature in the town
- Well water in Castroville has surpassed health and legal limits 4 four times and remains high
- On many streets in town, the drainage of water off the roads needs improvement
- Surface drainage travels through town during large flood events
- There are many depressions, which can hold stagnate water or keep flood waters from receding

### Design Recommendations

By incorporating the research results with design theories the following recommendations have been developed:

- Limit use of pesticides, and fertilizers on farm lands by city ordinance and encourage organic growers
- Have septic and sewage systems thoroughly sealed
- In drainage areas, use plants that reduce water pollutions, like *Carex spp.* (sage) and *Arbuscular mycorrhizal* (a fungi)
- Eliminate standing stagnant water in poor drainage areas
- Use flood zones for location of open space, such as parks or conservation areas
- Site planning must address these wide ranges of water depth (due to flooding or seasonal fluctuations) and river carrying capacity especially when considering river side development
- Collect and recycle storm water/surface water
- Reuse sewage water to conserve ground water levels
- Create a system for effective trash removal to preserve and protect the river quality
- Control water from entering the town on the northwest side
- Maintain clear water flow for evacuation of storm water on south side of the city
- New development should have a finish floor elevation higher than 774
- Provide alternative routes for travel to avoid flood affected areas

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## Introduction

In the attempt to fully understand the City of Castroville it is crucial to identify the existing vegetative conditions. In order to recognize these conditions it is vital to establish the ecological zones and gain an understanding of the characteristics that present themselves and what opportunities they offer. This research was conducted to describe the vegetative zones and their characteristics of Castroville and from these findings validate suitable performance criteria for making decisions regarding vegetative features in the design process.

## Existing Conditions - General

Medina County is separated from east to west by the Balcones Escarpment that divides the area into the Edwards Plateau and Hill Country to the north and the Rio Grande Plains to the south (TSHA). The following map provided by the Texas Parks and Wildlife Department shows the Vegetation Types of Texas. The star indicates Castroville and the following vegetation types are common of the area:

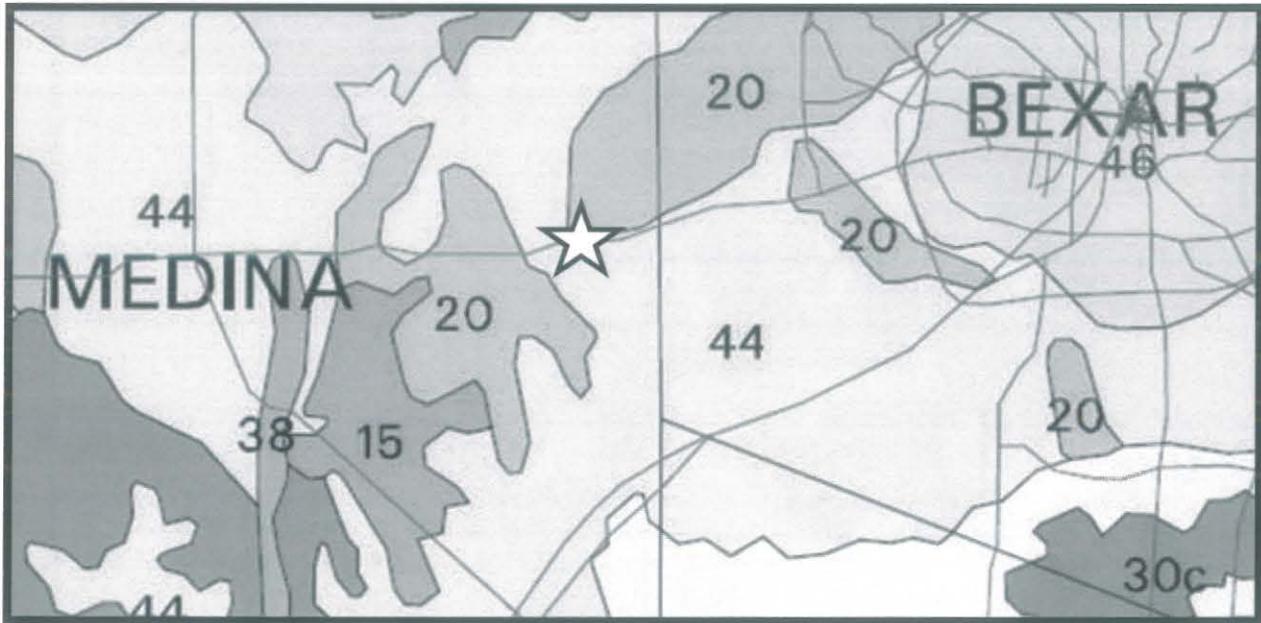


Figure 1. Medina County Vegetation Types. Source: Texas Parks and Wildlife Department

**(20) Mesquite-Live Oak-Bluewood Parks – Commonly Associated Plants:** Huisache, Huisachillo, Whitebrush, Granjeno, Lotebrush, Berlandier, Blackbrush, Desert Yaupon, Texas Pricklypear, Agarito, Mexican Persimmon, Purple Three-awn, Roemer Three-awn, Pink Pappusgrass, Halls Panicum, Sensitive Briar, Two-Leaved Senna, Mat Euphorbia.

**(44) Area 44** is generally labeled “Cropland” as it is considered 45% of the land in the county is prime farm land (TSHA).

## Existing Conditions - Specific

Upon closer investigation including a more site specific study, different local ecological conditions became evident. The Medina River dictates the **Bottomland**, a riparian area notable for Bald Cypress and Pecan Trees. The Bottomland transitions into the **Developed Land**, which is an area no longer in its natural state due to human influence. In this region between the Bottomland and Upland you find the remnants of a transition between sites which is still primarily composed of Pecans, Live Oaks and native grasses. The Developed Land has also witnessed the introduction of non-native species due to human activity in the area. In the **Upland** zone there exists a brushland area where Mesquite trees, Yucca, and Texas Mountain Laurel can be found. Finally, the **Cropland** consists of converted lands now used for agricultural production. The following image shows these four zones as they are found in the vicinity of Castroville.

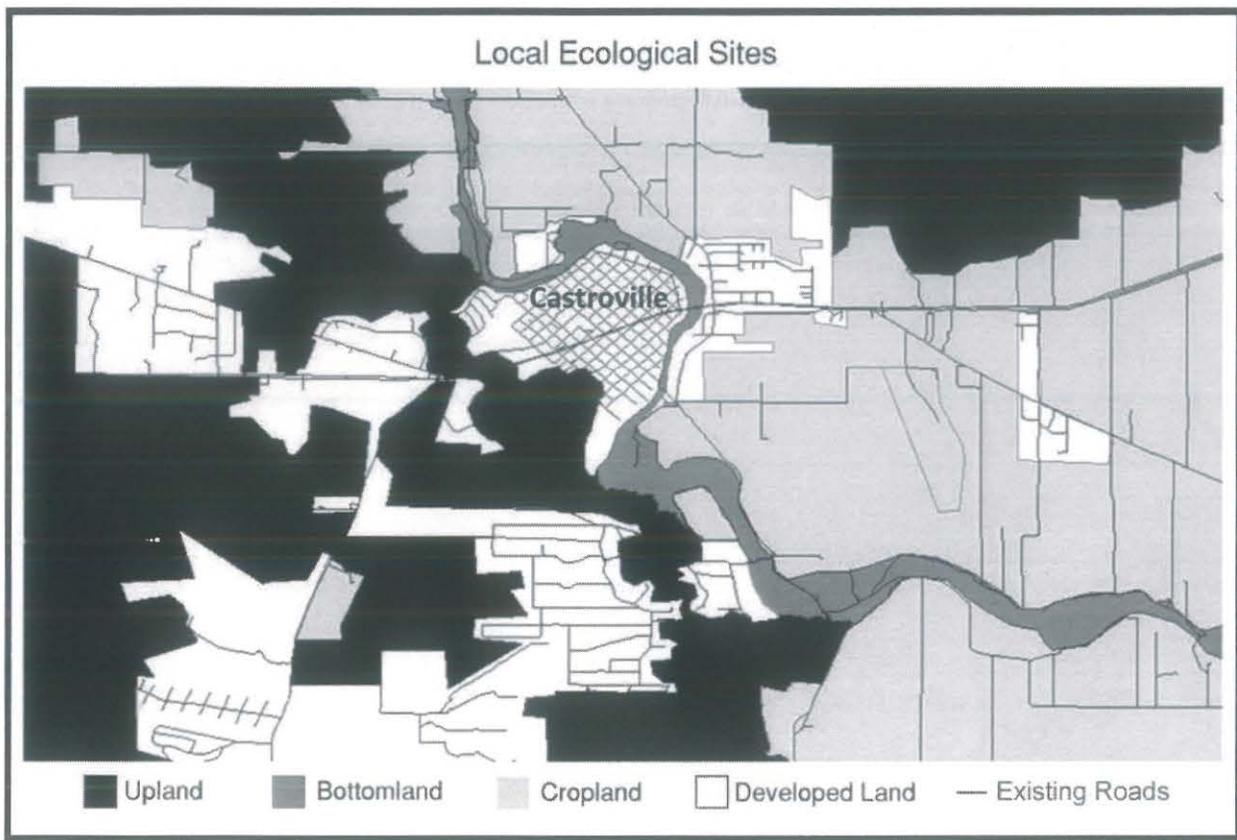


Figure 2. Local Ecological Sites. Source: Brian Stewart

## Analysis

After a visit to Castroville it was clear to see the differences between local ecological sites. A number of plant species can be found throughout the area of Castroville. Listed below are prominent plants that were identified throughout the area:



Figure 3. Upland. Source: Trace Unruh

**Upland:** The Regional Park as well as areas northeast of town consists of heavily matted brushland forming a dense cover on the landscape. Trails similar to the one pictured are laced through Regional Park and provide opportunities to experience the native vegetation.

- Texas Sotol – *Dasyilirion texanum*
- Yucca – *Yucca spp.*
- Prickly Pear Cacti – *Opuntia spp.*
- Texas Mountain Laurel – *Sophora Secundiflora*
- Honey Mesquite – *Prosopis glandulosa var. glandulosa*
- Texas Persimmon – *Diospyros texana*

**Developed Land:** Throughout the town exist a variety of plants. Some are in good condition while others appear in need of maintenance. Native plants remain, yet introduced species are most prevalent throughout the city.

- Red Tip Photinia - *Photinia fraseri*
- Texas Red Oak - *Quercus texana*
- Chinkapin Oak - *Quercus muehlenbergii*
- Loquat - *Eriobotrya japonica*
- Texas Sage - *Leucophyllum frutescens*
- English Ivy - *Hedera helix*
- Boxwood – *Buxus spp.*
- Nandina - *Nandina domestica*
- Pecan – *Carya illinoensis*
- Live Oak – *Quercus virginiana*
- Red Yucca – *Hesperaloe parviflora*
- Italian Cypress - *Cupressus sempervirens*

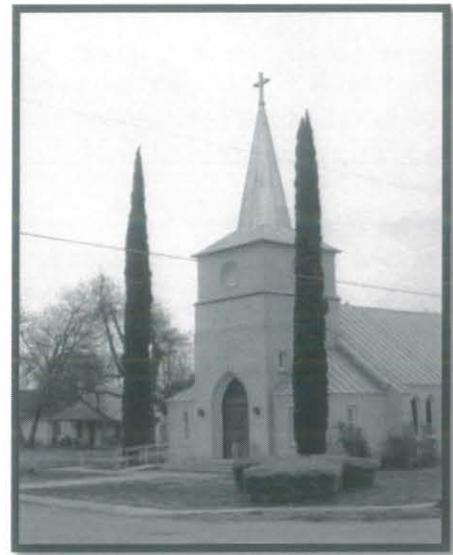


Figure 4. Developed Land. Source: Trace Unruh



Figure 5. Bottomland. Source: Trace Unruh

**Bottomland:** Excellent displays of Bald Cypress and Pecan trees, although the debris from trees has fallen into the river and canal. Pictured here are Bald Cypress trees stretching out over the river near the Regional Park.

- Pecan – *Carya illinoensis*
- Bald Cypress – *Taxodium distichum*
- Live Oak - *Quercus virginiana*

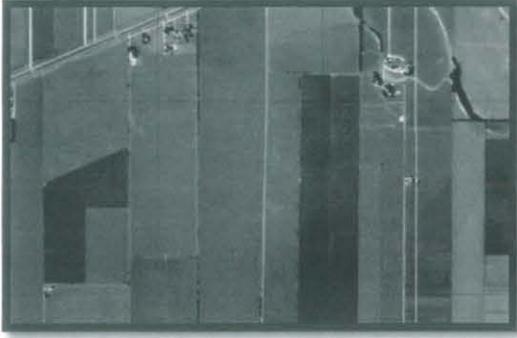


Figure 6. Cropland. Source: Google Earth

**Cropland:** The cropland area found predominately to the east and north of town provides economic opportunities for agriculture. Crops found here include grain sorghum, oats, wheat, maize, and corn.

## Conclusion

Recommendations are based on conclusions drawn from analysis and the understanding of site conditions. These recommendations concentrate on the following goals:

- Protect the community's unique identity
- Maintain the Environment in a healthy state
- Tourism as a significant component of the local economy
- Healthy Community

### Conclusion 1

The Bottomland area around the Medina River is a premier attribute and resource providing a more densely vegetated area with an abundance of pecan and cypress trees.

### Design Recommendation

- Preserve and maintain the Bottomland area to sustain the local environment and quality of life for residents.
- Encourage the potential for trails and/or attractions as a potential source of tourism and income to the visually pleasing and fruit bearing vegetation.

### Conclusion 2

The Upland area is densely vegetated with shrub and brush land.

### Design Recommendation

- Preserve the Upland area as a natural state to prevent erosion, sustain the local environment and limit the opportunity for new unwanted development.
- Create natural opportunities to encourage tourism.

**Conclusion 3**

Due to the diverse features of the land, including the bottomland and upland area, there are multiple ecological zones that support numerous types of vegetation. The native vegetation includes species that require little maintenance and are drought/heat tolerant.

**Design Recommendations**

- Utilize natural landmarks/sites to help promote identity.
- Enhance areas of interest by providing potential connectivity to natural features.
- Use vegetation and the natural landscape to help create potential buffers.
- Make use of existing vegetation to provide natural connections with people and promote health.
- Use native and adaptive plants for streetscape or plantings:

**Upland:****Shrubs:**

Texas Mt. Laurel- *Sophora secundiflora*  
 Yaupon Holly- *Ilex vomitoria*  
 Texas Lilac- *Leucophyllum frutescens*  
 Red yucca- *Hesperaloe parviflora*

**Grasses**

Buffalo Grass- *Bouteloua dactyloides*  
 Little Bluestem- *Schizachyrium scoparium*  
 Hairy Tridens- *Erioneuron pilosum*

**Bottomland:****Trees:**

Bald Cypress- *Taxodium distichum*  
 Live Oak- *Quercus virginiana*  
 Pecan -*Carya illinoensis*  
 Cedar Elm- *Ulmus crassifolia*  
 Texas Red Oak- *Quercus texana*  
 Chinkapin Oak- *Quercus muehlenbergii*

**Shrubs:**

Texas Mt. Laurel- *Sophora secundiflora*  
 Japanese Yew- *Podocarpus macrophyllus*  
 Yaupon Holly- *Ilex vomitoria*  
 Texas Lilac- *Leucophyllum frutescens*  
 Elaeagnus- *Elaeagnus pungens*

**Grasses**

Buffalo Grass- *Bouteloua dactyloides*  
 Little Bluestem- *Schizachyrium scoparium*  
 Hairy Tridens- *Erioneuron pilosum*

**Developed Land:**

**Trees:**

Bald Cypress- *Taxodium distichum*  
Live Oak- *Quercus virginiana*  
Pecan -*Carya illinoensis*  
Cedar Elm- *Ulmus crassifolia*  
Texas Red Oak- *Quercus texana*  
Chinkapin Oak- *Quercus muehlenbergii*

**Shrubs:**

Texas Mt. Laurel- *Sophora secundiflora*  
Japanese Yew- *Podocarpus macrophyllus*  
Yaupon Holly- *Ilex vomitoria*  
Texas Lilac- *Leucophyllum frutescens*  
Elaeagnus- *Elaeagnus pungens*  
Red yucca- *Hesperaloe parviflora*

**Grasses**

Buffalo Grass- *Bouteloua dactyloides*  
Little Bluestem- *Schizachyrium scoparium*  
Hairy Tridens- *Erioneuron pilosum*

**Vines**

English Ivy- *Hedera helix*  
Virginia Creeper- *Parthenocissus quinquefolia*

**Crop Land:**

**Trees:**

Live Oak- *Quercus virginiana*  
Cedar Elm- *Ulmus crassifolia*  
Texas Red Oak- *Quercus texana*  
Chinkapin Oak- *Quercus muehlenbergii*

**Shrubs:**

Texas Mt. Laurel- *Sophora secundiflora*  
Japanese Yew- *Podocarpus macrophyllus*  
Yaupon Holly- *Ilex vomitoria*  
Texas Lilac- *Leucophyllum frutescens*  
Elaeagnus- *Elaeagnus pungens*  
Red yucca- *Hesperaloe parviflora*

**Grasses**

Buffalo Grass- *Bouteloua dactyloides*  
Little Bluestem- *Schizachyrium scoparium*  
Hairy Tridens- *Erioneuron pilosum*

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Prepared by: Gonzalez & Saunders

## Introduction

This research categorizes and identifies information about existing current species of wildlife and the habitats in which they live throughout the Castroville area. The material within this area of investigation is focused on the description of common and endangered native species along with their habitat requirements. The habitat locations are noted in relationship to heavily vegetated areas, major water and food sources, potential attraction of tourism and economic growth, and the potential pest problems and diseases



The area designated as seed crop is used as agriculture where a variety of different species will feed on the rotating crops. The legume and grass areas are open grasslands where an assortment of seeds and herbaceous plants can be found as a food source. The areas designated as Upland consist mainly of drought tolerance grass types as well as native hardwood trees.

## Existing Conditions

The wildlife of the Castroville area are located within the boundaries of the Edwards Plateau region in the South Texas Region. The most common variety of native species in this region includes but is not limited to:

### Game Wildlife

- White Tail Deer
- Turkey
- Javelins
- Squirrels

### Non-Game Wildlife

- Armadillos
- Bobcats
- Coyotes
- Opossums
- Raccoons
- Road runners
- Skunks
- Song Birds (Cardinal, robin, Northern mockingbird, cedar waxwings, golden-cheeked warbler and black-capped vireo, etc.)

The South Texas Region also has a number of endangered and threatened species that are listed at the end of this section. With current trends of urban sprawl; habitat loss is the major contributor affecting particular species survival.

The Medina River provides a major habitat corridor through Castroville. This space provides food, water and shelter to the wildlife. The river is a vital part of the insurance of the wildlife population in the area.

“An average of forty to sixty feral cats and dogs are dumped in or around Castroville each month.” (Mayor Robert Lee) The increased number of dumped animals is due in part to the growing population in the surrounding areas. These feral animals pose a threat to the native populations of wildlife.

## Evaluation

The areas immediately adjacent to the Medina River and within the Regional Park are of the highest value with regards to established habitat for native wildlife. The area along the river is the best habitat due to its abundance of available food, water and shelter, for a majority of local species of birds, fish, and small mammals. The river also serves the purpose as a major connection route through the heavily populated areas of Castroville. The rich alluvial soils along the river provide nutrients for ample vegetation which in turn provides the necessary cover for wildlife. This location would perform best if protected in a conservation easement. A minimum easement of two hundred feet on both sides of the Medina River would act as a restriction on the specific use the land. This could be an agreement with the landowners to protect natural, productive, or cultural resources located within the controlled easement.

The vegetated steeper habitat on the west end of the regional Park and up onto Cross hill provides habitat for a variety of different species different from those accommodated in the riparian zone along the Median River. The vegetation and steep slopes provide different forms of cover and food in the upland areas seen in the regional park. These areas need to be kept free of invasive vegetation, overdevelopment, and preserved at their current area in order to provide a sufficient range of solid habitat for large species of mammal. This can be accomplished by limiting development along the base and hillside of Cross Hill and protecting native tree cover.

The majority of wildlife species in the vicinity of Castroville share similar requirements for vegetative cover, and food type. Since these species have established themselves under similar conditions, providing for the needs of white-tail deer. A diverse vegetation structure is essential for the health of deer that use the vegetation for hiding, escape, thermal cover as well as food. This brush cover is also

used for nesting and mating grounds by many birds such as: robins, cedar waxwings, northern cardinals, black-capped vireo, and the endangered golden-cheeked warbler. A variety of berries, seed, forbs, and insects are provided by native plant species, the dominant species of food-providing trees would be ashe juniper in the upland area, and pecan in the riparian zone. In order to restore the habitat in these key locations to a pre-development quality, the promotion of native plants will be an essential technique.

Species such as the Golden-cheeked warbler have become endangered mainly due to the fact that many tall juniper and oak woodlands have been cleared to build houses, roads, and stores. Some habitat was cleared to grow crops or grass for livestock. (Texas Parks and Wildlife Department)

These old growth forest support large variety of species and cannot be replaced within one generation.

## Conclusions and Design Recommendations

The contributing resources to maintaining and encouraging local wildlife in the Castroville region would be the established areas of native brush cover, as well as the riparian zone immediately adjacent to Medina river. These important locations are valuable to existing wildlife because their combination of vegetation and soil types provide a main source of food, shelter, and water. By designing and managing a habitat which is based on the needs of the dominant species in these areas of concentration the town of Castroville can maintain a healthy population of all adjoining native species.

### Conclusion 1

- The river provides a corridor for wildlife to safely travel.
- The old growth tree canopy provides shelter for various mammals and bird species.
- The areas along the river banks offer a source of food and water.

### Design Recommendation 1

- Allowing native vegetation to take hold by limiting development within an easement of 200 feet on both sides of the river.
- The easement limits the type, height, and amount of barriers built in the area immediately adjacent to the river.
- Ensures the safe and free passage of all types of wildlife along the main river corridor.

### Conclusion 2

- Many of the native species in the area of Castroville share the same needs as the dominant species of White tail deer
- Design habitats for the White-tail deer, all of the needs for other endangered species will be met.
- A range of cover types, need to be established.

**Design Recommendation 2**

- Design planting schemes and variation of open and enclosed spaces for clear passage by wildlife.
- Establish connections between major brush locations and the river corridor throughout the town.
- 10-20 feet wide existing dense thicket or open grassland connecting one established habitat to the other.

**Conclusion 3**

- Promote broader diversity of wildlife to insure the revival and establishment of endangered species
- Establish a healthy population of various species throughout the entire ecosystem in order to decrease the threat to endangered species.

**Design recommendations 3**

- Place priority on the use native plant material over invasive exotic species when planting or promoting any plants around and within the town.

**Medina County Threatened & Endangered Species List:**

Listed below is a list of endangered species located in Medina County. Special attention should be paid to each of these species’ habitat types. Provisions should be made in order to maintain and preserve these habitats in and around Castrovilla, as they currently exist.

Taxon	Common Name	Scientific Name
Amphibians	Valdina Farms sinkhole salamander	<i>Eurycea troglodytes</i> complex
	Isolated, intermittent pools of a subterranean streams and sinkhole in Nueces, Frio, Guadalupe, and Pedernales watersheds within Edwards Aquifer area	
Birds	Baird's Sparrow	<i>Ammodramus bairdii</i>
	Shortgrass prairie with scattered low bushes and matted vegetation; mostly migratory in western half of State, though winters in Mexico and just across Rio Grande into Texas from Brewster through Hudspeth counties	
Birds	Western Burrowing Owl	<i>Athene cunicularia hypugaea</i>
	Open grasslands, especially prairie, plains, and savanna, sometimes in open areas such as vacant lots near human habitation or airports; nests and roosts in abandoned burrows	

**Birds**      **Zone-tailed Hawk**      **Buteo albonotatus**  
 Arid open country, including open deciduous or pine-oak woodland, mesa or mountain county, often near watercourses, and wooded canyons and tree-lined rivers along middle-slopes of desert mountains; nests in various habitats and sites, ranging from small trees in lower desert, giant cottonwoods in riparian areas, to mature conifers in high mountain regions

**Birds**      **Mountain Plover**      **Charadrius montanus**  
 Breeding: nests on high plains or shortgrass prairie, on ground in shallow depression; nonbreeding: shortgrass plains and bare, dirt (plowed) fields; primarily insectivorous

**Birds**      **Golden-cheeked Warbler**      **Dendroica chrysoparia**  
 Juniper-oak woodlands; dependent on Ashe juniper (also known as cedar) for long fine bark strips, only available from mature trees, used in nest construction; nests are placed in various trees other than Ashe juniper; only a few mature junipers or nearby cedar brakes can provide the necessary nest material; forage for insects in broad-leaved trees and shrubs; nesting late March-early summer

**Birds**      **Peregrine Falcon**      **Falco peregrinus**  
 Both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance, reference is generally made only to the species level.

**Birds**      **American Peregrine Falcon**      **Falco peregrinus anatum**  
 year-round resident and local breeder in west Texas, nests in tall cliff eyries; also, migrant across state from more northern breeding areas in US and Canada, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

**Birds**      **Arctic Peregrine Falcon**      **Falco peregrinus tundrius**

Migrant throughout state from subspecies' far northern breeding range, winters along coast and farther south; occupies wide range of habitats during migration, including urban, concentrations along coast and barrier islands; low-altitude migrant, stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands.

Birds      Whooping Crane      *Grus americana*  
 Potential migrant via plains throughout most of state to coast; winters in coastal marshes of Aransas, Calhoun, and Refugio counties

Birds      Interior Least Tern      *Sterna antillarum athalassos*  
 Subspecies is listed only when inland (more than 50 miles from a coastline); nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony

Birds      Black-capped Vireo      *Vireo atricapilla*  
 Oak-juniper woodlands with distinctive patchy, two-layered aspect; shrub and tree layer with open, grassy spaces; requires foliage reaching to ground level for nesting cover; return to same territory, or one nearby, year after year; deciduous and broad-leaved shrubs and trees provide insects for feeding; species composition less important than presence of adequate broad-leaved shrubs, foliage to ground level, and required structure; nesting season March-late summer

Crustaceans      Ezell's cave amphipod      *Stygobromus flagellatus*  
 Known only from artesian wells

Fishes      Edwards Plateau shiner      *Cyprinella lepida*  
 Edwards Plateau portion of Nueces basin, mainstem and tributaries of Nueces, Frio, and Sabinal rivers; clear, cool, spring-fed headwater creeks; usually over gravel

Fishes      Nueces roundnose minnow      *Dionda serena*  
 Edwards Plateau portion of Nueces basin: mainstream and tributaries of Nueces, Frio and Sabinal rivers

Fishes      Headwater catfish      *Ictalurus lupus*

Originally throughout streams of the Edwards Plateau and the Rio Grande basin, currently limited to Rio Grande drainage, including Pecos River basin; springs, and sandy and rocky riffles, runs, and pools of clear creeks and small rivers

Insects	Leonora's dancer damselfly	<i>Argia leonorae</i>	South central and western Texas; small streams and seepages
Mammals	Frio pocket gopher	<i>Geomys texensis bakeri</i>	Associated with nearly level Atco soil, which is well-drained and consists of sandy surface layers with loam extending to as deep as two meters
Mammals	Ghost-faced bat	<i>Mormoops megalophylla</i>	Colonially roosts in caves, crevices, abandoned mines, and buildings; insectivorous; breeds late winter-early spring; single offspring born per year
Mammals	Cave myotis bat	<i>Myotis velifer</i>	Colonial and cave-dwelling; also roosts in rock crevices, old buildings, carports, under bridges, and even in abandoned Cliff Swallow ( <i>Hirundo pyrrhonota</i> ) nests; roosts in clusters of up to thousands of individuals; hibernates in limestone caves of Edwards Plateau and gypsum cave of Panhandle during winter; opportunistic insectivore
Mammals	Plains spotted skunk	<i>Spilogale putorius interrupta</i>	Bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened
Mollusks	Golden orb	<i>Quadrula aurea</i>	Sand and gravel in some locations and mud at others; intolerant of impoundment in most instances; Guadalupe, San Antonio, and Nueces River basins
Mollusks	Texas pimpleback	<i>Quadrula petrina</i>	Mud, gravel and sand substrates, generally in areas with slow flow rates; Colorado and Guadalupe river basins
Reptiles	Indigo snake	<i>Drymarchon corais</i>	

Texas south of the Guadalupe River and Balcones Escarpment; thornbush-chaparral woodlands of south Texas, in particular dense riparian corridors; can do well in suburban and irrigated croplands if not molested or indirectly poisoned; requires moist microhabitats, such as rodent burrows, for shelter

Reptiles      Spot-tailed earless lizard      *Holbrookia lacerata*  
 Central and southern Texas and adjacent Mexico; moderately open prairie-brushland; fairly flat areas free of vegetation or other obstructions, including disturbed areas; eats small invertebrates; eggs laid underground

Reptiles      Texas horned lizard      *Phrynosoma cornutum*  
 Open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil, enters rodent burrows, or hides under rock when inactive; breeds March-September

Reptiles      Texas tortoise      *Gopherus berlandieri*  
 Open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November

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Prepared by: (Williams & Marston)

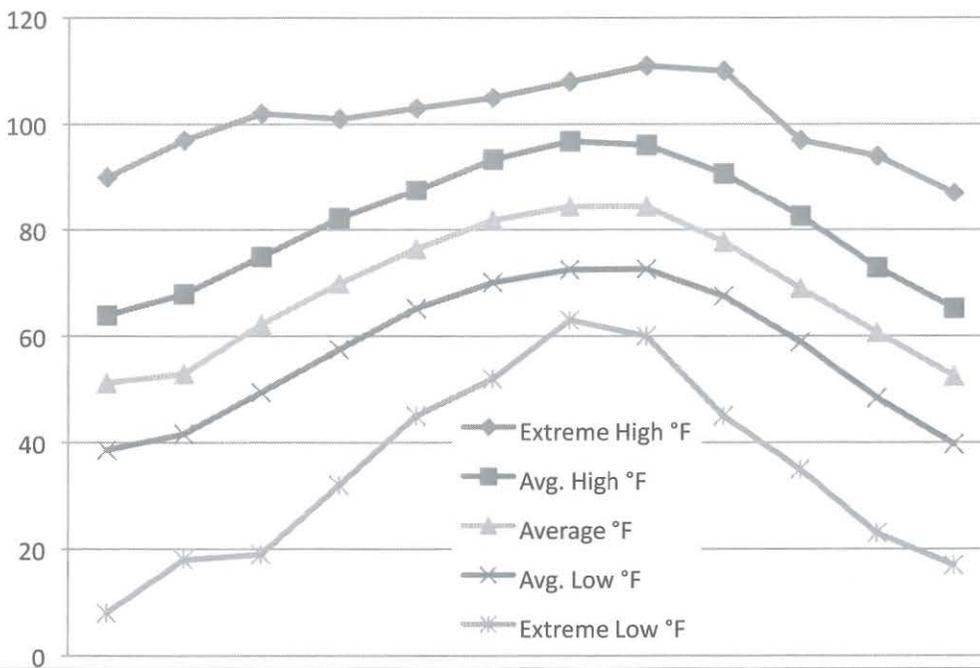
## Introduction

Climate encompasses a large spectrum of atmospheric conditions including, temperature, rainfall, wind, precipitation and humidity. These conditions must be understood fully in order to develop the best design considerations possible for the city. By studying the climatic conditions of Castroville, the designer will be better prepared to work with the City to keep its “Alsacian” identity, and improve existing conditions.

For this report, 49 years (1960-2009) of climatic data have been gathered from Hondo, Texas. This city is 20 miles west of Castroville, having the most similar conditions for what data are available. To visually represent the conditions of Castroville, data on temperature, precipitation, humidity, wind speed and wind direction have been analyzed and converted into graphs.

## Existing Conditions

Average Annual Temperatures (1960-2009)



	J	F	M	A	M	J	J	A	S	O	N	D	
EXT High °F	90	97	102	101	103	105	108	111	110	97	94	87	111
Avg. High °F	63.9	67.9	74.9	82.2	87.5	93.4	96.8	96.1	90.7	82.6	72.9	65.2	73.2
Avg. °F	51.2	52.9	62.2	69.9	76.4	81.8	84.4	84.4	77.7	69.0	60.7	52.5	68.6
Avg. Low °F	38.6	41.6	49.4	57.5	65.2	70.1	72.5	72.6	67.5	58.9	48.4	39.7	56.8
EXT Low °F	8	18	19	32	45	52	63	60	45	35	23	17	8

Figure 1. Temperature of Hondo, TX (1960-2009) Source : (National Climatic Data Center (NCDC)) Hondo, Texas

Annual Average Precipitation (1960 – 2009)

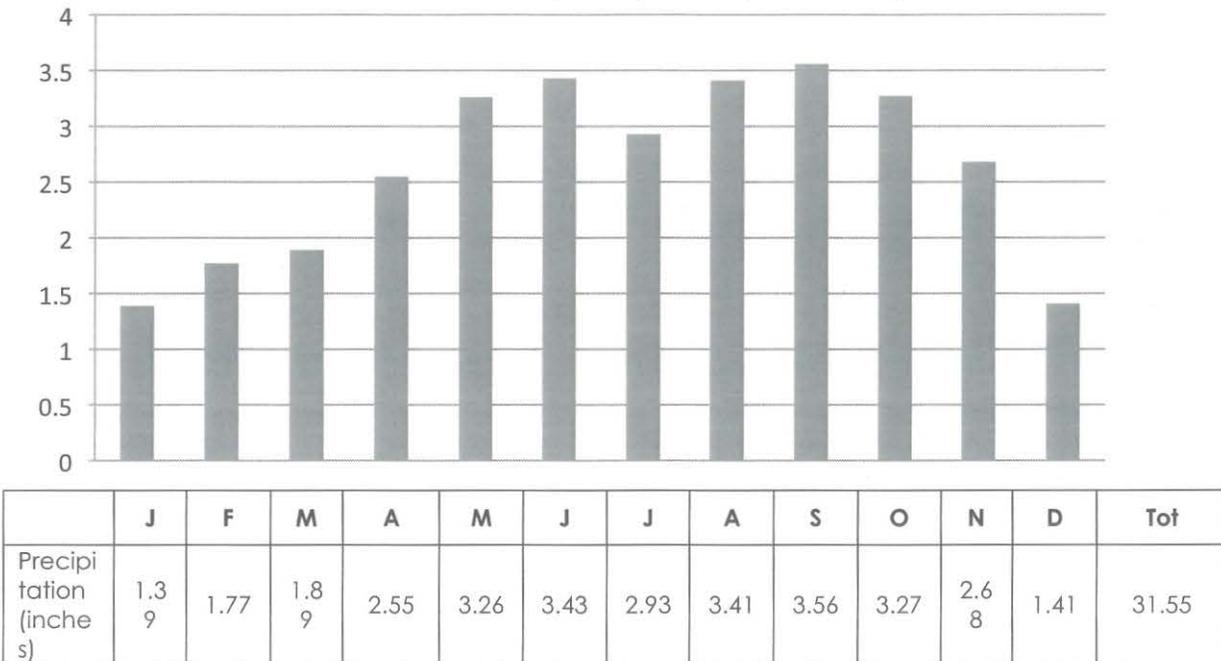
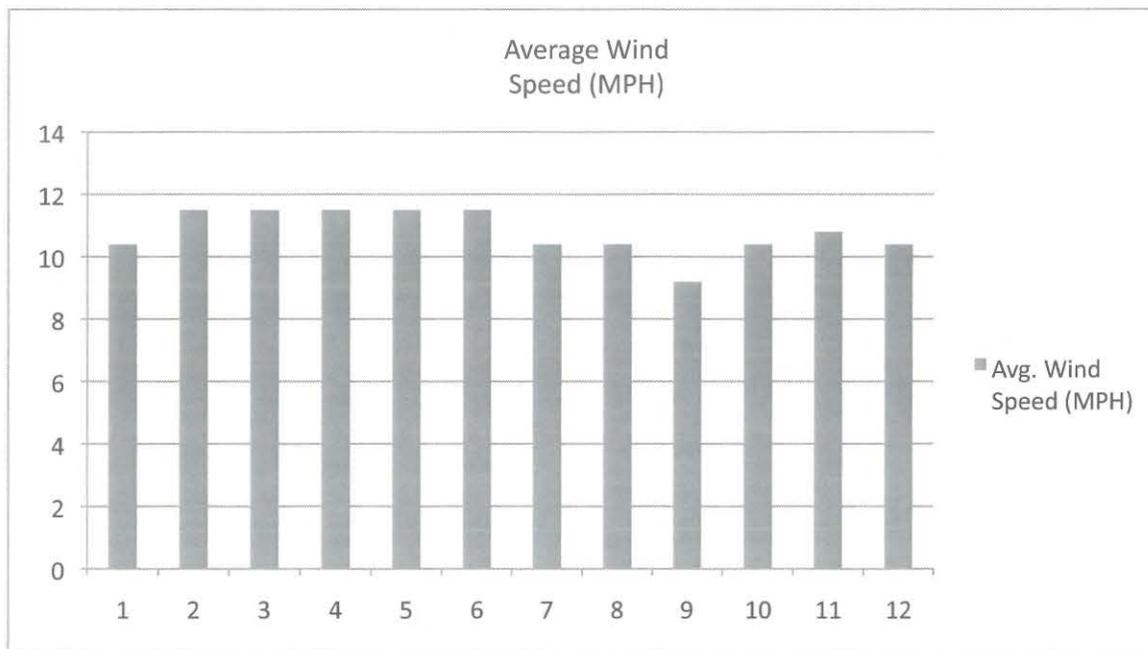


Figure 2. Average Precipitation (1960-2009) Source : ( National Climatic Data Center (NCDC)) Hondo, Texas



Month	J	F	M	A	M	J	J	A	S	O	N	D	AVG
Wind Speed	10.4	11.5	11.5	11.5	11.5	11.5	10.4	10.4	9.2	10.4	10.8	10.4	10.8
Wind Direction	NE	NE	SE	SE	SE	SE	SE	SE	SE	SE	S	NE	SE

Figure 3. Average Speed and Direction (1960-2009) Source : ( National Climatic Data Center (NCDC)) San Antonio, Texas

## Analysis

These charts and graphs represent how each set of data relates to one another over the course of about 50 years. Looking at the average precipitation and temperature, the data show that as the temperature in the area increases, so does the precipitation, except during the month of July when the amount of precipitation decreases and could present periods of drought stress. When we evaluate temperature for Castroville, we understand the importance of microclimates in social and public spaces throughout the year. The wind pattern throughout the year is consistent, blowing from the southeast for 9 months out of the year (from March to November) at about 11 mph, and from the northeast at about 11 mph (between December and February). It is necessary to understand the wind velocity as well as direction to be able to reach appropriate conclusions for the area. This analysis of Castroville's climate can help us see potential problems this area might face in the hotter, dryer portions of the year, when water resources are scarce and plants need it most. We can present design innovations such as rainwater harvesting to irrigate plants.

## Conclusion

Castroville has hot and humid conditions with a light wind at 11mph most of the year. Design suggestions to improve the comfort of the town would include creating favorable microclimates in highly used areas. Microclimates are designed to create a cooler or warmer environment in a desired area. Taking advantage of the wind from the southeast between spring and fall can greatly increase the comfort in hot and humid conditions. During the hotter times of the year, the design should provide shade while allowing consistent airflow, and during the cooler parts of the year the design should propose to allow solar radiation to reach people while blocking the colder air from the northeast. Another design element would be to increase vegetation. Through the process of evapotranspiration, plants are able to cool the surrounding area. For materials to be employed in Castroville, the data suggests the use of lighter colored materials. According to *Britannica*, introducing materials that are lighter in color, such as lighter streets, sidewalks and sides of buildings will increase the albedo. The albedo of an object is a measure of how strongly it reflects light and heat from radiation sources such as the Sun. It is a measure indicative of a surface's or body's diffuse reflectivity. A higher albedo reduces solar radiation and creates a cooler atmosphere. However, high reflectance and glare can be unpleasant if taken to extremes.

### Conclusion 1

#### Precipitation Influence

- The City of Castroville receives approximately 31.55 inches of precipitation annually. However, there is a deficit at the height of the growing season in July. Some rainfall events throughout the year can produce unexpected flooding. Vegetation has been shown to reduce the amount of standing water in areas, so by adding vegetation like trees flooding maybe reduced.

### Design Performance Criteria

- Choosing plants for this area would include more drought tolerant plants, native to this area to fit the existing conditions of the area, and that can handle both extremes of temperature, and plants that require low maintenance and low water requirements due to the City's budget limitations.

### Conclusion 2

#### Temperature Influence

- The maximum and minimum temperatures for Castroville over the past 50 years are 111°F and 8°F respectively. Temperatures reach triple digits numerous times during the summertime, which create unpleasant times to spend outside. Meanwhile in the winter months, cold air from the north brings the average temperature to the mid to low 40s. Creating microclimates that provide shade in the summertime to reduce the outside temperature along with increasing the temperature during the wintertime by allowing sun penetration would create more pleasant outdoor experiences.

### Design Performance Criteria

- Summer Months
  - Providing shade to areas where there is limited cover to provide cooler microclimates.
- Winter Months
  - Using deciduous trees in high interest areas to allow solar radiation to reach users.

### Conclusion 3

#### Wind Influence

- The wind patterns for Castroville are predominately from the southeast between the months of March and November at an average of about 11 mph. During this time when the temperature is the hottest, utilizing airflow will improve comfort under hot and humid conditions. During the winter months, mainly December through February, the wind changes direction blowing from the northeast at about 11 mph. Blocking these cooler winds can improve comfort by reducing the wind chill.

### Design Performance Criteria

- Summer Months
  - Take advantage of the airflow during the hotter months of the year to create more pleasant outdoor use. The orientation of the northerly oriented streets will create an angle acceptable to utilize the summer breeze that comes from the southeast. This will help promote outdoor use by improving comfort during the hottest times of the year.

- Microclimates created by shade along with a light wind will create more desirable outdoor use areas.
- Winter Months
  - Block colder wind during this time of the year coming from the northeast
  - Use deciduous trees to allow sunlight penetration in winter will also increase outdoor activity by making it warmer with less wind during the winter months.

#### Conclusion 4

##### Material influence

- Plant material in this area should be acceptable to humid subtropical conditions. Such plant material conforms to the natural landscape already present, and avoids an exotic appearance tropical plants might create. Using surface materials in this area must be carefully selected to reinforce the existing vegetation now existing in Castroville.

##### Design Performance Criteria

- Vegetation
  - Choose plants for this area based on consistency with the native plants in Castroville.
  - Use plants that are well adapted to a humid subtropical region with low water requirements and maintenance.
  - Extensive lawn areas reduce both absorption and reflection of radiation and improve comfort.
- Sidewalks and Paving
  - Pavements with higher albedos (light or buff colors) absorb less energy and are cooler. Where paved surfaces are required, using materials with higher albedos will reduce the heat island effect, saving energy by reducing the demand for air conditioning and improve air quality.
  - Brick and stone materials in Castroville will be consistent with the surrounding environment.
  - Using materials that conform to the standards of the existing buildings and streets that Castroville currently has will help keep the town unified in appearance.

#### Conclusion 5

##### Rain water harvesting

- With the amount of rain Castroville gets on a yearly basis, it could be possible to capture and store rainwater to be used during dryer parts of the year when water is scarce.

### Design Performance Criteria

- By collecting rainwater, Castroville will have water available to use for irrigation during the dry winter months that will reduce the need to use municipal water for landscape maintenance.
- Simple storage systems, are least expensive to construct and have a wide range of materials to choose.
- Storage tanks come in diverse range of sizes and are available to use above ground or below ground where it may be acceptable.

### Conclusion 6

#### Shade

- Areas of high use such as Houston Square should incorporate shaded margins to make the hot summer months cooler and more comfortable for its users. Shade by large trees or manmade structures such as pergolas could be considered.

Prepared by: Liz Chapman & Tyson Gaspard

## Introduction

Visual Quality identifies descriptions of the environment that include landforms, water, vegetation, structures, and materials that can be man-made or natural, that form the perceptual character of a setting. In the city of Castroville, there are certain existing elements and features that must be analyzed before designs can be proposed for the future.



## Existing Conditions

- Castroville is located amidst the scenic Texas Hill Country 20 miles west of San Antonio.
- Castroville has a historical character which is evident through the architecture and scale of the buildings and streets throughout the city.
- The City currently does not have distinct entry or exit points.
- The City is surrounded by the Medina River, but the river is not treated as a prominent feature in the landscape.
- Many buildings are falling into disrepair.

The factors that were used to evaluate visual quality include: uniqueness of place, complexity of the components, overall unity, and the ability to create a compelling sense of attraction to people.

- **Uniqueness-** the ability of a place to offer something that is rare and special to an observer.
- **Complexity-** measure of variety and interest. It is important that a place display environmental complexity while remaining unified overall.
- **Unity-** measure of the overall harmony and cohesiveness with which a place forms an identifiable whole.
- **Compelling-** how stimulating and appealing a place is to the senses.

## Evaluation

Castroville is a unique city enriched with historic character and culture. The city has a distinct architectural style that comes from its Alsacien heritage in France, combined with the use of local Texas materials to create a character that is uniquely its own. Many of the buildings, both public and private, are historical landmarks, and recognized by the State of Texas for their historical importance. The problem is that many of the historically rich buildings are falling into neglect and much of the new development is not cohesive with historical trends.



Historic Character



Historical home in need of repair



The City of Castroville has many unique features that, if utilized, could create a very attractive and inviting destination. Natural features such as the Medina River and the surrounding hillsides have the potential for beautiful views and multiple opportunities for interaction. Because Highway 90 cuts through the middle of Castroville, the city has the potential to be overlooked or missed. The city lacks any hierarchy of landmarks, districts, nodes, gateways, paths, edges, and portals. This hierarchy needs to be established so that separate areas and important aspects of the city are clearly defined. Creating visual access into the city, as well as historically significant parts of the city, will decrease the likelihood that it is over looked by potential tourists and residents.

Areas of the city, such as September square, Houston square, and the Medina River near The Landmark Inn are not being utilized to their full potential. September Square is difficult to access and offers no visual attraction from Highway 90 to establish it as a portal. Houston Square is consumed by excess parking, decreasing the accessibility. The site is not well integrated with the surrounding areas, and the focal point, the fountain, is being neglected and offering no visual stimulation. There is limited access to the Medina River for citizens and tourists in both the physical and visual sense. Near the Landmark Inn, there is great potential for interaction and access to the Medina River. These places are key areas for attracting users and potential tourists. Currently, there is not an effective path system that connects these elements. There is a need for connection among these high interest destinations that must be visually distinct. This will aid users in way finding and strengthen the sense of place within downtown Castroville.



Underutilized sites



## Conclusions

### Conclusion 1:

Building facades and other aesthetic elements for new construction should be regulated, possibly through ordinances or guidelines.

### Design Recommendations:

- Use similar building facades and materials that reflect historical and cultural influences to strengthen the sense of place and create a more unified appearance.
- Emphasize building codes and ordinances that enforce historical roof pitches and building techniques in accordance with the Official Castroville Design Guidelines, which can be referenced at:

[http://www.castrovilletx.us/objects/DRAFT\\_Design\\_Guidelines.pdf](http://www.castrovilletx.us/objects/DRAFT_Design_Guidelines.pdf)



Historically significant roof pitch

### **Conclusion 2:**

Historical buildings need to be protected and buildings that are falling into disrepair need to be addressed.

### **Design Recommendations:**

- Ensure that site lines to prominent buildings are clear and intentional.
- Renovate structures that are showing signs of wear.
- Determine which, if any, of the buildings are beyond repair; if any are found, they should be removed for aesthetic and safety concerns.

### **Conclusion 3:**

The City's identity and sense of place needs to be strengthened through the use of:

- Landmarks - readily identifiable object which serves as an external reference point.
- Portals – distinct entry point into a district.
- Edges – perceived boundaries such as walls, buildings, and shorelines.
- Nodes – focal point, intersection, or loci.
- Paths – streets, sidewalks, trails, and other channels in which people travel.
- Districts – relatively large sections of the city, distinguished by some identity or character.

### **Design Recommendations:**

- Provide signage and direction for entrances to establish portals, edges and districts.
- Create recognition of the downtown district, beginning at September Square, with the establishment of a portal.
- Designate pedestrian walkways within the downtown district to establish paths, edges and nodes.
- Establish a consistent character of the streets to reinforce the district.
- Establish and enhance existing landmarks.
- Address important nodes and their functions such as Houston and September Square, and the Highway 90 crosswalk at Fiorella Street.

**Conclusion 4:**

Houston Square has aesthetic quality issues that need to be addressed

**Design Recommendations:**

- Reduce parking spaces around the square to decrease the visual dominance of the asphalt and open up site lines.
- Establish site lines with the surrounding context, such as St. Louis Catholic Church.
- Define the boundaries of the square.
- Improve the visual quality by defined spatial edges and spaces.
- Improve the attractiveness through amenities such as benches, shade trees, etc.

**Conclusion 5**

Site lines to the natural landscapes that surround the city need to be opened up and made clear from areas in the downtown with high pedestrian traffic.

**Design Recommendations:**

- Emphasize and accentuate views of the Medina River from locations such as the Landmark Inn and Regional Park, and Streets such as Alamo, San Jacinto and Washington by providing viewing spaces and interaction opportunities.
- Provide views to the nearby scenic higher ground from opportune areas within the downtown by creating viewing areas and site lines.

**Conclusion 6:**

There is not a visually cohesive group of plant species and street furniture to unify the City.

**Design Recommendations:**

- Incorporate potted plants or window boxes that reflect Alsacien heritage.
- Provide street trees where possible to create scale, attraction and comfort.
- Incorporate street furnishings such as lamp posts and benches.

**References**

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## Design Performance Requirements

The design performance requirements outline in this section are established from the foregoing research areas. They are derived from the analysis of research and presented here to facilitate efficient access for designer and for the subsequent evaluators of the proposals contained herein. The design performance requirements, which are summarized and compiled here, along with the previously stated design goals (Section 3: Project Intent) provide the information used to guide and evaluate planning and design proposals that follow in later sections of this report.



## Historic and Cultural Performance Requirements and Conclusions

To foster a foundation for economic prosperity, tourism, managed growth, and an excellent quality of life through the conservation of historic buildings and places, along with the preservations of authentic character and aesthetic quality of the community.

- To preserve and revitalize the historic integrity of all essential buildings, landscapes, landmarks, and sites within Castroville.
  - Impose the use of zoning ordinances and revitalization efforts to improve existing sites and enact city codes to preserve their historic integrity
- Provide a cohesive, easy to follow historic experience by establishing an accessible route to all vital historic locations including sites not currently mapped on the existing historic walk, a well organized documentation of knowledge and information, a centrally located space for the display of Castroville artifacts, and an interactive (audio/visual) experience for tourist attraction.
  - Create a cohesive signage theme to denote the various historic sites located on the Historical Walk.
- Provide a stronger entrance point to the historic center to better introduce the tourist walking experience.
  - Establish a specific starting point for the Historic Walk
    - Steinbach House
      - Historical Walk maps
      - Historical Information
    - Landmark Inn
      - Historical Artifacts
    - September Square
      - Beginning of Historical Walk
- Create a distinctive pathway to better delineate the historic walk and sites within Castroville.
  - On street revitalization to better define the Historical District
- Create uniform signage and maps to better accommodate the tourist experience.
- Manage the annual influx of tourism by providing better parking organization for the seasonal festivities.
- Ensure historic integrity through the proper enforcement of City requirements and ordinances for historic and cultural preservation.
- Create a cohesive and unique adaptive use design by integrating new implementations into the established community with sensitivity to its existing surroundings.
- Use Alsatian/Texas colonial characteristics in architectural detail, spatial boundaries, and design materials to maintain the historical veracity of Castroville.
- Better incorporate the landscape and existing open spaces into the historical experience.

## Social Conditions

By analyzing the demographic and social data, conclusions can be drawn and further used for establishing design performance requirements that would benefit the City of Castroville as a whole.

### Conclusion 1

Castroville has a significantly higher percentage of senior citizens than that of the State of Texas.

Design Performance Requirements:

- Provide services for an aging population.
- Promote healthy living by providing nodes and interest points within walk-able distances.
- Provide places to stop and rest.
- Most social needs are being met by currently providing opportunity for involvement in different organizations and classes; however, make available safe routes for walking to these meeting places to provide the user with an alternative choice of transportation – other than driving.
- Provide housing to meet the progressive dependency of the elderly.

### Conclusion 2

*A great number of historic houses require high maintenance. Because a high percentage of the population is over 60 years of age, many citizens may not be able to maintain these houses.*

Design Performance Requirements:

- Seek self-help volunteer groups such as Habitat for Humanity
- Take advantage of local volunteer groups to aid the elderly perform house maintenance
- Recognize that historic buildings are a community resource and provide City sponsored support

### Conclusion 3

*The history and culture of Castroville are its most important resources. Therefore institutionalized historic preservation is vital to the City.*

Design Performance Requirements:

- Preserve and restore historic landmarks and important buildings.
- Construct new buildings that fit or complement the existing architecture; however, do not replicate the historic structures – otherwise, the importance of the historic buildings may be diluted and lost.
- Establish and enforce architecture codes to ensure appropriate building form.

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#### **Conclusion 4**

*San Antonio's population growth rates affect the City of Castroville. Castroville's population is increasing slowly, but is at risk of urban sprawl from San Antonio.*

#### **Design Performance Requirements:**

- Design for existing population.
- Design for future population growth.
- Decide how big Castroville needs to be in order to maintain their historic and cultural values, yet be sustainable.

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## Economic Conditions

According to the U.S. Census of 1990, the City of Castroville had a higher economic level overall in comparison to the State of Texas, as well as to the City of San Antonio. The median household income level is significantly higher than that of the City of San Antonio, as well as that of Texas – Castroville’s median household income is \$51,007; San Antonio’s is \$41,331, and Texas’ is \$45,861. Furthermore, its poverty level is low (9.1%). Although the majority of residents in the City of Castroville are in good economic condition, due to higher income from working in San Antonio and secure retirees moving into the community, there are some actions the City of Castroville can take to bring the City’s economy to the next level.

### Conclusion 1

*The City of Castroville has limited budget for the maintenance and beautification of the town and to preserve and restore the historic sites and buildings.*

Design Performance Requirements:

- Apply for state and national government grants, such as Texas Leverage Fund and Capital Access Fund. Such funds emphasize economic development and tourism. There are also Texas Heritage Tourism Partnership Grants, which are focused on heritage tourism-oriented projects. These include interpretation, signage, publications and websites, curriculum development, educational programs, and workshops and training (Texas Historical Commission).

### Conclusion 2

*City of Castroville is targeting tourism to improve its economy. The City has unique historic and cultural buildings of Alsatian heritage to offer and educate the tourists.*

Design Performance Requirements:

- Develop good “networks” to promote Castroville’s culture and publicize it to other cities to increase tourism. Use vacant or underused buildings in the historic downtown area to recruit local businesses that fit-in with the demographic and cultural theme of the town; such as local art, food, quality antique shops, etc. Also, develop the pedestrian environment and streets for safety and enjoyment of all.

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### Conclusion 3

*Some of the features in Castroville are not used to maximum potential; such as the river, regional parks, and downtown areas. Increasing the use of these areas may enhance the economy of the City.*

#### Design Performance Requirements:

- Create easy access to the river for tourists and residents for recreational purposes. Moreover, beautify the downtown areas and improve the attractions' signage to demonstrate the town's identity and also increase tourism. Furthermore, provide better connectivity and signage to guide tourists to different historic attractions.

### Conclusion 4

*About twenty-five percent of the working population of Castroville drives to work 15 minutes or less.*

#### Design Performance Requirements:

- Provide alternative transportation (safe walking and biking networks).

### Conclusion 5

*More than fifty percent of the working population of Castroville drives to work 30 minutes or more.*

#### Design Performance Requirements:

- For this portion of the population, keeping traffic continuous on highway 90 is important. However, design safe thoroughfares that are safe for motorized vehicles, as well as for pedestrian and bike use. Provide safe road crossing, walking and biking paths, and clear signage.

### Conclusion 6

*Aging population percentage doubles that of Texas' average.*

#### Design Performance Requirements:

- Provide services and housing for the elderly.

## Community Services

### Conclusion 1

Many recreational opportunities are present within the parks operated by the city of Castroville and other private entities, but may not be utilized to their fullest potential. The health of citizens can be improved by making more outdoor spaces accessible by all and capitalizing on the natural landforms that are offered. By better developing open space within the core of the city, more efficient and accommodating facilities can be available for local festivals and celebrations.

- Improve health of citizens by utilizing park and recreational spaces to their fullest potential.

### Conclusion 2

Access to the Castroville Volunteer Fire Department and Medina Valley EMS may be impeded by occasional flood waters. Land and construction features that generate flooding near these facilities must be addressed.

- Address flooding near the Castroville Volunteer Fire Department and Medina Valley EMS.

### Conclusion 3

The more city services are concentrated in the core of the city, the greater their role will be to retain the vitality of the historic downtown area of Castroville. The dispersal of city services can reduce normal community interaction and limit community viability. For example, the Little Alsace Urgent Care Center is located away from the city center on W. Houston Street. This may cause important healthcare opportunities to be inaccessible to many citizens of Castroville. By re-establishing an urgent care center that is more centralized within the community, more citizens can better access essential healthcare needs.

- Establish an urgent care center near the core of the city with better accessibility.

### Conclusion 4

Heavy traffic on Hwy 90 impedes emergency vehicles from entering or crossing in a timely or efficient manner. The exploration of alternative routes for moving thru-traffic in and out of town to allow better access by emergency vehicles may be necessary.

- Explore alternative routes from moving thru-traffic in and out of town to allow better access by emergency vehicles.

### Conclusion 5

Castroville Public Library and local schools are separated by US Highway 90. School buses only pick up children living greater than 2 miles from school, St. Louis Catholic School does not offer transportation, and US Highway 90 prevents children from crossing safely. Pedestrian safety needs to be addressed along US Highway 90 to allow safer and more accessible crossing options.

- Address pedestrian safety along US Highway 90 to allow safer and more accessible crossing options.

### Conclusion 6

To establish and emphasize the desired image of Castroville as a “unique” Little Alsace, buildings under city ownership can be modified to express the scale, materials, form, and detail of structures that display the charms of Castroville.

- Adopt and enforce ordinances that create and protect the aesthetics that are considered historically and culturally important.

## Circulation and Traffic

**Conclusion 1:** State Highway 90 brings regional traffic through the center of Castroville, effectively disrupting and dividing the City.

- Provide alternative routes for regional traffic
- Reduce the speed of traffic along State Highway 90
- Reduce the scale of the road width along State Highway 90

**Conclusion 2:** There are inadequate safe and visible crosswalks over Highway 90

- Improve the access across Highway 90 by providing more and safer crosswalks.
  - Wider crosswalks
  - Different paving along the crosswalk to increase visibility
  - Increase the allotted time for crossing at all crossing lights

**Conclusion 3:** There is no effective signage to direct tourists into the historic center of the city

- Post signage for Castroville at the entrance and exit portals of the City
  - “Welcome to Castroville” signs that illustrate the culture and heritage of the city
- Post additional signage to better locate points of interest
  - Historical Sites
  - Historical District
  - Other Points of Interest
    - i.e. Houston Square, September Square, etc.
- Replace existing historical site signage with larger signs for easier identification by tourists
- Post large street signs along Highway 90 to create easier navigation throughout Castroville
- Alter existing street signs to allow roads with historically significant sites to be easily recognized
  - Color
  - Size
  - Text
  - Form

**Conclusion 4:** There is inadequate parking within the downtown area of the city

- Redesign Houston Square to appropriately accommodate parking
- Establish additional parking lots and services to accommodate large events
  - Vacant lots
  - Lot outside of the city
  - Shuttle service
- Establish formal street side parking in downtown Castroville

## Utilities and Services

- **Conclusion 1:** Basic utilities are out of date and therefore unsafe.
- **Design Requirements:**
  - o Use materials for underground utilities that are not affected by corrosion from soils, carefully located and placed, ensure durability and are economically efficient.
  - o Upgrade all water lines within the City that are smaller than 6" in diameter.
  - o Utility lines should be kept inside ROW to facilitate ease of maintenance o Meet design requirements for pipe size, ROW size and fire hydrant offsets.
- **Conclusion 2:** Unsightly overhead utilities are visible on a majority of streets in the historic area.
- **Design Requirements:**
  - o Establish a consistent, unique and recognizable appearance for utilities (ex....man holes, street lighting, utility poles, street lights, signage) throughout the historic area.
  - o Use materials for underground utilities that are not affected by corrosion from soils, carefully located and placed, ensure durability and are economically efficient.
  - o Due to the immediate cost and inconvenience of burying electrical lines, it would be in the City's best interest to conduct burial in separate phases over periods of time. To avoid a surplus of labor and to maximize efficiency, it would be in the City's best interest to bury the lines at the same time the adjacent roads are being reconstructed and repaved. Of the streets where electrical lines would be buried, Madrid Street, Paris Street and Fiorella Street would be of the highest priority due to improving the quality of the experience of tourists and increasing the unique culture by the removal of visually obstructive electrical lines.
- **Conclusion 3:** Underground utilities in the River Bluff development on the southwest portion of town have proved troublesome due to the cracking/separation of roads, unstable soil conditions, unlevel electrical boxes and unstable foundations of homes.
- **Design Requirements:**
  - o Provide stricter standards regarding the installation of buried utility lines in order to prevent future maintenance from poor installation practices.
  - o Use materials for underground utilities that are not affected by corrosion from soils, carefully located and placed, ensure durability and are economically efficient.
- **Conclusion 4:** Improvements and recommendations require a dramatic increase in funding and economic resources
- **Design Requirements:** New development or upgrades should incorporate feasibility studies to ensure that the most economic methods and materials are being used. Development phases should be implemented to maximize development opportunities without jeopardizing the budget of the City.
- **Conclusion 5:** Relocation of the Public Works facilities out of the downtown area would free up space to beautify the downtown area and act as a potential source of revenue.
- **Design Requirements:**
  - o Ensure a both practical and efficient location for new Public Works facilities to effectively serve the City as a whole.
  - o New development on existing Public Works site should
    - maximize the economic opportunities of the site's ideal location
    - serve a purposeful function both to the downtown and its people
    - reflects the unique identity of downtown Castroville.
- **Conclusion 6:** Drainage inlets along Highway 90 are old, out of date and have exposed rebar that poses dangerous situations for the community, particularly children.

- **Design Requirements:**
  - o New, standard drainage inlets should replace all existing dangerous drainage inlets
  - o Provide storm drains in the lowest part of downtown region to collect sheet flow and to prevent flooding.
  
- **Conclusion 7:** At the end of March, Wastewater Management will stop providing excess treated wastewater to a local farmer. This treated wastewater will be deposited through a 12" PVC overflow pipe into a channel on the edge of Castroville Regional Park that will flow into the Medina River
- **Design Requirements:**
  - o Contrary to dumping it into the Medina River (proposed plan that will be effective at the end of March, 2010), the City should explore more viable and economical uses for excess water from wastewater system.
  
- **Conclusion 8:** Lack of tree maintenance along property lines and ROW's have led to overgrown trees interfering with the electrical lines. Such conditions pose serious threats if an ice storm, rapid winds, tornado or hurricane were to occur.
- **Design Requirements:**
  - o Avoid planting trees directly underneath or near power lines
  - o Maintain and properly prune existing trees that interfere with utility lines
  - o Low-growing trees or shrubs can be planted rather than large-growing trees that interfere with electrical lines
  
- **Conclusion 9:** Explore alternate locations of the proposed new wastewater management system
- **Design Requirements:**
  - o Location should be closer to town to minimize cost of excess piping and to avoid problems such as low, inadequate pressure.
  - o Reinforce, maintain and expand the waste management system to effectively adapt to the future needs of the community.
  - o Ensure proposed water line, electrical line and sewer upgrades meet standards provided by standing contract development
  
- **Conclusion 10:** Utilities impair the visual quality in the historic district
- **Design Requirements:**
  - o Provide alternate solutions for utilities impairing the visual quality in the historic district
  - o Overhead vs. buried electrical units
  - o Provide screening for utilities that would be highly problematic in relocating
  - o Relocate utility components to enhance the aesthetic quality of the City
  - o Locate utilities to promote design conditions and prevent adverse affects to physical and functional integrity of the community.
  
- **Conclusion 11:** Medina River functions as a drainage, ecological and scenic corridor
- **Design Requirements:**
  - o Ensure all proposals, improvements and plans before development regarding utilities carefully consider that the effects on Medina River
  - o Explore opportunities to use detention/retention ponds to limit pollution and control water volume in order to prevent flooding from the Medina River.
  - o Provide storm drains in the lowest part of downtown region to collect sheet flow and to prevent flooding.
  - o Explore low elevations along the bank of Medina River that could be built up to prevent flooding into the town

## Land Use

**Conclusion 1:** With commercial spread thinly along Highway 90, it makes it hard for visitors to look within the City to view its unique culture.

- Develop a growth barrier enforced along the City to limit the amount and the time of growth
- Ordinances should be enforced to maintain the quality of developments
- Discourage commercial development on land directly around the Medina River and across the river
- Be mindful of existing conditions and how they affect the entire community

**Conclusion 2:** Castroville is in danger of being overwhelmed by the growth of San Antonio and losing its character.

- A more clearly defined edge needs to be established outside of the City of Castroville using land use as a tool
  - Mark where the city begins and ends
- Acquire more ETJ outside of Castroville before San Antonio so as to further maintain the quality of incoming developments
- The ETJ and zoning ordinances should be strictly enforced to maintain the quality and character of Castroville

**Conclusion 3:** Vacant land within the residential districts of Castroville is primed for development.

- New development focused on reusing the existing vacant lots and buildings should renew focus on the core of the city
- Create facilities for the growing population of elderly people in Castroville
  - Assisted living facilities
  - Nursing home facilities
- Avoid developing parkland in these areas
- Create new connections to important areas within the town including historical areas

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## Zoning and Ordinances

**Conclusion:** Without improvement, Castroville is leaving itself vulnerable to many negative occurrences such as deterioration; physically, economically, socially and in many other ways. It should be understood that if change is not implemented, the current conditions will continue to worsen and multiply. For the City of Castroville this means permanent loss of historic character and therefore a great deal of its charm, quality of life, and one of its main tourist attractions. Currently, the town is a pleasant mixture of different architectural styles. This will all change without proper enforcement of codes and ordinances and the city could lose its cohesive feel. Change is inevitable, therefore, Castroville should step in and lead the changes happening around them head in a positive direction.

- Adopt a conservation easement ordinance to help maintain Castroville’s Agrarian culture and prevent possible loss due to future expansion.
- Adopt an ordinance to protect Bald Cypress (*Taxodium distichum*) and Pecan (*Carya Illinoensis*) trees, which are important to the character and cohesive appearance of Castroville (Reference vegetation section) through the protection of their habitat.
- Uphold current zoning ordinances and design guidelines and keep them up to date in order to prevent new development from taking away from Castroville’s strong character.
- Finalize and implement the drafted version of the Castroville Design Guidelines currently being developed.

## Geology

**Conclusion 1:** The porous characteristics of the bedrock allows for potential contamination of groundwater resources.

- Ordinances and codes should be put into place to regulate the use of fertilizers, pesticides and herbicides for residential and agricultural uses
- Bioswales should be used to minimize the absorption of pollutants from street runoff into the groundwater

## Soils

**Conclusion 1:** The use of Open Furrow Farming systems causes extensive damage to the Medina River and associated Riparian Areas

- Changes in the agricultural systems could reduce erosion, increase permeability, increase fertility
  - Use of Strip Agriculture in clay soils east of Castroville
  - Prevention of farming in riparian areas should be encouraged

**Conclusion 2:** Use of more highly adapted crop types will lower cost of agricultural production

- Native and adapted crops require less irrigation and chemical fertilizer to grow
  - Crops types should be matched to specific soil conditions
  - Crops should be specialized for us in Alkaline soils

**Conclusion 3:** The expansiveness of clay soils in the area can cause problems in foundation

- Development outside the Clay areas can be more effective with less cost
  - Primary develop in the gravelly clay areas west of the City
- Development in Clay soils should be designed to move with soils
  - Installation of utility lines and underground electrical lines should be designed to withstand the expansive soils onsite
  - Building foundations should be designed to withstand the expansive soils

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## Topography

### Conclusion 1

*The highest elevations and steepest slopes occur along the southwest edge of Castroville. This can lead to problems with erosion and increased stormwater runoff.*

#### Design Recommendations

- Avoid development on and directly at the base of the hills.
- Do not increase the amount of impervious surfaces in the hills.
- Do not allow new development to block the existing drainage patterns down the hills.
- Retain existing vegetation for slope stabilization.
- Use hills for minimally-invasive forms of passive recreation, such as walking, hiking, and nature observation.

### Conclusion 2

*The higher elevations and steeper slopes surrounding the central area of Castroville will be the most expensive areas to develop.*

#### Design Recommendations

- Avoid development on hills.
- Concentrate development on level areas, such as within the central area of Castroville.

### Conclusion 3

*The most level land is in the central part of the City. This can create drainage problems if the water is not able to move efficiently across the land.*

#### Design Recommendations

- Do not allow new development within the City to block the existing drainage pattern of surface water from the northwest corner to the eastern side of Castroville.
- Maintain streets as open drainage channels.

### Conclusion 4

*The land on the hills and along the Medina River will be the most desirable places for new development, as they are the most striking and unique topographic features of Castroville. Development in these areas will lead to a loss of the most beautiful, historic, and characteristic views of the City.*

#### Design Recommendations

- Avoid new development on the hills and along the Medina River.
- Maintain existing vegetation in hills and along the Medina River.
- Do not allow new developments to block existing views of the hills and the Medina River.

## Hydrology

### Conclusions

The river water quality is important to the health of the environment and to the health of the people living in the area. In order to protect the river as a resource, reducing the harmful effects of pollutants in all areas of the watershed should be encouraged. When considering the health of the aquifer, water is coming from wells more quickly than it is recharging. Additionally, flooding is a problem in Castroville. Currently, certain drainage solutions for problems sites have been identified and designed. Yet, the government still needs funding to carry out these changes. Major considerations for future flooding need to be taken into consideration. Also, the residents of Castroville are disputing the FEMA map so it would be useful to understand the topography and soil data to make conclusions. The river is a beautiful feature for the town but not all recreational activities are currently appropriate due to river depth and smaller dams. The river has the potential to become a tourist attraction. In summary, the main conclusions for the hydrologic systems are as follows:

- The river surrounds Castroville on three sides, making it an important feature in the town
- Well water in Castroville has surpassed health and legal limits 4 four times and remains high
- On many streets in town, the drainage of water off the roads needs improvement
- Surface drainage travels through town during large flood events
- There are many depressions, which can hold stagnate water or keep flood waters from receding

### Design Recommendations

By incorporating the research results with design theories the following recommendations have been developed:

- Limit use of pesticides, and fertilizers on farm lands by city ordinance and encourage organic growers
- Have septic and sewage systems thoroughly sealed
- In drainage areas, use plants that reduce water pollutions, like *Carex spp.* (sage) and *Arbuscular mycorrhizal* (a fungi)
- Eliminate standing stagnant water in poor drainage areas
- Use flood zones for location of open space, such as parks or conservation areas
- Site planning must address these wide ranges of water depth (due to flooding or seasonal fluctuations) and river carrying capacity especially when considering river side development
- Collect and recycle storm water/surface water
- Reuse sewage water to conserve ground water levels
- Create a system for effective trash removal to preserve and protect the river quality
- Control water from entering the town on the northwest side
- Maintain clear water flow for evacuation of storm water on south side of the city
- New development should have a finish floor elevation higher than 774
- Provide alternative routes for travel to avoid flood affected areas

## Vegetation

Recommendations are based on conclusions drawn from analysis and the understanding of site conditions. These recommendations concentrate on the following goals:

- Protect the community's unique identity
- Maintain the Environment in a healthy state
- Tourism as a significant component of the local economy
- Healthy Community

### Conclusion 1

The Bottomland area around the Medina River is a premier attribute and resource providing a more densely vegetated area with an abundance of pecan and cypress trees.

### Design Recommendation

- Preserve and maintain the Bottomland area to sustain the local environment and quality of life for residents.
- Encourage the potential for trails and/or attractions as a potential source of tourism and income to the visually pleasing and fruit bearing vegetation.

### Conclusion 2

The Upland area is densely vegetated with shrub and brush land.

### Design Recommendation

- Preserve the Upland area as a natural state to prevent erosion, sustain the local environment and limit the opportunity for new unwanted development.
- Create natural opportunities to encourage tourism.

### Conclusion 3

Due to the diverse features of the land, including the bottomland and upland area, there are multiple ecological zones that support numerous types of vegetation. The native vegetation includes species that require little maintenance and are drought/heat tolerant.

### Design Recommendations

- Utilize natural landmarks/sites to help promote identity.
- Enhance areas of interest by providing potential connectivity to natural features.
- Use vegetation and the natural landscape to help create potential buffers.
- Make use of existing vegetation to provide natural connections with people and promote health.
- Use native and adaptive plants for streetscape or plantings:

#### Upland:

##### Shrubs:

Texas Mt. Laurel- *Sophora secundiflora*  
Yaupon Holly- *Ilex vomitoria*  
Texas Lilac- *Leucophyllum frutescens*  
Red yucca- *Hesperaloe parviflora*

##### Grasses

Buffalo Grass- *Bouteloua dactyloides*  
Little Bluestem- *Schizachyrium scoparium*

Hairy Tridens- *Erioneuron pilosum*

**Bottomland:**

**Trees:**

Bald Cypress- *Taxodium distichum*  
Live Oak- *Quercus virginiana*  
Pecan -*Carya illinoensis*  
Cedar Elm- *Ulmus crassifolia*  
Texas Red Oak- *Quercus texana*  
Chinkapin Oak- *Quercus muehlenbergii*

**Shrubs:**

Texas Mt. Laurel- *Sophora secundiflora*  
Japanese Yew- *Podocarpus macrophyllus*  
Yaupon Holly- *Ilex vomitoria*  
Texas Lilac- *Leucophyllum frutescens*  
Elaeagnus- *Elaeagnus pungens*

**Grasses**

Buffalo Grass- *Bouteloua dactyloides*  
Little Bluestem- *Schizachyrium scoparium*  
Hairy Tridens- *Erioneuron pilosum*

**Developed Land:**

**Trees:**

Bald Cypress- *Taxodium distichum*  
Live Oak- *Quercus virginiana*  
Pecan -*Carya illinoensis*  
Cedar Elm- *Ulmus crassifolia*  
Texas Red Oak- *Quercus texana*  
Chinkapin Oak- *Quercus muehlenbergii*

**Shrubs:**

Texas Mt. Laurel- *Sophora secundiflora*  
Japanese Yew- *Podocarpus macrophyllus*  
Yaupon Holly- *Ilex vomitoria*  
Texas Lilac- *Leucophyllum frutescens*  
Elaeagnus- *Elaeagnus pungens*  
Red yucca- *Hesperaloe parviflora*

**Grasses**

Buffalo Grass- *Bouteloua dactyloides*  
Little Bluestem- *Schizachyrium scoparium*  
Hairy Tridens- *Erioneuron pilosum*

**Vines**

English Ivy- *Hedera helix*  
Virginia Creeper- *Parthenocissus quinquefolia*

**Crop Land:**

**Trees:**

Live Oak- *Quercus virginiana*  
Cedar Elm- *Ulmus crassifolia*  
Texas Red Oak- *Quercus texana*  
Chinkapin Oak- *Quercus muehlenbergii*

**Shrubs:**

Texas Mt. Laurel- *Sophora secundiflora*  
Japanese Yew- *Podocarpus macrophyllus*  
Yaupon Holly- *Ilex vomitoria*  
Texas Lilac- *Leucophyllum frutescens*  
Elaeagnus- *Elaeagnus pungens*  
Red yucca- *Hesperaloe parviflora*

**Grasses**

Buffalo Grass- *Bouteloua dactyloides*  
Little Bluestem- *Schizachyrium scoparium*  
Hairy Tridens- *Erioneuron pilosum*

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## Wildlife

The contributing resources to maintaining and encouraging local wildlife in the Castroville region would be the established areas of native brush cover, as well as the riparian zone immediately adjacent to Medina river. These important locations are valuable to existing wildlife because their combination of vegetation and soil types provide a main source of food, shelter, and water. By designing and managing a habitat which is based on the needs of the dominant species in these areas of concentration the town of Castroville can maintain a healthy population of all adjoining native species.

### Conclusion 1

- The river provides a corridor for wildlife to safely travel.
- The old growth tree canopy provides shelter for various mammals and bird species.
- The areas along the river banks offer a source of food and water.

### Design Recommendation 1

- Allowing native vegetation to take hold by limiting development within an easement of 200 feet on both sides of the river.
- The easement limits the type, height, and amount of barriers built in the area immediately adjacent to the river.
- Ensures the safe and free passage of all types of wildlife along the main river corridor.

### Conclusion 2

- Many of the native species in the area of Castroville share the same needs as the dominant species of White tail deer
- Design habitats for the White-tail deer, all of the needs for other endangered species will be met.
- A range of cover types, need to be established.

### Design Recommendation 2

- Design planting schemes and variation of open and enclosed spaces for clear passage by wildlife.
- Establish connections between major brush locations and the river corridor throughout the town.
- 10-20 feet wide existing dense thicket or open grassland connecting one established habitat to the other.

### Conclusion 3

- Promote broader diversity of wildlife to insure the revival and establishment of endangered species
- Establish a healthy population of various species throughout the entire ecosystem in order to decrease the threat to endangered species.

### Design recommendations 3

- Place priority on the use native plant material over invasive exotic species when planting or promoting any plants around and within the town.

## Climate

Castroville has hot and humid conditions with a light wind at 11mph most of the year. Design suggestions to improve the comfort of the town would include creating favorable microclimates in highly used areas. Microclimates are designed to create a cooler or warmer environment in a desired area. Taking advantage of the wind from the southeast between spring and fall can greatly increase the comfort in hot and humid conditions. During the hotter times of the year, the design should provide shade while allowing consistent airflow, and during the cooler parts of the year the design should propose to allow solar radiation to reach people while blocking the colder air from the northeast. Another design element would be to increase vegetation. Through the process of evapotranspiration, plants are able to cool the surrounding area. For materials to be employed in Castroville, the data suggests the use of lighter colored materials. According to *Britannica*, introducing materials that are lighter in color, such as lighter streets, sidewalks and sides of buildings will increase the albedo. The albedo of an object is a measure of how strongly it reflects light and heat from radiation sources such as the Sun. It is a measure indicative of a surface's or body's diffuse reflectivity. A higher albedo reduces solar radiation and creates a cooler atmosphere. However, high reflectance and glare can be unpleasant if taken to extremes.

### Conclusion 1

#### Precipitation Influence

- The City of Castroville receives approximately 31.55 inches of precipitation annually. However, there is a deficit at the height of the growing season in July. Some rainfall events throughout the year can produce unexpected flooding. Vegetation has been shown to reduce the amount of standing water in areas, so by adding vegetation like trees flooding maybe reduced.

#### Design Performance Criteria

- Choosing plants for this area would include more drought tolerant plants, native to this area to fit the existing conditions of the area, and that can handle both extremes of temperature, and plants that require low maintenance and low water requirements due to the City's budget limitations.

### Conclusion 2

#### Temperature Influence

- The maximum and minimum temperatures for Castroville over the past 50 years are 111°F and 8°F respectively. Temperatures reach triple digits numerous times during the summertime, which create unpleasant times to spend outside. Meanwhile in the winter months, cold air from the north brings the average temperature to the mid to low 40s. Creating microclimates that provide shade in the summertime to reduce the outside temperature along with increasing the temperature during the wintertime by allowing sun penetration would create more pleasant outdoor experiences.

#### Design Performance Criteria

- Summer Months
  - o Providing shade to areas where there is limited cover to provide cooler microclimates.
- Winter Months
  - o Using deciduous trees in high interest areas to allow solar radiation to reach users.

### Conclusion 3

#### Wind Influence

- The wind patterns for Castroville are predominately from the southeast between the months of March and November at an average of about 11 mph. During this time when the temperature is the hottest, utilizing airflow will improve comfort under hot and humid conditions. During the winter months, mainly December through February, the wind changes direction blowing from the northeast at about 11 mph. Blocking these cooler winds can improve comfort by reducing the wind chill.

#### Design Performance Criteria

- Summer Months

- o Take advantage of the airflow during the hotter months of the year to create more pleasant outdoor use. The orientation of the northerly oriented streets will create an angle acceptable to utilize the summer breeze that comes from the southeast. This will help promote outdoor use by improving comfort during the hottest times of the year.
- o Microclimates created by shade along with a light wind will create more desirable outdoor use areas.
- Winter Months
  - o Block colder wind during this time of the year coming from the northeast
  - o Use deciduous trees to allow sunlight penetration in winter will also increase outdoor activity by making it warmer with less wind during the winter months.

#### **Conclusion 4**

##### Material influence

- Plant material in this area should be acceptable to humid subtropical conditions. Such plant material conforms to the natural landscape already present, and avoids an exotic appearance tropical plants might create. Using surface materials in this area must be carefully selected to reinforce the existing vegetation now existing in Castroville.
  - Design Performance Criteria
- Vegetation
  - o Choose plants for this area based on consistency with the native plants in Castroville.
    - o Use plants that are well adapted to a humid subtropical region with low water requirements and maintenance.
    - o Extensive lawn areas reduce both absorption and reflection of radiation and improve comfort.
- Sidewalks and Paving
  - o Pavements with higher albedos (light or buff colors) absorb less energy and are cooler. Where paved surfaces are required, using materials with higher albedos will reduce the heat island effect, saving energy by reducing the demand for air conditioning and improve air quality.
  - o Brick and stone materials in Castroville will be consistent with the surrounding environment.
  - o Using materials that conform to the standards of the existing buildings and streets that Castroville currently has will help keep the town unified in appearance.

#### **Conclusion 5**

##### Rain water harvesting

- With the amount of rain Castroville gets on a yearly basis, it could be possible to capture and store rainwater to be used during dryer parts of the year when water is scarce.
  - Design Performance Criteria
- By collecting rainwater, Castroville will have water available to use for irrigation during the dry winter months that will reduce the need to use municipal water for landscape maintenance.
- Simple storage systems, are least expensive to construct and have a wide range of materials to choose.
- Storage tanks come in diverse range of sizes and are available to use above ground or below ground where it may be acceptable.

#### **Conclusion 6**

##### Shade

- Areas of high use such as Houston Square should incorporate shaded margins to make the hot summer months cooler and more comfortable for its users. Shade by large trees or manmade structures such as pergolas could be considered.

## Visual Quality

### Conclusion 1:

Building facades and other aesthetic elements for new construction should be regulated, possibly through ordinances or guidelines.

### Design Recommendations:

- Use similar building facades and materials that reflect historical and cultural influences to strengthen the sense of place and create a more unified appearance.
- Emphasize building codes and ordinances that enforce historical roof pitches and building techniques in accordance with the Official Castroville Design Guidelines, which can be referenced at:  
[http://www.castrovilletx.us/objects/DRAFT\\_Design\\_Guidelines.pdf](http://www.castrovilletx.us/objects/DRAFT_Design_Guidelines.pdf)

### Conclusion 2:

Historical buildings need to be protected and buildings that are falling into disrepair to do be addressed.

### Design Recommendations:

- Ensure that site lines to prominent buildings are clear and intentional.
- Renovate structures that are showing signs of wear.
- Determine which, if any, of the buildings are beyond repair; if any are found, they should be removed for aesthetic and safety concerns.

### Conclusion 3:

The City's identity and sense of place needs to be strengthen through the use of:

- Landmarks - readily identifiable object which serves as an external reference point.
- Portals – distinct entry point into a district.
- Edges – perceived boundaries such as walls, buildings, and shorelines .
- Nodes – focal point, intersection, or loci.
- Paths – streets, sidewalks, trails, and other channels in which people travel.
- Districts – relatively large sections of the city, distinguished by some identity or character.

### Design Recommendations:

- Provide signage and direction for entrances to establish portals, edges and districts.
- Create recognition of the downtown district, beginning at September Square, with the establishment of a portal.

- 
- Designate pedestrian walkways within the downtown district to establish paths, edges and nodes.
  - Establish a consistent character of the streets to reinforce the district.
  - Establish and enhance existing landmarks.
  - Address important nodes and their functions such as Houston and September Square, and the Highway 90 crosswalk at Fiorella Street.

**Conclusion 4:**

Houston Square has aesthetic quality issues that need to be addressed

**Design Recommendations:**

- Reduce parking spaces around the square to decrease the visual dominance of the asphalt and open up site lines.
- Establish site lines with the surrounding context, such as St. Louis Catholic Church.

**Conclusion 5:**

Provide visual site lines to the surrounding natural landscapes from the downtown in areas with high pedestrian traffic flow.

Site lines to the natural landscapes that surround the city need to be opened up and made clear from areas in the downtown with high pedestrian traffic.

**Design Recommendations:**

- Emphasize and accentuate views of the Medina River from locations such as the Landmark Inn and Regional Park, and Streets such as Alamo, San Jacinto and Washington by providing viewing spaces and interaction opportunities.
- Provide views to the nearby scenic higher ground from opportune areas within the downtown by creating viewing areas and site lines.

**Conclusion 6:**

There needs to be a cohesive group of plant species and street furniture to unify the city visually.

**Design Recommendations:**

- Incorporate potted plants or window boxes that reflect Alsacien heritage.
- Provide street trees where possible to create scale, attraction and comfort.



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## Community-Wide Revitalization and Development Plans

Once the research material had been compiled and analyzed, a number of alternative development scenarios were investigated as possible courses of action for future development of the City. These alternative scenarios contrast the likely future of the community if prevailing trends prevail, with two general development concepts: the development of a new commercial center for the City to preserve the character and scale of the existing town center. The other alternative investigates the possibility of employing an agricultural greenbelt reserve as a strategy for preventing the absorption of the existing community by creeping suburban sprawl emanating from the San Antonio Metropolitan Area.

These alternative Urban Development Plans are offered to describe in a comprehensive way, an overall vision for the future revitalization of the City of Castroville with attention to resolving the most pressing problems for conserving the architectural and cultural heritage of the community. Particular attention has been paid to development concepts that hold promise for development that will improve the quality of life in the community while strengthening the City's position as a tourist destination. These plans attempt to provide a comprehensive view of the areas where attention must be placed to yield maximum benefit from revitalization efforts over the course of the next decade.

The Urban Development Scenarios address the following issues:

- Conservation of historic, cultural, and natural resources
- Unification of the physically divided community
- Improving the City's economic base
- Improving community function
- Improving connectivity between existing and future community activities
- Improving communication with tourists about desired destinations
- Improving available parking within the historic city center
- Improving access to cultural, historic, and natural attractions
- Restoring historic buildings to their original appearance
- Adaptive reuse of existing facilities and sites
- Improving safety throughout the community
- Taking optimum advantage of existing cultural and natural resources
- Improving the quality of life within the community
- Improving environmental quality
- Improving the aesthetic appearance of the community

These issues are graphically illustrated and explained in detail on the plans below. Although these areas of redevelopment emphasis are treated individually in the plans, it is important to

recognize that the greatest benefits may be derived when these issues are addressed as components of a comprehensive system. The primary strength of the plans is in their treatment of the City's cultural, historic, architectural, and natural conditions as a totality. In this way, each element of the plans is considered as it contributes to and reinforces advantages to other elements and the whole in a systematic way.

Prepared by: Gonzalez, Gustafson, Kelliher, Miller, Reed, Rojo, Snyder, Stewart

## Introduction

The purpose of this report is to show possible consequences of allowing growth in and around Castroville to continue uninhibited. It is important to evaluate and understand the current development trends in Castroville, so that action can be taken to properly manage the future development of the City in a manner consistent with the goals established below. If current trends are allowed to continue then the goals will not be met.

This research is based on the following goals for the City of Castroville, assuming a continuation of current trends:

- Access
- Safety
- Healthy Community
- Healthy Environment
- Unique Identity
- Tourism
- Revitalize the City Center
- Economic Viability
- Quality of Life
- Function

For this analysis, survey data maps that include the existing conditions, local zoning, local ordinances, and the extraterritorial jurisdictions of Castroville and San Antonio were collected and assessed. A general inventory was taken of the major civic, residential, commercial, and recreational uses within and near the City. Bastrop, Texas was used as a case study to understand the effects of current growth trends in small towns that are similar to Castroville.

## Case Study: Bastrop

The City of Bastrop shows the characteristics of current development trends. Bastrop has exhibited changes similar to those occurring in Castroville. The original settlement was established in 1804 and was influenced by German culture. The historic downtown used to have a highway passing through until the recent construction of a bypass. Bastrop is struggling to revitalize its historic downtown and maintain its unique identity.

The bypass consists of the intersection and continuance of Highways 21 and 71. Currently, the commercial development is allowed to stretch along the highway, creating strips of large scale highway related businesses. This strip development along the highway diverts business away from the historic downtown, causing a change in the character of the city and hiding access to the historic downtown. People who drive through Bastrop are unaware of its historic character and uniqueness. (Figure 1)

Castroville should limit the growth of unregulated commercial development along the highway, due to the fact that this will divert business away from the historic center of Castroville, destroy the local merchant economy, allow the unique identity of the city and its culture to be lost, and diminish its tourism and economic viability.



Figure 2. Bastrop, Texas. Source: Jennifer Kelliher.

## Development Projection Map and Analysis of Castroville

A development projection map was created from the combined research and analysis maps (Figure 3). The map shows likely future land use in Castroville, based upon the effects of the continuation of current growth trends.

### Commercial Growth

In the context of Castroville and the surrounding areas, the commercial growth is concentrated along highway 90. Secondary growth could be seen at the

intersection of major roadways. These commercial zones are being developed in direct response to the availability of valuable land. Value of the land depends on how close it is to high traffic areas and a large population base.

This new influx of commercial growth will not address identity of Castroville as it is and will act as a detractor from the historic district. These new strip centers composed of large name brand companies will offer customers a new and convenient destination being closer to residential areas and offering lower prices. The most likely result will be a loss of Castroville's identity and the town's draw for tourist.

### Residential Growth

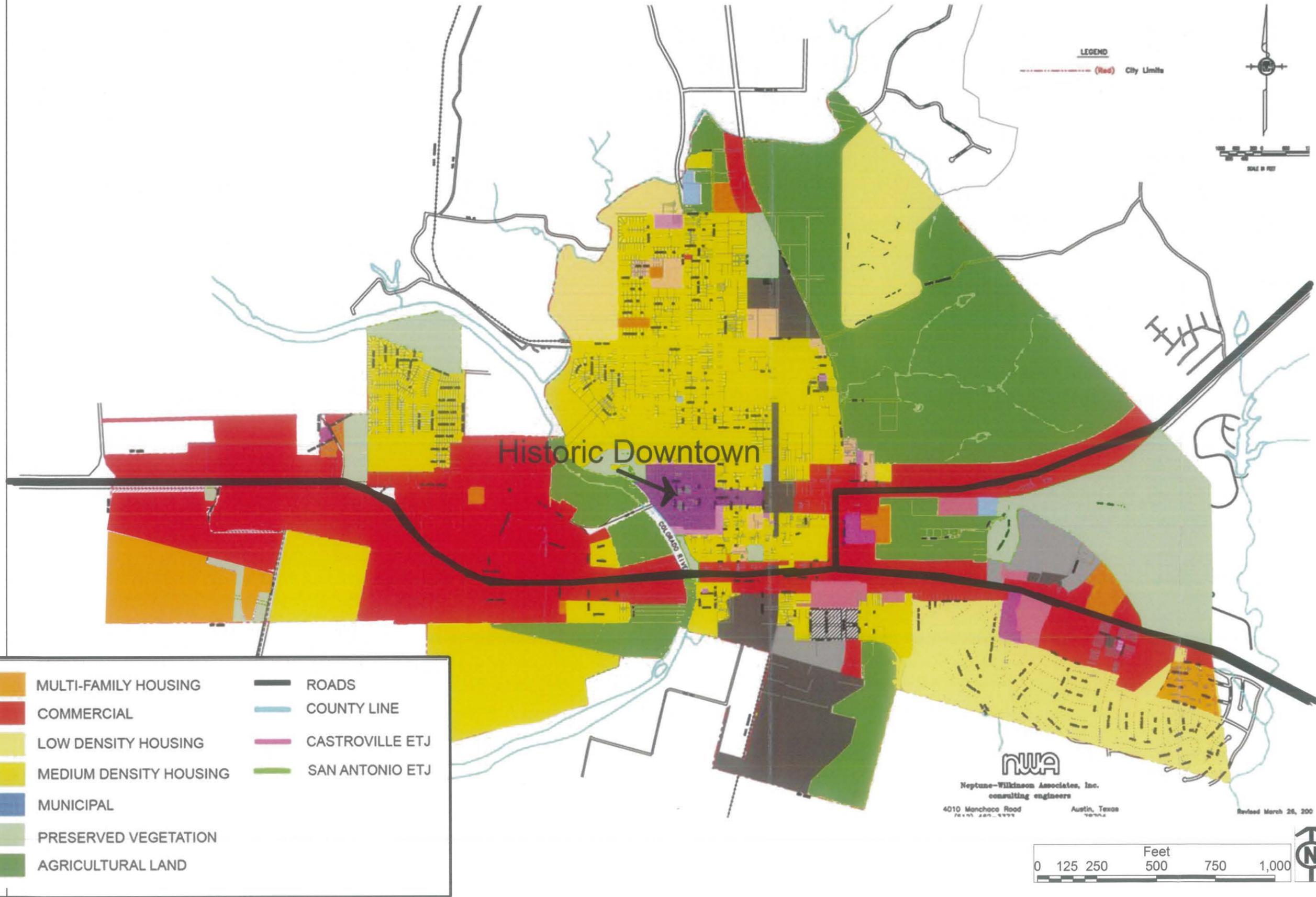
The map portrays three types of residential growth: multi-family, medium density, and low density. This housing expansion would constitute the regional growth of the City of San Antonio as it encroaches upon Castroville. These housing developments may be expected to assert a strain on the municipal services offered by the City of Castroville. These services would include: sewage treatment, road maintenance, electrical service, potable water access, and waste management. The new housing developments will be a dominant feature in the landscape, ubiquitous in everyday life.

The multi-family housing will develop with the highest level of density on the most inexpensive land. This inexpensive land would be along highway 90 due to the possibility of noise pollution. The flat terrain would also play a role in determining the value of the land. A site with no slope would allow for lower building costs.

The medium density housing will develop in areas with more desirable features, while also allowing the developer to build this housing at the lowest price. The location of this type of housing would be determined by sites with a minimal amount of slope, reasonable proximity to major roadways, access to major commercial zones and schools, and availability of large tracks of inexpensive land. Medium density housing would be developed by large development companies and serve single family households.

Most low density housing will be established on land with desirable features and at the highest cost. The location of this housing type depends on the aesthetic qualities of the site. The low density housing will be placed in areas with varying topography, offering the residents a view of the surrounding landscape. Due to the varying elevation of these sites the cost of building road, houses, and utilities will be

# CASE STUDY BASTROP TEXAS



## Castroville Texas

### Current Trends

Figure 1

extensive. These housing establishments would be developed at the lowest density and at the highest cost for the users.

### **New Road Development**

With an increase in the population of the San Antonio and Castroville region, a need for more roads will be evident. An expansion of highway maybe expected to accommodate the increased volume of users traveling on this road.

As these new road systems materialize to support development there is the expectation that holistic planning, may be absent, without consideration of all elements of the landscape are taken into consideration. These elements would be: terrain, major nodes and destinations, existing highways and arterial roads, and land use.

A new system put in place to meet the needs of independent developers would exclude dangerous intersections (acute angles of intersecting roadways), haphazard and inefficient routes, and a lack of set back or planning for future expansion.

This situation would result in delays for everyday users in Castroville as well as for people commuting to San Antonio. Another result would be a decrease in safety for drivers and pedestrians caused by lack of pedestrian infrastructure, such as traffic signals, and an increased number of vehicles on the roadways.

## **Continuing Trends Affect on the Goals**

### **Access**

As Castroville follows current trends, access throughout the community may be expected to decrease. The overwhelming population growth will increase automobile traffic due to new residents and commuters to San Antonio. Highway 90 will expand because of the increase in traffic and strip development. The expansion will cause greater difficulty for pedestrians, bicyclists, and cars to cross.

As Highway 90 is heavily built upon, this will decrease access to the City of Castroville, especially the historic core. Those who travel by bicycle or walking will be forced to travel by automobile due to longer distances caused by sprawl. There will be more roads built to connect new development to Highway 90, likely in a large grid pattern. The access to characteristic views will be hindered or destroyed as well as with the development of new roads and larger scale buildings and residences.

### **Safety**

Increased automobile traffic will make conditions more hazardous to bicyclists, pedestrians, and other drivers which will in turn lead to an increase in accidents. An influx of new residents may alter current residents' perception of the safety of their small town. When there are more strangers, a decrease in accountability can lead to a higher likelihood of crime.

### **Healthy Community**

As sprawling commercial and residential developments emerge, Castroville will be forced to become an automobile-focused city. Distances between destinations will become unreasonably increased for pedestrians or bicyclists to travel. As discussed previously, the decreased access and safety for pedestrians and bicyclists may also deter them from traveling via these healthier modes of movement. This loss of opportunity for exercise may have a negative effect on the physical health of the community.

The spatial disconnect between land uses and people may also affect the social health of the community. The strong sense of community currently thriving within Castroville will be threatened by the influx of new residents. With fewer opportunities for community interaction, these people may forever seem like strangers to the current residents. If interaction among current residents decreases, the strong relationships that hold the community together may begin to wane. The increase in new residents and decline in community interaction may result in a loss of recognition of the traditions of Castroville, causing the historic community spirit to decline.

### **Healthy Environment**

The increase in people and the resulting development will have a significant impact on the health of the environment in Castroville. The most immediate effects will be the destruction of wildlife habitats and vegetation to make way for the new development. The increasing number of automobiles passing through the town will contribute to air, water, and soil pollution. New developments and the new roads required to access them will greatly increase the amount of impervious surfaces in the area. When stormwater runs across hard surfaces, such as concrete or asphalt, rather than infiltrating into the soil, it is not naturally filtered. The water picks up chemicals, trash, debris, and other pollutants that will eventually end up running into the Medina River. The higher amounts of impervious surfaces also increase the amount of stormwater. This means that a much higher volume of water will be running into the River, increasing the likelihood of flooding and erosion.

### **Express Unique Identity**

The unique identity of Castroville is their Texas interpretation of Alsatian culture and architecture. This identity will be lost in the future with the increase of common chain stores and housing units. The architectural scale, style, and materials of new commercial and residential development will have an inappropriate contrast with existing development. Castroville is historically an agricultural community as well. The agricultural land that once surrounded the city will give way to new development in the future. These historic landscapes and scenic vistas will be developed as residential areas.

### **Tourism**

As the Alsatian heritage becomes less visible, people will no longer have an obvious reason to stop in Castroville. As mentioned before, the historic character will be lost to increased population and new developments. The Medina River is one of Castroville's most important natural resources and will also affect tourism. When new residential properties develop along the river and further limit access to it, the potential of the Medina River as a vital tourist attraction will also be lost.

### **Revitalization of City Center**

The city center will face a sharp economic and population decline with the development of new commercial and residential areas. As visitors and residents may be prompted to live and shop outside the original city center, deterioration and decline of historic resources and the city center as a whole will occur. The shift of activity to places more accessible from Highway 90 will become the norm.

### **Economic Viability**

The economic viability of Castroville will be seriously and negatively affected by the new commercial developments that will follow the increase in residents and passers-through. An increase in franchise stores along Highway 90 is already being seen and can be expected to continue in the future. The high

visibility of these large stores and their convenient locations right off the Highway give them an advantage over the smaller shops further away from the Highway, as residents and people passing through Castroville are more likely to shop at them. These new commercial developments, as well as stores in San Antonio, may draw more shoppers than the stores in the original city Center. This shift of money being spent to the stores along the highway will hurt Castroville for multiple reasons. First, local stores will lose income they received in the past. Second, the money spent at franchise stores does not stay within the community. The profits that could be ascertained by the store maybe expected to leave the community and go to the company that owns the store.

### **Quality of Life**

If current trends continue and these goals are not met, the overall quality of life in Castroville may be expected to decrease. Some of the things that citizens of Castroville value include a strong connection with their community, naturally beautiful surroundings, familiarity with their surroundings and the people around them, safety, and the ability to share their history with others. All of these things are in danger of being lost.

### **Function**

The function of Castroville cannot be expected to remain exactly the same if new developments occur as current trends suggest. The new development will likely be poorly planned and unrelated to the current image of the City. If Castroville is allowed to lose its unique character, it will no longer be able to function as a historical and cultural destination of Texas.



# CONCEPTUAL GROWTH OF CASTROVILLE

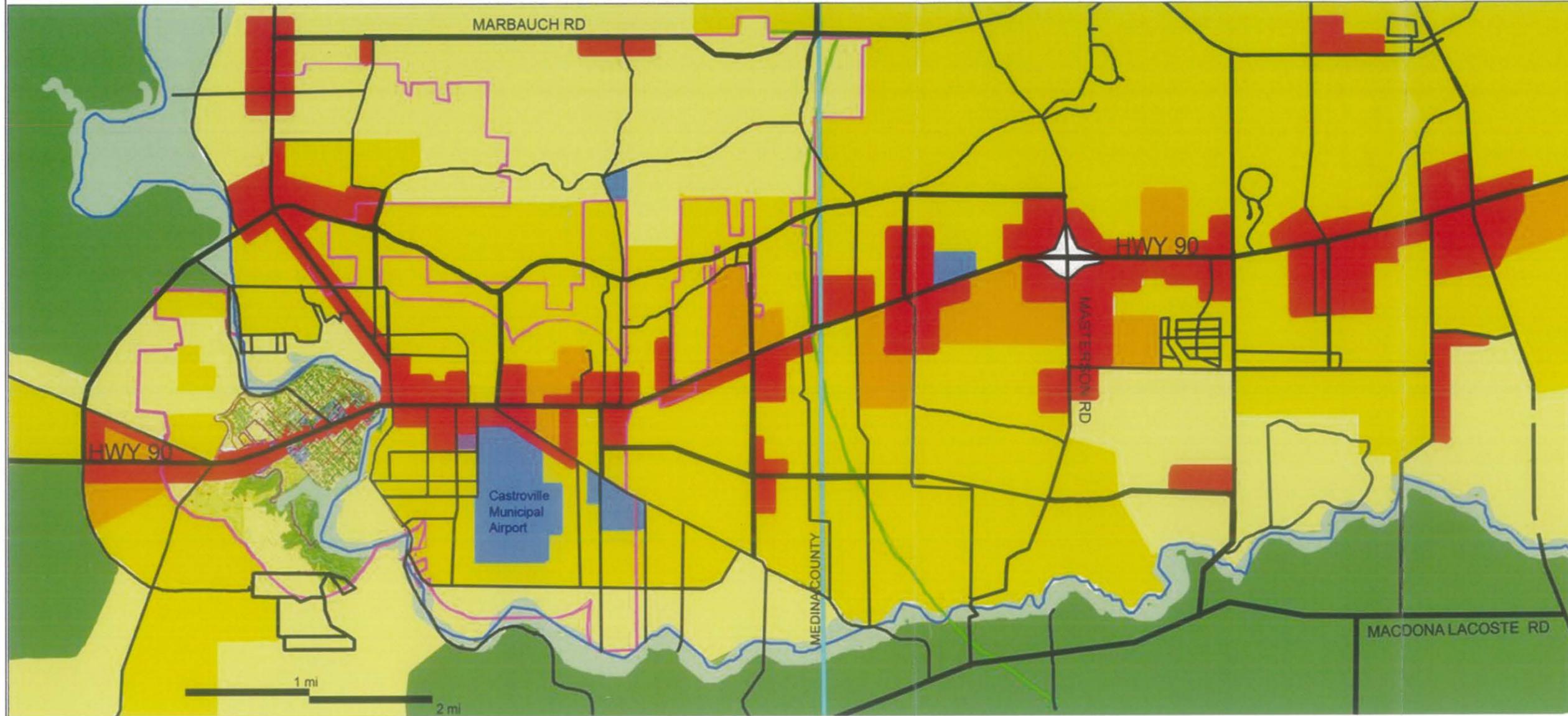


Figure 3

## Photo-Simulation: Applying Current Trends

Before



After

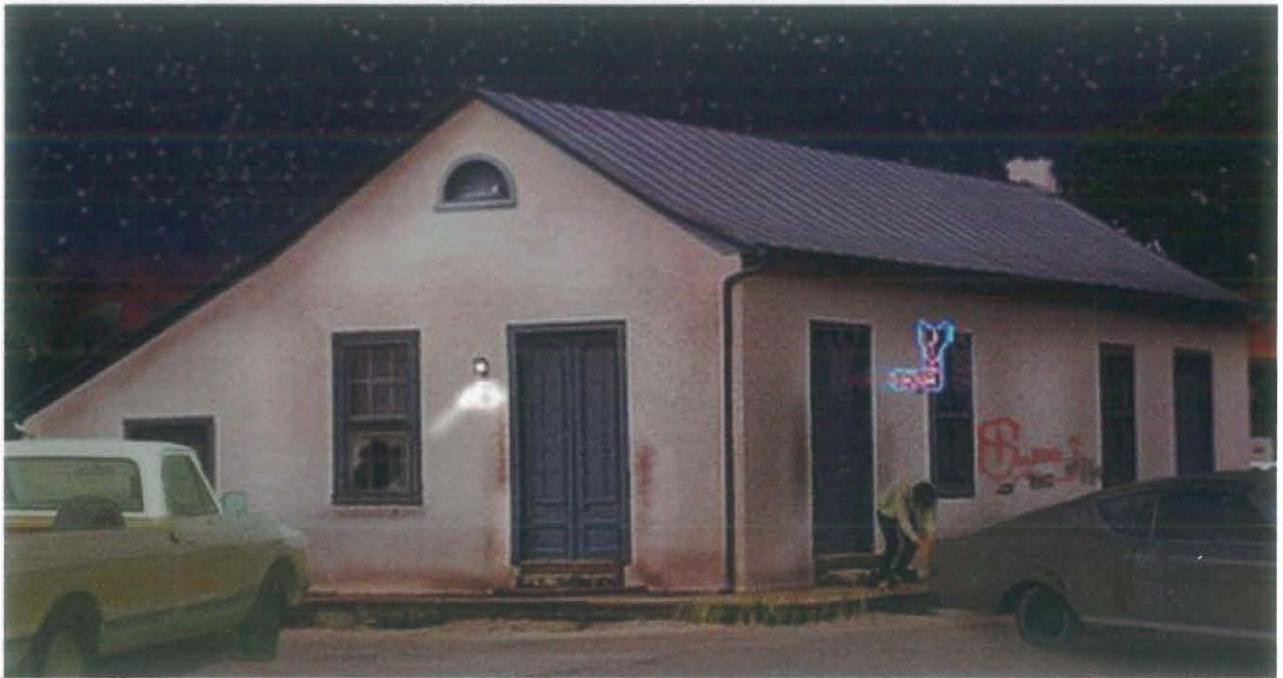


**Figure 4.** Shows the existing conditions (Before) under the Bridge on Highway 90 facing east away from the Steinbach House. If current trends continue, then the appearance of the Bridge on Highway 90 will deteriorate (After) including: vandalism such as graffiti, trash, and pollution of the river from the extensive amount of development nearby. *Source: Ben Miller*

Before



After



**Figure 5.** Shows a typical historic building found within the City of Castroville as currently it (Before). If current trends continue then what will occur is the loss of the city's identity, potential tourism, and overall quality of life through the deterioration of the historic buildings. *Source: Ben Miller*

Before



After



**Figure 6.** Shows an image of Highway 90 looking west towards Castroville (Before). If current trends continue then a probable increase in large franchise market stores such as: Best Buy, Wal-Mart, and McDonalds will occur (After). *Source: Ben Miller*

Before



After



**Figure 8.** Shows the current agricultural areas around the city of Castroville (Before). If current trends occur then heavy commercial as well as residential development will engulf these agricultural areas decreasing the overall quality of the environment, via degradation of soils as well as destroying wildlife habitat within the area. *Source: Brian Stewart*

Before



After



**Figure 7.** Shows Regional Park on the Southwest edge of Castroville (Before). If current trends continue then what will occur is the development of Residential homes on the hilltops of the city overlooking Regional Park (After). These homes could potentially degrade the natural systems of the hills west of Castroville as well as the possible degradation of Regional Park's aesthetic appeal. *Source: Alex Gonzalez*

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## Introduction

This Design proposal outlines how creating an additional town center in Castroville would aid in achieving the goals of:

- Access
- Safety
- Healthy Community
- Healthy Environment
- Unique Identity
- Tourism
- Revitalize The City Center
- Economic Viability
- Quality of Life
- Function

To evaluate the most suitable location of a New Town Center several primary site considerations were documented. Existing development, current Extra Territorial Jurisdictions, floodplains, soils, existing tree canopy cover, and topography were each analyzed and aided in the decision making process for determining where the New Town Center should be located.

## Existing Development

The existing development in Castroville consisted of Commercial sites, Culturally Significant sites, Residential sites, Parks and Recreational areas, the existing Airport and Industrial locations, as well as all current vacant properties within Castroville. The majority of the Commercial development is concentrated along HWY 90 and Houston Square, the commercial core of the Historic District.

Culturally Significant sites are located around the existing Historic walk. Such sites include St. Peter's Church, Houston Square, v Zion Church, City Hall, the Saloon, Landmark Inn, Gristmill, and the Steinbach House. The Residential sites are scattered throughout Castroville and gradually radiating out from the commercial core of the City. The Parks and Recreational areas are located at three primary locations, Castroville's Regional Park, Koenig Park, and Central Park. The Industrial sites and Airport (shown in purple on *figure 1*) are located southeast of the city.

The existing development documents the current locations of the cities activities. This is one of the primary considerations used to locate the New Town Center in a way that links historically significant sites with the proposed development for the New Town Center.

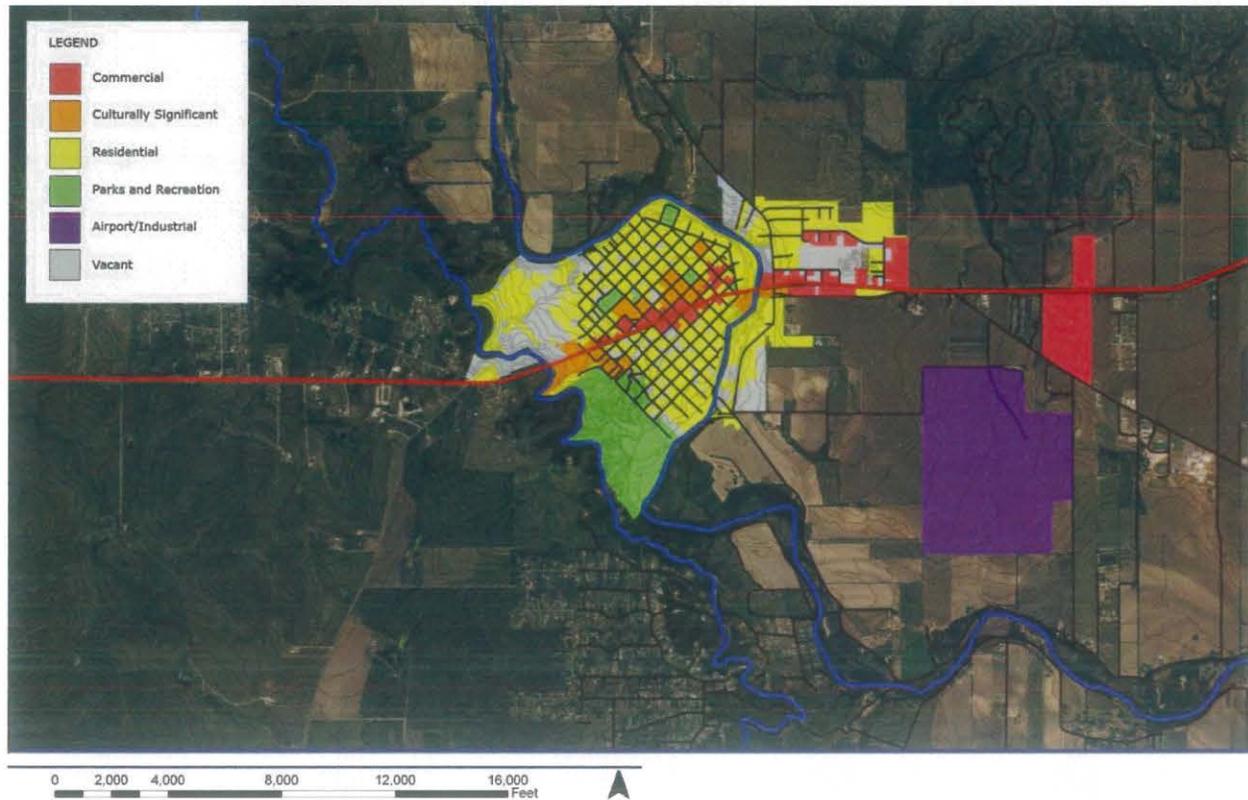


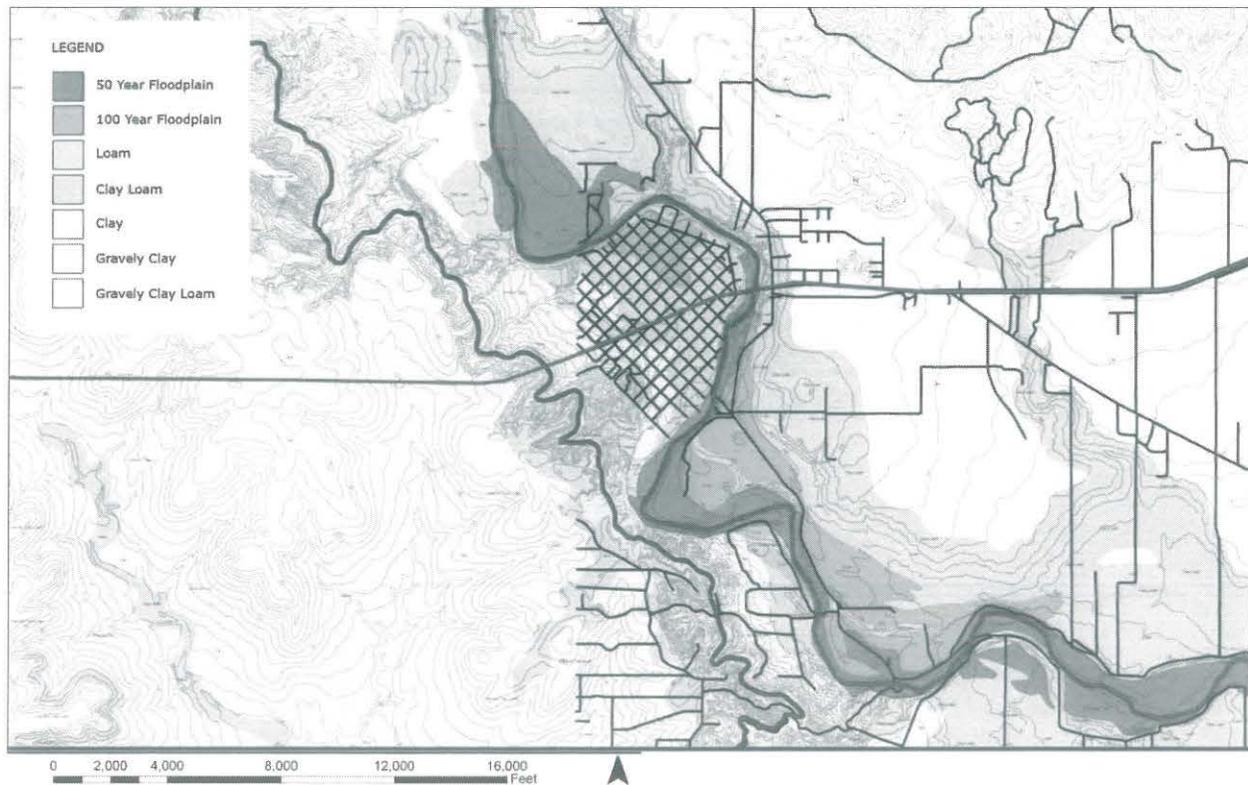
Figure 1. Existing Development in Castroville.

## Flood Plain and Soil Analysis

The Flood Plain and Soil Analysis data consisted of the 50 and 100 year floodplains, dry creek beds, and existing canals, as well as documentation of all soil conditions within the City of Castroville. The Flood Plain follows the flow of the Medina River Valley. Much of the Flood Plain directly correlates to the location of the most suitable soils for vegetative cover and agricultural development. The most suitable soils for potential development include Loam, Clay Loam, Clay, Gravelly Clay, and Gravelly Clay Loam.

Dense vegetative cover follows the dry creek bed that flows to the east of the Airport. This coverage serves as an ideal buffer between Airport noise pollution and development outside of the airport. There is also an irrigation canal that runs to the West of the Medina River following the topographical changes of the hill that encloses the City of Castroville, thus providing a natural boundary for development.

Figure 2 depicts the site analysis for both the Flood Plain and Soils.



**Figure 2.** Flood Plain and Soil Analysis. Data Source: U.S. Department of Agriculture

This analysis aided in depicting the primary location of a vegetative buffer as well as ecological corridors and agricultural development. Much of the agricultural development is existing; however, *Figure 3* shows primary locations for vegetative buffers and ecological corridors along the Medina River. The most suitable location for the agricultural and ecological preservation zone is shown in green. The Flood Plains and Medina River and Canal are shown in blue. Knowing the importance of preserving as much of these areas as possible, narrowed the space left for The New Town Center.

Many parts of this preserved space serves as a riparian zone. The riparian zones function as a preservation and restoration zone for the natural vegetation and wildlife along this corridor. The areas not in the floodplain, which are included in the riparian zones are areas that are densely vegetated, contain high slopes which would be undesirable to build upon and alter, or are current park spaces such as Regional Park. These riparian zones serve important ecological functions, and allow water to naturally filtrate back into the ground. Overall the health of the community and environment are protected and promoted through riparian zones.

## Agriculture Preserved Land

The preserved agricultural zones are to protect the agricultural land that is currently being utilized. These lands were selected by observing the soils and current crops being grown on the property. These agricultural lands are important historically and aesthetically, and maintaining crop land is a good use of open space.

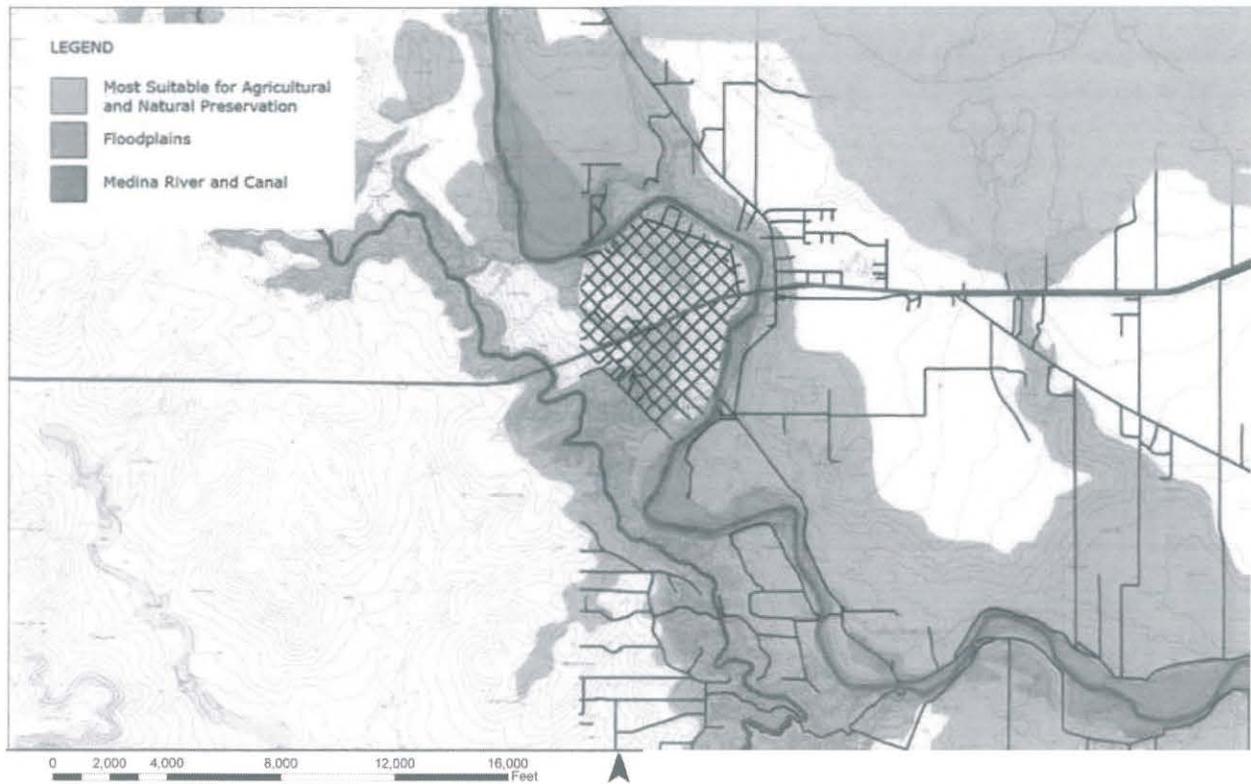


Figure 3. Existing Development with Suitable Agricultural and Ecological Preservation Zone.

## Bypass

Highway 90 leads from San Antonio in the east to Van Horn and El Paso in the west and currently divides the City of Castroville into two parts. It diagonally intersects with the City's grid system and this makes it dangerous to both the drivers as well as pedestrians that might be crossing the road. A lot of regional traffic, which is about 20,000 vehicles per day including commercial traffic, passes through the City at relatively high speeds and this poses problems for people trying to get from one part of the city to the other. This proposal is to create a highway in which both drivers and people crossing on foot are safer when accessing the highway. To aid in this, a bypass is proposed to divert the majority of traffic around Castroville. By redirecting this hazardous traffic around Castroville, the City will ultimately become more safe and walkable.

The topography of the City of Castroville has directly dictated the location of much of the City's development. Due to the drastic change in elevation on the western most side of the City, the development has concentrated to the east of this drastic topographical change. The Topography of the area almost encloses the city of Castroville in an oxbow point bar. The Topographical map was used to analyze the most appropriate location for the design development of the HWY 90 bypass.

The bypass would be a 6-mile stretch that would branch off Highway 90 west of Castroville, move south past the airport, and reconnect on the east side of the City towards San Antonio. The bypass was located

in an area with the most appropriate geographical conditions for this road. The bypass would need to include minimal bridges to accommodate through-traffic below as well as the major topographical changes that occur along the western ridge. This bridge will be the largest piece of construction along the bypass, however, the bridge is located where the Medina River and western canal are closest. The location of this bridge would reduce the amount of cut required for the construction of the bypass bridge.

To reduce the amount of development along the bypass, the proposal includes the planting of a dense vegetative buffer along the edge of the bypass. The Bypass will not include any frontage road, nor will it include any development within the buffer. This buffer will keep development from impeding the southern development of the city of Castroville. This new road would redirect most of the regional traffic that moves through Castroville currently around the City. People who do not wish to go through Castroville will be able to avoid entering the city. Those wanting to enter would do so by the Business 90 route.

The traffic that currently moves through Castroville is a threat that is solely capable of breaking up the unique character of the City. The bypass is a major step toward preserving Castroville's character and culture and failure to implement a bypass will result in the failure of reaching the goal of unifying and preserving Castroville as a culturally and architecturally unique city.

*Figure 4* shows the proposal for the location of the bypass, its vegetative buffer, and the proposed bridges that will take place during its construction.



**Figure 4.** Proposed Bypass and Bridge Construction.

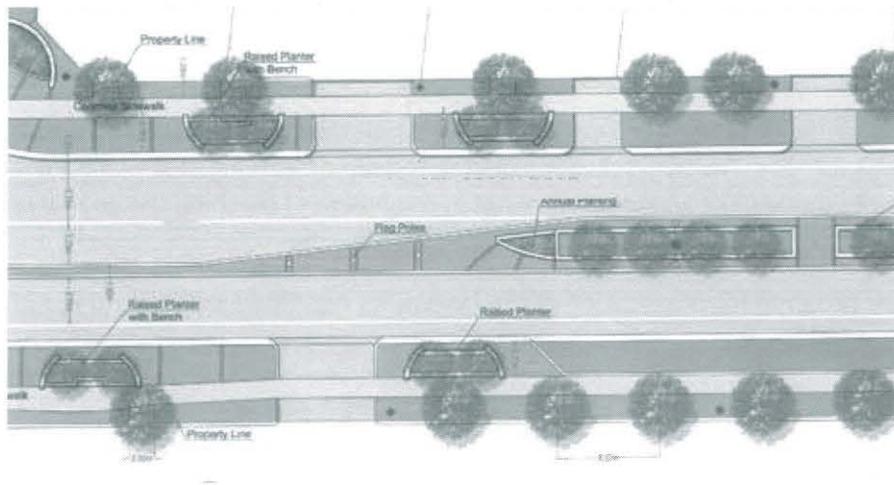
## Old Highway 90

By proposing a bypass around the City of Castroville, it will be possible to scale down Highway 90 into a 4-lane street. A vegetated median is proposed to slow down traffic passing through the city as well as add aesthetic appeal. This will make it easier for people to cross the road especially with the addition of

crosswalks. Sidewalks are also proposed for pedestrians. A center turning lane will be provided for drivers making left turns along the highway. The vegetated median will also provide a place for refuge for anyone crossing newly renamed Castroville Main at major intersections.

Components of Old Highway 90:

- Vegetated Median
- Sidewalks
- Crosswalks
- Center Turning Lane
- Enhanced Streetscape



**Figure 5.** Basic Concept of the New Castroville Main. *Source:* [http://todhunterassociates.com/what\\_we\\_create/SR\\_images/innisfil/01.png](http://todhunterassociates.com/what_we_create/SR_images/innisfil/01.png)



**Figure 6.** Vegetated Median Example Images. *Source:* <http://www.livablestreets.com/streetswiki/traffic-diverters/median-break-sammamishwa-burden.jpg>

By adding these elements, Castroville Main will be more accessible to users. The road will be made more attractive for the, and this will create the opportunity to draw people's attention into Castroville's historic center through signage. People that choose to go through Castroville will have a chance to better experience the City's history and culture rather than speeding by.

## The New Town Center

With the anticipated population growth, and increasing demands for development in Castroville, there is an immediate need to address potential problems with development and compatibility of future land uses. The “New Town Center”, more appropriately termed “the additional commercial zone” is intended to be a complement to the historic downtown area of Castroville, and thus, the New Town Center is modeled much like the existing Town Center of Historic Castroville. Commercial Development is concentrated in the center, Residential areas surround that, and Agricultural Land is retained as the buffer surrounding all development. The commercial area is laid out in a linear formation, along a new boulevard, and provides a place for commercial needs that do not fit into the scale or character of the existing historic downtown area. It is important that this type of growth and these types of uses be channeled into specific, pre-determined locations and placed under strict regulations in order to maintain the integrity and character of Castroville. If aesthetically displeasing, or big box scale developments begin to take prominence in Castroville, as precedent would lead us to believe they will, being able to control and regulate that development will be key to preserving Castroville as a cultural heritage site. The existing residential areas on the southeastern side of the Medina River is preserved within the New Town Center proposal, and much of the residential area surrounds existing development while expanding in locations that surround the proposed commercial concentration in the New Town Center. It is important to realize that the New Town Center is intended to be a commercial zone, and while it may have pleasant characteristics, it is not meant to take away from the historic town center. Community and Civic functions remain exclusively within the historic town center, at locations such as Houston Square or Koenig Park, and along existing streets such as the historic Fiorella Street.



*Figure 7. Proposed New Town Center Development.*

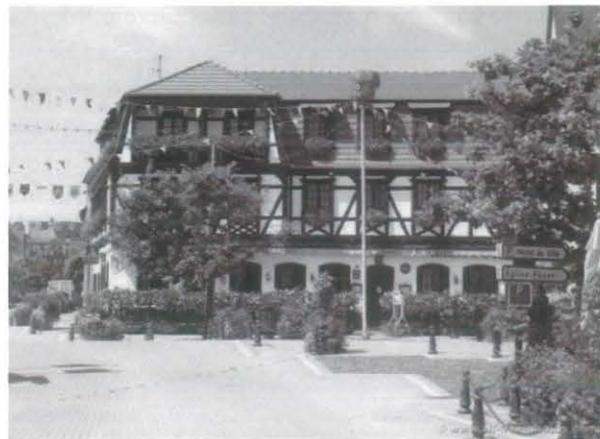


Figure 8. New Town Center Example Images. Source: [www.google.com](http://www.google.com)

## Portals

Currently Castroville lacks “entry portals” that mark the beginnings and edges of important districts or regions. To aid in wayfinding, and to enhance a visitor’s sense of place, specific areas have been identified as important locations for portals. The portals are marked on *Figure 9* with a red asterisk and numbered as follows:

1. Entry into the City of Castroville when traveling south west (From San Antonio), located at the Junction of the proposed bypass and Castroville Main (current Hwy 90)
2. Entry into the proposed additional commercial district located at the intersection of Castroville Main (current Hwy 90) and a proposed collector street.
3. Entry into the historic downtown area of Castroville located at September Square.
4. Entry into the City of Castroville when traveling north east (From Hondo) located at the cemetery that currently flanks both sides of the current Hwy 90.
5. Entry into the Castroville when traveling north east (from Hondo) located at the Junction of the proposed bypass and Castroville Main (current Hwy 90).



Figure 9. Proposed Portals and nodes

Examples of Portals:



Figure 10. Portal Example Images. Source: echelonlimo.com, www.fairfaxautomile.com/

## Nodes

In addition to these five portals, two “nodes” have been identified within Castroville. The Nodes, which represent focal points or key intersections, are marked in Figure 9 with blue circles and are labeled as follows:

- a) Houston Square: Serves as a current hub for activity within the City, located within the heart of Castroville.
- b) September Square: Located at one of the most important intersections in Castroville, September square stands where Castroville Main (Old Hwy 90), Fiorella Street, the new proposed pedestrian paths, and Florence street (which provides direct access to regional park) intersect.

## Vehicular and Pedestrian Circulation

The primary focus of the proposed development is to maintain existing circulation patterns while expanding upon existing connections to better connect with the New Town Center development. The primary existing connections include, Mexico Street, the Constantinople vehicular bridge, Lower Lactose Road, Farm to Market Road 471, and current HWY 90. *Figure 11* highlights the vehicular circulation patterns through a hierarchical road system, existing and proposed connections, and intersections.

The proposed development is to maintain existing pedestrian pathways, which include, the Historic Walk and crucial pedestrian intersections, while expanding upon existing connections to create a more pedestrian oriented City with the New Town Center Proposal. The main pedestrian intersections include those located along Fiorella Street across the existing HWY90 as well as the existing circulation patterns along the arterial roads which surround Castroville. The proposed pedestrian circulation patterns include both foot and bicycle traffic. The foot traffic is primarily concentrated in the core of the existing Historic District and the proposed New Town Center, while the bicycle traffic loops around the outer areas of linking vehicular roads and paths throughout the vegetative and ecological zones. The circulation patterns are displayed in *Figure 11*.

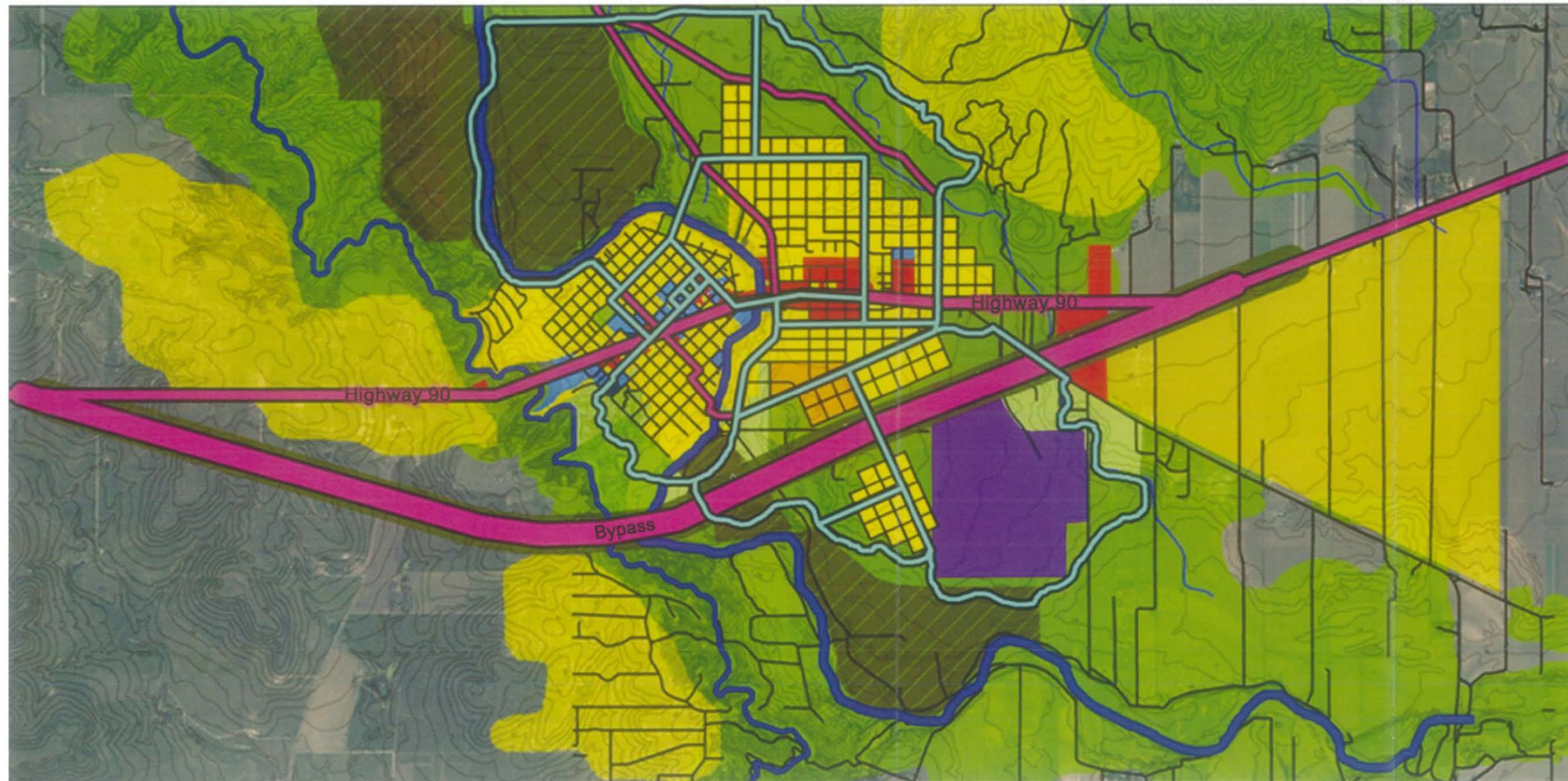


Figure 11: Vehicular and Pedestrian Circulation System for Proposed New Town Center Design



# Castroville, Texas

## Vehicular and Pedestrian Circulation

- Agriculture
- Residential
- Assisted Living/Retirement
- Commercial
- Industrial
- Public/Institutional
- Parks
- Riparian Corridor
- Medina River
- Buffer
- Vehicular Circulation
- Pedestrian Circulation

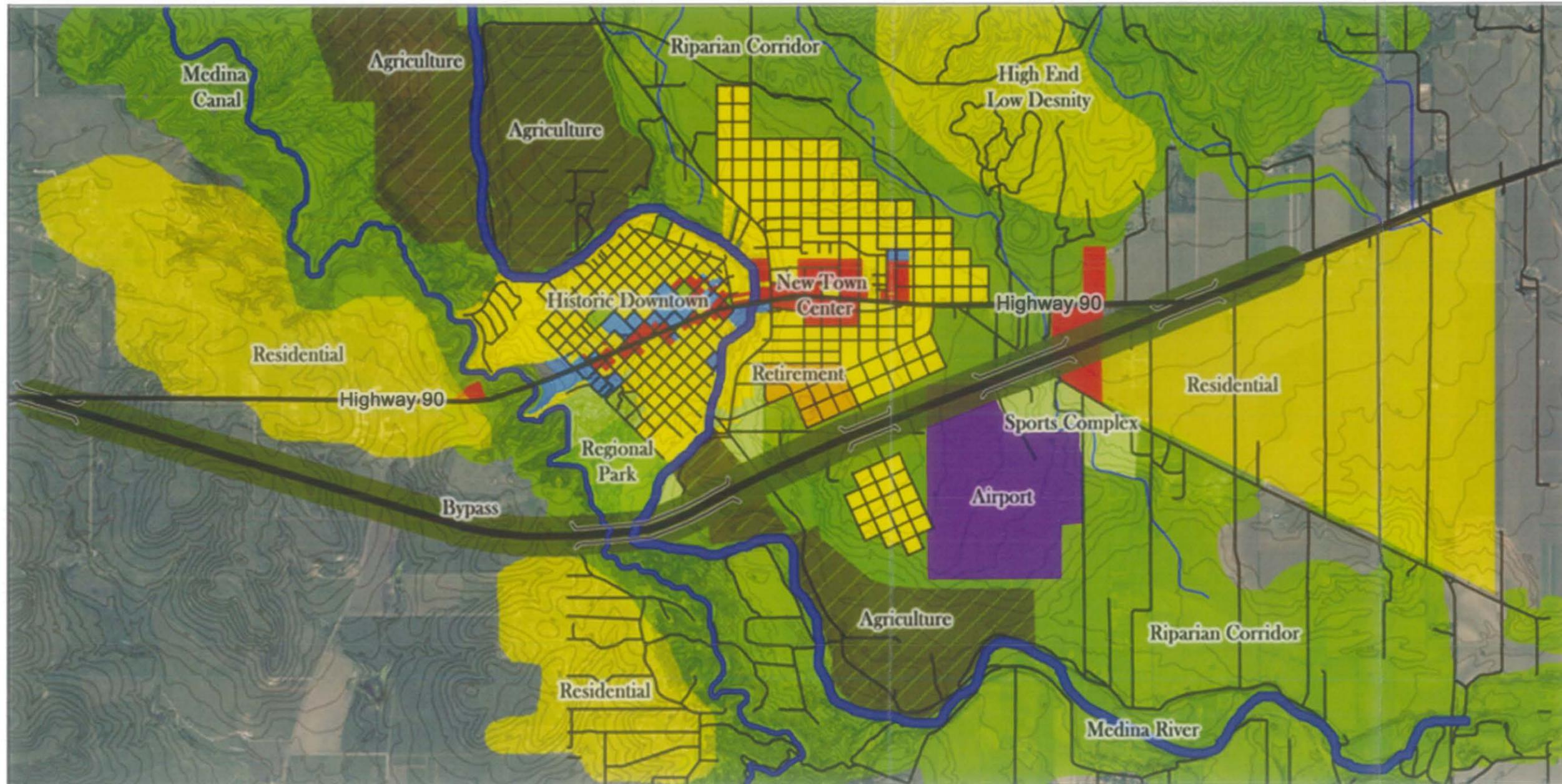


Figure 12: Proposed Land Use Plan for New Town Center Design

0 2,000 4,000 8,000 12,000 16,000 Feet



### Fiorella Fairway

Fiorella Street is a road that runs along several of the most important historical features of Castroville. The street is also the location of the popular town event ‘Fiorella Fridays’. The street has inconsistent physical features and lack of pedestrian access. The inconsistency in appearance downplays the streets importance as a main pathway for the historical walk and town and is uninviting to pedestrians who travel along this street.

In the new development plan Fiorella Street is linked with the new “Fiorella Fairway”. This road is proposed as pedestrian access only, thus serving as a Cultural connection from the Historical District of existing Castroville. The street would serve as a pedestrian “Fairway” that could act as a location for activities such as a Farmers Market. The Fairway would include a green buffer that would act as a centralized location for pedestrian traffic within the New Town Center. The following image locates the proposed “Fiorella Fairway” and the way in which it connects with existing conditions.



Figure 13. Proposed Fiorella Fairway.





Figure 14. Florella Fairway Example Images. Source: auachicago.wordpress.com

## Assisted Living Facilities

Assisted living facilities create a variety of different living arrangements depending on each resident's unique circumstance and level of assistance needed. In these facilities, residents live independently in apartment style accommodations or in a single residential setting. Each of these types provides choices in health related services and personal assistance. A health care facility is proposed on site for the more dependent residents as well as emergencies. This health care unit can have a number of different services such as physical therapy, pharmacy, check up facility, or any others that the town would need.

Now is the time that millions of baby-boomers are either getting ready to retire or have already done so, and although the majority of them are in good health, there are thousands that are already in need of some form of assistance on some scale, be it personal hygiene, grocery shopping, or paying bills. In the near future we will see a rapid increase in the number of people retiring and in need of assistance both those currently residing in Castroville, as well as those intending to move to Castroville to retire and spend their remaining years.





**Figure 15.** Example Images of Assisted Living. Source: [www.assisted-living-directory.com/](http://www.assisted-living-directory.com/), [www.realtyresourcesgroup.com/assistedliving.aspx](http://www.realtyresourcesgroup.com/assistedliving.aspx), [http://cdn11.g5search.com/store\\_photos/1307/slideshow/assisted-living-missouri-mo.jpg](http://cdn11.g5search.com/store_photos/1307/slideshow/assisted-living-missouri-mo.jpg)

The proposed assisted living appears as the orange land use (Figure 12) to the immediate south of old Highway 90. This location was chosen due to its close proximity to the Medina River, Historic Castroville, and the New Town Center. Its close proximity to the Medina River adds to the quality of life of the senior citizens who will be residing in the assisted living area. Its location close to Historic Castroville allows residents to more easily access the town for Church, food, friends, family, or any other close ties they hold with Historic Downtown. The residents can easily access the new town center/mixed use area for any shopping, dining, and other amenities.



**Figure 16.** Example of Assisted Living Facility. Source: [theypressofraleigh.com](http://theypressofraleigh.com)

## Retirement Community

Active Adult Retirement Community housing focuses on providing a wide range of activities for residents. The location of the proposed area dedicated to retirement is located adjacent to the Medina River to accommodate river front properties as an added amenity, as well as its adjacency to preserved agricultural land. Combining the more dependent assisted living area adjacent to the retirement community is an added benefit for the retirement community due to its close proximity to medical facilities. Old Castrovilla is also easily accessible as well as the New Town Center for shopping and leisure. The likelihood of new populations coming to Castrovilla to retire is high because of its historic setting, strong character, proximity to a major city, access to urban health care, and a number of other reasons.



**Figure 17.** Examples Images of Housing and Social Gathering Space. Source: [http://scopp.org/yahoo\\_site\\_admin/assets/images/Picture3.242120640\\_std.png](http://scopp.org/yahoo_site_admin/assets/images/Picture3.242120640_std.png)



**Figure 18.** Retirement Community Example Image. Source: <http://www.helmr.com/images/St%20Andrew%20Aerial.jpg>

## Sports Complex

The Sports Complex, shown in the map below, is intended to be a large, regional complex that brings in large groups of visitors to Castroville. The complex would house fields for multiple sports, most significantly baseball, softball, and soccer. All three of these sports have high participation in the state, and large tournaments are common for all age groups. This sports complex could be utilized for hosting tournaments on the weekends, which could bring in significant revenue in terms of hotels, dining, and tourist attractions and during the week could be a valuable amenity to the citizens of Castroville.

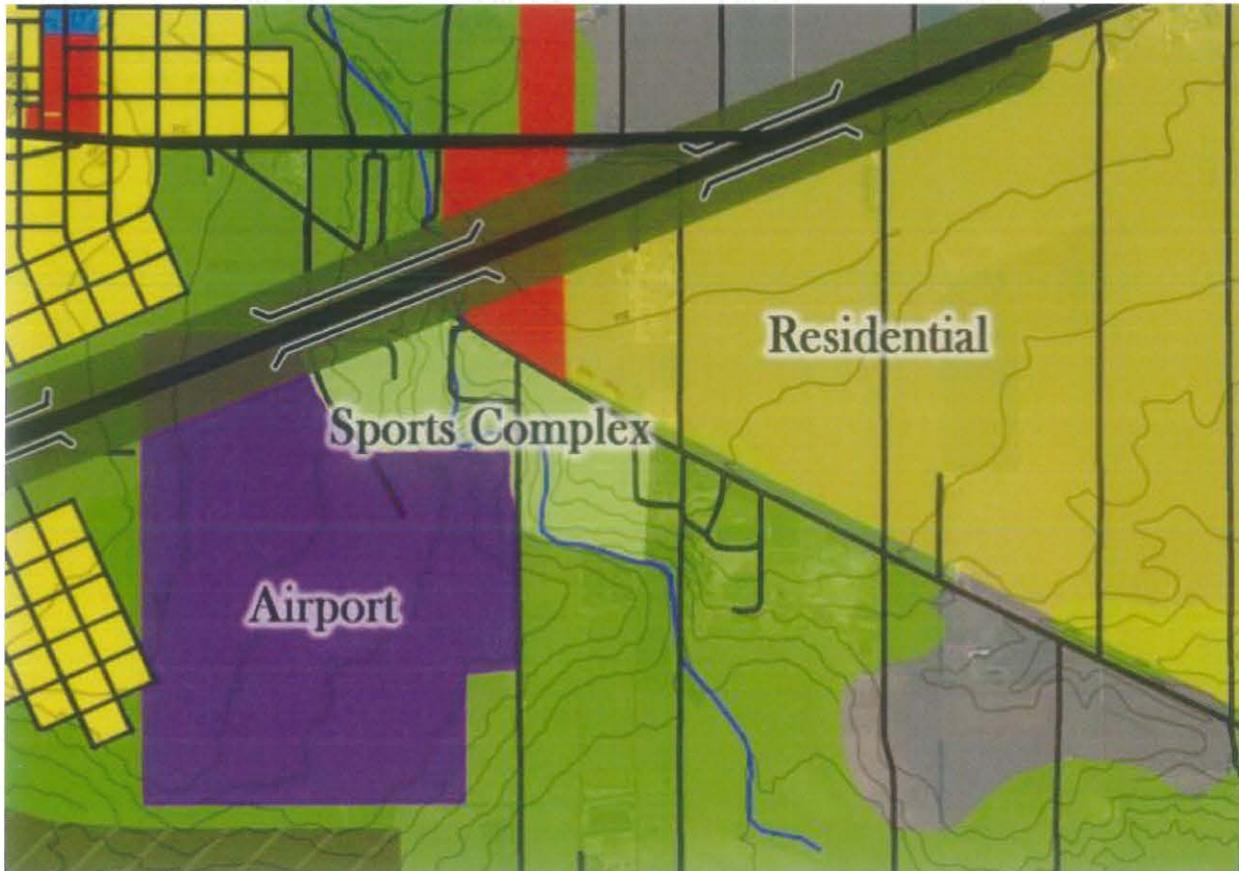


Figure 19. Proposed Sports Complex.

## Location

The proposed location for the Sports Complex was chosen for a number of reasons. It's proximity to the high school, and the airport made for compatible land uses that complement each other. Each of these land uses have been known to produce sound and light pollution, which typically does not work well near residential areas. Additionally a floodplain runs through the middle of the sports complex, which greatly limits the opportunity for other development there. Placing sports fields here, allows the location to be flooded when needed, and acts as an important recharge zone for runoff water. It is important to note, that as the area around Castroville gets more built up, runoff will continue to increase, so keeping this floodway open will only increase in importance over time.



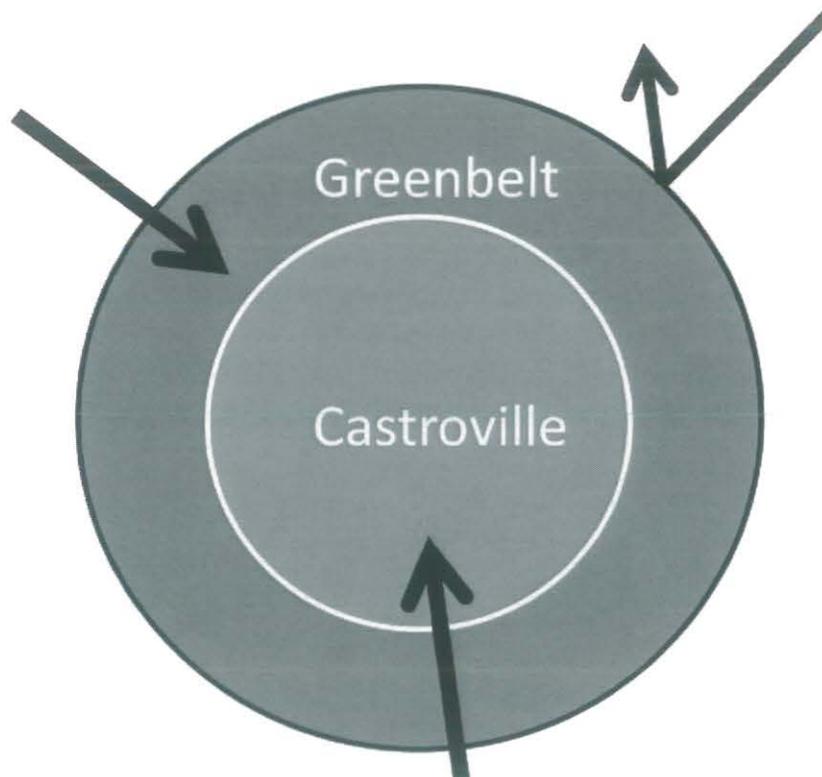
Figure 20. Sports Complex Example Images. Source: <http://www.rdgusa.com/news/archives/2008/01/>

Prepared by: Aragon, Benson, Chapman, Cruce, Kendall, Schuchard, Unruh, Ward, Williams, Wu

## INTRODUCTION

The following implementations under the concept of an “Agricultural Greenbelt” work together with the preservation of the environment and current agricultural practices to form a shield from the undesired growth of the San Antonio metropolitan area and for the betterment of the community of Castroville. The overall concept employs a vegetated and agricultural buffer that allows the City of Castroville to decide which types of development will be accepted in the future. The following goals were used to direct the design of an agricultural greenbelt:

- Promote function
- Increase accessibility
- Revitalize city center
- Promote safety
- Protect Identity
- Promote economic viability
- Further tourism as a significant contributor to the local economy
- Promote a healthy community
- Promote a healthy environment
- Improve quality of life



*Concept Diagram: Promote infill while filtering the types of development allowed in Castroville.*

## PROPOSED AGRICULTURAL BUFFER

### Agricultural Farm Lands

Castroville, Texas is a small town approximately 24 miles west of San Antonio. There is fear that its cultural identity will be lost as future development moves west. To develop a buffer between the suburbs of San Antonio and Castroville, the agricultural farm lands are suggested as an open space preserve, creating a greenbelt around the City.

According to research on soil types, the greenbelt's location takes advantage of the soil types most conducive to a wide range of agricultural production. The design proposal uses a U-shaped band of farm land surrounding three sides of the City, while the fourth side is protected by highly vegetated hills.

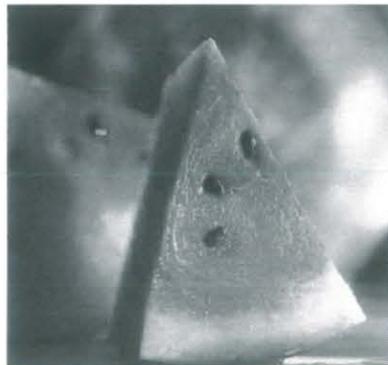
Castroville is located along the southern boundary of the Texas Hill Country Wine Region. Therefore, Castroville is able to take advantage of the growing Texas wine market by producing Alsatian and other wines, thus reinforcing its unique identity and increasing Castroville's appeal as a tourist destination. (SOURCE: Gotexas.com/wine) Other crops may also increase tourism by providing a wide selection of locally grown produce at a farmer's market or allowing customers to pick their own food.

Appendix A list of suggested crops, soil requirements, dollar value per acre, and other information for crops grown in the region is included. Furthermore, the agricultural belt prevents development in a large section of the Media River flood plain. The greatest problem facing Castroville is the encroachment San Antonio and the loss of cultural history as development ensues. Thus, with the agricultural greenbelt, the following benefits are produced by protecting the agricultural lands:

- Preserves land for flood drainage
- Increases tourism through vineyard tours, berry picking, and specialty local crops/products
- Provides a locally grown product for a farmer's market
- Builds a self-sustaining economy and community by providing food for local markets
- Protects Castroville against sub-urbanization
- Enhances town's agricultural background and rejuvenates historical elements



Vineyard



Watermelon



Harvesting

Each aspect of the greenbelt design compliments goals outlined in the beginning of the design project. For example, as the farms develop a unique **identity** for themselves they enhance the **identity** of the community by providing an experience unlike that of other towns. Furthermore, farms may promote **tourism** and **economic viability** by allowing tours of their fields with events such as berry picking, wine

tastings, farmer's markets, and branding processed food products like salsas, preserves, jams, etc. Additionally, locally and organically grown produce support a **healthy community** and a **healthy environment** by providing nutrient rich food to local schools, restaurants, and residents. The environment benefits from organically grown food just as it does for people because the soils, microorganisms, insects and plants are cared for as a viable part of the ecosystem.

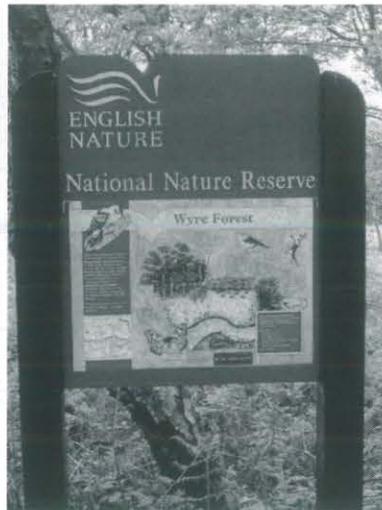
## Undeveloped Land Preservation

Undeveloped land is defined as acreage with no added improvements, such as drainage, streets, utilities, and structures. This land is capable of serving as a buffer between Castroville and the growing San Antonio metropolis, while at the same time preserving the vegetation and wildlife and the processes that accompany them. The benefits of preserving undeveloped land include, but are not limited to:

- Preserve clean air and water
- Protect natural processes
- Offer educational opportunities
- Prevent undesirable development



*Hiking Trails*



*Educational Displays*



*Handicap Accessible Walkways*

These undeveloped areas are functioning ecosystems that perform an integral role in wildlife survival and the promotion of species' continuation, thus promoting a **healthy environment**. Humans are naturally drawn to green spaces and the community can capitalize on these areas, on that account creating **tourism** to generate an **economically viable** basis to preserve undeveloped land. Non-motorized transportation can flow through a limited number of these areas, devising a low-impact mode of transportation that increases **accessibility** between neighborhoods. By encouraging outdoor activity and recreation in some of these preserved areas and educated visitors and residents of their naturalistic surroundings, a **healthy community** can be achieved. Being known as "Little Alsace", Castroville can produce an **identity** similar to that of Alsace, France by surrounding existing and future development with rolling hills of preserved, undeveloped land.

### How to Preserve

There are two approaches that can be taken to ensure that this undeveloped land is preserved. The first of which is through annexation by the City of Castroville. Annexation is the process by which an incorporated city expands its boundaries to include a specified area. Through annexing, the city can zone the chosen land for whatever land use is desired or freeze the land into its current use. In this case, the City would preserve the land's agricultural status or possibly rezone the parcel.

There is also an option of a conservation easement. A conservation easement is defined as a restriction placed on a piece of property to protect its associated resources, whether that is environmental processes, visual quality, or its benefit to society. In a conservation easement, a landowner voluntarily agrees to sell or donate certain rights associated with their property, often the right to subdivide or develop, and a private organization or public agency agrees to hold the right to enforce the landowner's promise not to exercise those rights. Each easement is tailored to meet the landowner's needs and lengths of contracts vary. In some instances, landowners can qualify for tax benefits under rules by the Internal Revenue Service (IRS). Benefits of conservation easements include, but are not limited to:

- Prevent housing developments
- Tailored to meet landowner's and habitat's needs
- Fair market value compensation
- Public access is not a requirement
- Restrict harmful activities
- Property remains on tax rolls
- Landowner maintains ownership and control
- Possible benefits through IRS codes

### Future Development

While trying to conserve and preserve the environment around Castroville, one also has to account for future development and growth. The agriculture greenbelt serves as a method to prevent unwanted growth from external development, resulting in the preservation of Castroville's **unique identity**. Future development should occur first within the existing City boundary. There are many vacant or undeveloped lots within the City core that allow future growth needs to be met in a positive and controlled manner that will strengthen the community.

In addition, there are also two areas of proposed future residential and commercial development. These have been placed on the less productive clay soils, so not to take away profitable land from agricultural purposes. One development is centered around the Medina Valley Middle and High Schools so residents can take advantage of their proximity to youth-centered activities. These new developments are connected to the Castroville city center by the proposed non-motorized transportation paths. Further, a number of these developments can be "development supported agriculture." Development supported

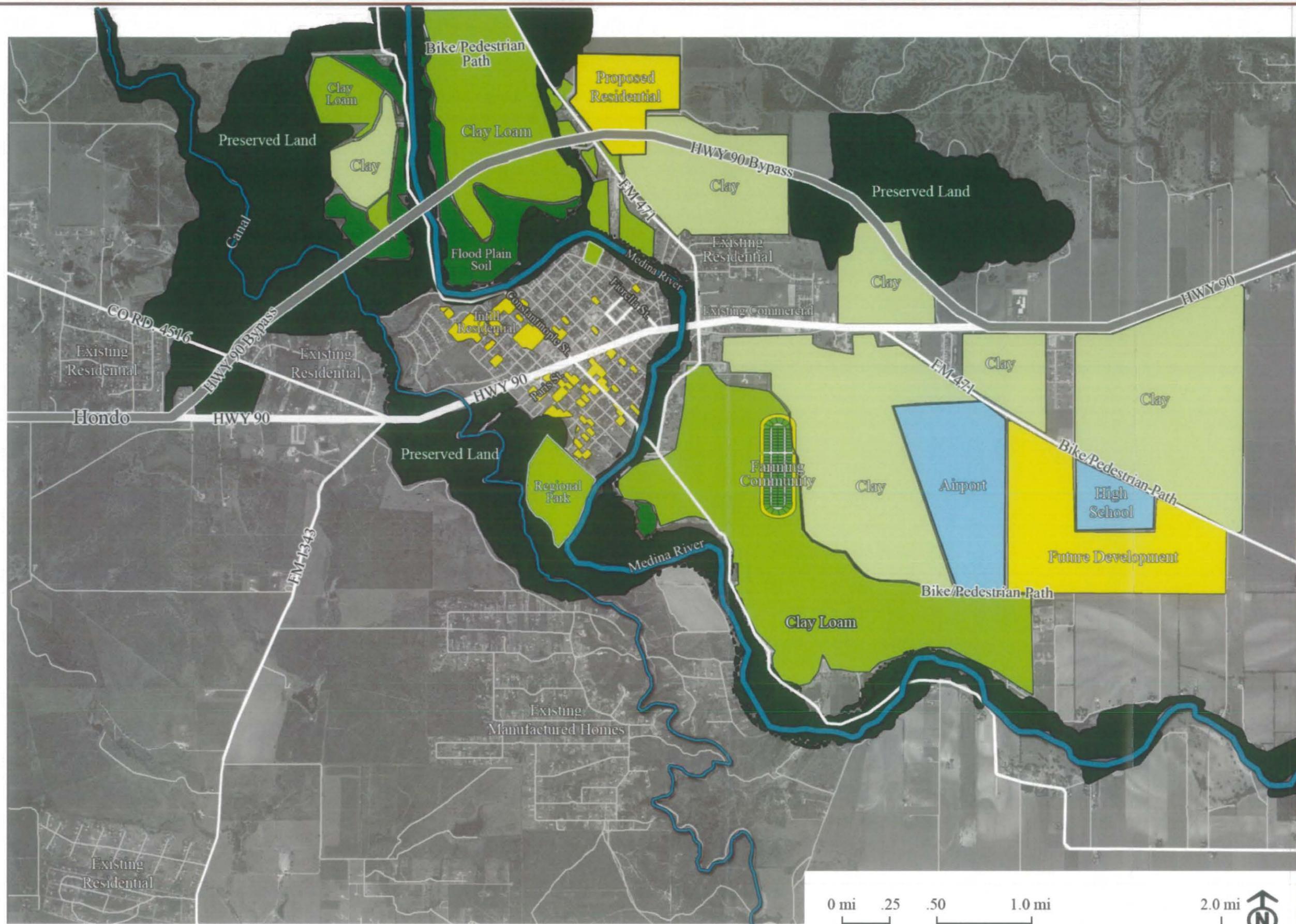
agriculture is a method of preserving farmland through limited development and continuity of previous farming uses by forming agreements between developers and farmers and implementing low-impact construction practices. Large lot sizes allow landowners to grow their own food and raise their own animals in order to be more self-sufficient and able to provide resources to the community. Organic practices and existing architectural styles that Castroville possesses would be encouraged.



*Numbered lots in an existing development supported agriculture community*

Development supported agriculture promotes a **healthy environment** by encouraging low-impact construction and continuing the farming land use that is currently in place. By producing their own food organically and encouraging outdoor activity, the ideal of a **healthy community** is advocated. Strong relationships between neighbors and friends are also fostered through the agricultural lifestyle.





# Castroville, Texas

## Agricultural Greenbelt Proposed Development

- Soils Within Greenbelt**
- Soil in Flood Plain
  - Clay Loam Soil
  - Clay Soil
- Land Use**
- Preserved Land
  - Existing Parks
  - Public or Institutional
  - Future Development
  - Existing Roads
  - Medina River

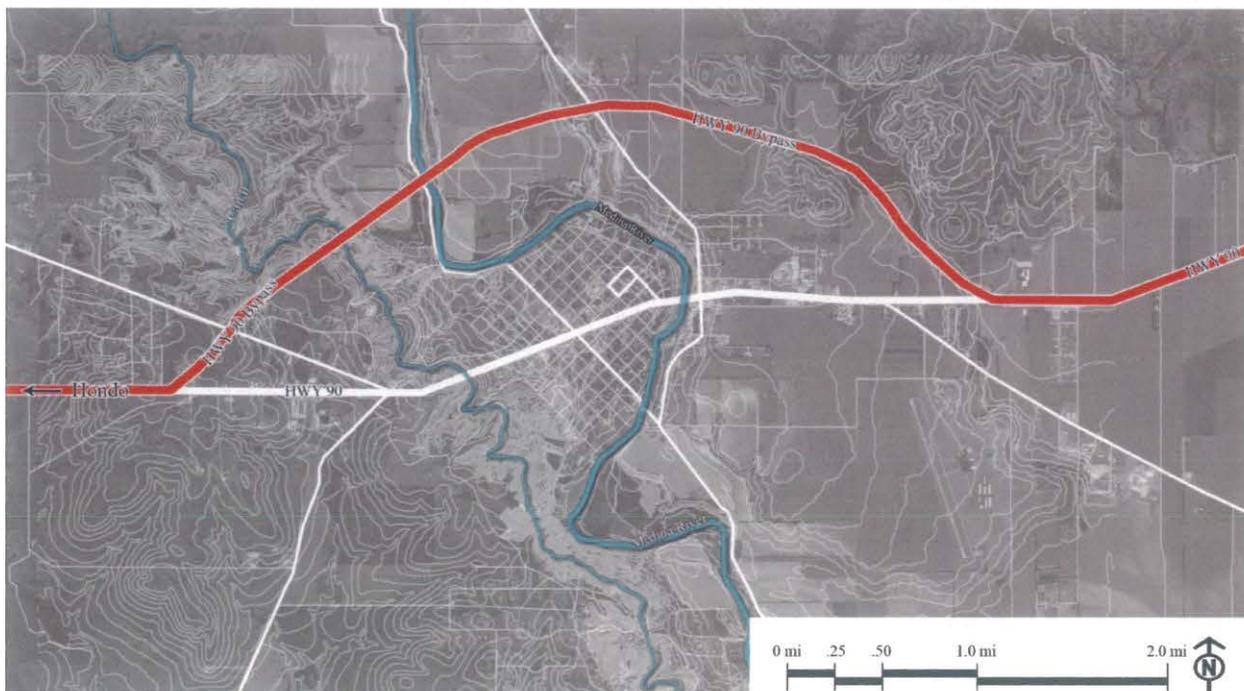


## PROPOSED CIRCULATION ROUTES

### US Highway 90 Bypass

The proposed circulation systems include improved routes for vehicular, pedestrian, and bicycle circulation. Currently in Castroville, US Highway 90, a major regional thoroughfare, bisects the City and disrupts the grid circulation pattern, resulting in pedestrian and bicycle transportation difficulty. Construction of a bypass is the only way to insure an increase in connectivity within the City and preservation of the Castroville's unique cultural identity. Without the bypass, none of the proposed changes are possible. In addition, the bypass provides safer intersections for pedestrians and cyclists. A route taking US Highway 90 north of Castroville is preferable as the topography lends itself to more economical construction. A northern bypass would limit the area of grade variation as compared to a southern route. Also, a northern route would allow for better circulation between the City of Castroville, Castroville Municipal Airport, and the Medina Valley School District. The benefits of a US Highway 90 bypass include, but are not limited to:

- Highway 90 safety for motorists and pedestrians
- Downtown Preservation
- Noise Reduction



*Proposed US Highway 90 Bypass*

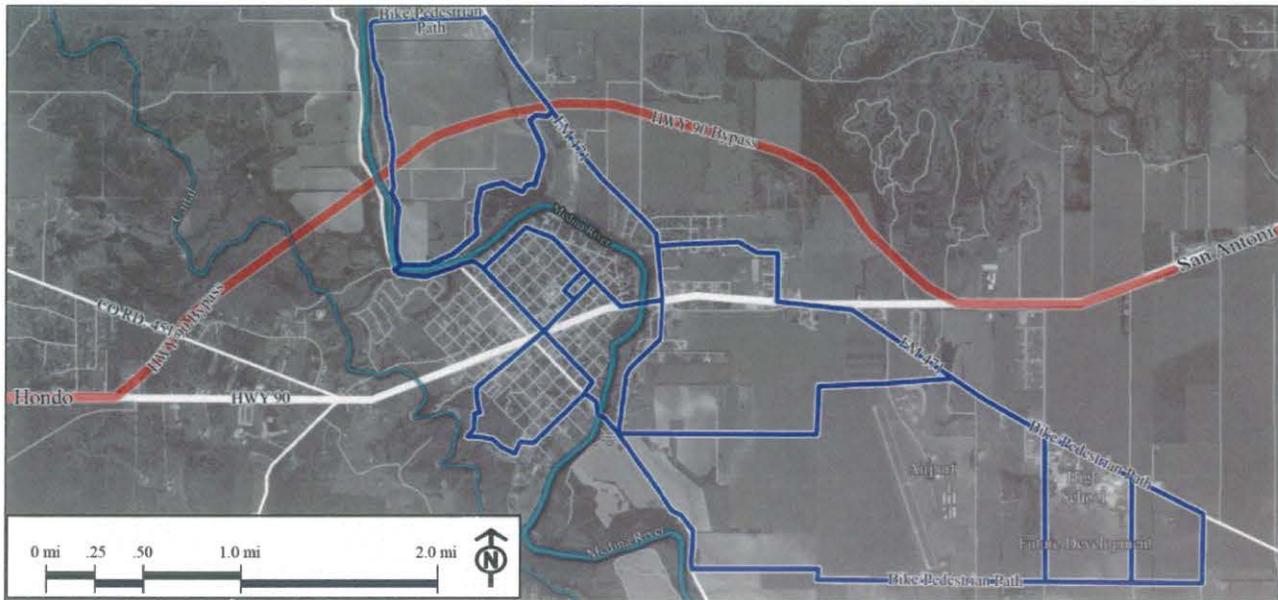
With large amounts of regional traffic on US Highway 90 commuting to and from San Antonio, the creation of the bypass will establish a quicker and safer route. Taking regional traffic out of the

downtown of Castroville will allow the City to make changes to the previous route of US Highway 90 to increase **safety** for local vehicular, pedestrian, and bicycle traffic. To ensure that the bypass does not negatively affect the economy of the central business district, no frontage roads will be provided and land uses adjacent to the bypass will be encouraged to remain in agriculture or undeveloped land. Through increased **safety** and connectivity, the bypass will aid Castroville's **revitalization** effort by making the city more pedestrian-oriented. Additionally, the City will benefit **economically** as new commercial/retail development will be concentrated within the city center, where development will have to meet strict architectural codes to secure the City's **unique identity**. Through elevated safety, connectivity, and concentration of commercial development as a result of the bypass, the **health of the community** will be enhanced as residents will have greatly improved transportation opportunities.

### Non-Motorized Transportation

A non-motorized transportation (NMT) route is a system that is designated for pedestrians and cyclists. When the route was determined, the system took advantage of existing roads to minimize the cost of construction and increase connectivity between different districts that lie on the same existing route. The benefits of NMT routes include, but are not limited to:

- Link existing and new developments
- Encourage outdoor activity
- Decrease automobile dependence
- Reduce traffic congestion
- Take advantage of local cycling interests
- Road and parking cost savings
- Reduce crash risk
- Reduce noise and air pollution
- Conservation of energy



*Proposed NMT Paths*

By establishing a non-motorized transportation route the City of Castroville will better prepare itself for the future by creating an interconnected system that increases circulation for modes of transportation that are energy independent. Through an established NMT route, pedestrian and cycling participation is likely to increase resulting in an increased **health of the community, and environment**. In order for the NMT route to meet the desired **function**, it will connect the extremities of the community to the City's center. Through this connection Castroville will be able to create a network that effectively provides **access** through the City for pedestrians and cyclists. This is important as pedestrians and cyclists will be given their own route, which is much **safer** than the current road network that pedestrians and cyclists must now share with cars and trucks.

## Ecological Corridors

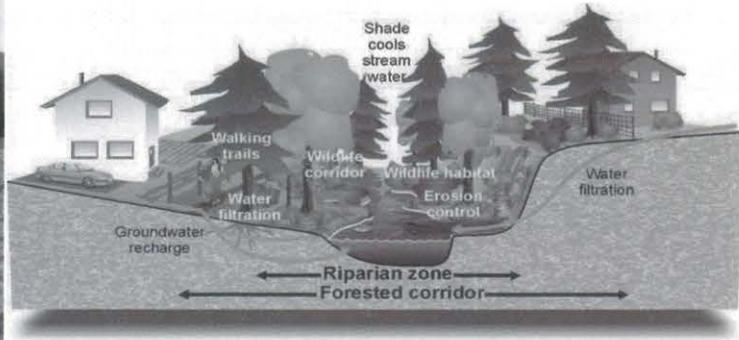
With the implementation of a highway bypassing the existing US Highway 90 corridor, the health and continuation of the existing ecosystems is of high concern. In order to insure that minimal impact is placed on the environment due to the construction of the highway, ecological corridors have been put into place. An ecological corridor is an area of habitat connecting wildlife populations separated by human activities. In this case, special consideration will be paid to three specific areas. These areas traverse waterways and areas of dense vegetation. The designated corridors would also take advantage of valleys and low-lying expanses where the proposed US Highway 90 would be elevated, allowing wildlife to pass underneath. Benefits of these ecological corridors include, but are not limited to:

- Increase wildlife migration rate between populations which could maintain diversity
- Increase wildlife population size
- Decrease probability of species' extinction
- Prevent species' inbreeding

- Increase foraging area for species
- Allow an escape or refuge from predators, fires, and other disturbances



*Wildlife Passageway*



*Riparian Corridor*

These corridors allow current ecological systems to continue to operate with minimal disturbance by proposed future development. On the most basic level, ecological corridors serve to continue **functioning** ecosystems. Also, a **healthy environment** can be created through preserving these areas and designating them as refuges for wildlife. Within these corridors, pedestrian and bike paths can be implemented, taking advantage of passageways below the proposed US 90 Highway bypass and increasing connectivity and **accessibility** between neighborhoods and communities. Visitors and residents that are interested in studying and observing wildlife can travel down these bike and pedestrian paths within the corridors that create another tourism facet for the City of Castroville.

### River Access

The City of Castroville is surrounded on three sides by the Medina River and the river is one of the reasons the City was established in its current location. The river has been an integral feature in the City, however in its current condition, it is underutilized. Conditions that are to be addressed when offering Medina River access include:

- Create easy accessibility for the public
- Clean river bottom
- Canoe and kayak access at Koenig Park and Landmark Inn/Dam
- Address relationship with public and private access

When allowing access to the Medina River, there are proposed regulations that apply to river activities. These regulations will seek to address concerns of pollution and noise by nearby residents. Examples of these include:

- Limited hours for usage
- No containers in the river
- All floating devices must require a bottom (e.g. kayaks and canoes)



Proposed River Access Map



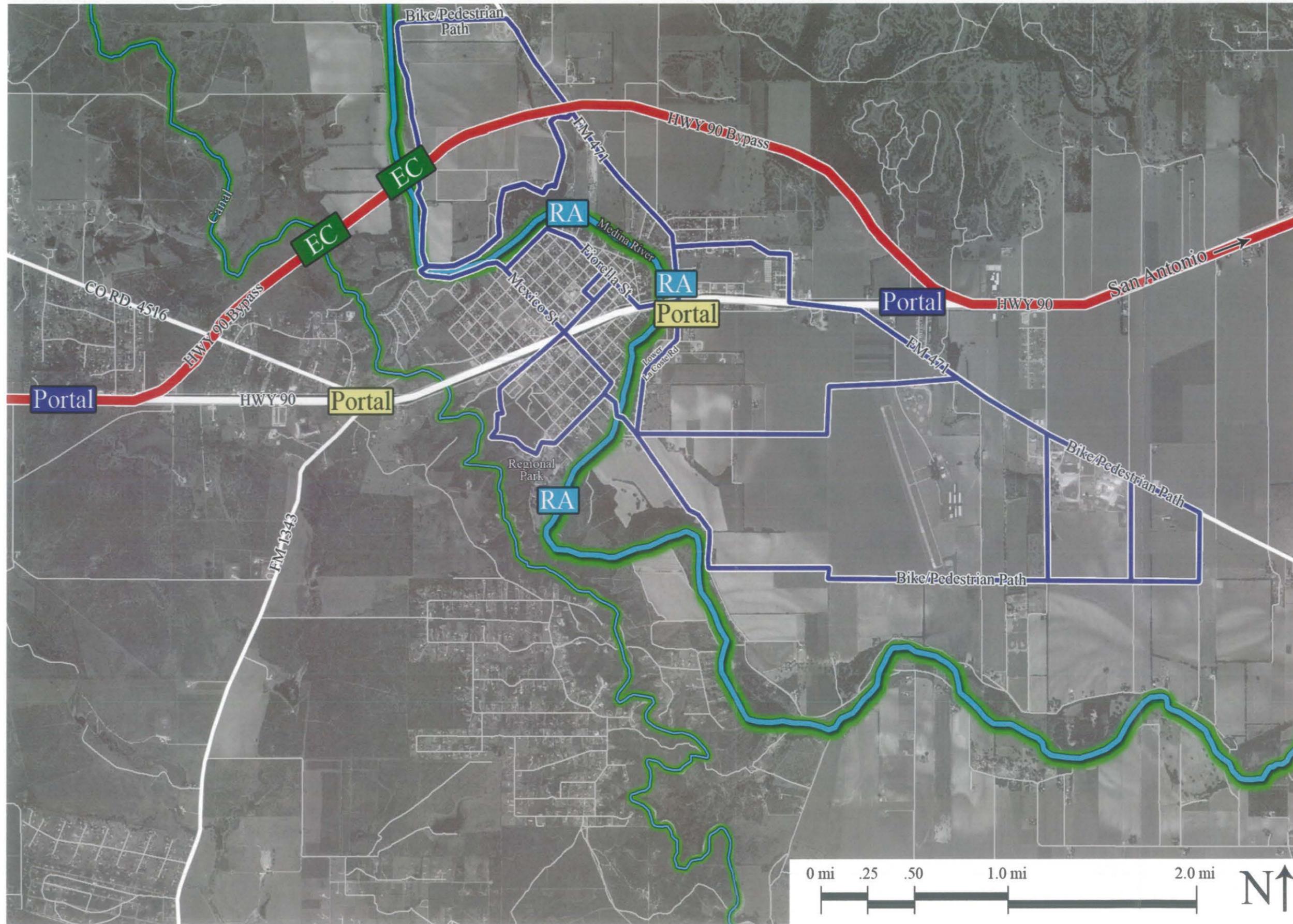
Access Point Examples

The existing river bottom needs to be cleaned in order for it to function as a recreational destination and to create a beneficial resource for the City. A clean river is promoting a **healthy community** for the city and additionally promotes the **identity**. The proposed river access points are created to provide an active, entertaining attraction for visitors and residents to interact with the Medina River and the surrounding city. The result is increased **tourism** in Castroville. Furthermore, it also increases the **economic viability** through more tourism. The proposed river access can also provide better **accessibility** for the residents and visitors. As a whole, the proposed river access provides a better **function** to the city than currently exists.



# Castroville, Texas

## Agricultural Greenbelt Circulation Plan



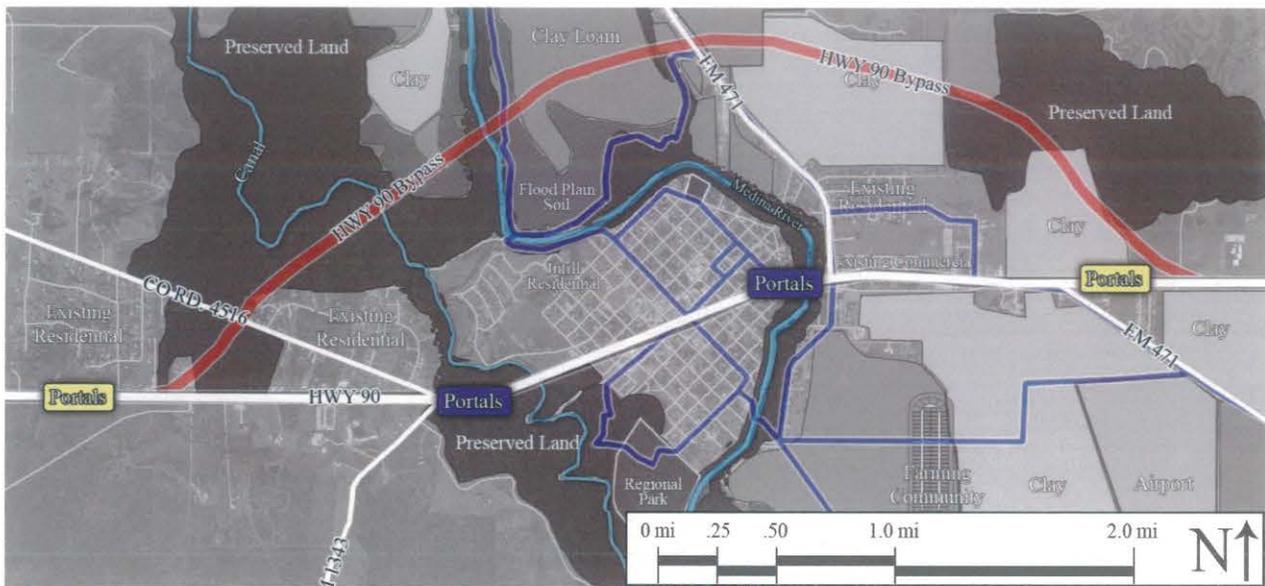
- EC** Ecological Corridor  
Pass Under Roads
- EC** Ecological Corridor
- RA** River Access
- Portal** Outer Portal
- Portal** Inner Portal
- HWY 90 Bypass** HWY 90 Bypass
- Non-Motorized Transportation** Non-Motorized Transportation
- Medina River** Medina River
- Collector Roads** Collector Roads

## PROPOSED CITY REVITALIZATION

It is not only important to enclose the City of Castroville in order to mitigate urban sprawl from the City of San Antonio, but also to revitalize the City's core to reach its utmost potential. As a result, Castroville will become more economically sustainable. By encouraging infill development and revitalization of existing features the City of Castroville can regain, enhance, and preserve its unique cultural character. In this section, focus was directed to those features that were considered to be of greater potential as a starting point such as the City's entrances, US Highway 90 design, and downtown street design. In order for revitalization to be economically viable, phases need to be implemented. Revitalization would start with the historic core of Castroville. Next, expansion beyond the previously revitalized district, once additional funds become available. This process is repeated until all renovations are complete.

### Portals

Providing portals on the east and west entrances to the City of Castroville on US Highway 90 is important to promote a sense of **identity**. Four portals are proposed, two being at the city limits on highway 90 (east and west) and two entering the core city. The following image shows the location of the different proposed portals.



*Proposed Portal Map*



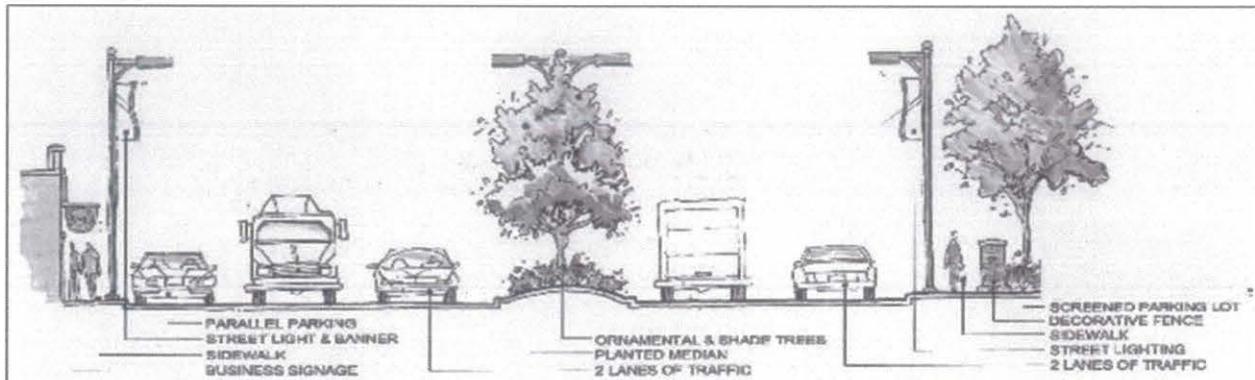
*Portal Signage Options*

The proposed portals and entrance signs are to be unique and must represent the character of the city of Castroville, which will consequently **promote tourism** and invite passers-by to visit the city. The previous pictures are examples of what other cities have done with their signage to better represent themselves.

### Highway 90 Re-Design

The implementation of the proposed bypass will provide the opportunity for highway 90 to become a boulevard, on which the following proposed design features can later be applied:

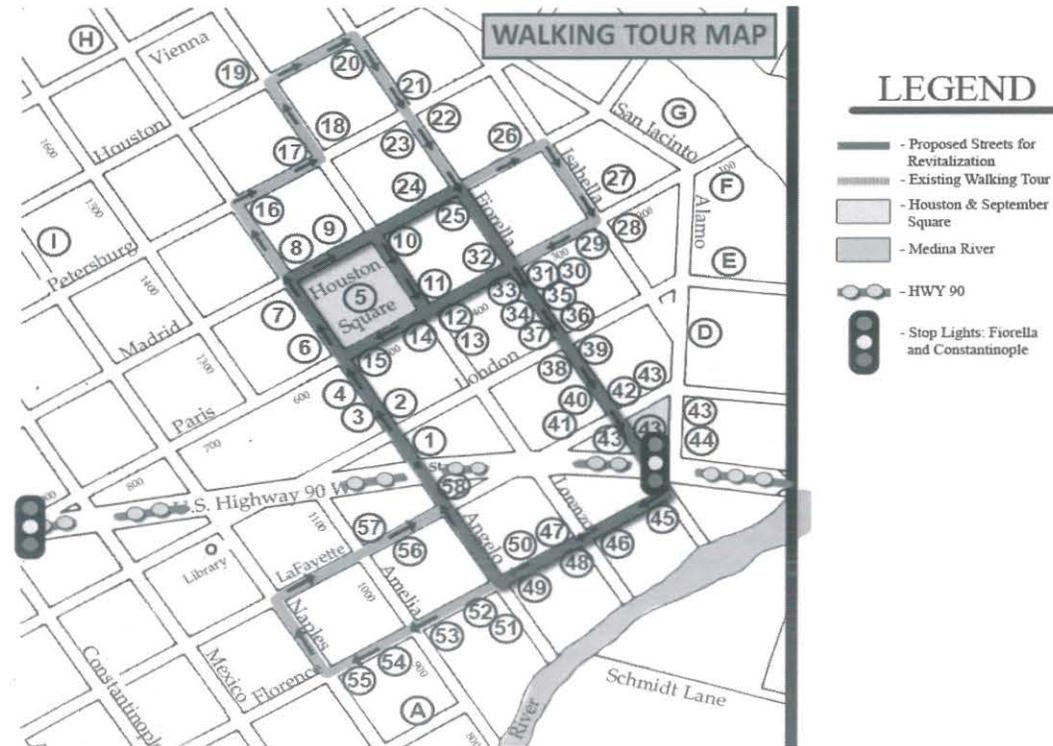
- Address Hwy 90 streetscape
- Link north and south of Castroville at major intersections – as Fiorella and Mexico streets
- Sidewalks – along highway 90
- Safer crosswalks
- Tree plantings
- Pedestrian islands
- On-street parking
- Adjustment of traffic signal timing



*Proposed cross section of highway 90 going through the core city of Castroville*

By implementing the proposed design features, pedestrians, cyclists, and automobile drivers will be better accommodated for **safety**, creating a thoroughfare network system that will consequently promote alternative modes of transportation within the city, such as walking and biking. As a result, a **healthy community** is encouraged. Also, it will improve the **function** within and throughout the city of Castroville rather than the City being divided into the north and south areas. The image above represents the proposed design ideas to be implemented on US Highway 90 Business after the execution of the proposed bypass.

## Downtown Street Design

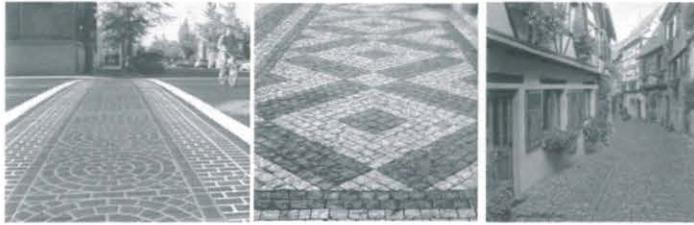


*Edited Walking Tour Map*

The walking tour map above shows the streets proposed to be redesigned in downtown Castroville. The streets included in this proposal encompass important sites and destinations such as the Fiorella Street, Castroville City Hall, St. Louis Church, Houston Square, September Square and Landmark Inn. It focuses on the historically significant places in the city and connects them through pedestrian trails. The downtown street revitalization has a significant impact on the City and includes the following design suggestions:

- Gateways that announce that one has entered the Historic City Center
- Amenities such as trees that serves the purpose of forcing vehicles to slow down and provide shady walking areas (no curbs is necessary)
- Intermittent parking so that cars do not form a wall of steel between the roadway and homes or businesses
- New paving patterns to create a more attractive and comfortable walkway surface

The proposed street paving pattern can range from simple bricks design to a varying geometric design in colors. The paving pattern serves its purpose as a visual attention alert for both drivers and pedestrians.



*Street paving Options*

The signs on the stores can be altered to show more characteristics of the City’s Alsatian heritage and by adding banners to the street lamps, a unique character can be created in the downtown area. The store signage and banners demonstrate a unique environment for the visitors to attract more tourists.



*District Signage Options*



*Light pole/Banner Options*

A street sign with unique character can distinguish itself from other areas. It can create easy way-finding for the visitors into the town and can also separate the historic downtown areas from the residential areas nearby.

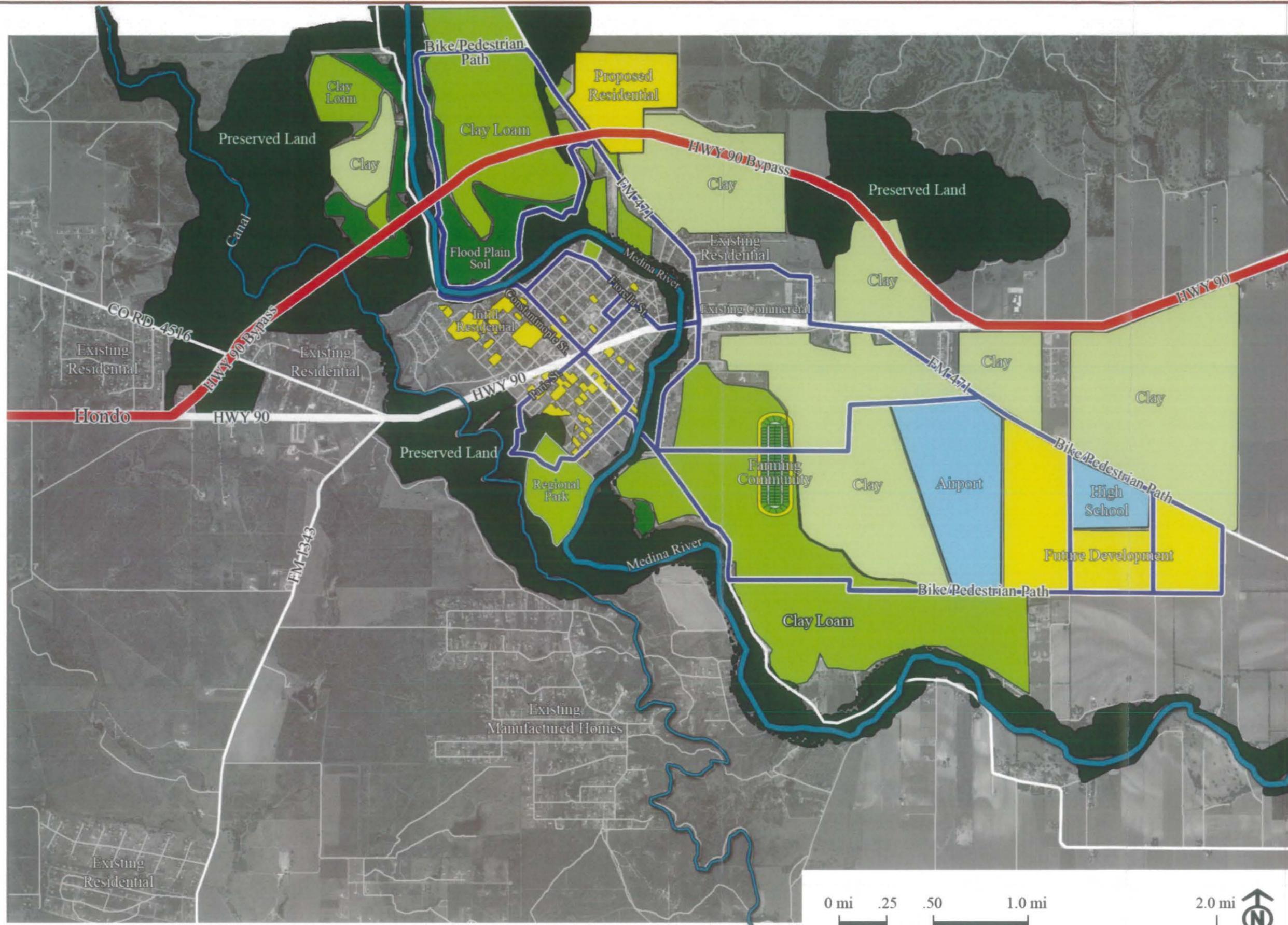


*Street Signage Options*

The proposals for the downtown street design emphasize **accessibility, tourism, identity, function, economic viability, and safety**. The proposed downtown street design can create easier way-finding for the visitors coming into the city, which in turn can also improve **accessibility** within the city. The City of Castroville has a rich historic heritage and cultural background. By **revitalizing** the downtown streets the City can emphasize its culture to attract more **tourism** and bring in additional revenue. The proposed downtown street design incorporates paving patterns for pedestrian sidewalks as opposed to curbs. The paving pattern can alert the drivers to stay on the path and designate a walkway for the pedestrians. The paving pattern is also proposed in the crosswalk areas in the City to further improve on the pedestrian **safety**. Overall, the proposed downtown street provides a better **function** for the City.

# Castroville, Texas

## Agricultural Greenbelt Master Plan



- Soils Within the Greenbelt**
- Soil in Flood Plain
  - Clay Loam Soil
  - Clay Soil
- Land Use**
- Preserved Land
  - Existing Parks
  - Public or Institutional
  - Future Development
  - HWY 90 Bypass
  - Non-Motorized Transportation
  - Medina River
  - Collector Roads

Crop Sugestions for Agricultural Greenbelt

Crop	Scientific Name	Varieties	Soil Requirements	Water Requirements	Soil pH	Drainage	Optimun growing season conditions	\$/acre	In Region (Acres)
Bell Pepper	<i>Capsicum</i> sp.	Aladdin, Jupitern Capistrano, Supersweet	fine sandy loam	25 to 35	pH 6.0-7.5	well drained	80-90F day, 65-70F night	3400	500
Blackberries	<i>Rubus</i> sp.	Navaho, Choctaw, Rosborough, Arapaho	best in sand but tolerates wide range		pH 4.5- pH 7.5	well drained	zones 7-9	6500	80
Cabbage	<i>Brassica oleracea capitata</i>	Cheers, Emblem, Pennant, Red Rookie, Red Jewel, Cardinal	fertile, medium texture	20 to 30	pH 6.0-7.5	well drained	60-70F day, 40-50F night	4100	1700
Carrot	<i>Daucus carota</i>	Apache, Caropak, Navajo, Cheyenne, Sugar Snax, Choctaw	tolerates wide range, sandy loams	10 to 15	pH 6.5-7.8	well drained	60-75F day, 45-50F night	3400	1400
Cumcubmers	<i>Cucumis sativus</i>	Poinsett 76, Dasher II, Turbo, Supersett, Slice Master, Daytona	wide range, prefers sandy loam	20 to 25	pH 6.3-7.5 (as low as 5.5)	well-drained	80-90F day, 60-70F night	1600	6200
Fig	<i>Ficus carica</i>	Celeste, Texas Everbearing, Kadota, Magnolia	tolerates wide range		pH 6.6- 7.5	well drained		3200	0
Grapes (wine)	<i>Vitis</i> sp.	LeNoir, Blanc duBois, Riesling, Chardonnay	sand to clay		varriety of pH	well drained, 30-40" deep	73F-83F day	3800	1000
Green/snap beans	<i>Phaseolus vulgaris</i>	Strike, Benchmark, Landmark Opas; Flatpot:	silt loams	10 to 15	pH 5.5-6.8	well drained	80-85F day, 55-60F night	1100	4100
Olives	<i>Olea europea</i>	Ascolano ornanerta	sand to clay		pH 5.5- 8.5	well drained, drought tollerant	best at 70F dies at 10F	400	0
Onion	<i>Allium cepa</i>	Mercedes, Sweet Sunrise, Utopia, Ole; White: Monsoon, TX Early White,	Fertile, sandy loam, will tolerate wide range	25 to 30	pH 6.0-8.4	good moisture, well drained	planting mean temp 60F, bulbing 70-80F	5200	2000
Peach	<i>Persica vulgaris</i>	Texstar, Loring, Dixiland, Redskin, Melba	sandy loam to well drained clay		pH 6.0-7.0	excellent drainage		8200	1700
Pecans	<i>Carya illinoensis</i>	Sioux, Choctaw, Kiowa, Wichita, Pawnee, Caddo	clay, to loam or sandy loam		pH 5.5-6.5	well drained		1200	49000
Potato	<i>Solanum tuberosum</i>	Russet Norkaotah, Atlantic, Yukon Gold, Red LaSoda, Ciking	sandy loam, sandy clay loam, loamy sand	20 to 40	pH6.0-7.8	well drained	75-85F day, 50-60F night	2800	6500
Southern Peas	<i>Pisum sativum</i>	Blackeye: Ark #1, Blackeye #5 & #46; Crowder: Brown Sugar Crowder	fine sandy loam, to light sandy clays		pH 6.0-7.5		85-95F day, 60-65F night	400	2000
Strawberry	<i>Fragaria virginiana</i>	Sequoia, Allstar, Cardinal, Douglas, Pajaro	sandy		acid to pH 7.5	well drained		3600	100
Tomato	<i>Lycopersicon esculentum</i>	Celebrity, Carnival, Summer Flavor 5000, Spitfire, Sanibel, Sunrise	sandy loams	20 to25	pH 5.5-7.3	well drained	80-85F day, 60-70F night	1400	100
Watermellon	<i>Citrullus lanatus</i>	Summer Flavor 800, Sangira, Royal, Sweet, Big	deep, light textured soil	10 to 15	pH 5.0-8.0	well-drained	80-95F day, 60-70F night	2300	5800

(Source: aggie-horticulture.tamu.edu/commercial)



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## Design Emphasis Areas

Emerging from the analysis of the Urban Development Scenarios were a number of areas within the community that would benefit from specific redesign and redevelopment efforts. These areas are located throughout the City and its immediate environs. These redevelopment sites, it is believed, represent the most effective areas for revitalization attention over the next decade. Once these areas have been refurbished, other sites will be seen as needing similar attention later.

The site redevelopment proposals presented here are intended to prompt the Community to serious consideration of exactly what it collectively wants in its future and on that basis determine for itself a specific course of revitalization action for these target sites. It is further intended that the proposals will prompt active discussion to reach these conclusions based on a vision of what might be possible in an altered future condition. There is little doubt that the community will change drastically over the next two decades due to pressures from growth emanating from outside the City. These proposals will have satisfied their purpose if they serve to reveal that alternatives to the existing condition of the community are both likely and that it is within the power of the community to shape those changes in a desired path.

The Areas of Design Emphasis described below include:

- **Gateways to the City**
- **Roadside Treatment of Highway 90 Through Town**
- **Redevelopment of September Square**
- **Redevelopment of Houston Square**
- **Steinbach/Landmark Inn Connection**
- **Redevelopment of Fiorella Street/ Historic Walking Tour**
- **Redevelopment of the Public Works Property**
- **Redevelopment of Houston Street Park**
- **Medina River Access Street Treatment**
- **Redevelopment of Cross Hill**
- **Roadside redevelopment of the Cemetery**



## Introduction

The ultimate goal of a portal is to provide recognition of Castroville to those travelling along Highway 90. There is currently no indicator to inform travelers that they are entering a unique or culturally significant place. The locations proposed will act as gateways to the city and enhance the overall experience of visitors to Castroville.



## Designs

### East Portal:

The eastern portal into Castroville is significant because it is the main entry used by those travelling to and from San Antonio. The materials used in the portals are native to Castroville and symbolic of the construction style that is typical in this area. Other visual aspects such as the trees and stone formation are also important. These features visually demand the attention of those traveling along Highway 90. By including such visually demanding features to a portal, it forces visitors and residents alike to notice a change in scenery and as a consequence of that change, they will notice they are entering a unique region of Texas.



West Portal:

The western portal into Castroville takes advantage of a beautiful vista as they travel east. This vista provides an overlook of the city of Castroville. The view is introduced by a natural style of features including boulder formations, stone sign, and a revitalization of existing pavilions.



Bridge Portal:

The bridge portal is a significant gateway into Castroville because it denotes the beginning and end of the historic downtown district. The downtown district is a focal point of Castroville so it is important to frame this area to make sure it can be noticed while traveling with any form of transportation. The bridge portal design will be covered during the Steinbach House & Landmark Inn Connection portion of the report.

## Introduction

State Highway 90 is a five lane highway that bisects Castroville, Texas. Running from the Northeast to the southwest side of the city, the highway diagonally cuts through the grid street pattern. Throughout the length of the highway there is a center turning lane. This site design is focused on Highway 90 starting at the Steinbach House to the east and ending at the canal to the west. The purpose of this design proposal is to increase the safety for pedestrians, bikers, and vehicles while improving the visual quality along Highway 90 and its relationship to the historic town center.

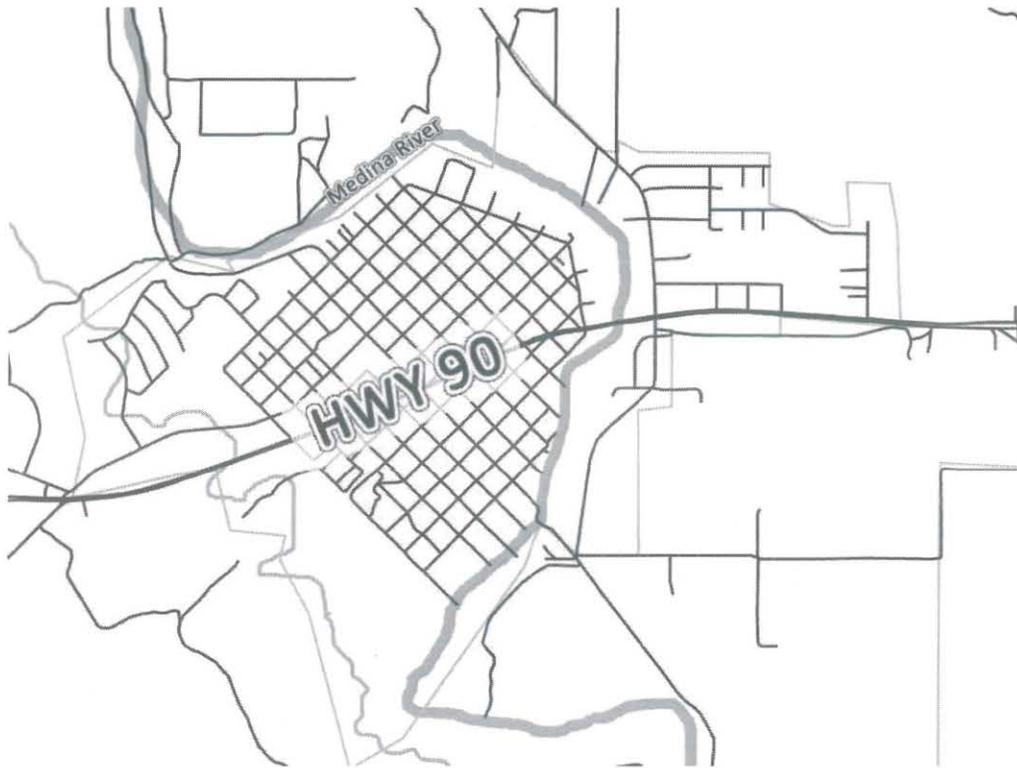


Figure 1 Location map

## Existing Conditions

Currently, Madrid, London, and Paris Streets, cross Highway 90 at acute angles, which creates dangerous intersections due to blind sightedness for left-hand turns. Additionally, the center turning lane serves both directions of traffic simultaneously. The turn lane lacks traffic separation for turning automobiles, creating situations that encourage head-on approaches. Next, sidewalks exist in certain areas and not in others producing a discontinuous path throughout the City. The sidewalks need to be connected along Highway 90, otherwise, the non-vehicular traffic is forced to walk on roads or driveways without any physical or physiological protection from the fast moving traffic. Therefore, the sidewalk's unsafe conditions discourage users from actively utilizing the non-vehicular methods of transportation, such as walking or biking. Presently, the few intersections with crosswalks have fragmented paint, and are indistinguishable in comparison to their surroundings. Also, the short timing of the crosswalk

discourages pedestrians of all capabilities from crossing the street in a safe manner. Furthermore, the crosswalk lacks a pedestrian refuge, or stopping place, for those unable to cross streets within the allotted time. Lastly, many driveways are hardly distinguishable from the highway because there are no curbs, paint markings, or other indications. This fails to notify drivers of entrances causing confusion and creates a hazard for pedestrians and bikers utilizing them as paths, as well as for motorists passing through.



**Figure 2** Existing Conditions: indistinguishable driveways (Source: Google Maps)



**Figure 3** Existing Conditions: Invisible crosswalks and acute intersection angles (Source: Google Maps)



**Figure 4** Existing Conditions: Sidewalks that do not continue (Source: Google Maps)

## Goals

In order to express the **unique identity** of Castroville, our design proposal incorporates paved medians, walkways, bikeways, and crosswalks. Porous brick pavers are proposed to mimic the brick paved streets seen in Alsace, France. Adding flowering plants to the center median is to visually symbolize the Alsatian hanging flower boxes by bringing color to the street.

To ensure the **safety** on Highway 90 for both motorized and non-motorized traffic, this design proposal recommends the adjustment of the crosswalk timing to allow all people to cross the highway safely. The medians are to create a safe refuge from the high traffic speeds on the highway for people unable to make it across the road within the allotted crossing time. The brick pavers on the medians, crosswalks, walkways, and bikeways increase the visibility of pathways. Furthermore, the design proposes tree lined streets to enhance the user's perception of safety. The trees visually enclose the road, thus enticing drivers to reduce their speeds. By eliminating left hand turns and their acute angles of intersection at Madrid Street, Paris Street, and London Street, the drivers may only turn in only one direction reducing the risk of collision. Additional safety is provided by the brick pavers that connect the north and south sides of the highway by making the crosswalks, pathways, and medians more visible. The placement of the medians and the bioswales prevent access for crossing or turning in unsafe place for both vehicular and non-vehicular traffic. The sidewalks are separated from the road by a bioswale so that changes in road elevation do not affect the separation of vehicular and pedestrian traffic.

This design proposal encourages a **healthy community** by establishing multiple path systems. This enhances people's ability to get where they need to go easily, quickly, and without the use of motorized vehicles. Thus, the **environmental health** benefits as well by reduced carbon emissions. The porous brick pavers on the crosswalk and sidewalks assist with drainage issues by allowing water runoff from the highway to be absorbed into the soil in the bioswale more readily. This plan proposes diverse vegetation, which improves environmental productivity and produces healthier environments.

## Design Concept

By designing the length of Highway this proposal addresses the problems as a whole. Noting the major and minor routes of travel, key intersections, current building locations and important features helps illustrate the areas of focus on Highway 90. For example, pedestrian crossings at the lighted intersections, indicated by the circles and the square, were areas of concentration due to their exceptionally unsafe nature. Additionally, Madrid, Paris, and London streets, indicated with triangles, meet HWY 90 at acute angles. The design proposal focuses on these intersections in order to make them safer.

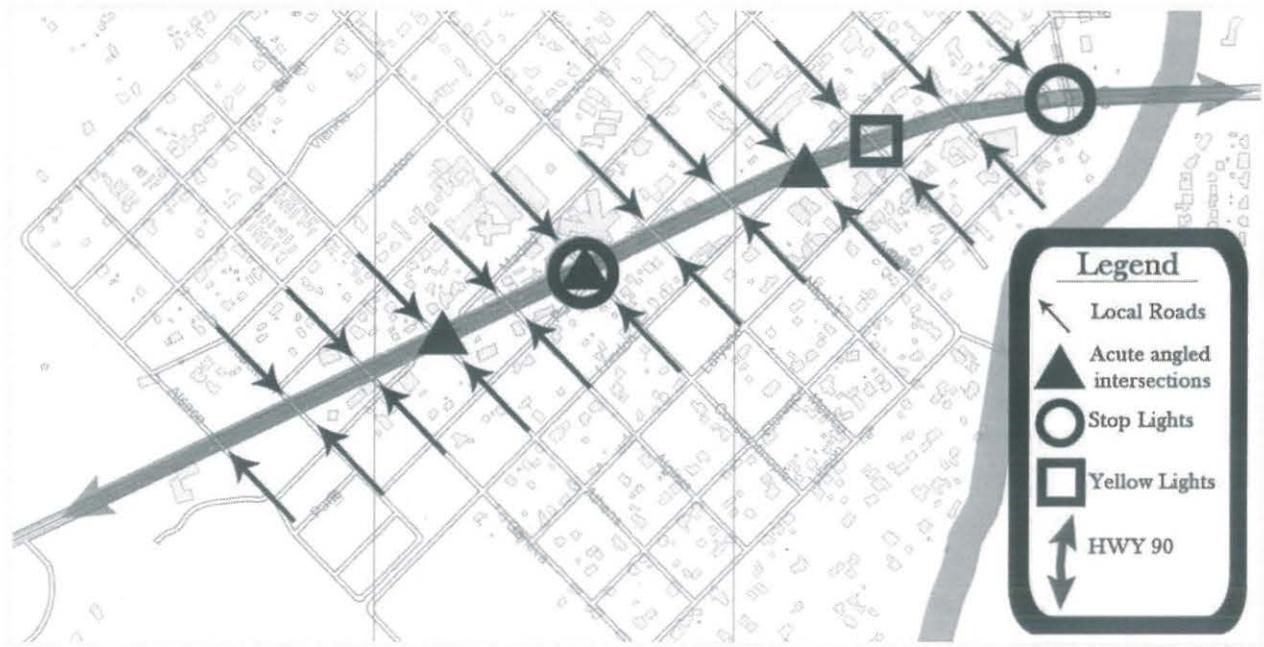


Figure 5 Concept Map

## Design Proposal

### Region One

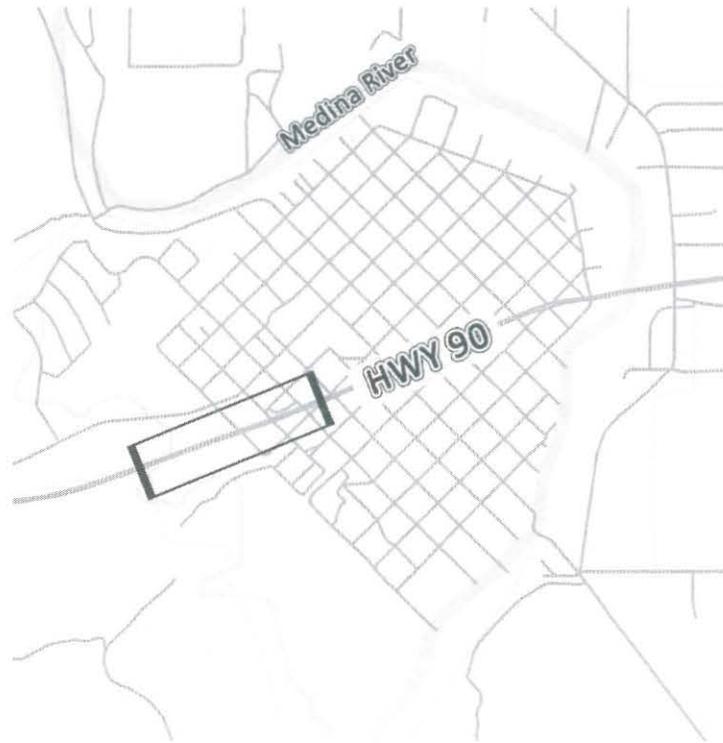


Figure 6. Location of Region One

In the southwest area of Highway 90, the amount of trees diminishes in order to preserve the beautiful view that one sees when entering the city from the hill. The median and the paths are not present on the southern most section because the existing shoulder drops off and the median slowly fades away.



Figure 7. View from the hill

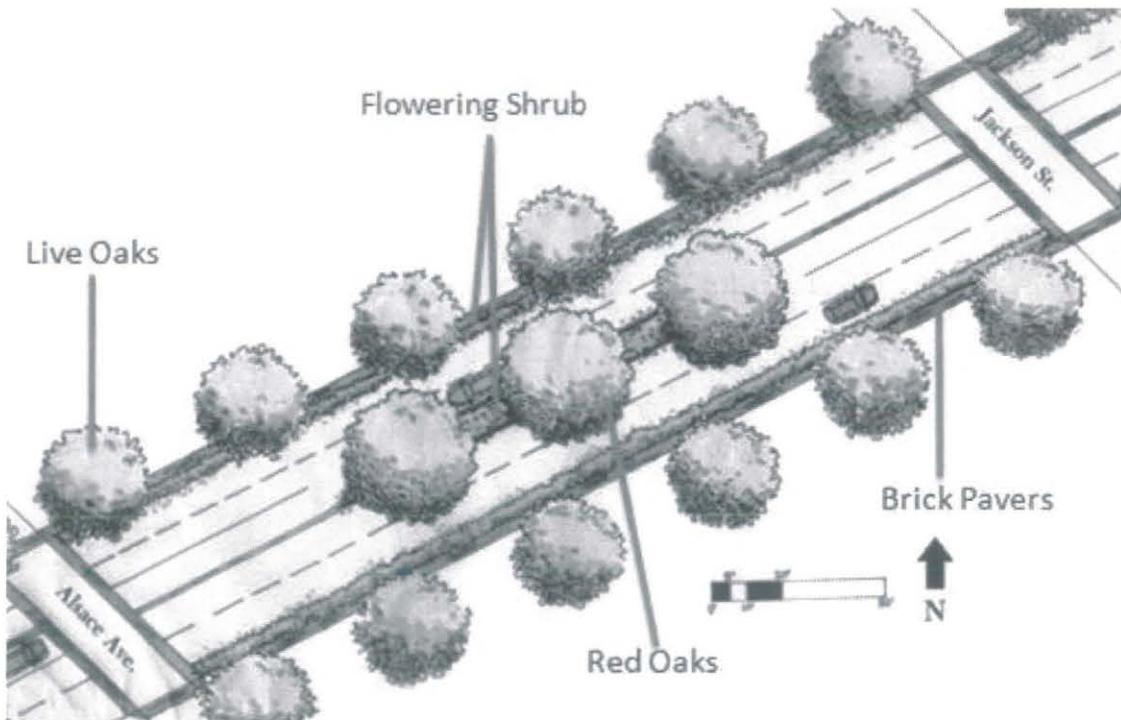


Figure 8. Design Proposal Plan

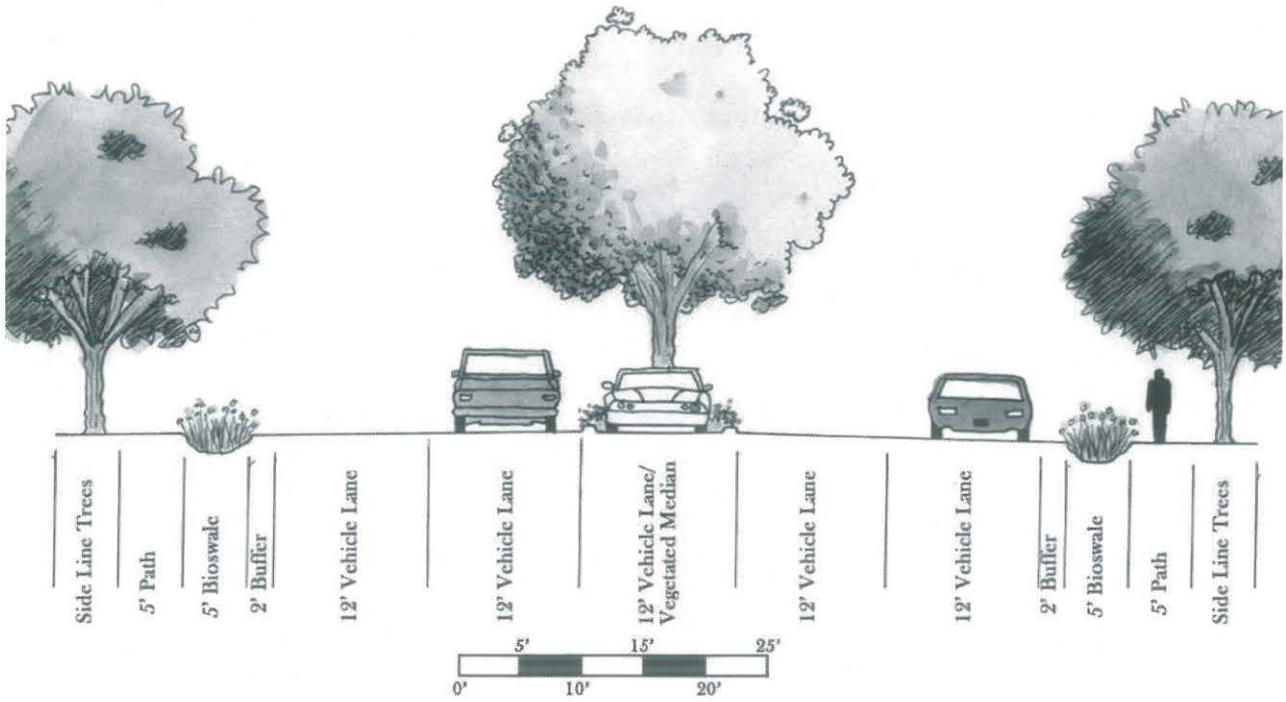


Figure 9. Section of overall design proposal

### Region Two

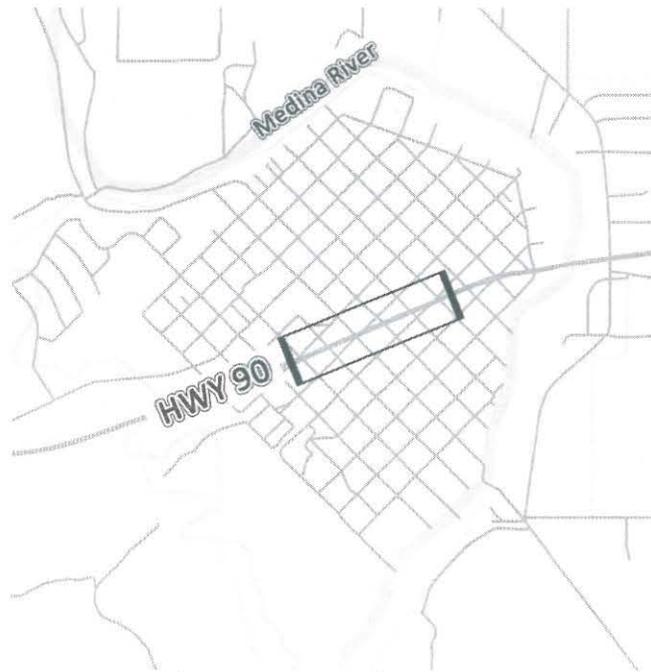


Figure 10. Location of Region Two

As illustrated by Figure 10, Region Two starts at the intersection of Madrid St. and Highway 90 then continues to London St. Currently, the conditions of Highway 90 create unsafe settings for vehicular and non-vehicular traffic at each of these intersections due to the acute angles of junctions.

After analyzing access requirements on the north side of Paris St., between Highway 90 and Mexico St., the proposal utilizes this section for solely non-vehicular traffic, which is illustrated by Figure 13. This section, referred to as the Paris connection in this report, has no property access to the north side of the road and the southern property has access from Highway 90. This section of trail is blocked with bollards to prevent automobile usage, paved with porous brick pavers matching the sidewalk system and lined with trees to provide comfort.

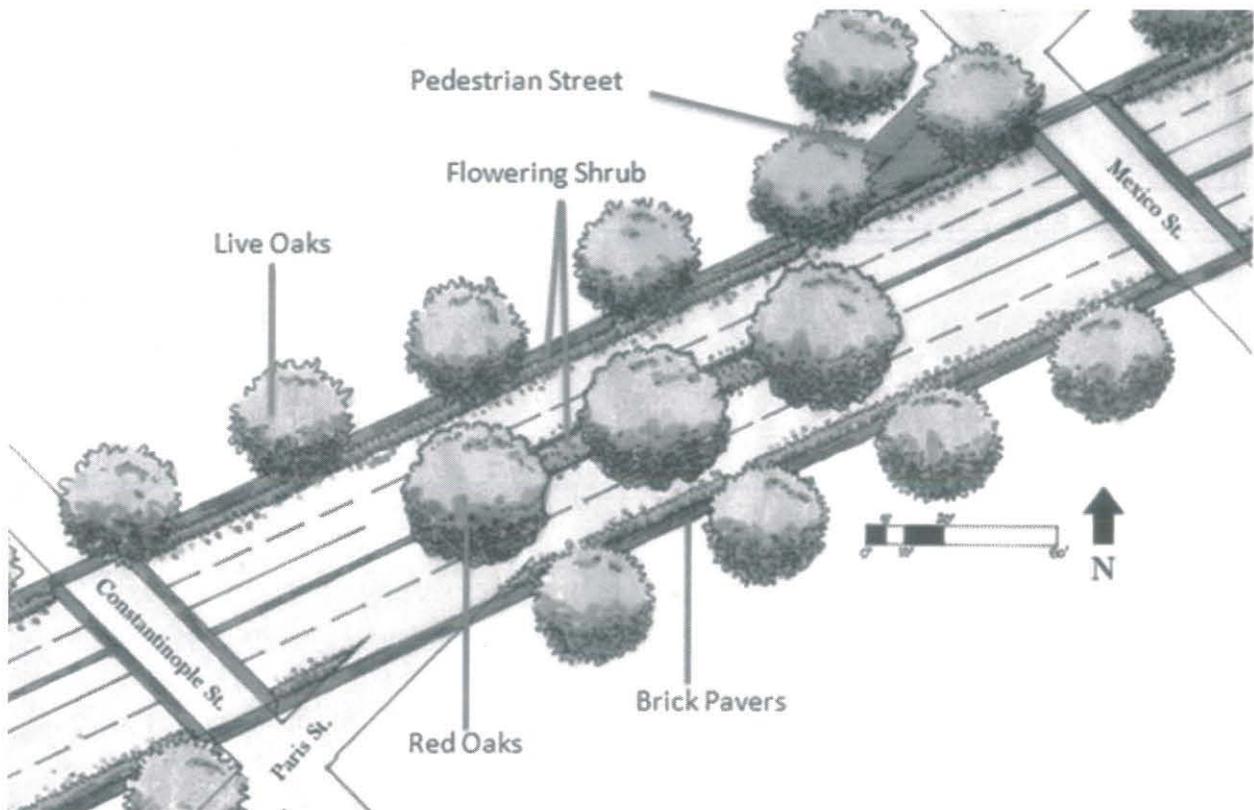


Figure 11. Design Proposal Plan



Figure 12. Perspective of street view

The other intersections of Paris St., Madrid St., London St., and Lafayette St. are limited to right-hand turns by continuing the median since limited visibility makes left turns dangerous. The median opens at Athens St., Algiers St., Constantinople St., and Mexico St. so vehicles may still make the necessary left or right handed turns. Figure 13 shows the Paris Connection and how acutely angled streets met Highway 90.

Lastly, Figure 12 demonstrates the street design features showing the enclosure of trees, the bioswale, the sidewalk, and the paved median. The street design features enhance the user's experience when driving through town while meeting all the design goals.



Figure 13. Paris Connection

### Region Three



Figure 14. Location Map Region Three

This area of Highway 90 is located adjacent to the historic district near the Steinbach house, Landmark Inn, and September Square and Highway 90 serves as a connection between these sites. This area is also a portal to traffic entering the City from the east and also acts as a portal to the historic district.

The proposed plan, shown in Figure 15, illustrates the increased connectivity between September Square and the newly proposed brick paved crosswalk. This is done through increased visibility of the sidewalks and crosswalk by using brick paving the sidewalks and crosswalks, which is to remain uniform along the highway. By designing these sidewalks and crosswalks to have greater visual impact for both pedestrians and vehicular traffic, it creates a safer environment for both. In the center turning lane there is a proposed bricked and vegetated median to create safer conditions for both pedestrians and vehicles. The twelve foot wide median creates a place for pedestrians to stop safely while crossing the road. The trees in the median and on the side of the highway visually enclose the highway to encourage drivers to slow down.

In this proposal for Region 3, there is a visual break in trees and vegetation on Highway 90 in front on September Square and Landmark Inn. This is designed to draw attention to and make users aware of the significant views.

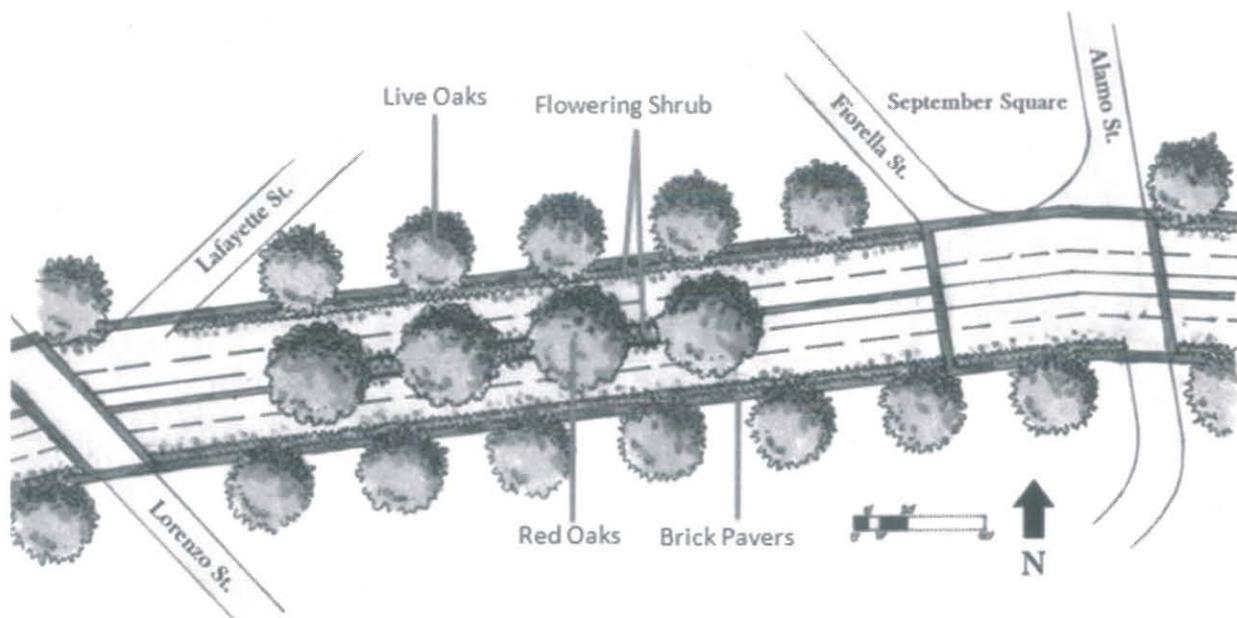


Figure 15. Region Three Design Plan

Figure 16 shows the bridge on Highway 90 looking from the Landmark Inn area across the Medina River to the Steinbach House. This figure illustrates the two proposed viewing platforms on either side of the river overlooking these important historical areas. These platforms create a place to stop along the historic walk to take advantage of the scenic views of the Medina River and the historic landmarks.

Figure 17 illustrates the visually striking entrance proposed for entering the City from the east across the bridge. Located on each of the light poles along the highway are banners each display important aspects of the town such as the historic walk, dining and popular places to visit. Doing this will create a clearer portal into Castroville and allow visitors to know what is available to them. Figure 17 illustrates the usage of a low fence along the sidewalk on either side of the bridge, creating a safe passage for pedestrians across the bridge.

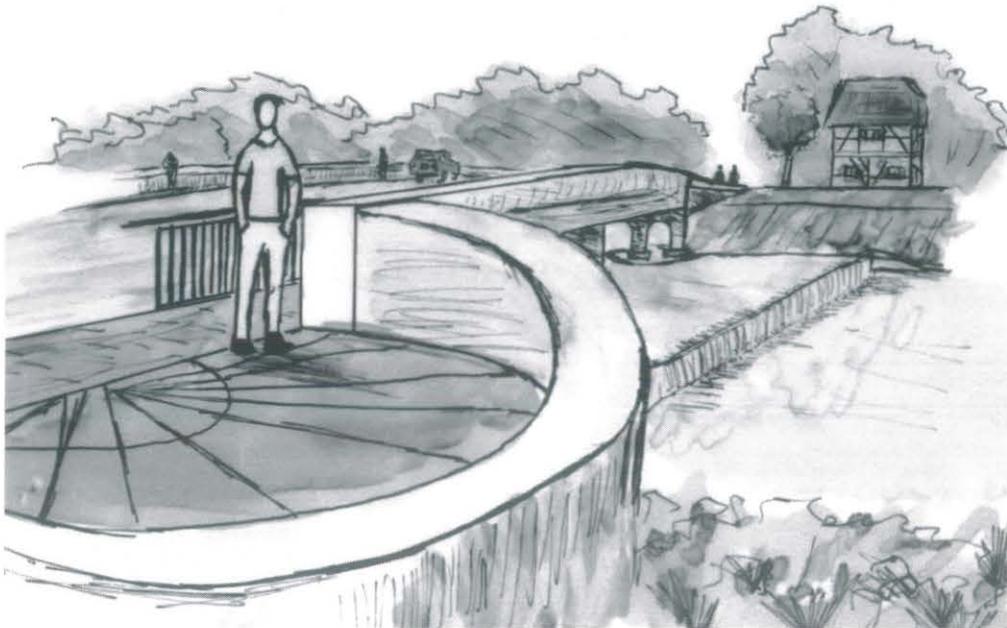


Figure 16. Viewing Platforms looking from Landmark Inn across the Medina River



Figure 17. View from Highway 90 Bridge coming into town. Landmark Inn is on the left hand side.

### Conclusion

With this design proposal, the safety of both motorized and non-motorized traffic would be increased. The visual quality of the City, as well as the preservation of its unique cultural and architectural identity would be preserved. The health of the citizens and visitors alike would be enhanced through the increased use of more visible pathways. The adjustments made to crosswalk timing would also assist in creating a safer environment. The environment will benefit too through the reduced use of vehicles and increased amount of vegetation. Highway 90 is an integral part of Castroville and should be treated as such. This proposal sums up the highway's main issues and attempts to resolve them through design.

Prepared by: Gonzalez, Kelliher, & Reed

## Introduction

September Square is both culturally and historically important to the City of Castroville. It serves two functions, as a memorial and a gateway to the City of Castroville. The square observes the site in which Henri Castro and his fellow pioneers first settled on September 3, 1844. It also commemorates the brave men and women who served in both World War I and World War II. As a gateway to the City, it is located in a prime position along Highway 90 and within walking distance from some of Castroville's most cherished historic sites.

September Square currently faces conditions that do not allow for its potential to be met as a memorial and a gateway. This section details existing conditions, the design goals, concept and revised plan for a newly renovated September Square.



Figure 1. West End of September Square. Source: Leslie Snyder

## Existing Conditions

- September Square is not distinctive and blends in with the streetscape along highway 90.
- The composition of the site does not have a clear hierarchy or defined spaces for reflection, gatherings and leisure.
- There are no specific paths for pedestrians to travel through the site.
- The main features of September Square are not visible from Highway 90.

## Goals

- September Square should act as a portal to the City of Castroville.
- The central space should be a memorial that symbolizes and upholds the history and dignity of those who founded Castroville and those who served with honor in World War I and World War II.
- September Square should have clear accessibility throughout the space and a clear connection to the historic walk.
- The open plaza should also provide clear visibility from Highway 90 and surrounding sidewalks to welcome visitors and the community to this historic gateway.

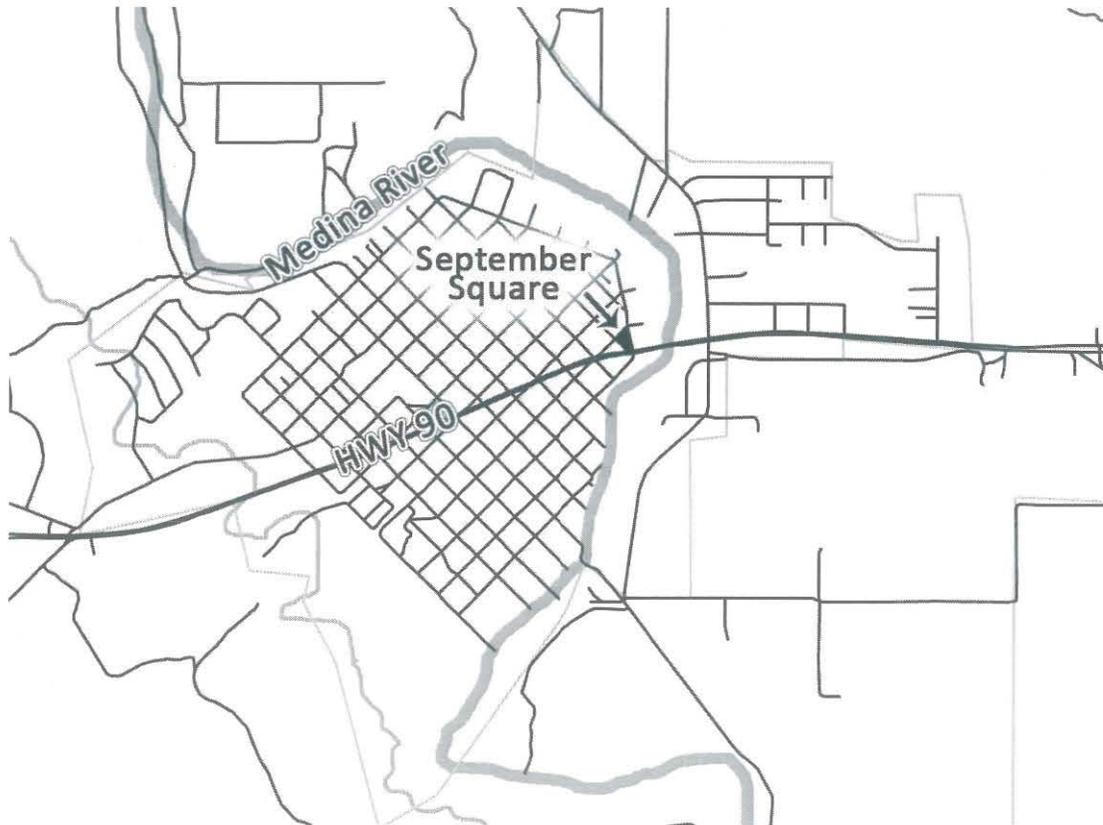


Figure 2 Context map for September Square, highlighted in Maroon. Source: Trace Harsh

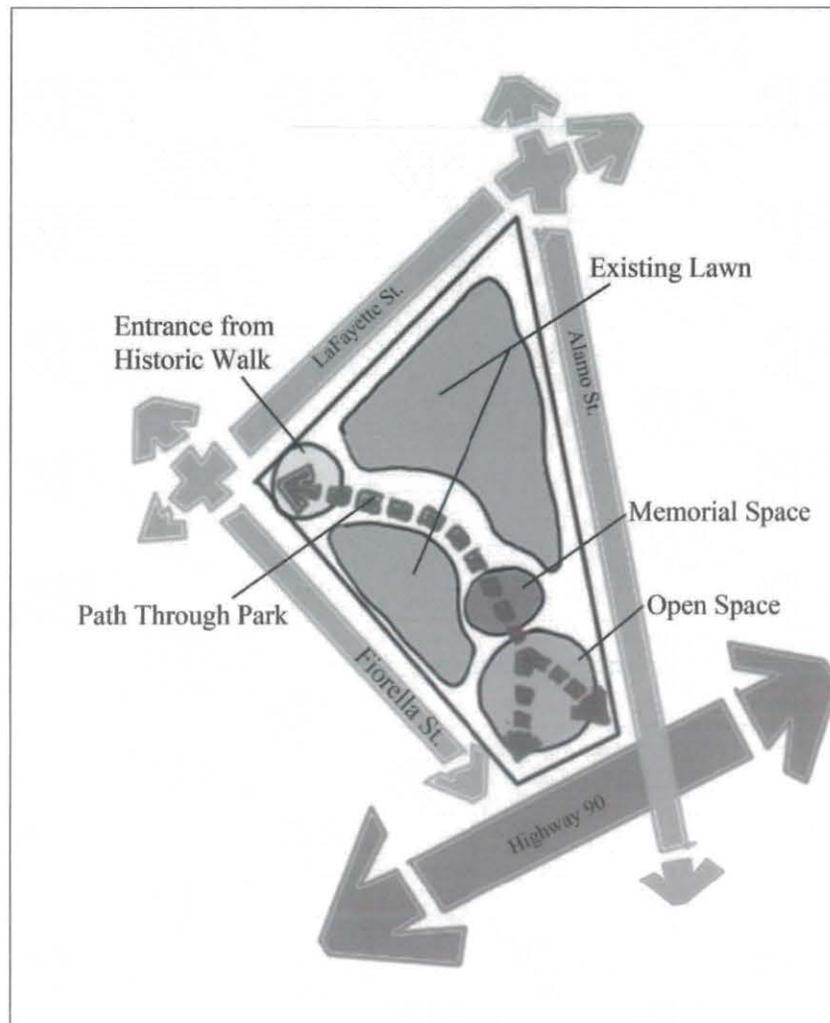


Figure 3. Concept diagram for September Square. Source: Jennifer Kelliher

## Concept Diagram

Because September Square is the portal into the historic district it is important that the park is highly visible from highway 90. In order to achieve visibility of the park as a whole as well as the memorials, open space is proposed on the south end of the park. The memorials have been moved south out from under the trees to increase visibility. September Square can connect pedestrians with other landmarks. The connection to the historic walk and Landmark Inn were the most emphasized. The northwest corner is the second entrance to the park that connects with the historic walk. The dashed arrows are pedestrian pathways. It is important to emphasize paths through the park so people can experience it as well bring focus to the memorials.

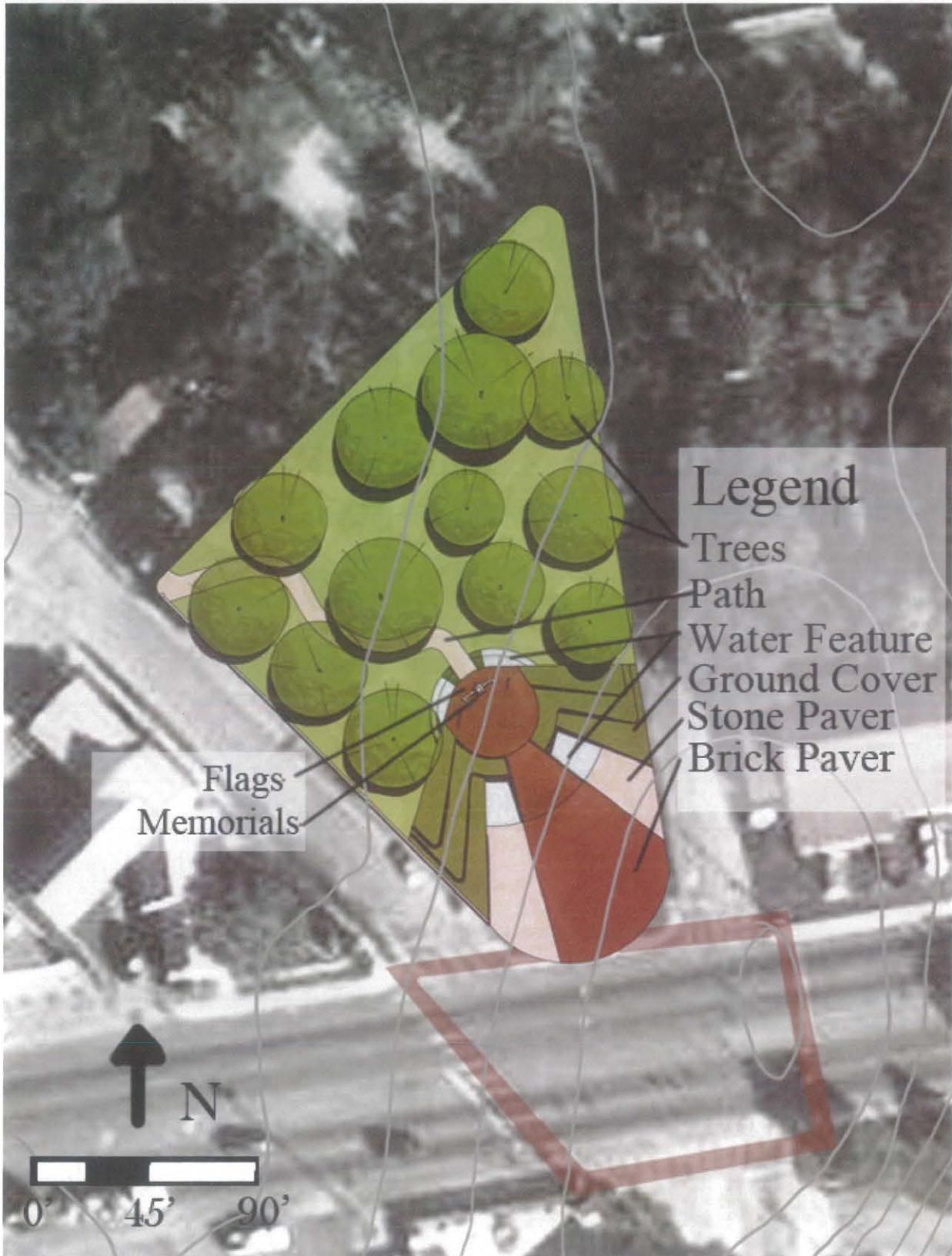


Figure 4. Location map of September Square. Source: Jennifer Kelliher

## The Plan

The memorial space was brought out from under the existing tree canopy and raised 3 feet in order to accentuate their significance. The three separate memorials have been combined into one structure with three plaques. It is important that they are combined so there is one focal point and one destination. This will also allow the memorials to become a single focal point and not detract from each other. Two flags were added, in addition to the United States flag, to enhance the cultural aspect of September Square and the City of Castroville: the state flag of Texas and the flag of Alsace.

An open plaza faces Highway 90 to allow visibility into the park and to the memorials. The north side of the plaza is lined with stepped terraces leading to the memorial. The openness and emphasis of horizontal lines from the terraces causes the south end of the park to more formal and auspicious. The stone and brick pavers radiate from the memorial as if they were open arms welcoming you to the space. This is important because it allows viewers to realize the importance of this place as a memorial and gateway to the City.

The North side of the Square is designed to inspire personal reflection and for peaceful gatherings. The fountains below the memorial add a soothing ambience, which enhances the mood and quality of the place. There is a winding path through existing trees that direct visitors to the memorial and to the Historic Walk. All of the existing trees on the north side are preserved, along with added trees, in order to provide plenty of shade for the walkway and grass areas.



Figure 5. A view of September Square as seen from Highway 90. Source: Alexander Gonzalez



Figure 6. A scene of a citizen experiencing the serenity of the memorial platform. Source: Alexander Gonzalez



Figure 7. Perspective of the limestone path leading to the Memorial as one would see coming from the northwest connection to the Historic Walk. Source: Alexander Gonzalez

Prepared by: Aragon, I. Z., Barrera, D.E., and Williams, C. M.

## Houston Square

Houston Square is situated in the center of the historic business district, across from St. Louis Catholic Church and adjacent to Lorenzo St., Paris St., Angelo St., and Angelo St.



**Figure 1.** Context Map of Houston Square

Houston Square has had many uses since its beginnings in 1844. It has served as sports fields for the St. Louis Catholic High School, as well as a parking lot for the Church and nearby businesses. One of the most important events that took place in Houston Square was the Car Show, which due to insufficient parking space, was later moved to an alternative location. Today, Houston Squares mainly functions as a park and parking lot, and is used for numerous community and historic events, such as:

- Farmers' Market and Market Trail Days
- Old Fashion-Christmas
- Procession from St. Louis Catholic Church
- Every day social activities
- Parking for St. Louis Catholic Church and adjacent businesses

Due to its historic and location significance, Houston Square is an important asset to the City of Castroville, for which redeveloped needs to be undertaken in order to address its current deficiencies, as presented by the following pictures.



**Figure 2.** Images of existing conditions in Houston Square

Photo courtesy of Iliana Z. Aragon

The pictures reveal:

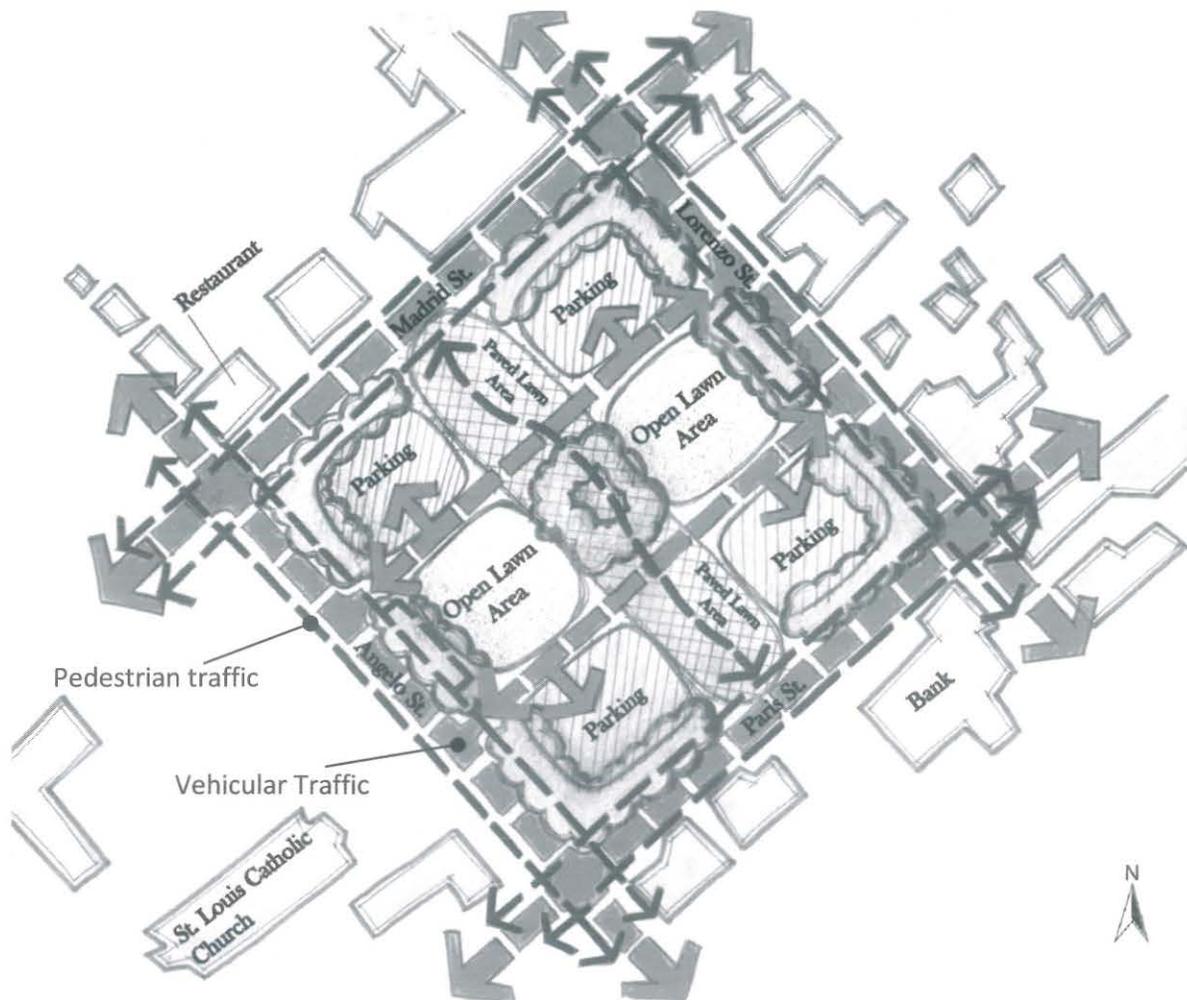
- Lack of clarity of edges
- Lack of designated pedestrian and vehicular paths
- Large asphalt area mainly used for parking is uninviting for pedestrian social, or recreational use
- Underutilized central square
- Lack of designated pedestrian and vehicular entrances and exits
- Lack of organization of parking lot

### Site Design

The proposed redevelopment concept for Houston Square re-emphasizes the area as a place for public activity as well as to retain the character of the City of Castroville.

#### Design Goals

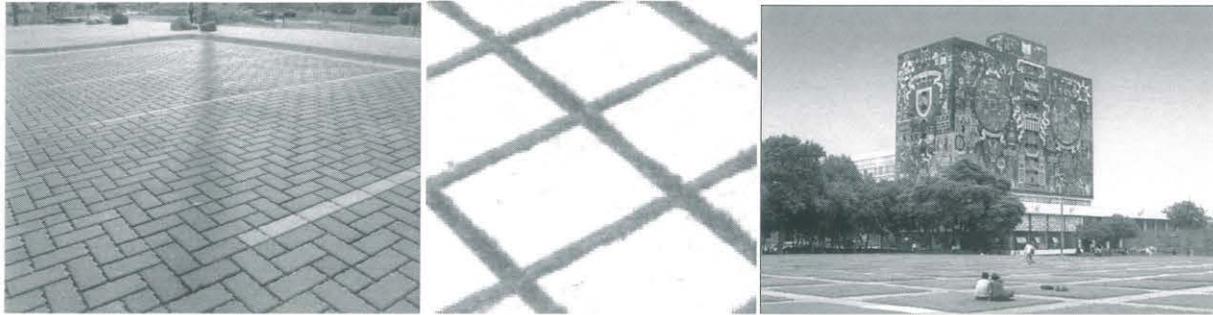
- Re-establish Houston Square as center for civic activity
- Enhance the community's unique identity
- Provide full accessibility to all users
- Safety
- Contribute to the improvement of Castroville's aesthetic character
- Functional organization
- Improve quality of life



**Figure 3.** Proposed Concept Plan

The proposed concept plan (Figure 3) portrays the schematic organization of Houston Square. The thicker arrows represent vehicular traffic around as well as within the square. The two paths transversely cutting through Houston Square, however, are not intended to function as main routes but instead, are just a point of access for vehicular traffic to enter the Square. Thus, the speed that these vehicles will be traveling within these areas will be relatively slow and will not compromise the safety of pedestrians. It will also not interfere with the social or recreational activities. The black arrows depict pedestrian traffic flow, which travels in a rather formal way on the outer edges of the square, and in a more casual manner within the square. Tree masses are provided around and within this place. The purpose of this design is to have a versatile square that will serve many functions of the town by providing a multi-use open space while also meeting the needs of parking around Houston Square.

The materials proposed in the design of Houston Square are to aid in better storm-water management, as well as reduce the urban heat island effect. The following images consist of porous pavers for the parking lot, turf paving for the driveways, and large grass squares lined with concrete pathways for the large recreational areas:



**Figure 4.** Proposed Paving Materials. Source: [http://www.minnehahacreek.org/images/PorousPavers-2008CleanWaterCouncilTour021-TransitCenterDowntownMound\\_000.jpg](http://www.minnehahacreek.org/images/PorousPavers-2008CleanWaterCouncilTour021-TransitCenterDowntownMound_000.jpg), [http://www.synlawn.com/img/size/o/artificial\\_grass\\_photos-14-fresno\\_pavers-fresno\\_artificial\\_grass\\_lawn\\_pavers\\_4.jpg/w/640/h/640/m/auto](http://www.synlawn.com/img/size/o/artificial_grass_photos-14-fresno_pavers-fresno_artificial_grass_lawn_pavers_4.jpg/w/640/h/640/m/auto), [http://farm1.static.flickr.com/226/494092903\\_cc725fe94b\\_o.jpg](http://farm1.static.flickr.com/226/494092903_cc725fe94b_o.jpg)

To help re-establish the square from the street, a double row of Cedar Elms were placed around the boundary of Houston Square while incorporating the newly proposed sidewalks between them. At each of the four corners, four small plaza areas are located as entry points and for socializing.

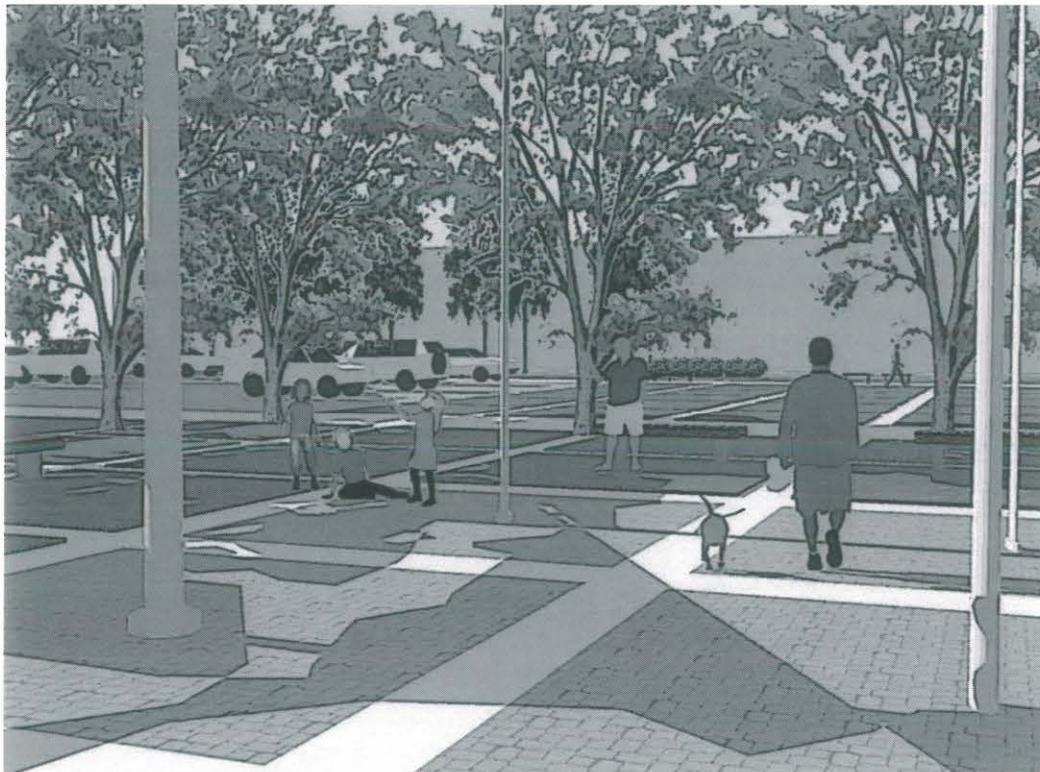
The amount of parking was significantly reduced but there is still enough incorporated in the design for event purposes that might take place within the square or around it such as Mass at St. Louis Catholic Church. Adequate parking is also included in the design for the proposed return of the car show. Reduced parking lots help tone down the visual dominance that parking currently holds over the site. The four proposed parking lots at each corner of the square are indicated as paved with porous brick unit pavers for adequate drainage of storm-water from the site. Houston Square will hold approximately 72 parking spaces. For vehicular access into these designated spots for parking, 2 driveways/walkways were added. These vehicular access paths are paved with turf paving to help with the purposes previously stated as well as to tie in with the rest of the square. One driveway also adds potential to be used for a Church processional route.

Directly across from these designated parking areas are two large open lawn areas located on both sides of the central space of Houston Square. These areas would serve as a venue for many recreational activities such as a place for throwing the football or as a relaxation spot for the citizens of Castroville as well as for civic activities such as the farmers market. These two large lawns can also serve as a location for overflow parking if needed.

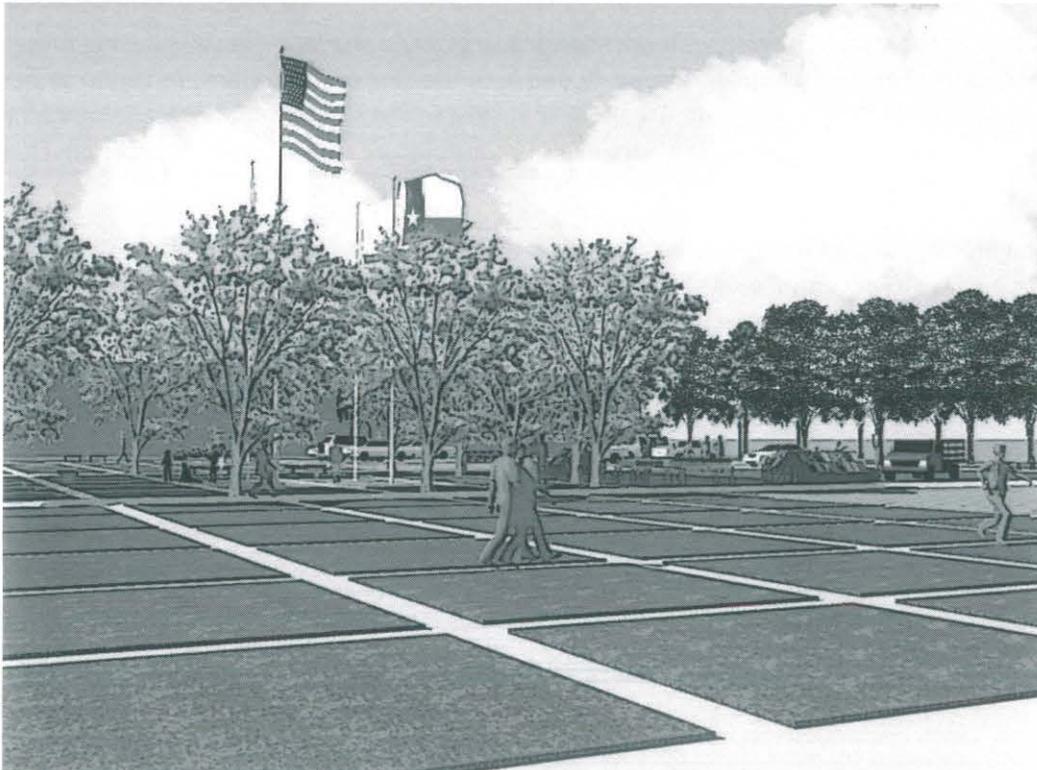
Three spaces located on the northern, central, and southern areas of the quadrants consists of large 15 ft. x 15ft. squares of lawn defined by 5 ft. wide concrete pathways weaving through them. This helps with finding a balance between the amount of lawn and paved areas within Houston Square. With this type of paving along with the combination of the turf pavers used on the vehicular access paths, Houston Square will be able to manage storm-water and create the essence of Houston Square as a large open green space.

The central area of the square is lined with Honeylocust to provide shade while still filtering more light into this space and in turn keep the center openly tied in to the rest of the square. To retain some of the current elements of Houston Square, the flag poles that exist in the square today were relocated to the center. This helps to promote the City of Castroville's unique culture through the various flags that will be flying high over Houston Square and Castroville's Central Business District.

With this design, Houston Square would be renovated more to scale with the rest of the City of Castroville as a pedestrian center, as well as to reflect the character of the City. Hopefully, Houston Square will once again become the heart of civic activity in the center of Castroville's Historical District.



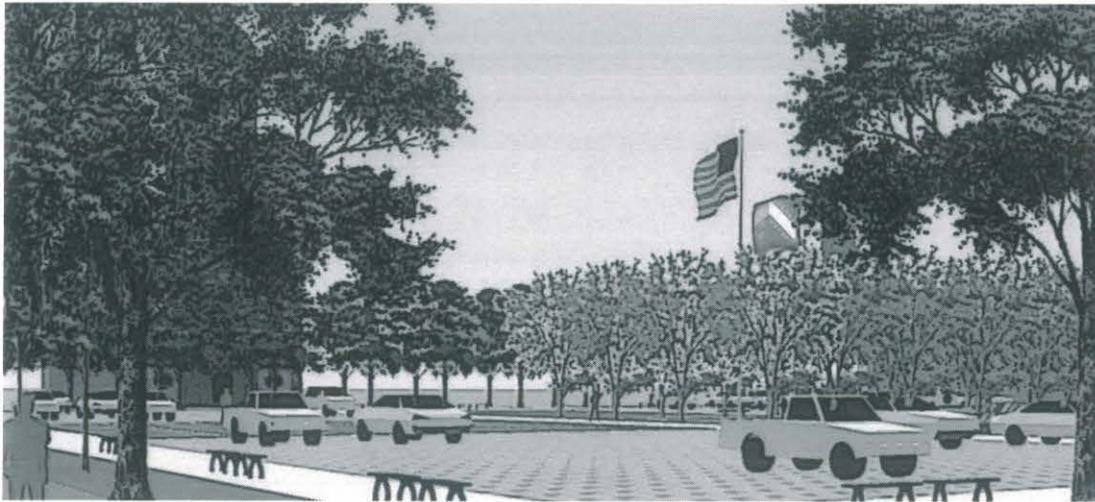
**Figure 5:-** View from the middle of the square looking out: This central area houses the flag posts that currently exist in Houston Square. The center is paved with porous pavers and is surrounded by large paved lawn areas.



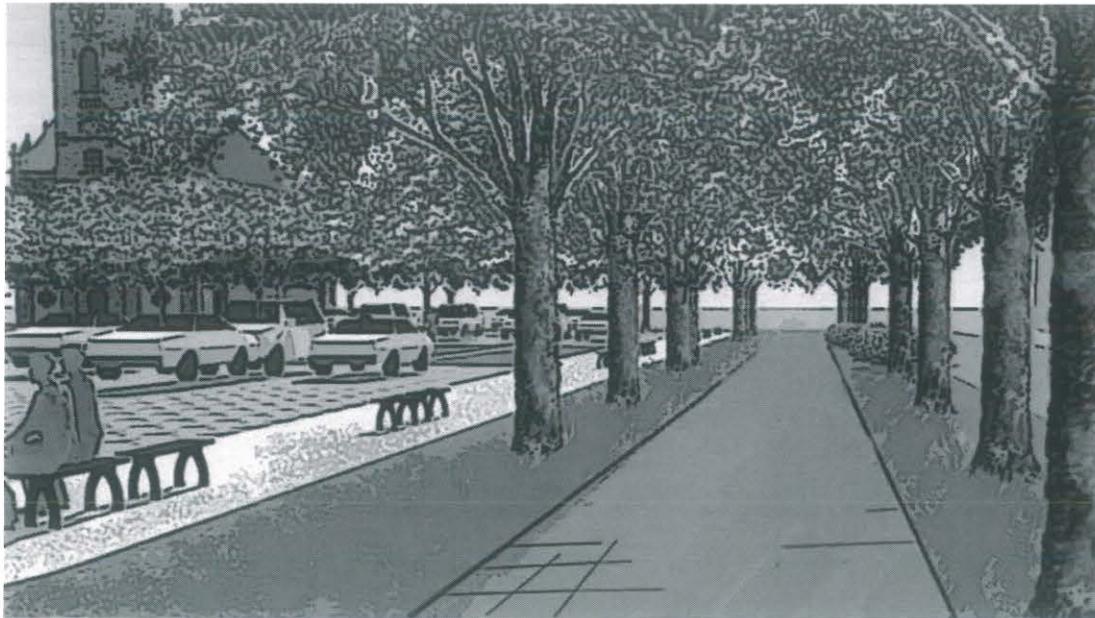
**Figure 6:** View from open area looking into the middle of the square: In order to keep the majority of Houston Square open for activity as well as provide a balance between lawn and paved areas, large turf spaces lined with concrete paving were incorporated into the design.



**Figure 7:** View from open grass area. (Farmers market) These large open areas provide space for potential activity such as the farmers market and car show. This will hopefully bring back the majority of Castroville's civic events to Houston Square.



**Figure 8:** View from the intersection of Paris St. and Lorenzo St.: This image shows the view from the street near the parking lot which will be paved with porous unit pavers in order for this area, as well as the rest of Houston Square, to drain properly. This image also shows the distinction of the central area upon looking into Houston Square with the various flags flying high representing Castroville's culture.



**Figure 9:** View from the sidewalk facing St. Louis Cathedral: The sidewalk is lined with Cedar Elm trees. This helps reestablish the edge of Houston Square from the street.





Figure 9

# Castroville, Texas

## Houston Square Site Plan

### Legend

-  Flag
-  Sidewalk
-  Driveway/  
Pedestrian Path
-  Open Space
-  Parking Lot
-  Common  
Honeylocust
-  Cedar Elm
-  Benches
-  Dwarf Yaupon
-  Indian  
Hawthorn

Prepared by: Callaway, Saunders, Stewart, Unruh

## Introduction

The Steinbach House and the Landmark Inn are both buildings of cultural and historical significance in Castroville. The image below shows the location of these two sites and their proximity to the Medina River. Currently there is no formally defined connection between these two places of interest, and the only means of travel is by vehicle or a small, uninviting sidewalk running along the Highway 90 Bridge. The intent of this design proposal is to establish a clear connection allowing visitors and residents alike

to safely access both The Steinbach House and The Landmark Inn.

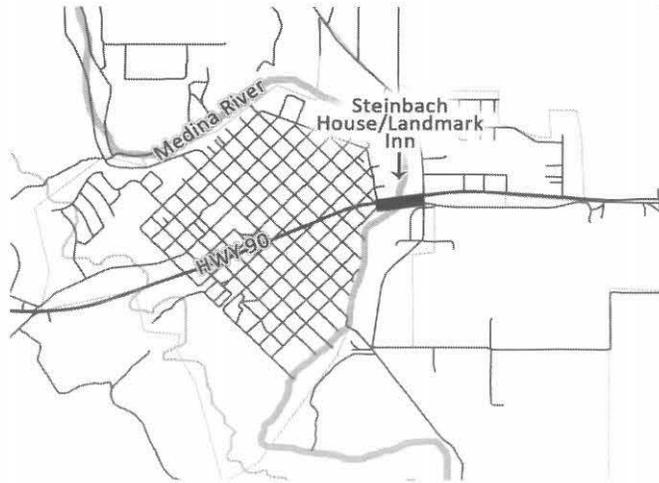


Figure 1. Context Map.

## Design Considerations

**Medina River:** The Steinbach House and The Landmark Inn properties are separated by the path of the Medina River. With both sites located along the Medina River, the opportunity to create scenic river views and places valued for their naturalistic qualities are enhanced.

**Highway 90 Bypass:** The proposed Highway 90 Bypass (to the north or the south) could potentially affect The Steinbach

House/Landmark Inn connection. This was taken into account when considering different design alternatives. The effects of a possible bypass on the two sites include the reduction of traffic through the core of the city increasing safety, while also limiting noise pollution from trucks making their way through town.

## Goals

The goals focused on and addressed in this design were **function, safety, and accessibility**. By satisfying these objectives the site allows the city of Castroville to achieve larger goals including the revitalization of the historic center, protection of the community's unique identity, as well as establishing tourism as a significant component of the local economy.



Figure 2. Bird's eye view. Source: Bing Maps

**Function:** In the sites current condition, there are no identifiable pathways connecting the neighboring properties. This lack of connection underutilizes the historic potential that The Steinbach House and Landmark Inn have, while also losing the potential to incorporate The Steinbach House into the current Historic Walk. Introducing a formal connection allows for visitors and residents to more readily experience the historic identity of Castroville, while bringing both sites to their full potential.

**Safety:** In the design of the proposed connection, safety was highly considered. Current conditions offer no barrier between vehicular and pedestrian traffic alongside Highway 90, while the floodplain offers little opportunity for a safe connection down at Medina itself. Allowing for pedestrians, bicyclists, and handicapped to freely travel from site to site in a safe manner is crucial to the experience available.

**Accessibility:** The need for a safe connection from the Steinbach House to the Landmark Inn is needed, yet the connection has to be accessible. Accommodating different modes of transportation is important to insure that all conditions have the opportunity to experience the history and culture these two sites bring to Castroville.

### Concept Plan

In the concept plan below, two crossings are proposed on both sides of the existing Highway 90 Bridge. These areas are represented below by dashed lines. The existing Landmark Inn and Steinbach House are labeled and denoted with arrows pointing to their respective locations. The circles around The Steinbach House show proposed plantings to be added to the area. A trail loop is included to assist in circulation around the Steinbach House which connects to an area for picnic tables that overlooks the Medina River. New signage is proposed at the corner of Highway 90 and Lower La Coste Road.

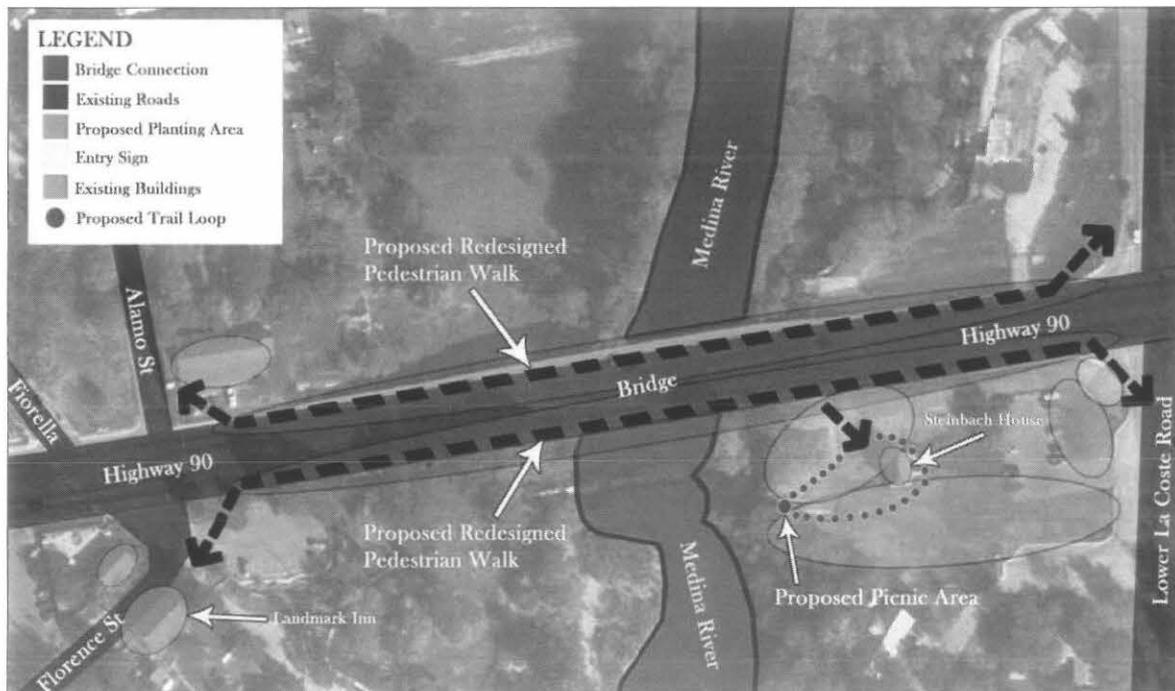
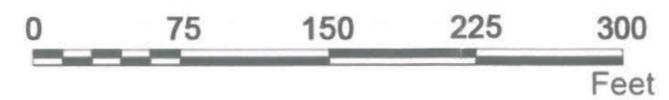


Figure 3. Conceptual Plan for Steinbach House/ Landmark Inn Connection. Source: Callaway & Saunders



### Site Plan View

Figure 4



- Live Oak Tree
- Mountain Laurel
- Red Yucca
- Tables
- Street Light
- Planter Box
- Ramp
- Pavers
- Existing Vegetation

# Castroville, Texas

## Landmark Inn/ Steinbach House Pedestrian Connection

## Site Plan

The site plan illustrated in Figure 7 shows the revised Highway 90 Bridge, with proposed pedestrian crossing, new lighting feature placement and revised traffic lanes. It also shows the detailed design of The Steinbach House and Landmark Inn.

### Highway 90 Pedestrian Bridge

For safety and accessibility, the 12' center turn lane is removed allowing for the widening of the sidewalks on both sides of the bridge. Railing and planter boxes inspired by Alsatian style are proposed on the edge of the sidewalk to serve as a barrier from the highway traffic. New lighting features give added safety at night to pedestrians, and are spaced appropriately to scale down the size of the highway.



Figure 5. Alsatian flower Boxes along bridge railing. Source: Google Images.

### Landmark Inn

The site of the Landmark Inn is currently heavily vegetated, and already possesses an extensive trail system leading to multiple attractions. This design proposes to modify the current trails and walkways to make them more ADA compliant. The current path connects to the Highway 90 bridge pedestrian path at the intersection of Fiorella Street.



Figure 6. Landmark Inn. Source: Google Images



Figure 7. Steinbach House. Source: Google Images

### Steinbach House

At The Steinbach House, additional plantings were proposed to increase the appeal of the grounds allowing for a more intriguing visit. Plant species including Live Oak Trees, Mountain Laurel and Red Yucca are suggested to add color and shade for visitors. New trails allow users access to a scenic outlook over the Medina River, and to the designed picnic area. In addition an ADA accessible ramp connecting the trail to the Highway 90 pedestrian bridge crossing is proposed. An entrance/welcome sign accompanied with a planter bed is added to increase awareness of the site.



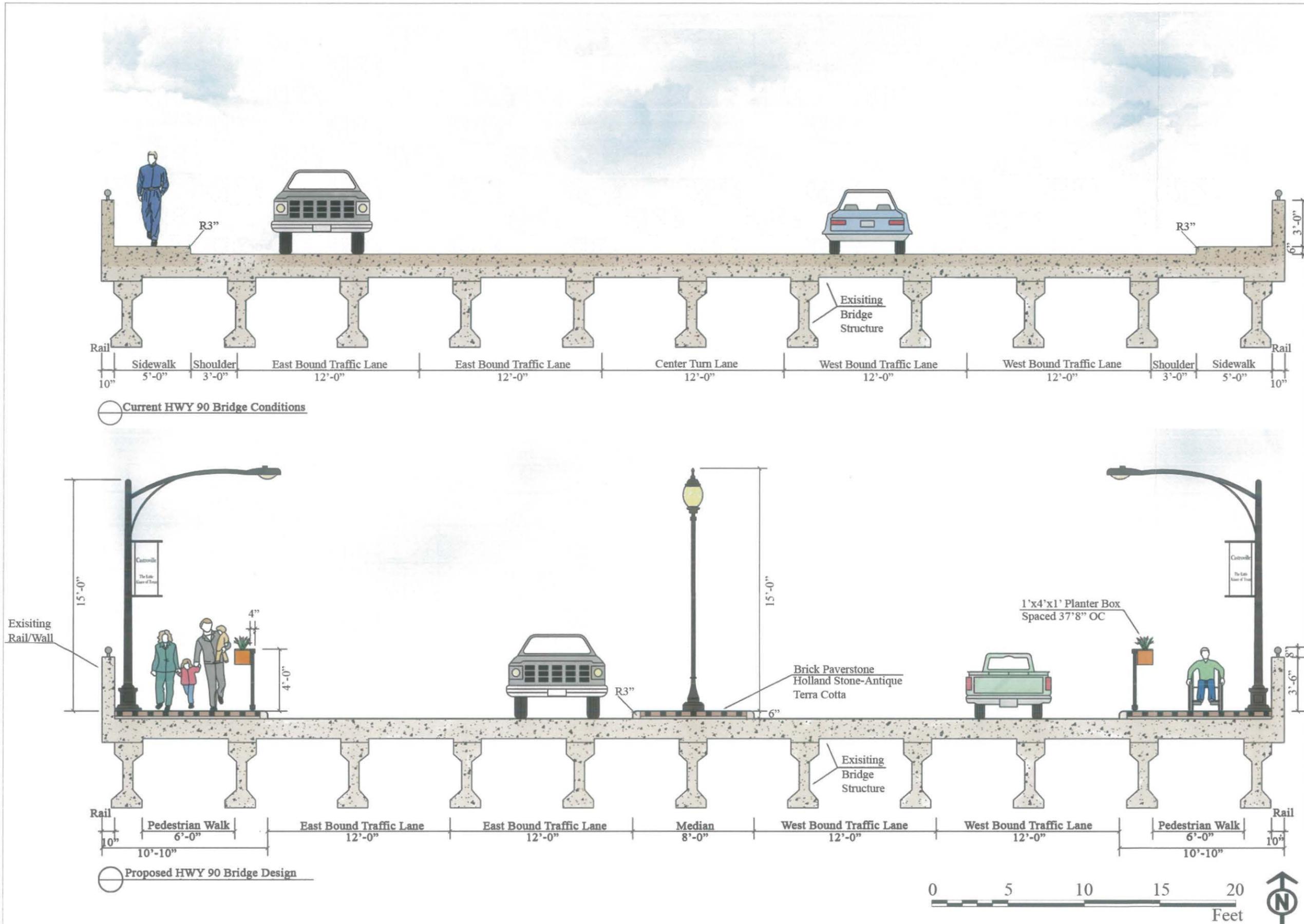


Figure 8.



Figure 9. Reference Map



Figure 10. Perspective



Figure 11. Perspective



Plan View of Pedestrian Bridge

Figure 12.



Castroville, Texas  
Pedestrian Bridge  
Plan View / Perspective

- Live Oak Tree
- Mountain Laurel
- Red Yucca
- Tables
- Street Light
- Planter Box
- Ramp
- Pavers
- Existing Vegetation



Figure 13. Reference Map



Figure 14. Perspective



Figure 15. Perspective



Plan View of Landmark Inn  
Figure 16.



-  Live Oak Tree
-  Mountain Laurel
-  Red Yucca
-  Tables
-  Street Light
-  Planter Box
-  Ramp
-  Pavers
-  Existing Vegetation

# Castroville, Texas

## Landmark Inn Plan View / Perspective

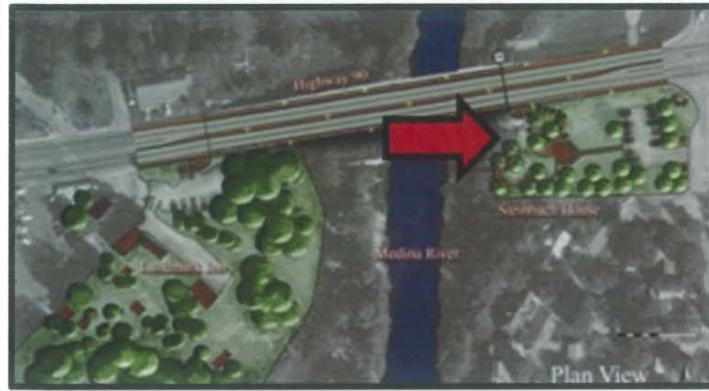


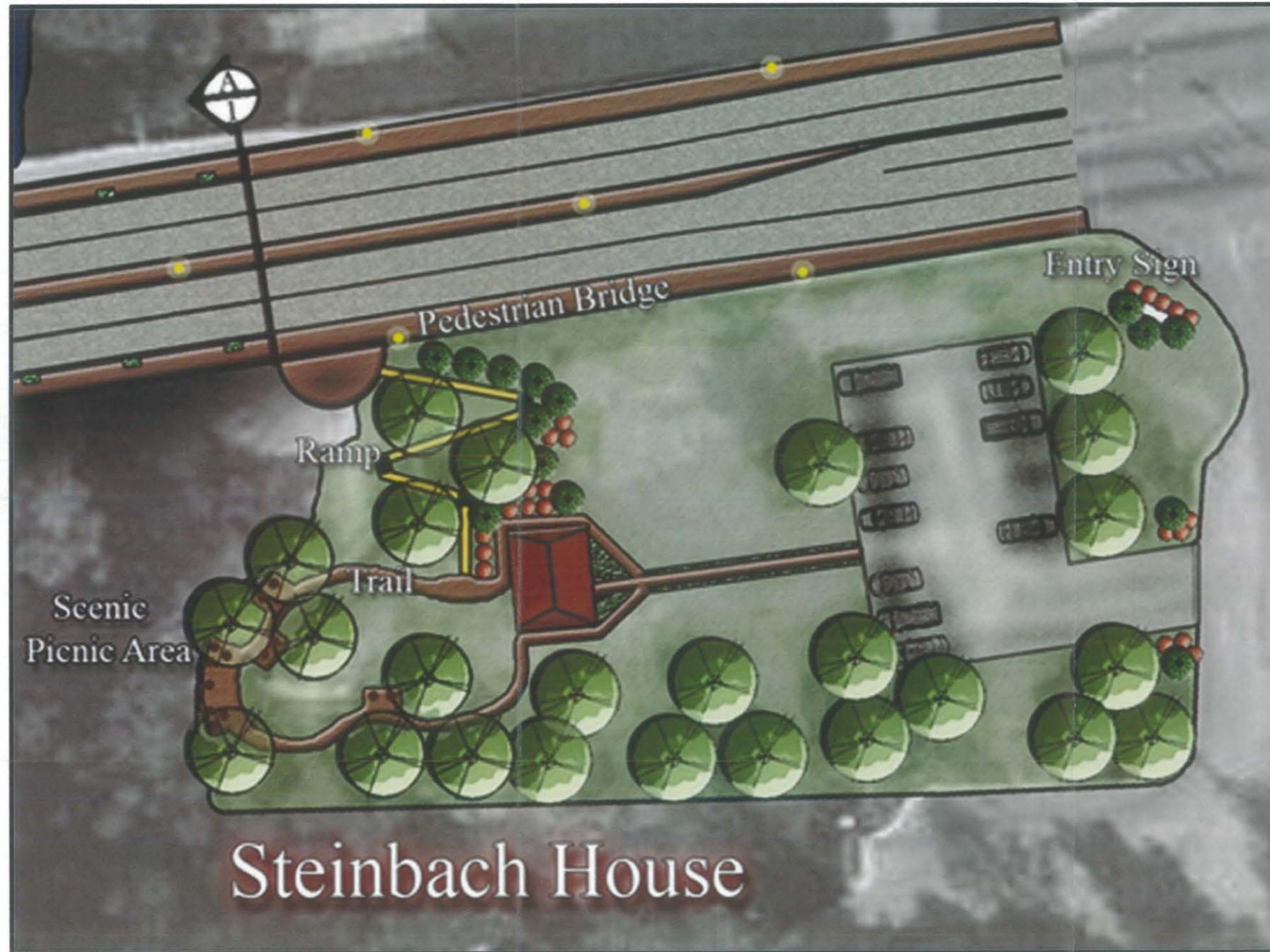
Figure 17. Reference Map



Figure 18. Current Conditions



Figure 19. Proposed Conditions



Plan View of Steinbach House

Figure 20.

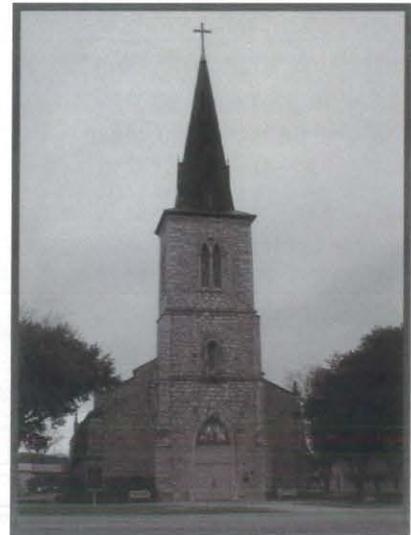
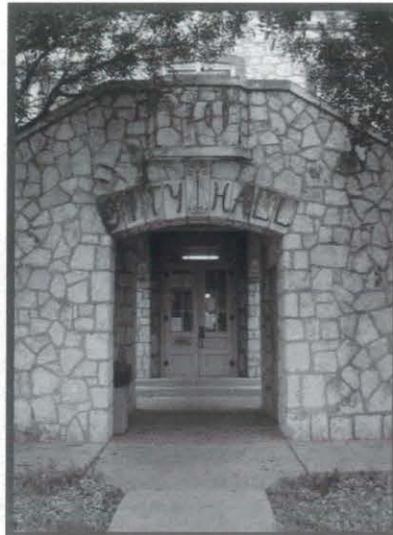
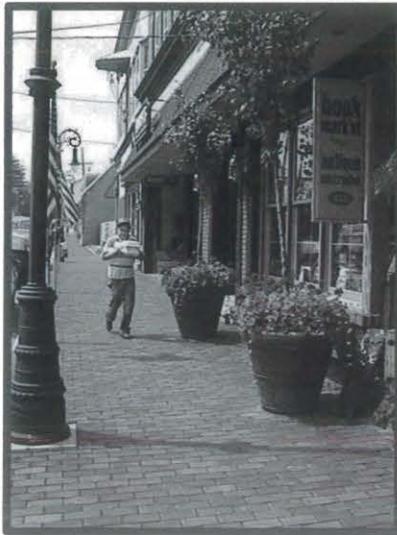


**Castroville, Texas**  
**Steinbach House**  
 Plan View / Perspective

- Live Oak Tree
- Mountain Laurel
- Red Yucca
- Tables
- Street Light
- Planter Box
- Ramp
- Pavers
- Existing Vegetation

Prepared by: Tyson Gaspard, Marsha Jenkins, & Ben Miller

## Introduction



## Existing Conditions

The main problem with the current downtown streets is that there is no clear definition between vehicular traffic areas and pedestrian traffic areas. This presents problems with safety and a diminished sense of place for pedestrians. Tourists and citizens alike have no indication that they have entered the historic town center of the City that serves as the commercial and civic hub, or where within it they belong. There is also a lack of overall wayfinding for pedestrians and tourists.

## Design Goals

The design goals for the downtown streets included the following:

- To create an **Identity**, a sense of place and **Edge** for the downtown area, through the implementation of consistent sidewalks, street furniture, and plantings located throughout the downtown area.
- To Increase **Safety** within the downtown by separating pedestrian and vehicular traffic with the establishment of distinct sidewalks, and providing additional lighting along sidewalks and crosswalk intersections.
- To establish a **Healthy** community, by promoting walking within the downtown area and increased community interactions through the use of communal spaces and the promotion of community and historic preservation.
- To strengthen the **Economic Viability** of The City by providing a more desirable destination for tourists in the historic downtown by making major commercial districts more accessible and promoting commercial unity through the use of consistent aesthetic character.

### Street Selection

These street improvements will only be applied to specific streets in the downtown area. The streets that were selected to be included are show in *Figure 1* surrounded by their context. The streets were selected because of the high number of civic, historic, and commercial uses that front them, as well as their relationships with Houston Square and September Square. These areas are the most effective at drawing in tourists and pedestrians, and therefore have the greatest need for designated pedestrian paths, and an increased sense of place and consistency.

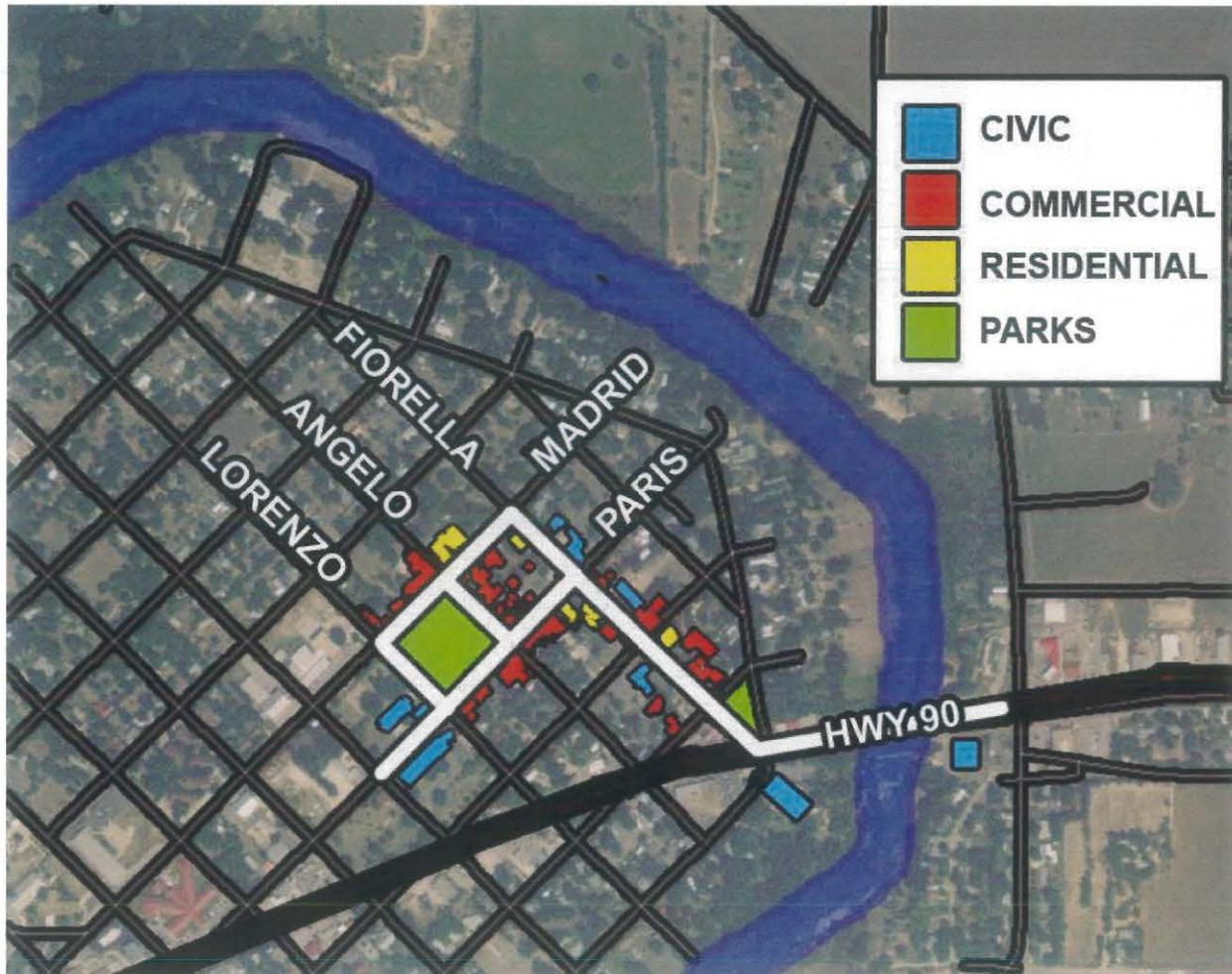


Figure 1. Downtown Streets for Design Proposal Improvements and surrounding Context

## Design Proposals

The following image illustrates the plan view of the downtown street design proposal. The proposed focus of street design is highlighted in yellow and surrounding crosswalks and pedestrian sidewalks are highlighted in red. The numbered locations are in reference to the perspectives used to further illustrate the visual character of the proposed design elements and implementations. Though these perspectives focus on specific areas, it is important to keep in mind that similar design elements are to be used along all of the highlighted streets referenced in the image below.

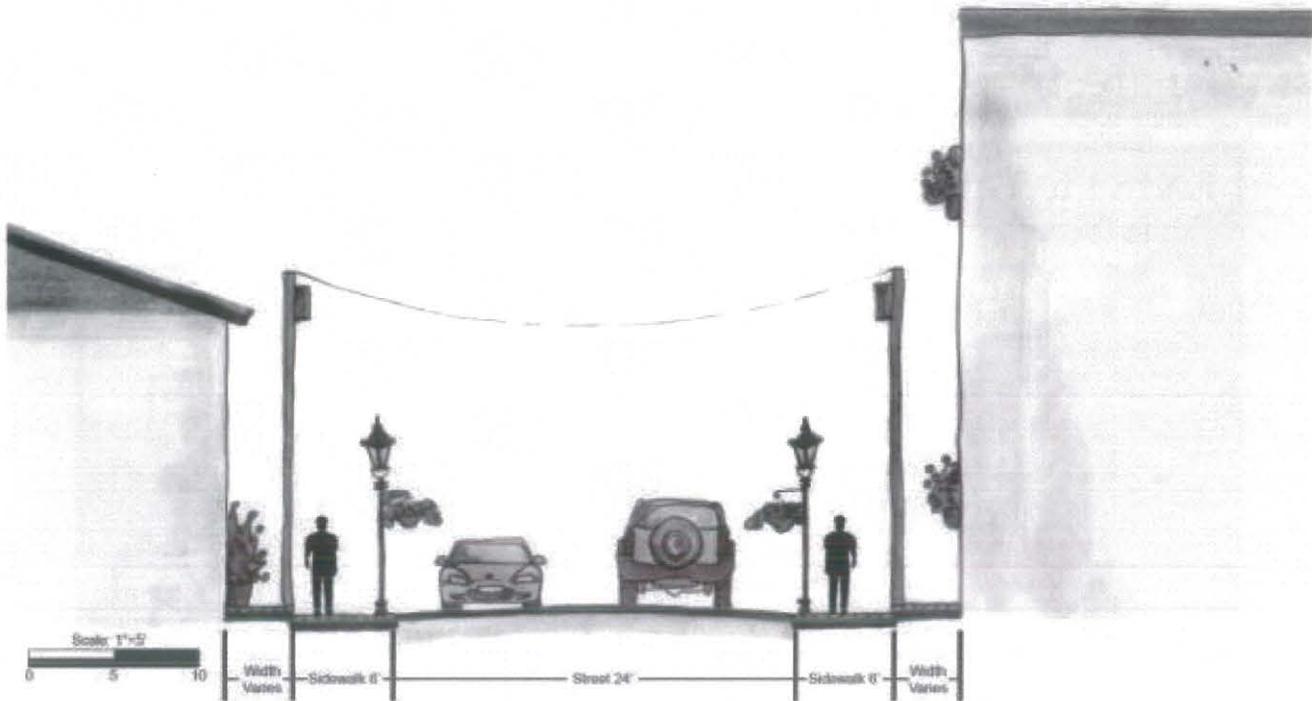


*Figure 2. Proposed Plan for the Downtown Streets of Castroville*

The following images illustrate the design proposal solutions. These designs can be applied to similar street conditions along selected downtown streets. *Figure 3* focuses on the design implementations proposed along Fiorella Street and the facades of the Saloon and Chocolate shop.



*Figure 3. Fiorella Street Perspective View from Highway 90 towards Courthouse*



**Figure 4.** *Fiorella Street Cross-Section*

The image above illustrates the cross-section of the Fiorella Street perspective. This image provides dimensions for the sidewalks and street widths, paving along the building frontage of Fiorella Street varies, however, brick paving will be used in these areas to extend the proposed sidewalk. The use of material illustrated in this image includes brick pavers along the sidewalks and building frontages, as well as concrete along the street.

Figure 5 focuses on the design solutions for Paris Street on the northern point beside the Rainbow Theater. Along this road there is existing parallel parking. By keep the existing parking conditions and adding the paving to the existing sidewalks, this space becomes more defined for pedestrian and vehicular traffic.

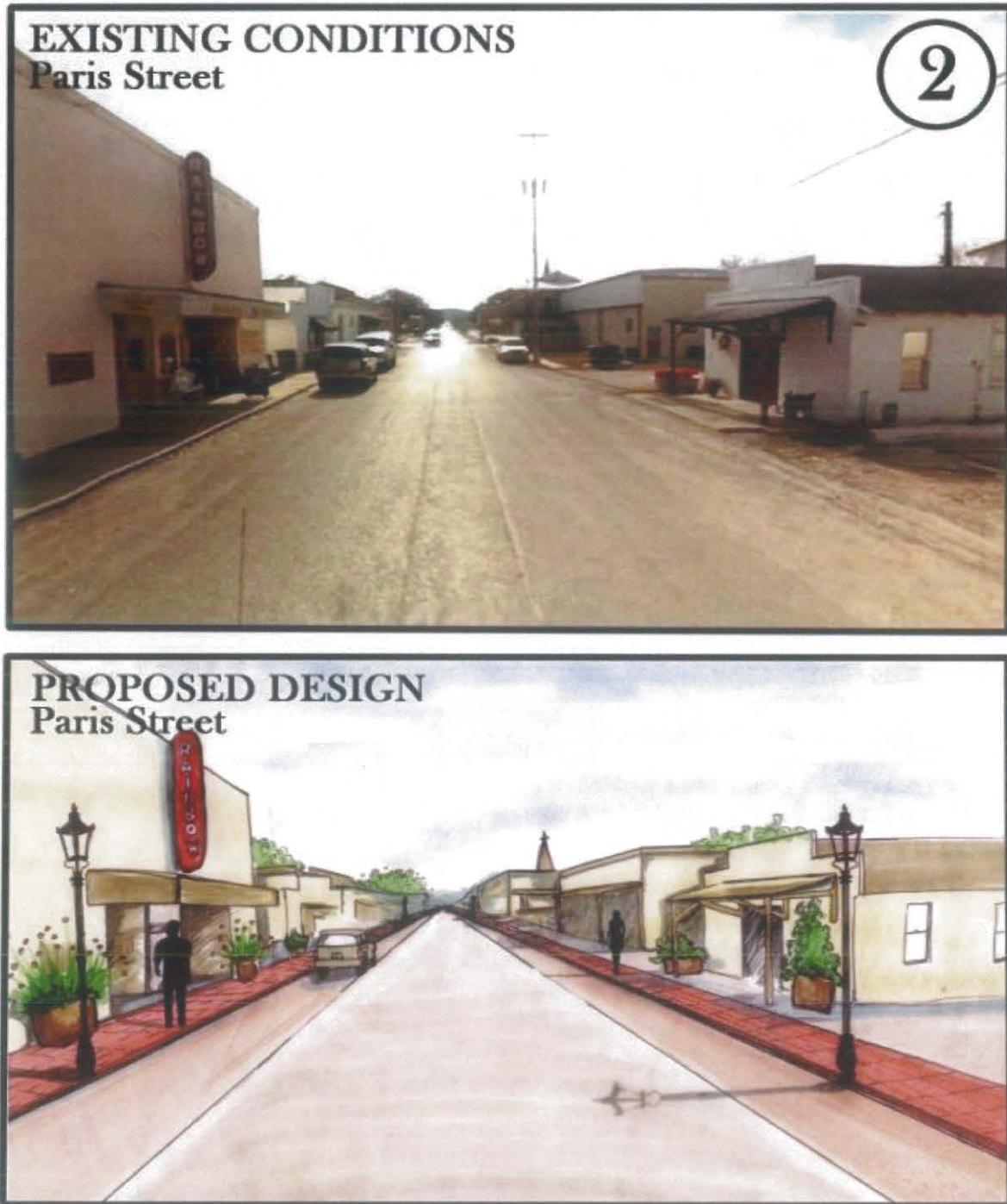
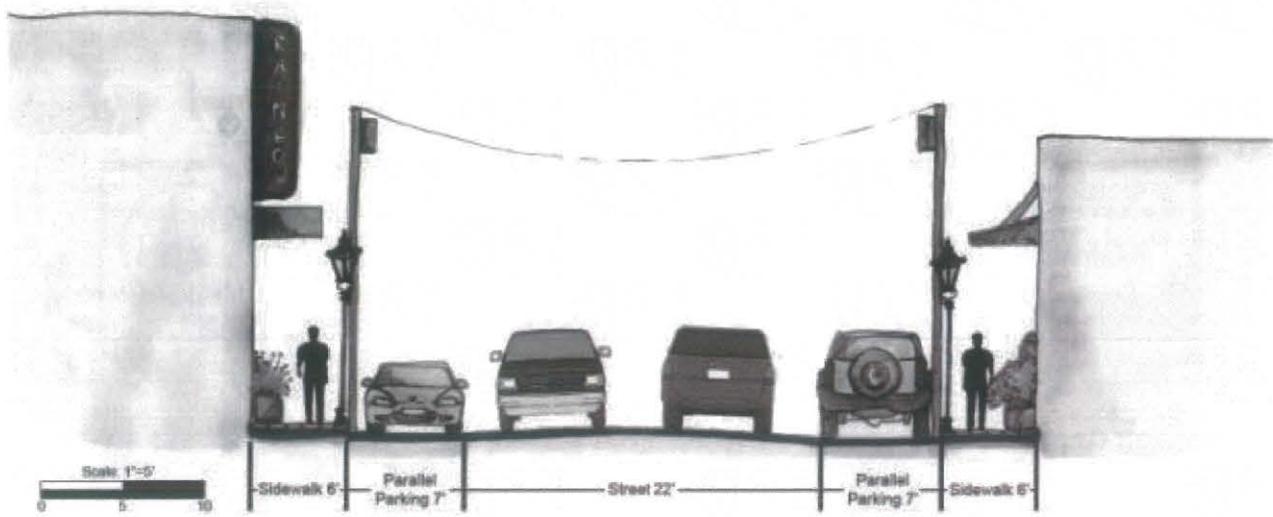


Figure 5. Paris Street Perspective View Towards St. Louis Cathedral



**Figure 6.** Paris Street Cross Section

The image above illustrates the cross-section of the Paris Street perspective. This image provides dimensions for the sidewalks, parallel parking spaces, and street widths. The use of material illustrated in this image includes brick pavers along the sidewalks, stained concrete within the parallel parking zones, and concrete along the street.

Figure 7 below shows the proposed use of dense street tree cover. By incorporating street trees into the existing vacant spaces between buildings, the pedestrian pathways can be made into a more comfortably walk-able space. These perspectives focus on the view from Paris Street looking towards St. Louis Church. The design proposal also incorporates the design proposal for Houston Square by providing street trees along the edge of the square. Reference the Houston Square Design Proposal for details.

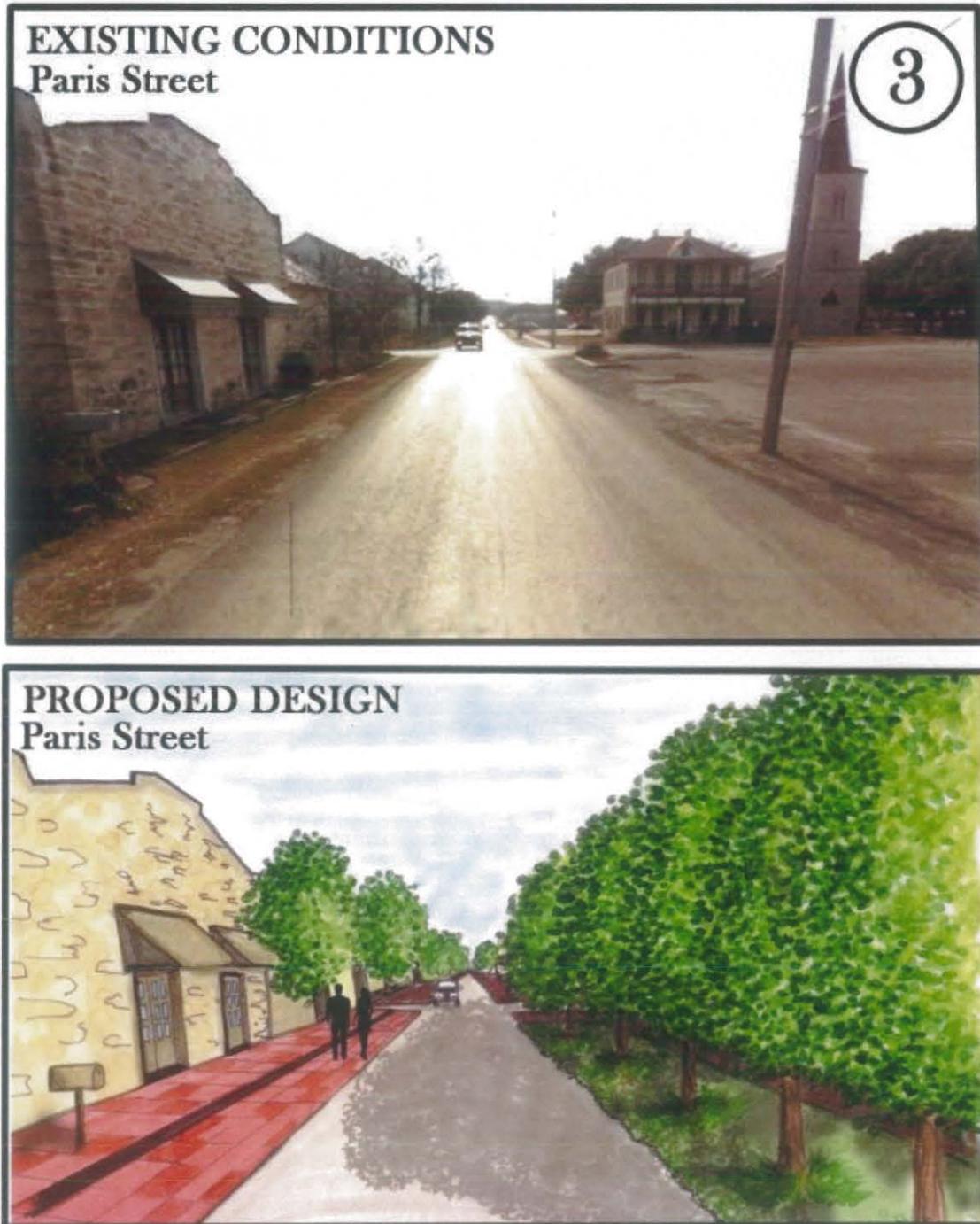
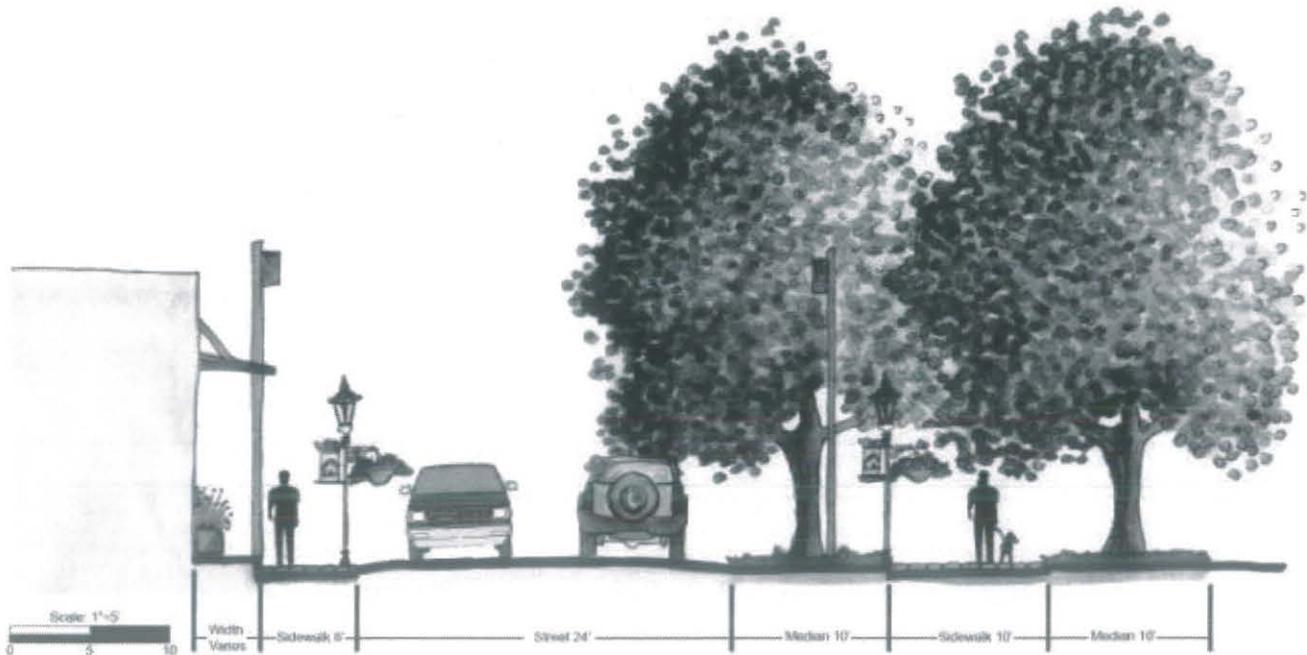


Figure 7. Paris Street Perspective view adjoining Houston Square Design Proposal



**Figure 8.** Paris Street Adjoining Houston Square Cross-Section

The image above illustrates the cross-section of the Paris Street perspective shown in *Figure 7*. This image provides dimensions for the sidewalks, grass median around Houston Square, and street widths. The use of material illustrated in this image includes brick pavers along the sidewalks, concrete along the street, and grass along the outer edge of Houston Square. Reference the Houston Square Design Proposal for details.

## Sewer and Storm Water Management

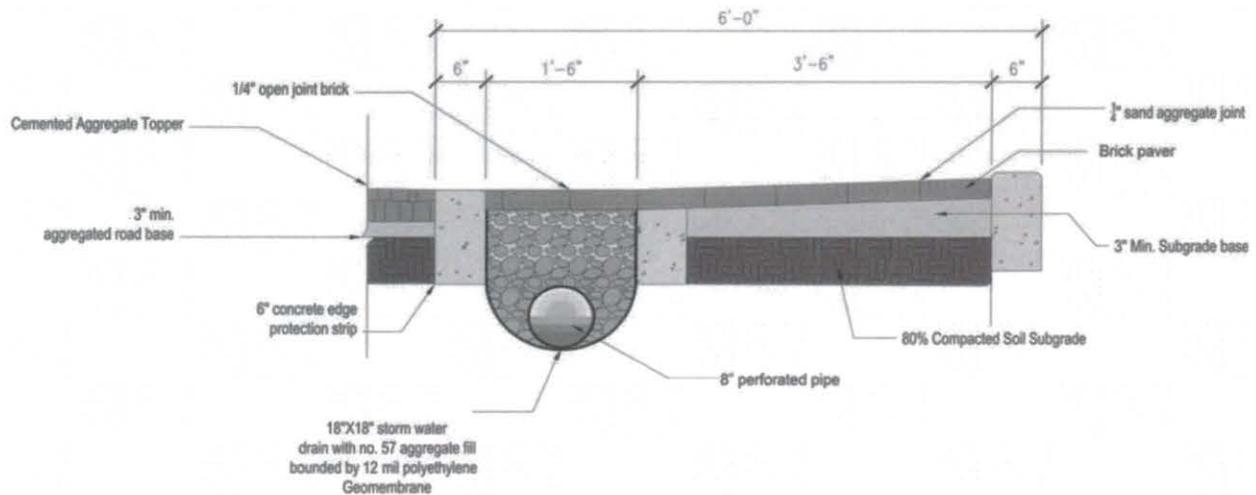
The downtown of Castroville presents many challenges in scale and function that needed to be addressed in order to conceive a city streets plan that could be fully realized. Many of the issues that arise when planning for downtown streets are caused by naturally occurring problems, such as the flooding of the Medina River.

The Medina River, according to FEMA flood plain maps, floods most typically on the river bend that surrounds the northeast corner of the city. However soil research shows that an increased problem in drainage of the city streets is due to the shallow water table beneath the City, as well as slowly draining soils in the downtown area. The topographic condition of the site is extremely flat, thus increasing the potential for standing water in the occurrence of a flood. This type of flooding could cause damage to the foundations of historic buildings and roads.

The combination of high rainfall and soil inundation beneath the street drastically increases the potential of standing water in case of a flood. While speeds on the streets of Castroville's' downtown areas are not generally high enough to cause hydroplaning conditions on roads, in periods of high rainfall, research has shown that safety is greatly reduced by the lack of ability to see the road. Another problem that surfaces after the onset of rainfalls is the inundation of soils beneath asphalted roads causing sinks or "Potholes" in the road surface. These "Potholes" are expensive to repair. They also increase the possibility of vehicular accidents in rainfall, due to their unexpected pull on a vehicles wheel joints.

The standing water that is left in streets after a rainfall can also reduce the aesthetic appeal and quaint charm of the City by depositing trash and other debris on the areas that are left to puddle. One common solution would be using a concrete curb and drain style storm water management system to relieve streets of their drainage problems. However due to the expense of installation, complicated building levels, as well as many other factors including aesthetic character and scale of these units, the development of consistent curb heights throughout the downtown would make planning and installation virtually impossible.

A French Drainage System could easily be integrated into the brick paved right of way and sidewalks proposed for improvement of City streets. These French Drains can be installed at relatively low expense to the City. *Figure 9* shows a typical cross section of a French Drain system suggested for the street improvements of Castroville. These storm drains are to be installed at the existing grade of the street allowing storm water to flow directly off the street and adjoining properties and infiltrate into the storm system through the joint spaces of the brick pavers that make up the top layer of the cross section. The use of matching brick pavers allows for a relatively unnoticeable transition between the storm sewer and the proposed sidewalk.



**Figure 9.** Typical French Drain Storm Sewer Cross-Section

The installation of the French Drain System is relatively low cost. The system consists basically of inexpensive and readily available plastic sheeting material, preferably made from polyethylene plastic for its ability to resist degradation from soil alkalinity as well as its low cost. The prices range from a few cents per linear foot to about a dollar per foot. The system also contains a readily available aggregate fill material that is installed to slow water flow, to suppress erosion at the outfall of the system, as well as provide a filter for contaminants from the street. Eight inch perforated pipe is recommended for this system to increase storm water flow offsite in times of heavy rainfall.

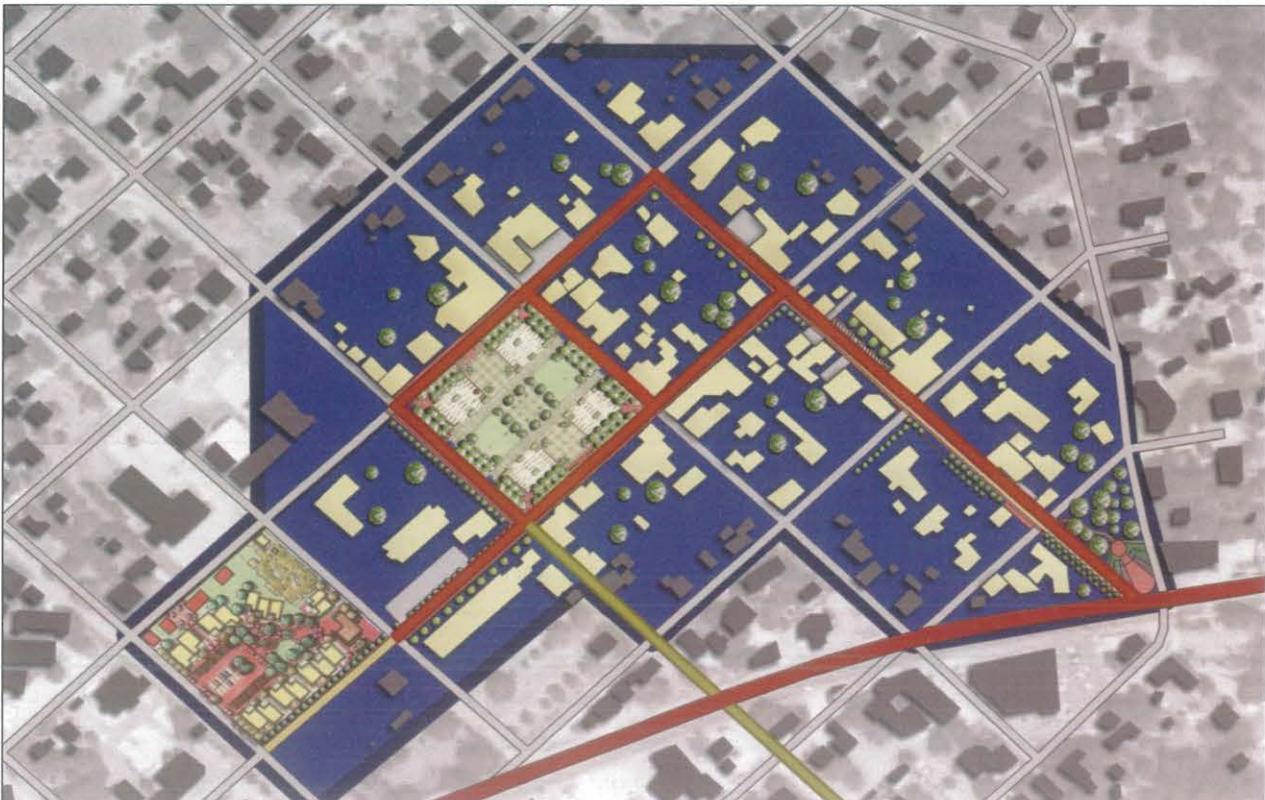


Figure 10. Effective Drainage Area of the Proposed Storm-Water Management System

A drainage system of this type when installed to a depth of eighteen to twenty four inches below grade can effectively convey between forty-two and fifty-five percent of the rainfall from a heavy rainfall in the drainage area surrounding Castroville’s downtown shown in blue in Figure 10.

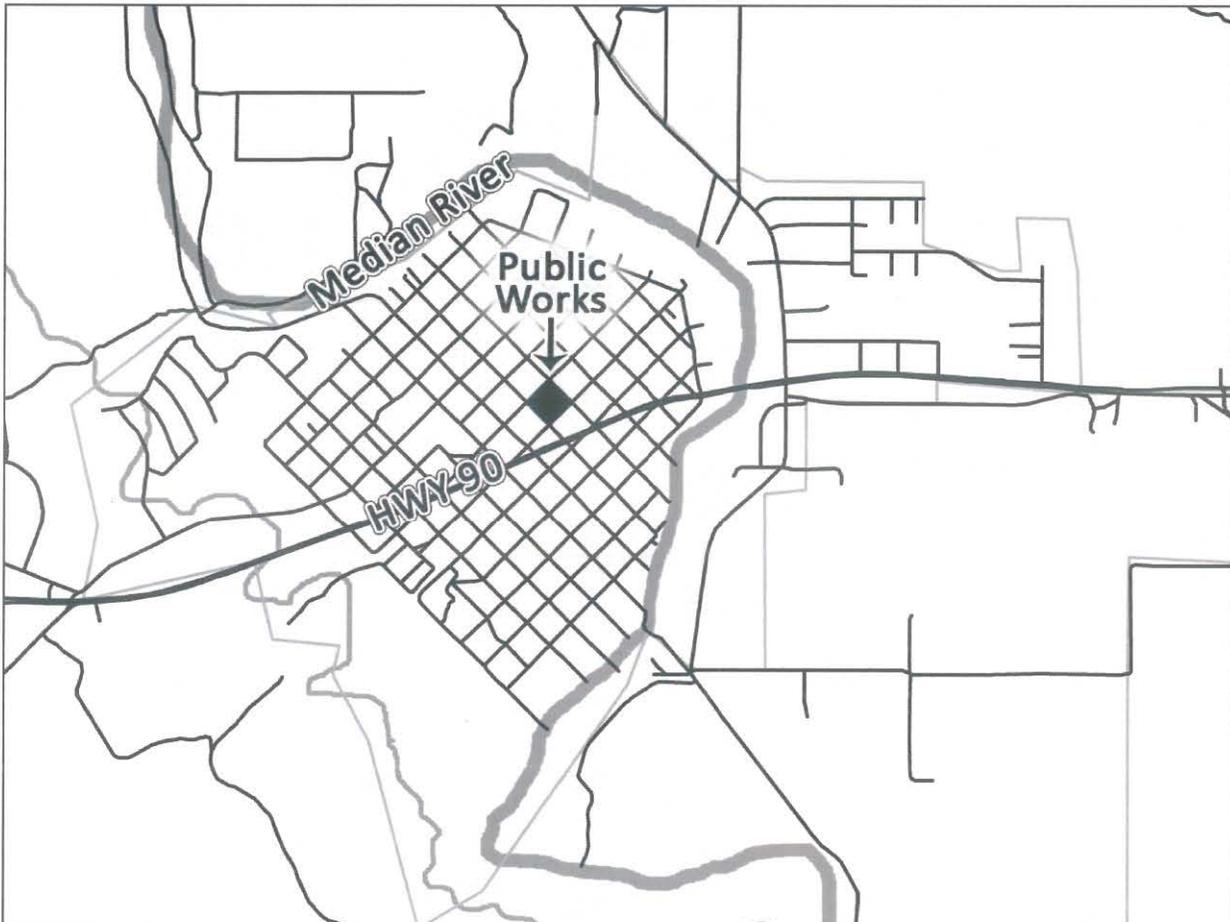


Prepared By: Schuchard, S.C.  
Smith, K.H.

### Problem Statement

The current Public Works site is underutilized and has the potential to become something that is more economically viable and aesthetically appropriate. The location and close proximity to key features within Castroville makes this site valuable for redevelopment.

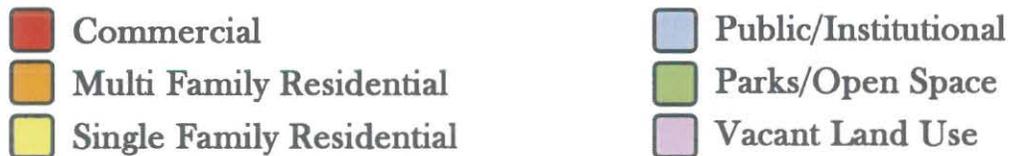
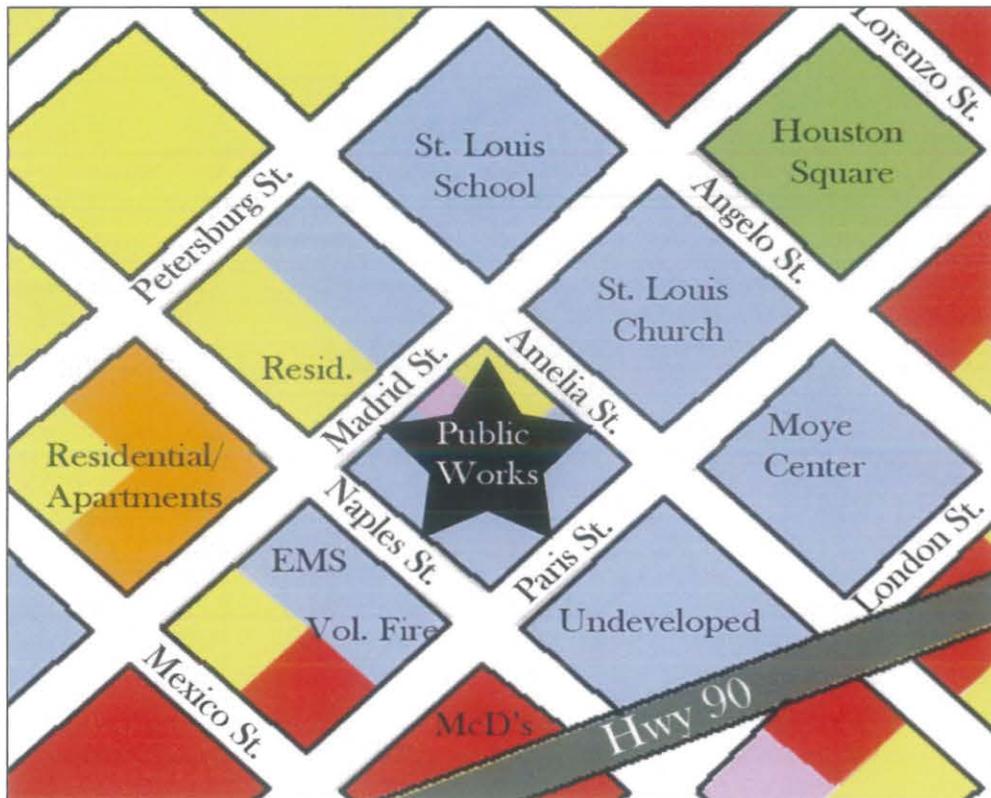
### Location Map



Location Map

## Site Context Map

The Public Works site is located one block north of Highway 90 and occupies six of the eight lots within the block bordered by Madrid Street, Amelia Street, Paris Street, and Naples Street. The lot on the corner of Amelia Street and Madrid Street contains a historic home that is zoned as single family residential. The lot adjacent to the residential lot is zoned as vacant. The adjacent blocks to the Public Works site along Amelia Street are the St. Louis Catholic School, the St. Louis Church, and the Moye Center. The adjacent blocks to Public Works along Naples Street contain multifamily residences, the Medina Valley EMS, volunteer fire department, and McDonald's. It is located near some of the main historic features in Castroville, such as Houston Square.



Surrounding Land Use Map. Source: City of Castroville

## Site Proposal

This proposal recommends that Public Works be relocated to the Castroville Regional Airport area and a retirement village be proposed for the site. In 2000, 15.6% of Castroville citizens were 65 years and older, which is substantially higher than the Texas and United States averages. A retirement community was determined as the best use of the land, as there is an increasing need for housing the elderly. The land's close proximity to services and other amenities makes the site a prime location for this type of development.

## Adjacent Site Conditions

The images below illustrate the historic context as well as the existing nearby public facilities. Residents would have the luxury of being within a short walking distance of Houston Square surrounded by St. Louis Church and local dining and shopping.



**Adjacent Site Conditions.** Left: St. Louis Catholic Church, Top Right: EMS, Bottom Right: St. Louis Catholic School.

## Existing Site Conditions

The site currently has a single historic stone building located in the western corner. The site is used by Public Works for housing their administrative offices and storing equipment. The permanent buildings located at Paris St. and Amelia St., have water damage from reoccurring flooding. As a result Public Works is set up in portable buildings. The following images portray the current use of the site and it's incompatibility with the context of the historic downtown.



**Existing Site Conditions.** Left: view of storage yard, Right: view of flood damaged Public Works building.



**Existing Site Conditions.** Left: historic building on site, Right: portable buildings for Public Works' offices.

## Goals & Design Intent

The following are the goals that informed the proposed design for the Public Works site.

### Safety

- All paving is ADA compliant
- Residential spaces designed to face public areas
- Low ground planting for better visibility
- Plenty of shaded seating and pathways
- Houses designed with porches over each entrance to reduce glare and act as a transition zone
- Gathering plaza located NE corner adjacent from St. Louis Church for safe crossing
- Volunteer Fire Department and EMS located adjacent to site

## Accessibility

- Parking lot designed to allow residents to park next to their houses
- 10 of the total 26 parking spaces are handicap accessible
- Ample parking is available for visitors
- Community Center is centrally located
- Located adjacent to St. Louis Church, one block from Houston Square, adjacent to McDonalds, a block and a half from Highway 90, two and a half blocks from the public library.
- A variety of accessible outdoor rooms that can accommodate different functions

## Economic Viability

- Attractive to new residents to retire in Castroville
- Possible out of town visitors (Tourism)
- New commercial development
- Types of commercial that would complement the new community: Bakery, Corner Store, Coffee Shop, Barber/Beauty Shop, Café
- Use of existing structures on the site for commercial use
- 16 Residential units (Property Tax)

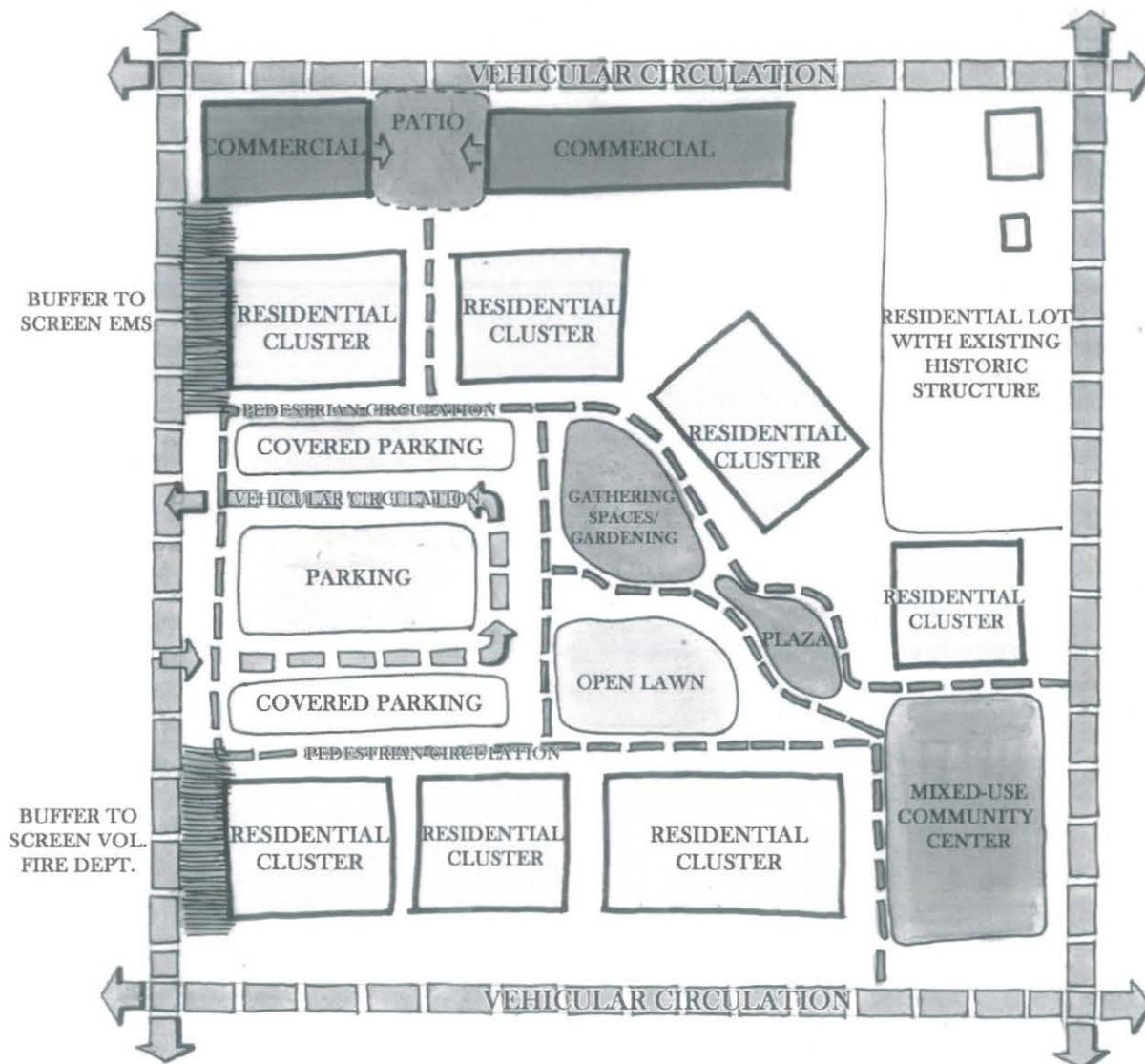
## Functional Organization

- The layout of the residential units to face the central area
- The parking lot located to allow short distance to houses
- Location of main gathering area in the center to be viewed by all and to be equidistant
- Having a community center to allow for indoor gatherings during all seasons
- Paths to all buildings and important spaces on the site
- Location of the commercial development on the “outside” of the village but still easily accessible to residents.

## Concept Plan

The diagram below shows the relationship between the different proposed land uses on the Public Works site. The map shows the location of buildings and outdoor spaces. The dashed lines represent main traffic thoroughfare both pedestrian and vehicular.

Residential clusters are placed facing a central space in order to have easy visual and physical access. The arrangement of homes also provides safety as residents can keep an eye on each other and be aware of users. The parking is centrally located off of Naples St. due to low traffic volume on the street. Additionally the parking lot allows covered parking near the resident's homes to protect them from the summer heat and reduce the travel distance from their car to front door. The mixed-use community center is centrally located to be equidistant for all residents. The mixed-use center houses the leasing office as well as a communal kitchen and living room for residential use for card games, parties, and any other social gatherings. There are a variety of outdoor spaces centrally located to accommodate a number of activities. The proposed commercial development is located along Madrid St. so it is in close proximity to existing residential areas for increased visibility and use. An adjacent patio is proposed for outdoor dining and socialization of residents and shop customers.



# Castroville, Texas

## Proposed Public Works Master Plan



- Commercial
- Residential
- Arbors
- Brick Paving
- Elm Tree's
- Ornamental Tree's
- Oak Tree's
- Existing Structures
- Contours

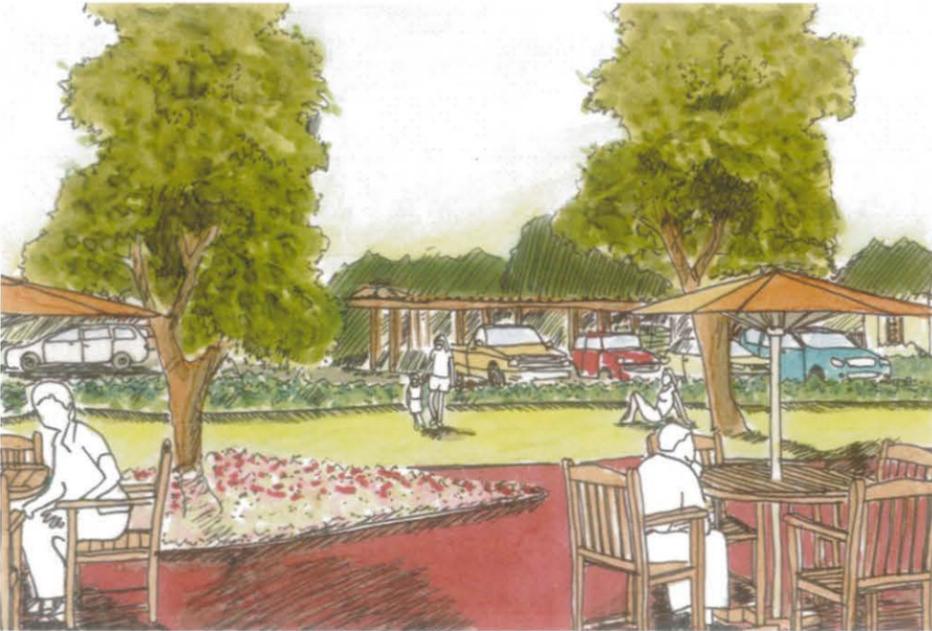


## VIEW OF COVERED PARKING



**Perspective 1** shows the proposed covered parking. This illustrates the closeness of the parking to residential units as well as the shade provided by the arbor. Each resident's personal yard would be enclosed with a picket fence to allow for privacy and screen any poorly maintained yards.

## VIEW OF SEATING OVERLOOKING OPEN LAWN



**Perspective 2** illustrates the open lawn area in relation to the patio/open seating area. There are movable tables and chairs with shade umbrellas to accommodate whatever the resident's preferences might be. The open lawn area can allow for more active users, such as visiting grandchildren. The lawn is highly visible from all surrounding areas to promote safety for the users. There are shrubs suggested along the border separating the lawn area from the parking to help enclose the area protecting children from danger.

## VIEW OF SEATING AREA & PARTY GAZEBO



**Perspective 3** demonstrates one of the smaller seating areas and its relationship to the gazebo used for larger gatherings. The vegetation in the site design would consist of lower growing or manicured ground plantings and trees will be pruned to allow an eye level view of all surroundings for residents to keep an eye on each other. This perspective also shows a flower fountain, which is typical of Alsace, France and culturally significant to the area.

## VIEW OF TEA GARDEN



**Perspective 4** shows the smallest of the gardens which is a rose/tea garden. This area can act as a social gathering space for a small group of residents. Tea parties, book club meetings, or other small gatherings could take place in this semi secluded, intimate rose garden.

## Supporting Images

The images are used to help illustrate the proposed visual character of the design suggestion.

### Commercial Development Imagery

The commercial buildings located on Madrid Street on the north-west side of the development contain one existing historic building, and three proposed buildings. The three new commercial buildings are to resemble the cultural architecture that is seen throughout Castroville. These three images are of historic buildings that resemble the architectural character that is intended for the new commercial buildings.



**Supporting Imagery.** Images of Historic Buildings Currently in Castroville. *Source: <http://www.flickr.com/photos/matthigh>.*

### Village Housing Imagery

The three homes that are represented in the images below are examples of the housing unit styles that are intended in this proposal. These housing units are patio homes with that range from 900sf to upwards of 1500sf. The patio home design allows for units to be clustered while giving home owners their own private yard. The fenced in yards give residents an outdoor area where they can be creative and physically exercise through gardening.



**Supporting Imagery.** Images of the Potential Style of Housing. *Source: Google Images.*



Prepared by: Rojo A., Suleimanji A., and Wu P.

## Introduction

In this proposed park design, the mission is to create an enjoyable multi-functional park for the citizens of Castroville. The proposed design oriented towards the community; it offers different functions to target a wide range of age groups.

## Existing Conditions

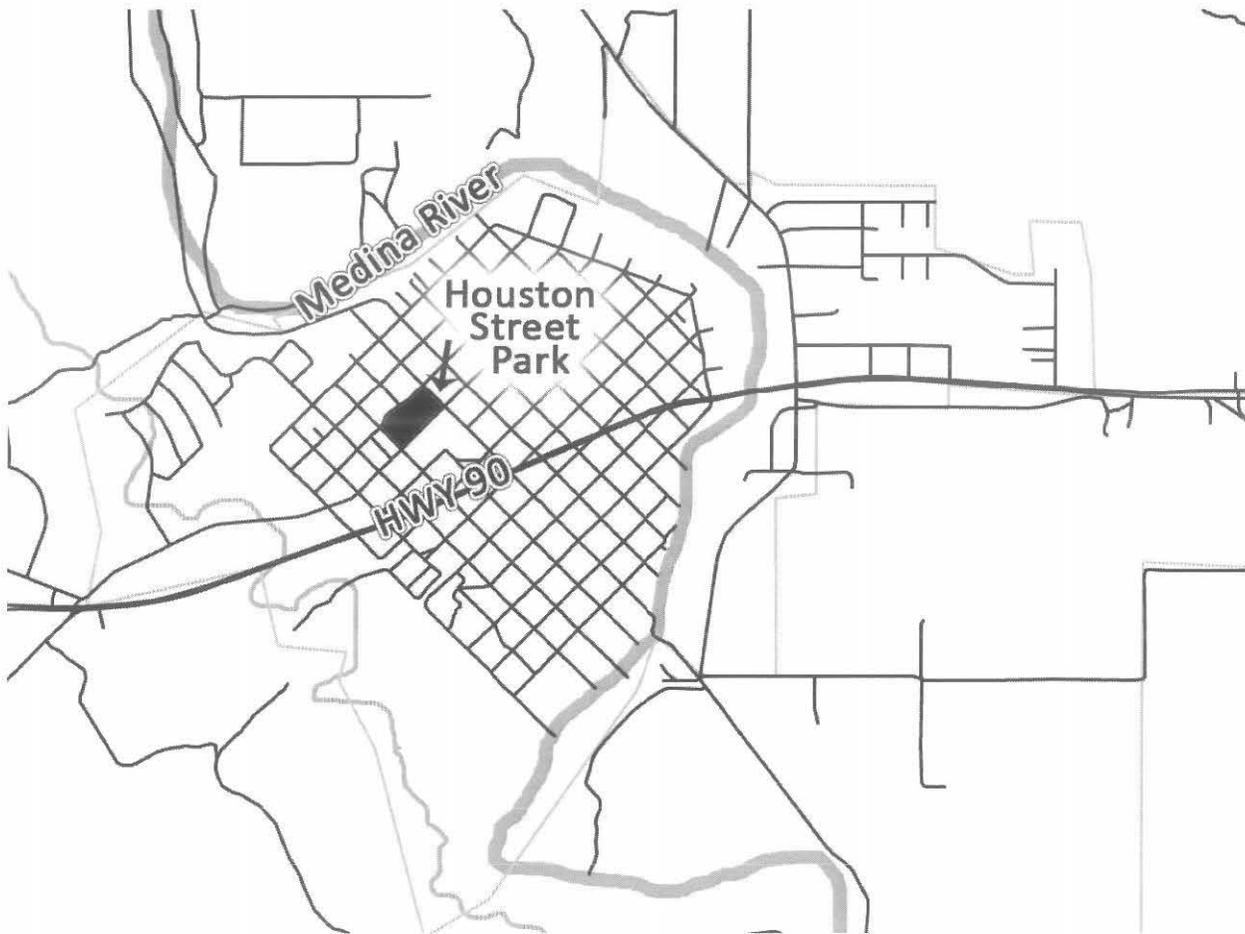


Figure 1. Site Location Map.

The park is located on the north side of highway 90, approximately 300' x 750' in size, and roughly 2 blocks.

## Adjacent Site Condition

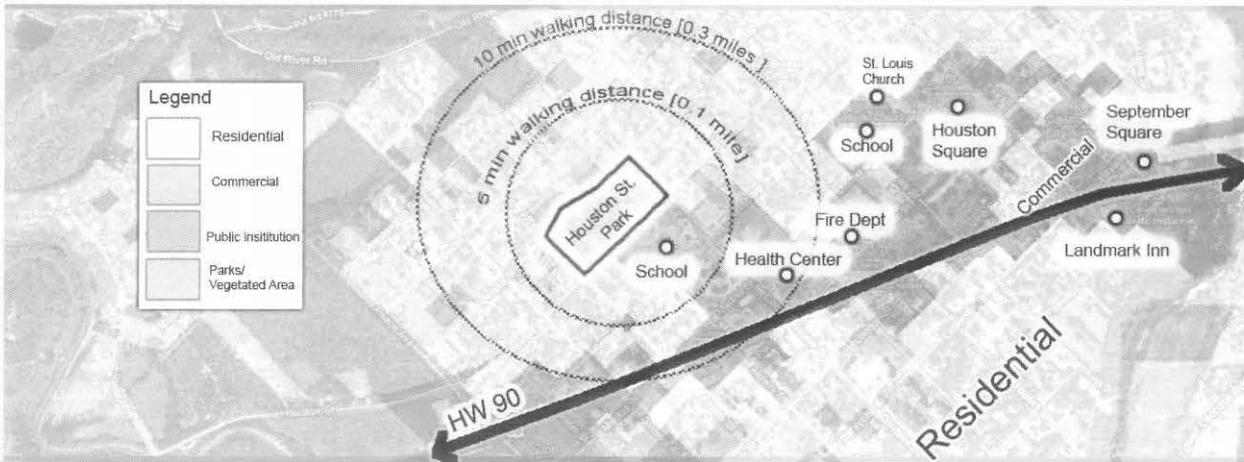


Figure 2. Adjacent Site Conditions.

The land use of the surrounding site is residential and a public elementary school located adjacent to it. The elementary school has direct access to the site. In the figure, there are two loops shown on the map; the outer loop illustrates the 10 minutes walking distance and the inner loop demonstrates the 5 minutes walking distance from the park.

## On Site Condition

### Problem:

- The site is not being used to its full potential
- The site is not serving all age groups and activities
- The site has no shade or seating
- The site is undeveloped and unattractive



The current site consists of a baseball field and a softball field. The two fields are completely fenced in with chain-link and with bleachers on the ends. The slope of the site is nearly level and the north side of Vienna Street is not in good condition. There are also electrical boxes and light poles in the park. Furthermore, the current grass field areas are not in good condition.

## Concept Map

**Mission:** To create a multi-functional park for the citizens of Castroville.

**Goal:** Healthy Environment  
 Healthy Community  
 Safety  
 Accessibility  
 Function

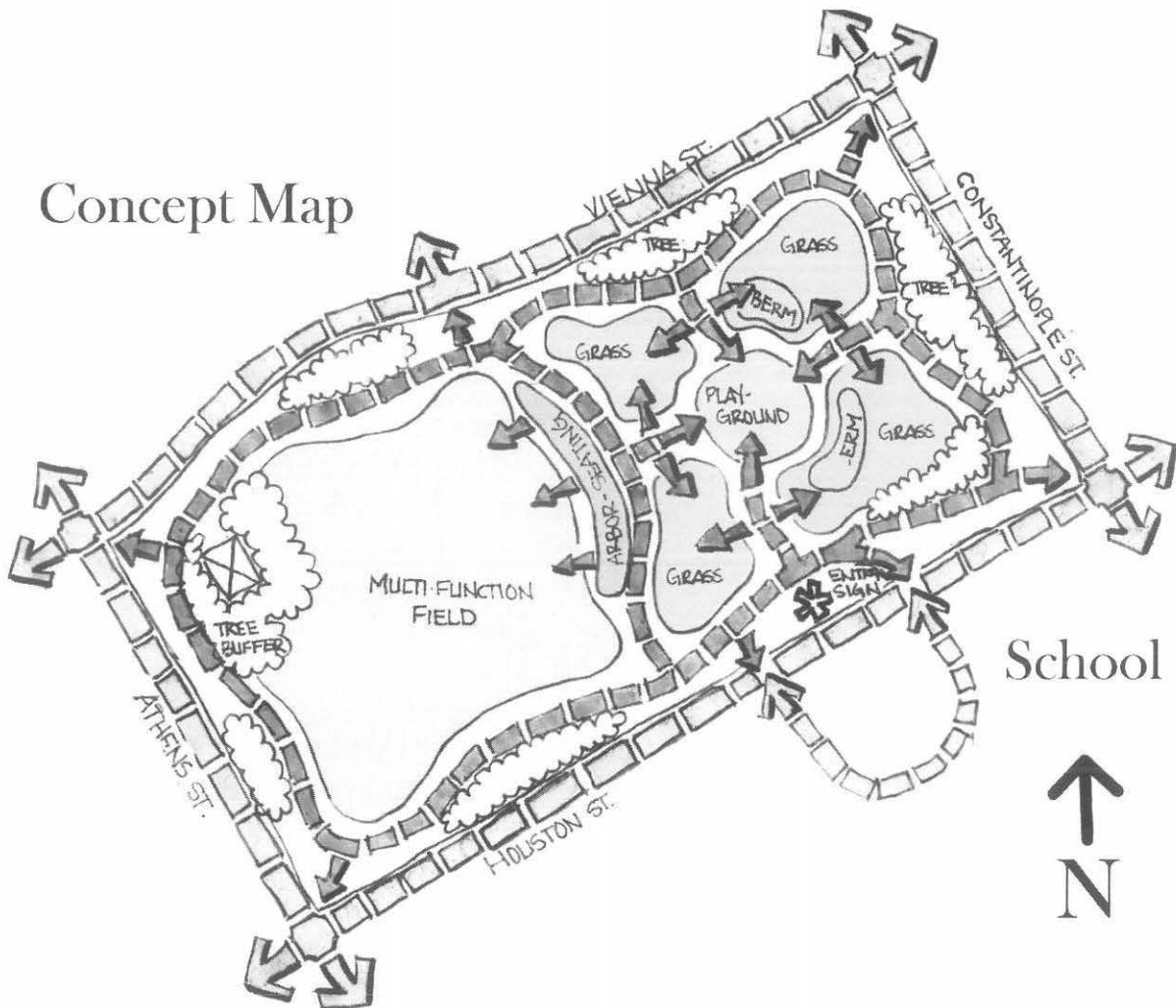
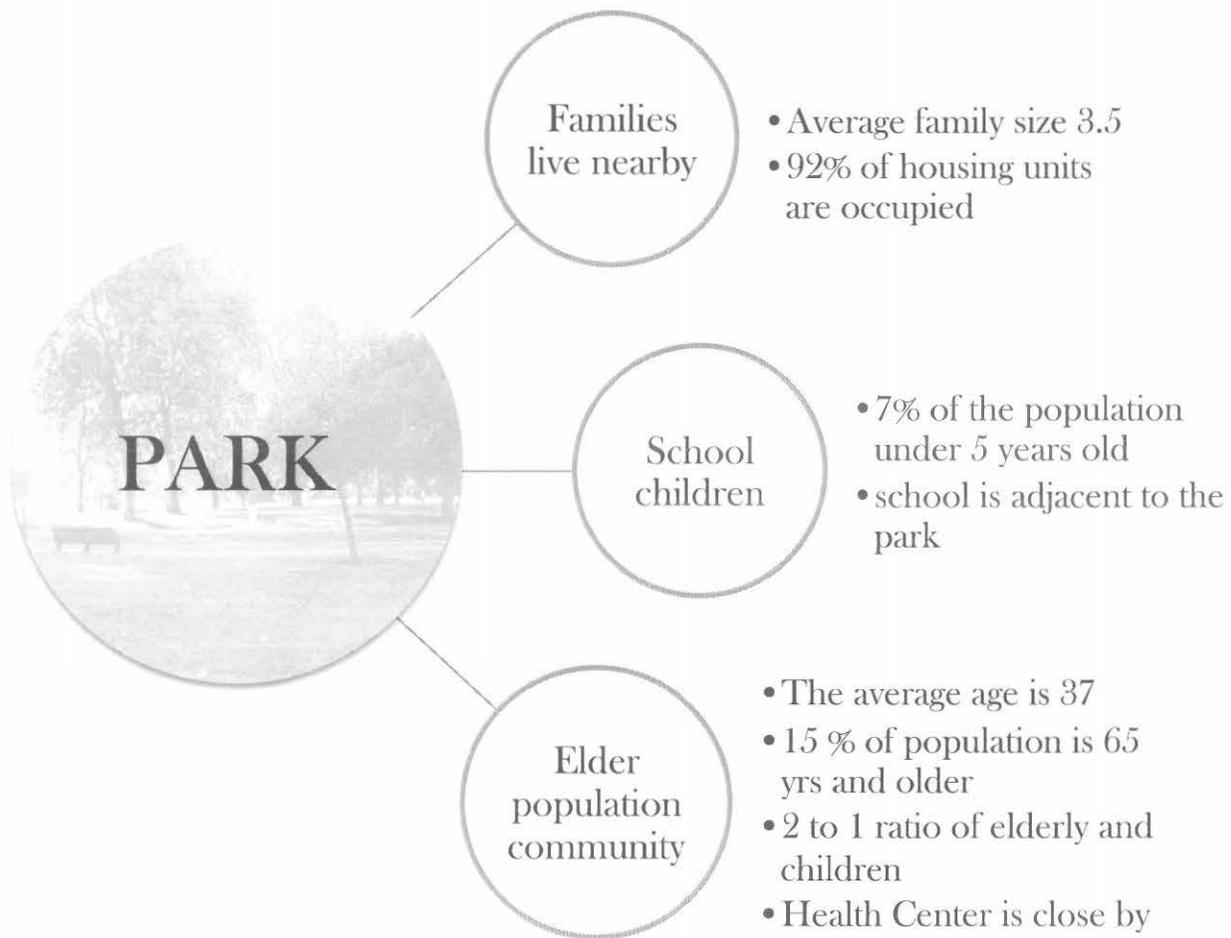


Figure 3. Concept Map.

This concept map demonstrates how the proposed design functions. The outer arrows along the park illustrate the vehicular traffic circulation; the inner arrows in the park illustrate the pedestrian circulation. The park has open access for all users and creates easy way finding from all different directions. The proposed design focuses on four different zones; multi-functional field, arbor with seating areas, children's playground area and the grass/berm areas. Each zone serves a different purpose in the design.

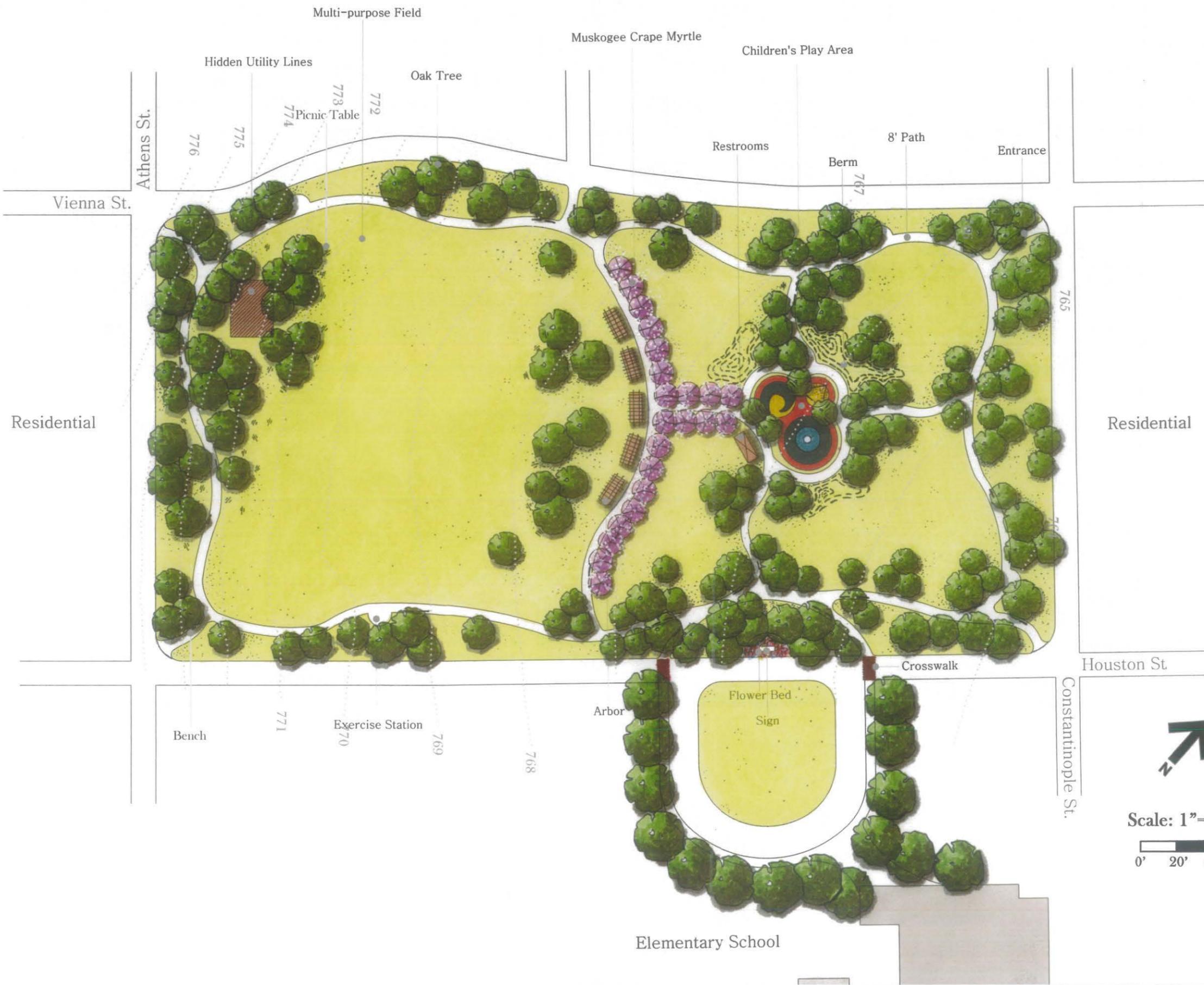
## Target Users

The target users are school children, the elderly population in the community and families that live near the site. The school is located adjacent to the site and surrounded by residential neighborhoods. Moreover, the City of Castroville has a higher elderly population compare to the State of Texas and the City of San Antonio. The average age for Castroville is 37 years old and 15% of the population is over 65 years old.



# Castroville, Texas

## Proposed Houston Street Park



Scale: 1"=40'



## Goals & Design Elements

### *Function*

- The proposed **multi-purpose field** is intended to accommodate all age groups as well as different types of outdoor and social activities such as: soccer and football.
- The **children's playground** is mainly targeted towards the adjacent elementary school therefore; it is located on the east side of the park. It is also located at the center for the safety of the users from the vehicular traffic that circulates the entire park.
- A variety of **trees** are proposed throughout the park to provide shade and color for the users and the different activities.
- A **park sign** is proposed between the two crosswalks behind the elementary school with a native and low maintenance planting bed for color and sense of direction.
- **Benches** are located at the entrances to the park, along the trails, and in the children's playground for seating. Three **berms** are proposed next to the three different areas in the children's playground for added seating and play opportunities.
- **Picnic tables** are proposed around the children's playground and the multi-purpose field for seating and social interaction.
- **The game tables with moveable seating** under the shaded **arbors** are proposed mainly for the elderly population. It creates a space for social interaction and causal chatting as well as a place for people watching.

### *Safety*

- Different types of **lighting** are proposed throughout the park for night usage.
- The park is designed to be mostly **open** for ease of surveillance from streets and nearby residences and school
- For the **children's playground** a rubber material is proposed for the user's safety as well as three different areas; age 0-5 area, age 5+ area, and sandbox area with small climbing boulders.
- Two **crosswalks** are proposed between the park and the elementary school along with a proposed walkway that links the crosswalks with the school entrance and driveway.

### *Accessibility*

- Numerous **entrances** are proposed at every major street intersection and across the street from the Elementary school.
- The proposed **trails** are 8 feet wide and are ADA accessible. **Exercise stations** are also proposed along the outer trail loop.
- The proposed **restrooms** are centrally located for easy access from the multi-purpose field, the arbors, and the children's playground.

### *Healthy Environment*

- The various **trees** located throughout the park help to create pleasant microclimates.

### *Healthy Community*

- Overall, the proposed Houston Street Park plan helps to improve the **quality of life** for the citizens of Castroville by providing a social space for all ages.

### Proposed Plant Materials

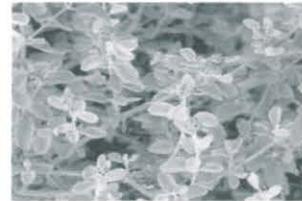
Front Signage Planting Bed:



Texas Sage  
*Leucophyllum frutescens*



Texas Mountain Laurel  
*Sophora secundiflora*



Woolly Butterfly Bush  
*Buddleia marrubifolia*

Proposed Trees used in the Park



Texas Ash  
*Fraxinus texensis*



Escarpment Live Oak  
*Quercus fusiformis*



Muskogee Crape Myrtle  
*Lagerstroemia indica*

Pergola Cover



Live Oak  
*Quercus virginiana*



Crossvine  
*Bignonia capreolata*



### Proposed Site Furniture

The following are the kind of suggested park furniture to be located throughout the site.



Bench



Trail Lighting



Arbor Lighting

### Proposed Exercise Stations

The following are the kind of exercise station located along the outer trail.



### Perspectives

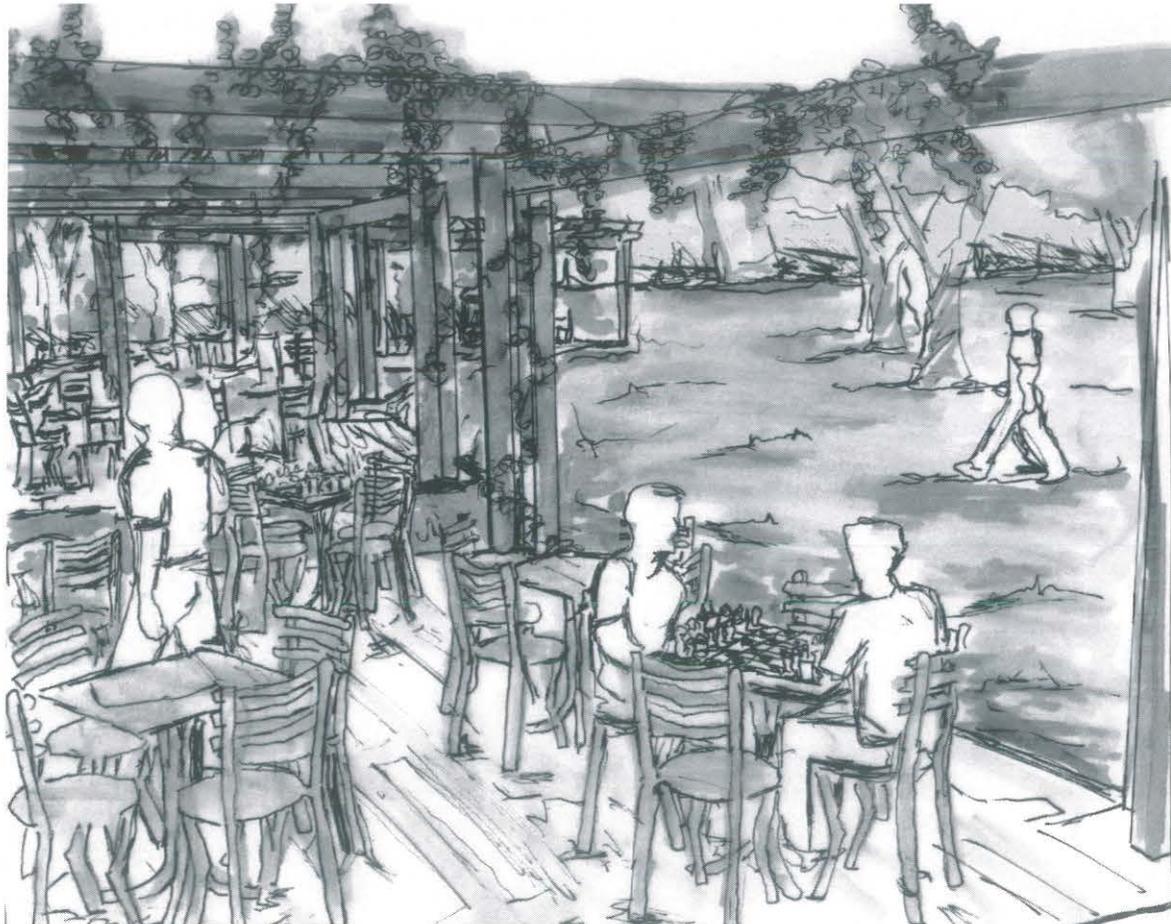


Figure 4. Perspective of Arbors & moveable seating with game tables.



Figure 5. Perspective of Arbors

Figure 4 views the inside of the arbor area. This shows the movable seating with game tables. From this perspective you can also view the sports fields to the right of the arbor space. Opportunities to view people, socialize, eat and rest are available from this location. This area is centrally located so that it can be accessed by users from the sports fields or the children's playground area. Figure 5 perspective shows a walkway toward the arbor space. This space is the central hub of the proposed park. This space is for the elderly to socialize and people-watch.



Figure 6 &. Childrens Playground Area

Figure 6 shows a perspective of the general kids playground. This area consists of monkey bars, swings and a slide/climbing unit. The floor is covered with a soft rubber material.

## Existing Conditions

Castroville has 24 rights-of-way that lead from paved streets to the Medina River. These rights-of-way are often referred to as paperstreets, or streets that appear on paper maps that were never built in actuality. During the earlier days of Castroville when the City's grid street system was laid out, these rights-of-way allowed livestock to access the Medina River as a water source.

Today, these rights-of-way have either been ignored or claimed by the neighboring property owners. In some cases, structures such as out-buildings and fences have been built within the rights-of-way by the neighboring property owners even though this land is technically public property.

These rights-of-way offer excellent opportunities for storm water runoff to return to the Medina River, native vegetation to filter pollutants and sediments from this runoff, wildlife to utilize the natural resources, and pedestrians to gain access to the Medina River.

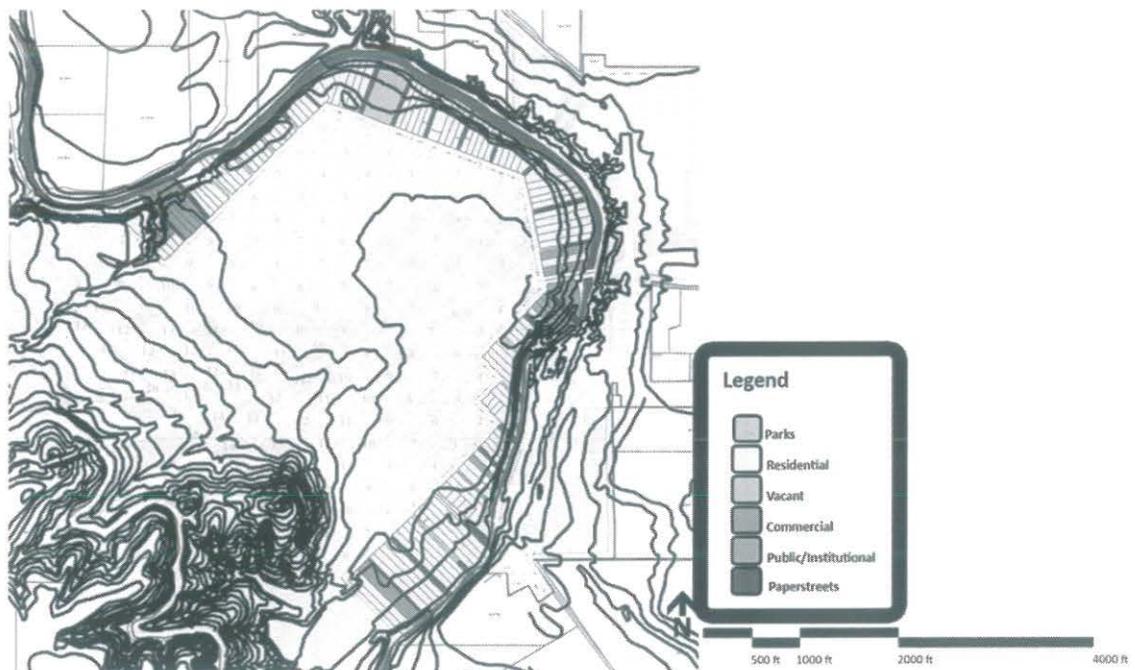
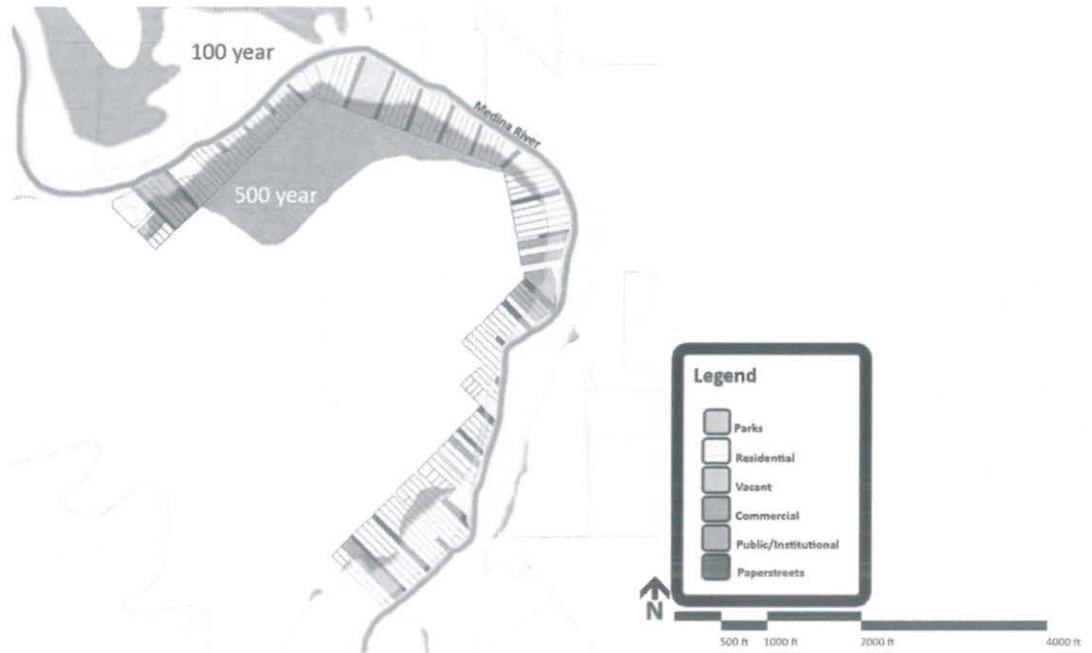
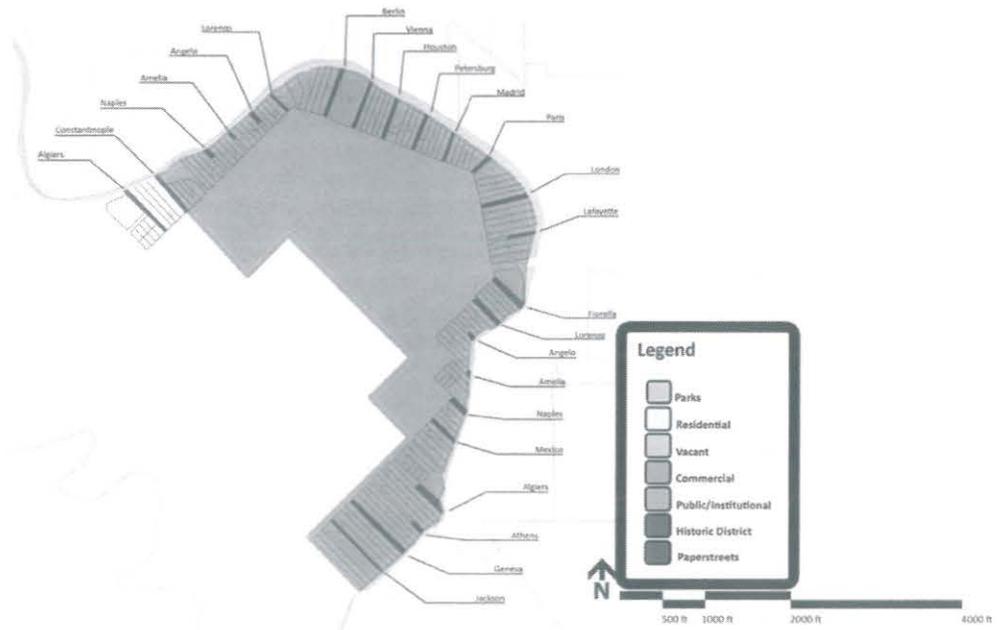


Figure 1. Contour Map  
This map displays the contours lines in and around the City of Castroville at 10 foot intervals.



**Figure 2. FEMA Floodplain Map**  
 This map illustrates the 100 and 500 year floodplain designated by the Federal Emergency Management Agency for the City of Castroville.



**Figure 3. Historical District Map**  
 23 of the 24 identified rights-of-way fall within the Historical District designated by the National Register of Historical Places in 1970.

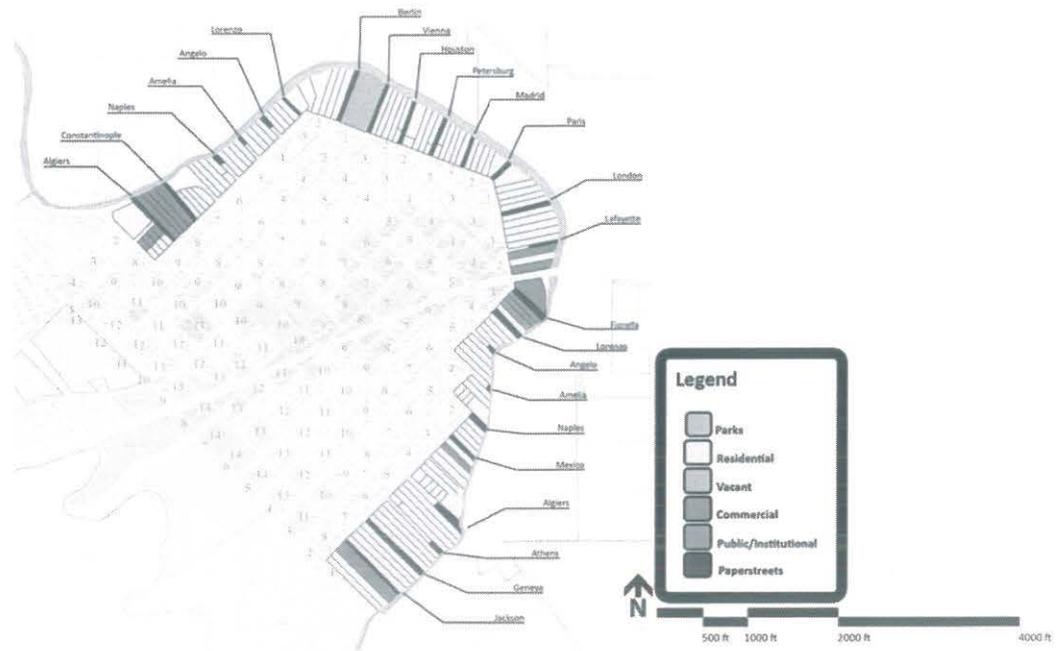


Figure 4. Rights-of-way Identified  
There are 24 identified rights-of-way in the City of Castroville.

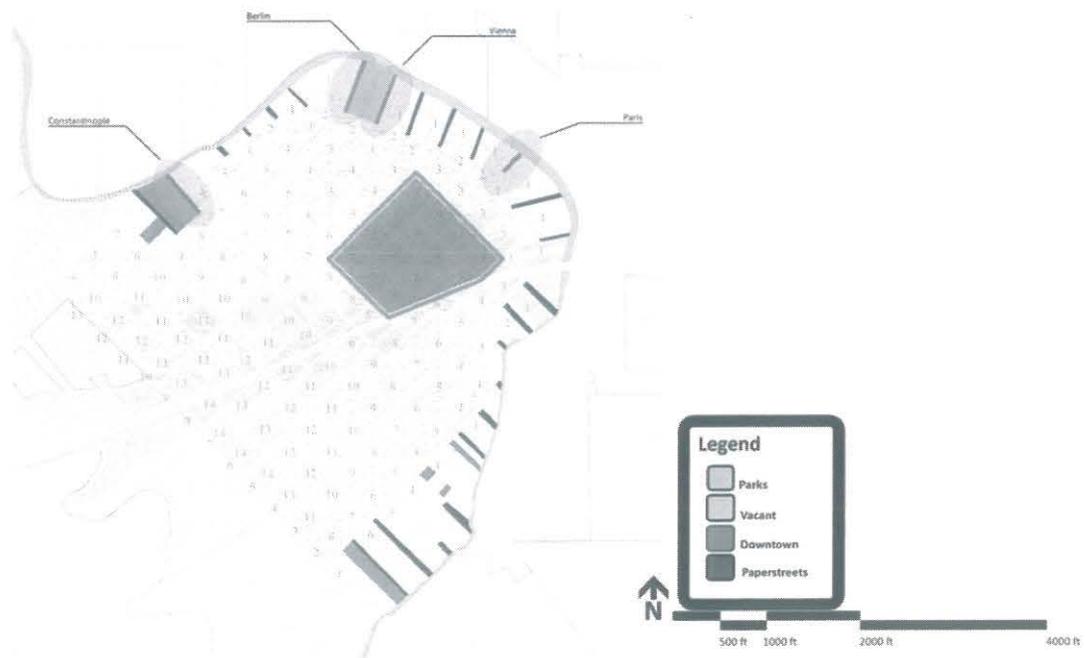


Figure 5. Pedestrian Emphasis  
An emphasis on pedestrian design has been placed on four chosen rights-of-way based on their proximity to vacant land, parkland, or existing high pedestrian use areas and the opportunities these locations offer.

Pedestrian activity will be most utilized and successful within the four following rights-of-way:

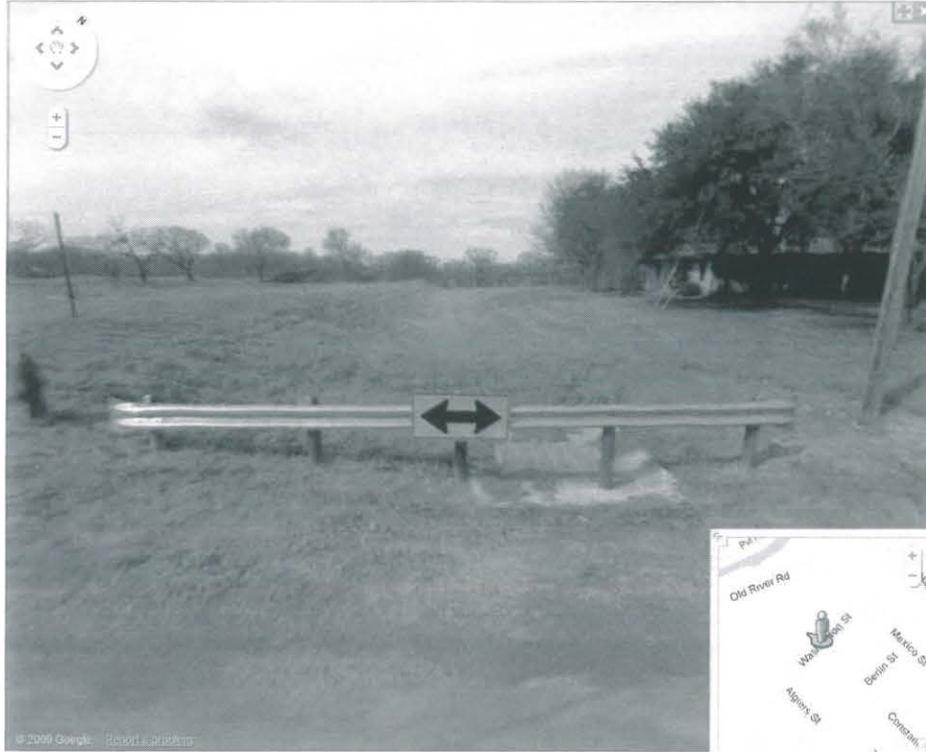


Figure 6. Constantinople Street Right-of-way



Figure 7. Berlin Street Right-of-way

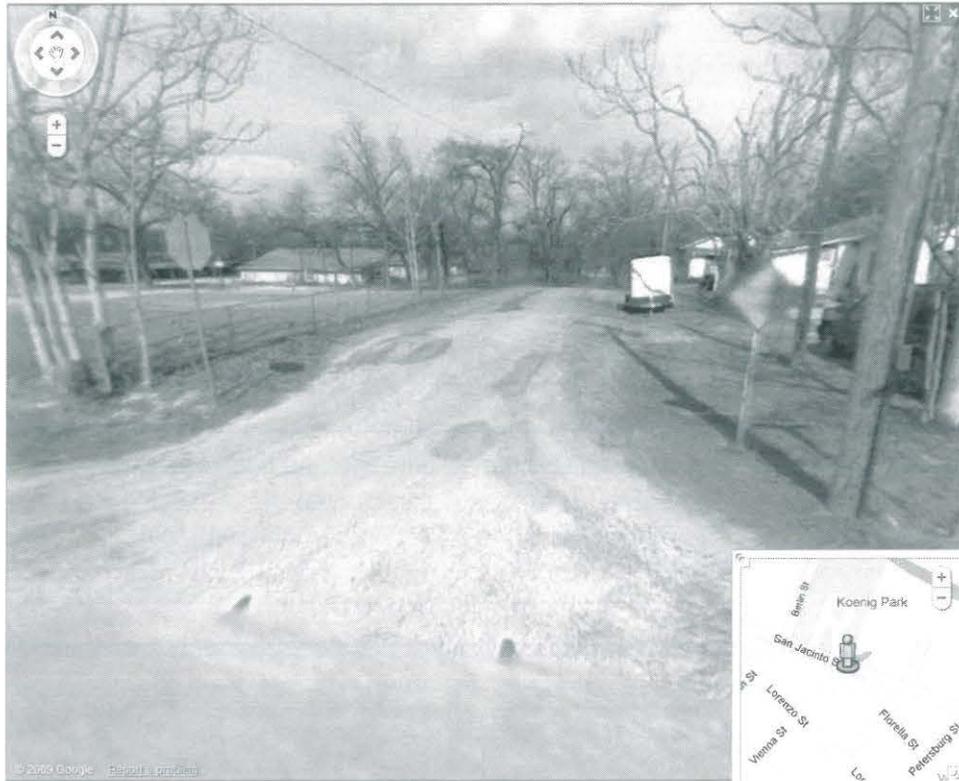


Figure 8. Vienna Street Right-of-way



Figure 9. Paris Street Right-of-way

### Goals

The intent of the design of the rights-of-way leading to the Medina River is to satisfy the following design goals:

#### Function

**Flood Control:** The rights-of-way offer a drainage corridor from the inner-city of Castroville to the Medina River.

**Water Filtration:** Planting of native vegetation will filter pollutants and sediments from storm water runoff before entering the Medina River.

#### Accessibility

**Wildlife:** The rights-of-way were initially designed to allow livestock access to the Medina River. There are no livestock within the city limits today, but wildlife still depend on the river for survival. These rights-of-way will serve as wildlife habitats and access corridors to the Medina River.

**Emergency Vehicles:** Within the right-of-ways, a 12 foot wide, clear path will make accessibility easier for emergency response vehicles in case a situation needing such assistance occurs on or near the Medina River.

**Tourism:** Visitors and residents will be able to walk or bike down a number of these rights-of-way to experience both the medina River and the wildlife it supports.

#### Healthy Environment

**Medina River:** The rights-of-way will allow pollutants and suspended soils to be filtered before entering the Medina River.

**Wildlife:** A sustainable habitat is created for local wildlife when plantings of native vegetation are reintroduced into the rights-of-way.

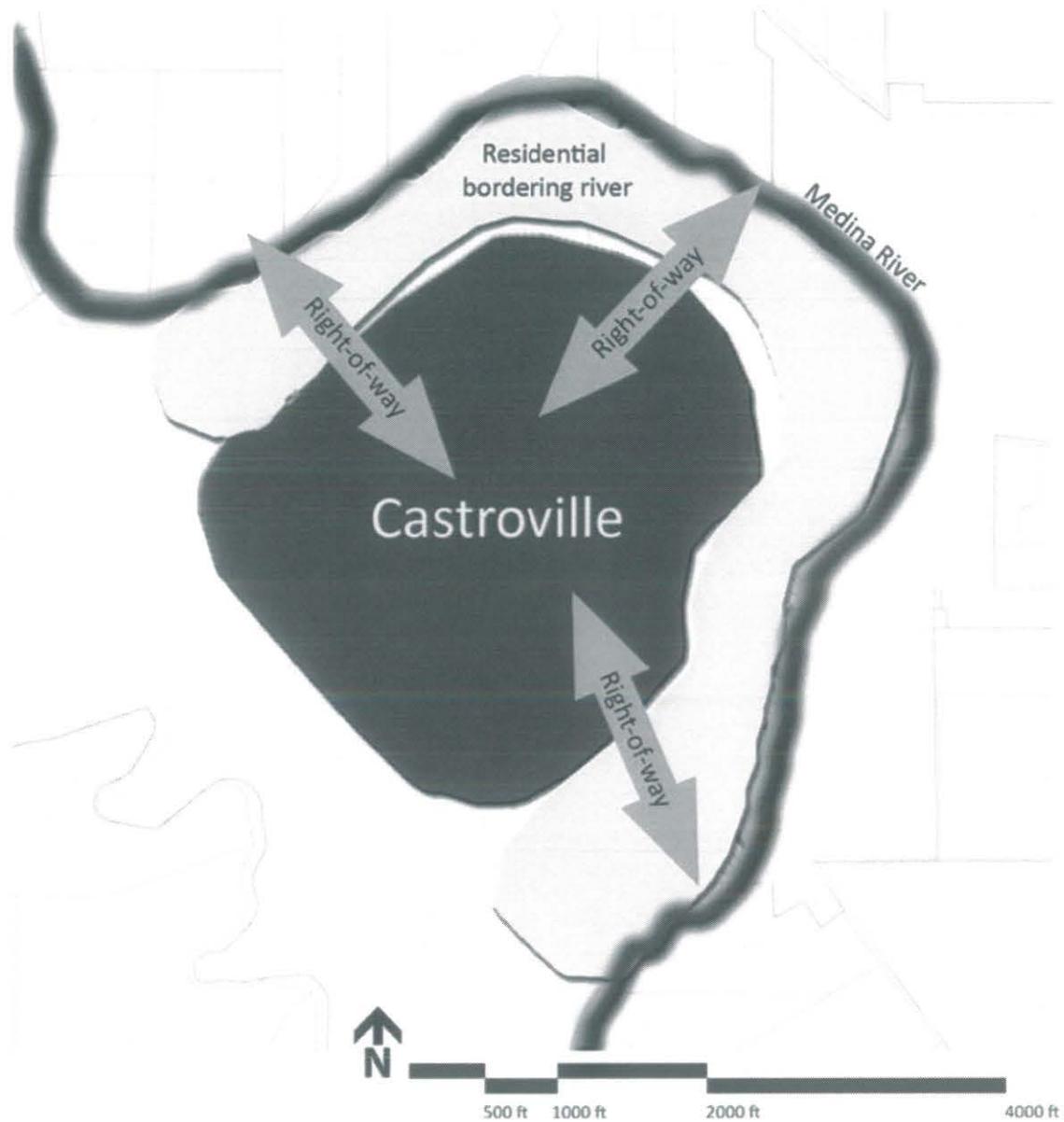
#### Healthy Community

**Flood Control:** Each right-of-way will allow for a quicker and more efficient evacuation route for flood waters, thus reducing the risk of flood waters jeopardizing the welfare of Castroville residents.

**Outdoor Recreation:** Both passive and active recreation is encouraged within these rights-of-way. Limited access to the Medina River offers observation and reflection points, while permeable paths create bike and hike opportunities for visitors and residents.

**Education:** Natural processes within the rights-of-ways, as well as wildlife and vegetation found there, will be illustrated on informational sign boards to aid in education the public on their surrounding environment and foster an appreciation for it.

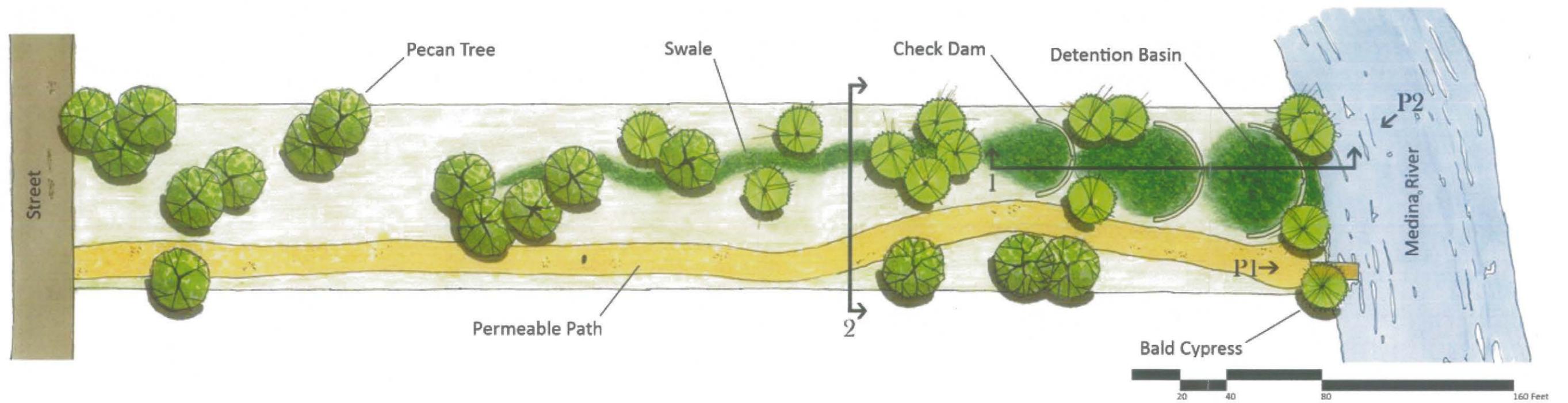
## Design Implementations



**Figure 10. Concept Map**

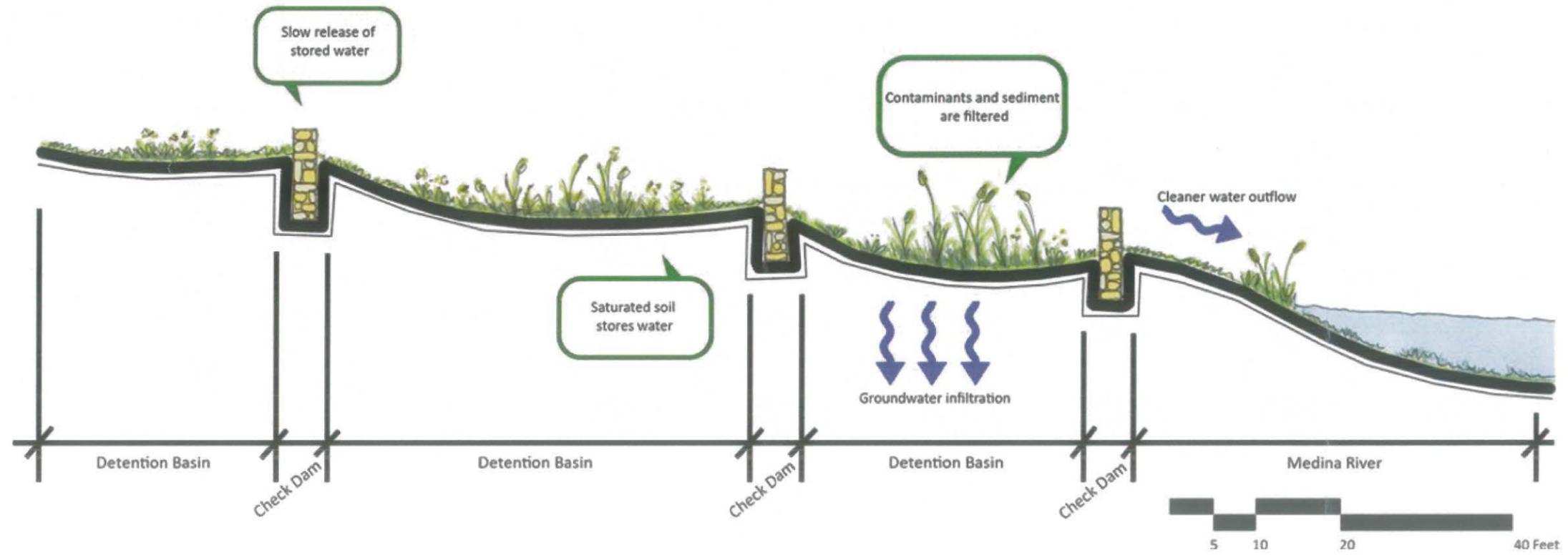
This concept demonstrates how residents and visitors pass through an area of residential space in order to get to the Medina River. With the redesign of the rights-of-way, conflict between pedestrians and neighboring residents would be reduced.



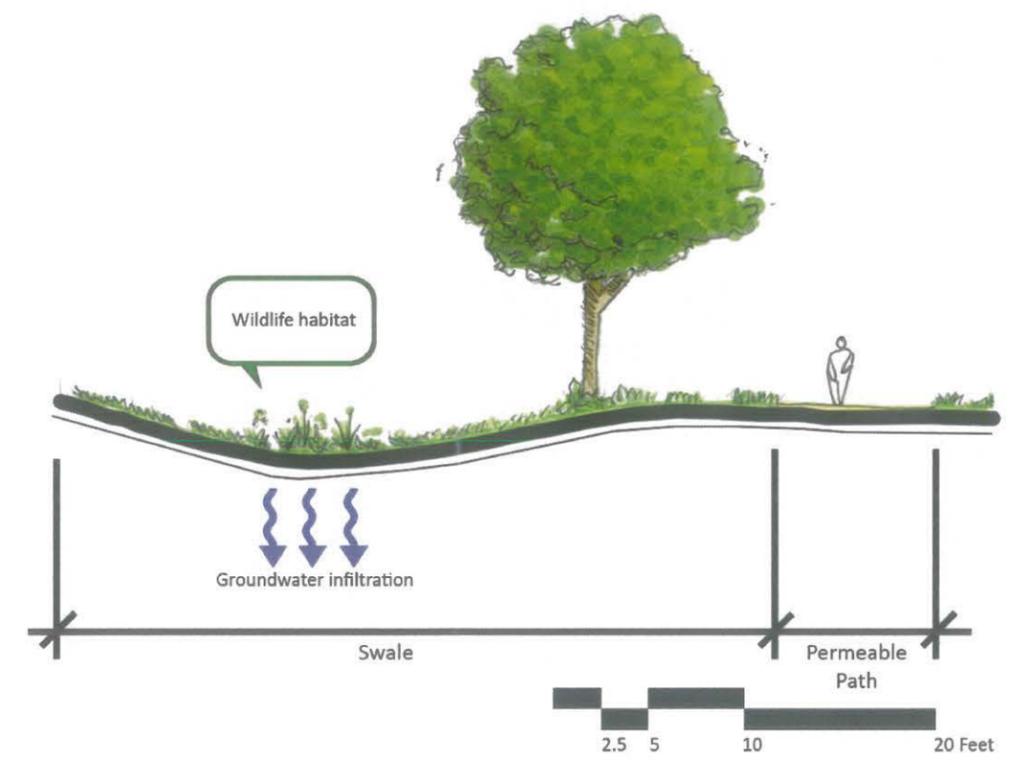


**Figure 11. Plan**

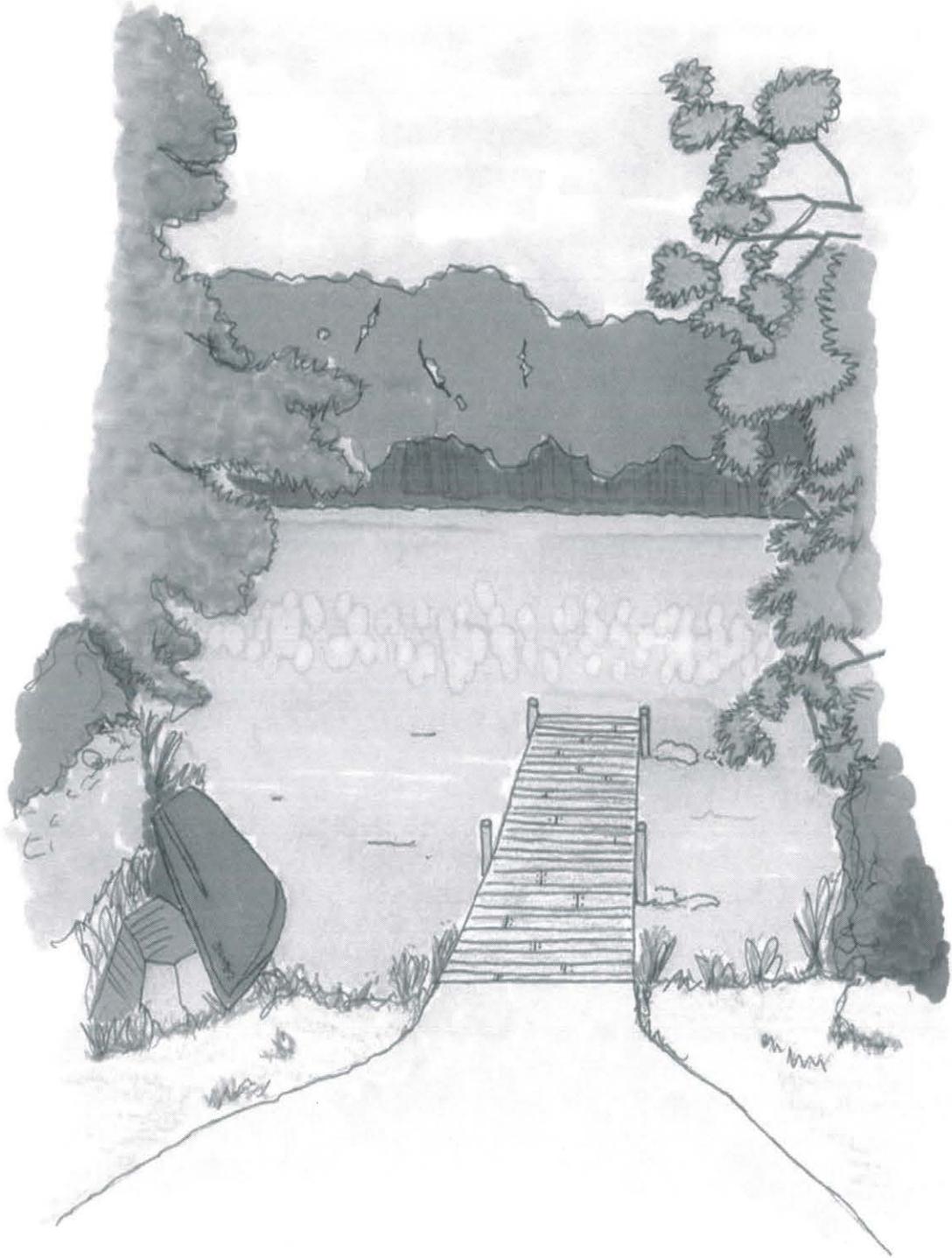
This plan illustrates an overhead view of a typical right-of-way design. Moving from left to right, storm water runoff moves down a channel that parallels a permeable pedestrian path. Before entering the Medina River, the water travels through a series of check dams that both filter sediments and pollutants, but also slow the runoff water that could cause erosion along the river bank.



**Figure 12. Longitudinal Cross Section**  
View of the water filtration system implemented in the rights-of-way.

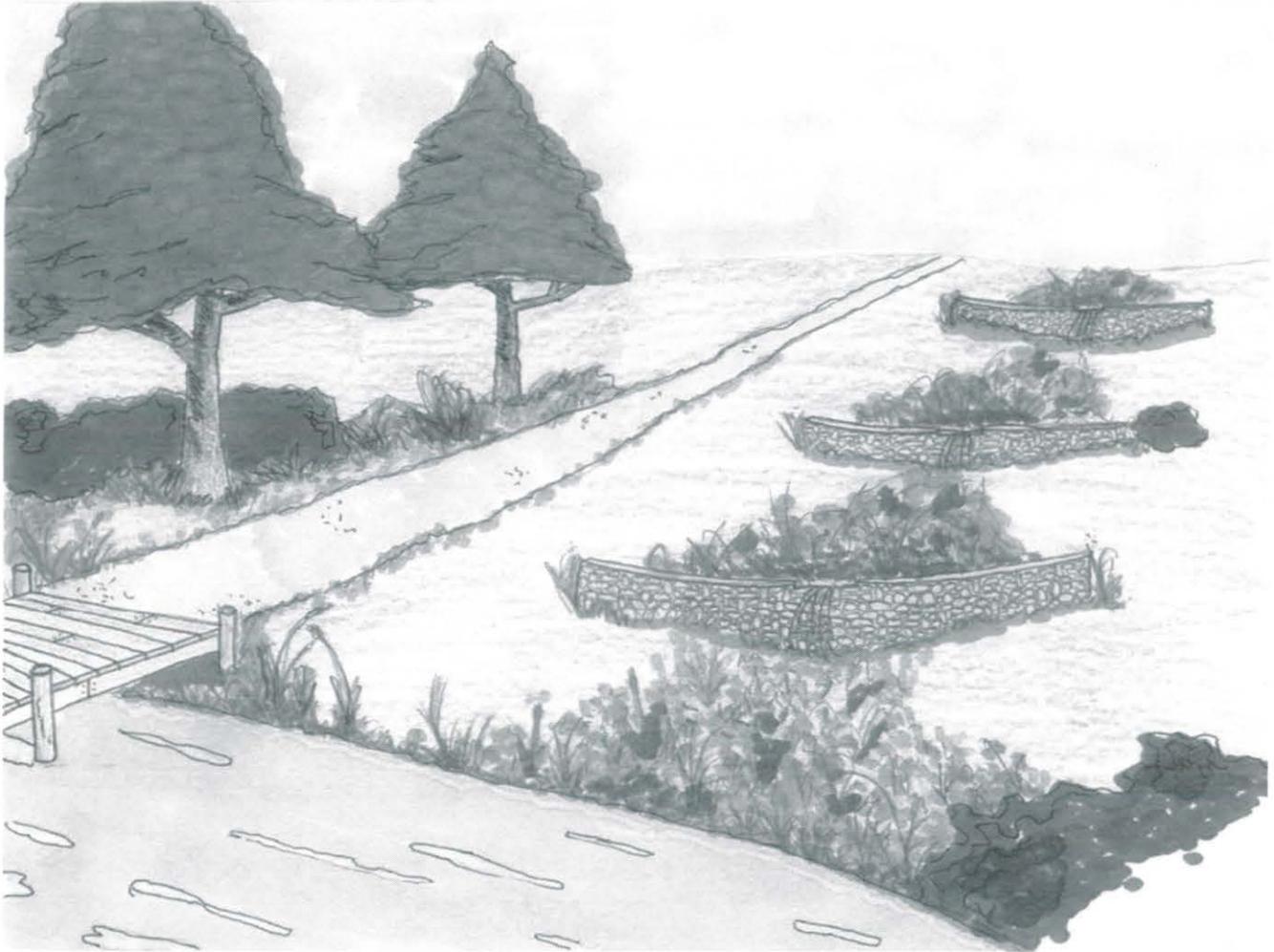


**Figure 13. Cross Section**  
View of the water channel and associated systems in the rights-of-way.



**Figure 14. Dock Perspective**

This image illustrates the view from the end of the permeable path within the right-of-way, looking out across the Medina River. A wooden dock offers access to the river.



**Figure 15. Check Dam Perspective**

This image demonstrates the flow of the storm water runoff down the right-of-way as it passes through the series of check dams that slow and filter the water before entering the Medina River.

Prepared by: Gustafson and Marston

## Introduction

Cross Hill, also known as Mont Gentilz, got its name from Theodore Gentilz, who was a close friend of Henri Castro. Gentilz was the surveyor of Castroville who was responsible for the layout of the town, as well as the layout of the farms. After moving to San Antonio, Gentilz became a famous painter of Texas themes, including some scenes of early Castroville. The hill was named in his honor due to his significance to the City of Castroville.

Cross Hill was established from an old European tradition, in which a village would declare its faith by placing a cross on a prominent point. When early settlers from Alsace came to Castroville, they brought this tradition with them.

Cross Hill is an important historical site in Castroville, beloved by the citizens of the town. The purpose of this design proposal is to improve the space to better facilitate its intended uses. Improvements can be made to accommodate users who wish to use Cross Hill as a place to contemplate or celebrate their faith, as a place from which to view the City, or simply as an enjoyable setting in which to spend time.

## Site Context

Cross Hill is located at the top of Mont Gentilz, which is located on the southwest edge of Castroville (Figure 1). A majority of the southwestern side of the hill is within Regional Park. The hill is bordered by Zion Cemetery on the northwestern side, with which it shares a similar religious purpose. Residential neighborhoods border the remaining sides of Mont Gentilz.

The majority of this design proposal will focus on the area at the top of Cross Hill, where the cross itself is located. This area is situated about 100 feet northwest of the water tank that shares the upper portion of the hill.



Figure 1. Location Map of Cross Hill. Sources: Chase Schuchard.

## Existing Conditions

After investigation of the site, it is clear that several problems affect the functionality of Cross Hill.

- Poor Accessibility (Figures 2-3)
  - Dense, overgrown vegetation makes walking trail very narrow
  - Steep, rocky, and uneven ground is difficult to navigate by vehicle or on foot
  - Road not wide enough for two cars to pass safely
- Compromised Views (Figures 4-5)
  - Water tank dominates view of Cross Hill from below
  - Cross not very visible from below
  - Views of surrounding area blocked by large, overgrown vegetation
  - Water tank blocks some views to and from the Hill
- Intended Use of Space Unclear (Figure 6)
  - Parking area not clearly designated
  - No seating
  - Minimal signage
  - Undefined edges of spaces caused by unmaintained vegetation



Figure 2. View of pedestrian path on Mont Gentilz. Source: Leslie Snyder.



**Figure 3.** View of road headed down from top of Cross Hill. *Source: Darcy Gustafson.*



**Figure 4.** View of existing vegetation that blocks views of Castroville from top of Cross Hill. *Source: Darcy Gustafson.*



**Figure 5.** View of water tank that blocks views from top of Cross Hill. *Source: Leslie Snyder.*



Figure 6. View of open, undefined space on top of Cross Hill. *Source: Justin Marston.*

### Goals

- Protect the historical and cultural significance of Cross Hill
- Maintain the traditional function of Cross Hill as a place to proclaim the town's faith
- Provide a more comfortable place for people to go to celebrate or contemplate their own faith
- Improve pedestrian and vehicular access
- Maximize and improve views of the surrounding areas from on top of Cross Hill
- Improve visibility of the Cross from areas below
- Define edges and uses of different spaces more clearly

## Proposed Extension of Regional Park

Figure 7 shows the existing land use according to the report done by Frie Planning and Development in 2008. The map shows vacant areas represented in gray, single family residential in yellow, and Regional Park in green. As indicated by the map, Cross Hill falls on vacant land outside the boundary of Regional Park. However, Cross Hill currently functions as a part of Regional Park, and there is access to Cross Hill from the park trails.

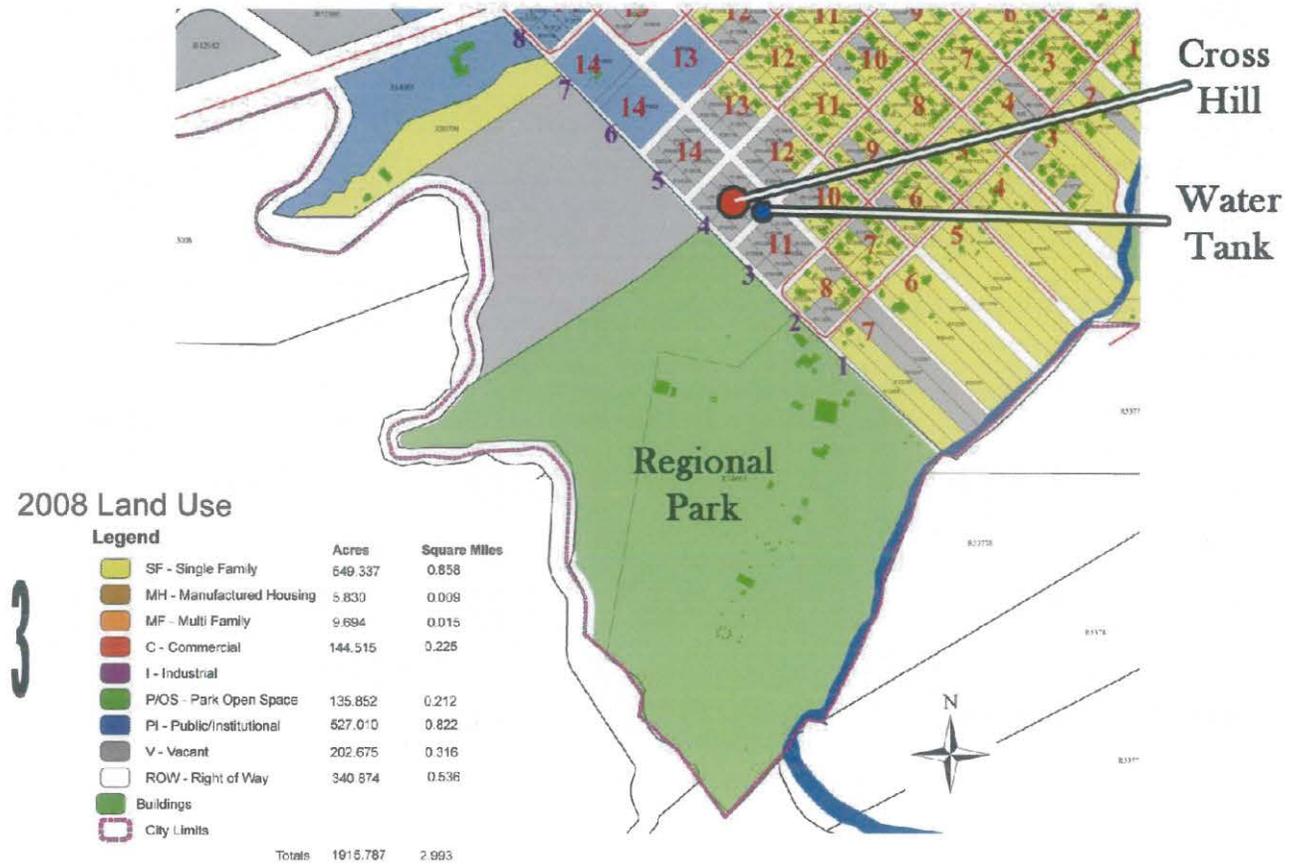


Figure 7. Existing Land Use Map of Castroville, TX in 2008. Source: Castroville Horizons: City Master Plan.

One of the main concerns we have for Cross Hill as the current conditions exist is that Cross Hill sits on vacant undeveloped land, however it does possess ownership. Our concern is that being private land, the owner could potentially sell or develop on the property itself if they had the resources to do so, according to the city.

Figure 8 shows the existing area of Regional Park in the lighter green and the proposed addition to Regional Park in the darker green. The extended area is approximately 18 acres, which would bring the existing size of Regional Park from about 123 acres to around 140 acres, increasing the opportunity for recreation.

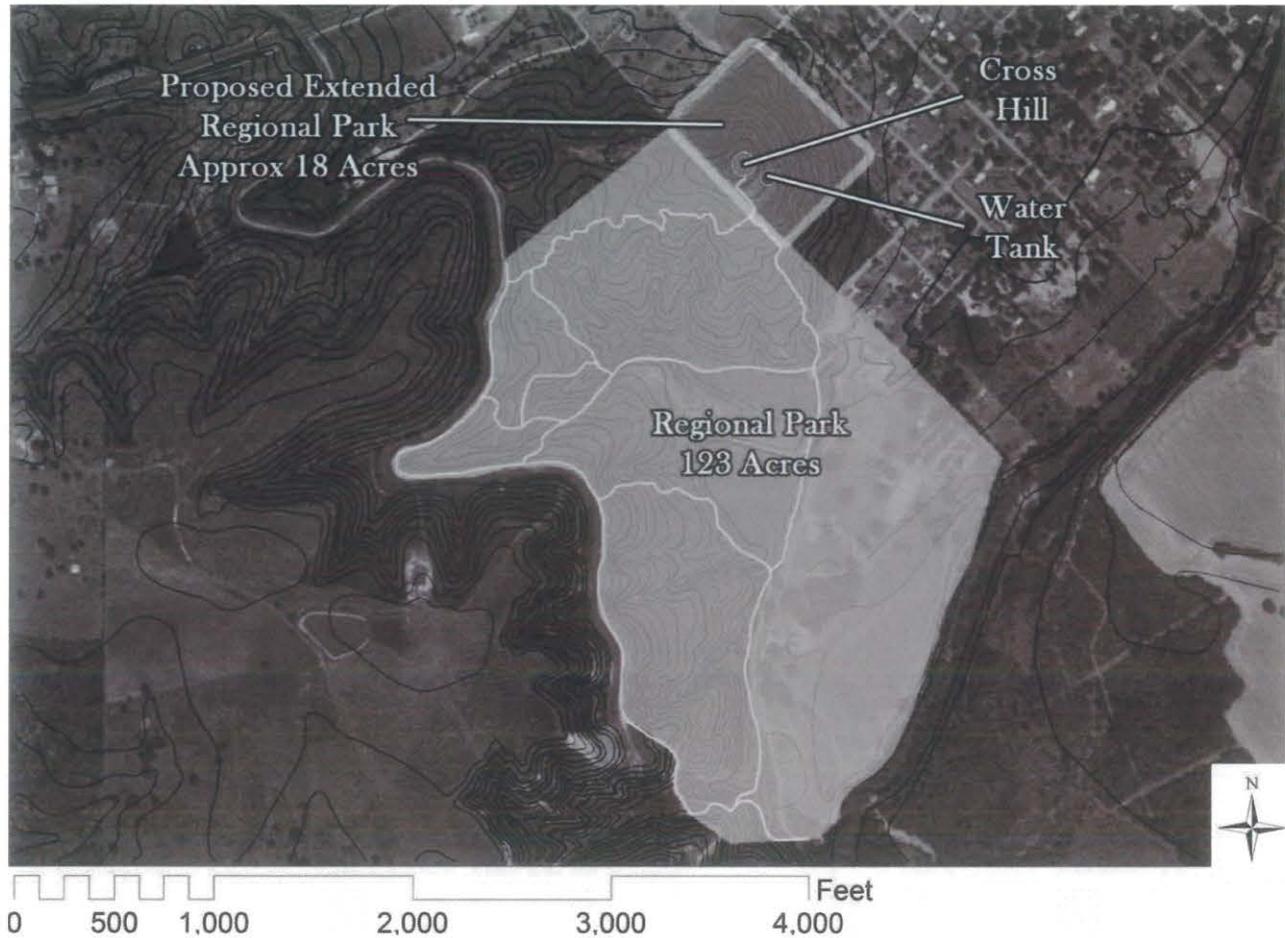


Figure 8. Map of proposed extension of Regional Park. Source: Justin Marston and Darcy Gustafson.

By extending this portion of Regional Park to encompass Cross Hill, it will preserve the site of Cross Hill by preventing any further development on the hill itself which could potentially obstruct the views to and from Cross Hill.

## Concept Diagram

Figure 9 is a conceptual diagram, indicating the major features of the renovation design proposal. It shows how the vehicular and pedestrian circulation is laid out, also providing an area for parking at the top of the hill. It indicates where the vegetated buffer will be to screen the existing water tank at the top of the hill. The diagram shows where each of these elements are in relation to the actual cross.

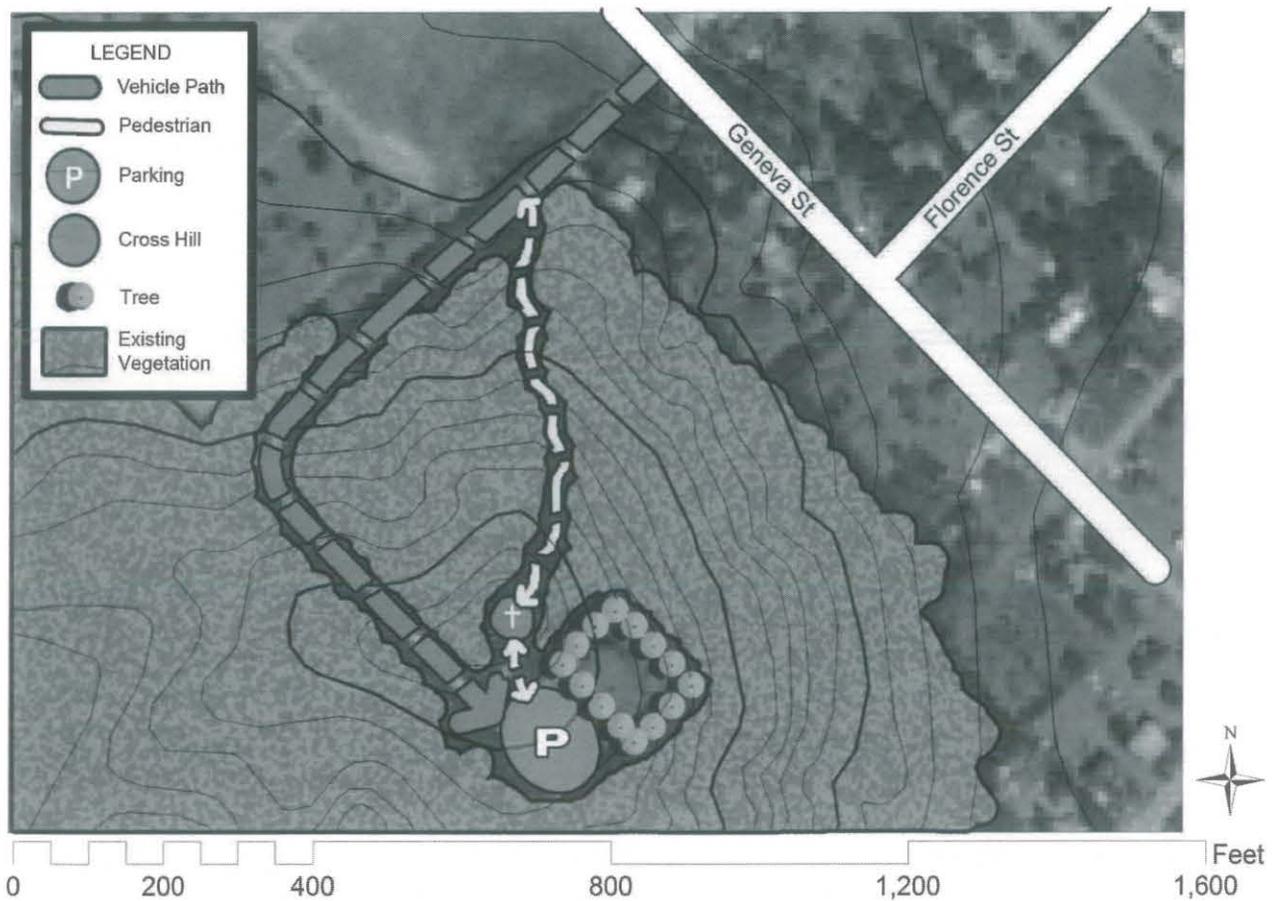


Figure 9. Conceptual Map of Proposed Cross Hill Renovation. Source: Justin Marston and Darcy Gustafson.

## Proposed Site Plan

The extents of the proposal for the renovation of Cross Hill encompass the area shown in Figure 10. At this scale, the map shows the layout and spatial relationships of the major elements of the site.

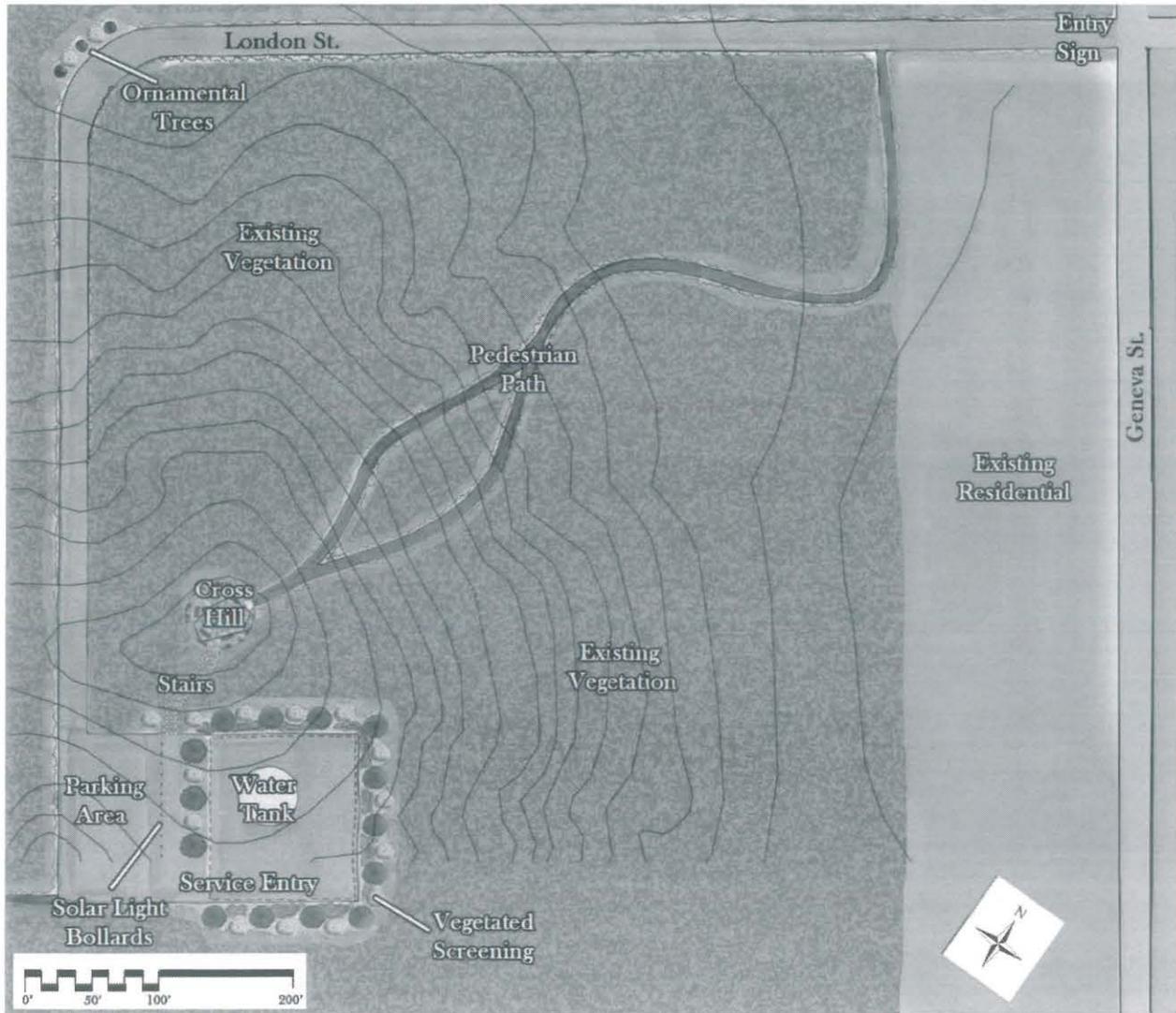


Figure 10. Site plan of full extents of proposed Cross Hill renovation. *Source: Darcy Gustafson and Justin Marston.*

Almost all of the existing vegetation on the site will be preserved. Removal of the vegetation would result in destabilization of the slopes, thus increasing the likelihood of erosion on the hill. Maintaining the vegetation also preserves the habitat for any animals that may currently live, hunt, or forage there. The vegetation on the hills should also be kept to avoid detracting from Castroville's characteristic natural beauty.

A new sign at the intersection of London Street and Geneva Street will welcome visitors to Cross Hill. More clearly indicating the entrance to Cross Hill will increase its usage, retaining its importance as a religious, cultural, and historical icon of Castroville.

The portion of London Street that runs up to the top of Cross Hill will be re-graded and compacted so that the slope will be much smoother, giving more vehicles access the top of the hill. The large rocks will also be removed prior to compaction of the road. By widening the road to twenty feet, cars will be able to pass one another more easily when traveling in opposite directions.

The existing pedestrian path from London Street to the top of Cross Hill will also be re-graded and compacted after removal of the large rocks. Widening the pathway to eight feet across will keep the path from getting too narrow when the vegetation begins to grow larger, reducing the need for maintenance. A loop has also been added in the path to give users more variation of experience.

## Enlarged Site Plan

Figure 11 is an enlarged site plan that focuses on the area encompassing the water tank and the parking.

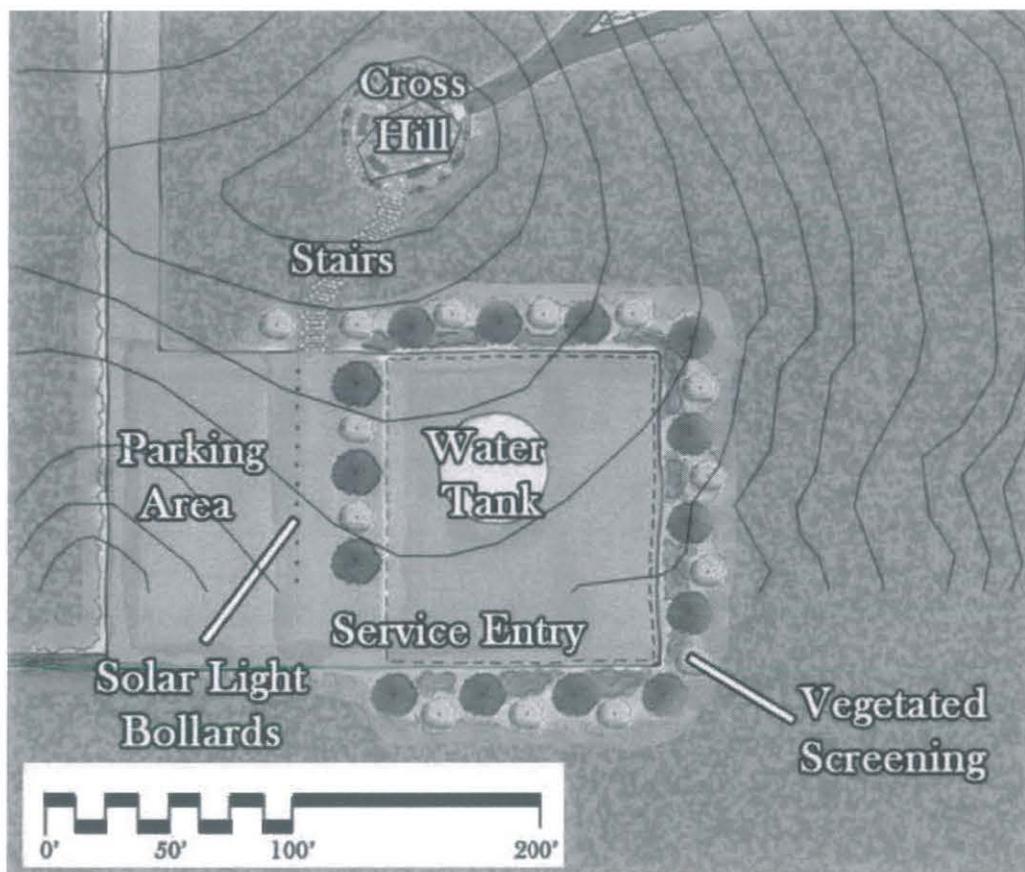


Figure 11. Enlarged site plan of proposed improved parking area. Source: Darcy Gustafson and Justin Marston.

Like the road and the pedestrian path, the existing informal parking area at the top of the hill will also be re-graded, compacted, and cleared of large rocks.

A row of bollards will be installed in the parking area, to which cars will park perpendicularly. These bollards will protect the pedestrians that use the path from their cars to the stairs that lead up to the top of Cross Hill. They will also protect the trees put in place to screen the water tank. These bollards could further enhance the safety and accessibility of the site by being equipped with solar powered lights (Figure 12).



Figure 12. Possible solar-light bollards. Sources: <[solarilluminations.co.uk](http://solarilluminations.co.uk)>, <[scorigin.com](http://scorigin.com)>, and <[windandsolarworld.com](http://windandsolarworld.com)>.

The steps leading up to the cross will be lit at nighttime with solar lights (Figure 13). Small, inexpensive solar lights can be placed into the beds flanking the steps by hand. They are durable, easy to maintain or replace, and last a relatively long time.



Figure 13. Possible solar lights for pathway. Sources:<[beamsolar.com](http://beamsolar.com)> and <[modernecohomes.com](http://modernecohomes.com)>.

The existing fence around the water tank will be left in place for security. A strip of land along to southeast side of the parking area will remain open for vehicular access to the water tank by authorized personnel.

The distracting views of the water tank will be screened by a row of trees along each side. A variety of trees are proposed, in order to reduce the maintenance requirements (Figure 14). If only one type of tree were to be used, it is not likely that they would grow to similar shapes and sizes if left on their own. Multiple species allows for planned variety. The tree species chosen are all small trees that should not exceed thirty feet in height, so they will not grow taller than the cross. This is important, because the cross should be the highest and main focal point on the hill. They will not further block views of the cross. These drought tolerant species are suited to the climate in Castroville and the rocky conditions on top of Cross Hill.



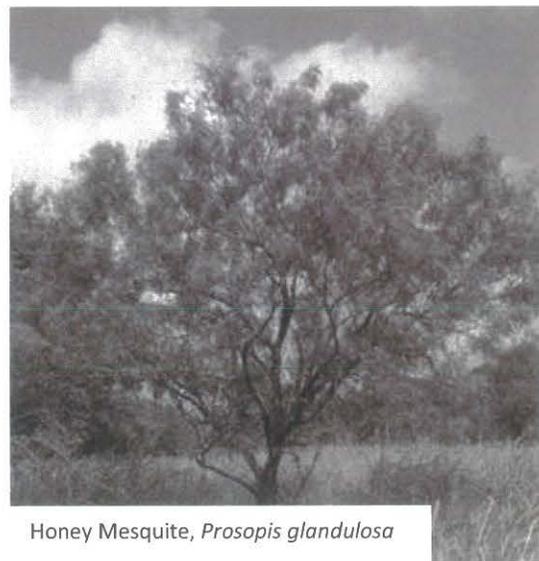
Desert Willow, *Chilopsis linearis*



Texas Mountain Laurel, *Sophora secundiflora*



Crabapple, *Malus spp.*

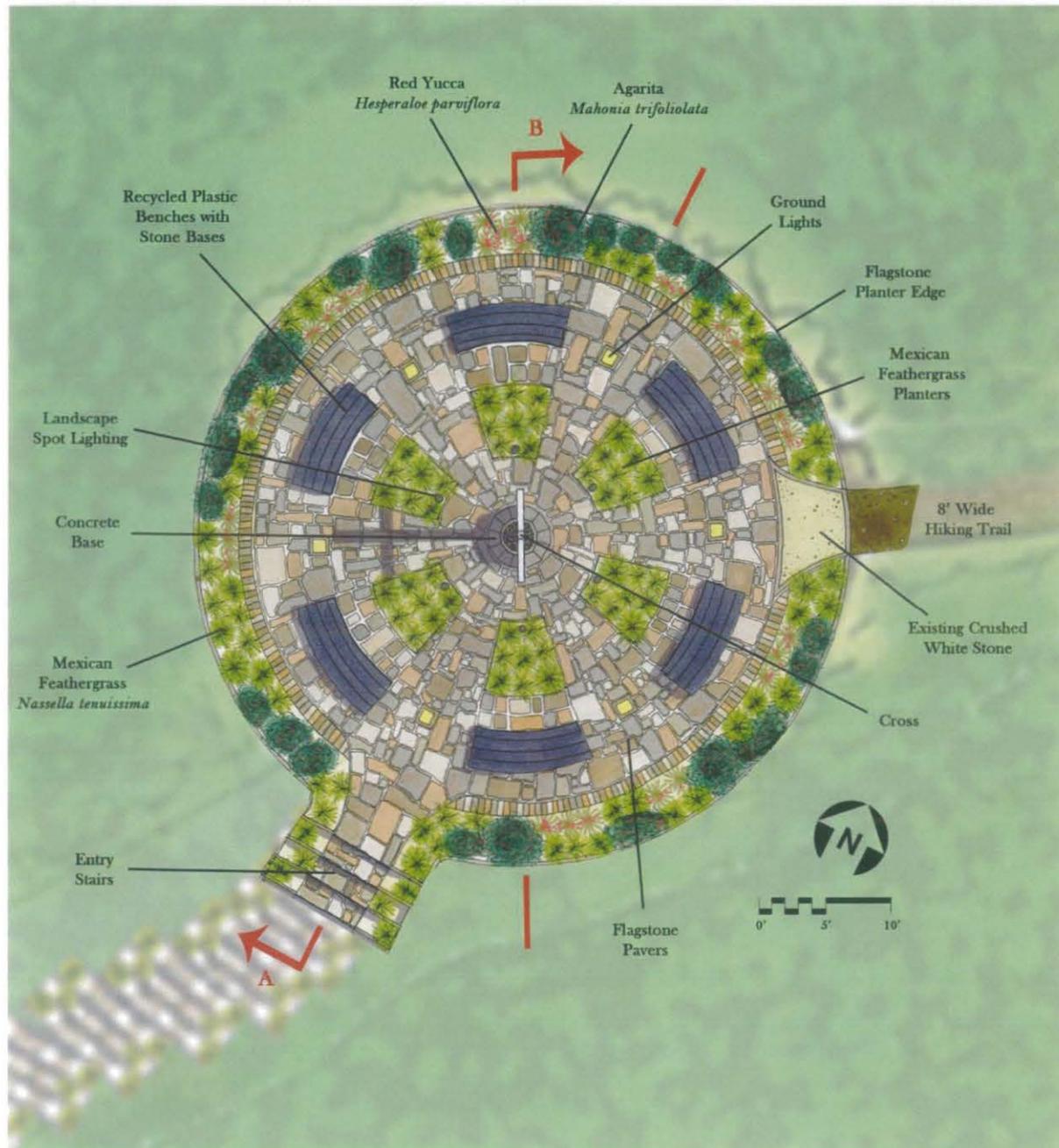


Honey Mesquite, *Prosopis glandulosa*

**Figure 14.** Proposed tree species for screening water tank. Sources: <desertwillowdesigns.com>, <jbrlandscaping.com>, <cirrusimage.com>, and <ci.austin.tx.us>.

## Site Plan Cross Hill

The space around the cross has been reshaped from its current oval form to a perfect circle fifty feet in diameter. Figure 15 shows the details of the proposed redevelopment of the area on top of Cross Hill.



**Figure 15:** Enlarged site plan of proposed redevelopment on top of Cross Hill. Sources: Darcy Gustafson and Justin Marston.

The circular area will be paved over with flagstones. In comparison with the current uneven and rocky surface on top of the hill, this will improve the accessibility of the space. This new surface will be more durable when exposed to natural elements than the bare soil is now.

A five foot wide plant bed will surround the entire circle. With the existing vegetation cleared from the main circle, as well as this plant border, views from the hill will be improved. The existing vegetation in this plant bed area will be replaced with a variety of smaller plant species (Figure 16). These species are all suitable for full sun xeriscape gardens in this region of Texas. The large rocks collected from the site during the re-grading and compaction of various areas can be crushed to make the growing media for these plants.



Mexican Feathergrass, *Nassella tenuissima*

Red Yucca, *Hesperaloe parviflora*

Agarita, *Mahonia trifoliolata*

**Figure 16.** Suggested plants for Cross Hill xeriscaping. Sources: <land8lounge.com>, <choate.usa.com>, and <uts.cc.utexas.edu>.

The steps leading up to the cross are made of flagstone and have extended planting beds on either side. These beds are smaller replications of the larger circular bed to be implemented on top of Cross Hill. Mexican Feathergrass is the only suggested plant for these beds, because it is safest to use soft plant material along pathways. People might injure themselves if plants with thorns or sharp leaves are used along both sides of the path.

Six benches are arranged around the cross. These benches could be flat and backless to allow people to sit and face the cross, or sit and look out across the town in the opposite direction of the cross. The seats on these benches are supported by stacks of flagstone, continued from the proposed paving on the ground. Recycled plastic is an ideal material for the top of these benches, as it is a sturdy material in all types of weather. Stone or concrete seats would get too hot sitting exposed under the Texas sun all day. Wooden benches would not be durable enough in the rain and sun, and would eventually splinter and begin to look unattractive.

Six in-ground lights are positioned between each of the benches. They shine up, rather than at any specific object, so that the focus of the lighting at night can come from the spotlights highlighting the cross. Because these lights are completely level with the ground, they will not present a tripping hazard. These lights will be subtle, but also provide necessary light for improved safety and accessibility in the dark.

The six beds surrounding the cross are planted with Mexican Feathergrass. Due to the site's direct exposure to wind, the movement of these grasses will produce visual and auditory interest. The soft texture of the grasses will also help to balance the coarser texture of the stone and concrete on top of the hill. Again, the growing media is crushed white rock.

Six small spotlights will be positioned around the cross, one in each of the grass beds. These spotlights will shine up at the cross at night, making it beautifully visible from the city below.

The cross itself will be repainted bright white to enhance its visibility, both during the daytime and nighttime.

The existing concrete base of the cross has been enlarged to a five foot diameter dodecagon (12-sided polygon) that is three feet tall, that tapers outwards towards the bottom. A depression in the top of the base, approximately six inches deep, holds large black river rocks that will contrast sharply with the white of the cross that rises out of them. These smooth river rocks will remind viewers of the nearby Medina River. The information from the existing sign on top of Cross Hill can be placed onto more permanent plaques to be mounted on the new base.

### Perspectives

The drawings in Figures 17-18 depict possible views of the site that could be attained by implementing this design proposal.



**Figure 17.** View to the north entering the top of the hill. Sources: Justin Marston and Darcy Gustafson.

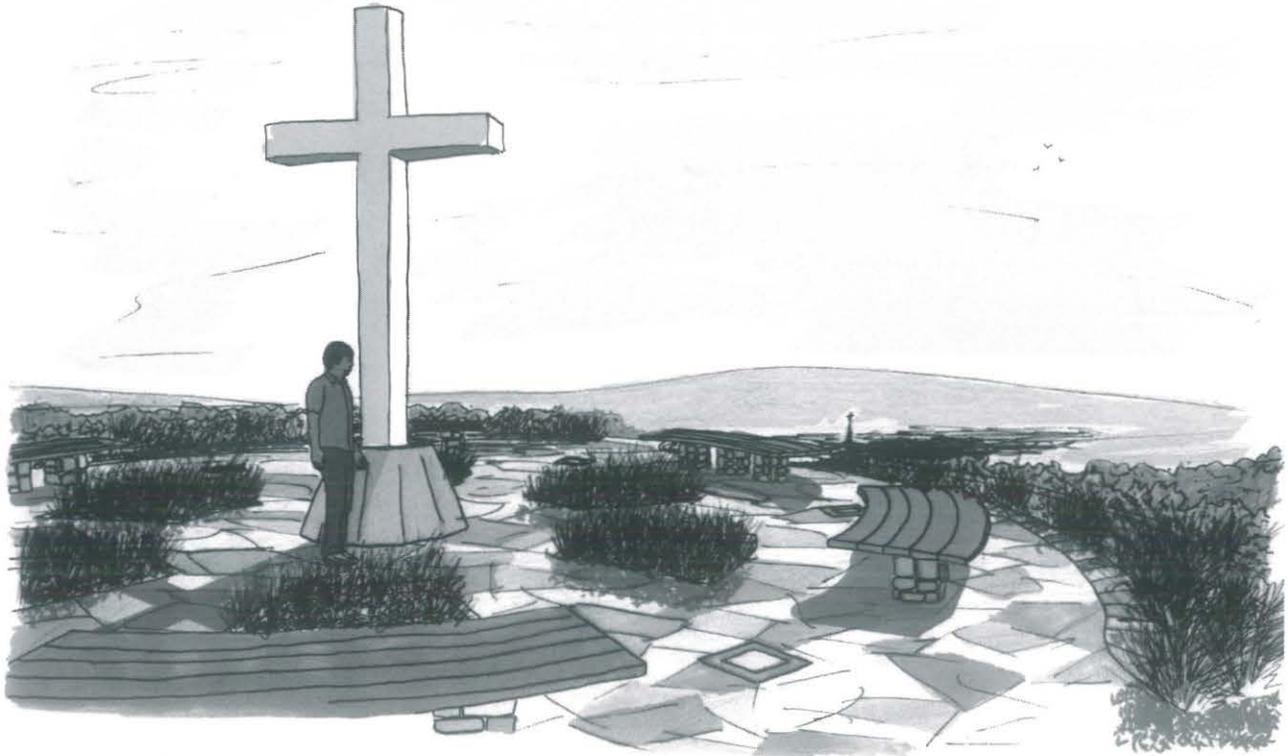


Figure 18. View to the northeast from the top of Cross Hill. Sources: Justin Marston and Darcy Gustafson.

## Cross Sections

These cross sections indicate the horizontal spatial relationships of the elements proposed for the top of Cross Hill (Figure 19). The enlarged site plan of Cross Hill shows which points these measurements are being taken at with red lines.



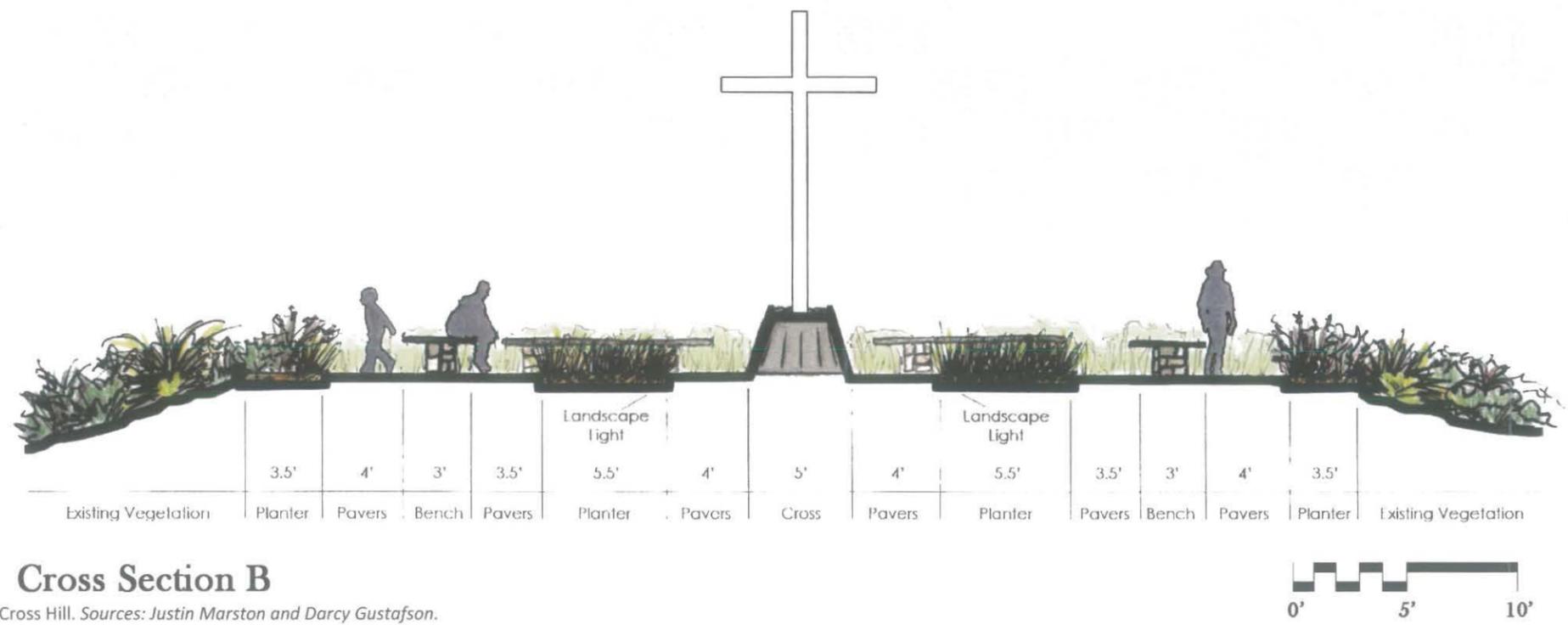
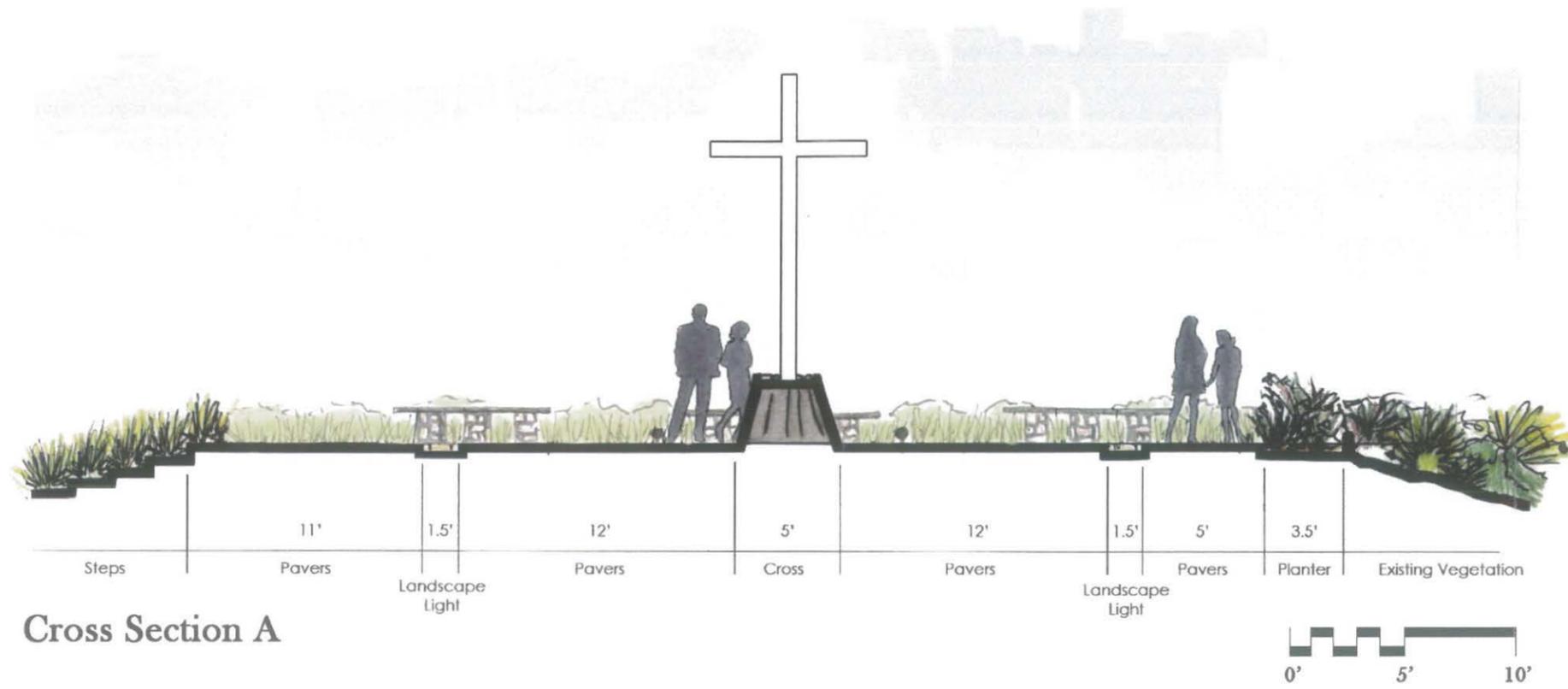


Figure 19. Cross sectional views of the top of Cross Hill. Sources: Justin Marston and Darcy Gustafson.

## Conclusion

Cross Hill plays an important cultural as well as historical role in the City of Castroville that should be well preserved and maintained. Over the years, Cross Hill has undergone many changes and its meaning to the City is more important than ever to preserve Castroville's unique identity.

This design proposal accomplishes the goals set for Cross Hill and makes it a functional and accessible destination for all visitors to enjoy. With a renovation of Cross Hill, the City of Castroville can help preserve its unique Alsatian identity with a place that represents a tradition that was brought over when the first Alsatian settlers moved to Castroville.

## References

"Black Solar Lamps." Photo. *Modern Eco Homes*. 30 April 2010

<<http://www.modernecohomes.com/solar/outdoor-lighting/>>.

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## Introduction

The cemetery grounds of Castroville are a key historical feature located on the south side of Hwy. 90, at the western edge of town. The grounds comprise both Zion Lutheran Cemetery and St. Louis Cemetery. The exact location of the cemeteries is displayed in Figure 1.

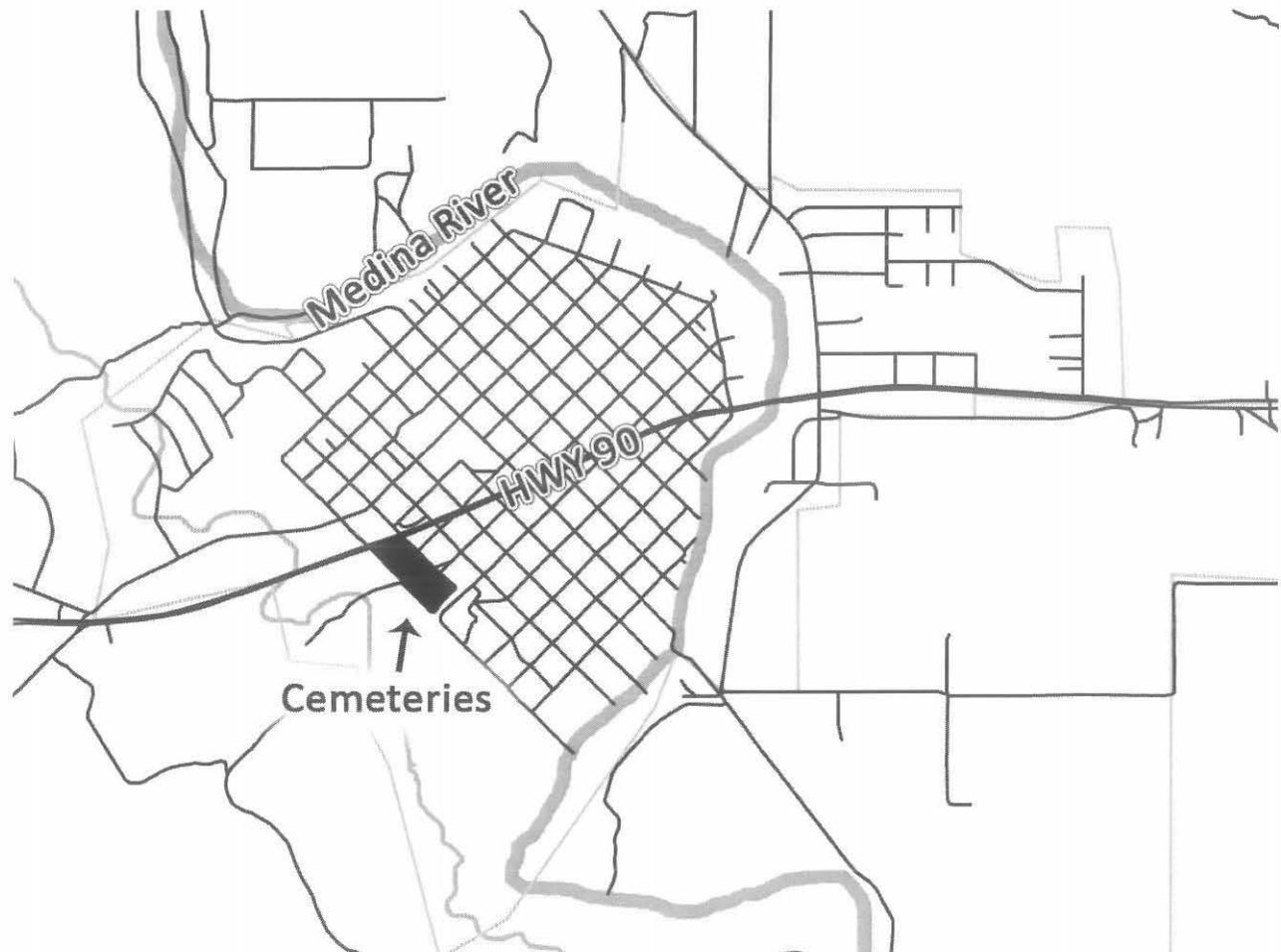


Figure 1. Location Map

### Existing Conditions

The cemeteries consist of three different fence materials; iron, chain-link and stone wall. The use of these three fence materials creates inconsistency throughout the cemetery. Vegetation such as crepe myrtles is present at the north entry gate of Hwy. 90, but is absent along most of the fence line. The majority of gate entries (identified in Figure 2a and 2b) lack adjacent, well-defined areas of vegetation. The gate entries (identified in Figure 3a and 3b) have signage that is significant to the history of Castroville, due to their unique and original design. The signs fail to serve as an entry that effectively separates the interior experience from the exterior of the cemetery. This lack of a well-defined entry-way can also be attributed to the surrounding elements lack of visual appeal.

The cemetery's location on Highway 90 conflicts with the sacred feel typically associated with cemeteries. The lack of visual and physical barrier between the edge of Highway 90 and the cemetery allow large amounts of traffic noise to enter the cemetery and degrade the overall experience within the sacred grounds. Also, the lack of a well-defined edge along the cemetery causes Highway 90 motorists to overlook the cemetery. These conditions prevent the cemeteries from reaching their full potential as a significant landmark that effectively promotes the history of the city. Sense of place and sense of enclosure are not achieved currently, and thus prevents Castroville from taking full advantage of the opportunity to provide a unique experience for tourists.

The cemeteries are located between commercial development to the east, and Hillcrest Chapel to the west. Overflow parking for the cemetery is available within the parking lots of Hillcrest Chapel and the commercial development.

Although the cemetery is disconnected from the historic walking tour of the historic district of town, the cemetery is conveniently located north of Cross Hill. The foothills, in which Cross Hill stands upon, serve as a scenic backdrop at the southern end of the cemetery. A poorly defined trail leading up to Cross Hill currently exists that could be improved for regular travel between Cross Hill and the cemeteries. Very few trees exist along the southern edge of the cemetery, which allows views to and from Cross Hill.



Figure 2a, Unique but poorly defined entry

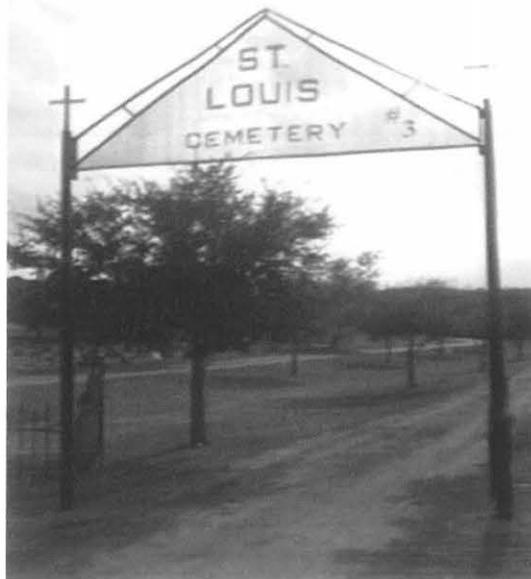


Figure 2b, Unique but poorly defined entry



Figure 2c, Lack of edge along Hwy. 90



Figure 2d, Lack of edge along Hwy. 90



Figure 2e, Low entry sign, low vegetation screening entrance



Figure 2f, Different fencing materials

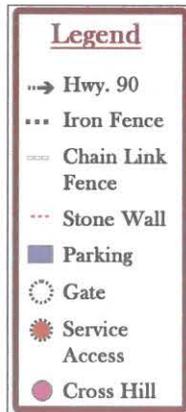
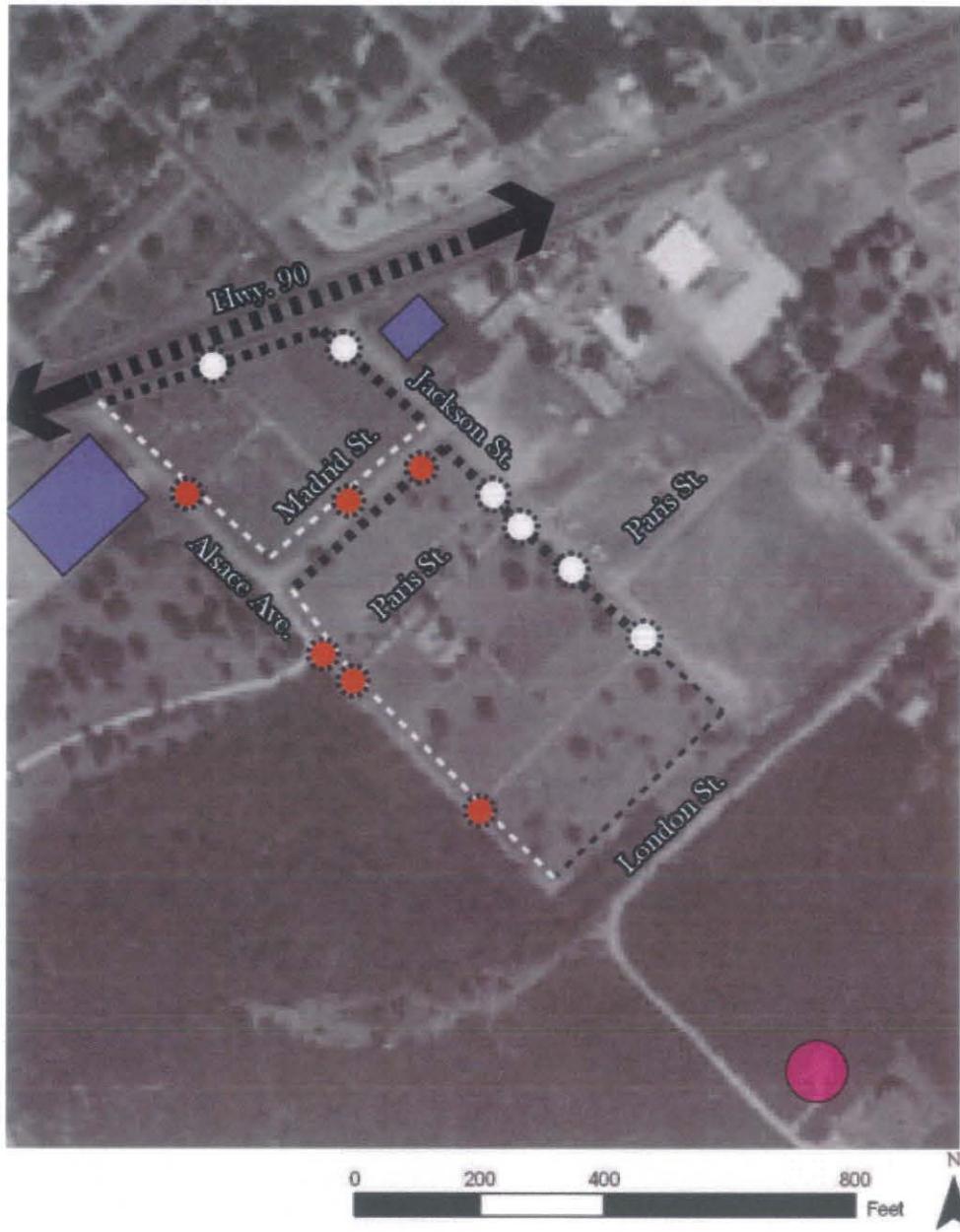


Figure 3. Existing Conditions Map

This map shows the existing parking to the west and to the east. It also identifies the three different types of fence material used throughout the site. Zion Lutheran Cemetery is bordered by Highway 90 to the north end and Madrid St. to the south. St. Louis Cemetery is bordered by Madrid St. to the north and Paris St. to the south. Another portion of Zion Lutheran Cemetery is located south of Paris St. Existing gates and service access points are located. It is important to note that the main entry gates are located on Highway 90 and Jackson Street.

## Design Goals

The main goals for addressing areas of improvement within the cemeteries are based upon the foundation of promoting a unique identity, preserving historic significance, advancing the health of the environment and promoting opportunities for tourism.

More specifically, the design for the cemetery aims to:

- Provide a uniform appearance
- Maintain the unique architectural identity of the cemetery
- Provide a sense of enclosure
- Enhance the quality of both imagery and space
- Promote a sense of sacred place
- Direct increased attention towards the cemetery
- Enhance the visual experience from both within and beyond the site

Fulfilling these goals allows the cemeteries to promote their unique identity and unique experience, unmatched by any other in Castroville. The conceptual ideas behind the design are displayed in Figure 4.

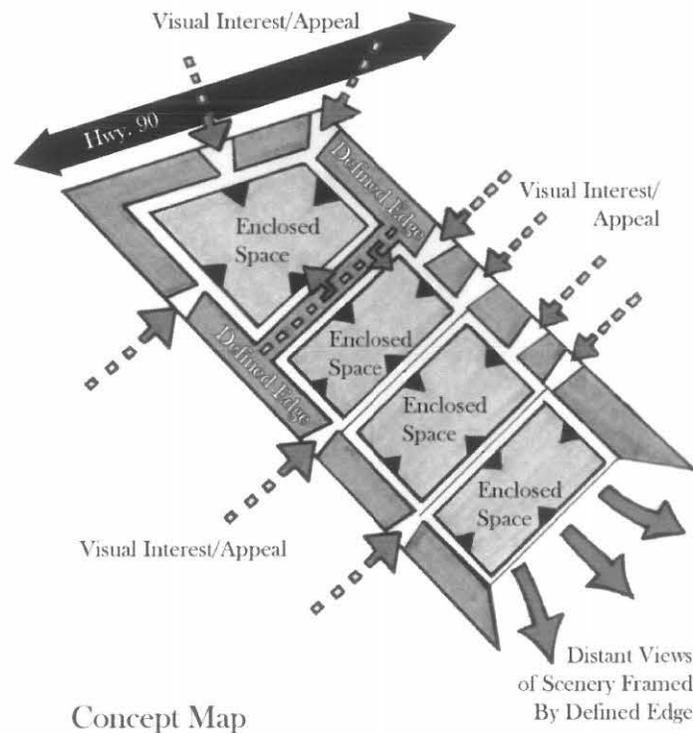


Figure 4. Design Concept Map



Figure 5. Proposed Improvement Plan

## Design Objectives

Design objectives focus specifically on the elements proposed and the measures by which the elements can be incorporated into design improvements. The improvements of the cemetery include preserving and raising the existing signs, adding columns to strengthen the visual weight of the sign, adding stone edges at the base of the columns to serve as anchor points for the entry way, and installing a new and ornate gate appropriate to the beauty of the cemetery and to draw attention to the cemetery as a distinctive feature of the community. The proposed improvements are not to take away from the existing signage, but are meant to enhance its overall appeal. The crosses located atop each entry sign are to remain the central focus, emphasis and architectural importance.

In addition, the existing tree vegetation surrounding the entry gates is to be replaced with three cypress trees on each side of the gate. A row of oak trees is to be planted continuously along the fence line of the cemetery to serve as a defining spatial edge, and provide a sense of enclosure within the cemetery. The oak trees should meet the edge of the cypress trees, but should not compete with the well-defined entries. The south end of the cemetery grounds is to be left un-vegetated to preserve the scenic views of the hillside from within the cemetery, as well as the view into the cemetery from Cross Hill. The existing fence materials are proposed to be replaced with an iron fence around the perimeter of the cemetery. The iron fence is to be accompanied by a low, continuous row of shrubs throughout the site. The new fence, shrub line, oak trees and improved entry gate are to create a uniform appearance that promotes a sense of enclosure, unique identity and direct separation from Highway 90.

## Proposed Upgrades: Before and After Images

A series of before and after images is displayed in Figures 6a - 9d. The purpose of these images is to display the current conditions at each site and to address the proposed improvement. This allows each specific site to be examined in its current state, while clearly proposing future conditions through graphic illustrations. It is important to keep in mind the goals for the proposed improvements, and the elements incorporated to reach these goals.



Figure 6a. Before Image: View of cemetery edge from Hwy. 90



Figure 6b. After Image: View of cemetery edge from Hwy. 90



Figure 7a: Before Image: Zion Lutheran Cemetery Entry Gate from Hwy. 90



Figure 7b. After Image: Zion Lutheran Cemetery Entry Gate from Hwy. 90



Figure 8a. Before Image: St. Louis Entry Gate from Jackson St.



Figure 8b. After Image: St. Louis Entry Gate from Jackson St.



Figure 9a. Before Image: Zion Lutheran Cemetery Access Entry from Madrid St



Figure 9b. After Image: Zion Lutheran Cemetery Access Entry from Madrid St.

### Summary

The cemeteries are a valuable key to preserving the heritage of Castroville. The proposed improvements allow the cemetery grounds to develop into an even more significant landmark, and provide an experience unlike any other in Castroville.

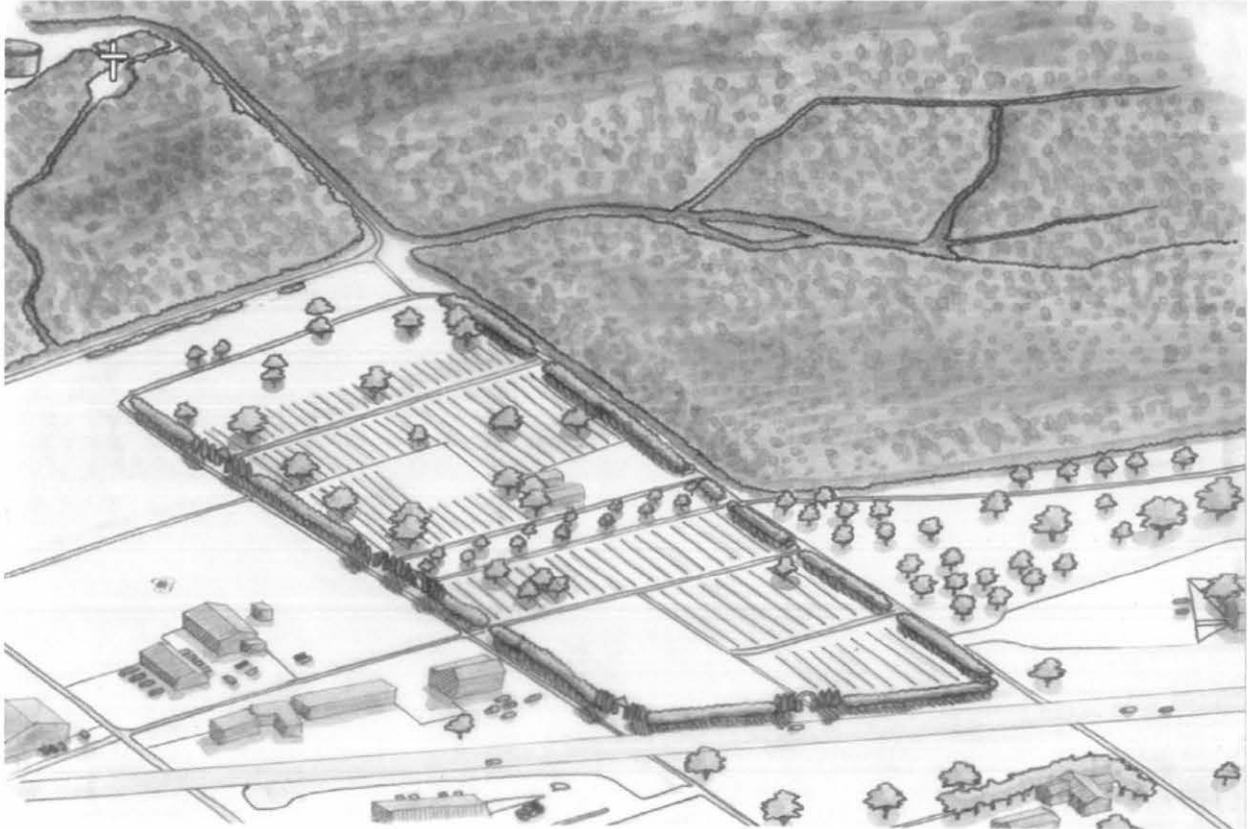


Figure 10. View of cemeteries from Northeast across Highway 90. Cross Hill pictured on the hillside.

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## Conclusions

At the outset of this investigation, the class embarked on a process of defining and resolving a set of community-wide planning and design issues related to the conservation and revitalization of Castroville's unique cultural and architectural heritage. Information about these issues was to be used to improve quality of life, promote increased tourist activity, and thereby, enhance the economic base of the City. As work on the project took shape it appeared that the effort would result in a definitive understanding of the issues involved and lead to a series of design proposals for guiding change in the historic town center.

The class conducted research and analyzed the data for direction in recommending the changes needed to realize the desired results. By the time the design emphasis areas had been defined and redevelopment proposals had been formulated, it seemed as if the project would come to a successful conclusion. What the class discovered was that the process of change was not nearing completion, but in reality, only entering the beginning stages of a long-term process. The ideas for the proposed design and redevelopment areas were well informed by accurate, up to date information, and by all accounts, were innovative and useful recommendations. However, rather than bringing the process of deliberation to a close, the work of this investigation has only formalized the dialogue.

What the design recommendations currently lack is significant involvement from the community at all levels. To be effective, design ideas must be "owned" by those who are to implement them and live with the results over the long term. Owing to the distances involved, and other factors beyond our control, the class did not have the opportunity to fully engage the community in this level of dialogue after the proposals have been formulated and presented. The ideas about what to change and how will benefit from knowledge of conditions on the ground at a level that the class was unable to fully appreciate as a result of its relatively brief exposure to the community. Only when the community becomes fully vested in the process, and fully involved in the formulation of plans for the future, will specific designs have the background and meaning required for their successful execution and follow through.

Changing a community – since changing any part of it will have a bearing on the community as a whole – is a process that can only be engaged by the community itself. The long-term process that led to the deterioration of the community's architectural and historic resource base is the issue most in need of change. Repairing the streets and buildings addresses the symptoms, not the problem itself. The physical conditions of the buildings, squares, parks, streets, etc., and all the other features that make the City of Castroville a unique physical and cultural setting are simply an expression of the community itself. The 19<sup>th</sup> and early 20<sup>th</sup> century setting has been bypassed by late 20<sup>th</sup> and 21<sup>st</sup> century society. To retain the elegant and charming conditions

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into which many generations of the community have been born, raised, and nurtured will require that the architectural and cultural heritage be treated with greater care and consideration – respectful not only of the values of the present, but also of the foundation on which that heritage has been conveyed over the last century and a half to the present generation, the inheritors of that culture – than the last half century of modernism has allowed. The physical and cultural setting of Castroville is a priceless heritage that we now recognize can be permanently lost in the conventional processes of change that affects every person in every community.

The community, however, has taken the most important step in the process of conservation and revitalization. The community has collectively recognized that the resources in its possession are unique and invaluable, and they are a distinct expression of what its unique history is, and as a consequence, who the community is. The City is a physical record of its past. Recognition of these invaluable resources and that appropriate steps must be taken in preserving and protecting them is the first step in conserving the community in some form recognizable to those who live there for current and future generations. The seemingly small things – the character of Fiorella Street, parking in Houston Square, the monuments in September Square, the view from Cross Hill – are woven into a tapestry that is the heart of the City and among the communities greatest legacies for its children and theirs. Overlain on this physical structure and expressive of it, is the Alsatian-Texas culture that has flourished here uninterrupted since mid 19<sup>th</sup> century

It is the desire of the class that this work on behalf of the City will provide the kind of information and background – as seen by outsiders – to facilitate the continuation of the process we have had the pleasure to participate in. The class also hopes that the proposed design ideas will help shape an understanding of new possibilities for the future based on an understanding of the past and a recognition of the present. The information in this report documents the knowledge we found in the available record; it does not express the will of the people or their distinctive values and opinions, which are just as important to the successful formulation of a binding vision of the future as the technical information on which we relied for the recommendations presented here.

We are particularly grateful to the City of Castroville for inviting us to participate in this effort and to advance our education in ways that would never have been possible without such an experience. The opportunities to interact with citizens, City staff and City officials provided learning experiences that a classroom cannot provide. The small lessons learned each day have accumulated to create an education that will prepare us for the future in many ways that we cannot now understand. As Ernest Hemmingway once wrote, “They are the simplest things and because it takes a man’s life to know them, the little new that each man gets from life is very



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costly and the only heritage he has to leave.” Castroville has given the class for an educational heritage that we could not have anticipated. It is our hope that our work will be as useful to the City of Castroville.

The Partnership for Community Outreach at the Department of Landscape Architecture and Urban Planning, Texas A&M University, remains ready and would welcome the opportunity to assist the City of Castroville again if the opportunity arises in which we might once again be of assistance.



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## Appendix A: Memorandum of Agreement

1 November 2009

### Memorandum of Agreement

Between

**The Department of Landscape Architecture and Urban Planning**

**Partnership for Community Outreach**

College of Architecture

Texas A&M University

College Station, Texas 77843-3137

And

**The City of Castroville, Texas**

1209 Fiorella Street

Castroville, TX 78009

This letter outlines a collaborative Agreement between the Partnership for Community Outreach, Department of Landscape Architecture and Urban Planning at Texas A&M University (herein referred to as the LAUP) and the City of Castroville, Texas (herein referred to as The SPONSOR) to investigate future development opportunities of the City. The investigation is undertaken with professional advisory assistance (provided pro bono) from the architectural firm of Paul Anthony + Associates Architects (PA+A) of San Antonio, Texas.

The purpose of the collaboration is to conduct an exploratory investigation of the City's town center and immediate environs to establish guidelines for the revitalization of the downtown through historic conservation and urban redevelopment. The City of Castroville has many historically, culturally, and environmentally significant structures and places to be preserved as the permanent heritage of the community. The primary objective of the investigation is to identify strategies for the preservation, conservation, and adaptive reuse of historical, architectural, and ecological resources, and to investigate

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appropriate actions to improve and sustain the community's quality of life and satisfy existing and future development needs. The impetus for the investigation is to assist the community in its response to pressures from growth originating from the rapidly expanding periphery of the City of San Antonio immediately to the east of Castroville. The aim of the investigation is to consolidate and optimize the use of community resources to preserve the character and heritage of the community and improve the potential for tourism as a central component of its future economic expansion.

The investigation is to be conducted as part of an extended classroom exercise by fourth year students of Landscape Architecture. The academic benefits of the collaboration will derive from the students' exposure to the complexities of community redevelopment and revitalization planning. This exposure and the experience of conducting an investigation to identify and address the planning and design issues involved are the primary educational consideration in the undertaking.

The SPONSOR benefits by becoming a partner in an investigation leading to a comprehensive assessment of the community's resource base and as recipient of a series of alternative design proposals regarding how The City's resources might be put to use to improve community organization, conservation and adaptive reuse of historical and ecological resources, and to enhance the attractiveness of the City as a high quality living environment. These work products benefit the SPONSOR by providing detailed investigations that can form the core of a community dialogue about the future of the City, forming the core of evidence on which to base future development or redevelopment decisions. The proposed studies will attempt to describe the conditions that might result from the City's various responses to the options available, particularly in regard to the eminent changes that appear likely as a result of suburban expansion from the growth of San Antonio over the next ten to twenty years.

In consideration of the promises and mutual covenants and agreements described herein, the parties agree as follows

#### **Article 1. Scope of Work**

The purpose of this agreement is to recognize a mutuality of interests among the SPONSOR, LAUP, and PA+A. PA+A will provide project assistance and monitor the progress of the work with support from its licensed architects and planning professionals. LAUP would both

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contribute to and benefit from the realization of these goals through faculty and student participation in "real world" projects by:

- providing research and documentation service and assistance to the SPONSOR in facilitating its community dialogue and decision-making process;
- enhancing the professional education of the students of LAUP through service-learning experiences;
- preparing LAUP students with the professional skills necessary to deal competently with the physical, social, cultural, economic, ecological, and technical complexity and challenges embedded in real projects in general and in public-private partnership projects in particular;
- advancing the body of knowledge of the professions represented within LAUP, including landscape architecture, urban planning, and real estate/land development;
- developing a model of collaboration between Land Grant universities and communities for enhancing professional design, planning, and development educational programs through involvement in service learning.

Service projects undertaken by LAUP faculty and students are exploratory and developmental, generating ideas and principles for the SPONSOR to use to clarify and direct its planning and redevelopment efforts. These service projects are not intended to replace professional consultant services but rather to assist the SPONSOR in exploring a range of conceptual design and development alternatives before the investment of significant time and resources for professional project development.

LAUP agrees to use its best efforts to perform the work set forth in Appendix A (Scope of Work). The scope of work will not be changed except by duly executed amendment to this Agreement.

Any additional work not specifically identified in the scope of work statement, but which is indicated during the course of the study, will be separately negotiated and funded for the appropriate amounts to be agreed upon by the SPONSOR and LAUP.

## **Article 2. Period of Performance**

The period of performance for this Agreement is to begin on or about 15 January 2010 and end on or about 15 May 2010. This period may be extended by mutual agreement of the parties in writing.

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### **Article 3. Consideration and Payment**

As consideration and compensation for LAUPs best efforts and performance under the terms of this Agreement, SPONSOR agrees to compensate LAUP a fixed-price amount of \$10,550.00 before commencement of work on the project. If the SPONSOR is unable to make the full payment in advance, payment will be made in accordance with the following schedule within 30 days of receipt of LAUPs invoice:

Payment to the LAUP is to be made in three phases:

33% of total budget amount due: 30 days after this MOA is signed by both parties;

33% of total budget amount due: 30 days after submission of draft documents

33% of total budget amount due: 30 days after the final products are delivered

The LAUP contact and telephone number for billing/invoice questions: Ms. Myra Kretzschmar, Assistant to the Department Head, Department of Landscape Architecture and Urban Planning, Texas A&M University (979) 845-1046.

Payments will be made payable to: Department of Landscape Architecture and Urban Planning, and will be mailed to the following address: Department of Landscape Architecture, College of Architecture, Texas A&M University, Langford Building, A310, College Station, TX 77843-3137.

### **Article 4. Publicity**

SPONSOR will not use, nor permit others to use the name of LAUP, The Texas A&M University System, or any part or branch thereof in any manner whatsoever, directly or indirectly, without obtaining the express, prior written consent of LAUP. Nor will SPONSOR indicate, directly or indirectly, any endorsement by LAUP, The Texas A&M University System or any part or branch thereof, of any products or services of SPONSOR for any reason, without obtaining the express, prior written consent of LAUP. SPONSOR will not use the name of LAUP, The Texas A&M University System, or any Part or subdivision thereof, nor the names of any of their employees nor any adaptation thereof in any advertising, promotional or sales literature without prior written consent obtained from LAUP in each case.

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## **Article 5. Intellectual Property**

All rights, title and interests to all Intellectual Property developed under this Agreement will vest in Texas A&M University. Intellectual Property will mean, individually and collectively:

1. all works authored, created, prepared and/or developed (including compilations) in the performance of the work hereunder that are the subject matter of copyright under Chapters I through 8 of Title 17 of the United States Code, and that were authored, created, prepared and/or developed by one or more employees of Texas A&M University, or jointly by one or more employees of Texas A&M University and by one or more employees of SPONSOR in the performance of the work under this Agreement.
2. inventions, discoveries and/or improvements which are conceived or first reduced to practice, whether or not patentable, by one or more employees of Texas A&M University, or jointly by one or more employees of Texas A&M University and by one or more employees of SPONSOR in the performance of the work under this Agreement.

## **Article 6. Publications**

LAUP will have the first right to publication of materials containing technical information produced under this Agreement. However, SPONSOR will be furnished copies of all proposed publications or presentations in advance of the submission to a journal, editor, or other third party.

## **Article 7. Liability**

LAUP agrees to defend, indemnify and hold harmless SPONSOR from any and all claims, injuries, damages or other liability arising in tort or breach of contract and resulting from any intentional or negligent (including grossly negligent) acts of LAUP 's principals, officers, agents or employees arising in favor of any person or entity.

SPONSOR agrees to defend, indemnify and hold harmless LAUP from any and all claims, injuries, damages or other liability arising in tort or breach of contract and resulting from any intentional or negligent (including grossly negligent) acts of SPONSOR's principals, officers, agents or employees arising in favor of any person or entity.

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#### **Article 8. Warranty**

NEITHER LAUP, NOR ANYONE ACTING ON BEHALF OF LAUP, MAKES ANY WARRANTY OR REPRESENTATION, EXPRESSED OR IMPLIED, WITH RESPECT TO THE ACCURACY, COMPLETENESS, OR USEFULNESS OF THE INFORMATION PROVIDED PURSUANT TO THIS AGREEMENT, WHETHER OR NOT CONTAINED IN ANY WRITTEN REPORT; OR THAT THE USE OF ANY DATA, INFORMATION, APPARATUS, METHOD, OR PROCESS DISCLOSED IN ANY REPORT MAY NOT INFRINGE PRIVATELY OWNED RIGHTS. NOR DOES LAUP, NOR ANYONE ACTING ON ITS BEHALF ASSUME ANY LIABILITY WITH RESPECT TO THE USE OF, OR FOR DAMAGES RESULTING FROM THE USE OF, ANY DATA, INFORMATION, APPARATUS, METHOD, OR PROCESS DISCLOSED PURSUANT TO THE WORK HEREUNDER. CONCERNING THE INFORMATION AND DATA SUPPLIED HEREUNDER, LAUP MAKES NO REPRESENTATIONS OR WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

#### **Article 9. Disputes**

The parties will make every possible attempt to resolve in an amicable manner all disputes that might arise between the parties concerning the interpretation of this Agreement and the implementation thereof.

Any controversy, claim, or dispute arising out of or relating to this Agreement concerning questions of fact or law, or breach thereof, will be settled by binding arbitration in accordance with the rules and procedures of the American Arbitration Association that pertain to such matters. Such arbitration will be held in Houston, Texas.

#### **Article 10. Governing Law**

The validity of this Agreement and all matters pertaining thereto, including, but not limited to, matters of performance, non-performance, breach, remedies, procedures, rights, duties, and interpretation, will be governed and determined by the laws of the State of Texas.

#### **Article 11. Termination**

This Agreement may be terminated by either party at any time prior to the full term of the Agreement period provided that a written notice is given to the other party thirty (30) days in advance. However, such termination will not free SPONSOR from obligation to pay for all services, orders, materials, or facilities committed in good faith prior to

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the effective date of termination.

**Article 12. Content of Final Reports**

The written and graphic content of reports produced by LAUP in conjunction with this Agreement will be under the complete control of LAUP.

**Article 13. Miscellaneous**

This document constitutes the entire agreement between the parties relative to the subject matter, and may be modified or amended only by a written agreement signed by both parties.

This Agreement will not be assigned, in whole or in part, by either party without the prior written consent of the other party.

This Agreement is binding upon and will inure to the benefit of the parties hereto, their representatives, successors in interest, and permitted assigns.

The failure of either party at any time to require performance by the other party of any provision of this Agreement will not affect the right to require such performance at any time thereafter nor will the waiver by either party of a breach of any provision hereof be taken or held to be a waiver of any succeeding breach of such provision or as a waiver of the provision itself.

If any provision of this Agreement is held to be invalid, illegal or unenforceable, then such provision will be severed and will not affect the remainder of this Agreement.

IN WITNESSS WHEREOF, the parties have executed this document on the day and year last specified below.

The Contract Manager for the City of Castroville is: Mr. Bob Lee, Mayor, City of Castroville, 1209 Fiorella Street, Castroville, TX 78009. Telephone. (830) 931-4070

The Project Manager for LAUP is: Michael D. Murphy, Professor, Department of Landscape Architecture and Urban Planning, College of Architecture, Langford A310, College Station, Texas 77843-3137, Telephone: (979)845-1079; Fax: (979)862-1784.

APPROVED:

City of Castroville,  
Texas

Department of  
Landscape Architecture  
and Urban Planning,  
College of Architecture,  
Texas A&M University

(original signed)

(original signed)

By: Mr. Bob Lee

By: Dr. Forster Ndubisi

Title: Mayor

Title: Head of  
Department

Date: \_\_\_\_\_

Date: \_\_\_\_\_

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## APPENDIX A

### SCOPE OF WORK

### PROCESS AND SCHEDULE

The collaboration outlined here is undertaken for the mutual benefits it affords to both parties. The investigation is to be organized as follows:

1. The process will begin on a mutually agreed date, normally at the beginning of the Spring Semester at Texas A&M University.
2. The lead role in the process will be taken by students associated with a fourth year Landscape Architecture course at Texas A&M University. This laboratory course is specifically intended to provide students with an opportunity to apply academic skills and techniques in a "real world" setting. Approximately thirty students will be enrolled in this class.
3. The principle objective of the course will be to gather and analyze data pertaining to the future disposition of the downtown and related community areas, and the eventual production of a series of alternative redevelopment design proposals for the SPONSOR. This investigation will involve site inventory, analysis, goal setting and preliminary design for the downtown and related areas of the City. A significant element of the investigation will be the production of development guidelines, based on the findings of research, which can provide the basis for future growth decisions.
4. Efforts will be made to secure contributions from other classes and departments both within the College of Architecture and elsewhere on the campus of Texas A&M University.
5. All of the products within the scope of activities related to this process will be formally presented to the SPONSOR by faculty and students at interim progress reports and in a final report at the conclusion of the investigation.
6. All final products will be submitted to the SPONSOR by no later than the end of the summer semester following the term in which it the study has been undertaken (estimated to be mid July 2010).

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## PROCESS LEADERSHIP

The process described in this Agreement will be under the leadership of Professor Michael D. Murphy the faculty member responsible for the class in the Department of Landscape Architecture and Urban Planning, Texas A&M University that undertakes the project. The process is expected to engage the community, its civic and political leaders, and all those with interest and/or access to critical information on which the study is to be based.

1. The LAUP will take responsibility for organizing the efforts of the class and conducting the investigation herein described.
2. The SPONSOR will take responsibility for facilitating interaction between the class and relevant City staff and citizen participants.
3. The SPONSOR will assume responsibility for providing all information in the possession of the City on which the investigation will be based.
4. The SPONSOR will assume responsibility for making itself available for interaction and providing timely feedback to presentations and requests for information from LAUP.

## SCOPE OF WORK AND PRODUCTS

The following products will result from this process:

- 1. An inventory of existing community resources to include: Documentation of land use, circulation patterns, historic resources, community structure and open space:**

\*(During this stage of the process, students will visit the City to meet with relevant citizens and community groups and to gather on-site information)

- 2. An analysis of existing and proposed conditions in the community that must be considered prior to the preparation of plans for future conservation and redevelopment activities:**

Determination of existing problems and opportunities related to the existing urban structure as it pertains to future growth and development impacts.

- 3. Determination of future goals for downtown redevelopment, historic and open space resources conservation, adaptive reuse of existing facilities, and urban expansion:**

Goals are to be established based on the intentions of the community and results of the analysis described above.

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**4. Development of broad concepts for the future of the downtown and related areas of the community:**

Development of alternative conceptual approaches to future growth and/or redevelopment of Castroville will be developed.

\*(At this stage of the process the students will make a preliminary presentation of findings to the SPONSOR (on campus) for the purpose of sharing information, gaining feedback for validation and/or correction, and to review preliminary development concepts to establish the most appropriate direction for final design investigations).

**5. Development of alternative design scenarios for the future disposition of the downtown and related areas:**

Individual students or student groups will develop detailed design proposals to meet established redevelopment and revitalization goals. Designs may be expected to include proposals for the following:

- a. Design treatment of the City's center and its relations with Highway 90
- b. Designs for entry treatments of The City
- c. Preservation, adaptive reuse, and conservation of historic buildings and sites
- d. Design proposals for treatment of the City's urban edge
- e. Design proposals for community infill and future development
- f. Design proposals for treatment and expansion of parkland along the Medina River
- g. Possible linkages between the downtown and the Medina River
- h. Community open space, recreation, and greenway/greenbelt areas
- i. Pedestrian and vehicular circulation patterns and materials treatments
- j. Urban agriculture in conjunction with innovative sewage treatment systems
- k. Identify potential funding sources (i.e. government and/or private grant or loan opportunities) to support identifiable project developments.

\*(At this concluding stage of the process the students will make a final presentation to the community (in Castroville) for additional feedback and final clarification of community interests prior to documentation of the Final Report).

**6. Final Report documenting the findings of the investigation and various design development scenarios:**

Final documentation of the analysis and conclusions of research, development guidelines, and alternative design proposals.

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**PRINTING**

The LAUP agrees to produce 2 hard copies of the final report and one copy of presentation boards associated with this agreement for the SPONSOR. The SPONSOR will also will be given a digital copy of the final products on compact disk.

**ACADEMIC RELATIONSHIP**

It is understood by all parties that the process associated with this Agreement is specifically related to academic programs at Texas A&M University. Nothing within this Agreement shall interfere with a faculty member's academic freedom or the educational mission of Texas A&M University.

**SERVICE COSTS AND FORM OF PAYMENT**

The total cost for the services associated with the scope of work described in this Agreement shall be \$10,550.00. The budget associated with this agreement is as follows:

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**PROJECT BUDGET**

<b>Item</b>	<b>SPONSOR Costs</b>	<b>LAUP Cost Share</b>
<b><u>Travel</u></b>	\$2,500.00	\$2,000.00
Including:		
Vehicle rental and fuel		
Food and lodging		
<b><u>Materials, supplies &amp; reproduction</u></b>	\$2,500.00	\$2,000.00
Drafting supplies & copying		
Map and photo duplication		
<b><u>Miscellaneous</u></b>	\$ 500.00	\$ 500.00
Contingencies		
<b><u>Total Direct Costs</u></b>	\$5,500.00	\$4,500.00
<b><u>Department Administrative Cost</u> (10%)</b>	\$ 550.00	
<b><u>Total Costs</u></b>	\$6,050.00	\$4,500.00
<b><u>Total Project Cost</u></b>		<b>\$10,550.00</b>

