Steam Pump Ranch Master Plan

Draft Final Report

April 2008

POSTER FROST ASSOCIATES, INC.
ARCHITECTURE PLANNING URBAN DESIGN

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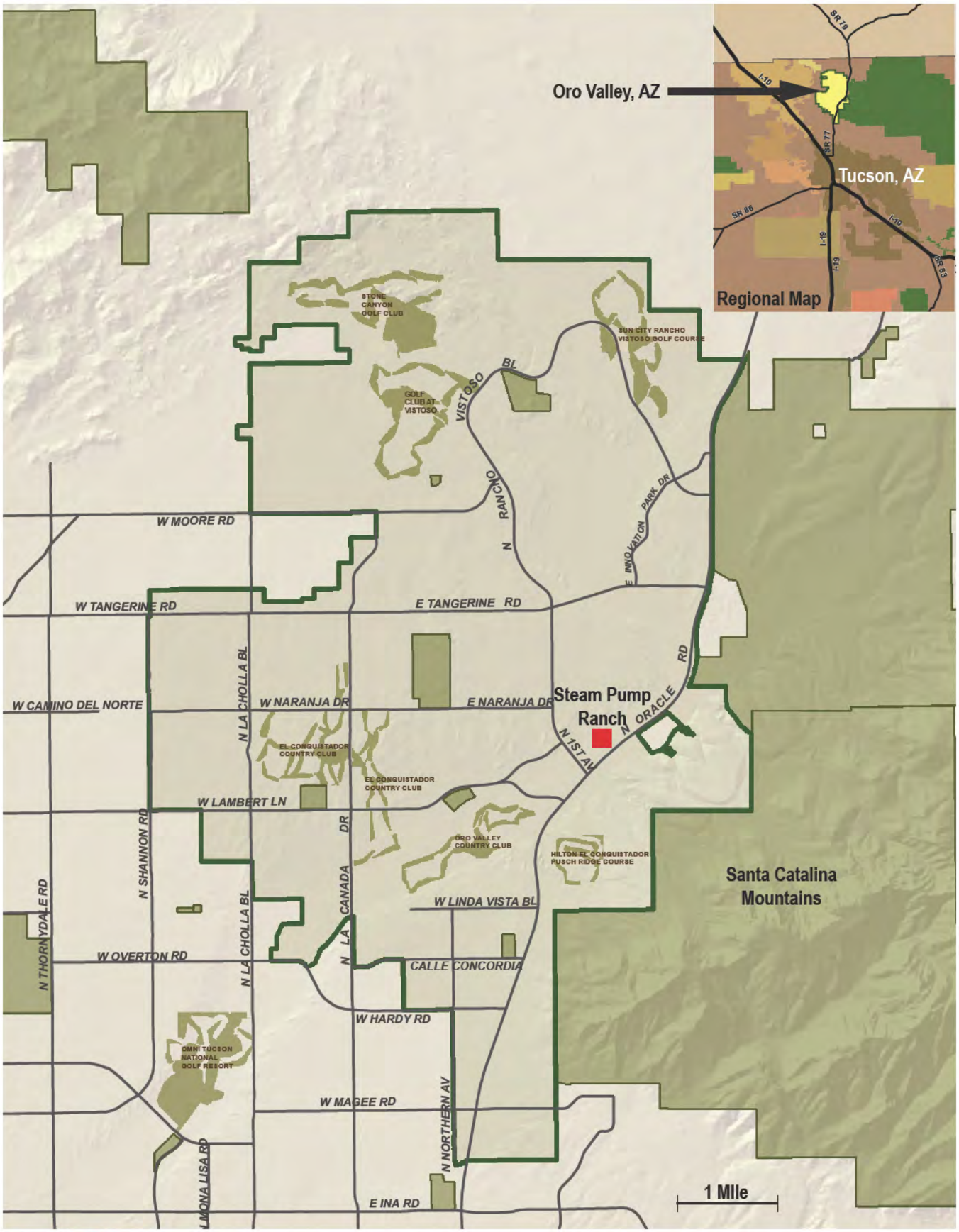
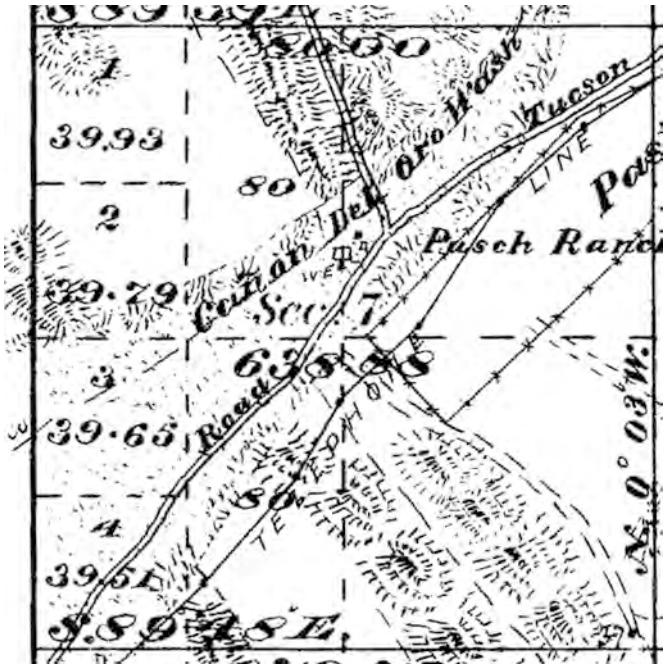


Town of Oro Valley Map

Introduction and Overview

The Santa Catalina Mountains provide a majestic backdrop to the Steam Pump Ranch site in Oro Valley, Arizona

Residents of the Santa Cruz Valley in Southern Arizona, generally perceive the Town of Oro Valley as a vigorous *young* community, but in reality, it has a real and deep history in this region. The Steam Pump Ranch on North Oracle Roads represents a living piece of that history. The historic preservation efforts of the Town of Oro Valley and its partner, Pima County, have the potential to bring that history back to life. It is an opportunity to give residents and visitors an exciting window into the past, allowing the Town of Oro Valley to add this Steam Pump Ranch site to Honeybee Village and Catalina State Park, and to further establish its proper place in the unfolding history of Southern Arizona.



1903 GLO Survey of Pusch's Steam Pump Ranch

Stationary from Pusch's butcher shop in downtown Tucson

History

In 1874, two German immigrants – George Pusch and Johann Zellweger – arrived in Arizona and established the Steam Pump Ranch as an important way-station in the mercantile structure of the southern Arizona cattle industry and in the transportation corridor to Oracle and points north. The two entrepreneurial immigrants used a steam engine as the unique and state-of-the-art power to pump water from the shallow aquifer and to make it an oasis in the arid landscape of the region. This "Steam Pump" gave its name to the ranch itself. George Pusch and his wife Matilda Feldman were a active business people and citizens of the region. The Pusch family operated a downtown butcher shop and ice plant along the railroad in Tucson. George Pusch was also active in Tucson politics and an instrumental voice in the Territorial Legislature during the evolution to Statehood. During that same era, the Steam Pump Ranch figured in the military operations based from Fort Lowell Park in Tucson and in relation to other military encampments.

In 1933, John Procter migrated from Pasadena, California to become the manager of the Pioneer Hotel. He made the Steam Pump Ranch the bread-basket for his upscale hotel and raised produce and eggs for the enterprise. "Jack" Procter was active businessman in Tucson with a seat on the

Valley National Bank board and a stint as president of the Chamber of Commerce in 1966. Jack and Elizabeth Procter's daughter Betty married Hank Leiber, a prominent professional baseball player for the Chicago Cubs and the New York Giants. As the baseball spring-training industry emerged in Tucson in the 1950's, the Steam Pump Ranch became an occasional headquarters for parties and barbeques for professional baseball players training in Tucson. The site remained in the hands of the John and Cheryl Leiber until its acquisition in 2007 by the Town of Oro Valley.

John Monroe "Jack" Procter in 1941.
Image courtesy of the Arizona Historical Society

1960 Aerial with Current Steam Pump Ranch property boundary shown

Today

Today the material remains of the Steam Pump Ranch stand mostly intact along the banks of the Cañada del Oro, in the shadow of Pusch Ridge and the Santa Catalina Mountains. The site is tucked away in the midst of a busy modern commercial corridor along North Oracle Road, just north of the contemporary roads of First Avenue and La Reserve. With the acquisition of this property by the Town of Oro Valley, in partnership with Pima County, we now have the means to tell these important Steam Pump Ranch stories in a setting that can preserve its significance and integrity. Of special importance is the key commercial role this site has played in the ranching, water, and food production business of Tucson and the region. With appropriate capital investment in historic preservation of the buildings, artifacts and landscape, a plan for creative interpretation, a blueprint for economic sustainability, and a long-range vision for stewardship, the Steam Pump Ranch can be brought back to life as vehicle for education and inspiration. This Steam Pump Ranch Master Plan is intended as a tool to do precisely that.

Pusch Ranch House and historic ranch setting, 2007

Since this 2005 Aerial, commercial development at Steam Pump Village northeast of the ranch site has begun

Goal

The goal of this Master Plan process is to help the Town of Oro Valley – its residents and its Town Council – to decide on a strategy for the future of this 15-acre property; a future that strengthens Oro Valley's firm connection to the past. Master Plans, in general, are not meant not to be rigid definitions of future activities. Instead, they are intended to provide a precise but flexible framework so that the next decision that needs to be made can be made in the context of, and consistent with, an overall long-term vision. A Master Plan, by its nature, generates overall concepts and recommendations for a site, based on desired goals and outcomes.

Members of the Task Force working through the planning process

Process

The Steam Pump Ranch Master Plan was developed in the context of very active involvement of Town and region residents and with the careful oversight of the Mayor and Town Council and its appointed advisory committees and commissions. The immediate steward of the planning process was the Steam Pump Ranch Task Force appointed by the Mayor and Town Council of Oro Valley. The charge to the Task Force by the Mayor and Town Council, was to:

- Evaluate studies, public meeting input, develop use and site design alternatives.
- Formulate a final recommendation on the Master Plan document and Design Scenario to be considered by the Historic Preservation Commission and Town Council.

The Oro Valley Preservation Historic Commission was charged with the larger oversight of the process and was actively engaged with the Master Plan at most of its monthly meetings. The Mayor and Town Council also participated in extensive review and commentary in three formal Town Council meetings and a lengthy Study Session. There were three public meetings to gather commentary directly from the community.

The Master Plan itself was organized around a carefully-structured process using a "Rational Planning" model. The first step in this process was the extensive gathering of factual, technical and historical information about this site. Economic and marketing analysis of comparable sites was also collected and it informed the planning process. These facts were presented to the residents of Oro Valley in a public meeting on September 6, 2007. From the citizen input at this meeting and other commentary, the Task Force defined the guiding principles that would become the project evaluation criteria. The Steam Pump Ranch Task Force met on a monthly basis (and occasionally more often as-needed) from the summer of 2007 through March of 2008. The Task Force developed the following project guidelines as a starting point for the Master Plan work and as a set of criteria from which to evaluate alternative design concepts:

The Town's Founding Father, the late Jim Kreigh, speaking at the dedication of the site on August 15th, 2007

Project Guiding Principles

1. All of the elements of the Steam Pump Master Plan must focus on authenticity.

2. The improvements to the site must conform to the preservation policies of Pima County.
- the Oro Valley/Pima County IGA
- the 2004 Pima County Bond language
- Pima County's preservation easement
- and consistent with eligibility on the National Register of Historic Places.

3. Steam Pump Ranch should appeal to a broad range of visitors.
- youth/school children
- winter visitors
- local residents
- visiting friends and relatives
- academics
- seniors
- students of history

4. The site should be a part of the Santa Cruz Valley National Heritage Area with other historical sites including
- Catalina State Park
- Honeybee Village Archaeological Preserve

5. There are stories that need to be told about the Steam Pump Ranch:
- a stop-over on the route of territorial commerce
- the food connection: Tucson and Steam Pump Ranch
- the role of immigrants in southern Arizona
- the story of technology in everyday life
- the daily life of the ranch: fun, hardship, risks
- the role of Native Americans on this site
- Steam Pump Ranch and military activities

6. The site should demonstrate and teach about the long-term natural ecology of our landscape
- the evolution of the property over time
- water
- drainage
- plant materials
- and wildlife

7. The development of engaging programs will be critical to the success of the site.

8. Partners that bring something of value will be important to the development of this site

9. The Steam Pump Ranch program must be carefully crafted to be economically sustainable but "without selling our soul." Any commercial activity must be directly tied to the core education and preservation mission of the Steam Pump Ranch site.

10. The proper stewardship of the site is essential. This can best be achieved by building an evolving program on a solid foundation.

Location of the Steam Pump Ranch on the route of Territorial Commerce. Approximate area of Pima and Pinal Counties involved in Pusch and Zellweger's ranching enterprises. Cattle on the way to market, via the railroad from Tucson, would be watered at the Steam Pump Ranch. Image courtesy Hank Zipf

Alternative Concepts

From these ten principles, three distinct Master Plan concepts were developed as alternative means to preserve and interpret the site. After review and commentary by the Task Force, these three concepts were presented to residents at a public meeting on November 7, 2007. The three concepts were organized around three different approaches to interpretation:

1. *Eras of Oro Valley History*, a rehabilitation approach
2. *A Day in the Life, 1944*, a preservation approach
3. *Two Periods (Pusch/Procter)*, a restoration approach

Preferred Plan

As is typical, the preferred plan evolved as a hybrid of the three alternatives studied. From an interpretive perspective, the consensus conclusion was the preference to tell the stories of the two major family eras on the site: the Pusch Family period (1874 – 1933) and the Procter Family period (1933 – 2007) with a "period of significance" for the site of 1874-1960. The intent of this interpretive strategy was to highlight the differences in technology, architecture, landscape, water use, food production, transportation, commerce, education, and leisure activities of these two distinct eras. The layout of the Steam Pump Ranch happily facilitates a north-south imaginary line to be drawn through the site and to use the preserved buildings, landscape and artifacts on either side of this line to tell the distinctly different stories of these two eras. The additional guideline that emerged from the Task Force in response to the three concept plans, was the desire to keep any significant new structures or commercial activities out of the historical core of the Steam Pump Ranch.

Eras of Oro Valley History

A Day in the Life, 1944

Two Periods (Pusch / Procter)

The Master Plan

(See Chapter 3, for Master Plan Detail)
The Master Plan itself is organized by three separate phases:

1. The ***Pre-Opening Phase*** is intended to invest modest available and attainable funds to stabilize the site and threatened structures, to restore and rehabilitate the *Pusch Ranch House* (and hopefully the *Pump House Building*) and to prepare the site for future investment. It is intended that, during this phase, the public would be allowed limited access to the site, with docent-led tours by appointment only. The capital cost of this phase would range from $300,000 to $700,000 depending on fund availability. This phase would be implemented from May 1, 2008 through fall, 2009. Included in this cost should be design and implementation for modest signage for current orientation and interpretation as well as graphics that characterize the *Opening Phase* (below) to generate interest and Town support.

2. The ***Opening Phase*** anticipates major capital investment in:

- infrastructure development in grading, power, gas, domestic water, fire protection, wastewater, and drainage.
- landscape restoration, new plant materials and gardens, irrigation, water harvesting, walking paths, drives, parking, fencing and security, corrals, accessibility, screening, sound mitigation and site furnishings.
- building preservation, rehabilitation and restoration, limited new construction (ramadas and restrooms), all building sub-systems and interior finishes ready for interpretive installation.

At the completion of this *Opening Phase*, the site would be a fully-developed Town heritage park facility open to the public. The capital cost of this phase would be approximately $5.0 million to $5.3 million depending on the extent of the *Pre-Opening Phase* capital budget. This *Opening Phase* is planned to be funded by Pima County Cultural Resource Bonds and is anticipated to be implemented from November 2009 to February 2012 (in time for the February 14 Centennial Celebration of the Statehood of Arizona.). If Pima County Bond funds are delayed, cancelled or rejected by voters, the only viable alternative would be Town of Oro Valley Bond funding.

The costs of the interpretive exhibits themselves are excluded from this capital cost of the *Opening Phase* and a detailed interpretive plan is beyond the scope of this Master Plan. It is recommended that upon the final acceptance of this Steam Pump Ranch Master Plan, a professional museum and exhibit planner and designer be engaged in a two-stage exhibit design process. Phase one would be conceptual planning, design and cost analysis. Phase two would be a detailed implementation design for the graphics, technology and exhibits. The cost of museum-quality exhibits are projected to be approximately $500,000. The professional fee for the exhibit design and planning should be budgeted at $60,000.

3. The ***Build-Out Phase*** includes place-holders for future buildings that may possibly be located on or near the site. The generally include new construction that would bring additional attendance and more mixed-uses of the site. These include:

- An *Event Center* located in the panhandle in the northeastern corner of the site. This Event Center is envisioned as a multi-use large community room intended for banquets, weddings, conferences, concerts, art exhibits, and other large-venue activities. The building would include restroom facilities, modest office space, storage space and a kitchen intended to accommodate catering rather then large-scale cooking. The Event Center is preliminarily projected to be 8400 square feet and might accommodate 200 people seated at tables or 350 people in theater-style seating. The building could be operated by the Town of Oro Valley or a private operator under

contract to the Town. The capital cost of this building is projected at $1,512,000 in current dollars. Escalation of costs needs to included depending on the time of construction. This building would only be constructed after a detailed cost-benefit analysis and market study is undertaken under Town supervision. The time of implementation is unknown.

- An *Equestrian Center* is also suggested as a compatible use. It might house, as a minimum, a mounted sheriff patrol assigned to monitor the behavior and activities on the Canada del Oro Multi-Purpose path. Additional possible equestrian uses include trail rides, riding lessons and modest commercial boarding of horses. Again, this building would only be constructed after a detailed cost-benefit analysis and market study is undertaken under Town supervision. The Equestrian Center is preliminarily projected to be 3500 square feet with a budgeted cost of $307,500. The building would likely be operated by a private operator under contract to the Town.

- *Chicken Coops* and *Arts and Crafts* stalls are also a suggested Build-Out use. The projected costs of these buildings are $60,000 and $112,000 respectively in current dollars. These buildings would only be constructed after a detailed cost-benefit analysis and market study is undertaken under Town supervision. The time of implementation is unknown.

- A *New Caretaker's Residence* would be required if the existing non-historic caretaker's cottage were demolished to accommodate the Event Center as shown. The building is projected at 1250 square feet and with a projected cost of $225,000 in current dollars. The time of implementation is unknown.

- A *Potential Office Building* has been identified. During the Master Plan process there was an expressed interest in office space on-site by the Northern Pima County Chamber of Commerce, the Greater Oro Valley Arts Council and the Oro Valley Historical Society. In cooperation with the adjacent Steam Pump Village, a potential pad has been identified off-site and adjacent to the eastern boundary of Steam Pump Ranch. This structure has the potential for housing these related activities with the benefit of bringing a larger critical mass of visitors to the Steam Pump Ranch site. This project is beyond the scope of this Master Plan but has been shown on the *Build-Out* plan for connectivity purposes only. The actual implementation would depend entirely on an agreement between private parties with no affiliation to the Town of Oro Valley.

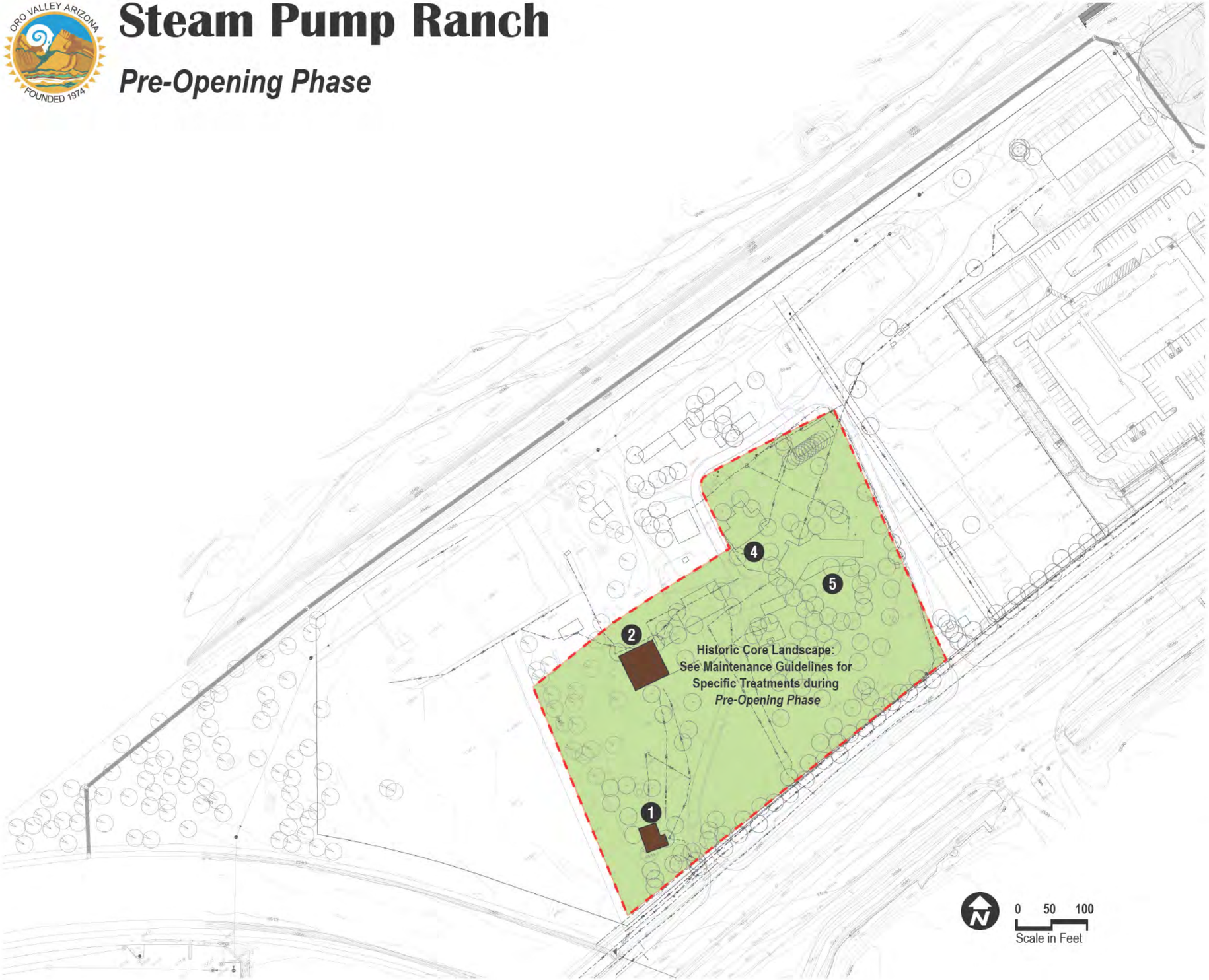
Operating Plan for Steam Pump Ranch

The following chart summarizes the projected operating and maintenance costs, revenue and attendance for the three phase of the Steam Pump Ranch. See Chapter 4, The Market Analysis and Operating Plan for Steam Pump Ranch for additional detail.

Phase	Site Cost	Program Cost	Revenue	Net Cost	Attendance
Pre-Opening Phase	$ 90,840	$ 13,406	-0-	($104,406)	1,000-2,000
Opening Phase	$312,466	$127,309	$119,700	($319,925)	30,000 -40,000
Build-Out Phase	$376,191	$191,529	$298,950	($268,470)	60,000 -80,000

Steam Pump Ranch

Pre-Opening Phase



BUILDING LEGEND

1 Pump House

Acquire funding to completely restore the Pusch era Pump House

2 Pusch Ranch House

Acquire required funding to supplement the remaining 2004 Pima County Bond Funds for the rehabilitation and restoration of the Pusch Ranch House.

SITE INFRASTRUCTURE

Mitigate site hazards to eliminate dangers to people and historic buildings.

2008 PRIORITIES

1 Pump House

Strengthen bracing and protective coverings until structure can be restored.

2 Pusch Ranch House

Install a high quality roof and appropriate flashing on those portions of the building not re-roofed during the summer of 2007.

Evaluate interior ceilings and walls to determine if temporary shoring is required.

4 Workers' Housing and Garage

Clean-out interior spaces to better evaluate the condition of the existing walls. Brace walls as required.

Support interior beam with a 4" x 4" post until the wall can be repaired.

Openings should be protected to prevent water and animals from entering the building.

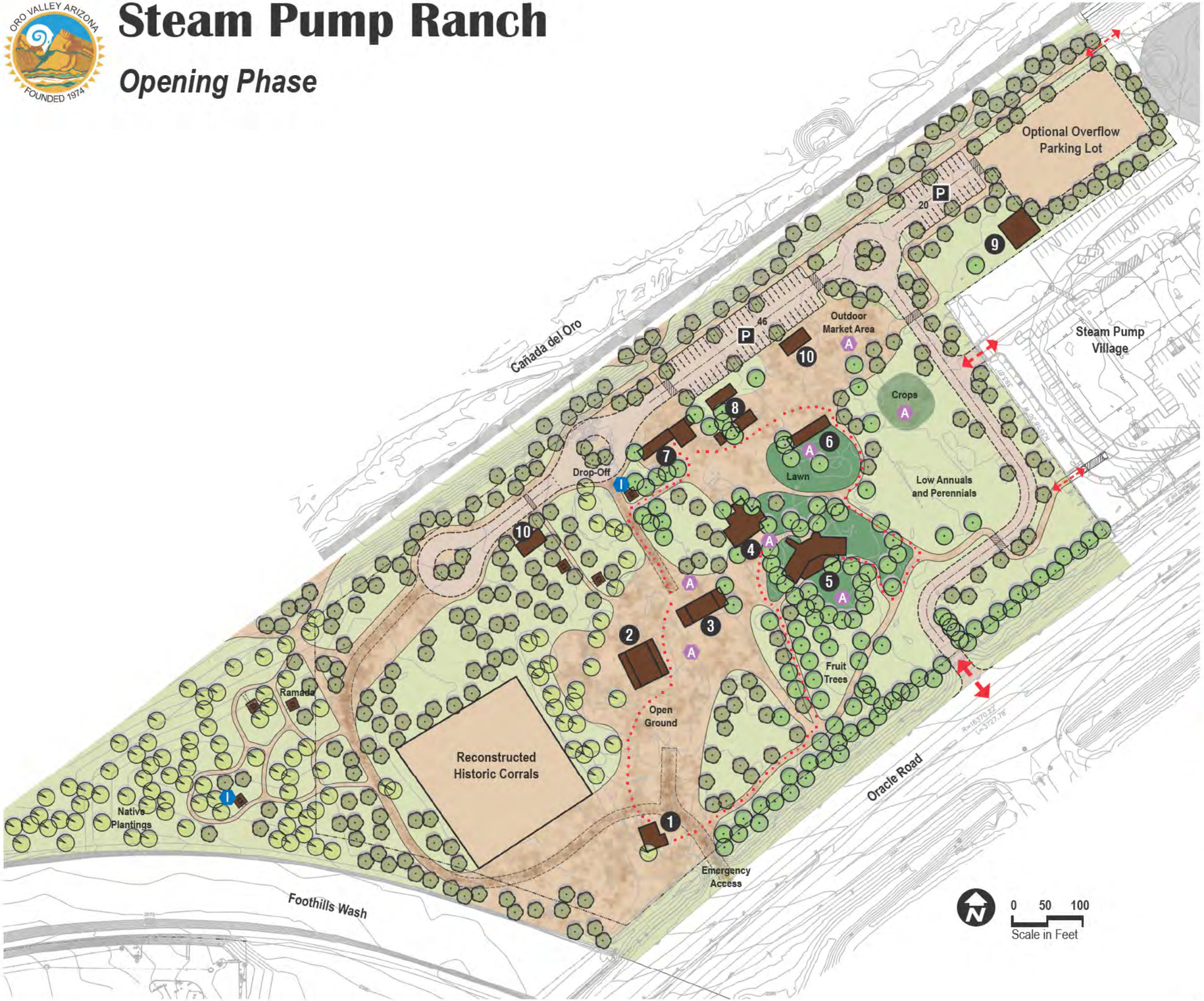
5 Procter / Leiber Residence

Support the ceiling in the living room below the second story fireplace with temporary shoring until removal of the non-historic second story addition.

Protect exterior wood windows damaged by termites to prevent additional damage.

Steam Pump Ranch

Opening Phase



BUILDING LEGEND

1. Pump House with Optional Blacksmith / Interpretive Exhibits
2. Museum Exhibits (Pusch Era), Small Meeting Room, Research Library, Office*
3. Restrooms (West), Cowboy House Museum (East), Farm Implements (Covered Area)
4. Natural History & Native American Exhibits, Rotating Gallery, Multipurpose Room / Classroom, Restrooms / Storage / Small Kitchenette
5. Procter / Leiber Era Exhibits, Other Exhibits, Offices* / Sun Porch / HC Restroom, Food Service (Optional Gift Shop)
6. Rehabilitate as Barbecue Pavilion / Storage / Restroom
7. Rehabilitate for Orientation / Entry Building / Gift Shop
8. Stabilized Former Chicken Coop Structure (No Chickens or Livestock- Consider Use for Site Storage and Outdoor Market Uses)
9. Rehabilitate as Caretaker's Residence
10. New Restroom Building for Park Use

* Office use is intended for Town of Oro Valley Parks and Recreation or other Town use, Oro Valley Historical Society, or a "Friends of Steam Pump Ranch" type group.

LANDSCAPE LEGEND

- Potential Interpretive Path
- Interpretive Ramada
- Potential Outdoor Activity / Event Space

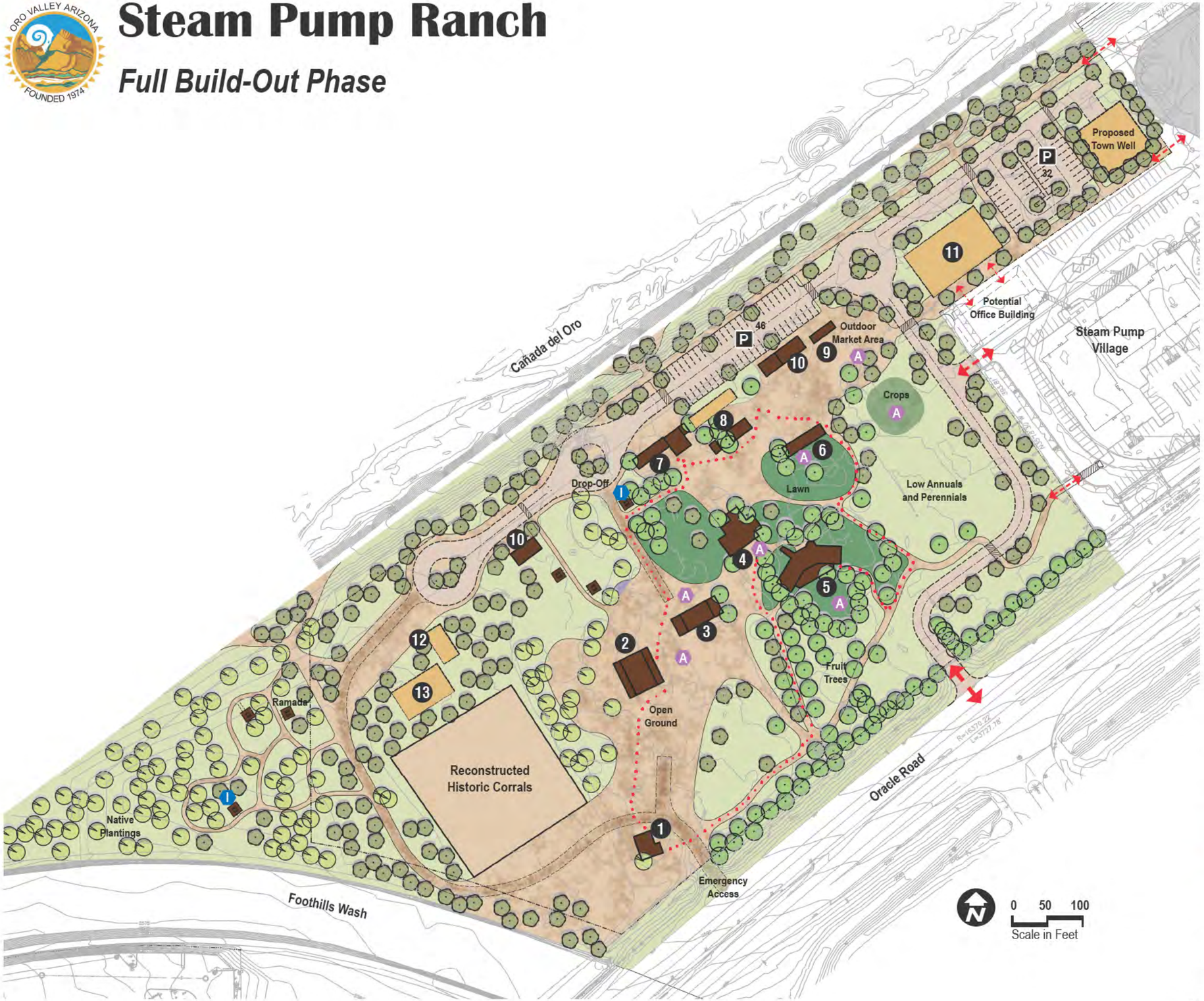
PARKING COUNTS

66 Organized Spaces

+100 Overflow Spaces

Steam Pump Ranch

Full Build-Out Phase



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6. Rehabilitate as Barbecue Pavilion / Storage / Restroom
7. Rehabilitate for Orientation / Entry Building / Gift Shop
8. Restore / Rehabilitate Structures for Potential Use by Youth Animal Husbandry Program, similar to 4-H
9. New structures based on historic layout for vendors/ artists/ antique fairs / markets
10. New Restroom Building for Park Use
11. New Multi-Purpose Event Building
12. New Caretaker's Residence
13. New Equestrian Building with Tack Room / Office

* Office use is intended for Town of Oro Valley Parks and Recreation or other Town use, Oro Valley Historical Society, or a "Friends of Steam Pump Ranch" type group.

LANDSCAPE LEGEND

- Potential Interpretive Path
- Interpretive Ramada
- Potential Outdoor Activity / Event Space

PARKING COUNTS

78 Organized Spaces

+100 Overflow Spaces

Prehistoric Context

9000 B.C.	Oro Valley was used by hunters and gatherers as early as 9000 B.C.
	Oro Valley was used throughout prehistoric times for hunting deer, sheep, and a range of smaller animals in the hills and mountains, for farming on the lower mountain flanks and larger floodplains, for gathering wild plants and mineral resources, and for habitation in temporary camps and year-round settlements in the best-watered areas

Pusch's and Zellweger's Arrival in the United States

1865 (3 October)	Johann Zellweger (18 year old) arrives in New York aboard the Bellona.
1865 (28 October)	George Pusch (b.24 June 1847 in Darmstadt, Germany) arrives in New York aboard the Wieland.
	Pusch and Zellweger became close friends in NYC with Pusch apprenticing as a butcher for $7.50 a month. The two eventually went their separate ways.
1870	Pusch moved on and spent time in Baltimore, St. Louis, Sedalia, Missouri and Chetopa, Kansas. Pusch listed as a butcher during the 1870s census. Pusch moves on to San Francisco and Los Angeles.

Arrival in Arizona

1874	Pusch comes to Arizona driving a 14-mule team. Pusch lived in Phoenix and Prescott for a while before moving to Tucson.
Mid 1870s	Pusch met up again with John Zellweger in Tucson and together they opened a butcher shop together, realizing they could make more money selling meat from their cattle than by merely selling the cattle)
	Pusch and Zellweger purchase the Cañada del Oro Ranch and mark their cattle with the PZ brand
	Purchase of a steam pump led to the renaming of the ranch as Steam Pump Ranch.
1876 (March 15)	George Pusch becomes a citizen of the United States.
1879	Pusch and Zellweger are running cattle in Pima and Pinal counties.

Arrival of the Railroad

1880	Pusch and Zellweger operate the Pioneer Meat Market on Mesilla Street. The shop sold both wholesale and retail beef, pork, and mutton. They deliver their products to any part of the city free of charge.
1880 (March 20)	The Southern Pacific Railroad arrives in Tucson. Rail line ran from San Diego through Yuma to Tucson and then eastward, connecting with other lines. The railroad opened up the market for cattle for local ranchers. Cattle no longer had to be herded, but could be loaded on railroad cars for large cities to the east or west. Ranchers to the north of Steam Pump Ranch bring their cattle to the ranch and water them, with Pusch charging 15 cents per head. The cattle would weigh more on the scales at the railroad embarkation point, bringing the rancher more money. The ranch was a stopping point for other travelers, including stagecoaches. It's been reported that a post office and store were once located at the ranch.

Marriage and Family

1881(April 24)	George Pusch marries Matilda Feldman (b. 19 June 1861 in Drakenberg, Germany) in Tucson. Matilda may have been related to A.M. Feldman who was working at the Pusch and Zellweger butcher shop in the early 1880s.
1882 (April 15 / 16)	The Pusch's infant twin daughters, Jennie and Tillie, die one month after birth.
1882 (April 17)	Pusch sells a piece of land to M.G. Samaniego, marking the beginning of numerous sales over the next 39 years (50 individual sales recorded by Pima County Deed Record Entries and 18 in Bureau of Land Management records).
1883	Matilda is joined by childhood friend Sophia Sieling (b. 29 May 1855 in Drakenberg, Germany).
1883 (February)	Pusch and Zellweger purchase another ranch near the Gila River in Pinal County.
1883 (May 20)	Marie Sieling (Sophia's sister) marries John Zellweger
1883 (June 15)	Zellweger sells Pusch his share of the Steam Pump Ranch
1883	Pusch has a residence on Jackson Street Birth of daughter Gertrude D. Pusch Zipf
1884 (May 31)	Marie Zellweger (Sieling) dies
1885 (January 24)	Sophia marries John Zellweger

Business and Politics

1885	Local ranchers band together to round up their cattle in the spring and fall. Pusch and Zellweger's ranch is an important gathering point with cowboys finding ready water at the ranch.
1885	Pusch and Zellweger form a wholesale butcher business and after October 1 they will simply supply the markets with dressed meats. Jas. Simpson succeeds Pusch in the management of the Mesilla Street market.
1885	Lack of summer rain causes cattle to eat mesquite pods and cactus pads. Winter rains are severe and cause flooding along the Santa Cruz River. Many cattle are too weak to walk away from the muddy flood plain, and subsequently die. Many ranchers lose seven to eight percent of their herd, but Pusch and Zellweger report a loss of only three percent because they move their "blooded" stock more often to pastures, rather than leaving them in one spot.
	Birth of George William Pusch
1886	The partners operate a slaughterhouse about three miles north of Tucson with a 45-ft-deep well pumped by a windmill. Herman Grief was the chief butcher.
	Pusch and Zellweger purchase the Feldman Ranch along the San Pedro River between Mammoth and Winkleman. The Feldman Ranch is managed by Matilda's brother.
1886 (June)	A grading contract is awarded to A.J. Davidson and E.O. Shaw to construct a narrow-gauge railroad to the ranch to facilitate the shipping of cattle. Grading began that same month but the railroad was never completed.
1886 (June)	17 carloads of beef cattle, each with 28 head, are sent from Pusch and Zellweger and Pedro Charouleau's ranches to Kansas City.
1886 (Sept. 4)	Apache leader Geronimo surrenders.
1887 (May)	George and Matilda and their children live much of the year in Tucson. Occasionally, the family moves out to the ranch, including May 1887.
1888	Birth of Henrietta Louise Pusch Ballinger
1890	Birth of Wilhelmina Pusch Knabe
Early 1890s	Drought conditions throughout the region. Effects are felt less severely at the Steam Pump Ranch.

Timeline

1890s	Cattle from Pusch's various ranches and partnerships are shipped to Los Angeles, San Francisco, Denver, and Chicago. Pusch helped consolidate cattle from smaller ranches and arranged for their shipment on the Southern Pacific Railroad. About 1,000 head were shipped at a time.
1891	Pusch serves in the 16th Territorial Legislature. He is a life-long Republican.
	Birth of Maybelle Pusch Hankins
1893	Well continues to produce ample water during a dry year because it was dug during a dry year.
1894	Birth of Fred Lewis Pusch
1896 (Sept)	Pusch and Zellweger install the largest refrigerator in the Territory of Arizona at their meat market on Congress Street. It was manufactured especially for them by the Gurney Refrigerator Company of San Francisco.
1897	Arizona cattle are worth about $12 per head, while Sonoran cattle are worth $10.
	At one time, Pusch held interest in 15,000 cattle while owning portions of the Arivaca Land and Cattle Company and the Pusch, Bogan, and Bernard Company. He was director of the Arizona National Bank and served as chairman of the Territorial Livestock Sanitary Board for four years.
1898 (Jan)	The last Pusch child, Walter Feldman Pusch, is born
1899 (May)	Pusch and Zellweger relocate their meat market to the Pusch Block of Congress Street.
1899	Pusch serves in the 20th Territorial Legislature
1900 (June 4)	Pusch family lives at 145 W. Jackson Street with George working as a retail butcher. 36 year old Nellie Burns was the family servent.
1903	Pusch listed as secretary of the Pioneer Meat Market and owner of the Tucson Ice and Cold Storage Building.
1907 (May 18)	Tucson Ice and Cold Storage Company officially incorporated with Pusch, Zellweger, and N.C. Bernard as its Board of Directors.
1910 (Apr 10)	Pusch family lives at 428 S. 4th Avenue. George is employed as a stockman and the couple has seven children: Gertrude, George, Henrietta, Wilhelmina, Maybelle, Fred, and Walter. The youngest six children had attended school in the last year.

1912	Pusch and Zellweger Meat Shop (34 Congress Street) and Tucson Ice and Cold Storage Company (65 Toole Avenue) are in operation.
1912	Pusch serves on State of Arizona Constitutional Council
1914	George has a stroke and by 1917 was declared incompetent. Matilda is made his guardian.
1920	George and Matilda live with their son Walter, daughter Wilhelmona, Wilhelmina's husband Gustav Knabbe, and that couple's son Robert.
1921 (August 20)	George dies at 428 S. 4th Avenue from a cerebral hemorrhage.
1924 (March 3)	John Zellweger dies in Los Angeles following an operation.
1930 (April 10)	Matilda and son Fred live at 428 S. 4th Avenue.
1933 (July 5)	Matilda dies at home from apoplexy. Childhood friend Sophie Seiling Zellweger dies in Tucson in May 1948. George and Matilda are buried in Evergreen Cemetery. Shortly after Matilda's death the Steam Pump Ranch is raided by federal officers, who arrested John J. Hartney and discover an 80-gallon still, 30 gallons of whiskey, and 450 gallons of mash. The officers may have been alerted by a boiler explosion that had taken place in the previous week.

Procter / Leiber Period

1933 to present	John Monroe "Jack" Procter buys the Steam Pump Ranch for $10,000. Procter was born on October 4, 1891 in Oakville, Kentucky. On January 21, 1916 he married Elizabeth H. Simmons. The couple lived in El Paso, Texas with John working as a cashier at the Texas Bank and Trust Company. John registered for the draft in June 1918 and was described as being tall and slender, with brown eyes and light-colored hair. The couple and their daughter Elizabeth lived in Eastland, Texas in 1920 and John was vice president at a bank. In April of 1930, the family, including daughter Elizabeth and son J. Monroe, Jr., lived in Pasadena, California. Jack was the manager of the Hotel Constance. The Procters move to Tucson in 1932 when Jack is hired to be the manager of the Pioneer Hotel, a position he held until 1962. While the owner of the Steam Pump Ranch, which he called "his favorite diversion," Procter constructed a number of new buildings, including a residence for his family, two small dwellings for workers, a barbeque building that was later converted into a dwelling, and a large number of chicken coops. He raised chickens for meat and eggs for the Pioneer Hotel.

In Tucson, Jack was active in many organizations. He was on the Board of Directors for Valley National Bank from 1938-1966. Other positions he held included being president of the Tucson Chamber of Commerce in 1966 and chairman of the Arizona Highway Commission from 1940 to 1944. Procter was a 33rd degree Mason with the Scottish Rite Temple in El Paso and was a member of the Elks, Rotary, Old Pueblo and El Rio Golf clubs and the Tucson Country Club. He also served as the secretary-treasurer of the Tucson Cemetery Association from 1955 through 1960.

Elizabeth (Betty) Procter (1918 - 17 May 1978) married Henry (Hank) Leiber (17 January 1911- 8 November 1993). Hank had been a professional baseball player for the Chicago Cubs and New York Giants between 1933 and 1942. Hank and Betty had two sons, John Lee Leiber and Henry E. Leiber, Jr. who inherited the Steam Pump Ranch from their grandfather.

Betty Procter died on 21 March 1968 in Tucson and her estate was valued at approximately one million dollars at that time. John Procter died on 29 January 1972. He is buried in the Evergreen Cemetery.

The Cañada del Oro wash is directly north of the site and runs ephemerally throughout the year.

Flood berm adjacent to the Cañada del Oro wash interrupts natural flood plain dynamics on the site and cuts the site off from an important natural feature. View looking southwest from the site's panhandle. Note: multi-use path at top of flood berm is unpaved adjacent to the site. A funding source for improving the path and connecting across the Foothills Wash at the southwest corner of the site should be identified and implemented to improve the connectivity of the site to greater Oro Valley.

Overview

The three phases of the Master Plan: *Pre-Opening, Opening* and *Full Build-Out* are presented in more detail, beginning with a summary of the landscape and environmental context of the site. Following the section on landscape, the proposed plans for the existing buildings are presented. Information previously presented in the *Steam Pump Ranch Building and Landscape Assessments*, prepared in August 2007, are summarized in the Appendix of this report.

Landscape and Environmental Context: Natural History

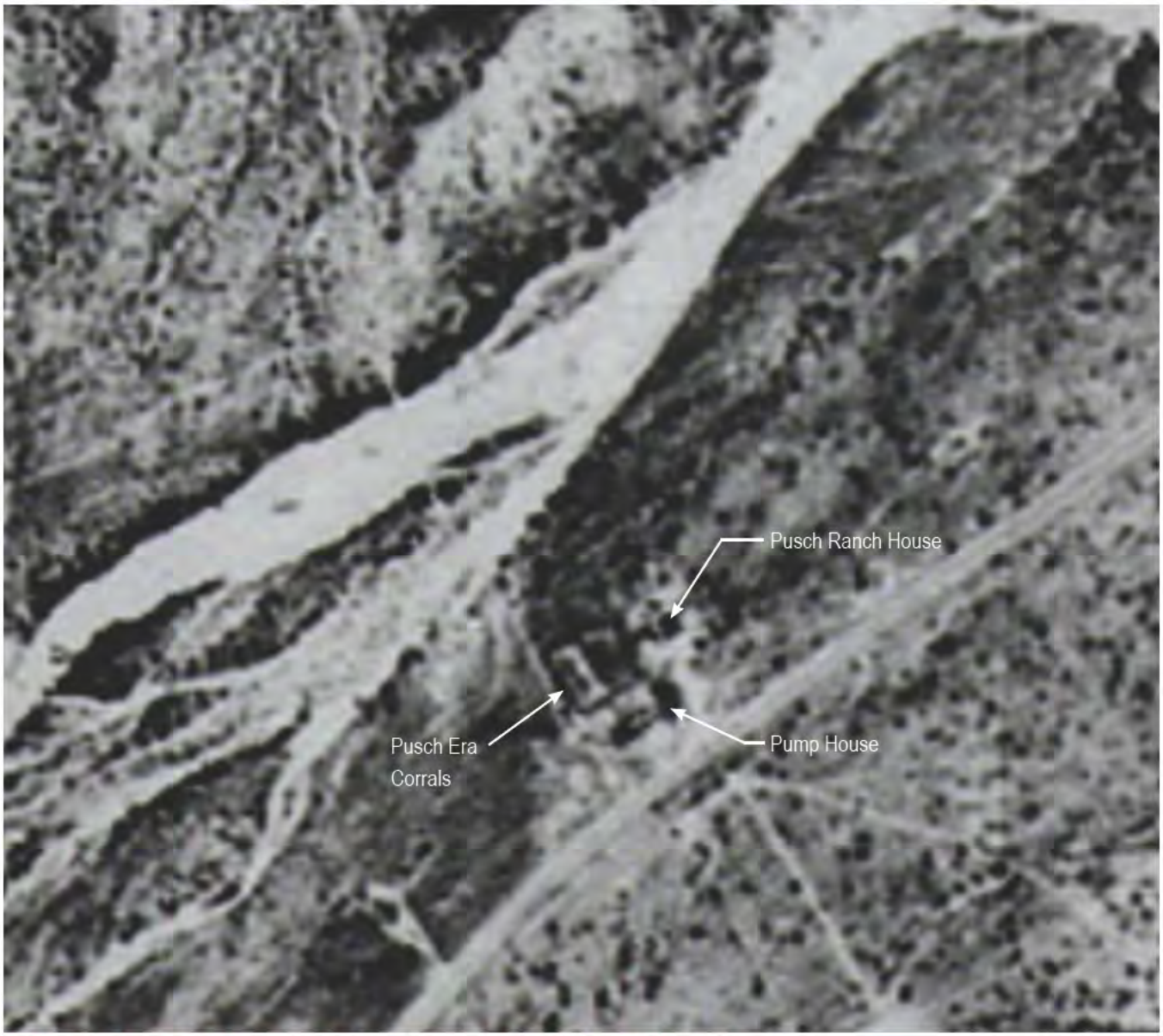
Prior to the mid 19th century, the landscape of the site likely consisted of relatively undisturbed native flood plain habitat with mesquite/palo verde habitat and cottonwoods in wetter locations in the flood plain. The wash likely ran intermittently, dependent on regional precipitation. The site received regular inundations from water overflowing the wash and also moving down from the mountain in small washes or as sheet flow. The ground water was closer to the surface than it is today, supporting denser vegetation. The site was part of a continuum of sloping grades and habitat that linked the wash and the mountains.

In the past forty years, the natural dynamic process of the flood plain and sheet flow have been significantly altered. Along the wash frontage, a flood control berm was erected and has eliminated flooding from the site. This berm has also eliminated the direct visual and physical connection to the wash. The elevated roadway on the east side of the site effectively channels all sheet flow and water from small washes away from the site. While controlling the flow of water on the site, the berms have also disrupted the historical natural relationship of the site to the wash and mountains.

Most of the native flood plain vegetation that once existed on site has been removed or has died due to the channelization of the wash and the lack of water.

Historical Context

Beginning in the last quarter of the 19th century, the landscape has been valued and significantly altered by uses related to its location along a major trail and on the banks of the Cañada del Oro, a major wash feeding the Santa Cruz River. The land was developed by George Pusch into a stop over and water source for cattle herds on route to Tucson, making it a vital component of the early cattle ranching communities in Pima County. In the early twentieth century the land's Sonoran Desert landscape replete with unique native plants and views to the Catalina Mountains attracted John Procter, a Tucson hotelier. He developed the land into a scenic rural respite which catered to the growing tourist economy. These two men, their families and workers each adapted and altered the landscape and built structures to suit their different needs.



1937 Aerial (of poor quality) showing Pusch era structures and native flood plain vegetation

View looking southwest along the imaginary “dividing line” between the Pusch and Procter / Leiber era landscape. To the right, the landscape will be restored back to a more native, flood plain setting with open ground to represent the former cattle activity on the site. In contrast, areas to the left of this dividing line will be preserved and enhanced to represent the more ornamental landscape of the Procter / Leiber period on the site.

Ornamental plants and lawns create a shady oasis around the Procter / Leiber residence. When contrasted to the Pusch era landscape, important interpretive themes on land use and water use can be developed.

Overall Landscape Concept

The center of the site is the historic core where the structures of the two historical eras were built in separate locations. Surrounding this area, adjacent to the flood plain berms and the new commercial development to the northeast are functional zones which will accommodate any new structures as well as parking and non historic drive lanes. The proposed landscape plan will restore the appropriate historical setting for each era as determined by the (limited) documentation. The restoration of the historic core and the surrounding functional use zones will meet the current building codes and laws required for safe and universal access by visitors and staff.

For the Pusch era, the working vernacular landscape will consist of mainly of cleared ground around the buildings and the corrals surrounded by native plants. From limited documentation, the focus of the land is understood to have been to accommodate large herds of cattle passing through on the trail to Tucson. The site was a commercial venture dependent on abundant water. Of the buildings, corrals, steam pump, water troughs and shade structures that were added, only the house and steam pump structure remain today

By contrast to the cattle-oriented, open landscape of the Pusch era, the Procter era is understood to have served as a rural retreat for a small number of tourists with shade and ornamental trees and as a supplier of meat, produce, and eggs to the downtown hotel. There is extremely limited documentation available on the physical layout and spatial arrangements of this era. The proposed landscape treatment for this area is based on an aerial photograph from 1960 and a 2007 survey of the existing major vegetation.

The following list defines the treatments of the different eras and areas as they relate to the historic guidelines as stated in the U.S. Department of the Interior, National Park Service’s bulletin “Characteristics of the Rural Landscape.” Of the eleven elements in the guidelines, three

(archaeology, buildings, and groups of buildings [clusters]) are not included in the following.

Land Uses

Pusch:

- Preserve sense of open space as was required to direct, contain, and water cattle herds.
- Remove eucalyptus and other plants not historically accurate

Procter:

- Farming - Rehabilitate farm fields & chicken coops
- Gardening – Recreate kitchen or flower garden area if historically accurate
- Leisure - Preserve shaded outdoor living areas and functional lawns

Spatial Organization

Pusch:

- Preserve orientation and grouping of major existing structures, connections to road, entry drives related to eras, path systems, fields, animal structures
- Interpret existence of minor and removed structures: wood sheds, outhouses, bunk houses, clothes lines
- Reconstruct corrals and historic relationships between fences, corrals, pump area, watering devices, fields, holding pens

Site wide:

- Remove non historic structures: overhead utility lines, metal sheds, metal fencing, utility pad & pool.
- Remove non-historic paths and drive lanes by replanting to specific era

Response to Natural Environment

Pusch & Procter:

- Preserve views to Catalina Mountains

Site wide:

- Interpret altered connections to flood plain and uplands
- Preserve existing grade conditions. Restrict major grade changes and/or earthwork (berms, basins) to less than 12” depth or height. No earthwork or grade changes in historic zone.

Pusch:

- Reestablish native xeroriparian (A, B or C sub classes) habitat

Cultural Traditions

Pusch:

- Restore fenced areas at buildings protecting plants, doors & windows
- Restore overall open work area beyond

Procter:

- Restore shaded leisure areas around house and shaded work areas by chicken coops

Circulation Networks

Pusch:

- Preserve open areas and links to trails, road and wash as established by foot, cattle and horse traffic

Procter:

- Preserve main entry drive to house, paths between house, coops, animal yards and fields as established for foot, horse and motorized vehicle traffic

Boundary Demarcations

Site wide:

- Not applicable

Vegetation Related to Land Use

Procter:

- Preserve fruit, nut, and ornamental / shade plants and limited lawns areas (adjacent to structures and serving as outdoor living areas)

Pusch:

- Restore open area around steam pump, house and corrals adjacent to road.
- Restore china berries and fig tree next to steam pump structure if documents indicate historical relevance.
- Preserve line of mesquites (possibly incidental to old corral or fence line) if tree ring survey indicates historical relevance.

Small Scale Elements

Pusch & Procter:

- Restore fencing, signs, gates, markers and machinery/equipment.

October 2007: Taking a core from the trunk of a mesquite tree near the Pusch Ranch House for dating by the University of Arizona Laboratory of Tree-Ring Research.

Nut trees south of the Procter / Leiber House should be preserved

Lawn area between the Procter / Leiber House and the restored barbecue pavilion contribute to the mid 20th century setting of the ranch and can be used for special events.

Landscape Maintenance Plan

Overview

This three-year strategy for removal, maintenance, irrigation and overall care of the landscape should be adopted as part of the *Pre-Opening Phase*.

The following maintenance recommendations for the 15.5 acre Steam Pump Ranch site are a component of the Master Plan for the rehabilitation and restoration of the historical landscape and buildings. The intention is to guide routine maintenance activities to accommodate and promote the vision for the landscape master plan. The recommendations are closely coordinated with the final landscape master plan and the plant inventory. Proper execution of these recommendations will require access to both of these plans.

Background: An initial short term landscape maintenance report was submitted to the Town of Oro Valley on May 29, 2007 by SAGE. It outlined recommended steps to ensure public safety and protection of historic structures until the completion of the landscape assessment and Master Plan. The recommendations in that report are not repeated in the following narrative. The following recommendations proceed with the assumption that the initial short term work was completed in full.

Recommended Landscape Maintenance
May 1, 2008 to Feb. 14, 2012

Year One

Record: Begin keeping monthly site-wide irrigation water use records to identify unusual use conditions which could indicate a leak or poor function and for future comparison to new irrigation system.

Remove

Pusch era landscape

- All lawn. Turn off irrigation to lawn in this area, as indicated on plan.
- All non-historic and non-native trees as identified on the Master Plan and Plant Inventory

in consultation with landscape architect. Turn off irrigation to these trees.

Site wide

- In coordination with TEP, remove or trim trees and branches obstructing power lines. Consult with Town of Oro Valley arborist on trimming methods to result in proper form.

Protect the following areas from damage by vehicles, construction, under/over watering, storage of material in root zones, etc. This may include installing fencing or other barricades.

Pusch era landscape

Mesquites and palo verdes in east/west line numbered T-67 through T-82 on the Plant Inventory.

- Any mesquites determined to be potentially historic in addition to those listed above. These may include trees numbered T-45, T-83, T-85, T-86, T-96 and T-171 through T-177 on the Plant Inventory. Consult with landscape architect and dendrochronologist. Provide supplemental water as determined by arborist to sustain health of trees.
- All native plants in areas indicated on plan.

Procter era landscape

- All native and exotic fruit, nut or ornamental trees and shrubs
- Mixed hedgerow along Oracle road.
- Lawn areas identified for programmatic use on plan

<u>Year Two</u>

Remove

Procter era landscape

- Lawn in areas indicated on plan. Turn off or modify irrigation to eliminate water to these lawn areas while maintaining irrigation to trees.

  This may require several months to complete since the lawn and tree irrigation may be one in

Vegetation and irrigation near buildings should be monitored to prevent damage to the buildings. At this location near the western adobe bunk house, standing water appears to be infiltrating the adobe walls causing the cement plaster to erode.

During the *Pre-Opening Phase* water to lawns may be eliminated so long as water to trees is maintained.

the same. The intention is to keep the trees watered where lawn is removed. Until a new irrigation system is designed and installed, a temporary above ground system may be required.

Protect
Continue protecting areas established in year one.

<u>On Going To 2012</u>
Annual
- Prior to storm season, arborist shall conduct site review of trees identifying dead or damaged limbs for removal.
- Conduct site review to identify and remove accumulations of dense, dried vegetation (such as dead grass, leaves, branches and piles of dead wood) which could pose fire risk.

Quarterly
- Conduct inspection of operational irrigation lines and valves to identify and repair leaks or other malfunctions. Adjust irrigation schedule to respond to seasonal water needs.
- Conduct inspection of protected areas and plants to repair barriers or remove hazards.

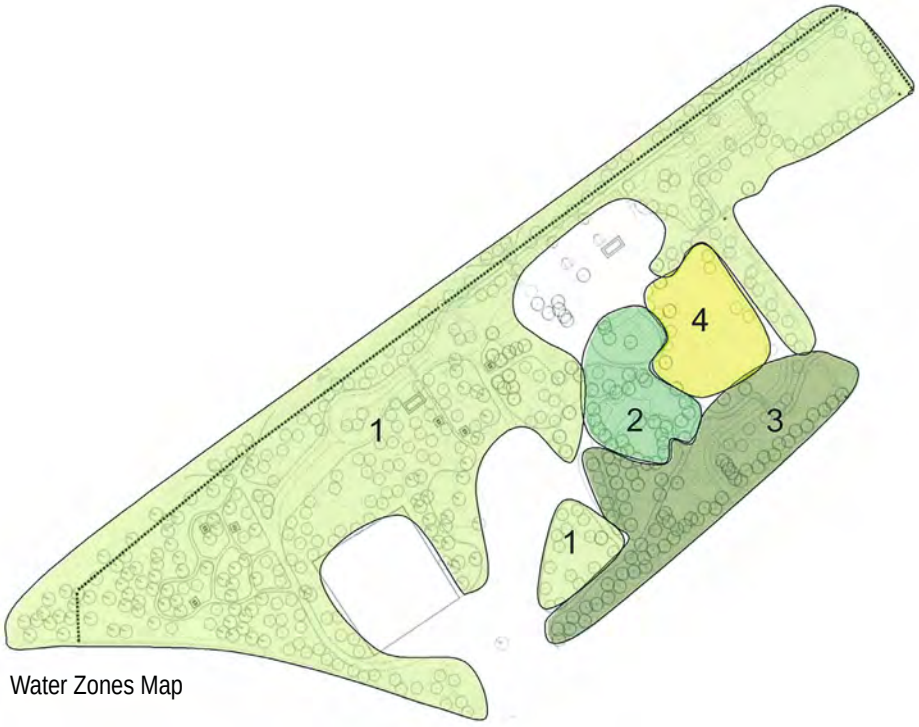
Monthly
- *Dry months*: In coordination with ADOT, conduct monthly visual inspection of Oracle Road Right of Way to identify and remove areas of dense dried grass which could pose fire risk.
- Remove newly volunteered weeds throughout the site.
- Pick up litter and trash.
- Trim vegetation only to remove damaged or broken branches and mistletoe and prevent conflicts with buildings and structures.
- Remove low branches (as identified in the Plant Inventory).

Water Zones and Budget

SAGE LANDSCAPE ARCHITECTURE & ENVIRONMENTAL

Area	Plant List	Estimated Total Area Acreage Ac	Estimated Total Area SF SF	Estimated designed landscape SF (% of total SF) Design SF	Evapotranspiration rate (Tucson) Et_o	Irrigation Efficiency (IE)	Species Factor (K_s)	Density Factor (K_d)	Microclimate Factor (K_{mc})	Landscape coefficient (K_l)	ETl (project specific ETo) ET_l	Highest Water Demand Gallons Per Month (July) Gallons (July)	Total Maximum Annual Water Demand Gallons Gallons Annual	Total Maximum Annual Water Demand Acre Feet Acre feet Annual
1 - 347043.81	Native trees,shrub, groundcovers xeroriparian species	7.97	347,173	208,304	9.06	0.63	0.5	1.1	1	0.6	4.983	1,035,155	**12,421,862**	**37.27**
2 - 59717.16	Lawn Area, Trees	1.37	59,677	59,677	9.06	0.9	0.7	1	0.8	0.6	5.0736	209,691	**2,516,289**	**7.55**
3 - 72399.93	Historic Trees: Fruit, nut, Eucs Understory: low annuals	1.66	72,310	54,232	9.06	0.63	0.9	1.1	1	1	8.9694	481,257	**5,775,086**	**17.33**
4 - 43560	Farm crops:	1	43,560	21,780	9.06	0.63	0.7	0.5	1	0.4	3.171	68,330	**819,959**	**2.46**
													21,533,195	**64.60**
													Project Total Annual Water Demand Gallons	**Project Total Annual Water Demand Acre feet**

NOTES
1) Figures used are for mid-summer baseline case (July). Calculation method adapted from LEED-NC 2.2 water efficiency reference guide.
2) Drip irrigation unless otherwise noted.
3) Soil analysis not available or included in calculations.
4) Rainfall for Oro Valley not included. Ave. Annual Rainfall for Oro Valley = 12.4 inches.
5) Reductions possible through use of captured rainwater; recycled on-site greywater; treated, reclaimed municipal wastewater and the use of unirrigated seeded areas.
LEED-NC Equation 1 KL=ks * kd * kmc
LEED-NC Equation 2 ETL (in) = ETO-KL
LEED-NC Equation 5 Total Water Demand Gal = Area (SF) x (ETL(in)/IE) x .6233 gall/sf/in



Water Zones Map

Area 1 - Xeroriparian Vegetation

Area 2 - Lawn

Area 3 - Historic Trees

Area 4 - Crops

Interpretive signage and interpretive displays should be developed to communicate the environmental and human history of the site to residents and visitors. The following points of interest and view points may be used as interpretive nodes throughout the site.

- Top of flood plain berm (water, landforms, floodplain, habitat, animals)
- View to Catalina Mountains (landforms, floodplain, habitat)
- Chicken coops, roughly where the 1940 flood plain might have been (domesticated animals, water, agriculture)
- Farm field (agriculture, seasons)
- Shaded lawn near Procter house (introduced plants, native animals)
- Native plant area at south end (native plants and habitat)
- Open area at corral (water, domestic animals, agriculture)
- Parking lots, pathways, and landscape (stabilized site soil, alternative paving techniques, water harvesting methods)

Landscape Interpretive Overview

This section provides an outline of potential site landscape and ecological systems interpretive themes and an overview of programmatic/ interpretive uses of specific outdoor spaces.

The following interpretive themes consider ideas as points of departure to compare and contrast the natural systems at Steam Pump Ranch during the two historic eras and contemporary times. Ideally personal stories from people who lived, worked or visited Steam Pump Ranch would be woven into the interpretation, making the historic site come alive. The goal is to have the visitor engage with the personal stories of the site (e.g. harvest time, a cattle herd visit, a flood, a visit from an unusual animal, first horse back ride into wash, etc.) to become more aware of the value of preserving the site's natural and historic resources.

Interpretive Themes

Landforms surrounding the site: Natural forces shaped the washes and mountains. Engineered landforms, like the flood plain berm, were built for specific reasons. How do these landforms differ and how are they similar? How long/how much soil did it take to construction the berm.

Flood plain and uplands: Explanation of the floodplain dynamics, how it's linked to the mountains and geology and how the current condition differs from what the site was like in 1880 or 1940. What is a floodplain and where is it in relation to the steam pump now and in the historic eras. How did geology influence the water resources of the site? How did flooding shape the lives of the people on the ranch prior to the berms? Discuss the benefits of flooding (enriched soil, connection to dynamic ecological system, ground water recharge) as well as the costs to life and structures.

Water: from floods to drought how has available water influenced the historic story of Steam Pump and changed the site landscape? What is ground water and where does it come from? Where does

the water in the CDO wash end up?

Habitat: What kind of habitat or how many different kinds of plants are in the wash? How does this compare to the site? How is this different from 1880 and 1940?

Agriculture in Pima County: What are the growing and harvest seasons? Which plants are harvested or planted when? If it's March what kind of fresh vegetable would you have eaten in 1880 or 1940? How large was the ranch, how many acres is required to support one head of cattle? What kind of pest control / fertilizer was used in 1940? Where did it come from?

Native and introduced plants: Where, when and how did the introduced plants become established on the site? What other plants were brought to the site, by whom and when. Desert trees don't usually grow in straight rows, so why is there a row of mesquites in the 1880 area? What were native plants used for in 1880 and 1940? Did cattle ranchers regard native plants differently than the tourists? What kind of plants would have lined the wash in the two eras? How did the landscape create economic value for the ranch and how did the ranch help Tucson prosper?

Native animals: What animals use the washes for travel, food or habitat? Which ones may have lived at the steam pump site?

Domesticated animals: What domesticated animals would have been on the site in 1880 or 1940? How would they have interacted with the native animals and plants? What do cattle eat in the desert?

Materials: What are alternative paving options that promote long-term sustainability and environmental stewardship? How does water harvesting work? What are some easy water harvesting techniques that can be incorporated into residential landscapes? What are alternative lighting options that use sustainable resources?

Gardens are important to understanding the seasonal differences in our climate and the role of food production historically on the ranch.

Just how many mesquite trees were on site when Pusch and Zellweger used the site in the 1870s and 1880s?

Pathway and parking lot designs should incorporate environmentally sensitive materials and passive water harvesting. Preservation strategies throughout the site should provide examples of water and energy conservation techniques for residents.

The following section provides a detailed overview of the proposed uses for the existing buildings on site. Proposed treatments for the individual buildings are guided by the *Secretary of the Interior's Standards for Historic Preservation*. A summary of the *Standards* is included in the Appendix of this report. The following building plans should assist in the development of interpretive exhibits and programs and amenities for visitors to the site.

1 Pump House

Building Legend

- A Pump Room 254 SF
- B Engine Room 131 SF
- C Blacksmith 410 SF

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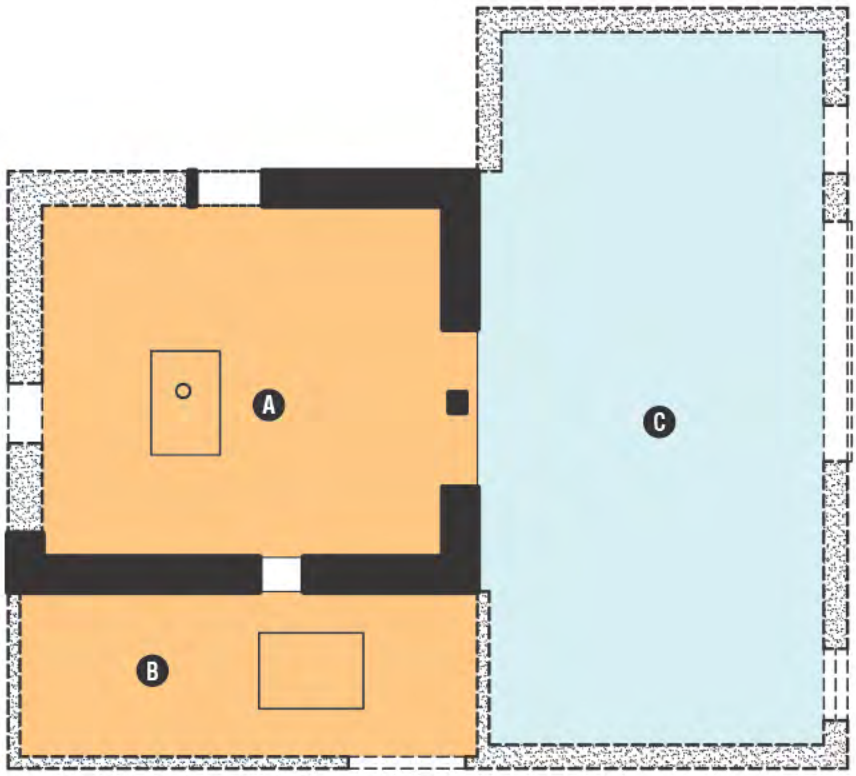
North



Pump House 1

The Pump House is located adjacent to Oracle Road near the southern property line. It is probably the oldest and is the most significant structure on the site, believed to have been built by Pusch and Zellweger in the 1870s to feed and fatten cattle in-route to market via the railroad. It has been reported that the Steam Pump could draw up to 50 gallons per hour or roughly 300-400 gallons of water per day.

The structure is currently a ruin, with only several original adobe walls still intact. The master planning process determined that it was desirable to restore the strucutre. The restored building has the potential to serve as an icon for the site and to provide a context for interpretation on historic building techiniques and the changing technology used to provide water to the site.

Pump House looking from the northeast to the southwest. Date is circa 1923. Courtesy Arizona Historical Society.

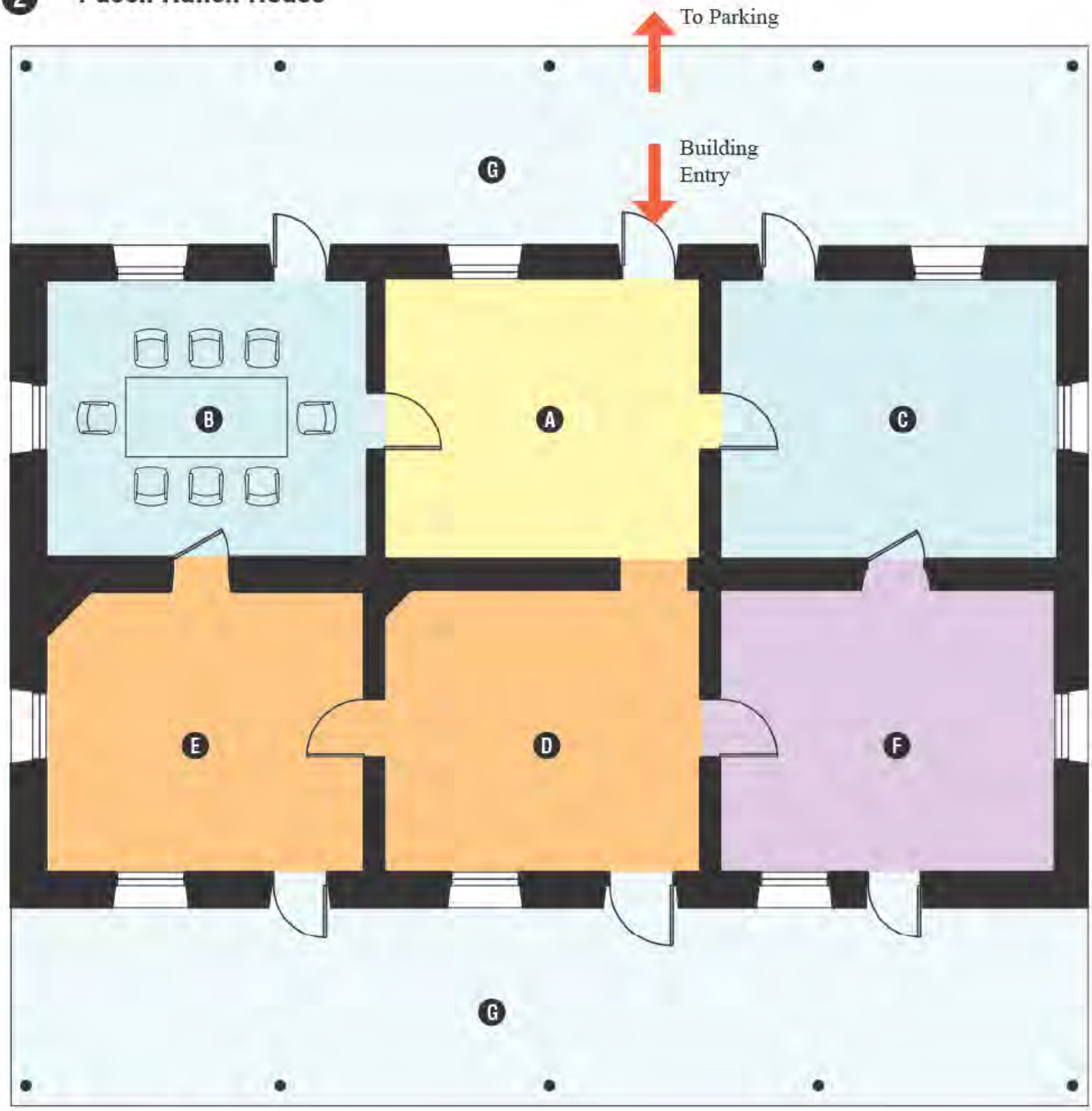
View of the Pump House from the southeast. Date unknown. Courtesy of the Arizona Historical Society

Interpretation: (A) Exhibits on the historical use of the pump building. Consider displaying pumps and creating a "working" pump. Focus on importance of reliable water source to regional ranching operations. **(B)** Engine Room display. At a location at or near pump house a display should discuss historic preservation / restoration rationale.

Demonstration: (C) Blacksmith's shop and equipment. Consider special demonstration days by groups such as the Arizona Artist Blacksmith Association.

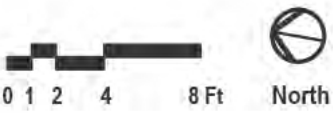
Keyplan

❷ Pusch Ranch House



Building Legend

A	Entry	219 SF
B	Meeting Room	219 SF
C	Research Library	232 SF
D	Rotating Exhibits	219 SF
E	Pusch / Ranching Exhibits	216 SF
F	Office Space	232 SF
G	Open Porch	



Pusch Ranch House 2

The Pusch Ranch House was probably built within a few years of the Pump House, circa 1880, as a retreat on the ranch for the Pusch family. The building is a good example of a transitional Sonoran-style building, consisting of high-walled, thick adobe core with a timber framed hipped roof. Porches were enclosed and small shed additions were attached to original six room core over time.

The Master Plan proposes removing later additions and restoring and rehabilitating the building to its appearance during the late 19th Century. A thorough review of building features is included in Harris Sobin's *Building Condition Assessment Report* completed in 2004. This report is an excellent resource for understanding the age of individual features.

West elevation circa 1900. Image courtesy of the AHS - Tucson.

View of Pusch Ranch House in 2007 from the Southeast

Entry / Orientation: (A) Room serves as a transition space to the building and exhibit rooms. Display cases and wall exhibits. May include a desk for a volunteer.

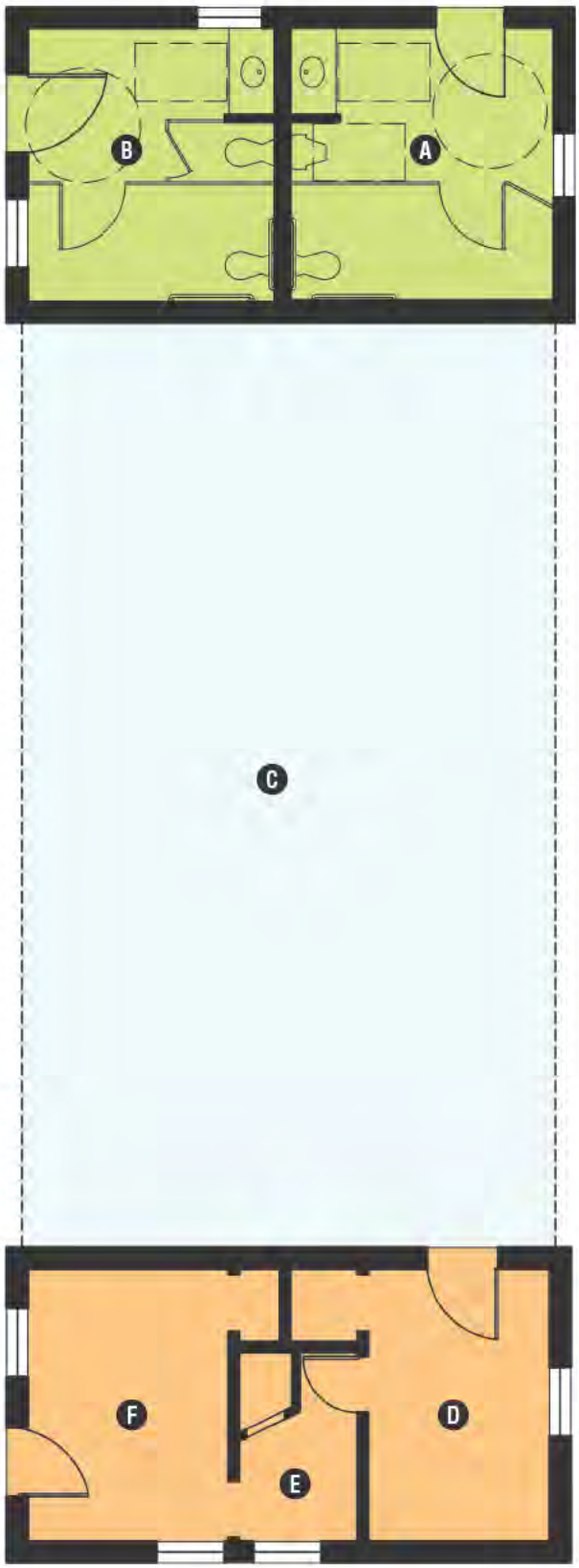
Interpretation: (D) Exhibits on Pusch-Zellweger settlement in the region, founding of SPR and connection of SPR to the local economy. **(E)** Rotating exhibits focused on the Pusch family and ranching, including china, baskets, trunk, organ, and related items, (subject to availability)

Meeting / Research: (B) Meeting space for small groups (10 people). **(C)** Research library starting with documents from the George Pusch Collection of historical documents. Open specific days / times. Both spaces include exhibits on the walls and in display cases.

Offices / Archive: (F) Office space and climatically controlled space for archival materials.

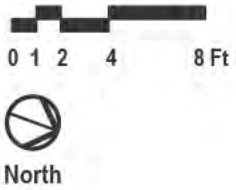
Keyplan

3 Bunk Houses



Building Legend

A	Men's Restroom	136 SF
B	Women's Restroom	128 SF
C	Covered Storage	933 SF
D	Bunkroom	104 SF
E	Shared Bathroom	42 SF
F	Bunkroom	110 SF



Bunk Houses 3

These small adobe buildings measure 24' x 13' and are believed to have been built by the 1940s for worker housing upon the transfer of the ranch to John Procter. This simple structures exhibit the typology and construction techniques of vernacular dwellings commonly built on ranches in the area.

Bunkhouses viewed from the southwest

The east building maintains a high degree of integrity with many original materials and possibly its original spatial layout. The interior layout of this building consists of two sleeping rooms separated by core consisting of closets and a shared bathroom. The east building will be preserved and used as a cowboy house museum that showcases the life of a ranch worker during the middle decades of the 20th century.

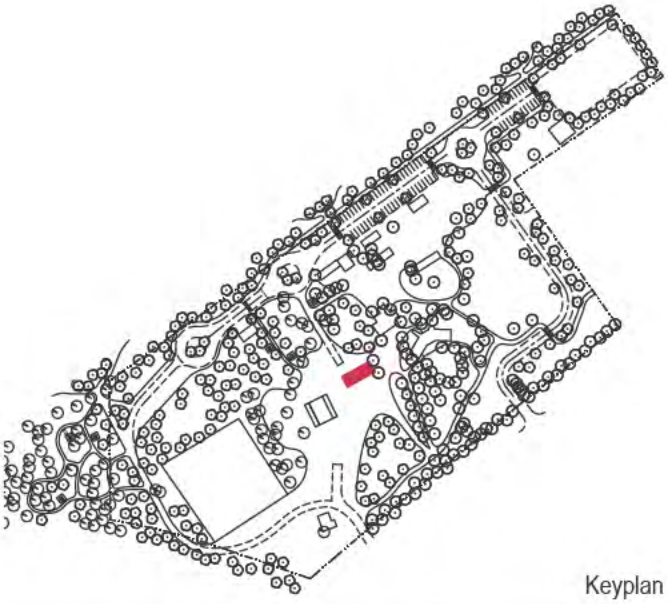
The interior of the west building appears to have been modified in recent decades. As proposed in the Master Plan, this building will be rehabilitated for modern restrooms.

The covered ramada that once spanned between the two bunk house will be restored. Under this protective covering, antique ranch equipment and vehicles can be displayed.

Restrooms: Rehabilitate existing bunk house as accessible restrooms

Demonstration: Antique ranch equipment /vehicles under restored ramada. Consider storage of equipment for use by park maintenance staff.

Interpretation: Cowboy house museum with period furnishings and memorabilia



Keyplan

4 Garage / Workers' Housing

Building Legend

A	Entry / Exhibits	208 SF
B	Small Kitchen	97 SF
C	Restroom / Storage	66 SF
D	Classroom / Western Movies	526 SF
E	Native American Exhibits	179 SF
F	Building Storage / Utility	110 SF
G	Natural History Exhibits	173 SF
H	Site Storage	135 SF

Garage / Worker's Housing 4

The former garage and workers' housing showcases the additive nature of vernacular building forms on the site. Typical of this ranch typology, the building was constructed in stages, presumably starting in the late 1930s - early 1940s, with additions added to the north, south and west over the ensuing two decades.

The building will be preserved and rehabilitated with proposed use for exhibits, meeting space and storage.

View of Garage / Workers' Housing from the southwest

Entry / Orientation: (A) Transition space with potential for hosting exhibits and visitor orientation to site and building.

Restroom / Kitchen: (B) Small kitchen with sink / ref. for service during functions in building and surrounding areas. **(C)** Rehabilitate existing restroom and closet.

Classroom / Meeting Space: (D) Multi-use space with potential to host classes, western movies, school groups, meetings. Capacity 20-25 seated.

Interpretation: (E) Exhibits on Native American history including influence of Apache on early American settlement of the region and SPR. **(G)** Natural history exhibits on local flora and fauna, changing ecological conditions and relationship of site to CDO and Catalina Mountains. Additional outdoor space adjacent to this room would be desirable.

Storage: (F) Building storage and utilities. **(H)** Storage for site furnishing and equipment

Keyplan

5 Procter / Leiber Residence

This Spanish Colonial / Mission Revival Style residence was built for John Procter and his family after their acquisition of the property in 1933. The building appears to have originally consisted of two equal wings separated by a central living room and a covered porch. The porch may have been fully enclosed shortly after construction. In the early 1970s, Procter's grandson, John Leiber, and his wife, Cheryl, moved into the house. Since that time, there have been a number of significant changes, including the renovation of the kitchen area, a second story addition above the living room, and the addition of a master bedroom suite at the eastern side of the building.

Thge Master Plan proposes removing the post 1970 additions and rehabiliting the core of the building. The strong connection that exists between the formal living room, sunporch and outdoor courtyard should be preserved. The courtyard is an important outdoor space that can be used for special events and receptions.

View from the north. Note second story addition, added in the mid 1980s, at the center of the photo. The stairs are original.

View of south facade, including sun porch and second story addition.

View of Procter / Leiber Residence from the southeast.

The vegetated patio south of the Procter / Leiber House has great potential to be used for outdoor events and receptions

Procter / Leiber Residence 5

Entry Porch: (A) Restored exterior porch for entry and gathering

HC Restroom: (B) Rehabilitate existing pantry for HC restroom **(D)** Service area and counter for snack food and drink sales.

Interpretation: (C) Displays on baseball star Hank Leiber and his family. **(E)** Restored to mid 1940s with period furniture and art. Exhibits on Procter Period ranch, including connection of SPR to Pioneer Hotel and the ranch's role in providing provisions for the hotel. **(F)** Possible OVHS exhibits including: Jim Kreigh meteorite collection, barbwire collection, Arizona Highways Magazine Collection, Photographic Collection, Rattlesnake collection.

Sunporch: (G) Restore open-air porch for gathering and for use in conjunction with events held in the adjacent courtyard.

Offices / Archive: (H) Office space and climatically controlled space for archival materials.

Building Legend

A	Entry Porch	126 SF
B	HC Restroom	47 SF
C	Hank Leiber Displays	441 SF*
D	Snacks and Drinks	226 SF
E	Procter Displays	566 SF
F	Exhibit Room	343 SF
G	Sun Porch	703 SF
H	Office / Archive	373 SF

*** Alternate Gift Shop location if not located in #7, Orientation and Entry Bldg.**

Keyplan

6 Carlos' House / Former Barbecue Pavilion

Outdoor BBQ Pavilion
(Speculative design - Additional research required)

The stone fireplace originally served as an open barbecue shed

This building was originally an open barbecue shed (see picture) before being enclosed and enlarged to serve as a residence over the last 40 years. It currently consists of a large central room, containing the original stone fireplace, flanked by a kitchen and laundry room. Bedroom extend north and west of this central area with a enclosed porch, closet and bathroom occupying the eastern side of the building. The core of the building is adobe with wood windows.

The proposed use calls for it to be returned to its earlier use as an outdoor barbecue shed and gathering area. The recently discovered image of the building as a barbecue can be used to guide the rehabilitation. The area between the barbecue and the Procter - Leiber Residence is proposed as a lawn where special events and gatherings can take place.

Building Legend

A	Small Kitchen	93 SF
B	BBQ / Gathering Space	370 SF
C	Storage / Utility	85 SF
D	Restroom	184 SF

0 1 2 4 8 Ft North

Carlos' House / Former Barbecue Pavilion 6

Photo of structure as outdoor barbecue, looking north. Date of photo unknown. Courtesy of Carlos Rivera

BBQ /Gathering (B) Multi-use space with potential for hosting events.

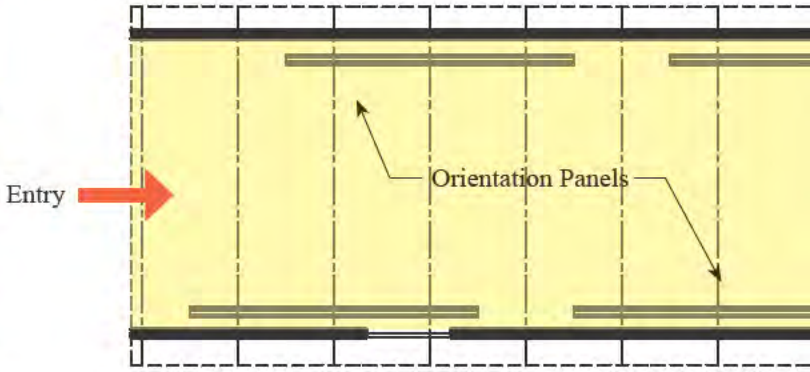
Service: (A) Small kitchen with sink / ref. for service during functions at BBQ and adjacent outdoor spaces. **(D)** Restroom

Utility / Storage: (C) Storage for chairs, tables, equipment. Utility space for site and building utilities.

Keyplan

❼ Orientation / Entry Building

Looking south from the orientation building towards the historic core and Santa Catalina Mountains



Building Legend

Ⓐ	Orientation / Visitor Information	640 SF
Ⓑ	Gift Shop	210 SF*
Ⓒ	Orientation / Visitor Center / Meeting Space	500 SF
Ⓓ	Utility / Storage	111 SF

*** Gift shop may be in Building #5**

Site Entry (A) Open air entry area with displays and interpretive exhibits. Covered seating for small groups and tour meeting point.

Orientation Film / Visitor Center / Meeting Room: (C) Meeting place for guided tours, self-guided equipment rental, orientation video, seating for 30. **(B)** Gift shop

Utility / Storage: (D) Building and site storage and utility

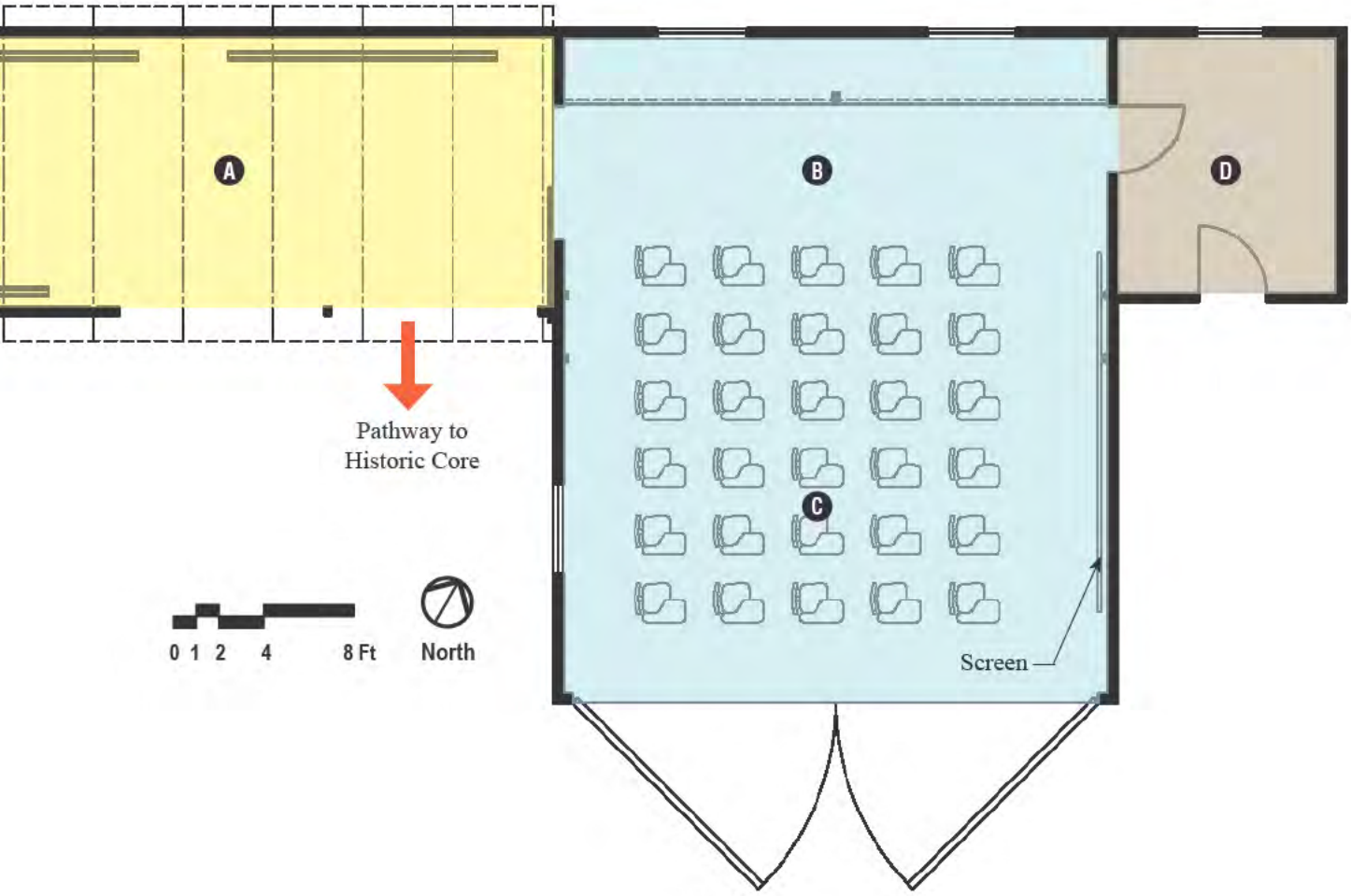
The sheds and storage barn are modern structures likely constructed in the last few decades. It is possible that the sheds and utility barn replaced a series of chicken coops similar to those further to the northeast.

The proposed use of these structures is the new orientation and entry building. Located convenient to the proposed organized parking areas along the berm, these low-key buildings will be the primary orientation node for visitors. The western shed-like portion of the building may function as an open-air orientation room where visitors can learn about the site from interpretive displays. The larger eastern portion of the building is well-suited for showing an orientation film and for flexible seating and displays. The gift shop may also be located in this space.

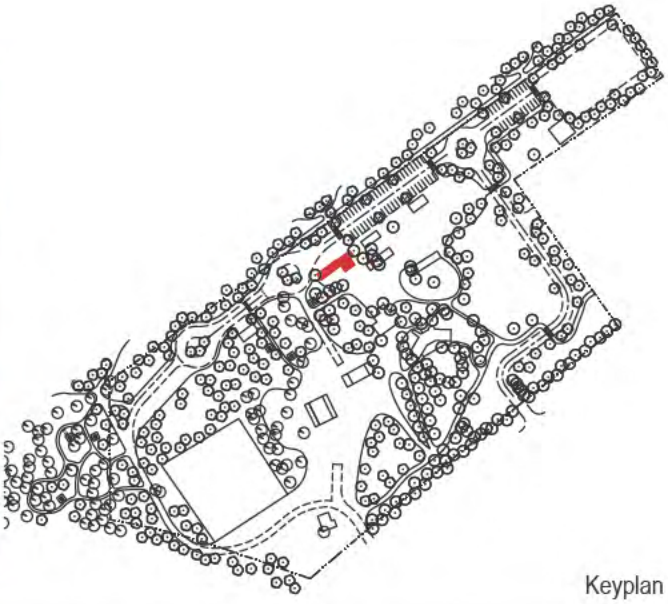
Upon leaving the building, visitors will follow a path south towards the historic core of the site. Interpretive ramadas and signage will further describe the importance of the site to visitors.

Orientation / Entry Building

7



View of the Utility Building from the south

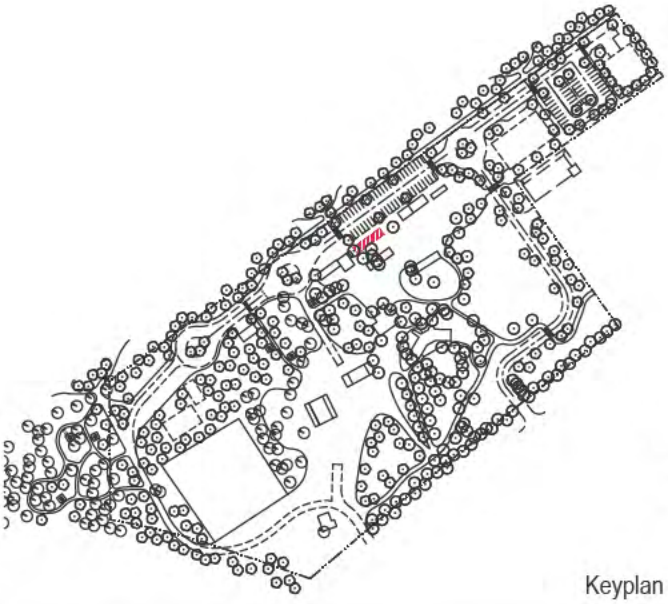


Keyplan

8 Former Chicken Coop Structures

View of the former chicken coops from the southeast

Many chicken coop structures were constructed after 1933 when Jack Procter used his ranch to supply the Pioneer Hotel with produce and eggs. The remaining coops are severely dilapidated but could be preserved during the *Opening Phase* for site storage or other compatible uses. For the *Full Build-Out Phase*, the coops could be rehabilitated for possible use by a 4-H type of program for local youth.

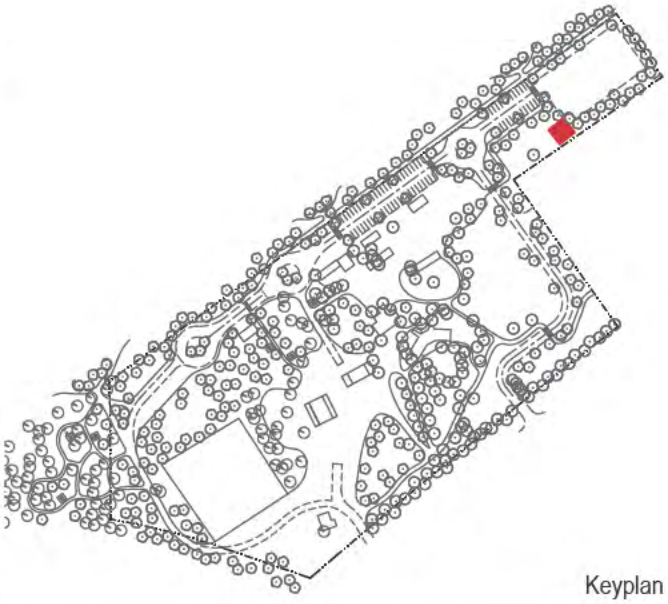


Keyplan

Caretaker's Residence 9

View of proposed caretaker's residence from the north

The former tack building, located in the panhandle of the site, is proposed as a caretaker's residence during the *Opening Phase* of the project. The location of the building, near the site's main driveway, is advantageous for providing security and protection to the resources on the site. If a new multi-purpose event center is constructed on site, a new caretaker's residence is proposed for the site adjacent to the proposed equestrian building. The existing non-historic stables building has no future as determined by the Master Plan.

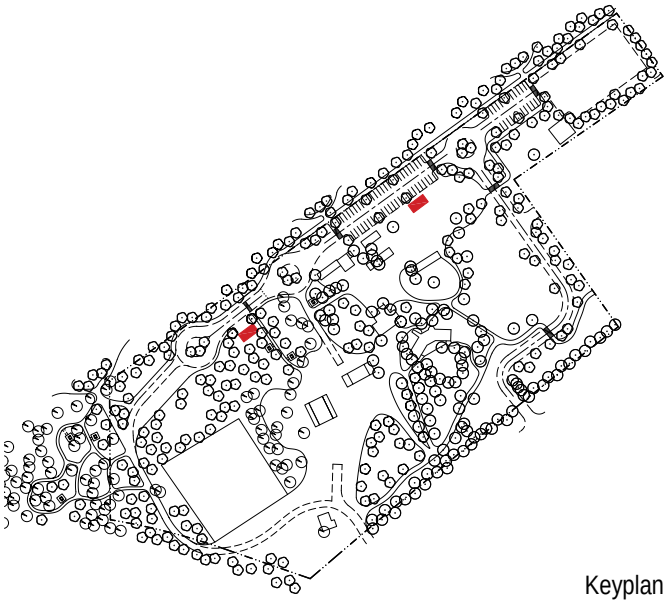


Keyplan

10 New Restrooms for Park Use

Example of restrooms sensitively placed in an existing historic structure at Sahuaro Ranch in Glendale, Arizona.

Two new restroom buildings are proposed during the *Opening Phase*. The restroom buildings are located at the southern edge of the parking area. The design should be compatible with the historic buildings on the site by being similar in material and scale. The size and massing of the former chicken coops is appropriate for the restroom buildings.



Keyplan

Interpretive Ramada

Examples of interpretive ramada from natural areas in So. Arizona.

Ramada should be consistent with the overall character of the site and designs should be prepared in conjunction with the interpretive program developed during the *Pre-Opening Phase*.

Keyplan

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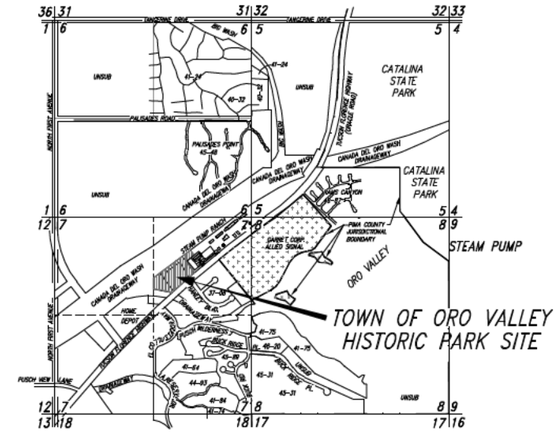
EXISTING UTILITIES MAP
FOR
STEAM PUMP RANCH HISTORICAL PARK
TOWN OF ORO VALLEY

LEGEND

- EXISTING SEWER MANHOLE
- EXISTING POWER POLE
- EXISTING WATER VALVE
- OHE — EXISTING OVERHEAD ELECTRIC LINES
- UGE — EXISTING UNDERGROUND ELECTRIC
- FO — EXISTING FIBER OPTIC LINE
- 12" W — EXISTING WATER LINE
- W — EXISTING WATER LINE
- 8" S — EXISTING SEWER LINE
- G — EXISTING GAS LINE
- EXISTING FENCE
- EXISTING 30" STORM DRAIN
- EXISTING 36" STORM DRAIN
- EXISTING 60" STORM DRAIN

NOTE: UTILITIES SHOWN WERE COLLECTED UTILIZING EXISTING TRACING INFRASTRUCTURE. NOTABLE OMISSIONS INCLUDE PRIVATE WATER AND SEWER OF A MATERIAL THAT IS NOT EASILY LOCATED, IE. VITRIFIED CLAY PIPE AND PVC.



LOCATION MAP

Sec. 5,6,7,8 T-12-S, R-14-E, G&SRM
Oro Valley, Pima County, Arizona

3" = 1 MILE

OWNER

TOWN OF ORO VALLEY
11000 NORTH LA CANADA DRIVE
ORO VALLEY, ARIZONA 85737

ENGINEER

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TUCSON, ARIZONA 85745
PHONE: (520) 750-7474
FAX: (520) 750-7470
CONTACT: WARREN THOMPSON, P.E.

BASIS OF ELEVATION

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STEAM PUMP RANCH HISTORICAL PARK
EXISTING UTILITIES MAP

STEAM PUMP RANCH, NORTH ORACLE ROAD
ORO VALLEY, ARIZONA

LOCATED IN A PORTION OF SECTIONS 5,6,7, & 8
T-12-S, R-14-E, G.&S.R.B.
TOWN OF ORO VALLEY, PIMA COUNTY, ARIZONA

SCALE AS NOTED
CONTOUR INTERVAL = 1 FOOT
APRIL, 2008

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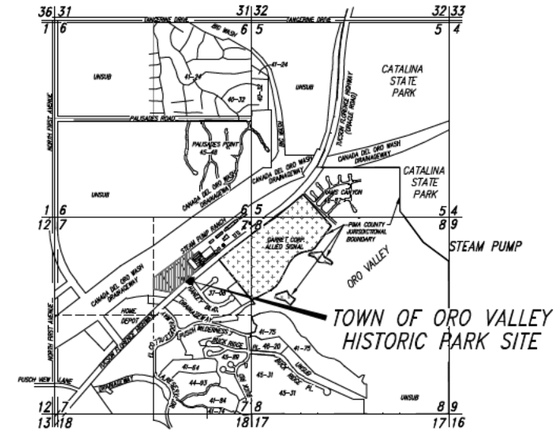
PROPOSED SEWER AND ELECTRICAL MAP
FOR
STEAM PUMP RANCH HISTORICAL PARK
TOWN OF ORO VALLEY

LEGEND

- EXISTING SEWER MANHOLE
- PROPOSED SEWER MANHOLE
- PROPOSED ELECTRIC TRANSFORMER
- 8" S — PROPOSED SEWER LINE
- PROPOSED HCS
- E — PROPOSED ELECTRIC
- 8" S — EXISTING SEWER LINE



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Sec. 5,6,7,8 T-12-S, R-14-E, G&SRM
Oro Valley, Pima County, Arizona

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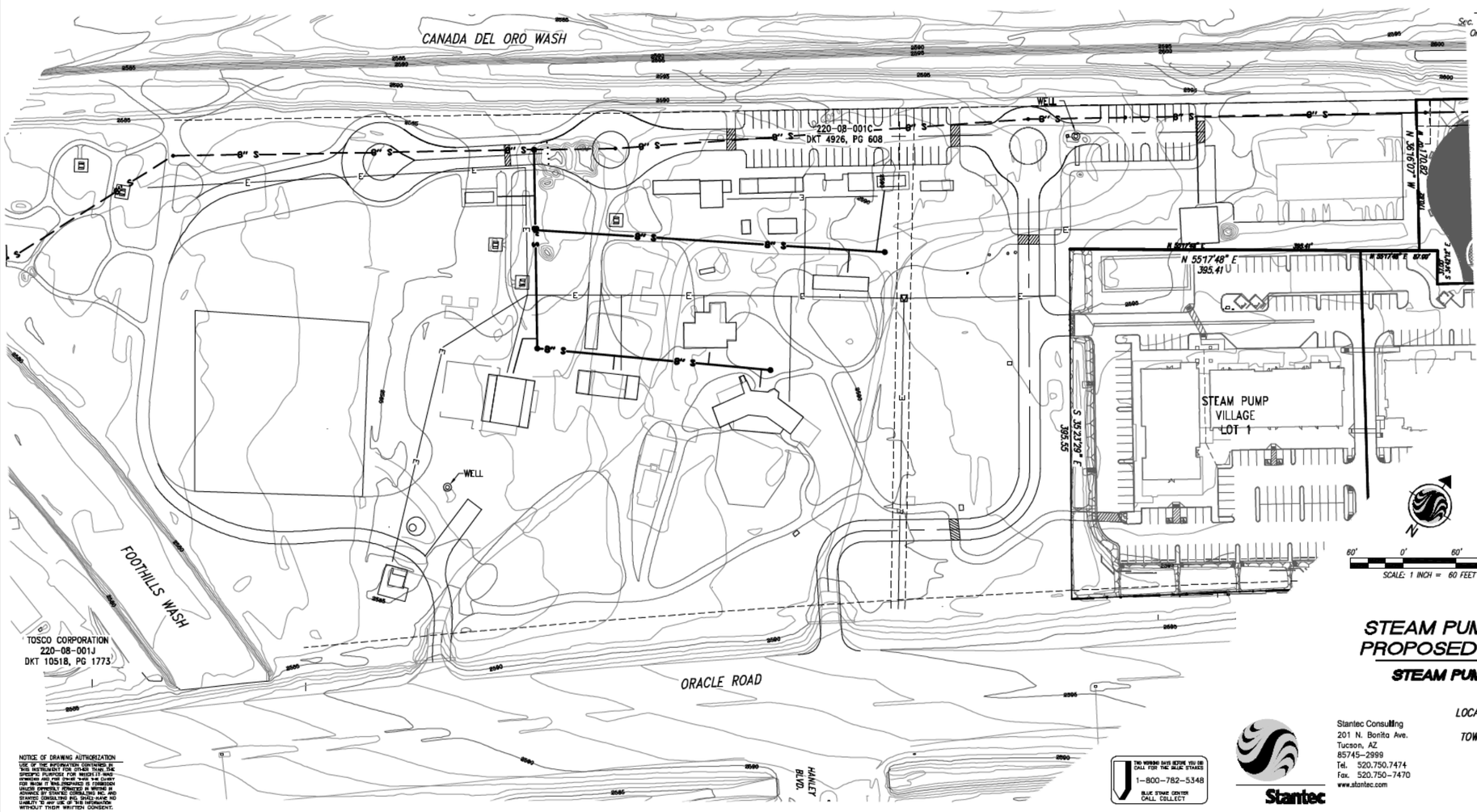

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STEAM PUMP RANCH HISTORICAL PARK
PROPOSED SEWER + ELECTRICAL MAP

STEAM PUMP RANCH, NORTH ORACLE ROAD
ORO VALLEY, ARIZONA

LOCATED IN A PORTION OF SECTIONS 5,6,7, & 8
T-12-S, R-14-E, G.&S.R.B.
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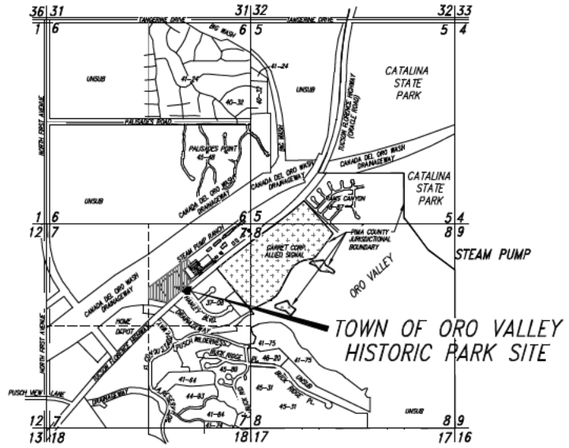
PROPOSED SITE MAP
FOR
STEAM PUMP RANCH HISTORICAL PARK
TOWN OF ORO VALLEY

LEGEND

- EMERCENY ACCESS PATH
- PAVEMENT
- SLOPE INDICATOR
- 2.0% DRAINAGE FLOW AND SLOPE ARROW
- 90.00 PROPOSED FINISH GRADE
- Q_{100}= 22.2cfs HYDROLOGY CONCENTRATION POINT
- HEADWALL
- 24" RCP STORM DRAIN
- PROPOSED PATH
- EASEMENT
- DRAINAGE CHANNEL
- EDGE OF PAVEMENT
- EDGE OF EMERGENCY PATH
- ROADWAY CENTERLINE
- EXISTING FENCE



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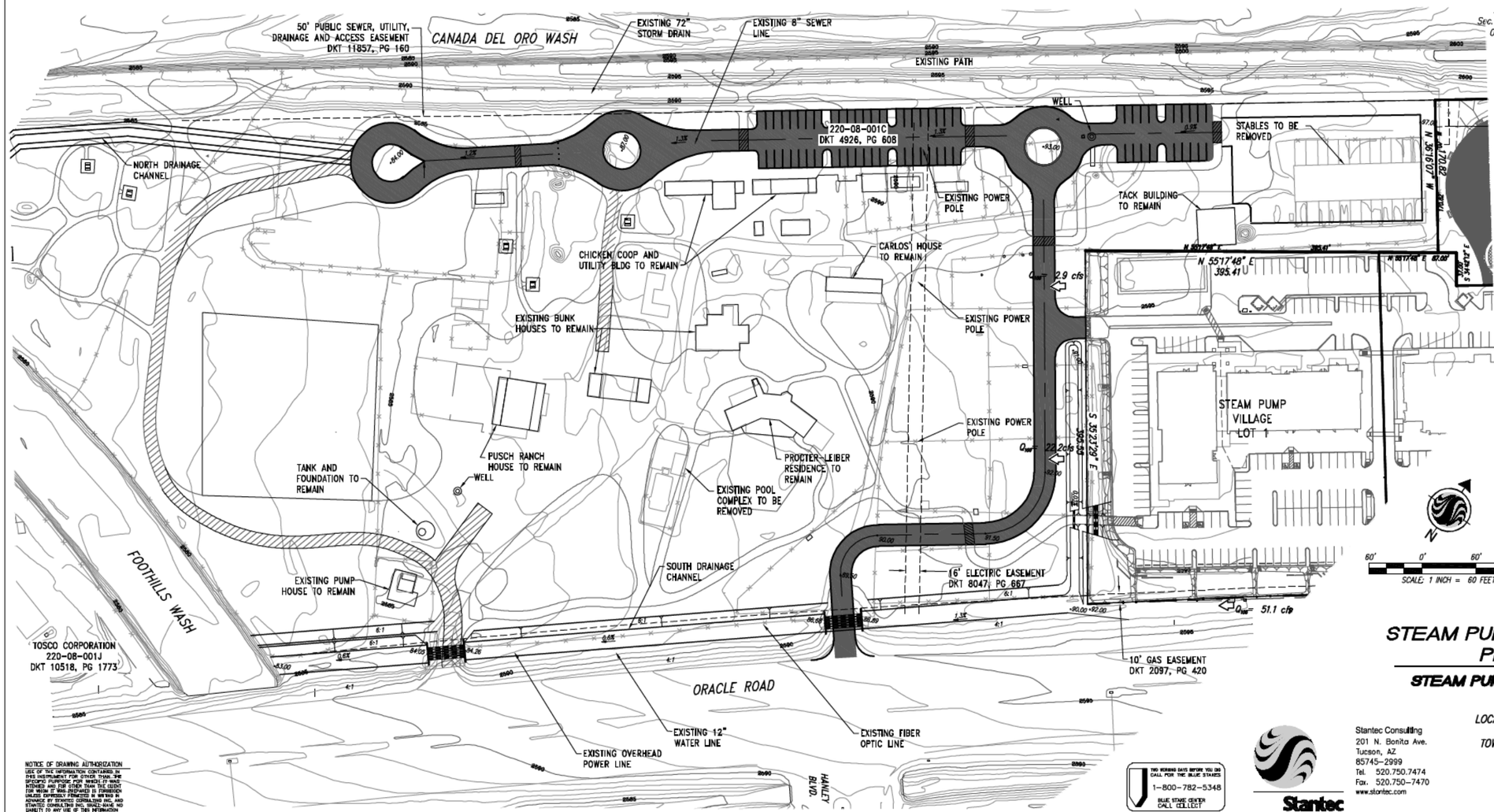

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STEAM PUMP RANCH HISTORICAL PARK PROPOSED SITE MAP

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ORO VALLEY, ARIZONA

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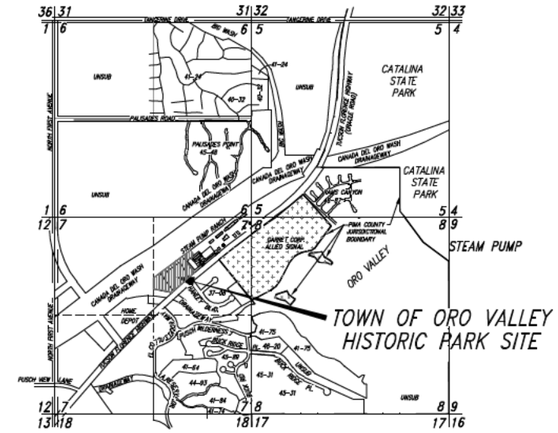
PROPOSED WATER MAP
FOR
STEAM PUMP RANCH HISTORICAL PARK
TOWN OF ORO VALLEY

LEGEND

- EXISTING WATER VALVE
- PROPOSED SINGLE WATER METER
- PROPOSED DOUBLE WATER METER
- 8" W — PROPOSED WATER LINE
- 4" W — PROPOSED FIRE SERVICE
- PROPOSED PRIVATE WATER SERVICE
- 12" W — EXISTING WATER LINE



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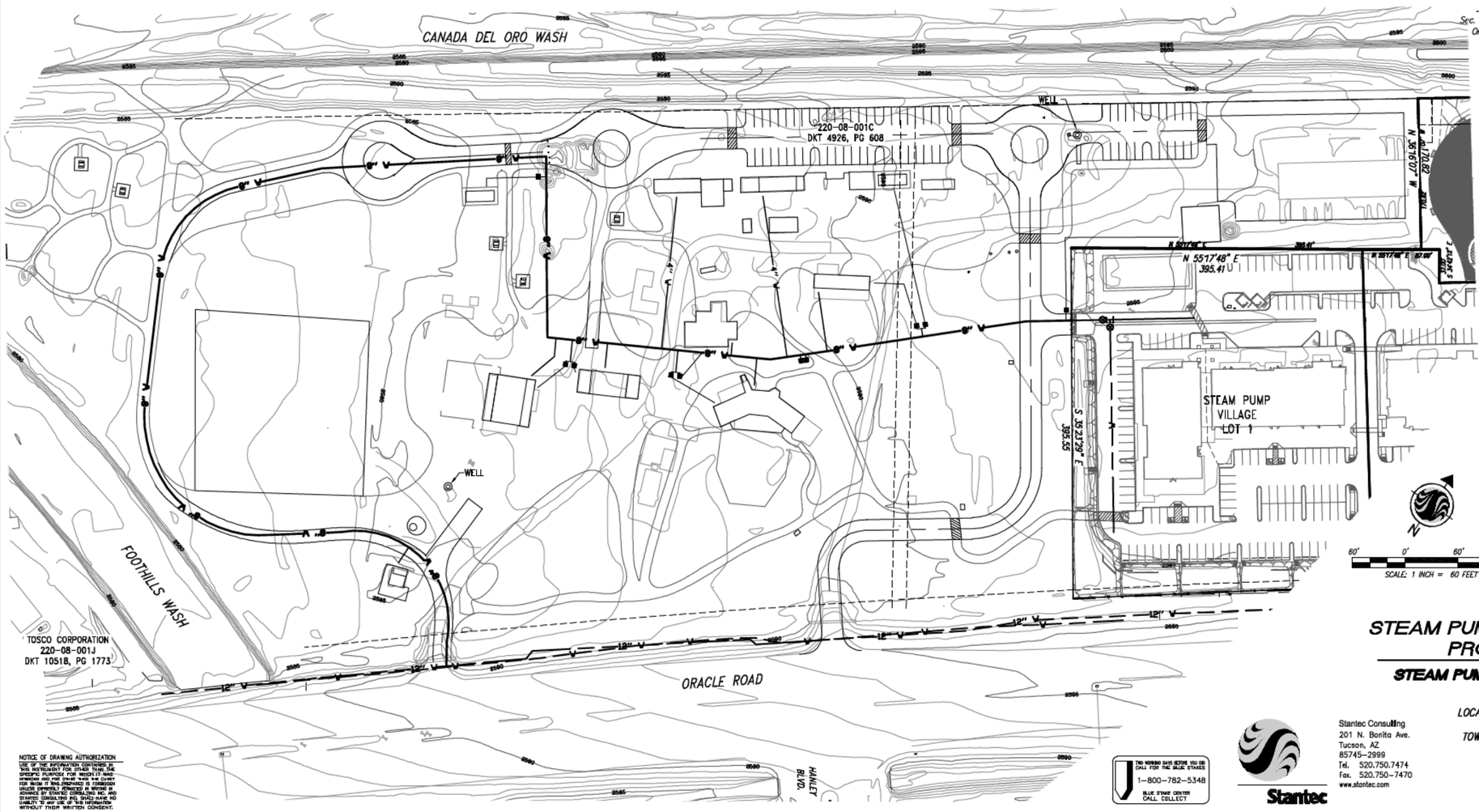

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Market Analysis and Operating Plan for Steam Pump Ranch

DRAFT REPORT

Prepared by:
ConsultEcon, Inc.

Prepared for:
Poster Frost Associates
Town of Oro Valley

April 2008

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Section I
INTRODUCTION, SUMMARY AND ASSUMPTIONS

ConsultEcon, Inc. was retained by Poster Frost Associates to provide economic and management consulting services for the Steam Pump Ranch master plan sponsored by the Town of Oro Valley. Throughout the planning and in an iterative process, ConsultEcon, Inc. supplied economic research data and input and analysis regarding proposed land uses and project elements being considered for the Steam Pump Ranch master plan potential as a public heritage attraction.

Summary

This report presents a market analysis and operating plan for developing a ranch-related heritage attraction at Steam Pump Ranch based on the master plan for the site completed by Poster Frost Associates. The master plan lays out a multiple phases schedule for site development that are reflected in the operating plan. For the purposes of this plan, operating expenses are divided into one of two functional categories: "site costs" and "program costs." Site costs are the core costs associated with ongoing maintenance of the grounds and buildings and administration and oversight. Program costs are associated with the programs and activities related to the site as a heritage and educational attraction. From an analytical perspective, site costs reflect a baseline ongoing investment by the Town of Oro Valley to enable public entry and safety of Steam Pump Ranch and the basic stabilization and conservation of the historic fabric onsite. Program costs reflect site heritage and educational benefits that enhance public use and add attractiveness to the private sector for their possible investment in the site and operating of tenant businesses onsite.

Steam Pump Ranch has the ability to earn revenue associated with both the site and program costs. Earned revenue falls into one of two categories: program revenue and non-program revenue. Program revenue is driven by the heritage and educational activities onsite and is supported by associated program costs as detailed in the operating expense plan. Non-program revenue is derived from outside use of the structures included in the master plan and rental to concessionaries. Such use is supported by the site-related operating costs. As with almost all publicly accessible parks, not-for-profit museums and historic sites nationwide, Steam Pump Ranch will have to supplement earned revenues with non-earned or contributed revenues. This is true for both site-related costs and

for program-related costs. Overall, the market and operating analysis indicates that there is a considerable opportunity for the initial and ongoing investment in infrastructure and operations to create a substantial and well-used community asset that enhances the quality of life in Oro Valley and contributes to the local economy.

The purpose of this operating plan is to provide information for the planning and development process. As project planning moves forward (including physical and interpretive programs) the project timing, operations, and financial plans will be refined.

Report Overview

This report incorporates baseline market information in Sections II through IV and an operating plan in Section V. Section I is this introductory section. Section II evaluates the location and site from a market perspective and provides a brief overview of the master plan elements. Section III documents research into resident and tourist markets available to Steam Pump Ranch. Section IV provides an industry profile of ranch-related heritage attractions. Section V presents an operating plan for Steam Pump Ranch.

Assumptions

In preparing this report, the following assumptions were made. This study is qualified in its entirety by these assumptions.

1. The size and design of the Steam Pump Ranch will serve to create a high quality, stimulating attraction with broad-based audience appeal and a distinctive image. The Steam Pump Ranch will be a unique attraction in the region and the nation. This distinction will give it further visibility as a "must-see" attraction. The entrances to the site will be highly visible and well signed. Additional land on the site will be used in a manner advantageous to the success of the project.
2. The facility will be competently and effectively managed. An aggressive promotional campaign will be developed and implemented. This program will be targeted to prime visitor markets. The admission price for the elements of the facility will be consistent with the entertainment and educational value offered, and with current attraction admissions prices for other comparable visitor attractions.
3. There will be no physical constraints to impede visitors to the Steam Pump Ranch, such as major construction activity. Changes in economic conditions such as a major recession or major environmental problems that would negatively affect operations and visitation will not occur in the near future.

4. Every reasonable effort has been made in order that the data contained in this study reflect the most accurate and timely information possible and it is believed to be reliable. This study is based on estimates, assumptions and other information developed by ConsultEcon, Inc. from its independent research efforts, general knowledge of the industry, and consultations with the client and Poster Frost Associates. No responsibility is assumed for inaccuracies in reporting by the client, its agents and representatives, or any other data source used in the preparation of this study. No warranty or representation is made that any of the projected values or results contained in this study will actually be achieved. There will usually be differences between forecasted or projected results and actual results because events and circumstances usually do not occur as expected. Other factors not considered in the study may influence actual results.
5. Possession of this report does not carry with it the right of publication. This report will be presented to third parties in its entirety and no abstracting of the report will be made without first obtaining permission of ConsultEcon, Inc., which consent will not be unreasonably withheld.
6. This report may not be used for any purpose other than that for which it was prepared. Neither all nor any part of the contents of this study shall be disseminated to the public through advertising media, news media or any other public means of communication without the prior consent of ConsultEcon, Inc.
7. Outputs of computer models used in this report are rounded. These outputs may therefore slightly affect totals and summaries.
8. This report was prepared during the period November 2007 through April 2008. It represents data available at that time.

Section II
EVALUATION OF THE LOCAL CONTEXT

This section reviews the Steam Pump Ranch site from a market perspective. Essential aspects of the market potential of a visitor attraction are its location, accessibility, visibility, adjacent uses, and site size and quality. Following is a summary of these factors as they relate to the Steam Pump Ranch.

Regional Context

Steam Pump Ranch is located in the Town of Oro Valley, a town in the Tucson Metropolitan Area in southern Arizona. Tucson is the second largest city in Arizona, with an estimated population that exceeds 500,000. The estimated Tucson Metropolitan Area (Pima County) population exceeds 1 million people.

Figure II-1 is a street map of the Tucson area. The Tucson area is served by major highways running east-west and north-south through the middle of Tucson—Interstate 10 and Interstate 19.

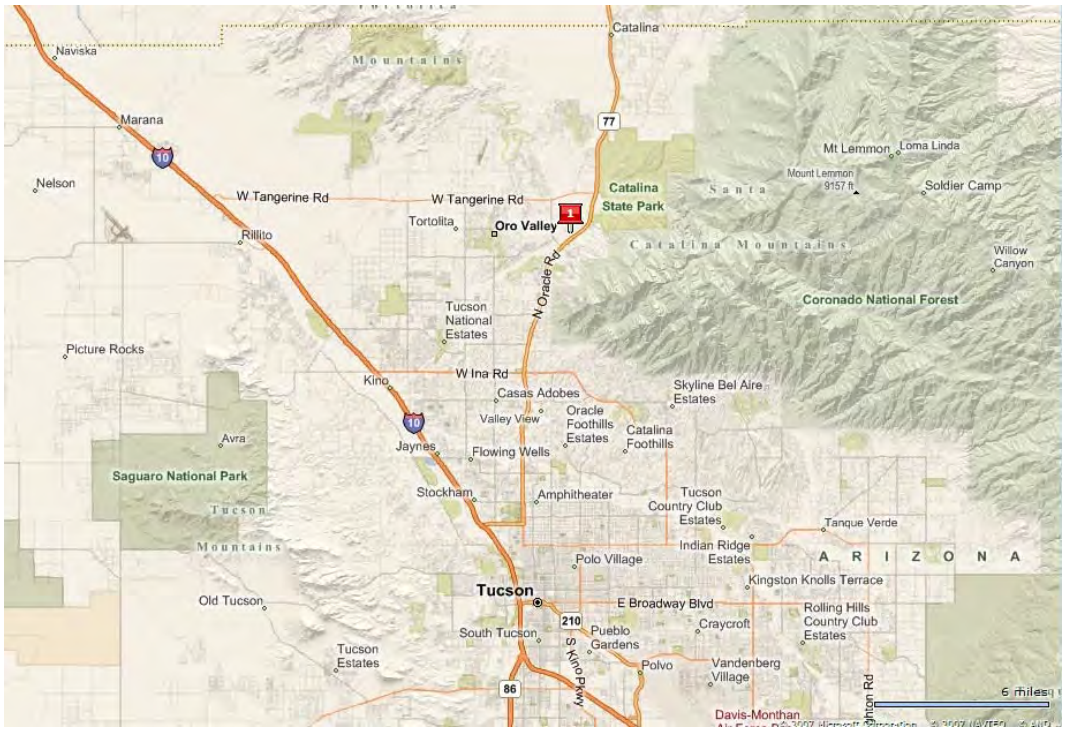
Figure II-1
Street Map of Tucson Metropolitan Area

Source: Microsoft Virtual Earth.

Location

Figure II-2 provides a street map of the Oro Valley area and shows the location of the Steam Pump Ranch highlighted with a red pushpin. The Steam Pump Ranch site is situated along North Oracle Road, a major thoroughfare to and through Oro Valley.

Figure II-2
Map of Location of Steam Pump Ranch



Source: Mapquest.com..

Figure II-3 is an aerial view of the Steam Pump Ranch site on North Oracle Road.

Figure II-3
Aerial Photograph of Proposed Desert Discovery Center Site

Source: Google Earth and ConsultEcon, Inc.

Accessibility

The site is accessible by vehicle from North Oracle Road. Downtown Tucson is approximately 13 miles away, about a 30-minute drive. Steam Pump Ranch is approximately 8 miles from Interstate 10. This would indicate that the site would be easily accessible by vehicle to residents from the Tucson area, as well as visitors from outside the region that may be less familiar with the area.

Visibility

The site is visible from North Oracle Road. According to traffic data from the Arizona Department of Transportation, average annual daily traffic (AADT) along North Oracle Road between North 1st Avenue and East Tangerine Road has decreased since 2003. In the roadway segment, AADT decreased 65 percent from 49,800 to 30,100 between 2003 and 2006. Steam Pump Ranch will be

able to heighten its visibility among through-travelers with adequate signage on North Oracle Road and on local highways and interstates.

Adjacent Uses

As a major north-south thoroughfare, North Oracle Road is populated by a variety of commercial uses. Southwest of the Steam Pump Ranch are large retailers, including an Albertson's grocery store and a Home Depot. To the northeast is a new mixed-use development that will include retail, restaurant, office and hotel uses. Northwest of the site is a wash and connection to a multi-purpose recreational trail that extends south to other trails and north into Catalina State Park. To the southwest across North Oracle Road are commercial and industrial uses.

Master Plan and Proposed Project Components

The site size and quality are sufficient to warrant the development of a heritage ranch attraction on site. The Steam Pump master plan provides an extensive overview of the current site and building conditions and lays out a number of project components, which are assessed in this report.

Summary

Essential aspects of the market potential of a visitor attraction are its location, accessibility, visibility, adjacent uses, and site size and quality. Steam Pump Ranch is located in the Town of Oro Valley, a town in the Tucson Metropolitan Area in southern Arizona. The Steam Pump Ranch site is situated along North Oracle Road, a major thoroughfare to and through Oro Valley, and visible to passers-by. Downtown Tucson is approximately 13 miles away, about a 30-minute drive. Steam Pump Ranch is approximately 8 miles from Interstate 10. This would indicate that the site would be easily accessible by vehicle to residents from the Tucson area, as well as visitors from outside the region that may be less familiar with the area. As a major north-south thoroughfare, North Oracle Road is populated by a variety of commercial uses. Steam Pump Ranch will be able to heighten its visibility among through-travelers and adjacent users with adequate signage on North Oracle Road and on local highways and interstates. The site size and quality are sufficient to warrant the development of a heritage ranch attraction on site. The Steam Pump Ranch master plan provides an extensive overview of the current site and building conditions and lays out a number of project components, which are assessed in this report.

Section III
MARKET SEGMENTS

This section reviews the market segments available to Steam Pump Ranch.

Resident Market Overview

While Steam Pump Ranch has the potential to draw on tourist markets, resident markets will be a primary source of visitation. The geographic reach and available resident markets for a project depend on the size and quality of the attraction, its accessibility and location, the presence of other nearby attractions, regional transportation networks, and marketing and promotional efforts.

The resident markets for an attraction such as Steam Pump Ranch are defined as the area whose residents would visit the attraction as a day-trip. Persons in this Resident Market Area often have repeat visitation patterns, or become members of the institution. Visiting the Steam Pump Ranch would be a primary purpose or important part of a day-trip. Resident markets are analyzed within a "gravity model" context; the closer residents live to the attraction, the more likely they are to visit it. Depending on the individual market's circumstances, resident markets can extend up to 100 or more miles, or be as narrow as 50 miles. On its periphery, the resident markets change over to the visitor (or tourist) market.

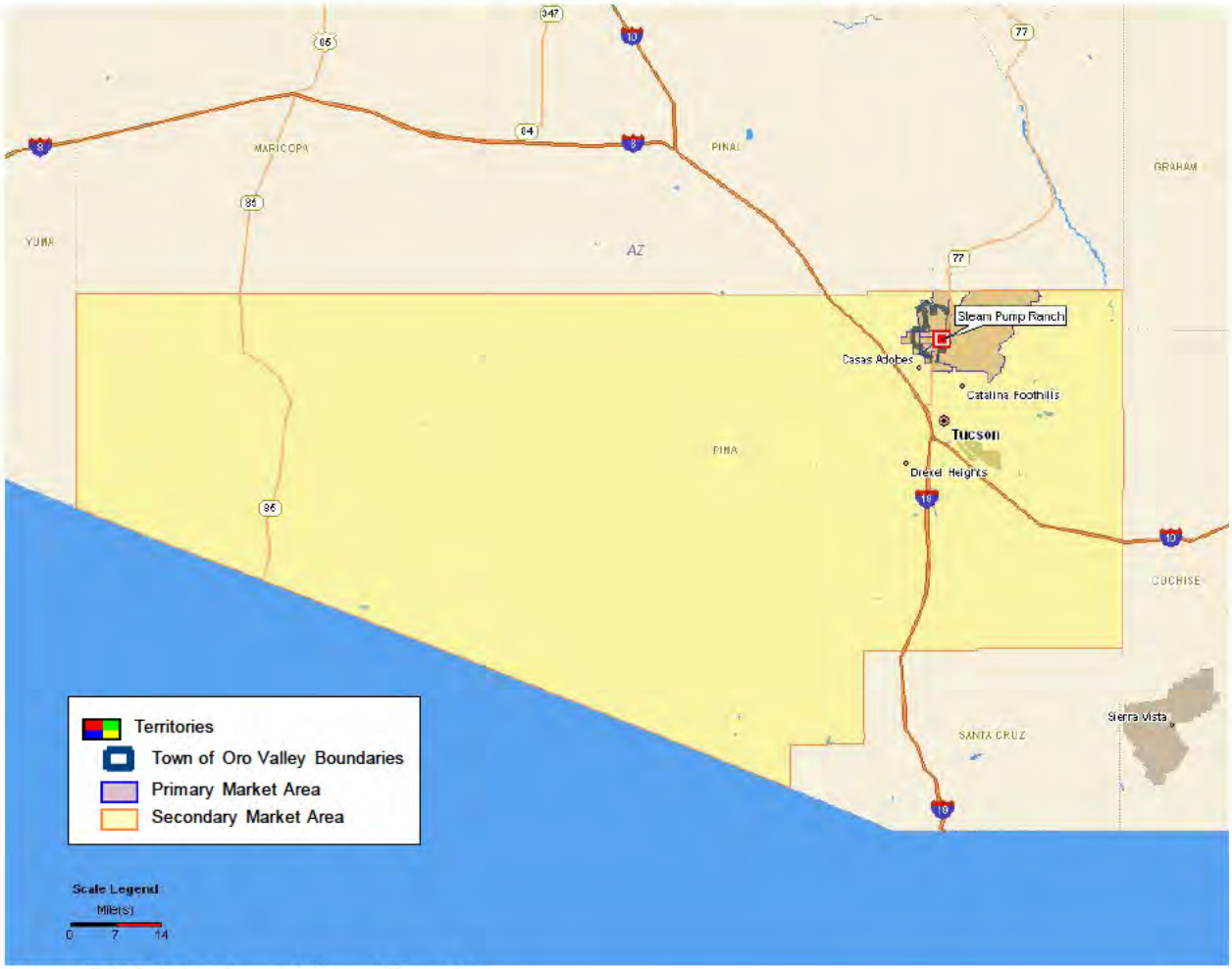
Definition of Resident Market Area

The Resident Market Area for Steam Pump Ranch is the Tucson Metropolitan Area (Pima County). Within this overall Resident Market Area, Primary and Secondary Resident Market segments are defined as follows:

- **Primary Resident Market:** Census tracts with parts in the Town of Oro Valley (0046.19, 0046.20, 0046.22, 0046.32, 0046.33, 0047.13, 0046.34, 0046.35, 0046.36, 0046.37, and 0047.16).
- **Secondary Resident Market:** Remainder of the Tucson Metropolitan Area (Pima County).

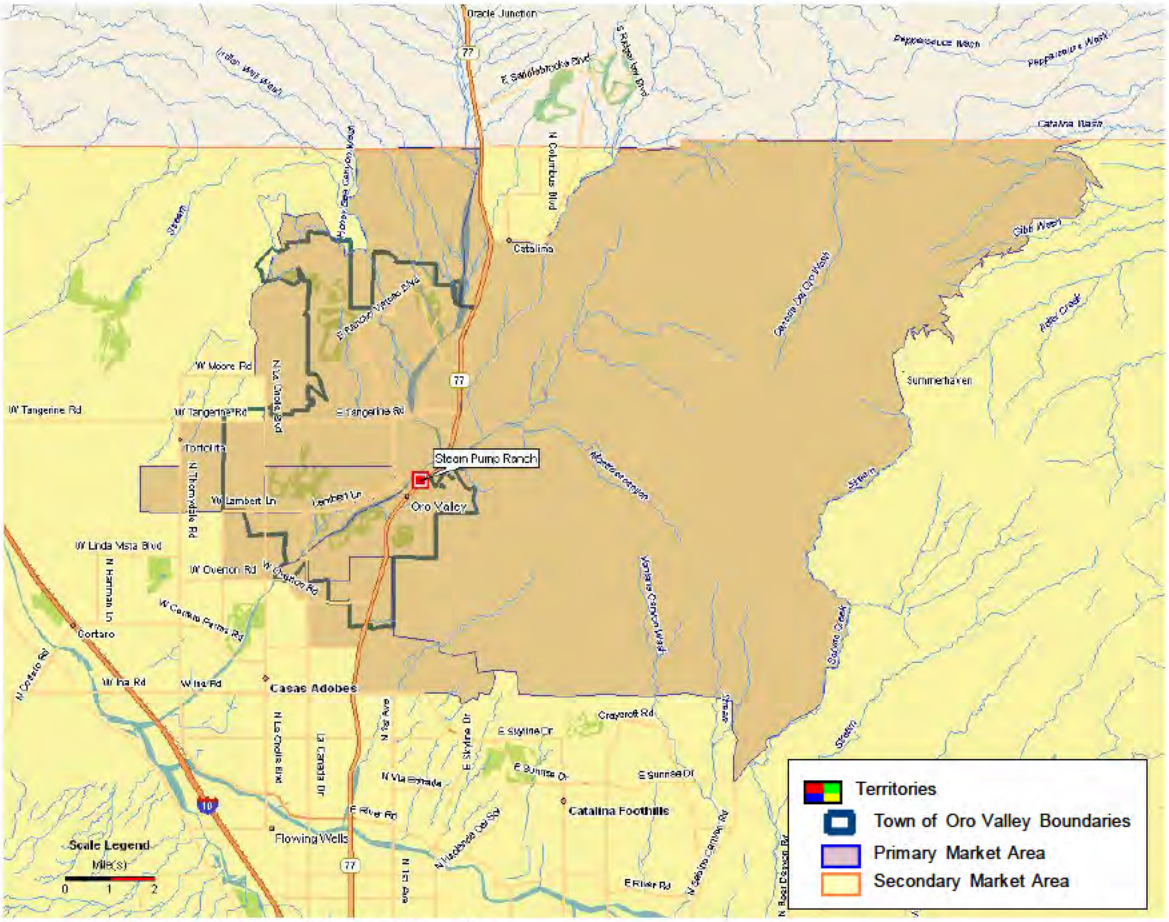
Figure III-1 and Figure III-2 show maps of the extent the Primary Resident Market and Secondary Resident Market, as well as the boundaries of the Town of Oro Valley.

Figure III-1
Map of Resident Market Area for Steam Pump Ranch



Source: ESRI, TeleAtlas, and ConsultEcon, Inc.

Figure III-2
Map of Resident Market Area for Steam Pump Ranch



Source: ESRI, TeleAtlas, and ConsultEcon, Inc.

Population

Data in **Table III-1** show the estimated 2006 population in the Primary and Secondary Resident Markets and projections for the population in those markets in 2011.

Table III-1
Resident Market Estimated 2006 and Projected 2011 Population
Steam Pump Ranch

	2006 Estimated Population	2011 Projected Population	% Change 2006 to 2011
Primary Resident Market	49,699	54,849	10.4%
Secondary Resident Market	904,998	1,000,552	10.6%
Total Resident Market Area	**954,697**	**1,055,401**	**10.5%**

Source: ESRI and ConsultEcon, Inc.

The Primary Resident Market Area population was 49,699 in 2006, and is projected to be 54,849 in 2011, an increase of 10.4 percent. The Secondary Resident Market Area population was 904,998 in 2006, projected to increase to 1,000,552, an increase of 10.6 percent by 2011. The overall Resident Market Area population is therefore projected to increase by 10.5 percent, from 954,697 to 1,055,401 over the period from 2006 to 2011.

Age Profile

As an attraction primarily focused on cultural history and heritage, Steam Pump Ranch will likely have broad appeal to multiple age segments including school-age children, families with children, and older adults. Data in **Table III-3** show the population by age group in the Resident Market Area in 2006.

Table III-2
Resident Market Estimated 2006 Age Distribution
Steam Pump Ranch

	0-19	20-29	30-49	50-64	65+
Primary Resident Market	22.1%	8.1%	23.5%	22.8%	23.4%
Secondary Resident Market	26.8%	15.3%	26.4%	17.2%	14.2%
Total Resident Market Area	**26.5%**	**14.9%**	**26.3%**	**17.5%**	**14.7%**

Source: ESRI and ConsultEcon, Inc.

Important audiences for attractions such as the proposed Steam Pump Ranch are adults in their mid 20's through 40's with children, and adults in their 40's and 50's who have more time and disposable income for recreational activities of this type. The Primary Resident Market population has an age profile that is somewhat older than that of the Secondary Resident Market, particularly in the 50 to 64 and 65+ age categories.

These data are supportive of the development of the proposed project, as people in these older age groups are often retirees (and grandparents), with disposable time and income, an important component of the audience for this type of attraction.

Household Income

Higher incomes are associated with visitation to cultural and educational attractions such as Steam Pump Ranch, both in terms of ability to visit (disposable income, available transportation, and leisure time) and the desire to visit, as higher incomes frequently reflect higher educational attainment. Two measures of income are provided in the following table. Data in **Table III-3** profile household income groups for the Resident Market Area.

Table III-3
Median Household Income and Household Income Ranges by Percent to Total Population
Estimated 2006 Resident Markets
Steam Pump Ranch

	Number of Households, 2006	Less than $25,000	$25,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 +
Primary Resident Market	20,497	9.3%	19.1%	20.9%	20.3%	30.4%
Secondary Resident Market	355,014	26.3%	28.9%	19.4%	11.1%	14.2%
Total Resident Market Area	**375,511**	25.4%	28.4%	19.5%	11.6%	15.1%

Source: ESRI and ConsultEcon, Inc.

The above data show that 46.2 percent of households in the total Resident Market Area have incomes greater than $50,000. However, in the Primary Resident Market Area, an estimated 71.6 percent of households are in the $50,000+ category. These income data are supportive of the Steam Pump Ranch, in that they show that a significant percentage of the population in the Resident Market Area has the economic means to attend educational attractions such as the proposed project. Nevertheless, care should be taken in planning ticket price ranges to be affordable to all economic levels in the Resident Market Areas.

Resident Market Area Summary

The population in the overall Resident Market Area is projected to increase 10.5 percent, from 954,697 to 1,055,401 over the period from 2006 to 2011. This growth trend will increase the size of the markets available for the proposed Steam Pump Ranch. The demographic characteristics of the Resident Market Areas include moderately high-income levels. While approximately 71.6 percent of households in the Primary Resident Market Area had incomes over $50,000, in the overall

Resident Market Area, 46.2 percent of households were estimated in that category. Overall, these population and income level data are good indicators for Resident Market visitation to the proposed Steam Pump Ranch; however, care should be taken in planning ticket price ranges to be affordable to all economic levels in the resident market areas.

Overview of Tourist Market in Tucson Metropolitan Area

Tourists may be an important market segment for the proposed Steam Pump Ranch in Oro Valley. Arizona is a popular travel destination, with an estimated 33.7 million overnight trips to or within the state in 2006. Domestic overnight leisure visitors comprise 72 percent of these trips. An estimated 17.6 percent of Arizona domestic overnight leisure trips were taken in the Tucson and Southern area of Arizona (approximately 4.3 million trips). Overnight leisure travel in Arizona is strongest in the winter months, especially in Southern Arizona. Approximately 36 percent of overnight leisure visitors traveled to the Tucson and Southern area in January, February and March, while October, November and December accounted for another 26 percent of these visitors. The average length of stay in Tucson and Southern is 3.5 days. [1]

Travel to the Tucson Metropolitan Area is growing. According to the Metropolitan Tucson Convention and Visitors Bureau, Tucson draws an estimated 3.5 million overnight visitors annually. Of these, about 72 percent are leisure travelers. The impact of day-trip tourism (not counted in these estimates) should also be considered. With Mexico 80 miles away, and Tucson 100 miles away, there is significant day-trip visitation potential to the Tucson area. Visitors to Tucson visit historical places/ museums at rates higher than the State of Arizona or U.S. as a whole. This indicates a market predisposed to historical and cultural topics.

Steam Pump Ranch is located approximately 14 miles from downtown Tucson. As most visitors to Tucson have access to an automobile, it is close enough to warrant a day-trip or a half day-trip by a visitor to Tucson. In fact, many tourist attractions are located outside of the city. For example, the Arizona-Sonora Desert Museum (460,000 annual visitors) is located 20 miles from downtown. Steam Pump Ranch would compliment these historic and ranching attractions located in Tucson and Southern Arizona, creating more critical mass in the region as a destination for historic sites.

[1] *Arizona 2006 Tourism Facts: Year-end Summary*, Arizona Office of Tourism.

Local Tucson Area Attractions for Steam Pump Ranch

Tucson offers many popular attractions, major shopping malls, a growing accommodations base, and cultural offerings that include museums, festivals and events, and professional sports teams that play year-round. In addition to leisure travel, Tucson is also an active business locale that draws a number of business travelers. The Tucson Convention Center is a focal point for many business travelers, who may visit Steam Pump Ranch in their spare time.

In addition to the recreational destinations, the Tucson area has a diverse offering of local attractions that includes cultural museums, educational attractions, national parks, and major historic sites such as the Arizona Sonora Desert Museum, Saguaro National Park, Pima Air and Space Museum, Tohono Chul Park, Flandrau Science Center and Planetarium, and Reid Park Zoo, among others.

The nature of these attractions, their attendance, and pricing levels inform the assessment of attendance potential at Steam Pump Ranch. In general, there are many popular outdoor recreational destinations, and many mid-sized and smaller attractions. Data in **Table III-4** show selected Tucson and regional attractions and provide a summary of attendance, ticket prices, and descriptions.

Table III-4
Selected Tucson and Tucson-Area Attractions
Ranked by Attendance

Attraction and Location	2005 Attendance	Admission Price & Family Membership Price (2006)	Description
Saguaro National Park Tucson, AZ	727,208	$10.00/private car - 7 Days $5.00/individual - 7 Days $25.00 - Annual pass	Features Saguaro cacti, scenic drives through Upper Sonoran Desert, 150 miles of hiking and walking trails, and two visitor centers featuring bookstores with a large selection of books on the Sonoran Desert.
Arizona-Sonora Desert Museum Tucson, AZ	459,031	Adults $9.00 ($12.00 Sept - May) Children (6-12) $2.00 ($4.00 Sept-May) Family membership $50.00	Located on Pima County land, this museum of the Sonoran Desert includes natural history exhibits, a zoo, and botanical garden, featuring reptiles and invertebrates, mountain woodlands, desert grasslands, mammals, cave dwellers and habitats, an aviary and cactus garden. Includes meeting facilities, gift shop and food service.
Reid Park Zoo Tucson, AZ	445,117	Adults $6.00 Seniors (62+) $4.00 Children (2-14) $2.00 Family membership $48.00	This city-owned and operated 17-acre zoo features over 200 different species of birds, fish, amphibians, mammals & reptiles. AZA accredited.
Old Tucson Studios Tucson, AZ	300,000 (estimated)	Adults $14.95 (12 & over) Children $9.45 (4-11) Annual pass $39.95	Built in 1939 as a replica of Tucson for movie *Arizona*. Also was location for filming many Hollywood westerns. Now it is a family theme park, movie, and television location and hosts live entertainment.

Table III-4
Selected Tucson and Tucson-Area Attractions
Ranked by Attendance

Attraction and Location	2005 Attendance	Admission Price & Family Membership Price (2006)	Description
Kartchner Caverns State Park Benson, AZ	179,129	$5.00 per car (2 adults, $2.00 each additional adult) $22.00 per night camping fee Cave Tours Rotunda/Throne Room: $21.95 adult* $12.95 7-13 years* (free under 7) Cave Tours Big Room: $25.95 adult* $15.95 7-13 years* (free under 7) *includes $3 reservation fee	Includes Discovery Center (museum with interpretive displays, theater, gift shop & food vendors), guided cave tours, 62 camping sites and hiking and walking trails.
Tohono Chul Park Tucson, AZ	175,238	Adults $5.00 Seniors (62+) $4.00 Students w/ID $3.00 Children 5-12: $2.50 Family membership $40.00	Nature trails featuring native plants; gardens; art exhibits in a renovated historic home; research library; café and gift shop.
Tucson Museum of Art & Historic Block Tucson, AZ	160,000	Adults $8.00 Seniors (60+) $6.00 Students (13+) $3.00 Family membership $50.00	The museum features Pre-Columbian, Spanish Colonial, Post Colonial and Latin American Folk Art featured in five separate historic houses that form the historic block.
Pima Air & Space Museum Tucson, AZ and Titan Missile Museum Green Valley, AZ	138,226 at PASM 47,747 at TMM	Pima Air Museum: Adults $9.75 ($11.75 Nov.-May); Seniors $8.75 ($9.75 Nov.-May), Children (7-12) $6.00 ($8.00 Nov.-May) Titan Missile: Adults $8.50 Seniors: $7.50 Children (7-12): $5.00 Combo ticket: $16.00 ($18.00 Nov.-May) Family membership $60.00	The Pima Air & Space Museum is the largest privately funded aerospace museum in the world. More than four dozen interpretive exhibits are housed in nearly a 100,000 square feet of galleries covering all aspects of aviation history, technology, and science. There are 250 aircrafts covering 80 acres. The Titan Missile Museum opened in May 1986, and in April of 1994, the missile site was designated a National Historic Landmark. In November of 2003, the museum opened the Count Ferdinand von Galen Education and Research Center. The Center houses an expanded exhibits gallery, a classroom for educational programming, and a state-of-the art archival area devoted to the historical documents and artifacts of the Titan II program.
Catalina State Park Tucson, AZ	130,088	$6.00 per vehicle (1-4 adults) ($3.00 May-Sept) $2.00 individual/bicycle $12-$22/night camping	Scenic desert park offering camping, hiking, picnicking, bicycling, horseback riding, plant, wildlife, and an archaeological site. The Park contains 5,493 acres at elevations near 3,000 feet.
International Wildlife Museum Tucson, AZ	100,000 (estimated)	Adults $7.00 Seniors (62+) Students (w/ID) $5.50 Children (4-12) $2.50 Family membership $40.00	A natural history museum including displays of donated wildlife from around the world including birds of paradise, wooly mammoth tusks, and animals hunted by Theodore Roosevelt on his African expeditions. Also includes a 98-seat theater that plays nature films. Gift shop & restaurant on-site.
Tucson Botanical Gardens Tucson, AZ	100,000 (estimated)	Adults $5.00 Children (6-12) $2.50 Family membership $40.00	A five-acre collection of 16 specialty gardens including a historical garden, an herb garden, a butterfly garden, a cactus and succulent garden, and others. The collection consists of over 4,200 individual plants. There is also a café and a gift shop.

Table III-4
Selected Tucson and Tucson-Area Attractions
Ranked by Attendance

Attraction and Location	2005 Attendance	Admission Price & Family Membership Price (2006)	Description
Casa Grande Ruinas National Monument Coolidge, AZ	97,214	$5.00 per person, good for 7 days. Children 15 and under admitted free.	Casa Grande, or "Big House," is one of the largest prehistoric structures ever built in North America. Casa Grande Ruins, the nation's first archeological preserve, protects the Casa Grande & other archeological sites within its boundaries.
Boyce Thompson Arboretum Superior, AZ	85,000 (estimated)	Adults $7.50 Children (5-12) $3.00 Family membership $60.00	The Arboretum brings together plants from the Earth's many and varied deserts and dry lands and displays them alongside unspoiled examples of the native Sonoran Desert vegetation.
Fort Huachuca Museum Fort Huachuca, AZ	70,000	No charge	The Fort Huachuca Historical Museum the colorful history of the Southwest and the prominent part played by the U.S. Army.
Tucson Children's Museum Tucson, AZ	69,000	Adults $5.50 Seniors $4.50 Children 2-16 $3.50 Family membership $50.00	Exhibits feature a dinosaur world, ocean discovery center, the human body, music & culture, a firehouse, electricity, and a mock television studio.
Kitt Peak National Observatory Tucson, AZ	60,000 (estimated)	Adult $2.00 Children 6-12 $1.00	Visitors to the Observatory during the day have the opportunity to tour the facility. There is a nighttime observing program available.
Chiricahua National Monument Willcox, AZ	60,224	$5.00 per person, 16 and under admitted free. Good for 7 days.	Unusual rock spires and formations, as well as the Faraway Ranch, a pioneer homestead and later a working cattle and guest ranch. The house is furnished with historic artifacts tracing the development of technology during the first half of the twentieth century.
Tumacácori National Historical Park Tumacácori, AZ	44,020	$3.00 per person, 16 and under admitted free. Good for 7 days. $10.00 - Annual pass	Tumacácori Mission is one of the oldest missions in Arizona dating to 1691. The present church was built in the early 1800's and abandoned in 1848. It is the best preserved (restored) of the three missions and consists of garden, church, and museum with artifacts. The grounds include ruins of the cemetery, *convento*, granary, courtyard, lime kiln, and irrigation ditch. The ticket office, book store, and administration and maintenance offices are located at the Tumacácori site.
Tubac Presidio State Historic Park Tubac, AZ	16,500	Adult $3.00 ($2.00 May-Sept) Children free (under 14)	Tubac is the oldest state park in Arizona and has national significance as the beginning of the Anza Trail. The park contains a museum, archeology display, gift shop, and a number of historic buildings, including a schoolhouse, Otero Hall, Rojas House, and Sanchez House.

Sources: Facilities profiled, Arizona Office of Tourism: *Arizona 2005 Tourism Facts*, Association of Zoos and Aquariums: *Member Directory 2007*, American Association of Museums: *Official Museum Directory 2006*, National Park Service Public Use Statistics Office: *2005 Statistical Abstract*, Association of Children's Museums *2006 Membership* Directory, and ConsultEcon, Inc.

Local Attractions Summary

Tucson offers many popular attractions, major shopping malls, a growing accommodations base, and cultural offerings that include museums, festivals and events, and professional sports teams that play year-round. In addition to leisure travel, Tucson is also an active business locale that draws a number of business travelers. In addition to popular recreational destinations, Tucson has a diverse offering of local attractions that includes cultural museums, educational attractions,

national parks, and major historic sites such as the Arizona Sonora Desert Museum, Saguaro National Park, Pima Air and Space Museum, Tohono Chul Park and Reid Park Zoo, among others. Attendance at these top attractions ranges from 69,000 at the Children's Museum to over 700,000 at the Saguaro National Park. These major attractions generally have annual attendance in the 100,000 to 400,000 range, although there are also a number of smaller museums and attractions. Adult ticket prices at the top attractions range from $14.95 at Old Tucson Studios to $2.00 at Kitt Peak National Observatory. Most attractions fall in the $5.00 to $10.00 range.

Tourist Market Summary

Tourists may be an important market segment for the proposed Steam Pump Ranch in Oro Valley. According to the Metropolitan Tucson Convention and Visitors Bureau, Tucson draws an estimated 3.5 million overnight visitors annually. Of these, about 72 percent are leisure travelers. Steam Pump Ranch is located approximately 13 miles from downtown Tucson. As most visitors to Tucson have access to an automobile, it is close enough to warrant a day-trip or a half day-trip by a visitor to Tucson.

Section IV
INDUSTRY PROFILE OF RANCH RELATED HERITAGE SITES

This section discusses the concepts, visitor experience, and operations of several notable attractions that are comparable to Steam Pump Ranch. This section provides an overview of the interpretive themes, programs, visitor markets, and operating economics of such facilities. Steam Pump Ranch will provide opportunities for heritage education with a focus on ranching history, cultural history, and nature while offering outdoor activities. Case studies of relevant facilities that can be considered comparable to Steam Pump Ranch help to inform planning parameters for the project such as attendance potential, operating budgets, staff composition, and provide a general sense of varying types of programs and operating models. It should be noted that there are no "perfect" comparable projects to Steam Pump Ranch, as each site will have its own unique circumstances.

As America entered the 21st century and left many of its rural traditions behind, there has been a demand among the public for experiences that authentically reflect the history, atmosphere, and lifestyle of prior times and historic ways of life. This has resulted in the development of 'living history' museums; the preservation of historic farms and ranches; and the procurement of open spaces for the public benefit. The benefits of these measures have been evident in a number of facets; the education provided to local school children, tourists, and the general public about these regions or localities; the enhancement to tourism and economic development provided by educational attractions; the preservation of scenic and environmentally sensitive landscapes; and the inherent benefit of preserving and interpreting culture. There are a number of examples of these types of sites which are profiled in the following section, most of which relate to the historic ranching industry.

Types of Ranching Attractions

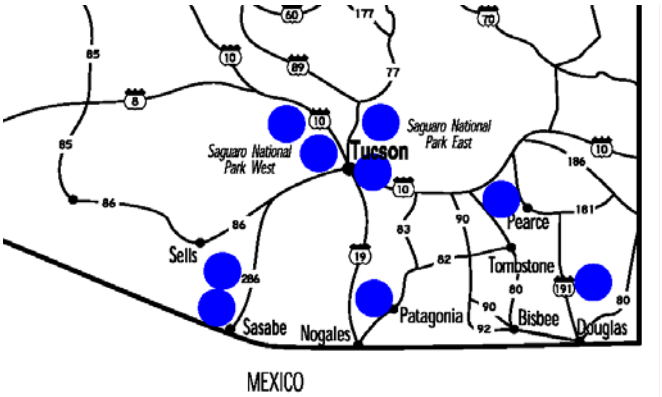
Arizona is one of the hubs of ranching history in the U.S. Due to its scenery and its many authentic working ranches and guest ranches, it is a national and worldwide destination for visitors seeking to experience life in the 'Old West.' The Tucson area and Southern Arizona has numerous choices of ranching and cowboy related attractions for visitors to the area. Due to the interest in ranching related tourism and the wealth of ranches in the area, there has been considerable effort to develop

this type of tourism. There have been a considerable number of ranches which have shifted their economic focus from livestock and agriculture to tourism. Following are descriptions of the governance and characteristics of ranch-related heritage education sites or historic sites including private sector models, government-operated sites, and non-profit operated sites.

Private Sector "Dude Ranches"

Dude ranches are a private sector model by which ranches have been used for the enjoyment of tourists in an economically viable way. They are typically operated by families or companies, for profit, and usually offer accommodations, guided horseback rides, and other leisure activities. Dude ranches are found throughout the Southwest and are popular with families. They serve many markets, including international tourists. The Arizona Dude Ranch Association (ADRA) has 13 members whose ranches and facilities are diverse in size, quality, and visitor activities/amenities. Nine of the dude ranches are found near Tucson or south of Tucson. Dude ranches primarily cater to overnight visitors; though some offer facilities for 'day-riders.' The for-profit status of most dude-ranches requires relatively high lodging rates — many with meals and rides inclusive. This contrasts to Steam Pump Ranch which has been primarily considered a potential resource for the general public. However, the already-established market for overnight accommodation and horse-riding at dude ranches, and the position this region holds in satisfying that market, suggests that such uses could be considered at Steam Pump Ranch as part of its program, or as an 'alternative' use. **Figure IV-1** shows the general location of dude ranches that are members of the ADRA in the region, indicated by large blue dots.

Figure IV-1
Southern Arizona Dude Ranch Locations



Source: Arizona Dude Ranch Association.

Federal Government Managed Ranch Attractions

The Federal government is the proprietor of several significant historic ranches that are preserved and interpreted for the public benefit. These ranches are managed under a number of different arrangements. Some are designated National Parks or National Monuments. Some ranches are operated by the Bureau of Land Management. One such facility is the Empire Ranch, located southeast of Tucson in Santa Cruz County. Descriptions of several federally managed historic ranches follow.

Empire Ranch

Located on a remote section of Highway 83 north of Sonoita, the Empire Ranch is early in the process of developing into an historical education center around its ranching history. Access is fairly inconvenient; a long, bumpy gravel road leads from the highway to the main site. The Empire Ranch House is a 22-room adobe and wood frame building dating to 1870.

The ranch is operated by the Bureau of Land Management and is part of the 42,000-acre Las Cienegas National Conservation Area. The Empire Ranch House was designated an Official Project of the White House *Save America's Treasures* initiative in 1999, and was awarded a Millennium Grant for preservation work. Successfully raising $95,000 in matching funds for the grant was a major Foundation achievement in 1999-2000. Other funding sources for preservation have come from member support, partnership grants and cost-share grants from BLM, as well as grants from private foundations. Over the next five years, once stabilization is assured, a master plan jointly prepared by the Foundation and the BLM envisions development of the *Empire Ranch Western Heritage Site and Education Cente*r, with interdependent programs for:

- Restoration of the ranch house as a historic house museum;
- Establishment of a self-guided Heritage Trail linking the historic buildings, natural landscape and ecology of the ranch; and
- Development of educational programs for all ages, especially programs for children to augment classroom learning about the natural and cultural history of the region.

The Empire Ranch, as a tourist attraction, is relatively early in the development process. Currently, it is unknown if the site would charge an admission price, or what it might be. When the preservation work has progressed, there will be more attention paid to the programmatic planning

elements. There has already been some planning and physical construction of a trail system around the ranch property.

Chiricahua National Monument/ Faraway Ranch

Located northwest of Douglas, Arizona the 12,000-acre National Monument is popular for hikers and bird-watchers. Of historic interest is the Faraway Ranch, a pioneer homestead and later a working cattle and guest ranch. It is a significant example of human transformation of the western frontier from wilderness to the present settlement. Faraway Ranch offers glimpses into the lives of Swedish immigrants Neil and Emma Erickson and their children. The house is furnished historically, but also traces the development of technology during the first half of the twentieth century. The Chiricahua National Monument drew 58,200 visitors in 2005, though not all of these visitors necessarily went to the Faraway Ranch buildings.

Grant-Kohrs National Historic Site

Located 50 miles from Helena, Montana this National Historic Site was established by Canadian fur trader John Grant, and expanded by cattle baron Conrad Kohrs. Grant-Kohrs Ranch National Historic Site commemorates the Western cattle industry from its 1850s inception through recent times. The park was enacted in 1972, and embraces 1,500-acres and 90 structures. The site is maintained today as a working ranch. Periodic events include house tours, wagon rides, blacksmithing, and children's crafts and activities. The Grant-Kohrs National Historic Site drew 17,500 visitors in 2005.

State Ranches

A number of state parks in Arizona, and throughout the U.S., have origins as ranches. Most are family ranches (and farmsteads) that have been ceded to - or acquired by - the state for use as public parks, which make use of both their open space and historic qualities for the visitor's benefit. Donated or acquired ranches have been converted into state parks in many places across the West. Following is a discussion of state parks in Arizona and New Mexico that have formerly been ranches.

Dead Horse Ranch State Park

This 423-acre park was once a cattle ranch, acquired by the Arizona State Parks in 1973. The Park features group camping amenities, trails for hiking, biking, equestrian use, and horse corrals available for overnight use with advance arrangements. It is adjacent to the Verde River Greenway Natural Area, and the Coconino National Forest. There are not any historic structures in the Park. There were approximately 99,000 visitors to Dead Horse Ranch State Park in 2004.

New Mexico Farm and Ranch Heritage Museum

The New Mexico Farm and Ranch Heritage Museum is a 47-acre site that brings to life long history of farming and ranching in New Mexico. A large main building contains more than 24,000 square feet of exhibit space, along with a restaurant, gift shop and 150-seat indoor theater for special productions, presentations, and lectures. An outdoor amphitheater seats 250 people for plays and outdoor programs. Visitors to the museum can watch a cow being milked, stroll along corrals filled with livestock, enjoy several gardens, or drop by the blacksmith shop or another venue to watch one of the demonstrations. Cooking classes are offered throughout the year. Live animals on-site include burros, sheep, goats, horses, and cattle. There is also a crop demonstration plot, a pond, irrigation ditch, and stalls for milking cows. Annual attendance ranges from 42,000 to 45,000 and the price of adult admission is $3.00.

Oracle State Park Center for Environmental Education

Ranging from 3,500 to 4,500 feet in elevation, the nearly 4,000-acre park consists of oak grassland, riparian woodland, and mesquite scrub habitats which contain a diversity of wildlife and plant species. Once home to 1,100 head of cattle, the ranch was donated to the Defenders of Wildlife in 1976, who later transferred the property to the State Parks Board. Today the park provides environmental education programming, tours of a historic ranch house, and 15 miles of hiking trails. It is located approximately 45-minutes north of Tucson in the Santa Catalina Mountains. There were approximately 8,300 visitors to Oracle State Park in 2004. The town of Oracle, nearby, is also home to the Acadia Ranch Museum, a historic site that is open for several hours on Saturdays or by appointment.

San Raphael Ranch State Park (in planning phase)

This property features a historic pre-territorial ranch house with surround-house porches, barns, and windmills. The present land base of the ranch includes over 20,000 acres. The historic ranch house was built in 1900 by cattle rancher Colin Cameron. Near the house is the barn, corrals and blacksmith shop with an assortment of tools associated with ranch work. While the Nature Conservancy has purchased conservation easement for most of the property, Arizona State Parks has purchased 3,550 acres of land on the lower section of the Ranch. The property will protect the habitat for the many rare and unique native plants and animals. The Park is not yet open to the public, but plans are under way for nature walks, an historic house tour, and other activities to be offered to the public on the portion of the property owned by Arizona State Parks.

Spring Mountain Ranch

Spring Mountain Ranch is located within the Red Rock Canyon National Conservation Area. This 520-acre state park was once a combination working ranch and luxurious retreat by a string of owners who have given the area a long and colorful history, including millionaire Howard Hughes. For 30 years the Park has hosted a Super Summer Theatre, a theatrical organization that performs nightly during the summer in an outdoor theater. Semi-annual living history events at the Park include costumed role playing, demonstrations and re-enactments of historic events. Demonstrations of pioneering skills are also presented, and visitors are encouraged to participate. In addition to the living history aspects of the Park, there are two hiking trails, nature interpretive walks, and picnic tables. Overall Park attendance is approximately 200,000 annually. Admission is $5.00 per car.

Local Government Ranches

Cities and counties can also be owners and/or operators of historic ranches; for example Pima County's own *Roy P. Drachman-Agua Caliente Regional Park.* This 101-acre Pima County park surrounds a perennial warm spring flowing into three large ponds. Interpretive signs explaining the geology and history of the warm spring and the natural and human history of the site are installed throughout the park. Several historic ranch buildings on the site have been preserved and restored. It is located on the far east-side of Tucson. It was opened by the County in 1985 and the historic

Ranch House and Rose Cottage were restored in 2004. There is no admission fee to the Park, and no known visitor count.

Sahuaro Ranch Park

The historic Sahuaro Ranch is located in a residential neighborhood of Glendale, Arizona, and is part of a greater park complex that features the historic ranch, recreational fields, playgrounds, and picnic pavilions. Within its 17 acres, the historic area features a rose garden, historic orchards, agriculture demonstration field, barnyard, and 13 original buildings. The city manages the park, including running events and educational programs on site, and there are two full-time and two part-time city employees located on site. Site and building maintenance is also taken care of by the city. The facility is available for rentals and the barn can accommodate large groups. Community events are held throughout the year. The city partners with other organizations, including the Glendale Arizona Historical Society, which holds guided tours of the house during fall, winter, and spring for a donation, the Arizona Artist Blacksmith Association, the Arizona Beef Council, and the Arizona Early Day Gas Engine and Tractor Association. It is estimated that 50,000 people visit the park annually, with half of the visitation derived from community events held onsite and educational programs.

Non-profit Ranches

There are quite a few historic ranches or heritage education sites operated by non-profit organizations; one of the most common management forms. Several examples in Arizona include the following:

El Ranch de la Golondrianas

El Ranch de la Golondrianas is a living history museum located on 200 acres in a rural farming valley 16 miles south of Santa Fe. It is dedicated to the heritage and culture of Spanish Colonial New Mexico. Original colonial buildings on the site date from the early 18th century and 19th century. In addition, historic buildings from other parts of northern New Mexico have been reconstructed at Las Golondrinas. Docents and interpreters clothed in the styles of the times show how life was lived in early New Mexico in buildings such as a hacienda, a village store, a schoolhouse, and several chapels and kitchens. There's also a working molasses mill,

wheelwright and blacksmith shops, shearing and weaving rooms, a threshing ground, a winery and vineyard, and four water mills, as well as dozens of farm animals. Attendance in 2005 was 49,000 and the adult admission price is $5.00.

La Posta Quemada

This working ranch is located 25-miles southwest of Tucson and is part of Colossal Cave Mountain Park. The ranch portion of the site features a museum, research library, a gift shop, and open-air café serving Mexican food. The Ranch Headquarters House on La Posta Quemada Ranch was built in 1967 (the original adobe Ranch house burned to the ground in 1965). Today it houses a museum with two focuses: the human history and the natural history of the caves and the Cienega region. Colossal Cave Mountain Park is owned by Pima County. Pima County holds an administration agreement with a charitable corporation, the Pima County Parklands Foundation. The Foundation, in turn, holds a management contract with private operators, who oversee the day-to-day management of the Park.

George Ranch Historical Park

This 23,000-acre working ranch located in Richmond, Texas has 480 acres dedicated to a non-profit historical park. The park places emphasis on depicting authentic locations, historic homes, and costumed presenters that tell a story of that reflects Texas's history through a number of historical periods. The park is self-guided and there are costumed interpreters stationed at the exhibit sites that demonstrate and discuss their daily routines. Live animals can be found on the site; additionally the park offers opportunities for bird watching and alligator viewing. A visitor center/gift shop/cafe is the entry point for the historical park. The admission price of $9.00 is at the high end of historical ranches. Attendance was 91,000 in 2005. Most of attendance is drawn from site rentals and events.

MacGregor Ranch

The 1,200-acre MacGregor Ranch is the last remaining working cattle ranch in Estes Park and one of the few sites operating as both a working ranch (110 head) and youth education center in the northern Colorado area. The 1896 house museum has been in operation since 1973. The MacGregor Ranch Historic District is home to 43 buildings. Twenty-eight of the buildings are listed on The National Register of Historic Places. The Muriel L. MacGregor Charitable Trust, a

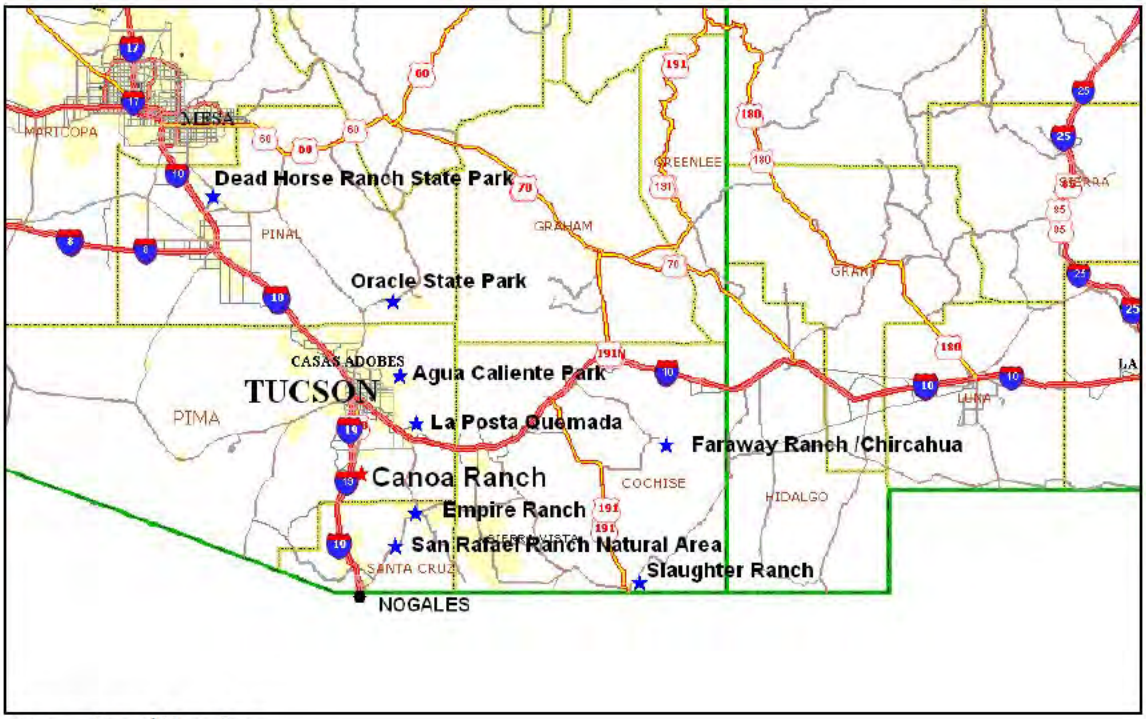
private, non-profit operating foundation, funds and manages all Ranch activities, the museum and all educational programs. The MacGregor Trust relies heavily on donations, grants and investments to operate the historic Ranch. Annual attendance ranges from 8,000 to 10,000 visitors annually. Adult admission is $3.00.

Slaughter Ranch

Located in Douglas, Arizona, Slaughter Ranch is now the Johnson Historical Museum of the Southwest. This National Historic Landmark, with an old adobe ranch house, has been restored along with the ice house, wash house, granary, commissary, and car shed to give the feeling of what ranch life was at the turn of the century. This non-profit historical attraction draws approximately 4,000 annually.

The location of these ranches is shown on **Figure IV-2.**

Figure IV-2
Map of Selected Ranch Related Attractions in Southern Arizona



Source: ConsultEcon, Inc.

Summary

Following is a summary of characteristics of profiled ranch related heritage education sites, relevant trends, and lessons learned from research into such attractions.

- **Mission and Programs –** The historic ranches profiled have unique missions and programs. Education, preservation, and programming about heritage are parts of the primary mission of these sites. Several regularly featuring costumed interpreters demonstrating life and industry as it was in historic periods. Agriculture and cattle ranching is a primary interpretive theme as well. Another common mission is to simply preserve historic structures and teach the general public about them. Additionally, preservation of open-space is a common goal; ranch sites can encompass up to and exceeding 1,000 acres of land.

- **Governance** – Heritage education sites can potentially be operated by a number of types of organizations including local or state government, non-profit organizations, or in some cases such as dude ranches, by private companies. The profiled attractions are typically non-profit or government operated. While non-profit organizations don't pay income taxes on revenue, they often raise a substantial portion of their revenue from unearned sources (gifts, grants etc) to carry out their mission. Government operated facilities, as well as non-profit organizations have unique sets of challenges, many of which are related to consistent funding for programs and operations. Often the facilities that are linked to county, state, or even federal government have access to resources that are not usually available to stand alone non-profits. For example, a state or county run site may be able to borrow special equipment at no extra cost, or it might have access to technical expertise in the administrative offices. It is important that the governance established reflect the goals of the facility, its needs, and its viability.

- **Historic Sites and Interpretation –** Due to the unique history of the site and buildings found on the site, Steam Pump Ranch will certainly be a historic site with opportunities for interpretation of a number of historic and cultural themes. Most of the profiled ranch related attractions have historic structures on site, which serve as a central point of interest. The living history concept is one that has been used extensively at historic sites (real or re-created). This generally implies programs re-enacting life (cooking, farming, craft making etc) as it was during the historic period being interpreted.

  While one museum director called living history a 'dying industry' it still remains one of the best formats for teaching the general public (especially children) about past lifestyles. Nationwide, living history attractions have experienced stagnant attendance and often high operating costs. Such attractions generally require a large personnel staff, which is usually the most costly budget expense. The high cost of operating living history sites results in high operating expenses, and therefore results in admission fees that are often uncompetitive with other local attractions, thus a deterrent to visitation. Some sites have maintained living history on a special event basis (war reenactments, cultural festivities, holiday programs, weekend programs etc) to maintain visitor interest but without the day-to-day costs personnel costs of living history. Increasingly, the benefits of drawing the visitor into active participation (rather than passive 'watching') have become evident.

- **Tourist and Resident Markets** – In several instances, historic ranches are located outside of major population centers and therefore do not have direct access to significant resident and tourist markets. Unlike these more remote ranches, Steam Pump Ranch is located close to downtown Tucson. Most of these attractions benefit from both tourist and resident markets. However, due to the educational orientation (especially for school-children) of these attractions, they tend to draw more from local residents. Therefore, the need for new programming to draw repeat visitors is very important. Good visibility is needed for significant tourist visitation.
- **Attendance** – Annual attendance at the profiled ranch related attractions ranges from 4,000 to 200,000 visitors. Ranches in the high range of attendance were those located in large parks where attendance to the ranches is a subset of attendance to the overall park.
- **Price** – Adult admissions prices for historic ranches range from free to $9.00 per adult. Some state parks charge per vehicle rather than per person. The average adult admission price among the profiled ranches is $5.00. Generally, compared to many 'attractions' these profiled facilities are modestly priced. Admission prices should be set to be affordable for families living in the region, and should be competitive with other local attractions, while at the same time being high enough to help support the budget through earned revenue.
- **Operations and Budget** – The size of an operating budget is dependent on a number of factors including facility size and number of visitors, sources of funding, and the mission of the organization. More complex operations might include extensive programming and marketing, as well as facility rentals and catering. Some facilities operate on a more minimalist approach, in particular some state and county parks. More pared-down operations, such as that sometimes found in state and county parks, may include minimal staffing and maintenance costs. Often operations such as state or local parks are supported by larger administrations that provide value to the park or attraction in terms of expertise, business planning, maintenance, equipment use, and other services that may not be immediately apparent in the operating budget of the particular entity. These support structures and shared costs contrast to the non-profit model in which an organization often must support itself entirely both in terms of operating revenue as well as other types of support (operating expertise, political support, maintenance costs, bookkeeping etc).
- **Personnel** – Personnel costs often make up the majority of budget expenses at historic ranch parks. Living history attractions require larger staff sizes, as do other programming-heavy attractions, and thus are more expensive to operate than the smaller, less 'attraction' oriented sites. Some of the more minimalist operations are historic sites or parks where the emphasis is on self-guided tours, especially outdoor touring. The type of attraction and organization envisioned has much to do with the site's personnel profile. The importance of volunteers at the facilities profiled must be stressed. If properly organized, docents can replace personnel at certain positions, thus saving salary expenses, which could result in a more economically viable operation.

Section V
OPERATING PLAN FOR STEAM PUMP RANCH

This section describes the operating parameters for Steam Pump Ranch as envisioned in the master plan developed by the consultant team and the town plan committee; and analyzes Steam Pump Ranch's economic potential under the master plan. Visitor and operating assumptions used in the analysis are based on the market analysis for the project, the planned project size and master plan description, and additional research on operating factors that would be associated with a facility of the profile being considered.

The purpose of this operating plan is to provide information for the planning and development process. As project planning moves forward (including physical and interpretive programs) the project timing, operations, and financial plans will be refined.

Project Phasing

Under the master plan, Steam Pump Ranch would be developed over the course of three phases. The first or "Pre-Opening Phase" begins on May 1, 2008 with the Town of Oro Valley assuming complete control of Steam Pump Ranch. During the Pre-Opening Phase, existing capital funds will be used to renovate one building on site to function as office space. In addition, the town will work to secure capital improvement funds through a bond vote to occur in November 2009. During the Pre-Opening Phase, it is recommended that the town sponsor an interpretive plan for Steam Pump Ranch, which will make the ranch more competitive for capital improvement funds. Such work would be needed in any event to move the master plan forward. Once capital funds have been secured, building and construction can proceed, with a targeted completion date of early 2012 in time for the Arizona's centennial on February 14.

The opening of the second phase, or "Opening Phase," is targeted for February 14, 2012 when Steam Pump Ranch would open to the general public after the completion of an interpretive plan and capital funds have been secured to renovate existing buildings, construct new buildings, install interpretive elements and exhibits, and install required infrastructure and landscaping. The targeted opening would coincide with Arizona's centennial celebration of its admission to the union.

The third phase, or "Full Build-Out Phase," would occur at an as-yet determined time after the Opening Phase. This phase incorporates other public and commercial uses not developed onsite during the Opening Phase. It should be noted that individual components of the Full Build-Out Phase could be developed over time rather than all at once. In addition, some of the Full Build-Out Phase components might be developed earlier as part of the Opening Phase.

Operations Management

Steam Pump Ranch would operate under the norms for ranch attractions nationally, adjusted for local conditions. Steam Pump Ranch will be operated by the Town of Oro Valley. The Parks and Recreation Department will be the lead operating department, responsible for the activities and programs planned for the ranch and maintenance and upkeep of the grounds. The Public Works Department would be responsible for the maintenance and upkeep of the buildings on site. In addition, the Parks and Recreation Department may contract with non-profit organizations, commercial contractors and concessionaires to manage activities onsite or to operate onsite.

For the purposes of this analysis, the activities within the ranch that are operated by concessionaires will provide additional revenue to support ranch operations without affecting the ranch's (town) expense profile. Therefore, expenses incurred by concessionaires are not included in this analysis, and town revenues from concessionaires are expressed as "net" revenues to the town.

In addition, the Oro Valley Historical Society, Greater Oro Valley Arts Council, and other non-profit organizations may have an important role in coordinating volunteers, developing educational programs, sponsoring events onsite and raising supportive funds. Regardless of any group's current and future capacity to run programs and raise funds, the Town of Oro Valley will have to provide operating support in order to maintain the ranch operation. As is the case in every ranch attraction profiled in this report and virtually every heritage attraction across the country, Steam Pump Ranch will need ongoing operational support from local government and other contributing organizations and individuals.

Site Operating Expenses

Parks and educational attractions like Steam Pump Ranch are largely fixed cost operations. These fixed costs include insurance, utilities and exterior maintenance, personnel, exhibit maintenance,

basic marketing, facility maintenance, etc. There is some variability in expenses based on attendance levels such as visitor services, education programs, marketing, and so forth. The analysis of operating expenses is based on the size of the facility, an analysis of existing park operations and maintenance budgets in the Town of Oro Valley, as well as the operating experience of other attractions of this type. This operating profile assumes an efficiently run organization with a "bottom line" mentality.

For the purposes of this plan, operating expenses are divided into one of two functional categories: "site costs" and "program costs." Site costs are the core costs associated with ongoing maintenance of the grounds and buildings and administration and oversight. Program costs are associated with the programs and activities related to the site as a heritage and educational attraction. From an analytical perspective, site costs reflect a baseline ongoing investment by the Town of Oro Valley to enable public entry and safety of Steam Pump Ranch and the basic stabilization and conservation of the historic fabric onsite. Program costs reflect site heritage and educational benefits that enhance public use and add attractiveness to the private sector for their possible investment in the site and operating of tenant businesses onsite.

Operating expenses for each phase of Steam Pump Ranch will change according to the phase of development. A staff profile has been developed for each phase as an input to the overall operating expenses for each phase. The staffing of Steam Pump Ranch is anticipated to change with each new phase and according to the level of activities planned for the site.

In addition to salaries and fringe benefits, operating expenditures are assigned for a number of categories, including marketing, insurance, utilities, and staff overhead costs. Budget categories for this plan use the budget categories for existing parks in the Town of Oro Valley. Following is a discussion of selected expense items that are applicable to all of the phases.

- **Utilities –** Utility costs are estimated based on the experience of other parks in the Town of Oro Valley and include energy, water and sewer, and waste disposal. Natural gas and electricity is estimated at $3.00 per square foot of building area. This estimate will vary depending on the systems installed in the buildings, outdoor energy use, levels of activity, and future energy costs.
- **Outside Professional Services** – Expense category for various outside contractors, such as pest control, sign installation, tree removal and other contract services.

- **Administrative Supplies & Materials** – Includes maintenance, janitorial and operating supplies, office supplies and materials, and general business and miscellaneous expenses for the buildings.
- **Grounds Repair & Maintenance** – Includes maintenance costs, operating supplies, and miscellaneous expenses for the ranch grounds.
- **Building Repairs & Maintenance** – Expenses related to maintaining building systems, janitorial and general building functions.
- **Advertising –** Includes advertising; printing and publications design, production and distribution expenses for advertising; and other printed matter as well as in-house produced promotional materials. Steam Pump Ranch should participate in co-op marketing to the extent possible.
- **Printing & Publications** – Includes printing costs for brochures, visitor guides, office stationary and letterhead, press release packages, educational kits, and possibly a newsletter.
- **Exhibit Reinvestment** – Costs associated with maintaining and updating exhibits.
- **Miscellaneous & Contingency** – Other small expenditure items not covered in prior categories.

A moderate capital repairs fund, which is estimated at 3 percent of operating expenses, is included for small-scale capital repairs and improvements. It should be noted that this operating budget item does not include funds for major capital repairs (which would be addressed through capital budgets), nor does it include funds for exhibit renewal. These major capital items would be paid for through outside gift and grant funds and/or special town budget requests. Expenses were developed to reflect the program as conceived in the Steam Pump Ranch master plan and the experience of comparable visitor attractions.

Pre-Opening Phase: Staffing and Operating Expense Profiles

Data in **Table V-1** present a staffing profile for Steam Pump Ranch based on facility size and the activities planned for the site during the pre-opening phase. The staffing profile includes one part-time recreation manager, one overnight caretaker, and two part-time maintenance workers. This staffing profile represents the minimum required to maintain a presence on the site and to stabilize and maintain the grounds and buildings before the Opening Phase. The wage and salary figures are for illustrative purposes only and in no way are meant to represent actual or recommended salaries by position or position type. However, as a whole, these estimates are representative of salary levels in the Town of Oro Valley, and are illustrative of salary requirements for the facility as conceived.

In total, a payroll of $40,600 is estimated for the Pre-Opening Phase. A 40 percent fringe rate was utilized based on the current Town fringe rate. The total payroll for Steam Pump Ranch, based on this staffing profile, is estimated at $56,900. Personnel salaries and wages as projected are approximately 57 percent of total expenses at the facility in this phase. All of the personnel and personnel expenses are site costs in this phase.

Table V-1
Pre-Opening Phase Staffing Profile
Steam Pump Ranch

Personnel Schedule	Annual Salaries (FTE)	Number of Full Time Positions	Number of Part Time Positions	Site Salary Budget	Program Salary Budget
Administration 1/					
Recreation Manager (Site Manager)	$50,471		1	$25,236	
Assistant Recreation Manager (Programs and Events Coordinator)	32,360				-
Heritage Museum and Gift Shop 2/					
Educator/Volunteer Coordinator	35,000			-	
Concessions	20,000			-	
Operations 1/					
Caretaker 3/	-	1		-	
Park Maintenance Worker	30,802		1	15,401	
Public Works Maintenance Worker	30,802			-	
Intermittent Workers (Interns, Seasonal/Event Support)	20,000			-	
Site and Program Salaries		1	2	$40,637	$0
Taxes, Fringe & Benefits (@ 40% of salary)				$16,255	$0
Site and Program Salaries & Benefits Budget				**$56,891**	**$0**
Total Salaries				**$40,637**	
Taxes, Fringe & Benefits (@ 40% of salary)				**$16,255**	
Total Salaries & Benefits Budget				**$56,891**	
Site Full Time Equivalent Positions (FTE'S)		2.00			
Program Full Time Equivalent Positions (FTE'S)		0.00			
Total Full Time Equivalent Positions (FTE'S)		2.00			

NOTE: Part Time Employees at 50% FTE.
1/ Salaries based on 2007-2008 midpoint salary grade of Town of Oro Valley positions. Retrieved from http://www.ci.oro-valley.az.us/HR/Updated%202007-2008%20Salary%20Structure%2007-01-07.htm on January, 28 2008.

2/ Salaries based on comparable operating profiles for historic sites and museums in the Tucson Area, and general industry knowledge.
3/ A caretaker is a position designed to maintain a town presence onsite 24 hours per day. There is no paid salary. In exchange for free room at Steam Pump Ranch, the caretaker would maintain site security between sundown and sunup.
Source: ConsultEcon, Inc.

Data in **Table V-2** provide an operating expense profile for Steam Pump Ranch for the Pre-Opening Phase based on Town of Oro Valley park budgets and typical site operating costs. In the Pre-Opening Phase, operating expenses for all fixed amount categories are estimated to be 25 percent of those estimated for the Opening Phase due to the limited activities planned for the site. In total, an operating budget of about $104,400 is anticipated for the Pre-Opening Phase. These are mostly site rather than program costs.

Table V-2
Pre-Opening Phase Operating Expense Profile in Current Dollars
Steam Pump Ranch

Project Parameters				
Heritage Attendance	0			
Acres	17			
Building Interiors Square Footage (SF)	1,337			Poster Frost Associates
Employees (FTEs)	2.00			See Staff Profile
Detailed Budgetary Analysis	**Annual Amount**			**Expense Factors** [1/]
Site Costs				
Site Personnel Salaries (FTE, PTE)	$40,637			See Staff Profile
Fringe & Benefits	$16,255			See Staff Profile
Outside Professional Services	$12,500			Fixed Amount
Natural Gas and Electricity	$4,011	@	$3.00	per Building Square Foot
Water and Sewer	$10,625			Fixed Amount
Waste Disposal Fees	$1,750			Fixed Amount
Vehicle Repair and Maintenance	$188			Fixed Amount
Equipment Repair and Maintenance	$188			Fixed Amount
Grounds Repair and Maintenance	$1,250			Fixed Amount
Buildings Repair and Maintenance	$1,250			Fixed Amount
Rentals	$250			Fixed Amount
Postage	$188			Fixed Amount
Telecommunications	$375			Fixed Amount
Gasoline and Oil	$375			Fixed Amount
Non-Capitalized Equipment	$250			Fixed Amount
Field Supplies	$500			Fixed Amount
Uniforms	$250			Fixed Amount
Subtotal Site Costs	**$90,840**			
Program Costs				
Program Personnel Salaries (FTE, PTE)	$0			See Staff Profile
Fringe & Benefits	$0			See Staff Profile
Advertising	$0	@	$0.25	per Attendee
Printing & Publications	$0	@	$0.25	per Attendee
Travel and Training	$75			Fixed Amount
Memberships and Subscriptions	$50			Fixed Amount
Special Events	$5,000			Fixed Amount
Educational Programs	$5,000			Fixed Amount
Exhibit Reinvestment	$0	@	$0.50	per Attendee
Miscellaneous & Contingency	$400	@	$200	Per FTE
Subtotal Program Costs	**$10,525**			
Subtotal Operating Expenses	**$101,365**			
Capital Reserves [2/]	$3,041		3%	Of Total Op. Expenses
Total Operating Expenses	**$104,406**			
Operating Expense Per SF	$78.09			
Operating Expense Per FTE	$52,203			
Operating Expense Per Acre	$6,142			

1/ Site Costs are determined to be core costs associated with the ongoing maintenance of the site by the Town of Oro Valley. Program Costs are associated with the operation of the facility as a public attraction and community facility and may be attributed to another non-profit or governmental agency . Cost exstimates are based on analysis of Parks and Recreation Department budgets for other Oro Valley parks, conversations with Town of Oro Valley employees in the Parks and Recreation and Public Works Departments, and general industry knowledge. "Fixed Amount" Pre-Opening Phase expenses are estimated at 25% of Opening Phase expenses.

2/ Capital Reserves include funds for equipment replacements and minor capital for building improvements.

Source: ConsultEcon, Inc.

Opening Phase: Staffing and Operating Expense Profiles

Data in **Table V-3** present a staffing profile for Steam Pump Ranch during the Opening Phase based on facility size, projected attendance patterns, and the experience of comparable ranch attractions. The staffing profile includes one full-time recreation manager, a full-time educator and volunteer coordinator, one full-time concessions worker, one overnight caretaker, and two full-time maintenance workers. A strong cadre of volunteer docents, who would have educational and interpretive duties as well as assisting with special projects and other important functions, will be vital to the successful operation of the facility. The wage and salary figures are for illustrative purposes only and in no way are meant to represent actual or recommended salaries by position or position type. However, as a whole, these estimates are representative of salary levels in the Town of Oro Valley, and are illustrative of salary requirements for the facility as conceived.

In total, a payroll of $141,700 is estimated for the Opening Phase. A 40 percent fringe rate was utilized based on the current Town fringe rate. The total payroll for Steam Pump Ranch, based on this staffing profile, is estimated at $198,300. Personnel salaries and wages as projected are approximately 45 percent of total expenses at the facility in this phase.

Table V-3
Opening Phase Operating Staffing Profile
Steam Pump Ranch

Personnel Schedule	Annual Salaries (FTE)	Number of Full Time Positions	Number of Part Time Positions	Site Salary Budget	Program Salary Budget
Administration 1/					
Recreation Manager (Site Manager)	$50,471	1		$50,471	
Assistant Recreation Manager (Programs and Events Coordinator)	32,360				-
Heritage Museum and Gift Shop 2/					
Educator/Volunteer Coordinator	35,000	1			35,000
Concessions	20,000		1		10,000
Operations 1/					
Caretaker 3/	-	1		-	
Park Maintenance Worker	30,802	1		30,802	
Public Works Maintenance Worker	30,802		1	15,401	
Intermittent Workers (Interns, Seasonal/Event Support)	20,000			-	
Site and Program Salaries		4	2	$96,674	$45,000
Taxes, Fringe & Benefits (@ 40% of salary)				$38,670	$18,000
Site and Program Salaries & Benefits Budget				**$135,344**	**$63,000**
Total Salaries				**$141,674**	
Taxes, Fringe & Benefits (@ 40% of salary)				**$56,670**	
Total Salaries & Benefits Budget				**$198,344**	
Site Full Time Equivalent Positions (FTE'S)		3.50			
Program Full Time Equivalent Positions (FTE'S)		1.50			
Total Full Time Equivalent Positions (FTE'S)		5.00			

NOTE: Part Time Employees at 50% FTE.
1/ Salaries based on 2007-2008 midpoint salary grade of Town of Oro Valley positions. Retrieved from http://www.ci.oro-valley.az.us/HR/Updated%202007-2008%20Salary%20Structure%2007-01-07.htm on January, 28 2008.
2/ Salaries based on comparable operating profiles for historic sites and museums in the Tucson Area, and general industry knowledge.
3/ A caretaker is a position designed to maintain a town presence onsite 24 hours per day. There is no paid salary. In exchange for free room at Steam Pump Ranch, the caretaker would maintain site security between the hours of sundown and sunup.
Source: ConsultEcon, Inc.

Data in **Table V-4** provide an operating expense profile for Steam Pump Ranch for the Opening Phase based on Town of Oro Valley park budgets and typical site operating costs. In total, an operating budget of about $439,800 is anticipated for the Opening Phase. This includes about $312,500 for site costs, $114,500 for program costs and $12,800 for capital reserves.

Table V-4
Opening Phase Operating Expense Profile in Current Dollars
Steam Pump Ranch

Project Parameters				
Heritage Attendance [1/]	10,000			
Acres	17			
Building Interiors Square Footage (SF)	19,124			Poster Frost Associates
Employees (FTEs)	5.00			See Staff Profile
Detailed Budgetary Analysis	**Annual Amount**			**Expense Factors** [2/]
Site Costs				
Site Personnel Salaries (FTE, PTE)	$96,674			See Staff Profile
Fringe & Benefits	$38,670			See Staff Profile
Outside Professional Services	$50,000			Fixed Amount
Natural Gas and Electricity	$57,372	@	$3.00	per Building Square Foot
Water and Sewer	$42,500			Fixed Amount
Waste Disposal Fees	$7,000			Fixed Amount
Vehicle Repair and Maintenance	$750			Fixed Amount
Equipment Repair and Maintenance	$750			Fixed Amount
Grounds Repair and Maintenance	$5,000			Fixed Amount
Buildings Repair and Maintenance	$5,000			Fixed Amount
Rentals	$1,000			Fixed Amount
Postage	$750			Fixed Amount
Telecommunications	$1,500			Fixed Amount
Gasoline and Oil	$1,500			Fixed Amount
Non-Capitalized Equipment	$1,000			Fixed Amount
Field Supplies	$2,000			Fixed Amount
Uniforms	$1,000			Fixed Amount
Subtotal Site Costs	**$312,466**			
Program Costs				
Program Personnel Salaries (FTE, PTE)	$45,000			See Staff Profile
Fringe & Benefits	$18,000			See Staff Profile
Advertising	$2,500	@	$0.25	per Attendee
Printing & Publications	$2,500	@	$0.25	per Attendee
Travel and Training	$300			Fixed Amount
Memberships and Subscriptions	$200			Fixed Amount
Special Events	$20,000			Fixed Amount
Educational Programs	$20,000			Fixed Amount
Exhibit Reinvestment	$5,000	@	$0.50	per Attendee
Miscellaneous & Contingency	$1,000	@	$200	Per FTE
Subtotal Program Costs	**$114,500**			
Subtotal Operating Expenses	**$426,966**			
Capital Reserves [3/]	$12,809		3%	Of Total Op. Expenses
Total Operating Expenses	**$439,775**			
Operating Expense Per SF	$23.00			
Operating Expense Per FTE	$87,955			
Operating Expense Per Acre	$25,869			

1/ Midpoint of estimated range between 5,000 and 15,000 visitors annually.

2/ Site Costs are determined to be core costs associated with the ongoing maintenance of the site by the Town of Oro Valley. Program Costs are associated with the operation of the facility as a public attraction and community facility and may be attributed to another non-profit or governmental agency . Cost exstimates are based on analysis of Parks and Recreation Department budgets for other Oro Valley parks, conversations with Town of Oro Valley employees in the Parks and Recreation and Public Works Departments, and general industry knowledge.

3/ Capital Reserves include funds for equipment replacements and minor capital for building

Source: ConsultEcon, Inc.

Full Build-Out Phase: Staffing and Operating Expense Profiles

Data in **Table V-5** present a staffing profile for Steam Pump Ranch during the Full Build-Out Phase based on facility size, projected attendance patterns, and the experience of comparable ranch attractions. The staffing profile includes one full-time recreation manager, a part-time assistant recreation manager, a full-time educator and volunteer coordinator, one part-time concessions worker, one overnight caretaker, and two full-time and one part-time maintenance workers, as well as an allowance for intermittent workers that could be interns working on special projects or temporary help for special events. A strong cadre of volunteer docents, who would have educational and interpretive duties as well as assisting with special projects and other important functions, will be vital to the successful operation of the facility. The wage and salary figures are for illustrative purposes only and are not meant to represent actual or recommended salaries by position or position type. However, as a whole, these estimates are representative of salary levels in the Town of Oro Valley, and are illustrative of salary requirements for the facility as conceived.

In total, a payroll of $208,700 is estimated for the Full Build-Out Phase. A 40 percent fringe rate was utilized based on the current Town fringe rate. The total payroll for Steam Pump Ranch, based on this staffing profile, is estimated at $292,100. Personnel salaries and wages as projected are approximately 51 percent of total expenses at the facility in this phase.

Table V-5
Full Build-Out Phase Staffing Profile
Steam Pump Ranch

Personnel Schedule	Annual Salaries (FTE)	Number of Full Time Positions	Number of Part Time Positions		Total Salary Budget
Administration 1/					
Recreation Manager (Site Manager)	$50,471	1		$50,471	
Assistant Recreation Manager (Programs and Events Coordinator)	32,360		1		16,180
Heritage Museum and Gift Shop 2/					
Educator/Volunteer Coordinator	35,000	1			35,000
Concessions	20,000		1		10,000
Operations 1/					
Caretaker 3/	-	1		-	
Park Maintenance Worker	30,802	1	1	46,203	
Public Works Maintenance Worker	30,802	1		30,802	
Intermittent Workers (Interns, Seasonal/Event Support)	20,000		2		20,000
Site and Program Salaries		5	5	$127,476	$81,180
Taxes, Fringe & Benefits (@ 40% of salary)				$50,990	$32,472
Site and Program Salaries & Benefits Budget				**$178,466**	**$113,652**
Total Salaries				**$208,656**	
Taxes, Fringe & Benefits (@ 40% of salary)				**$83,462**	
Total Salaries & Benefits Budget				**$292,118**	
Site Full Time Equivalent Positions (FTE'S)		4.50			
Program Full Time Equivalent Positions (FTE'S)		3.00			
Total Full Time Equivalent Positions (FTE'S)		7.50			

NOTE: Part Time Employees at 50% FTE.
1/ Salaries based on 2007-2008 midpoint salary grade of Town of Oro Valley positions. Retrieved from http://www.ci.oro-valley.az.us/HR/Updated%202007-2008%20Salary%20Structure%2007-01-07.htm on January, 28 2008.

2/ Salaries based on comparable operating profiles for historic sites and museums in the Tucson Area, and general industry knowledge.
3/ A caretaker is a position designed to maintain a town presence onsite 24 hours per day. There is no paid salary. In exchange for free room at Steam Pump Ranch, the caretaker would maintain site security between the hours of sundown and sunup.
Source: ConsultEcon, Inc.

Data in **Table V-6** provide an operating expense profile for Steam Pump Ranch for the Full Build-Out Phase based on Town of Oro Valley park budgets and typical site operating costs. In the Full Build-Out Phase, operating expenses for all fixed amount categories are estimated to be 110 percent of those estimated for the Opening Phase. In total, an operating budget of about $567,400 is anticipated for the Full Build-Out Phase. This includes about $376,200 for site costs, $174,700 for program costs and $16,500 for capital reserves.

Table V-6
Full Build-Out Phase Operating Expense Profile in Current Dollars
Steam Pump Ranch

Project Parameters				
Heritage Attendance [1/]	15,000			
Acres	17			
Building Interiors Square Footage (SF)	22,000			Poster Frost Associates
Employees (FTEs)	7.50			See Staff Profile
Detailed Budgetary Analysis	**Annual Amount**			**Expense Factors** [2/]
Site Costs				
Site Personnel Salaries (FTE, PTE)	$127,476			See Staff Profile
Fringe & Benefits	$50,990			See Staff Profile
Outside Professional Services	$55,000			Fixed Amount
Natural Gas and Electricity	$66,000		$3.00	per Building Square Foot
Water and Sewer	$46,750			Fixed Amount
Waste Disposal Fees	$7,700			Fixed Amount
Vehicle Repair and Maintenance	$825			Fixed Amount
Equipment Repair and Maintenance	$825			Fixed Amount
Grounds Repair and Maintenance	$5,500			Fixed Amount
Buildings Repair and Maintenance	$5,500			Fixed Amount
Rentals	$1,100			Fixed Amount
Postage	$825			Fixed Amount
Telecommunications	$1,650			Fixed Amount
Gasoline and Oil	$1,650			Fixed Amount
Non-Capitalized Equipment	$1,100			Fixed Amount
Field Supplies	$2,200			Fixed Amount
Uniforms	$1,100			Fixed Amount
Subtotal Site Costs	**$376,191**			
Program Costs				
Program Personnel Salaries (FTE, PTE)	$81,180			See Staff Profile
Fringe & Benefits	$32,472			See Staff Profile
Advertising	$3,750	@	$0.25	per Attendee
Printing & Publications	$3,750	@	$0.25	per Attendee
Travel and Training	$330			Fixed Amount
Memberships and Subscriptions	$220			Fixed Amount
Special Events	$22,000			Fixed Amount
Educational Programs	$22,000			Fixed Amount
Exhibit Reinvestment	$7,500	@	$0.50	per Attendee
Miscellaneous & Contingency	$1,500	@	$200	Per FTE
Subtotal Program Costs	**$174,702**			
Subtotal Operating Expenses	**$550,893**			
Capital Reserves [3/]	$16,527		3%	Of Total Op. Expenses
Total Operating Expenses	**$567,420**			
Operating Expense Per SF	$25.79			
Operating Expense Per FTE	$75,656			
Operating Expense Per Acre	$33,378			

1/ Midpoint of estimated range between 10,000 and 20,000 visitors annually.
2/ Site Costs are determined to be core costs associated with the ongoing maintenance of the site by the Town of Oro Valley. Program Costs are associated with the operation of the facility as a public attraction and community facility and may be attributed to another non-profit or governmental agency . Cost exstimates are based on analysis of Parks and Recreation Department budgets for other Oro Valley parks, conversations with Town of Oro Valley employees in the Parks and Recreation and Public Works Departments, and general industry knowledge. "Fixed Amount" Full Build-Out Phase expenses are estimated at 110% of Opening Phase expenses.
3/ Capital Reserves include funds for equipment replacements and minor capital for building improvements.
Source: ConsultEcon, Inc.

Revenue Potential

Steam Pump Ranch will derive revenue from earned revenue and non-earned revenue sources. As with most parks, Steam Pump Ranch will have to supplement its earned revenues with non-earned sources because earned revenues will not support all of the operational expenses. Since the ranch will be owned and operated by the Town of Oro Valley, it is assumed that in lieu of other funds from other sources, the town will provide an annual contribution to support ranch "site" operations, either from general funds or from a fund set up specifically for Steam Pump Ranch. Earned revenues can cover much of the "program costs" of the site. This analysis assumes a "breakeven" operation: the amount of non-earned revenue required is the difference between the revenue earned and the total operating expense. Non-earned revenues cited in this report should be considered a minimum as additional non-earned revenues will enhance park operations, potentially leading to a better visitor experience.

Operating and Revenue Assumptions

Important operating and revenue assumptions for Steam Pump Ranch include:

- **Hours and Admission** – Steam Pump Ranch will not be open to the public during the Pre-Opening Phase, except during special events and programs. During the Opening Phase, it is assumed that Steam Pump Ranch will be open seven days per week from sunrise until sundown, or in accordance with the policies of other parks in the Town of Oro Valley. Steam Pump Ranch would be open as needed for evening events. The gift shop and food service would be open and guided tours are assumed to be available 4 days per week, Thursday through Sunday, from 10 am until 4 pm throughout the year.
- **Admission Fee –** Steam Pump Ranch will not have an admission fee. The general public will be allowed access to Steam Pump Ranch grounds, much like a public park, without charge. Docent-led tours of the grounds and of interior exhibit areas will be available 4 days per week throughout the year. The assumed fee for volunteer, docent-led tours of grounds and house exhibits is $5.00 in current dollars. The Pre-Opening Phase does not have potential for paid tours.
- **Attendance –** The pre-opening phase has modest attendance potential and no earned revenue potential from visitation. The heritage-related visitor potential for Opening Phase tours is 10,000, the mid-point of a 5,000 to 10,000 range. During the Opening Phase of Steam Pump Ranch, including public park, events and heritage-related visitation, is estimated to have 30,000 visitors. The Full Build-Out Phase heritage-related visitation potential is 15,000, the mid-point of a 10,000 to 20,000 range. Total Full Build-Out phase visitation is estimated at 65,000.
- **Retail** – A gift shop with appropriate and varied merchandise can be an important part of the visitor experience, as well as an important revenue source. This element is assumed to perform at industry norms for moderately scaled historical educational attractions, and to

generate $1.00 per visitor in retail sales. The cost of goods sold is estimated to be 52 percent of retail sales.

- **Food Service** – The Steam Pump Ranch program includes the potential for food service. During the Opening and Full Build-Out Phases, food service is assumed to be modest in scale, with vending machines onsite and a kiosk in Building 5 offering snacks and beverages. Limited seating should be available, with the possibility of outdoor seating to supplement indoor areas. There is an estimated $1.50 per visitor (heritage and other attendees) for onsite food service. The Town is assumed to use a concessionaire to manage the food service, with an estimated 15 percent of gross food service revenue to the Town. There is the potential to offer a greater array of food service options onsite; however, the food service would need to be of a sufficient size and menu diversity required to augment sales from onsite visitors with offsite audiences. It is reasonable to expect that food service provision could be combined with catering planned for the site to create a more attractive business opportunity and a stronger onsite tenant.
- **Room and Outdoor Area Rentals** – Many visitor attractions make their facilities available for private events and facility rentals. These might include receptions, meetings, and events. As a part of the Steam Pump Ranch master plan, there are two small indoor rooms and three outdoor spaces that can accommodate rentals. As such, Steam Pump Ranch will have an opportunity to earn revenues from this source. The terms for rental and the extent of rentals vary considerably among institutions. This analysis includes assumptions for the number of events held annually in each location and the revenue per event rental in both the Opening and Full Build-Out Phases.
- **Educational Programs and Special Events** – It is anticipated that Steam Pump Ranch will be used for a educational programs, such as lectures, demonstration activities and school programs, and special events, such an arts and crafts fairs and town celebrations. Programs and events will be important for generating regular activity onsite, as well as contributing to site visitation. Under the master plan, programs and events are assumed to either breakeven, and thereby do not generate earned revenue for the Town of Oro Valley.
- **Full Build-Out Phase Components** – The Full Build-Out Phase for Steam Pump Ranch includes two components that have earned revenue potential: a multi-purpose event building and an equestrian building. The multi-purpose event building as proposed would be large enough to handle events for up to 250 people, and would include a catering kitchen. This facility would transform the site's ability to hold events and an entirely different type and size of events would be possible. The event building is assumed to be operated by a concessionaire, with 12 percent of gross event fees returning to the Town as rent. The equestrian building is assumed to be used by a horse trail riding operation, which had been a use onsite in the recent past. The equestrian building is assumed to be operated by a concessionaire, with 12 percent of gross fees returning to the Town as rent. Even before the construction of permanent equestrian building and corrals, an equestrian operator could set up temporary structures onsite to establish a baseline trailing riding operation. Given the opportunity to start equestrian use on the site with relatively low investment, it is possible that equestrian use could begin earlier than the Full Build-Out Phase.

- **Inflation Assumption** – The financial pro forma analysis uses the 2008 value of the dollar for the first year (FY2008-2009) of the projection, with following years at an assumed 3 percent inflation rate.

Data in **Table V-7** summarize the assumptions underlying the financial analysis for Steam Pump Ranch.

Table V-7
Pro Forma Operating Assumptions in Current Dollars for All Phases
Steam Pump Ranch

Assumptions	Pre-Opening Phase	Opening Phase	Full Build-Out Phase
Heritage Attendance	0	10,000	15,000
Programs, Events and Rental Attendance	1,000	7,500	20,000
Park Attendance	0	12,500	25,000
Total Attendance	**1,000**	**30,000**	**60,000**
General			
Guided Tour Per Capita Fee		$5.00	$5.00
Inflation Rate (applied to revenues and expenses)		3.0%	3.0%
Office Rent for OVHS and other non-profit users		$0	$0
Gift Shop and Food Service 1/			
Per Capita Gross Gift Shop Sales		$1.00	$1.00
Cost of Goods Sold as a % of Gift Shop Sales		52%	52%
Per Capita Food Service Sales		$1.50	$1.50
Owner's Fee on Food Service Sales		15%	15%
Room and Outdoor Areas Rental Fees per Use			
Building 2 Meeting Room		$50	$50
Building 4 Meeting Room		$50	$50
Area b/t Buildings 2 and 3		$250	$250
Porch/Patio (Building 5)		$250	$250
Outdoor Barbecue/Gathering Space		$250	$250
Room and Outdoor Areas Rental Annual Use			
Building 2 Meeting Room		100	150
Building 4 Meeting Room		100	150
Area b/t Buildings 2 and 3		50	75
Porch/Patio (Building 5)		50	75
Outdoor Barbecue/Gathering Space		50	75
Multi-Purpose Event Building			
Gross Fees per Use			$5,000
Number of Uses per Year			100
Owner's Fee on Event Sales			12%
Equestrian Center			
Estimated Number of Trail Rides			10,000
Average Price of Trail Ride			$40.00
Owner's Fee on Equestrian Sales			12%

1/ Food service includes both vending machines located onsite and an area for snacks and beverages located in Building 5. The Owner's Fee may vary be different for vending machines and a snack and beverage kiosk.
Source: ConsultEcon, Inc.

Earned Revenue Potential

A variety of onsite consumer offerings and opportunities to attract concessionaire tenants will enable Steam Pump Ranch to earn operating revenues. The Pre-Opening Phase does not include opportunities for earned revenue. In the Opening Phase, the major sources of earned revenue will come from ticket and rental fees. Food service and a gift shop will provide additional revenue opportunities. In the Full Build-Out Phase, other revenue will be derived from activities operated by concessionaires, including the multi-purpose event building and an equestrian center.

Earned revenue falls into one of two categories: program revenue and non-program revenue. Program revenue is driven by the heritage and educational activities onsite and is supported by associated program costs as detailed in the operating expense plan. Non-program revenue is derived from outside use of the structures included in the master plan and rental to concessionaries. Such use is supported by the site-related operating costs.

Data in **Table V-8** show the estimated earned revenue potential of Steam Pump Ranch for the master plan phases. These are provided for a "stable" year of operations in current dollars for comparative purposes. The Table V-8 analysis then shows operating expenses by phase. The net income from earned revenue then indicates the outside support needed by phase.

Table V-8
Stable Year Earned Revenue Potential of All Phases in Current Dollars
Steam Pump Ranch

Revenue Category	Pre-Opening Phase	Opening Phase	Full Build-Out Phase
Program Revenue			
Office Rent (OVHS, GOVAC, etc.)	$0	$0	$0
Heritage Tickets	0	50,000	75,000
Gift Shop Sales	0	15,600	31,200
Café Sales	0	6,750	13,500
Subtotal Program Revenue	**$0**	**$72,350**	**$119,700**
Non-Program Revenue			
Room Rental Fees			
Building 2	$0	$5,000	$7,500
Building 4	0	5,000	7,500
Outdoor Rental Fees			
Area b/t Buildings 2 and 3	0	12,500	18,750
Porch/Patio (Building 5)	0	12,500	18,750
Outdoor Barbecue/Gathering Space	0	12,500	18,750
Equestrian Center Rent	0	0	48,000
Event Center Rent	0	0	60,000
Subtotal Non-Program Revenue	**$0**	**$47,500**	**$179,250**
Total Earned Revenue	**$0**	**$119,850**	**$298,950**
Operating Expenses	$104,406	$439,775	$567,420
Net Operating Income from Earned Revenue	**($104,406)**	**($319,925)**	**($268,470)**
Required Non-Earned Revenue	$104,406	$319,925	$268,470
% Earned Revenue to Expenses	0.0%	27.3%	52.7%

Source: ConsultEcon, Inc.

Non-Earned Revenue Requirement

As with almost all publicly accessible parks, not-for-profit museums and historic sites nationwide, Steam Pump Ranch will have to supplement earned revenues with non-earned or contributed revenues. Nationwide, virtually all public sector and private not-for-profit visitor attractions receive a substantial share of revenues from non-earned sources. In the case of parks, these are generally supported by municipal budgets. For historical and educational attractions, non-earned revenues include endowment earnings, gifts, grants, fundraising events, corporate support, government grants and in-kind donations. This report establishes a baseline amount or requirement of non-earned revenues to maintain basic operations. Higher levels of non-earned revenue would enhance operations and increase public benefits.

The sources and amounts of non-earned revenues vary between institutions based on their individual circumstances. Following is a discussion of possible sources of non-earned revenues at

Steam Pump Ranch. The best strategy is to tap a wide variety of sources of contributed revenues so that the revenue goals can be met or exceeded. Contributed revenue sources to support ongoing operations funding should be secured at the same time as capital funding prior to construction.

- **Public Subsidies and Contributions** – Since Steam Pump Ranch is to be managed by Town of Oro Valley, the town will no doubt contribute unearned revenues to support operations as it does for all of its parks. Such facilities are generally considered community assets that contribute to the quality of life for area residents while supporting the local economic base in terms of jobs and the importation of dollars into the local economy. On an ongoing basis, many educational and cultural attractions rely on an annual budget appropriation from state and/or local governmental sources. Sharing proceeds from local taxation districts is also a common source of annual funding.
- **Not-for-Profit Support Group** – During the planning of Steam Pump Ranch, several participants expressed interest in creating a 501(c)3 support group. Many visitor attractions have affiliated support groups that raise funds, organize volunteers, and generally support operations.
- **Endowment** – A targeted campaign to create an endowment for Steam Pump Ranch should begin in the project's early planning stages. Support from an endowment can substantially assist successful operations. Endowment contributions can be either general in nature, or specifically allocated to an exhibit, task, or position. For instance, the amount to endow a particular exhibit would be formulaically derived, and would carry with it formal signed recognition in the facility, as well as recognition in facility publications and visitor guides. Other endowment could be raised on a more traditional philanthropic basis.
- **Corporate Sponsorships** – Corporations are increasingly viewing sponsorship of first rate cultural and educational institutions as a way to meet their charitable obligations, while gaining positive publicity and public recognition. In the case of Steam Pump Ranch, there are a number of corporations that have a strong local presence which would be good prospects to become ongoing donors and /or sponsors of the Ranch. The tying of specific exhibits or programs to their sponsors allows the sponsor to have on-site recognition. This approach has yielded significant results for many museums and educational attractions.
- **Gifts In-Kind** – Some of the inputs to the operation of Steam Pump Ranch lend themselves to support through gifts in-kind. Other basic supplies and inputs might also be purchased under special arrangements, such as reduced profit margins or even as pure donations. These might range from paper products and printing to professional services.
- **Grants** – There are a wide-variety of grants available from government bodies and from foundations. Many museums and educational attractions receive substantial portions of their annual budgets from such sources. These will be especially useful in funding special educational programs, exhibit reinvestment, and other focused activities. The extent to which such sources of funds are tapped will be based on the ability for the institution to prepare and submit grant applications, and the persuasiveness and targeting of the individual requests.

- **Annual Events** – An annual event is often a way to meet multiple organizational objectives. These include membership development, community recognition, corporate support development, and fund development.
- **Annual Gifts** – A targeted development campaign should focus on regional individuals and foundations. This fundraising task may be undertaken by a Friends group that is affiliated with Steam Pump Ranch.

In summary, virtually all public parks, museums and educational attractions rely on non-earned sources of funds to supplement earned revenues. The amounts that can be gained from these sources will vary based on the individual circumstances of the institution, the support it receives in the community, and the personnel and resources that can be focused on attracting these sources of funds.

Multi-Year Operating Scenario

This analysis is of a small ranch attraction operating with a modest attendance estimate and a robust schedule of community and private events. A preliminary financial pro forma summary for Steam Pump Ranch is presented in **Table V-9**. For the purposes of this analysis, the Full Build-Out Phase is assumed to occur in FY2014-2015, but the exact timing of this phase has yet to be determined.

Table V-9
Multi-Year Revenue and Expense Pro Forma
Steam Pump Ranch

	Year 1	Year 2	Year 3	Year 4 1/	Year 5	Year 6	Year 7 2/
Project Phases	Pre-Opening			Opening			Full Build-Out
Potential Number of Users	1,000	1,000	1,000	15,500	30,000	30,000	60,000
Fiscal Year (July-June)	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	**2012-2013**	**2013-2014**	**2014-2015**
Program Revenue	$0	$0	$0	$39,529	$81,431	$83,873	$142,928
Non-Program Revenue	$0	$0	$0	$25,952	$53,462	$55,066	$214,034
Non-Earned Revenue	$104,406	$107,538	$110,764	$271,368	$441,508	$454,754	$463,496
Total Revenue	**$104,406**	**$107,538**	**$110,764**	**$297,320**	**$494,970**	**$509,819**	**$677,529**
Site Expenses	$90,840	$93,565	$96,372	$220,351	$351,683	$362,233	$449,192
Program Expenses	$10,525	$10,841	$11,166	$68,309	$128,871	$132,737	$208,603
Capital Reserves	$3,041	$3,132	$3,226	$8,660	$14,417	$14,849	$19,734
Total Operating Expenses	**$104,406**	**$107,538**	**$110,764**	**$297,320**	**$494,970**	**$509,819**	**$677,529**
Net Operating Income	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

1/ Steam Pump Ranch is planned to open on February 14, 2012. Revenue and expenses for fiscal year 2011-2012 are assumed to be half of those anticipated for the Pre-Opening Phase and half of those anticipated for the Opening Phase, adjusted for inflation.

2/ The Full Build-Out Phase will occur at a to-be-determined point after the Opening Phase. For the purposes of this analysis, this phase is assumed in Year 7, adjusted for inflation. It could be in a different year. Alternatively, individual component

Source: ConsultEcon, Inc.

Analysis of Operating Scenario and Phasing

The multi-year operating scenario reflects three different revenue and expense estimates for each phase of development. One way to assess the public support (non-earned revenues) required for the site is on a per capita basis. The first three years of operation of Steam Pump Ranch will have very limited public access, but still have carrying costs of around $100,000 to be funded by the Town. Therefore, the cost per user would be very high. Despite the limited usage, this period offers the Town of Oro Valley and its partners the opportunity to establish a detailed interpretive plan for the site through the development of exhibits, programs, events and other activities at Steam Pump Ranch. When the site is open to the public in 2012, the cost per user is expected to fall into line with the experience of other parks and heritage attractions.

Summary

There is a good opportunity to create a major benefit for citizens of Oro Valley. In addition, this project would benefit business community through a favorable amenity and improve the town as a place to live, work and play. Overall, the market and operating analysis indicates that there is a considerable opportunity for the initial and ongoing investment in infrastructure and operations to create a substantial and well-used community asset that enhances the quality of life in Oro Valley and contributes to the local economy.

Construction Cost Consulting
5923 East Pima Street
Tucson, Arizona 85712
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Statement of Probable Cost

Steam Pump Ranch
Master Plan

Oro Valley, Arizona

by Compusult

April 4, 2008

Compusult applies diligence and judgment in locating and using reliable sources of information. This Statement of Probable Cost is made on Compusult's knowledge of the project and experience. Compusult has no control over the costs of labor, equipment or materials or over the contractor's method of pricing. Compusult makes no warranty expressed or implied as to the accuracy of such opinions as compared to the bid or actual costs.

Harold H. McGrath III, CPE
Compusult

Budget Estimate
of
Steam Pump Ranch
Master Plan
for
Poster Frost Associates
by
Compusult, Inc.

Summary of Costs

Landscaping (Per SAGE)	**$2,073,900**
Civil (Per Stantec)	**$458,600**
Pump House	**$264,000**
Pusch Ranch House	**$421,200**
Bunk Houses & Covered Storage	**$219,400**
Garage/Workers' Housing	**$359,500**
Procter/Leiber Residence	**$463,200**
Carlos' House	**$158,700**
Orientation Building	**$65,000**
Restroom Buidlings (2)	**$300,000**
Tack Building	**$80,000**
Chicken Coops	**$36,000**
Construction Costs w/o Escalation	**$4,899,500**
Escalation to 3/2011 (5%/Year)	**$734,900**
CONSTRUCTION COST TOTAL	**$5,634,400**

Note: This estimate is based on current market conditions and excludes asbestos and lead abatement, furniture, fixtures and equipment.

Master Planning Estimate | Last Update----- 4/4/2008

April 4, 2008 | Final Cost--------- **$263,960**

Building Area-------- 975 | Cost / Sq. Ft.----- **$270.73**

Pump House/Blacksmith/Interpretive Exhibits

Description of Sub Items	Quantity/ Amount	Unit Price	Units	Subtotal	**Final Cost**	Cost/ Sq. Ft.
Site Grading/Drainage					**2,400**	$2.46
Regrade @ Foundation	1	1500	Allow.	1500		
Splash Block/Rip Rap	2	450	$/unit	900		
Foundations					**9,750**	$10.00
Underpin/New Footings	975	5.5	$/sq. ft.	5363		
New/Patch Slab-on-grade	975	4.5	$/sq. ft.	4388		
Exterior Walls					**72,000**	$73.85
Repair/Stabilize Existing	1	15000	Allow.	15000		
New Dbl. Adobe Walls	1900	30	$/sq. ft.	57000		
Exterior Doors					**14,500**	$14.87
Barn Door	1	4200	$/unit	4200		
Single Door	4	1700	$/unit	6800		
Door Hardware	4	750	$/unit	3000		
Finish Door	4	125	$/unit	500		
Exterior Windows					**4,350**	$4.46
Window	3	1200	$/unit	3600		
Finish Window	3	250	$/unit	750		
Roof Framing					**11,164**	$11.45
Roof Framing	795	7.5	$/sq. ft.	5963		
Loft Framing	402	6.5	$/sq. ft.	2613		
Roof Sheathing	795	2.25	$/sq. ft.	1789		
Paint/Finish Eve	1	800	Allow.	800		
Roofing					**5,916**	$6.07
Rolled Roof/Corgtd. Metal	1024	3.5	$/sq. ft.	3584		
Flashing	128	6.5	$/ln. ft.	832		
Vent/Chimney	1	1500	$/unit	1500		
Interior Walls					**20,700**	$21.23
Dbl. Adobe Demising Wall	660	30	$/sq. ft.	19800		
Adobe "Column"	1	900	Allow.	900		
Interior Doors					**800**	$0.82
"Belt" Window	1	800	$/unit	800		
Flooring					**926**	$0.95
Seal/Finish Slabs	975	0.95	$/sq. ft.	926		

Ceilings					**2,925**	$3.00
Finish Wood Ceiling	975	3	$/sq. ft.	2925		
Fire Protection					**4,388**	$4.50
Fire Sprinkler System	975	4.5	$/sq. ft.	4388		
Electrical					**13,000**	$13.33
New Service	1	2500	Allow.	2500		
New Lighting	1	3500	Allow.	3500		
New Power	1	3000	Allow.	3000		
FA/Security	1	4000	Allow.	4000		
Contingency	162,819	20.00%		32564	**32,564**	$33.40
Subtotal					**$195,383**	
General Conditions		15.00%			**$29,307**	
Contractor Fee		6.00%			**$13,481**	
Bonds & Insurance		4.00%			**$9,527**	
Sales Tax		6.57%			**$16,261**	
Total Pump House, Blacksmith/Interpretive Exhibits w/o Escalation					**$263,960**	

Master Planning Estimate

Last Update----- 4/4/2008

April 4, 2008

Final Cost--------- **$421,206**

Building Area-------- 1,770

Cost / Sq. Ft.----- **$237.97**

Pusch Ranch House

Description of Sub Items	Quantity/ Amount	Unit Price	Units	Subtotal	**Final Cost**	Cost/ Sq. Ft.
Site Grading/Drainage					**3,800**	$2.15
Regrade @ Foundation	1	2000	Allow.	2000		
Splash Block/Rip Rap	4	450	$/unit	1800		
Demolition					**10,000**	$5.65
Demolish Exist. Additions	1	7500	Allow.	7500		
Demolish Interior	1	2500	Allow.	2500		
Foundations					**17,809**	$10.06
Patch Exist. Slab	1770	2.5	$/sq. ft.	4425		
Porch Slab	1038	5.5	$/sq. ft.	5709		
Porch Post Footing	10	550	$/unit	5500		
Turn-down @ Porch	145	15	$/ln. ft.	2175		

Exterior Walls					**47,145**	$26.64
Repair/Stabilize Existing	1	35000	Allow.	35000		
Stucco Patch	2076	5	$/sq. ft.	10380		
Paint Stucco	2076	0.85	$/sq. ft.	1765		
Exterior Doors					**15,600**	$8.81
Single Door	6	1700	$/unit	10200		
Door Hardware	6	750	$/unit	4500		
Finish Door	6	150	$/unit	900		
Exterior Windows					**14,500**	$8.19
Window	10	1200	$/unit	12000		
Finish Window	10	250	$/unit	2500		
Roof Framing					**26,773**	$15.13
Upgrade Roof Framing	1859	5.5	$/sq. ft.	10225		
Rework Dormer	2	650	$/unit	1300		
Porch Framing	1090	3.5	$/sq. ft.	3815		
Porch Posts	10	300	$/unit	3000		
Roof Sheathing	2948	2.25	$/sq. ft.	6633		
Paint/Finish Eve/Porch	1	1800	Allow.	1800		
Roofing					**25,834**	$14.60
Rolled Roof/Corgtd. Metal	2948	3.5	$/sq. ft.	10318		
Roof Insulation	1859	1.15	$/sq. ft.	2138		
Flashing	212	6.5	$/ln. ft.	1378		
Rework Chimney	6	2000	$/unit	12000		
Interior Walls					**7,785**	$4.40
Patch Walls	1	5500	Allow.	5500		
Paint Walls	2688	0.85	$/sq. ft.	2285		
Interior Doors					**9,990**	$5.64
Single Door	6	1200	$/unit	7200		
Door Hardware	6	350	$/unit	2100		
Finish Door	6	115	$/unit	690		
Flooring					**11,793**	$6.66
Wood Flooring	1170	8.5	$/sq. ft.	9945		
Wood Base	336	5.5	$/ln. ft.	1848		
Ceilings					**6,260**	$3.54
Patch Ceiling	1170	4.5	$/sq. ft.	5265		
Paint Ceiling	1170	0.85	$/sq. ft.	995		
Specialties					**2,500**	$1.41
Tackboard/DMB/Proj. Scr.	1	2500	Allow.	2500		
Fire Protection					**6,638**	$6.81
Fire Sprinkler System	1770	3.75	$/sq. ft.	6638		
HVAC					**23,693**	$13.39
AC/Gas Heat	1770	13	$/sq. ft.	23010		
Climate Control Archive	195	3.5	$/sq. ft.	683		

Electrical					**29,696**	$16.78
Upgrade Service	1	3500	Allow.	3500		
New Lighting	1770	3.5	$/sq. ft.	6195		
New Power	1770	2.5	$/sq. ft.	4425		
Motor Conn./Power	1770	2.75	$/sq. ft.	4868		
Telecomm. R/I	1770	1.8	$/sq. ft.	3186		
FA/Security	1770	4.25	$/sq. ft.	7523		
Contingency	259,813	20.00%		51963	**51,963**	$29.36
Subtotal					**$311,776**	
General Conditions		15.00%			**$46,766**	
Contractor Fee		6.00%			**$21,513**	
Bonds & Insurance		4.00%			**$15,202**	
Sales Tax		6.57%			**$25,949**	
Total Pusch Ranch House w/o Escalation					**$421,206**	

Master Planning Estimate Last Update----- 4/4/2008

April 4, 2008 Final Cost--------- **$219,411**

Building Area-------- 679 Cost / Sq. Ft.----- **$323.14**

Bunk Houses and Covered Storage

Description of Sub Items	Quantity/ Amount	Unit Price	Units	Subtotal	**Final Cost**	Cost/ Sq. Ft.
Site Grading/Drainage					**2,400**	$1.36
Regrade @ Foundation	1	1500	Allow.	1500		
Splash Block/Rip Rap	2	450	$/unit	900		
Demolition					**3,060**	$1.73
Demo Slab for Plumbing	312	2.5	$/sq. ft.	780		
Demo Slab @ Cover	912	2.5	$/sq. ft.	2280		
Foundations					**3,612**	$2.04
Patch Exist. E Slab	341	2.5	$/sq. ft.	853		
New W Slab	338	5.5	$/sq. ft.	1859		
Post Footing	2	450	$/unit	900		

Exterior Walls					**23,658**	$13.37
Repair/Stabilize Existing	1	15000	Allow.	15000		
Stucco Patch	1480	5	$/sq. ft.	7400		
Paint Stucco	1480	0.85	$/sq. ft.	1258		
Exterior Doors					**10,400**	$5.88
Single Door	4	1700	$/unit	6800		
Door Hardware	4	750	$/unit	3000		
Finish Door	4	150	$/unit	600		
Exterior Windows					**4,200**	$2.37
Repair Exist. Window	7	350	$/unit	2450		
Finish Window	7	250	$/unit	1750		
Roof Framing					**12,180**	$6.88
Upgrade Roof Framing	624	5.5	$/sq. ft.	3432		
Covered Storage Framing	912	3.5	$/sq. ft.	3192		
Covered Storage Posts	2	300	$/unit	600		
Roof Sheathing	1536	2.25	$/sq. ft.	3456		
Paint/Finish Storage	1	1500	Allow.	1500		
Roofing					**7,533**	$4.26
Rolled Roof/Corgtd. Metal	1613	3.5	$/sq. ft.	5646		
Roof Insulation	624	1.15	$/sq. ft.	718		
Flashing	180	6.5	$/ln. ft.	1170		
Interior Walls					**3,984**	$2.25
Patch Walls	1	2500	Allow.	2500		
Paint Walls	1746	0.85	$/sq. ft.	1484		
Interior Doors					**5,110**	$2.89
Single Door	3	1200	$/unit	3600		
Door Hardware	3	350	$/unit	1050		
Finish Door	4	115	$/unit	460		
Flooring					**645**	$0.36
Seal Concrete	679	0.95	$/sq. ft.	645		
Ceilings					**2,472**	$1.40
Patch Ceiling	462	4.5	$/sq. ft.	2079		
Paint Ceiling	462	0.85	$/sq. ft.	393		
Specialties					**5,065**	$2.86
HC Toilet Partition	2	550	$/unit	1100		
Reg. Toilet Partition	1	450	$/unit	450		
Bath Accessories	1	3200	Allow.	3200		
Vanity Top	7	45	$/ln. ft.	315		
Plumbing					**22,400**	$12.66
Fixture	8	2800	$/unit	22400		
Fire Protection					**7,245**	$7.43
Fire Sprinkler System	1610	4.5	$/sq. ft.	7245		

HVAC					**8,827**	$4.99
AC/Gas Heat	679	13	$/sq. ft.	8827		
Electrical					**12,549**	$7.09
Upgrade Service	1	2500	Allow.	2500		
New Lighting	679	3.5	$/sq. ft.	2377		
New Power	679	2.5	$/sq. ft.	1698		
Motor Conn./Power	679	2.75	$/sq. ft.	1867		
Telecomm. R/I	679	1.8	$/sq. ft.	1222		
FA/Security	679	4.25	$/sq. ft.	2886		
Contingency	135,340	20.00%		27068	**27,068**	$15.29
Subtotal					**$162,408**	
General Conditions		15.00%			**$24,361**	
Contractor Fee		6.00%			**$11,206**	
Bonds & Insurance		4.00%			**$7,919**	
Sales Tax		6.57%			**$13,517**	
Total Bunk Houses & Covered Storage w/o Escalation					**$219,411**	

Master Planning Estimate Last Update----- 4/4/2008

April 4, 2008 Final Cost--------- **$359,536**

Building Area-------- 1,885 Cost / Sq. Ft.----- **$190.74**

Garage and Workers' Housing

Description of Sub Items	Quantity/ Amount	Unit Price	Units	Subtotal	**Final Cost**	Cost/ Sq. Ft.
Site Grading/Drainage					**5,200**	$2.94
Regrade @ Foundation	1	2500	Allow.	2500		
Splash Block/Rip Rap	6	450	$/unit	2700		
Demolition					**3,800**	$2.15
Demo Slab for Plumbing	120	2.5	$/sq. ft.	300		
Demo New Opening	1	3500	Allow.	3500		
Foundations					**660**	$0.37
Patch Slab @ Plumbing	120	5.5	$/sq. ft.	660		

Exterior Walls					**42,035**	$23.75
Repair/Stabilize Existing	1	25000	Allow.	25000		
Stucco Patch	2912	5	$/sq. ft.	14560		
Paint Stucco	2912	0.85	$/sq. ft.	2475		
Exterior Doors					**14,000**	$7.91
Single Door	4	1700	$/unit	6800		
Door Hardware	6	750	$/unit	4500		
Finish Door	6	150	$/unit	900		
Garage Door	2	900	$/unit	1800		
Exterior Windows					**15,950**	$9.01
Window	11	1200	$/unit	13200		
Finish Window	11	250	$/unit	2750		
Roof Framing					**16,837**	$9.51
Upgrade Roof Framing	1979	5.5	$/sq. ft.	10885		
Roof Sheathing	1979	2.25	$/sq. ft.	4453		
Paint/Finish Soffit	1	1500	Allow.	1500		
Roofing					**10,117**	$5.72
Built-up/Membrane	1885	3.5	$/sq. ft.	6598		
Roof Insulation	1885	1.15	$/sq. ft.	2168		
Flashing	208	6.5	$/ln. ft.	1352		
Interior Walls					**7,187**	$4.06
Patch Walls	1	3500	Allow.	3500		
Paint Walls	4338	0.85	$/sq. ft.	3687		
Interior Doors					**5,225**	$2.95
Single Door	3	1200	$/unit	3600		
Door Hardware	3	350	$/unit	1050		
Finish Door	5	115	$/unit	575		
Flooring					**9,601**	$5.42
Seal Concrete	1477	6.5	$/sq. ft.	9601		
Ceilings					**9,379**	$5.30
Patch Ceiling	1477	5.5	$/sq. ft.	8124		
Paint Ceiling	1477	0.85	$/sq. ft.	1255		
Specialties					**7,110**	$4.02
Tackboard/DMB/Proj. Scr.	1	2500	$/unit	2500		
Bath Accessories	1	2000	Allow.	2000		
Lower	10	185	$/ln. ft.	1850		
Upper	7	85	$/ln. ft.	595		
Shelving	3	55	$/ln. ft.	165		
Equipment					**3,000**	$1.69
Residential Kitchen Equip.	1	3000	Allow.	3000		
Plumbing					**8,400**	$4.75
Fixture	3	2800	$/unit	8400		

Fire Protection					**7,069**	$7.25
Fire Sprinkler System	1885	3.75	$/sq. ft.	7069		
HVAC					**24,505**	$13.84
AC/Gas Heat	1885	13	$/sq. ft.	24505		
Electrical					**31,698**	$17.91
Upgrade Service	1	3800	Allow.	3800		
New Lighting	1885	3.5	$/sq. ft.	6598		
New Power	1885	2.5	$/sq. ft.	4713		
Motor Conn./Power	1885	2.75	$/sq. ft.	5184		
Telecomm. R/I	1885	1.8	$/sq. ft.	3393		
FA/Security	1885	4.25	$/sq. ft.	8011		
Contingency	221,773	20.00%		44355	**44,355**	$25.06
Subtotal					**$266,128**	
General Conditions		15.00%			**$39,919**	
Contractor Fee		6.00%			**$18,363**	
Bonds & Insurance		4.00%			**$12,976**	
Sales Tax		6.57%			**$22,149**	
Total Garage & Workers' Housing w/o Escalation					**$359,536**	

Master Planning Estimate Last Update----- 4/4/2008

April 4, 2008 Final Cost--------- **$463,212**

Building Area-------- 2,617 Cost / Sq. Ft.----- **$177.00**

Procter/Leiber Residence

Description of Sub Items	Quantity/ Amount	Unit Price	Units	Subtotal	**Final Cost**	Cost/ Sq. Ft.
Site Grading/Drainage					**8,000**	$4.52
Regrade @ Foundation	1	3500	Allow.	3500		
Splash Block/Rip Rap	10	450	$/unit	4500		
Demolition					**13,926**	$7.87
Demo 2nd Floor	1	6500	Allow.	6500		
Demo Porch Enclosures	1	3500	Allow.	3500		
Interior Demolition	2617	1.5	$/sq. ft.	3926		

Foundations					**4,580**	$2.59
Patch Slab	2617	1.75	$/sq. ft.	4580		
Exterior Walls					**32,938**	$18.61
Repair/Stabilize Existing	1	15000	Allow.	15000		
Restore Porches	1	7500	Allow.	7500		
Stucco Patch	1	5000	$/sq. ft.	5000		
Paint Stucco	6398	0.85	$/sq. ft.	5438		
Exterior Doors					**13,150**	$7.43
Single Door	5	1700	$/unit	8500		
Door Hardware	5	750	$/unit	3750		
Finish Door	6	150	$/unit	900		
Exterior Windows					**25,400**	$14.35
Window	8	1200	$/unit	9600		
Repair Exist. Window	23	350	$/unit	8050		
Finish Window	31	250	$/unit	7750		
Roof Framing					**15,941**	$9.01
Upgrade Roof Framing	2617	3.5	$/sq. ft.	9160		
Roof Sheathing	2617	2.25	$/sq. ft.	5888		
Paint/Finish Porches	940	0.95	$/sq. ft.	893		
Roofing					**18,449**	$10.42
Built-up/Membrane	3557	3.5	$/sq. ft.	12450		
Roof Insulation	2617	1.15	$/sq. ft.	3010		
Flashing	460	6.5	$/ln. ft.	2990		
Interior Walls					**9,466**	$5.35
Patch Walls	1	4500	Allow.	4500		
Paint Walls	5843	0.85	$/sq. ft.	4966		
Interior Doors					**4,020**	$2.27
Single Door	2	1200	$/unit	2400		
Door Hardware	2	350	$/unit	700		
Finish Door	8	115	$/unit	920		
Flooring					**18,591**	$10.50
Flooring	2030	6.5	$/sq. ft.	13195		
Seal/Color Porch Concrete	895	2.25	$/sq. ft.	2014		
Wood Base	615	5.5	$/ln. ft.	3383		
Ceilings					**6,801**	$3.84
Patch Ceiling	2030	2.5	$/sq. ft.	5075		
Paint Ceiling	2030	0.85	$/sq. ft.	1726		
Specialties					**6,000**	$3.39
Bath Accessories	1	2000	Allow.	2000		
Lower	14	185	$/ln. ft.	2590		
Upper	14	85	$/ln. ft.	1190		
Shelving	4	55	$/ln. ft.	220		

Equipment					**10,000**	$5.65
Residential Kitchen Equip.	1	10000	Allow.	10000		
Plumbing					**8,400**	$4.75
Fixture	3	2800	$/unit	8400		
Fire Protection					**13,106**	$13.44
Fire Sprinkler System	3495	3.75	$/sq. ft.	13106		
HVAC					**34,832**	$19.68
AC/Gas Heat	2576	13	$/sq. ft.	33488		
Climate Control Archive	384	3.5	$/sq. ft.	1344		
Electrical					**42,125**	$23.80
Upgrade Service	1	4000	Allow.	4000		
New Lighting	2576	3.5	$/sq. ft.	9016		
New Power	2576	2.5	$/sq. ft.	6440		
Motor Conn./Power	2576	2.75	$/sq. ft.	7084		
Telecomm. R/I	2576	1.8	$/sq. ft.	4637		
FA/Security	2576	4.25	$/sq. ft.	10948		
Contingency	285,724	20.00%		57145	**57,145**	$32.29
Subtotal					**$342,869**	
General Conditions		15.00%			**$51,430**	
Contractor Fee		6.00%			**$23,658**	
Bonds & Insurance		4.00%			**$16,718**	
Sales Tax		6.57%			**$28,536**	
Total Procter/Leiber Residence w/o Escalation					**$463,212**	

Master Planning Estimate

Last Update----- 4/4/2008

April 4, 2008

Final Cost--------- **$158,694**

Building Area-------- 501

Cost / Sq. Ft.----- **$316.75**

Carlos' House

Description of Sub Items	Quantity/ Amount	Unit Price	Units	Subtotal	**Final Cost**	Cost/ Sq. Ft.
Site Grading/Drainage					**1,900**	$1.07
Regrade @ Foundation	1	1000	Allow.	1000		
Splash Block/Rip Rap	2	450	$/unit	900		

Demolition					**3,885**	$2.19
Demo Porch Enclosure	1	2500	Allow.	2500		
Interior Demolition	923	1.5	$/sq. ft.	1385		
Foundations					**1,615**	$0.91
Patch Cracked Slab	923	1.75	$/sq. ft.	1615		
Exterior Walls					**14,683**	$8.30
Repair/Stabilize Existing	1	7000	Allow.	7000		
Clean/Rehab BBQ	1	3500	Allow.	3500		
Stucco Patch	1	2000	$/sq. ft.	2000		
Paint Stucco	2568	0.85	$/sq. ft.	2183		
Exterior Doors					**7,800**	$4.41
Single Door	3	1700	$/unit	5100		
Door Hardware	3	750	$/unit	2250		
Finish Door	3	150	$/unit	450		
Exterior Windows					**5,650**	$3.19
Window	1	1200	$/unit	1200		
Repair Exist. Window	7	350	$/unit	2450		
Finish Window	8	250	$/unit	2000		
Roof Framing					**5,713**	$3.23
Upgrade Roof Framing	923	3.5	$/sq. ft.	3231		
Roof Sheathing	923	2.25	$/sq. ft.	2077		
Paint/Finish Porches	427	0.95	$/sq. ft.	406		
Roofing					**4,962**	$2.80
Rolled Roof/Corgtd. Metal	969	3.5	$/sq. ft.	3392		
Roof Insulation	501	1.15	$/sq. ft.	576		
Flashing	153	6.5	$/ln. ft.	995		
Interior Walls					**3,066**	$1.73
Patch Walls	1	2000	Allow.	2000		
Paint Walls	1254	0.85	$/sq. ft.	1066		
Flooring					**3,161**	$1.79
Flooring	360	6.5	$/sq. ft.	2340		
Seal/Color BBQ Concrete	365	2.25	$/sq. ft.	821		
Ceilings					**1,206**	$0.68
Patch Ceiling	360	2.5	$/sq. ft.	900		
Paint Ceiling	360	0.85	$/sq. ft.	306		
Specialties					**5,710**	$3.23
Bath Accessories	1	1000	Allow.	1000		
Lower	15	185	$/ln. ft.	2775		
Upper	15	85	$/ln. ft.	1275		
Shelving	12	55	$/ln. ft.	660		
Equipment					**4,000**	$2.26
Residential Kitchen Equip.	1	4000	Allow.	4000		

Plumbing					**8,400**	$4.75
Fixture	3	2800	$/unit	8400		
Fire Protection					**3,428**	$3.52
Fire Sprinkler System	914	3.75	$/sq. ft.	3428		
HVAC					**6,682**	$3.78
AC/Gas Heat	514	13	$/sq. ft.	6682		
Electrical					**16,027**	$9.05
Upgrade Service	1	2500	Allow.	2500		
New Lighting	914	3.5	$/sq. ft.	3199		
New Power	914	2.5	$/sq. ft.	2285		
Motor Conn./Power	914	2.75	$/sq. ft.	2514		
Telecomm. R/I	914	1.8	$/sq. ft.	1645		
FA/Security	914	4.25	$/sq. ft.	3885		
Contingency	97,887	20.00%		19577	**19,577**	$11.06
Subtotal					**$117,465**	
General Conditions		15.00%			**$17,620**	
Contractor Fee		6.00%			**$8,105**	
Bonds & Insurance		4.00%			**$5,728**	
Sales Tax		6.57%			**$9,776**	
Total Carlos' House w/o Escalation					**$158,694**	

PRELIMINARY CONSTRUCTION OPINION OF PROBABLE COSTS

Project : Steam Pump Historic Park
Stantec Project No: 185622836
Prepared by: BSH
Date: 03/19/2008

Construction Costs Parameters:

* Historic Park gross area of approx.. 15.5 acres
* Public onsite sanitary sewer and water system
* Onsite grading and drainage improvements

Category	Description	Quantity	Units Type	Unit Price	Total
Onsite					
Mobilization	Mobilization	1	LS	$ 35,861.75	$ 35,862
				Subtotal	$ 35,862
Demolition	Demolition of Buildings *	1	LS	$ 10,800.00	$ 10,800
	Removal of Debris from Site *	1	LS	$ 14,500.00	$ 14,500
	Septic System Demolition	1	LS	$ 2,000.00	$ 2,000
				Subtotal	$ 27,300
Earthwork	Entry Roadway Grading	800	CY	$ 5.25	$ 4,200
	Onsite Grading	1,500	CY	$ 4.50	$ 6,750
				Subtotal	$ 10,950
Public Sewer	8" SDR-35 Main	890	LF	$ 33.50	$ 29,815
	4' Diameter Manhole	5	EA	$ 3,200.00	$ 16,000
	4" HCS	410	EA	$ 22.50	$ 9,225
				Subtotal	$ 55,040
Public Water (Potable)	8" PVC	1,980	LF	$ 29.50	$ 58,410
	8" Valve, B&C	5	EA	$ 885.00	$ 4,425
	1" Private Serive Line	630	EA	$ 8.50	$ 5,355
	1" Irrigation Service	2	EA	$ 800.00	$ 1,600
	1" Service	5	EA	$ 800.00	$ 4,000
				Subtotal	$ 73,790
Public Water (Fire)	6" D.I.P.	60	LF	$ 45.00	$ 2,700
	4" Fire Service	535	LF	$ 22.00	$ 11,770
	6" Valve, B&C	3	EA	$ 675.00	$ 2,025
	Fire Hydrant	3	EA	$ 2,400.00	$ 7,200
				Subtotal	$ 23,695
Utilities	Trench (Joint) *	2,970	LF	$ 3.50	$ 10,395
	Backfill *	2,970	LF	$ 3.50	$ 10,395
	Dirt Transformer Pads *	1	EA	$ 300.00	$ 300
				Subtotal	$ 21,090
Drainage	Drainage Channel (North)	570	LF	$ 3.25	$ 1,853
	Drainage Channel (South)	1,200	LF	$ 3.75	$ 4,500
	Dumped Rock Riprap, 6", 1' Thick	70	CY	$ 235.00	$ 16,450
	1' x 3' Toedown	400	LF	$ 130.00	$ 52,000
	4' Headwall	100	LF	$ 235.00	$ 23,500
	24 Inch RCP	510	LF	$ 95.00	$ 48,450
				Subtotal	$ 146,753

PRELIMINARY CONSTRUCTION OPINION OF PROBABLE COSTS

Project : Steam Pump Historic Park
Stantec Project No: 185622836
Prepared by: BSH
Date: 03/19/2008

Summary						
Onsite	Mobilization				$	35,862
	Demolition				$	27,300
	Earthwork				$	10,950
	Public Sewer				$	55,040
	Public Water (Potable)				$	73,790
	Public Water (Fire)				$	23,695
	Utilities				$	21,090
	Drainage				$	146,753
				Subtotal	$	358,618
Contingency				20%	$	71,724
				Total	$	430,341
Sales Tax				6.57%	$	28,273
				Total	$	458,614

Note: This is a opinion of probable costs based upon a conceptual site layout, before review and approval by local review agencies. Items excluded from this estimate include but are not limited to environmental remediation, rock excavation, street lights, perimeter walls, and landscape and irrigation concerns. This estimate should not be construed as an exact value estimate. Stantec Consulting does not guarantee that eventual proposals, bids or actual construction costs/quantities will not vary from this estimate.

* Item quantity is assumed due to lack of information.

Assumptions: Existing utilities are assumed to be abandoned in place. Onsite power poles are assumed to be removed by TEP and not included in cost estimate. Grading for landscape features are not included in the cost estimate.

STEAM PUMP RANCH MASTER PLAN
PRELIMINARY LANDSCAPE COST ESTIMATE
Based on 04/08 plan

04/04/08

LANDSCAPE ELEMENTS (Materials & Installation)	ESTIMATED AREA / QUANTITY		ESTIMATED COST PER UNIT	ESTIMATED COST IN DOLLARS
PLANTING *				
	520,400	SF	0.75	$390,300
IRRIGATION **				
	520,400	SF	0.75	$390,300
ACCESS LANES/CORRAL/OVERFLOW	79,705	SF		
Stabilized Soil			0.15	$11,956
OPEN GROUND/PATHWAYS	200,475	SF		
Stabilized Soil			0.15	$30,071
DRIVE LANES	50,375	SF		
GravelPave2			4.40	$221,650
PARKING	12,155	SF		
GravelPave2			4.40	$53,482
ENTRY GATE & SIGN	1	LS	55,000.00	$55,000
CORRAL 2' thick retaque	630	LF	96.25	$60,638
SITE FENCING - DECORATIVE	3000	LF	50.00	$150,000
SITE FENCING - SECURITY	1000	LF	25.00	$25,000
SITE FURNISHING BUDGET ***	Lump Sum		55,000.00	$55,000
INTERPRETIVE & STANDARD RAMADA OR SHADE STRUCTURE no electric, w/ pad	6	EA	25,000.00	$150,000
SITE LIGHTING & OUTLETS parking, night use & security	Lump Sum		145,000.00	$145,000
WATER HARVESTING BUDGET	Lump Sum		30,000.00	$30,000
CROPS / COMMUNITY GARDEN grading, irrigation, soil prep, initial seed	1	AC	35,000.00	$35,000
CONTRACTOR FEES, OVERHEAD, TAXES, CONTINGENCY, etc.	Lump Sum		270,509.48	$270,509.48
			TOTAL	**$2,073,906**

* Includes: 12 acres of plants, seeding, fine grading, turf & mulch
** Includes: 12 acres of new irrigation
*** Includes: benches, picnic tables, trash receptacles, bike racks, grills, park signs, & water fountains

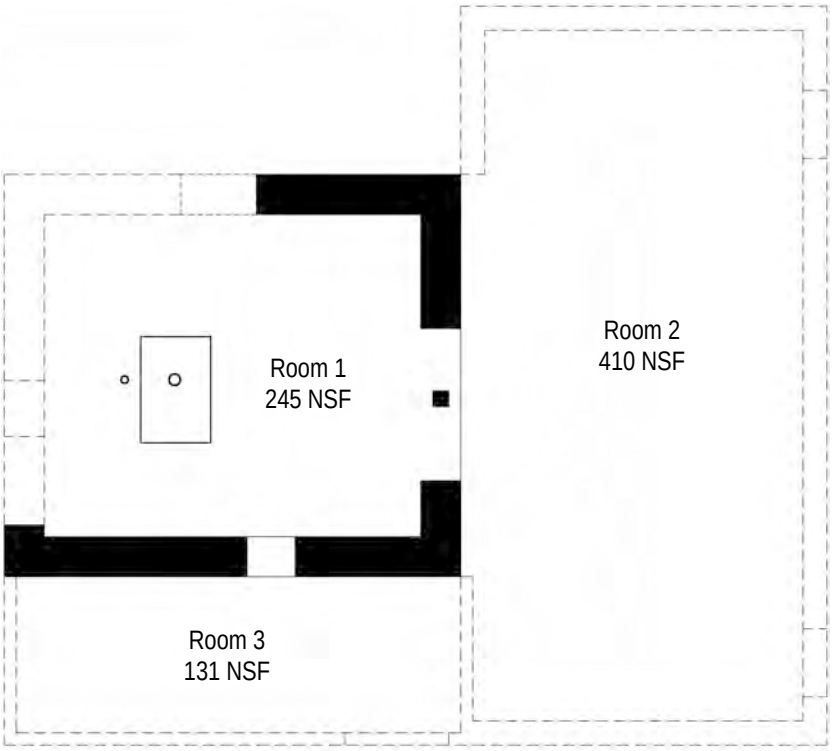
Appendix

Existing Building Plans

Secretary of the Interior's Standards for Historic Preservation

Existing Plant Inventory

Pusch and Procter Era Plants

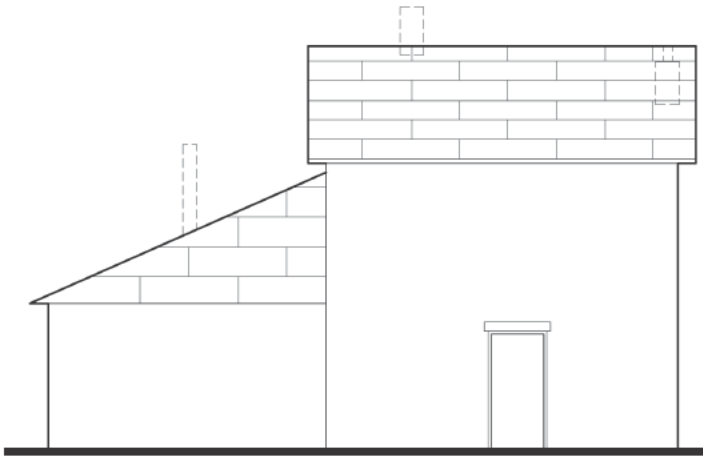


Pump House - Existing Plan
974 GSF

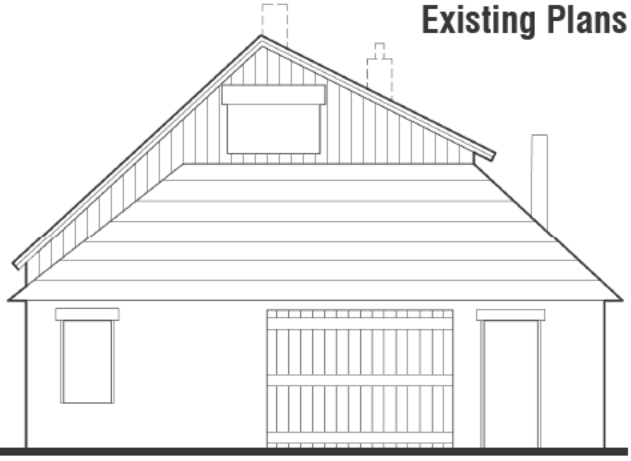
0 1 2 4 8

Scale in feet

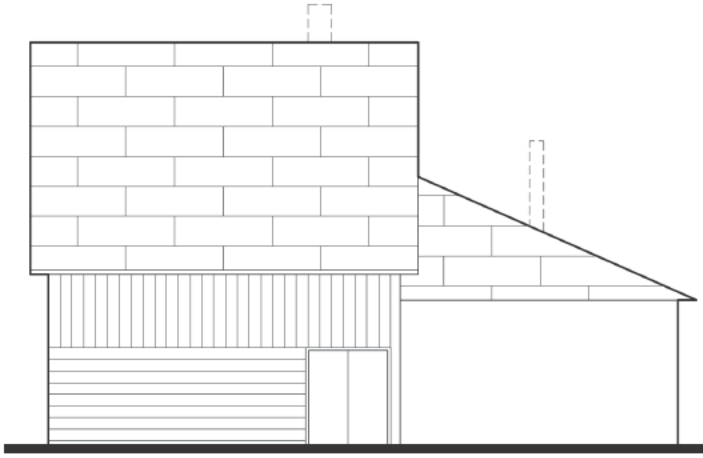
Plan
North



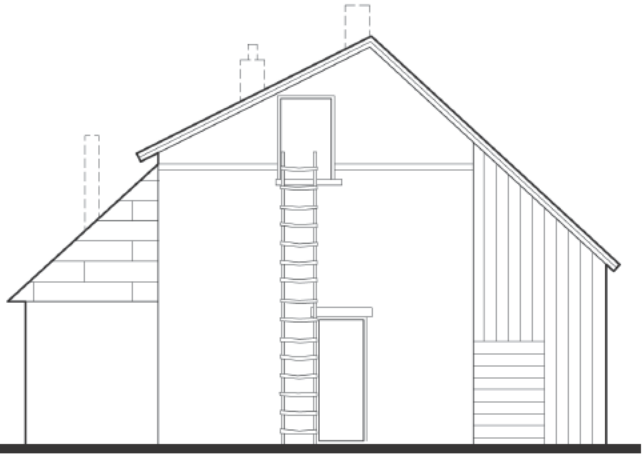
North



East

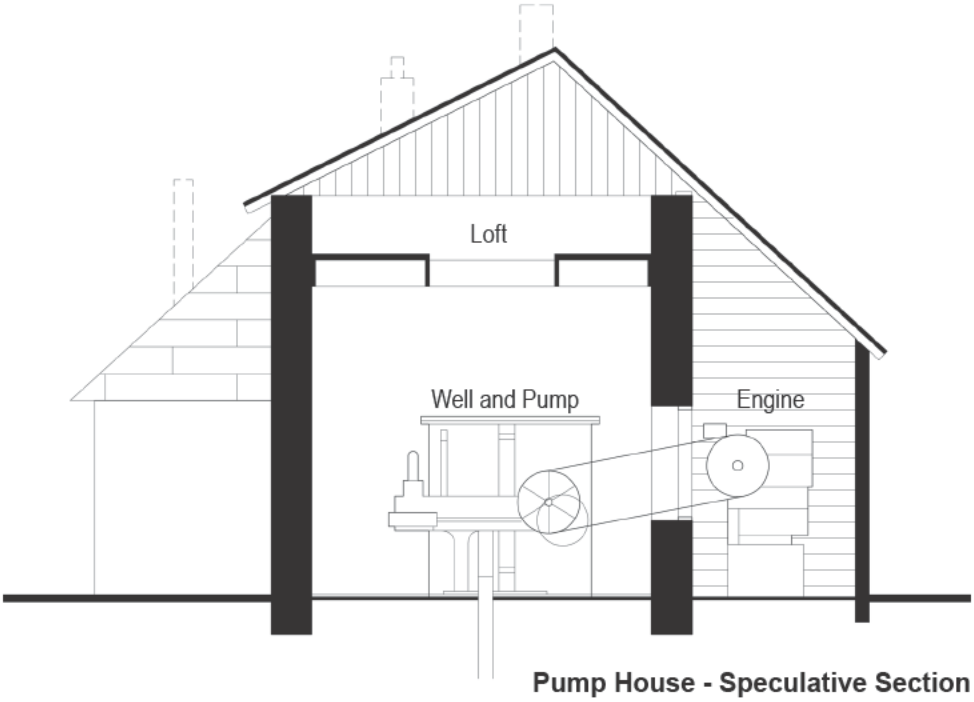


South

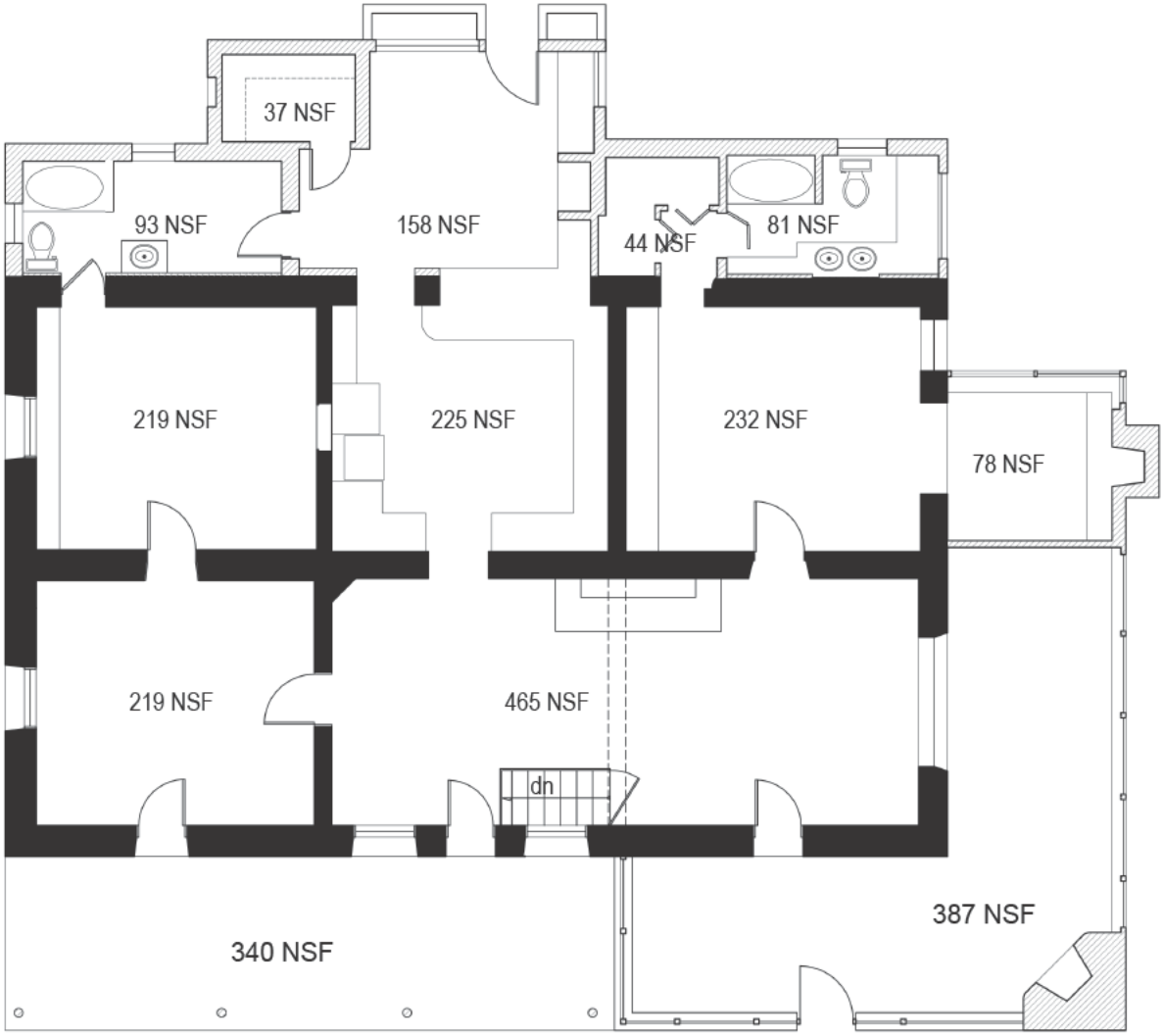


West

Pump House - Speculative Elevations



Pump House - Speculative Section Looking East

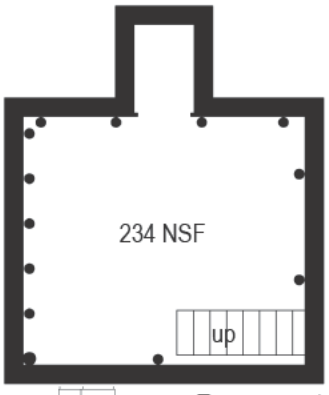


Pusch Ranch House - Existing
First Floor Plan
3,206 GSF (under roof)

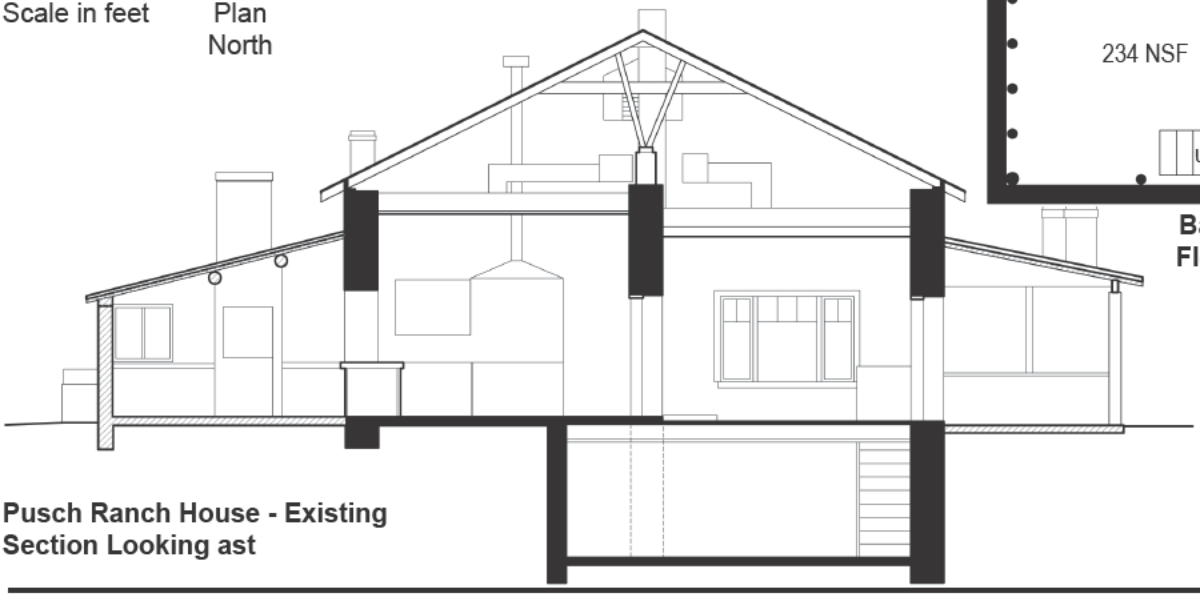
0 1 2 4 8

Scale in feet

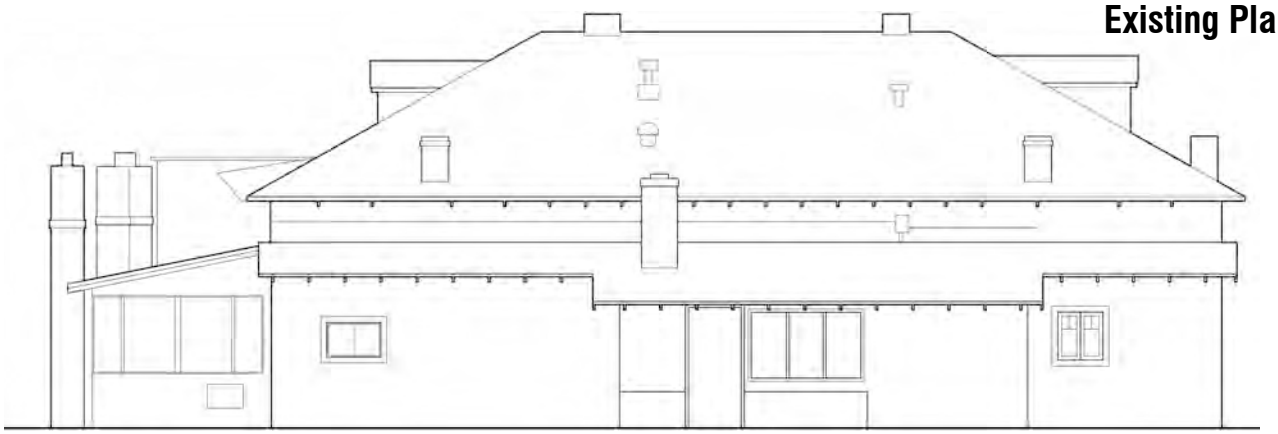
Plan North



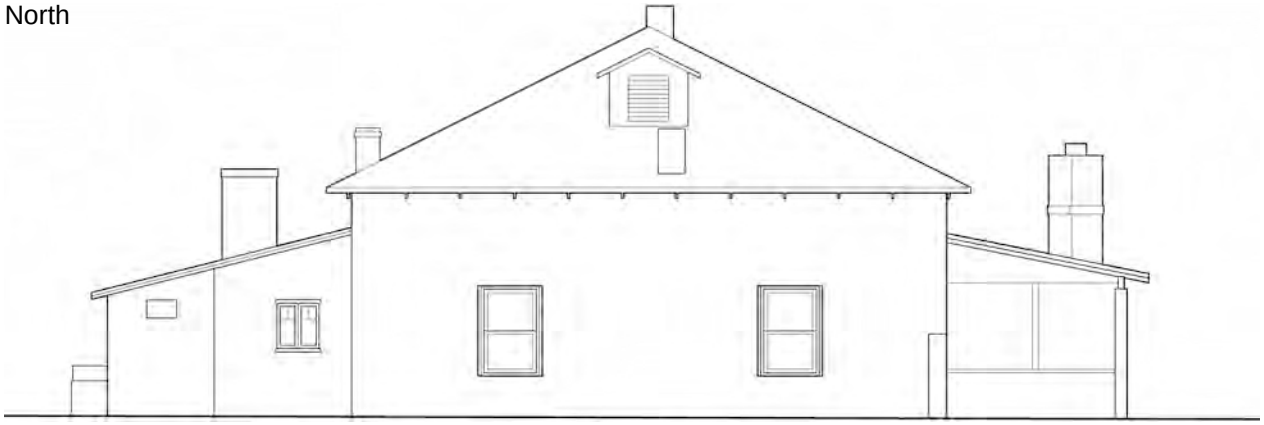
Basement Floor Plan



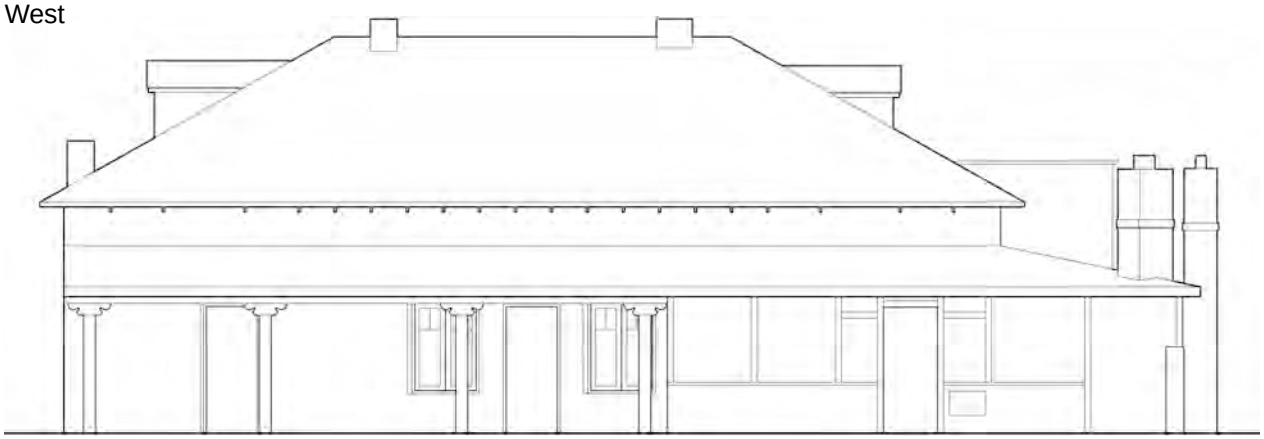
Pusch Ranch House - Existing
Section Looking ast



North



West

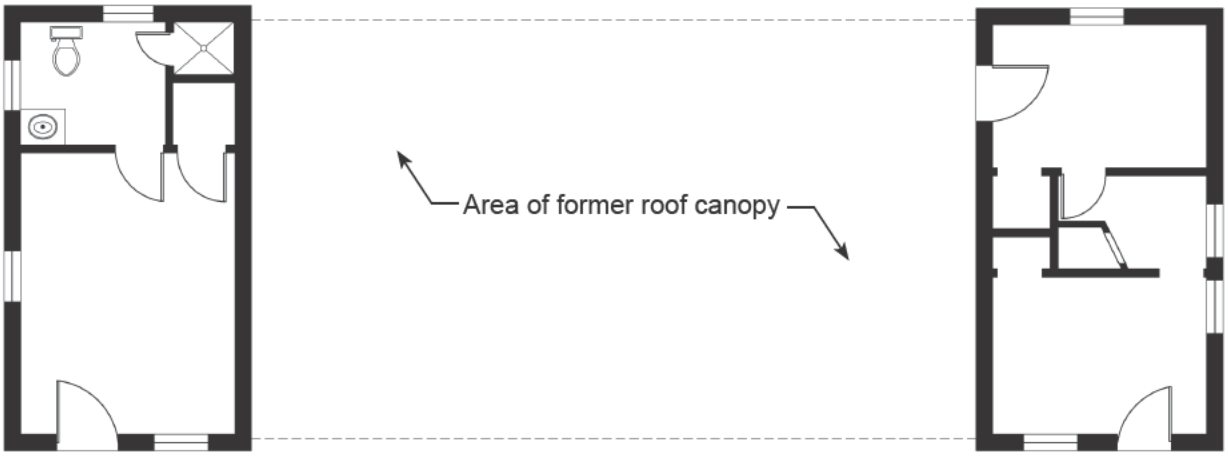


South

East

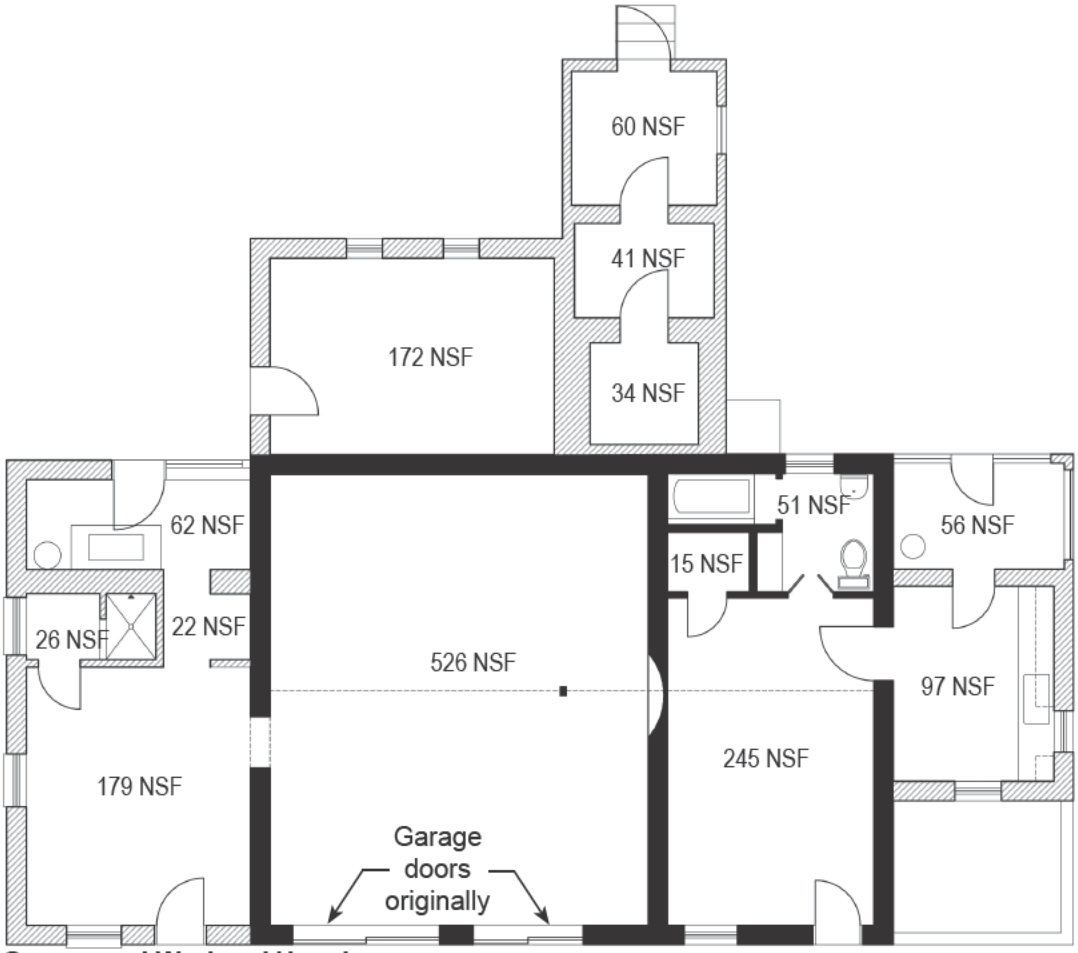
0 1 2 4 8

Pusch Ranch House
Existing Elevations



Bunk Houses - Existing Floor Plan
339 GSF

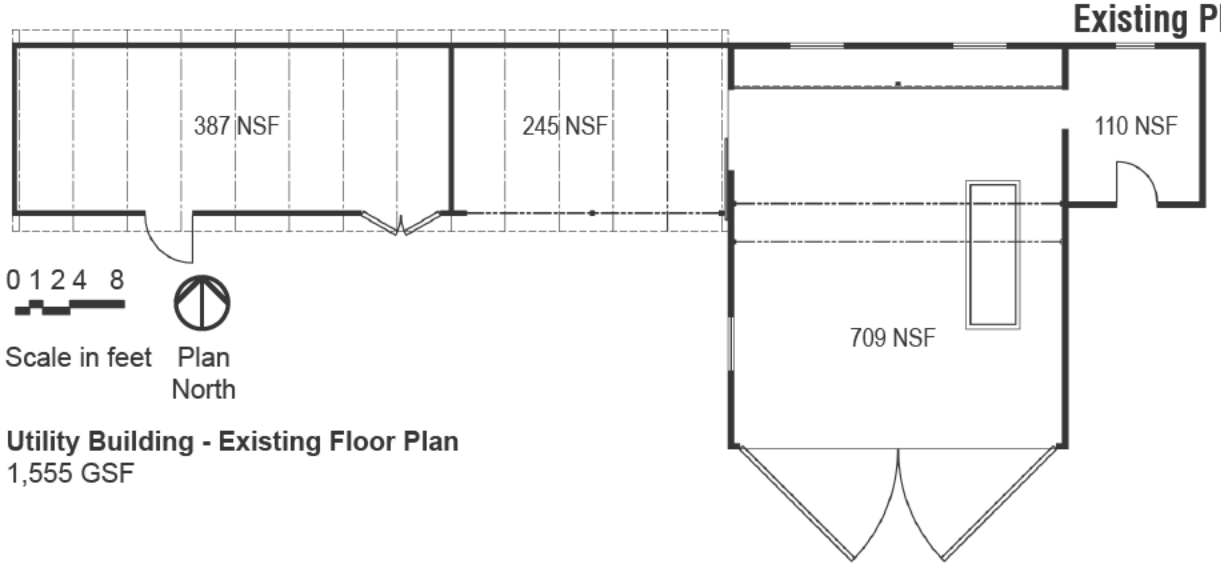
336 GSF



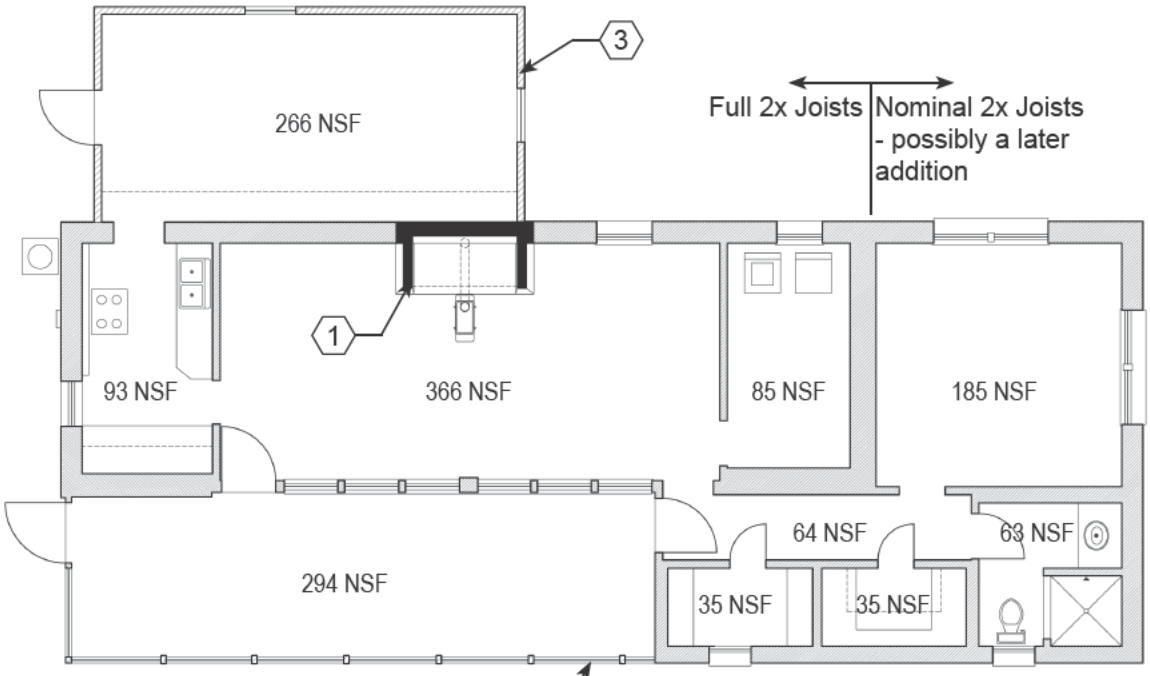
Garage and Workers' Housing - Existing Floor Plan
1,936 GSF

0 1 2 4 8
Scale in feet

Plan North



Utility Building - Existing Floor Plan
1,555 GSF

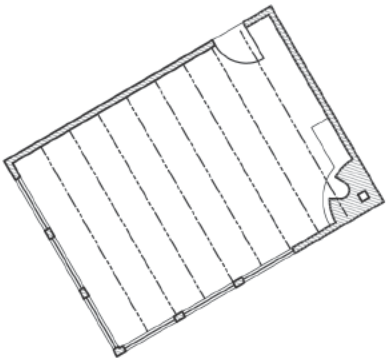


Carlos' House / Former BBQ
1,754 GSF (under roof)

0 1 2 4 8
Scale in feet
Plan North

Keynotes

1. Fireplace converted from original barbecue
2. Porch added, possibly 1970s
3. Room added around 1980



Existing Second Floor Plan
482 GSF (Added in 1985)

Keynotes

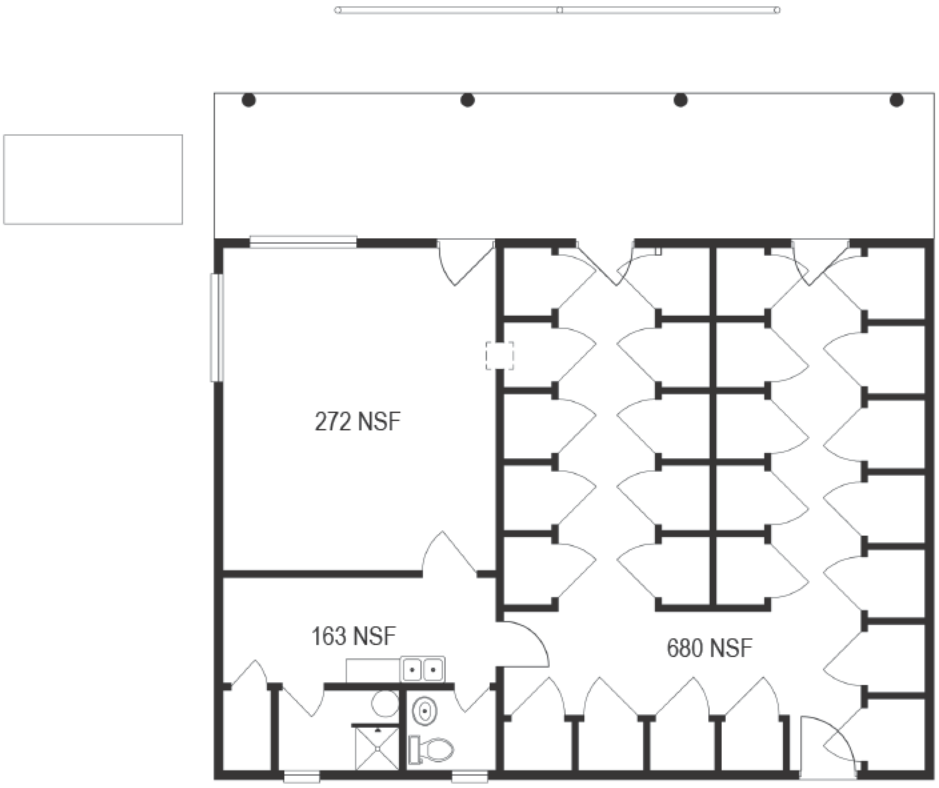
1. Master bedroom addition 637 GSF (added late 1980s).
2. Settlement below fireplace on second floor.
3. Porch added in the late 1970s.
4. Possibly an original carport. Enclosed at an unknown date.
5. Original sun porch. Enclosed after 1970.

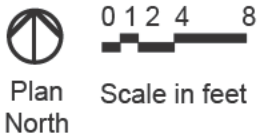
Procter / Leiber House- Existing First Floor Plan
4,833 GSF (under roof)

0 1 2 4 8

Scale in feet

Plan North





Tack Building /
Proposed Caretaker's Residence
Existing Floor Plan
1,525 GSF (under roof)

Secretary of the Interior's Standards

PRESERVATION

PRESERVATION is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Preservation should be used as a treatment:

- when the property's distinctive materials, features, and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement
- when depiction at a particular period of time is not appropriate
- when a continuing or new use does not require additions or extensive alterations
-

Basic Principles of Preservation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.
2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

REHABILITATION

REHABILITATION is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Rehabilitation may be considered as a Treatment:

- when repair and replacement of deteriorated features are necessary
- when alterations or additions to the property are planned for a new or continued use
- when its depiction at a particular period of time is not appropriate

Basic Principles of Rehabilitation

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Secretary of the Interior's Standards

RESTORATION

RESTORATION is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Restoration may be considered as a treatment (Prior to undertaking work, a particular period of time, i.e., the restoration period, should be selected and justified, and a documentation plan for Restoration developed.)

- when the property's distinctive materials, features, and spaces are
- when the property's design, architectural, or historical significance during a particular period of time outweighs the potential loss of extant materials, features, spaces, and finishes that characterize other historical periods
- when there is substantial physical and documentary evidence for the work
- when contemporary alterations and additions are not planned

Basic Principles of Restoration

1. A property will be used as it was historically or be given a new use which reflects the property's restoration period.
2. Materials and features from the restoration period will be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period will not be undertaken.
3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Materials, features, spaces, and finishes that characterize other historical periods will be documented prior to their alteration or removal.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period will be preserved.
6. Deteriorated features from the restoration period will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials.
7. Replacement of missing features from the restoration period will be substantiated by documentary and physical evidence. A false sense of history will not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically.
8. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
9. Archeological resources affected by a project will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
10. Designs that were never executed historically will not be constructed.

RECONSTRUCTION

RECONSTRUCTION is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

Reconstruction may be considered as a Treatment

- when a contemporary depiction is required to understand and interpret a property's historic value (including the re-creation of missing components in a historic district or site)
- when no other property with the same associative value has survived
- and when sufficient historical documentation exists to ensure an accurate reproduction

Basic Principles of Reconstruction

1. Reconstruction will be used to depict vanished or non-surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property.
2. Reconstruction of a landscape, building, structure, or object in its historic location will be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures will be undertaken.
3. Reconstruction will include measures to preserve any remaining historic materials, features, and spatial relationships.
4. Reconstruction will be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural designs or the availability of different features from other historic properties. A reconstructed property will re-create the appearance of the non-surviving historic property in materials, design, color, and texture.
5. A reconstruction will be clearly identified as a contemporary re-creation.
6. Designs that were never executed historically will not be constructed.

ID #	Genus & Species	Common Name	Trunk Caliper (Inches)	Height (Feet)	# Trunks	Viability	Comments (Health, Age, Form, Context, etc.)	Transplantability	Maintenance Notes
T-1	Ligustrum japonicum	Privet	7	15	2	H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-2	Ligustrum japonicum	Privet	12	19	3	H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-3	Ligustrum japonicum	Privet	3	18	1	H	Very close to building; Trimmed to tree form	M	Keep off roof of building
T-4	Ligustrum japonicum	Privet	9	17	4	H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-5	Ligustrum japonicum	Privet	8	19	4	H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-6	Ligustrum japonicum	Privet	3	15	1	H	Very close to building; Trimmed to tree form	M	Keep off roof of building
T-7	Ligustrum japonicum	Privet	6	20		H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-8	Ligustrum japonicum	Privet	6	20		H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-9	Ligustrum japonicum	Privet	8	19		H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-10	Ligustrum japonicum	Privet	7	20		H	Very close to building; Trimmed to tree form	L	Keep off roof of building
T-11	Ligustrum japonicum	Privet	6	1	8	L	Chopped down to 1 foot; New growth noted	L	
T-12	Ligustrum japonicum	Privet	10	1	2	L	Chopped down to 1 foot; New growth possible	L	
T-13	Ligustrum japonicum	Privet	5	1	5	L	Chopped down to 1 foot; New growth noted	L	
T-14	Morus spp.	Mulberry	15	16	2	H	Near building entry; Small cactus garden with Aloe and Cereus below	L	
T-15	Melia azedarach	Chinaberry	8	20	2	H	Near building entry	L	
~~T-16~~	~~Morus spp.~~	~~Mulberry~~	~~8~~	~~24~~	~~1~~	~~H~~	~~Healthy~~	~~L~~	
T-17	Populus freemontii	Cottonwood	24	40	1	H	Healthy; Lots of suckering; In lawn	L	
T-18	Populus freemontii	Cottonwood	18	22	1	L	Almost dead; By corrals and new pocket park	L	
T-19	Populus freemontii	Cottonwood	26	18	1	M	One major branch is dead	L	
T-20	Populus freemontii	Cottonwood	7	16	3	M	Sucker from old stump	L	
T-21	Populus freemontii	Cottonwood	20	20	1	L	Half dead	L	
T-22	Prosopis velutina	Velvet Mesquite	36	20	2	M	Low branching; Old	L	Remove mistletoe
T-23	Prosopis velutina	Velvet Mesquite	9	17	3	M	Low branching; Near farm equipment	L	Remove mistletoe
T-24	Populus freemontii	Cottonwood	24	35	1	H	Healthy; Upright	L	
T-25	Prosopis velutina	Velvet Mesquite	28	15	3	M	Very low hanging branches	L	Remove mistletoe
T-26	Prosopis velutina	Velvet Mesquite	26	25	1	M	Branches at 2 feet	L	Remove mistletoe
T-27	Prosopis velutina	Velvet Mesquite	36	22	1	M	Lots of dead branches; Nice form	L	Remove mistletoe
T-28	Populus freemontii	Cottonwood	24	35	1	H	Chainlink around trunk; In corral	L	
T-29	Populus freemontii	Cottonwood	20	28	1	H	Chainlink around trunk; In corral	L	
T-30	Prosopis velutina	Velvet Mesquite	12	18	1	H	Begins row of mesquite along entry drive; Branches at 2 feet	L	
T-31	Parkinsonia florida	Blue Palo Verde	9	18	3	M	Moderate health	L	
T-32	Prosopis velutina	Velvet Mesquite	54	6	2	L	Poor health; Lots of old wood; Some new growth	L	
T-33	Prosopis velutina	Velvet Mesquite	8	15	3	H	Good health	M	
T-34	Prosopis velutina	Velvet Mesquite	4	12	2	H	Healthy; Young	H	
T-35	Prosopis velutina	Velvet Mesquite	2	10	1	H	Healthy; Young	H	
T-37	Prosopis velutina	Velvet Mesquite	20	20	3	M	Old; Some dead wood; Against barbed wire fence	L	Needs trimming; Remove mistletoe
T-38	Prosopis velutina	Velvet Mesquite	6	8	5	M	Leaning; Poor form; Low branching; Dead wood; Against barbed wire fence	L	Remove dead wood
T-39	Prosopis velutina	Velvet Mesquite	6	5	2	M	Pruning damage; Leaning; Against barbed wire fence	L	
T-40	Prosopis velutina	Velvet Mesquite	12	20	2	M	Low branching; Leaning	L	Needs trimming
T-41	Eucalyptus spp.	Eucalyptus	36	50	1	H	Nice form; Healthy	L	Needs minor trimming
T-42	Prosopis velutina	Velvet Mesquite	12	18	1	M	Leaning; Broken limbs; Surface rooting	L	Remove mistletoe
T-43	Prosopis velutina	Velvet Mesquite	10	10	1	M	Poor form; Leaning; Against fence; Some pruning damage	L	Needs trimming
T-44	Eucalyptus spp.	Eucalyptus	48	50	1	H	Nice form; Healthy	L	Needs minor trimming
T-45	Prosopis velutina	Velvet Mesquite	14	25	1	M	Leaning; Pruning damage; Located against foundation of Steam Pump structure	L	Ensure that roots are not affecting foundation
~~T-46~~	~~Parkinsonia florida~~	~~Blue Palo Verde~~	~~12~~	~~15~~	~~1~~	~~M~~	~~Old; Some re-sprouting; Against barbed wire fence~~	~~L~~	
T-47	Prosopis velutina	Velvet Mesquite	36	25	2	M	Nice form; Has been pruned; Some die-back is occuring; Located near Steam Pump structure	L	
T-48	Parkinsonia florida	Blue Palo Verde	4	10	3	H	Near old entrance gate; Leaning; Small	H	
T-49	Prosopis velutina	Velvet Mesquite	3	10	2	H	Near hedge along Oracle Road; Young	H	
T-50	Prosopis velutina	Velvet Mesquite	4	12	1	H	Near old entrance gate; Nice form; Young	H	

Plant Inventory
Steam Pump Ranch
Oro Valley, AZ

Note: Items marked out were lost during a July, 2007 storm event or removed.

Data Sheet 1

SAGE
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ID #	Genus & Species	Common Name	Trunk Caliper (Inches)	Height (Feet)	# Trunks	Viability	Comments (Health, Age, Form, Context, etc.)	Transplantability	Maintenance Notes
T-51	Prosopis velutina	Velvet Mesquite	8	20	1	M	Nice upright form; Some pruning damage; Currently has Christmas lights hanging from it	M	
T-52	Fruit tree	Fruit tree	8	25	1	H	Located in large hedge along Oracle Road along with Pyracantha, Mesquite, Privet, Fruit trees, Mexican Palo Verde, Yellow Bird of Paradise, and Mulberry	L	
T-53	Parkinsonia florida	Blue Palo Verde	8	20	3	M	Located in large hedge along Oracle Road; Low branching; Dead wood	L	
T-54	Prosopis velutina	Velvet Mesquite	14	25	3	M	Located in large hedge along Oracle Road; Low branching; Dead wood	L	Remove mistletoe
T-55	Prosopis velutina	Velvet Mesquite	8	20	3	M	Located in large hedge along Oracle Road; Low branching; Tangled with Mexican Palo Verde	L	
T-56	Prosopis velutina	Velvet Mesquite	48	25	1	M	Located in large hedge along Oracle Road; Low branching; Huge; Leaning; Near Yellow Bird of Paradise	L	Remove mistletoe
T-57	Prosopis velutina	Velvet Mesquite	10	20	1	M	Located in large hedge along Oracle Road; Low hanging branches; Leaning	L	
T-58	Parkinsonia florida	Blue Palo Verde	8	20	2	M	Located in large hedge along Oracle Road; Pruning damage; Dead wood	L	
T-59	Parkinsonia florida	Blue Palo Verde	10	20	2	M	Located in large hedge along Oracle Road; Dead branches	L	
T-60	Prosopis velutina	Velvet Mesquite	8	20	3	M	Located in large hedge along Oracle Road; Leaning; Low branching	L	
T-61	Prosopis velutina	Velvet Mesquite	10	20	1	L	Tangled in barbed wire fence, Bad shape	L	
T-62	Prosopis velutina	Velvet Mesquite	14	20	2	M	Heavily leaning; Dead wood	L	Remove mistletoe
T-63	Parkinsonia florida	Blue Palo Verde	8	20	3	H	Nice form; Healthy; Adjacent to stone foundation of tank	L	
T-64	Prosopis velutina	Velvet Mesquite	12	20	2	M	Heavy pruning damage; Leaning; Old; Near tank	L	Remove mistletoe
T-65	Prosopis velutina	Velvet Mesquite	8	15	1	M	Ok form; Near fence	M	Remove mistletoe; Needs trimming
T-66	Prosopis velutina	Velvet Mesquite	14	25	3	M	Dead wood	L	Remove mistletoe; Needs trimming
T-67	Prosopis velutina	Velvet Mesquite	10	10	2	L	Heavy pruning damage; Bad shape	L	Remove mistletoe
	(Cluster of Mesquites - 3 Total)		8	10	Multi	M		L	Remove mistletoe
			8	10	Multi	M	Low branching	L	Remove mistletoe
T-68	Prosopis velutina	Velvet Mesquite	24	25	2	M	Pruning damage; Dead wood	L	Remove mistletoe
T-69	Prosopis velutina	Velvet Mesquite	36	25	3	M	Low branching; Dead wood; Leaning	L	Remove mistletoe
T-70	Prosopis velutina	Velvet Mesquite	10	20	1	L	Dead wood; Low branching; Broken limbs; Tangled in barbed wire	L	Remove mistletoe
T-71	Prosopis velutina	Velvet Mesquite	10	20	3	L	Dead wood; Low branching; Broken limbs; Tangled in barbed wire	L	Remove mistletoe
T-72	Prosopis velutina	Velvet Mesquite	8	20	1	M	Dead wood; Leaning; Poor form; Near soil pile and debris	L	
T-73	Parkinsonia florida	Blue Palo Verde	8	20	1	M	Lots of dead wood; Poor form; Near soil pile and fence	L	
T-74	Prosopis velutina	Velvet Mesquite	12	20	2	L	Dead wood; Low branching; Poor form	L	Remove mistletoe
T-75	Prosopis velutina	Velvet Mesquite	10	20	1	L	Terrible shape; Pruned heavily; Top is leaning	L	Remove mistletoe
T-76	Prosopis velutina	Velvet Mesquite	30	25	1	M	Low branching; Dead wood	L	Needs pruning; Remove mistletoe
T-77	Prosopis velutina	Velvet Mesquite	8	10	3	M	Low branching; Dead wood; Poor form	L	Remove mistletoe
T-78	Prosopis velutina	Velvet Mesquite	48	25	2	M	Dead wood; Ok form	L	Remove mistletoe
T-79	Prosopis velutina	Velvet Mesquite	10	20	1	M	Bad form; Pruning damage; Leaning	L	
T-80	Prosopis velutina	Velvet Mesquite	48	25	2	M	Ok form	L	Needs trimming; Remove mistletoe and wire
T-81	Prosopis velutina	Velvet Mesquite	14	20	3	M	Low branching; Lots of dead wood; Heavily leaning	L	
T-82	Prosopis velutina	Velvet Mesquite	12	20	2	M	Ok health; Heavily leaning	L	Remove mistletoe
T-83	Prosopis velutina	Velvet Mesquite	14	25	1	M	Ok form; Dead wood	L	Remove mistletoe
T-84	Pyracantha spp.	Pyracantha	6	20	Multi	M	Some dead wood; In yard	L	
T-85	Prosopis velutina	Velvet Mesquite	48	25	3	M	Poor form; Dead wood; Low branching	L	Remove mistletoe
T-86	Prosopis velutina	Velvet Mesquite	36	30	1	M	Nice canopy; Dead wood; Upright	L	
T-87	Morus spp.	Mulberry	3	15	1	M	Ok health; High canopy; By house - on roof	M	
T-88	Carya illinoensis	Pecan	30	40	1	H	Nice form and canopy; In lawn	L	Needs trimming
T-89	Punica granatum	Pomegranate	N/A	10	Multi	H	Shrubby; Fruiting; In lawn	M	

Plant Inventory
Steam Pump Ranch
Oro Valley, AZ

Data Sheet 2

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ID #	Genus & Species	Common Name	Trunk Caliper (Inches)	Height (Feet)	# Trunks	Viability	Comments (Health, Age, Form, Context, etc.)	Transplantability	Maintenance Notes
T-90	Morus spp.	Mulberry	8	25	3	H	Canopy has been trimmed up; Near structure	L	
T-91	Carya illinoensis	Pecan	30	40	1	H	Nice form and canopy; In lawn	L	Needs trimming
T-92	Pinus spp.	Pine	24	60	1	H	Upright; Healthy; In lawn	L	
T-93	Morus spp.	Mulberry	16	25	4	H	Nice form; Multi-trunk; Healthy; Surrounded by aloe, debris, and African Sumac suckers	L	
T-94	Prosopis velutina	Velvet Mesquite	18	30	1	M	Dead wood; Leaning; Surrounded by aloe, debris, and African Sumac suckers	L	Remove mistletoe
T-95	Eucalyptus spp.	Eucalyptus	48	75	1	H	Huge; Upright; Healthy; In lawn	L	
T-96	Prosopis velutina	Velvet Mesquite	30	30	2	M	Dead wood; Pruning damage; Poor form; In yard	L	Remove mistletoe
T-97	Pyracantha spp. (Hedge - 4 total)	Pyracantha	N/A	15	Multi	H	Along house	L	
T-98	Prosopis velutina	Velvet Mesquite	30	30	1	M	Dead wood; Ok form; Catclaw at base	L	Remove mistletoe
T-99	Prosopis velutina	Velvet Mesquite	12	30	1	M	Suckering at base	L	Remove mistletoe; Needs pruning
T-100	Carya illinoensis	Pecan	24	40	1	H	Healthy; Some dead wood; In grassy area	L	Remove wire around trunk
T-101	Carya illinoensis	Pecan	18	40	1	H	Healthy; Some dead wood; In grassy area	L	
T-102	Carya illinoensis	Pecan	18	40	1	H	Healthy; Some dead wood; In grassy area	L	
T-103	Morus spp.	Mulberry	8	30	1	H	Healthy; By chainlink fence		
T-104	Ligustrum japonicum (Cluster)	Privet	N/A	10	Multi	M	In decline; Some damage; By chainlink fence	L	
T-105	Ligustrum japonicum (Hedge - 16 total)	Privet	N/A	15	Multi	M	Along pool area; Also includes two bougainvilleas	L	
T-106	Prosopis velutina	Velvet Mesquite	24	30	1	M	Some dead wood; Good form; Root damage; Near equipment	L	
T-107	Prosopis velutina	Velvet Mesquite	30	30	1	M	Has been trimmed; Healthy, Near drive	L	
T-108	Prosopis velutina	Velvet Mesquite	24	30	1	M	Trimmed off roof; Near structure	L	
T-109	Carya illinoensis	Pecan	14	30	1	H	Healthy; In lawn	L	
T-110	Morus spp.	Mulberry	18	30	1	H	Healthy; Nice form; In lawn; By main house	L	
T-111	Morus spp.	Mulberry	12	30	1	H	Healthy; Nice form; In lawn; By main house	L	
T-112	Morus spp.	Mulberry	12	30	1	H	Healthy; Nice form; In lawn; Slightly leaning	L	
T-113	Morus spp.	Mulberry	24	30	2	H	Low branching; Healthy; Leaning; By main house	L	
T-114	Carya illinoensis	Pecan	10	30	1	H	Healthy; Nice form; By main house	L	
T-115	Carya illinoensis	Pecan	12	25	1	H	Healthy; Some dead wood; In grassy area	L	
T-116	Ligustrum japonicum (Hedge - 21 total)	Privet	N/A	10	Multi	M	By pool	L	
T-117	Eucalyptus spp.	Eucalyptus	40	70	1	M	Some dead wood; Some exposed roots	L	
T-118	Carya illinoensis	Pecan	10	40	1	M	Some dead wood; In grassy area	L	
T-119	Eucalyptus spp.	Eucalyptus	30	60	1	M	Dead wood; Declining health; Root damage	L	
T-120	Eucalyptus spp.	Eucalyptus	30	60	1	M	Dead wood; Declining health; Near T-119	L	
T-121	Prosopis velutina	Velvet Mesquite	12	35	1	M	Some dead wood; In grassy area	L	
T-122	Parkinsonia aculeata	Mexican Palo Verde	8	25	2	M	Nice form; In grassy area	L	
T-123	Carya illinoensis	Pecan	12	40	1	M	Some dead wood; Low hanging branches	L	
T-125	Prosopis velutina	Velvet Mesquite	30	35	2	M	Low branching; Dead wood	L	Remove mistletoe
T-126	Populus freemontii	Cottonwood	24	15	1	L	Dead	L	
T-127	Prosopis velutina	Velvet Mesquite	8	20	1	M	Pruning damage; Poor form; In grassy area	L	
T-128	Populus freemontii	Cottonwood	24	15	1	L	Suckering; Bad shape; Severely cut back	L	
T-129	Prosopis velutina	Velvet Mesquite	30	35	2	M	Low branching; Dead wood; Pruning damage; Exposed roots	L	Remove mistletoe
T-130	Prosopis velutina	Velvet Mesquite	48	35	2	M	Low branching; Dead wood; Pruning damage	L	Remove mistletoe
T-131	Parkinsonia aculeata	Mexican Palo Verde	10	15	5	M	Low branching; Dead wood	L	Remove mistletoe
T-132	Celtis pallida	Desert Hackberry	N/A	10	Multi	H	Mixed in with Desert Broom; Healthy; By corral	L	
T-133	Acacia greggii	Catclaw Acacia	4	15	Multi	H	Some dead wood; By corral	L	Needs trimming
T-134	Prosopis velutina	Velvet Mesquite	40	30	1	M	Some dead wood	L	Remove mistletoe; Needs trimming
T-135	Prosopis velutina	Velvet Mesquite	60	35	2	M	Huge; Old; Very low branching; Dead wood; Possible root damage; Stockpile at base	L	Remove mistletoe; Needs trimming
T-136	Prosopis velutina	Velvet Mesquite	24	30	3	L	Low branching; Dead wood; Leaning; Desert Hackberry tangled within	L	Remove mistletoe

Plant Inventory

Steam Pump Ranch

Oro Valley, AZ

Data Sheet 3

SAGE
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ID #	Genus & Species	Common Name	Trunk Caliper (Inches)	Height (Feet)	# Trunks	Viability	Comments (Health, Age, Form, Context, etc.)	Transplantability	Maintenance Notes
T-137	Morus spp.	Mulberry	14	35	1	H	Nice form; Some dead wood; In lawn	L	
T-138	Morus spp.	Mulberry	12	35	1	M	Some suckers; Dead wood; In lawn	L	Needs pruning
T-139	Prosopis velutina	Velvet Mesquite	50	35	1	M	Huge; Old; Moderately low branching; Dead wood	L	Remove mistletoe; Needs pruning
T-140	Phoenix dactylifera	Date Palm	24	20	1	H	Nice; Healthy; In lawn	M	
T-141	Washingtonia robusta	Fan Palm	30	50	1	H	Nice; Healthy; In lawn	L	
T-142	Carya illinoensis	Pecan	36	40	1	H	Some dead wood; Healthy; In lawn	L	
T-143	Olea europaea	Olive	10	25	1	H	Lots of suckers; Healthy; Against house	L	
T-144	Phoenix dactylifera	Date Palm	14	30	1	H	Nice form; In lawn	M	
T-145	Washingtonia robusta	Fan Palm	20	40	1	H	Nice form; In lawn; 4" caliper Mulberry underneath	L	
T-146	Morus spp.	Mulberry	6	20	1	H	Nice form; Healthy; Against house; Two roses below	M	
T-147	Morus spp.	Mulberry	12	25	1	H	Nice form; Healthy; Against house	L	
T-148	Ligustrum japonicum	Privet	24	30	1	M	Huge; Lots of suckers; Dead wood; Against house	L	
T-149	Populus freemontii	Cottonwood	24	50	1	H	Healthy; Nice form; Near house	L	
T-150	Rosa banksiae	Lady Banks Rose	N/A	15	Multi	H	Against house; Nice form; Healthy	L	
T-151	Ulmus pumila	Siberian Elm	36	30	1	M	Very low branches; By wall; Leaves are browning	L	Needs trimming
T-152	Ulmus pumila	Siberian Elm	8	25	1	M	Very low branches; By wall; Leaves are browning	L	Needs trimming
T-153	Celtis reticulata	Netleaf Hackberry	N/A	15	Multi	L	Wilted, Near 4" caliper tree (unknown species)	L	Increase water; May be diseased
T-154	Phoenix dactylifera	Date Palm	24	30	1	H	Healthy; Nice form; In yard	M	
T-155	Prosopis velutina	Velvet Mesquite	36	35	1	M	Dead wood; Leaning; Against wall; Unknown shrub species below	L	Remove mistletoe
~~T-156~~	~~Ulmus pumila~~	~~Siberian Elm~~	~~14~~	~~35~~	~~1~~	~~M~~	~~Dead wood; Leaning; Against wall~~	~~L~~	
~~T-157~~	~~Ulmus pumila~~	~~Siberian Elm~~	~~16~~	~~30~~	~~2~~	~~L~~	~~Low branches; Dying; In bad condition~~	~~L~~	~~Possibly remove~~
T-158	Punica granatum	Pomegranate	N/A	15	Multi	L	Diseased; Against wall	L	Possibly remove
T-159	Unknown	Unknown	N/A	20	Multi	L	Lots of dead wood; Against house; Some parts are healthy	L	
T-160	Ligustrum japonicum	Privet	8	20	3	L	Lots of dead wood; Against house; Some parts are healthy	L	
~~T-161~~	~~Populus freemontii~~	~~Cottonwood~~	~~16~~	~~40~~	~~1~~	~~M~~	~~Dead wood; Declining health; In dirt drive area~~	~~L~~	
T-162	Washingtonia robusta	Fan Palm	40	25	1	H	Nice form; Healthy; In dirt drive area	M	
T-163	Prosopis velutina	Velvet Mesquite	16	25	2	M	Low branching; Dead wood; Some evidence of pruning; Near chicken coops	L	
T-164	Prosopis velutina	Velvet Mesquite	20	25	2	M	Leaning; Low branching; Some evidence of pruning; Near chicken coops	L	
T-165	Prosopis velutina	Velvet Mesquite	24	25	2	M	Leaning; Low branching; Some evidence of pruning; Near chicken coops	L	
T-166	Prosopis velutina	Velvet Mesquite	6	15	1	H	Nice form; Upright; Healthy; Ocotillo and Cereus below	H	
T-167	Prosopis velutina	Velvet Mesquite	4	10	1	H	Small; Young; Healthy; Nice form; Ocotillo and Cereus below	H	
T-168	Punica granatum	Pomegranate	N/A	15	Multi	M	Mostly healthy; By chicken coops; Ocotillo and Cereus below	M	
T-169	Prosopis velutina	Velvet Mesquite	18	35	1	M	Leaning; Dead wood; Possible root damage; Tangled in chicken coop	L	
T-170	Prosopis velutina	Velvet Mesquite	6	20	1	M	Healthy; Some dead wood; Right by building	L	
T-171	Prosopis velutina	Velvet Mesquite	14	25	2	H	Very low branches; Healthy; Desert Hackberry below; In soil drive	L	
T-172	Prosopis velutina	Velvet Mesquite	36	25	1	M	Suckering; Really leaning; Desert Hackberry below; In soil drive	L	Remove mistletoe
T-173	Prosopis velutina	Velvet Mesquite	16	25	1	M	Leaning	L	Remove mistletoe
T-174	Prosopis velutina	Velvet Mesquite	8	20	1	M	Leaning	L	Remove mistletoe
T-175	Prosopis velutina	Velvet Mesquite	14	20	2	L	Low branches; Dying; Dead wood; Mistletoe infestation	L	Remove mistletoe; Possibly remove
T-176	Prosopis velutina	Velvet Mesquite	4	10	Multi	M	Yellowing foliage; Near soil drive	M	
T-177	Prosopis velutina	Velvet Mesquite	24	25	2	M	Dead wood	L	Remove mistletoe
T-178	Prosopis velutina	Velvet Mesquite	24	30	1	M	Severely pruned	L	Remove mistletoe
T-179	Prosopis velutina	Velvet Mesquite	12	25	2	M	Very low branching; Near shade structure	L	
T-180	Prosopis velutina	Velvet Mesquite	18	25	2	M	Low branching; Some suckering; Potential rotting	L	

Plant Inventory
Steam Pump Ranch
Oro Valley, AZ

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Data Sheet 4

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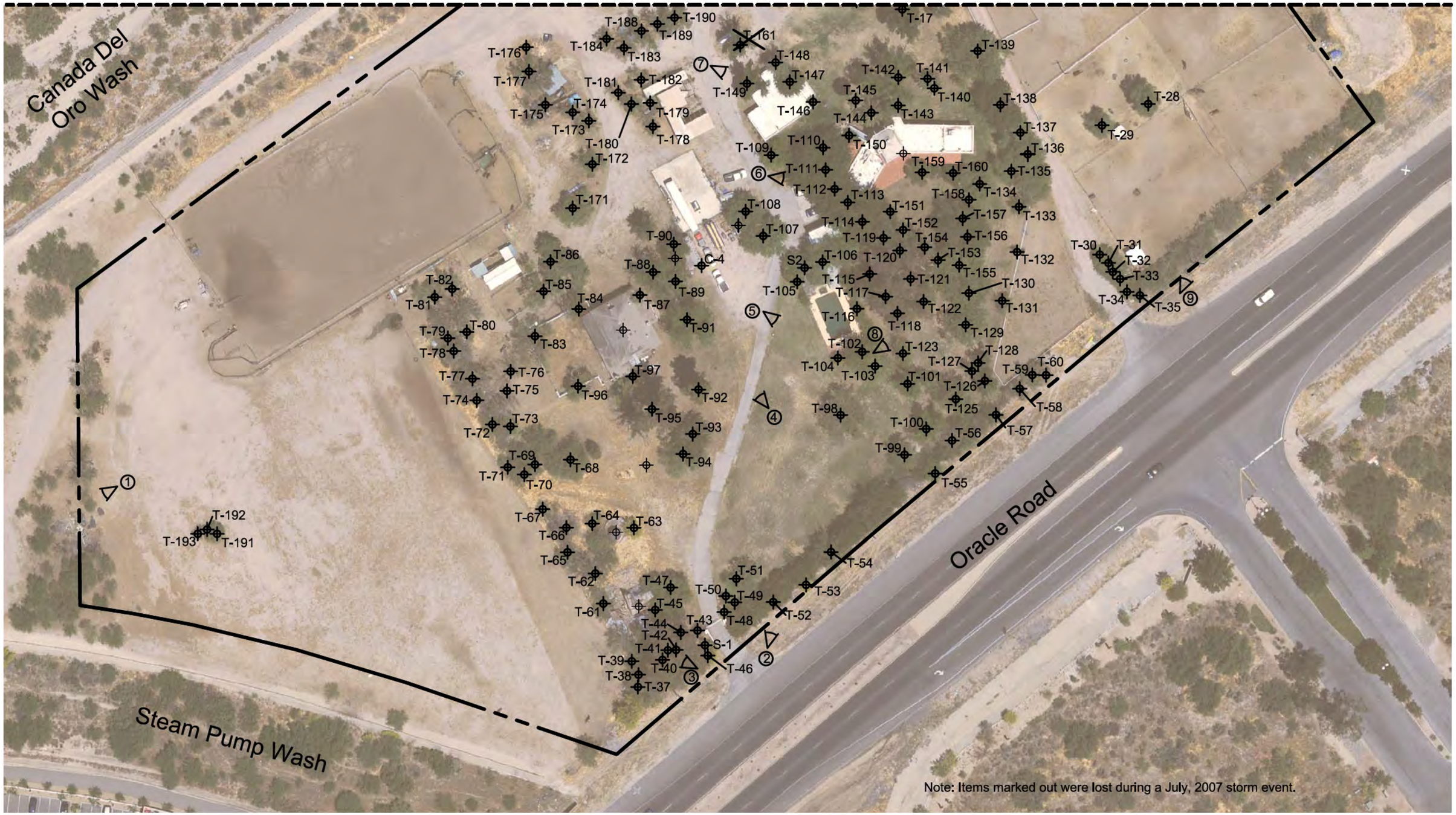
ID #	Genus & Species	Common Name	Trunk Caliper (Inches)	Height (Feet)	# Trunks	Viability	Comments (Health, Age, Form, Context, etc.)	Transplantability	Maintenance Notes
T-181	Prosopis velutina	Velvet Mesquite	10	20	1	M	Leaning; Severe pruning	L	
T-182	Prosopis velutina	Velvet Mesquite	20	20	3	M	Very low branching; Soil piled at base; Some dead wood	L	Remove mistletoe
T-183	Prosopis velutina	Velvet Mesquite	16	25	2	M	Dead wood; Low branching	L	Remove mistletoe
T-184	Prosopis velutina	Velvet Mesquite	10	20	1	M	Moderate health	L	Remove mistletoe
T-185	Prosopis velutina	Velvet Mesquite	6	15	1	H	Young; Healthy; Very close to building	L	
T-186	Prosopis velutina	Velvet Mesquite	8	20	1	M	Has been trimmed; Leaning; By building	L	
T-187	Prosopis velutina	Velvet Mesquite	12	25	1	M	Moderate health	L	
T-188	Prosopis velutina	Velvet Mesquite	10	25	1	M	Dead wood; Some leaning branches; In drive area	L	
T-189	Prosopis velutina	Velvet Mesquite	10	25	1	M	Dead wood; Some leaning branches; In drive area	L	
T-190	Prosopis velutina	Velvet Mesquite	24	25	2	M	Dead wood; Some leaning branches; In drive area	L	
T-191	Prosopis velutina	Velvet Mesquite	6	15	2	H	Nice form; In bare area	M	
T-192	Prosopis velutina	Velvet Mesquite	6	15	3	H	Low branching; In bare area	L	
T-193	Prosopis velutina	Velvet Mesquite	6	15	3	H	Low branching; In bare area	L	
C-1	Carnegiea gigantea	Saguaro	8	2	1	L	Almost dead; Split top	M	
C-2	Yucca spp.	Yucca	N/A	11		M	Old; Growing into Cottonwood canopy	L	
C-3	Carnegiea gigantea	Saguaro	10	5	1	H	Healthy	H	
C-4	Cereus spp.	Cereus	N/A	11	Multi	M	Some frost damage; By structure	M	
S-1	Ziziphus obtusifolia	Graythorn	N/A	7	Multi	H	Below Palo Verde canopy; Several young Mesquites in area	H	
S-2	Unknown	Unknown - Variegated Leaves	N/A	3.5	Multi	H	Near Privet hedge and spa; Three shrubs total	H	

Plant Inventory
Steam Pump Ranch
Oro Valley, AZ

Data Sheet 5

SAGE
LANDSCAPE ARCHITECTURE & ENVIRONMENTAL
2210 E. PT LOWELL RD., SUITE 120
TUCSON, ARIZONA 85719
TEL 520.740.0950
FAX 520.740.0707
www.sagelandscape.com

MATCHLINE - SEE SHEET 2



Plant Inventory
Steam Pump Ranch
Oro Valley, AZ

Sheet 1

Legend

- T-1 Surveyed Vegetation
  - T - Tree
  - C - Cactus
  - S - Shrub
- Photo Location
- Historic Structure (Per TOV)
- Property Line

N

0 40' 80' 160'

SAGE
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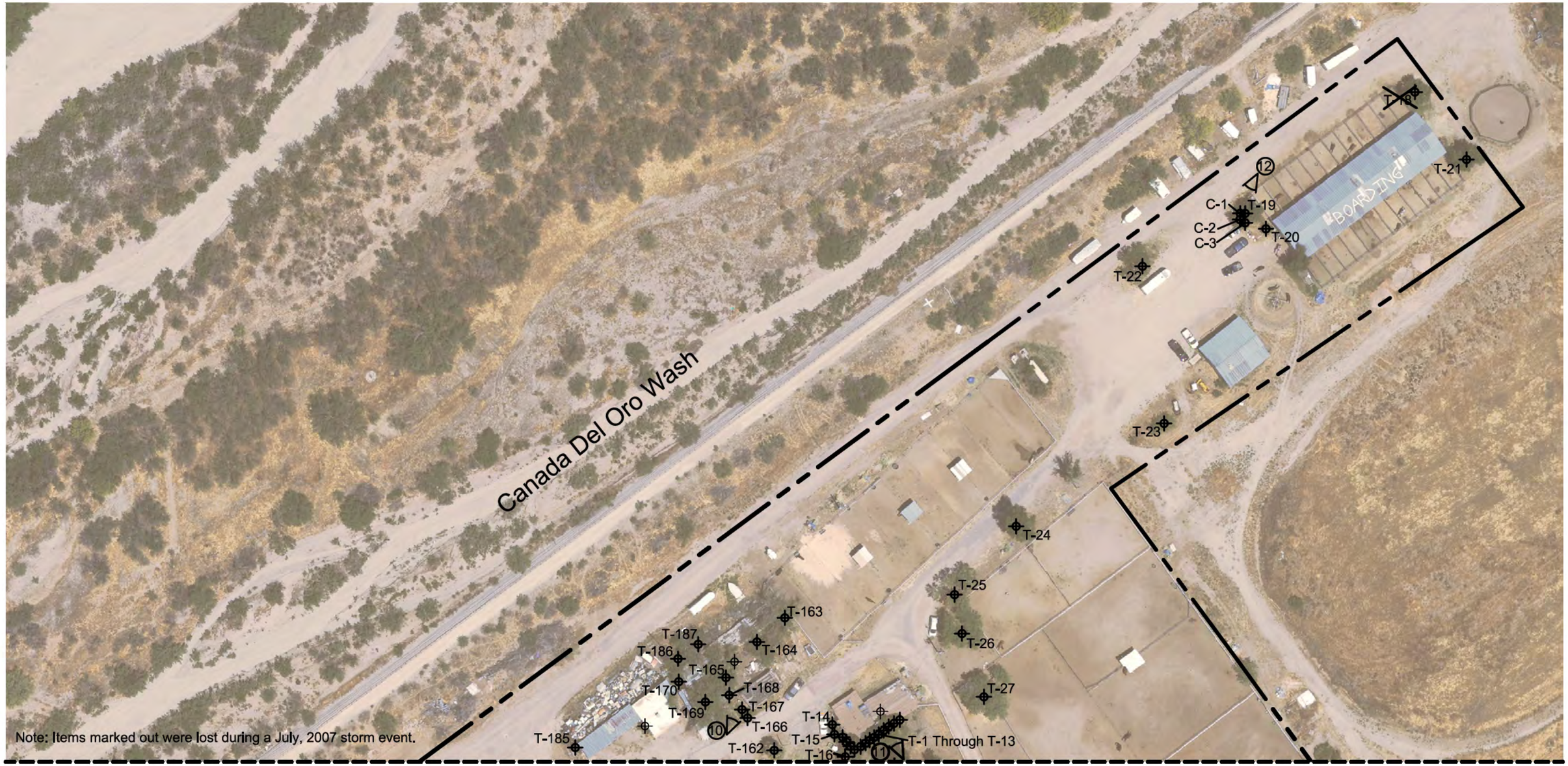

Plant Inventory
Steam Pump Ranch
Oro Valley, AZ

Sheet 2

Legend

T-1 Surveyed Vegetation
T - Tree
C - Cactus
S - Shrub

Photo Location

Historic Structure (Per TOV)

Property Line

N

0 40' 80' 160'

SAGE
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Pusch Era Plants

Prosopis velutina*	Mesquite
Parkinsonia florida*	Blue palo verde
Acacia greggii*	Catclaw acacia
Chilopsis linearis*	Desert willow
Celtis pallida*	Desert hackberry
Ziziphus obtusifolia*	Greythorn
Carnegiea gigantea*	Saguaro
Yucca spp.*	Yucca
Ambrosia deltoidea	Triangle leaf bursage
Anisacanthus thurberi	Desert honeysuckle
Callinadra eriophylla	Fairy duster
Encelia farninosa	Brittlebush
Ericameria laricifolia	Turpentine bush
Larrea tridentata	Creosote
Nolina microcarpa	Bear grass
Atriplex lentiformis	Quail bush
Eriogonum fasciculatum	Flat top buckwheat
Simmondsia chinenesis	Jojoba
Hyptis emoryi	Desert lavender
Baileya multiradiata	Desert marigold
Lycium fremontii	Fremont wolfberry
Penstemon spp.	Penstemon
Sphaeralcea ambigua	Globe mallow
Aristida purpurea	Purple three awn
Leptochloa dubia	Green spangle top
Parthenium incanum	Mariola
Sporobolus cryptandrus	Sand dropseed

* Species currently on site

Acacia greggii

Flower of the Chilopsis linearis

Encelia farninosa

Procter Era Plants

Populus fremontii*	Cottonwood
Ligustrum lucidum*	Privet
Morus alba*	Mulberry
Melia azedarach*	Chinaberry
Eucalyptus microtheca*	Coolibah tree
Carya illinoinensis*	Pecan tree
Punica granatum*	Pomegranate
Pyracantha*	Pyracantha
Pinus sp.*	Pine
Olea europaea*	Olive
Phoenix dactylifera*	Date palm
Washingtonia filifera*	California fan palm
Rosa banksiae*	Lady Banks rose
Ulmus pumila*	Siberian elm
Cereus peruvianus*	Peruvian apple
Carissa grandiflora	Natal plum
Feijoa sellowiana	Pineapple guava
Photinia fraseri	Photinia
Raphiolepis indica	Indian hawthorn
Thevetia perviana	Yellow oleander
Juniperus horizontalis	Creeping juniper
Myrtus communis	Myrtle
Abelia grandiflora	Glossy abelia
Rosmarinus officinalis	Rosemary
Nandina domestica	Heavenly bamboo
Caesalpinia gilliesii	Yellow bird of paradise
Prunus armeniaca	Apricot – 'Katy'
Ficus carica	Edible fig – 'Brown Turkey'
Vitis vinifera	Table grape – 'Thompson Seedless'

* Species currently on site.

Olea eurpaea

Rosa banksiae

Nandina domestica