Guadalupe Gardens

Master Plan
1994

Prepared for:
City of San Jose
Department of Public Works
Department of Streets and Parks

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January 7, 1994
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CHAPTER 1.0
INTRODUCTION AND OVERVIEW

1.1 ORIGIN OF THE GUADALUPE GARDENS CONCEPT

Although interest in a gardens concept may, according to some, date back to the 1940s, more recent activities related to Guadalupe Gardens can be traced to the late 1960s. Known then as the "Coleman Loop Area", the site's primary land uses were single family residences. With the increasing flight activity of the nearby airport and resulting stricter FAA noise mitigation standards, these residential uses became incompatible with airport operations. The City began acquiring properties at that time and by 1974, 80% of the cost for clearing the land was being provided from federal funds. The clearing took place in nine phases, the first of which involved 13 acres in 1975. When complete in 1990, the City had, with financial assistance from the Federal Aviation Administration, purchased some 630 residential properties creating approximately 120 acres of cleared land.

In 1986, Mayor Tom McEnery proposed the creation of a recreation area within the Airport Approach Zone. The City investigated the potential for various City-wide recreation uses to reduce a shortfall of active open space. A study explored appropriate mixes of uses and activities which would be compatible with the airport operations and an Airport Land Use Plan.

In 1987, a Golf Course Feasibility Study explored alternative regulation and "executive" layouts and their market potential in the project area. This was followed by the appointment of a task force by Mayor Tom McEnery and approved by the City Council in 1988, to "oversee the assimilation of community recreation needs, goals and objectives and to review preliminary and final land use proposals for open space and garden uses for the Coleman Loop Area" (Guadalupe Gardens Report, 1989 "Interim Land Use Plan"). The document prepared by Hargreaves and Associates identified and illustrated Long Term and Interim Land Use Site Utilization patterns. Based largely on the then existing grid pattern of streets and utilities, the area was divided into courtyard gardens, woodland gardens, rivulets, passive open space, active open space and commercial gardens. The Long Term Plan anticipated a four field softball complex and approximately 50 acres of undeveloped or lightly developed open space. It anticipated the eventual purchase of all of the scattered commercial and industrial sites along Coleman and in the vicinity of Ruff Drive between Heding and Interstate 880. The Interim Land Use Plan maintained the recreational activities at Columbus Park leaving the existing light industrial and commercial activities in place. Both plans designated a Garden Center at the far eastern corner of the study area (at Coleman and the Guadalupe River). Both plans as well were seen as an integral extension of the Guadalupe River Park, then in the planning stages (currently under construction). The existing Courtyard Garden at the corner of Spring and Taylor Streets designed by Hargreaves and Associates and the recently completed Rock Garden along the north side of Taylor Street (designed by Tom McLauchlan of DPW) were the first physical developments resulting from these plans. The task force was made up of knowledgeable citizens, representatives from the Department of Recreation Parks and Community Services, the Airport Department and the Department of Public Works as well as other City agencies.

In response to a "State of the City" report by Mayor Tom McEnery in 1989, Lorrie Freeman and Ruth Holmstrom, two leading San Jose garden activists, submitted a letter (including the names of almost 20 other knowledgeable
area including decorative horticultural and orchard plantings. This initiative led to the creation of a formal group which has been continuously active in the planning for Guadalupe Gardens. The Guadalupe Gardens Corporation set up interim quarters in a little-used field house and storage room in Columbus Park in the late fall of 1990. Mayor Tom McEnery, Councilmember Shirley Lewis, members of the Guadalupe Gardens Task Force and others dedicated the Gardens in a festive ceremony on May 22, 1990.

In August 1991, as the recession began to impact the City's capability to build, maintain and staff existing public parks, it became clear that the City would have to rely more on volunteer input (and financial support) in terms of planning, installation and maintenance of Guadalupe Gardens and less on City resources. The City solicited proposals from local designers and interest groups for specific gardens and sponsors to fill the cleared blocks identified in the 1989 Hargreaves Plan. The City received a dozen or so highly varied responses including proposals for a "Heritage Rose Garden," a "Chip Garden and Maze," a "San Jose Youth Garden," a "Palm Garden," an "Integrated Circuit Theme Garden," an "Historic Orchard" and an "Urban Landscape and Environmental Resource Educational Center." The "First Courtyard Garden" and the "Historic Orchard" were selected as the first projects, and after a review of proposals and subsequent interviews, the Heritage Rose Garden was selected to follow. While attempting to integrate the location of the Rose Garden with other proposed uses, the Technical Committee of the Advisory Council realized that the City lacked an adequately specific master plan to guide the placement of these gardens and to insure that they would contribute to an organized whole or complete landscape composition. An additional factor appeared to be the feeling that previous proposals had adhered too rigidly to the existing pattern of streets -- the future of many of the above and below ground utilities being more in doubt at that time than at present. It was then decided that it would be beneficial to develop a more detailed Master Plan of the site before proceeding with additional proposals.

In June 1992, the Department of Recreation, Parks, and Community Services and the Department of Public Works invited letters of interest from park planners and landscape architects to prepare a new and more detailed Master Plan, cost analysis and priority planning. The firm of Tito Patri & Associates was finally selected and began work on this Master Plan in the fall of 1992.
1.2 SUMMARY OF THE PLANNING PROCESS

The 15 month planning process for Guadalupe Gardens involved several steps starting with the collection and analysis of the site resources. A very important effort was the preparation of a horticultural evaluation (by Hort/Science, Inc. of Pleasanton, California) of over 1,000 trees remaining in the Gardens area. The results of their findings are included in the body of this report and charts listing the specific relevant conditions of each tree are included in the appendix. Major initial elements were the compilation of a topographic map for the northwestern portion of the study area between Hedding and Interstate 880. Importantly, a survey of human resources (including the interest groups which had already expressed the willingness to participate or had submitted plan proposals), involving contacts with representatives of dozens of new groups was conducted. In-person or telephone interviews were conducted to determine the level of potential interest and participation as well as the potential fit of such groups with the physical resources of the Gardens. Summaries of these interviews are included in the appendix of this document.

This was followed by drawing up lists of potential programs, activities, and uses paralleling an exploration of possible design themes. An "activities and elements list" was prepared and refined in the spring of 1993 followed by preliminary area diagrams assigning square footage or acre estimates to each use. These were compared to the overall area capacity of the Gardens. Each of these area estimates (high and a low range) was laid out at a plan scale of 1"=100' as a preliminary test of space needs. Even assuming the lower levels of space needs, it was clear that the potential for use in the relatively near future of all of the acreage within the project area was very high. Each step along the process was reviewed by the Design Review Committee and presented to the Guadalupe Gardens Advisory Council at monthly meetings for approval.

After preparation of a map of constraints and opportunities at the 1"=100' scale, the team prepared approximately eight conceptual level alternative land use diagrams. However, by this time, the following basic categories of use had been established:

- Garden Center Complex
- Varietal Gardens
- Walk Through History Gardens
- Natural Landscape Systems Exhibits
- Research/Academic & Commercial
- Community Gardens and Plots
- Wholesale Nursery Complex (at that time called "Commercial")

Finally, parking "orchards" and major internal circulation pathways were included. The process of refinement involved the Design Review Committee as well as presentations and meetings with the Guadalupe River Flood Control Project, the Guadalupe (SR87) Freeway, the Santa Clara Valley Water District's Central Pipeline Project, PG&E's high voltage undergrounding project and the Guadalupe River Park Technical Advisory Committee.

The refinement process resulted in the selection of "C Hybrid" with "B" as an alternative (shown here as more refined diagrams than the earlier more conceptual land use diagrams A through H). "C Hybrid" placed the Garden Center complex where it was located in the 1989 Interim Land Use Plan (at the southeast end of the project area and conversely placed the ball field complex along Coleman). Alternative B showed the Garden Center Complex adjacent to
Coleman, just to the north of Taylor and the ball field complex at the far easterly end near the Coleman Avenue bridge over the river.

During this time, several meetings were held with representatives of the Federal Aviation Administration in Burlingame. The decisions and opinions of FAA officials were significant in the ultimate selection of Hybrid C and the FAA's acceptance of the most southeasterly site as being outside the FAA's primary zone of concern (southeast of Hobson). The FAA's responsibility for the safety of users on the ground and noise mitigation were and are of primary importance. An additional complication was the fact that the agreements between the City and the FAA for those lands cleared with FAA funds prohibited the construction of any new structures on those parcels.

On August 11, 1993, the manager of the Airport District's Office Federal Aviation Administration, U.S. Department of Transportation, notified the City that it concurred with proposed land uses beyond the 5,000 foot threshold of runway 12R-30L, noting that the site could be "converted from open space and agricultural use to recreational, commercial or manufacturing and production land use." Its approval, however, is conditional upon agreement with the City whereby the City would request a written release from the special conditions of the grant agreement. This decision therefore precluded the use of the site along Coleman and Taylor which, while technically to the southwest of runway 30L would still be within the 5,000 foot zone of concern.

A related constraint involves the concerns of the Airport Land Use Commission which also received a presentation from the design team. Their recently completed Airport Land Use Plan, September 1992, extended the ALUC safety zone from Hedding Street to Emory Street for runway 30L. In general, the implications of this decision were that land uses which involved high concentrations of people would be in conflict with the land use goals of the ALUC, specifically the standards setting a ceiling of 25 persons per acre at any one time or more than an average of 10 persons per acre at any one time for all areas northwest of Emory Street. For this reason, uses in that area (particularly between Hedding and I-580) are considered to be low population density uses (Wholesale Nursery Complex and City Landscape Service Center) as well as a mixture of natural landscape systems and "Walk Through History" exhibits. The softball diamonds and the bleachers for these are also kept southeast of Emory for this reason. The areas where larger concentrations of people can be expected will be in the plazas and Main Meadow surrounding the Garden Center Complex.
Alternative Garden Use Diagrams
Alternative Garden Use Diagrams

KEY
- Garden Center
- Parking
- History Exhibits
- Varietal Gardens & Exhibits
- Commercial Growing Group
- Community Garden Plots
- Natural Landscape Systems
- Meadow
- Research & Commercial
- Orchard
- Rose Garden
Guadalupe Gardens

Physical Master Plan Map
1.3 OVERVIEW OF MASTER PLAN

Centrally located and easily accessible by automobile and public transit, Guadalupe Gardens is conceived of as a unique botanic and environmental complex. When completed and cleared of remaining abandoned streets and sidewalks, visitors to the 140.45 acre site will find an active center of horticultural education, research, environmental arts, recreational programs "cutting edge" architecture (new and renovated buildings), and over one hundred acres of agricultural fields, gardens, riparian forests, arboretum groves and meadows. The many gardens, forests and historic exhibits will be linked by a tree lined promenade overlooking the Guadalupe River Park and four miles of broad pedestrian ways and minor paths. The planned overall visual effect is a balanced blend of natural environments embracing "low impact" architectural elements, in short, a compromise between humankind and nature.

Guadalupe Gardens will display the history and culture of San Jose and the Santa Clara Valley in many educational and active ways (see Chapter 3.2 "Programming Suggestions and Innovations"). It will also be physically close to downtown San Jose via the path system being incorporated in the Guadalupe River Park. The Garden Center Complex is located nearest downtown at Coleman and the Guadalupe River; therefore, it is seen as a destination for pedestrians exploring the exciting range of cultural activities now offered in central San Jose.

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"WALK THROUGH HISTORY" EXHIBITS

NATURAL LANDSCAPE SYSTEMS

WHOLESAL E NURSERY COMPLEX

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<td>Greenhouses, etc.</td>
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VARIETAL GARDENS & EXHIBITS

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COMMUNITY GARDENS & PLOTS

ARBORETUM GROVES

<table>
<thead>
<tr>
<th>ARBORETUM GROVES</th>
<th>24.1 acres</th>
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RESEARCH/ACADEMIC/COMMERCIAL

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<th>RESEARCH/ACADEMIC/COMMERCIAL</th>
<th>78,370 s. ft.</th>
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<tbody>
<tr>
<td>Buildings (converted)</td>
<td></td>
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<tr>
<td>Grounds</td>
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</tbody>
</table>

CITY LANDSCAPE SERVICE CENTER

<table>
<thead>
<tr>
<th>CITY LANDSCAPE SERVICE CENTER</th>
<th>15,000 s. ft.</th>
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<tbody>
<tr>
<td>New buildings &amp; greenhouses, etc.</td>
<td></td>
<td></td>
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<tr>
<td>Grounds</td>
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GARDENS CORPORATION YARD

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5
ACTIVE RECREATION  
Softball fields/soccer  6.1 acres

PARKING ORCHARDS  
8.3 acres

RIVERSIDE PROMENADE  
0.8 miles

MAJOR PEDESTRIAN/SERVICE PATHS  
4.48 miles

COURTYARD GARDEN (existing)  
4.0 acres

Once known as the Coleman Loop area, the Gardens project area is clearly defined from surrounding land uses by Interstate 880 (and SJ International Airport) on the northwest, State Route 87 (the Guadalupe Parkway), the river and River Park all along the northeast, and Coleman Avenue along the south and southeast. In spite of this definition, the area is divided into three sections by two heavily used main roads, Hedding and Taylor Streets. A proposed pedestrian underpass at Taylor and a pedestrian bridge at Hedding will provide uninterrupted physical access. Visual continuity throughout the area (from southeast to northwest) is provided by the double row of river valley trees flanking a riverside promenade, the repetition of five linear riparian groves and meadows throughout the length of the Gardens and continuous arborium groves along Coleman. The architecturally unique glassed conservatory building, central to the Garden Center Complex would also be visible along an axial view corridor from Taylor Street.

Because of restrictions associated with the Airport Land Use Commission and the Federal Aviation Administration, no new buildings are proposed northwest of Hobson Street and the selection of open space land uses would result in decreasing numbers of people (workers, visitors, gardeners, etc.) as one moves from the Garden Center Complex toward the northwest (I-880) end of the Gardens.
CHAPTER 2.0
HISTORY AND RESOURCES

2.1 PREHISTORY AND HISTORY

Native Americans

The completion of Guadalupe Gardens will mark the latest chapter in the history of human interaction with the fertile lands along the Guadalupe River, continuing a tradition of land use that is known to date back 5,000 years.

The site of the Gardens lies within what was once the territory of the Tamien tribelet of the Ohlone people. Often referred to by anthropologists as "Costanoans" (from the Spanish term for coastal people), the Ohlone occupied the central California coast as far east as the Diablo Range (Basin, 6). The original hunting and gathering lifestyle of the Ohlone would not withstand the impact of the mission system which transformed many aboriginal people into agricultural laborers. In addition, many of the Ohlone themselves would not survive the foreign diseases introduced by Europeans, and thus, by 1810, their numbers had been drastically reduced. Today, over 200 people of Ohlone origin live in the San Francisco Bay area (Basin, 6), and many artifacts remain intact offering evidence of their pre-Mission way of life.

One well-known cultural deposit is the Holiday Inn Site, located within a mile of the southern end of the project area in downtown San Jose near West San Fernando Street on the north, the Guadalupe River on the west, Market Street on the east and slightly south of West San Carlos Street (Basin, 4). The material found here is varied and includes more than 80 human burials, house floors, ovens, hearths, mortars, pestles, ornaments, charmstones, bone artifacts, shell, bone, fire-affected rock and glass beads. This site was occupied during the Middle Horizon period (500-700 A.D.) and Late Horizon Early Phase 1 (1300-1500 A.D.).

Within the parameters of Guadalupe Gardens itself, one site containing evidence of prehistoric civilization has been uncovered west of the Guadalupe River near the northwest corner of the intersection of Regent Street and University Avenue. This site has been described as a midden deposit characterized by dark, ashy soil, fire-affected rock (cooking stones) and Cerithidea sp. shell (Basin, 10). Cooking hearths or ovens are suspected and burials considered "highly likely" by Cartier and Laffey who believe the site has the "potential for being a prehistoric village site." While "oldtimers" have reportedly been aware of the site for many years, an excavation has never been conducted (Basin, 19). Located approximately one and a half blocks south of this locus (on the northeast side of Irene Street, 6 lots south of Emory) is another point of interest, a lithic site where an obsidian flake estimated as 50-70 cm in size and a fist sized obsidian core were found. It is believed, however, that this lithic evidence is of an historic (and not pre-historic) context. (Basin, 6)

Such evidence as the Holiday Inn Site, together with the shared knowledge of Ohlone people who are alive today, help to reveal the workings of a civilization that was dramatically altered by the introduction of the Spanish Mission system. The proximity of the Tamien settlement to the Guadalupe River and to nearby springs indicate the important role that these readily available sources of fresh water must have played in the lives of the Ohlone people. Prior to the introduction of dams, wells and pumps which drastically lowered the water table, the river ran year-round, making possible the conveyance of reed canoes
to the Bay.

The combination of extensive, sheltering willow forests (revealed on an 1850 map, covering approximately one-half of the study area), adjacent grasslands and open water must have attracted water fowl and even large mammals, such as deer, to this area. A creek tributary to the river is also shown on early maps of the study site and ran almost due north through the willow forest from Coleman Street between Seymour and Hobson to a juncture with the river near Taylor and Anita Streets, indicating a wet zone toward the southern end of the study area. Today, the remaining native riparian forest which lines the banks of the river is, to at least some degree, representative of the environment in which the Ohlone people lived before the introduction of the missions and the subsequent drastic change in land use patterns. What is left of this forest has been or will be eliminated to accommodate flood control needs and the related Guadalupe River Park.

The Spanish Settlers

For the Spanish who arrived in the Santa Clara Valley during the late 1760s and 1770s, the Guadalupe River played a vital role in the selection of this region for settlement. On January 12, 1777, the Mission Santa Clara de Asis was founded on its banks (Scott, 12). The 8th of 21 missions in California, Santa Clara was linked to the Mission Dolores in San Francisco by way of El Camino Real ("the King's Highway").

Ten months after the founding of Mission Santa Clara, the Pueblo de San Jose de Guadalupe was established in the vicinity of present-day San Pedro and Hobson Streets. With orders from Spanish Governor Don Felipe Neve, Lieutenant Jose Joaquin Moraga brought nine soldiers and five farmers from San Francisco to the east bank of the Guadalupe, three quarters of a league from the Mission Santa Clara. Neve had recognized the potential of this region as a source for agricultural production that would obviate reliance on vessels from Mexico to provide necessities for Northern California settlements. Each of the 14 original settlers were given two cows, two horses, two sheep, two goats, a yoke of oxen, a mule, seed and farm implements. Thus equipped, they began to cultivate various grains and vegetables and to graze cattle on the fertile land (Loomis).

Due to repeated flooding by the Guadalupe River, the pueblo was moved south and upstream, and in 1797 the central plaza was built in the area that today is bounded by St. John Street and San Carlos, between San Pedro and Market (Muller, 11). The Alameda, which linked the pueblo to the mission, was also the victim of frequent flooding by both the Guadalupe River and Los Gatos Creek requiring a six mile detour along a southern road. In 1799, Father Magin Catala, with the aid of 200 Native Americans, planted 4 to 6 rows of black willows along this route which later became known as "The Way of the Willows." This section of the road extended from present day Bellsomy Street to Stockton Avenue (Basin, 10).

The Mission Santa Clara de Asis also fell victim to floods and was eventually moved to what is now the city of Santa Clara where, on November 19, 1781, its cornerstone was laid at the intersection of Campbell Avenue and Franklin Street. This second structure was irreparably damaged by the earthquakes of 1812 and 1818 and so a third church was erected in 1822 about 300 yards west of the previous one. The third Mission Santa Clara was destroyed by fire in 1926 (Wyatt).
Prehistory / History Context
Early American Agriculture

The present day Guadalupe Gardens site is located within the former Rancho el Potrero de Santa Clara, a parcel which at one time belonged to the Mission Santa Clara, but was later reverted to the Mexican government. In 1844, Governor Micheltorena granted the land to James A. Forbes, who then sold it to Commodore Robert F. Stockton in 1847. The entire Rancho el Potrero de Santa Clara consisted of 1,939 acres that began slightly north of Brokaw Road in Santa Clara and extended south to San Jose, bounded by the Guadalupe River and the Alameda (Wyatt). In 1849, Stockton had his home shipped from New York to San Jose by way of Cape Horn along with 18 others. This home was located on what is now the southern end of the San Jose International Airport and was destroyed during the early expansion of that facility.

During this time, an agricultural land-use pattern representing a variety of crops was beginning to overtake the cattle industry introduced by the Spanish settlers. The drought of 1863-64 caused a sharp decline in stock raising, after which wheat growing became the primary agricultural activity along with dairy farms and orchards (Basin, 10). Reflecting this transition, Commodore Stockton started an expansive nursery with a large inventory of apple, peach, pear, plum, nectarine and apricot trees imported from Massachusetts. One of the earliest experimenters in the fruit-growing industry, Stockton provided a major source of stock for Santa Clara Valley farms (Basin, 11). The success of this industry led to innovations in fruit preservation and by 1900, the Santa Clara Valley had become a world center for canned and dried fruit (Basin, 10). Stockton’s nursery presumably extended over much of the Guadalupe Gardens site.

Another horticultural pioneer of this era was Bernard Fox who in 1852 arrived in this country with boxes of fruit trees from his native Ireland. Fox provided nursery stock to Commodore Stockton and was responsible for introducing the first successfully grown strawberries as well as many new varieties of pears and other fruit trees.

Other important developments in agriculture included viticulture and the growing of hops which, according to an 1876 historical almanac, were claimed to be the "best in the world" by European dealers. Tobacco also grew well in this region. Beginning in 1853, a group of individuals interested in the development of agriculture and horticulture formed the Santa Clara Valley Agricultural Society and by 1857 had held their first fair. From its inception, the fair became an annual event and was professed to "afford the finest exhibition of stock, fruit, etc. in the State" (Thompson & West).

In addition to the temperate climate and the rich soils, a major factor in the success of the agricultural and horticultural industries was the availability and abundance of ground water drawn from artesian wells. These wells provided water for irrigation and indoor plumbing in some San Jose homes. Several of the grist mills built along the Guadalupe were powered by the river. In 1876, it was believed that the water supply was "inexhaustible" (Thompson & West). However, by the 1940s, the ground water level had decreased drastically, resulting in land surface settlement by as much as 17 feet in some areas. Within the parameters of Guadalupe Gardens, a map from 1850 shows a spring located on what is now the block bounded by Taylor, Asbury, Spring and Walnut Streets. Earlier maps reveal a stream which ran from the vicinity of Taylor and Anita Streets to an area south of Hobson. Both of these features are now gone.
The Railroad

In the 1860s, a proposed route for the San Francisco and San Jose Railroad was to pass through Stockton's Rancho. Stockton blocked this passage, forcing railroad supporters Charles B. Polhemus and Henry M. Newhall to buy the Rancho for a right-of-way in 1861. Construction began at San Francisquito Creek in May, 1861 and the railroad finally reached the City of San Jose in January, 1864 (Basin, 12). The SFSJ Railroad was purchased by Central Pacific RR in 1867 and renamed as the Northern Division of the Southern Pacific RR (McCaleb, 14). The proximity of the railroad accounts for the location of canneries and packing houses in and west of the Coleman Loop area (Basin, 12).

By 1876, Polhemus and Newhall had subdivided and sold much of the Rancho. Somewhere within 20 years prior to this time, the landscape underwent a dramatic change as scores of willow trees (shown as a significant feature on an 1850 map) were cleared from the site. An 1872 map of the area includes parcel subdivisions for "University Grounds" (Basin, 13), which were associated with the College of the Pacific, from Newhall to Polhemus Streets and extending west to the Alameda. Founded in 1851 at the corner of San Fernando and Second Streets, the College was moved to the Coleman Loop area in 1870 (Basin, 14). This location, and its surrounding subdivision, came to be known as "College Park," a 400 acre area bounded by the Alameda, Newhall Street, the Guadalupe River and West Taylor Street which was annexed to San Jose in 1925 (Basin, 14). The College of the Pacific campus was moved to Stockton in the 1920s and the property is now occupied by Bellarmine College Preparatory (Basin, 14). A 1915 map indicates that there was also a College Park Grammar School located within the Coleman Loop area (in the block between Locust and Walnut, Hedding and McKendrie Streets) on the present-day site of Guadalupe Gardens.

Surveys of the site conducted by Cartier and Laffey in 1986 and 1989 revealed two loci of possible historic American artifacts, one in a lot on the east side of Village Court and the other in a cleared lot bordered by Seymour, Spring, Hobson and Walnut Streets (Basin, 21). In the first locus, an estimated 40 glass bottle and ceramic fragments dating from the early 20th century were found. In the second locus, surveyors uncovered approximately 30 glass bottle and ceramic fragments, the ceramics bearing the marks of several American potteries of East Liverpool, Ohio (Basin, 21). In the Cultural Resources Assessment conducted by Basin Research Associates, Inc. in 1989, neither of these sites was relocated.

The Garden City

During the mid to late 19th century the Guadalupe River was the home of elegant parks and gardens. In the area which has now been designated as the Guadalupe River Park, there were once large private mansions with park-like gardens. In the vicinity of Anita Street, within the project area, 27 Victorian style homes were noted as having significant historical value (Basin, Fig.6). Another historic structure, the Randall-Ruff house, was sited at the intersection of Vermont and Spring streets. Today, none of these structures still stand. Historic estates also fronted on the Alameda with wide lawns, formal flower beds and ornamental trees and shrubs. On these estates, wealthy horticultural enthusiasts, such as business leader Samuel Hensley, cultivated exotic and rare plants imported from around the world.

Public gardens also helped earn San Jose its reputation as the garden showplace of California. One of the earliest of these was Prevost's Gardens, located on the
1876 Ward Map (First Ward)
Not to Scale
1850 Map of "Alameda Gardens"

Not to Scale
west bank of the river between San Carlos and Williams Streets. Built in the 1860s by the French silkworm farmer Louis Prevost, the gardens were home to imported flowers, bushes, fruit and ornamental trees and mulberry trees (upon which the silkworms fed). The garden also featured rose covered arbors and a flat boat which conveyed passengers across the river, an indication that the water level of the Guadalupe was significantly higher in those days than it is now. Louis Prevost's nursery, then one of the largest in the U.S., contained between 10,000 and 18,000 rose bushes, winning blue ribbons at the State Fair in 1858 and, for San Jose, the sobriquet, "The Garden City."

To the north of Prevost's Gardens was Live Oak Park, which extended along the riverbank from San Carlos to Park Avenue and was owned by Don Antonio Sunol. Sunol, who also owned the Rancho de los Coches (which was divided from Stockton's Rancho by the Alameda), had moved to the pueblo in 1822 and served as an official of its government. His park was so-named for the many live oaks which grew on the property, and, like Prevost's Gardens, was open to the public (Grant).

One of the most ambitious parks in San Jose's history - a downtown water park on the Guadalupe - was proposed in 1912 by Mayor Tom Monahan. Funded largely by donations from the citizens of San Jose, a dam was built just south of today's West St. John Street creating a lake for boating, rafting and swimming. Known locally as "Port San Say," it was hoped the lake would bring tourists from outlying regions into the City. Unfortunately, in the dry season the lake became a stagnant, mosquito infested pond and after less than 2 years, the water was drained and the dam dismantled (Farrell).

In spite of such disasters, however, the enthusiasm for large or unusual gardens so readily possible in this environment of rich soils, abundant water and mild temperatures continued to grow. The Garden City image was further strengthened in the 1920s and 1930s by the Santa Clara County Rose Society which organized rose shows and annual rose planting days, established the San Jose Municipal Rose Garden (one of the first in the nation), and helped establish the Fiesta de las Rosas, still remembered by many citizens.

Many of the gardens planted during this era remain today. Those such as the Sam Allen Garden (near the corner of San Antonio and 13th Streets) and the Victorian Briar Rose Garden (at Jackson and 18th) are gardens which have been restored and maintained and just a few of the scores which can be seen in the San Jose area. Some of these were the subject of a tour in the Spring of 1993, sponsored by the Garden Center of the Guadalupe Gardens and the South Bay Heritage Rose Group.

Commercial flower and seed growing continued within the project area and as late as the 1970s, the Katazawa Japanese nursery could be found on Taylor and Coleman Streets, as well as the Katazawa Seed Co. at Taylor and Spring Streets.

Modern San Jose

Between 1940 and 1943, the City of San Jose secured 483 acres of the Stockton Ranch for the site of a municipal airport. In 1946, the first buildings were constructed, including California Aviation Activities and a flight school. The terminal officially opened in 1949 (Barin, 13).

The opening of the airport was one of many developments during the past 50 years which reflect this region's enormous growth in population and industry.
Today the Santa Clara Valley has one of the largest concentrations of aerospace and electronics firms in the world, and is home to many internationally recognized technology-related companies including Hewlett Packard, Apple, IBM and Sun Microsystems.

Such rapid growth and industrialization have inevitably affected the environment of the Santa Clara Valley and have created a challenge for its citizens to find creative solutions to such problems as air pollution and limited water resources. The creation of a botanic garden and environmental center in the City of San Jose responds to the growing need for natural settings within an urban context, a need first realized in this city over a hundred years ago. The proposed Guadalupe Gardens project, in fostering an appreciation of the natural environment and drawing upon the region's historical tradition of agricultural and horticultural land use, will be a vibrant revitalization of the Garden City tradition. By utilizing the technological resources of this region for environmental education, science and research, the Guadalupe Gardens represent a positive and progressive step towards the preservation of natural resources for future generations.

Sources


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Freeman, Lorrie Communication 1993

Grant, Joanne "Guadalupe River Park Has Worthy Ancestors" San Jose Mercury News (April 9, 1990)

Loomis, Patricia "Moraga Founded Pueblo of San Jose," San Jose News (August 10, 1973)

Masunaga, Leslie (San Jose Historical Museum)


Mullcr, Kathleen San Jose, City with a Past (San Jose Historical Museum, San Jose: 1988)

Thompson & West Historical Atlas Map of Santa Clara County (Thompson & West, San Francisco: 1876)

Wyatt, Roscoe Historical Names and Places in Santa Clara (San Jose Chamber of Commerce: 1948)
2.2 URBAN SETTING

The surroundings of the Guadalupe Gardens site represent important influences, both from both a local and regional standpoint. Regionally, the site is extremely well-located, being almost centered within a network of rail and road connections. The convergence of Interstate 880, U.S. 101 (with its Guadalupe Parkway connection), the 280 Freeway, as well as the Cal-Train route (with its nearby College Park station) and the light rail transit along North 1st Street all make the site very accessible from the surrounding region. In addition to this, it is a neighbor to, and technically speaking, a part of the airport complex, conceivably of importance in the future when the Gardens are complete and draw visitors from across the country and possibly even outside of the U.S.

Locally, the pattern of potential and future potential land uses, public transportation linkages and public facilities tend to reinforce the importance of this site and the particular uses being proposed. Just a few moments walk from the City and County civic centers, it is less than one mile to the City's attractive new downtown along the proposed trails to be incorporated in the plans for the Guadalupe River Park (henceforth GRP). As can be seen in the accompanying diagram, several bus lines serve the site along Hedding, Taylor and Coleman and the site can be accessed along existing bicycle routes. North 1st Street transit corridor is within 1/2 mile from the center of the site. This is important because of the many planned residential developments along this corridor. All of these will be of higher densities than currently found in the area, therefore generating a potentially greater number of Gardens users. Since these are largely condominium or apartment dwellings, the residents are not as likely to have gardens of their own.

The accompanying maps also show the significance of Hedding and Taylor Streets as cross-community collectors which can conveniently bring visitors to Guadalupe Gardens. It should also be noted that a Cal-Train line has recently been extended south to Gilroy and may in the future be connected with a line looping to the east and north towards Milpitas and Fremont, all allowing possible rail access to this area from the East Bay, the West Bay and south of San Jose. The bus lines serving the site directly or nearby include the 36, 62, 304 Bonus Bus, 160 and 502 Express Lines.

The location of the Garden Center toward downtown reflects its function as a destination for those coming from downtown facilities. This would become more prominent if and when the River Drive, currently planned as an extension of Autumn Street, is completed and connected through the adjacent Southern Pacific property.

In terms of the surrounding land uses, four important entry points occur: two on Hedding (at SR-87 and at Coleman), and two on Taylor (at SR-87 and at Coleman). Coleman offers downtown access along Market Street. No areas consisting of purely residential uses abut the property. Those to the northeast of the Gardens are separated by SR-87 and the GRP. The area directly opposite the project along Coleman is a mixture of residential and light industrial. Of great importance is the large Southern Pacific parcel directly opposite the curving portion of Coleman Avenue. Its future is still undetermined and while some land use studies were initiated by consultants to Southern Pacific, no plans have as yet been made public. The land has been designated "research and development" as part of the Downtown Strategy Plan (San Jose Redevelopment Agency, April 1992). The location of the terminus of River Drive could have a significant effect on parcelization of the SP property.
Existing solid buildings on the Coleman curve are proposed in the Master Plan to be retained for a variety of uses, including commercial uses, and since the Garden Center complex will incorporate a certain type of commercial activity (bookstore, garden cafe, etc.), the pattern of commercial uses on the SP property could be complimentary to these Gardens-related activities. For example, shopping complexes based on the agricultural themes and rural background of the Valley might benefit from overflow activities in the Gardens. Conversely, such an activity could also generate greater visitation and interest in the Gardens.

One of the greatest entry impacts will be the raised "urban" intersection at Taylor and SR-87. The elevated position of motorists arriving at this point will also provide one of the better overall views of the Gardens.

While pedestrian connections on the southwest side of the Gardens along Coleman are likely to be limited to the intersections at Hedding and Taylor, a total of 12 connections to the GRP trail system are possible along the northeast side of the Gardens. Because of the uninterrupted length along Coleman from the Taylor intersection to the Guadalupe River (a distance in excess of 1,500 feet) a lighted intersection at the entrance to the Gardens (and potentially opposite the proposed River Drive) would not be unreasonable.
2.3 RESOURCE SURVEYS

2.3.1 SURVEY OF EXISTING BUILDINGS

A survey of existing buildings in the study area was conducted in the spring of 1993. The results are shown in the following charts. The retrofit potential is one of the most important listings and Gardens-related uses were in mind when evaluating the existing buildings. Those listed as having poor retrofit potential are not necessarily poorly suited to their current or other alternative uses. The buildings shown as being retained in the Master Plan have been listed as either good or marginal, and have at least good retrofit potential. No buildings were considered excellent in that respect. Finally, the survey suggested that there may be toxic or harmful materials stored or residual at some of the sites. Further investigations by qualified experts would be required to determine this. The observations reflect merely the type of use taking place and the visual observation of ground conditions and/or storage and service areas. There is also no indication that the level of toxics possibly involved here is significant.
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<td>X</td>
</tr>
<tr>
<td>26</td>
<td>WOOD FRAME</td>
<td>GOOD</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
2.3.2 UTILITIES

The accompanying six utility maps reflect the best currently available information regarding existing utilities and the potential for removal for various above- and below-ground utilities. After contact with various private and public utility agencies, it was decided to proceed on the assumption that most above- and below-ground utilities could either be abandoned, removed, relocated or safely undergrounded. References on the these maps to lines to "be removed" are mostly those which fall within or serve the future GRP project boundary. Utility companies have apparently no plans to remove many of the remaining lines within the Gardens area because there is, as yet, no completed Master Plan even though the 650 homes these utilities served no longer exist.

Many lines, such as the television cable and water lines which served the 650 or so homes once on the site, could be abandoned. The aerial lines shown on the Pacific Bell map are no longer needed because of the removal of homes.

It is not known at this point how much of the cost for removal or relocation of these utilities the City would have to bear. Many of the privately owned lines, such as PG&E and AT&T, are subject to franchise agreements with the City. In the case of TCI or other video cable, it is conceivable that some of the existing underground line could be used as a part of a Gardens' closed-circuit TV system connecting the kiosks and various offices with the Garden Center complex.

Based on consultation with the Santa Clara Valley Water District, San Jose Water Co., and PG&E, several major underground lines will remain which the Master Plan incorporates under broad pedestrian paths along corridors where structures and large trees would be excluded.

A variety of lines are involved. Storm sewers along McKendrie, Hedding, University, Emory and Taylor will remain. A planned major trans-valley central pipeline water main from Milpitas to the east and Los Gatos to the southwest converges at the Guadalupe River. It continues underground through the Gardens along the current Emory Street alignment. The pipelines will be installed by the Santa Clara Valley Water District.

Utilities which will remain include:

1. A new 66 inch diameter storm sewer line along McKendrie (construction of the outlet of this line at the GRP is currently underway);
2. A new 30 inch diameter storm sewer line along Hedding Avenue;
3. Twin 66 inch storm sewer lines along University Avenue;
4. A proposed 66 inch diameter regional water supply line along Emory Street and Line Valve Vault Structure on the GRP boundary;
5. Underground high voltage lines (proposed in twin insulated steel pipes connecting the airport under Interstate 880 along Ruff Drive to the transition tower near the Garden Center building - PG&E 115kV Underground Lines);
6. A 60 foot transition tower and overhead high voltage line connecting from the above point to the nearby sub-station on the opposite side of the Guadalupe River (Overhead Conductor Termination).
While the exact locations are not known, recent plans for extension of reclaimed water supply system (San Jose/SCVWD Nonpotable Reclamation and Reuse Project) indicate supplies will be available at Guadalupe Gardens with a line extending upstream from the treatment plant near Alviso to a 16-inch main on Emory Street. The reclaimed water would be distributed from 12-inch tributary lines off Spring Street. While the 12-inch line is shown terminating at Hedding and Taylor Streets, subsequent tributaries can presumably fit patterns best suited to the needs of the Gardens. Consultants to the City for this project (CH2M Hill) estimate a possible maximum daily demand of 953 gpm of reclaimed water at full development. These estimates assumed an acreage of 146 irrigable acres — higher than estimated by this study.

Not on Map Accuracy: The study team referred to the 1986 Golf Course Feasibility Study for the Airport Approach Zone and the Hargreaves Interim Land Use Plan for Guadalupe Gardens, among other sources, documentation of existing utility locations. Much of the information in those documents did not agree with conditions estimated by persons contacted for this study (see list below). More detailed or up-to-date information was not feasible without a special engineering study. Therefore, actual conditions should be determined through on-site studies by qualified engineers at the time each area is subject to development.

List of Persons Contacted in 1993 for Utility Locations:

| TCII Cable                          | Jerry Isbill         | 408/452-9100 |
| San Jose Water Co.                  | Dean Folkening       | 408/279-7843 |
| Santa Clara Valley Water Dist.      | Head Mellow          | 408/279-7847 |
| City of S.J. DPW/Sanitary Sewer     | Mark Klemencic       | 408/265-2600 |
| Public Works Dept. (ext. 2234)      | 408/265-2607         |              |
| City of S.J. DPW/Storm Sewer        | Bill Eppler          | 408/277-4638 |
| Pacific Gas & Electric              | John Lunsford        | 408/299-1157 |
| Pacific Bell                        | David Mackey         | 408/299-1025 |
|                                     | Irene Francis        | 408/493-7094 |
2.3.3 COMPOSITE SITE ANALYSIS

The Composite Site Analysis map combines historic, physical and visual elements, soils, tree conditions, and future utilities as an aid in identifying themes and determining the location and character of the many uses anticipated for the Guadalupe Gardens. Of note are the 19th century alignment of the Guadalupe River which was much more sinuous than today's river and followed a route paralleling Ruff Drive. A tributary creek extending from south to north, approximately from the intersection of Coleman and Hobson, fed the Guadalupe River near its current intersection with Taylor. The orientation of this creek and the associated riparian forest have been incorporated as important natural history elements in addition to providing visual continuity. The creek crossed a large area of close to 100 acres of willow forests as mapped in the 1850s wherein several natural springs were found. One of these was near what is now the more westerly of the two Columbus Park fields. Of all of the elements shown, perhaps the most constraining are the major and existing underground utilities retaining, first- and second-quality trees, existing improvements (i.e. Courtyard Park and the Taylor Street Rock Garden), airport-related restriction zones and re-use potential of solid buildings along the Coleman curve near Hedding in the vicinity of Ruff Drive.
2.4 EXISTING PUBLIC AND PRIVATE OWNERSHIP

The information shown on the ownership map reflects 1993 assessor’s map data and indicates most property owners and the names of the resident businesses. Ownership which may have changed since this information was made available are not included, as in the case of a concrete products construction firm which has appeared recently on the parcel at the end of Ruff Drive. The two small squares on the map with the letter P indicate publicly-owned parcels. The rectangle between Hedding and 880 is an airport guidance mechanism and the other, between Emory, Asbury, Spring and Vendome is owned by the San Jose Water Co. Since Columbus and Courtyard Parks are City-owned, no property boundaries are shown.

While commercial uses are identified on the opposite side of Coleman, the most significant undeveloped open space is that owned by the Southern Pacific Land Co. east of Taylor. The land uses for this parcel have not been determined. The following legend applies to the Public and Private Ownership Map.

- P Public
- C Commercial
- O Office
- LI Light Industrial
- R Residential
- V Vacant

Since there is no firm schedule for the construction of Gardens components, some of which may involve years of planning, design and fund raising, a schedule of building and parcel purchase is not included in this Master Plan. There are currently 33 parcels within the study area which are held by private owners. These are listed below:

1. R.V. Wagner
2. Children’s Home Society of California - O
3. R.V. Wagner
4. San Jose Self Storage - C
5. Y. Chang - C
6. V. Beaussay
7. E. Bledsoe - O
8. A.L. Legod - O
9. Exxon Corp. - C
10. L.A. Henderson (Master Metal Products) - LI
11. S. Lither (The Luggage Center) - C
12. K. Carroll (S.B. Motors) (Parishaus) - LI
13. Northwind Properties - V
14. P. Ellington - V
15. Alves Properties II (A.J. Auto Detailing) - LI
16. K. Rosman (Sunrise Metals Corp.) - LI
17. G. Brancato (Michael’s Tune-Up) - LI
18. S. Sandelman - V
19. S.P. Arnold (New England Glass Door)
20. B. Nielsen (Jack Nielsen, General Contractor) - LI
21. D. Costa
22. E. Costa - V
23. E. Jones (G.A.B. Construction)
24. PTI Inc. (Coleman Automotive Ctr.; Auto Image; European Auto Clinic; Townsend’s Auto.; Allied Transmission; Progressive Body Shop) - LI
25. P.N. Kouvetas (Gold Rush V.I.P.) - C
26. R.B. Scheidts (Ray Scheidts Electric Co.) - LI
27. G. Rosman Jr. (American Welding Co.) - LI
28. Norma Alves (Harcastle Autothon) - LI
29. E. Pelligrini - V
30. H. Pelligrini (Airport Office Furniture)
31. Bevans Electrical Inc. - LI
32. Investor Properties - LI
33. H. Crawford
2.5 HORTICULTURAL EVALUATION & MANAGEMENT GUIDELINES

2.5.1 VEGETATION

The Guadalupe Gardens site has a long and varied history with regard to vegetation. As a part of the Guadalupe River riparian forest, the natural vegetation was composed predominantly of broadleaved, deciduous trees. When the area was settled, agriculture was introduced and continued through the early 1900s. Then in the 1940s, the area was converted to a residential community in which much of the former landscape was replaced with ornamental plants. Although most houses were removed in the late 1970s and early 1980s, remnants of the landscape and street trees planted during the 1940s still remain today. The present vegetation, which includes ornamental plants, fruit and nut trees, as well as naturally-occurring trees and their associated wildlife provide valuable resources for Guadalupe Gardens. In particular, these serve as valuable indicators of the site suitability and drought tolerance of a wide variety of tree species.

Survey Methods

Vegetation was surveyed during August 1992. Each tree and large shrub 4" or greater in diameter was tagged with a number, plotted on a map and described. Information collected included plant name, height class, trunk diameter, health rating, structural characteristics, site constraints and pest or other horticultural problems (Table 1). To help identify plant location, each block was given a grid number (fig. 2). A complete listing of information collected for each plant is provided in Appendix A.

Description of Vegetation

Species and size:
Our survey identified and described 1016 plants, comprised of 111 taxa (Table 2). Seven species appear to be indigenous to the site; an additional 13 are native to California. The most frequently occurring trees were Norway maple (9% of population), California black walnut (8%) and London plane (7%) (Table 3). The taxa present represent common landscape, fruit and nut plants, as well as a few species uncommon to the San Jose area (e.g. Jacaranda, Flame tree, Umbrella catalpa).

We estimate that most of the trees on the site are 30-40 years old. Some of the indigenous trees are older, while the parks contain younger trees. Most of the trees are relatively small. Trunk diameters ranged from 4" to 55", with 61% falling between 9" and 20" (Fig. 3). Plant height ranged from 5' to over 51', with most trees reaching between 15-30' (Fig. 4). Only six trees were over 50' tall.

Plant condition:
The tree condition rating classified plant appearance, structure and vigor into four categories: poor, fair, good and excellent. Most of the trees were in fair condition (34%), followed closely by those in poor condition (32%) (Fig. 5). The remaining third were rated in good to excellent condition. Street trees were in slightly better condition than landscape trees (those not along the streets), even though many of the street trees had been topped. This may be because street tree species are selected by professional city arborists for their suitability to the site and ability to tolerate urban environments.

The condition rating included both health and structural characteristics.
Therefore, trees in good vigor that had been topped for utility clearance or had other structural problems were rated in "fair" condition. If the crowns of those trees could be restructured, or the structural defects corrected, the condition rating would be raised (see Recommendations section). Many of the London plane trees fall into this category.

Tree condition was largely a function of species. In general, trees with good frost and drought tolerance were in good condition (e.g. Coast live oak, Tree-of-Heaven), while those that require either irrigation or a water table within reach of the roots were in poor condition (e.g. California black walnut) (Tables 4 and 5).

Except for Columbus Park, the trees have received little irrigation or other care for the past 15 years. The value of irrigation and maintenance is illustrated by comparing the condition of plants in the existing parks with those on the unmaintained portions of the site. Seventy-seven percent of trees in Columbus Park (grid #24) were in good to excellent condition, compared to 33% in the remainder of the site.

**Common plant problems:**
A number of cultural, site and pest problems were noted. Drought was the most pervasive problem. Associated symptoms were twig and branch dieback, thin foliage and poor growth.

The freeze of December 1990 injured a number of species. These included Jacaranda, California pepper, Flame tree, Avocado, Eucalyptus, Blackwood acacia and Citrus.

Excess soil from sites throughout San Jose has been stockpiled in several areas of the site, particularly grids #3, 12, 16, 22 and 23. An effort was made to keep the trunks of the trees and most of the area within the driplines free of fill. Nonetheless, the root environment of trees in those areas has been markedly altered.

There were relatively few pests and diseases noted. The most frequently occurring pests were sycamore scale and powdery mildew on London plane. Sequoia pitch moth and irregular pine scale were common on Monterey pine. Mistletoe was found on California black walnut and Modesto ash. Elm foliage was skeletonized by elm leaf beetle. None of the pests encountered were considered life threatening to their hosts.

**Retention Recommendations**

Suitability for retention depends on a number of factors. First, the condition of the trees must be considered. Next, the type of use intended should be evaluated to determine if the use and associated site changes are suitable for the tree. Finally, ability to provide required maintenance to keep trees in good condition in the new environment must be examined.

Our survey included an evaluation of tree conditions. A list of all trees in poor condition is provided (Table 6). These are the trees that we would not recommend for retention under most circumstances. There are exceptions to be considered, however.

**Unusual species** -- Preference might be given to trees of unusual species for the San Jose area, such as Flame tree, Umbrella catalpa.
Response to irrigation -- Some species, notably the Coast redwoods, may recover sufficiently if irrigation is provided. For other species, however, if the major structural branches are dysfunctional, the tree should not be retained.

Ability to restructure crowns -- It may be possible to retain trees injured by the freeze that are otherwise desirable by pruning annually for several years to restructure the crowns. This is an expensive, time-consuming process that probably is only worthwhile for exceptional trees.

Habitat preservation -- Declining trees with hollow trunks, and dead limbs are valuable for wildlife (e.g. cavity-nesting birds, roosts for raptors). Tree rated as 'poor' could be retained for their habitat value in areas where failure of the dead and decaying parts would not strike people or structures.

Microsite modification/screening -- There may be locations where it is desirable to have canopy cover or screening on a temporary basis. Poor quality trees that fulfill this function could be retained, with the intention of eventually removing those trees once the planted vegetation is established.

Site use will also affect retention decisions.

Cultural requirements of trees -- Site use should be evaluated relative to the cultural requirements of adjacent trees. For instance, frequent irrigation is not compatible with coast live oak. On the other hand, cottonwoods and redwoods would not perform well in non-irrigated areas. Deep cultivation of the soil is not appropriate near mature trees that are sensitive to root injury, such as California black walnut and Eucalyptus.

Impacts from grading and construction -- Soil compaction, cuts, fills, trenching and other excavations for structures or pavement destroy roots. These activities should be restricted from within the driplines of trees. In some cases, encroachment can occur safely. The ability of trees to tolerate the disturbance depends on the health of the tree, species tolerance and the extent of impact.

Removal of utility lines -- There are 171 trees at the site that have utility lines overhead, 146 of which are in fair to excellent condition (table 6). As trees grow into utility lines, they must be heavily and repeatedly pruned, which is both disfiguring to the tree and expensive to maintain. About half of the trees have been topped to provide utility clearance. There is a good potential to retain this group of trees if the utility lines were removed or relocated.

Removal of sidewalks and streets -- Thirty-eight percent of the trees are located along streets. In some cases, the tree roots and trunks are interfering with the sidewalks. Removal of pavement will need to occur very carefully to avoid injury to the trees. If sidewalks are to be retained or repaired, the root structure of the tree relative to the pavement should be evaluated. Cutting large surface roots to accommodate sidewalks is only a temporary solution, since the roots rapidly grow back. The cuts can also be very damaging to the tree.
Immediate Vegetation Management Concerns

There are several conditions at the Guadalupe Gardens site that need to be addressed now, before site development occurs. These are: irrigation of drought-stressed trees, fill and debris around the trees and weed control.

Irrigation:
The vegetation at Guadalupe Gardens has varying irrigation requirements. The wet rainy season has been helpful to alleviate stress for the drought-tolerant species. However, there remain many trees that cannot survive the summer period between rains without supplemental irrigation.

We have identified the irrigation requirements of each species by three categories.

**Required** - Deep irrigation is needed on a regular basis to keep trees healthy and vigorous. Optimum frequency would be every 4-6 weeks (depending on the weather) from May through October.

**Beneficial** - One or two irrigations each season will help maintain healthier trees and improve appearance, however, trees will generally survive if water is unavailable.

**Not needed** - These are the truly drought tolerant plants that can withstand our normal summer drought period, and do not depend on the water table.

In some locations, some of the species for which we recommend irrigation may be able to survive without, for example California black walnut and Fremont poplar. That is because in their native environments they have access to a water table that supplies them with adequate water through the summer. The water table at this site has dropped below the root zone of the plants, and no longer can provide needed water. Therefore, it has become necessary to irrigate these species if they are to flourish.

Those trees for which we recommend irrigation through the summer of 1993 are listed in Table 9. Each irrigation should supply enough water to wet the soil within the dripline plus 10' beyond to a depth of 2.5-3'. Since irrigation will most likely be supplied by water truck, a 6' berm should first be built around the tree, outside the dripline. Fill the basin twice. Plan on irrigating in late June and early September.

Weed control:
Tree-of-Heaven has become an invasive weed over much of the site. They are large, hardy, drought tolerant trees that withstand urban stresses. However, they produce heavy seed crops that germinate readily, and can overtake the property if not controlled.

Areas of significant seedling stands are plotted on the tree survey map (Fig. 1). Efforts to disc the seedlings should be intensified. The cultivation must be deep enough to uproot and turn over the plants. In many cases, the seedlings have grown into saplings that cannot be controlled by tilling alone. There is no specific information available about how to control the larger plants, although treatments would probably combine mechanical and chemical methods. We recommend working with a U.C. Cooperative Extension Weed Specialist to
design treatments and evaluate their results.

**Fill, debris:**
Fill soil and debris has been piled around 157 trees. The fill material and debris should be pulled out of the driplines. Further dumping or stockpiling on the site should occur in areas without trees.
2.5.2 SOILS AND HYDROLOGY

Soils characteristics and hydrology were evaluated in three ways. First, information available through the Soil Conservation Service was assembled. Second, soil pits were excavated at selected locations. The site, and soil profiles were examined and described by Kelley & Associates Environmental Sciences, Inc. (K&AES). Third, soil samples were collected from the soil pits, and then analyzed for chemical composition and texture. Analytical data and soils reports are provided in Appendix B. A summary is provided below.

Guadalupe Gardens is located on an alluvial stream terrace of the Guadalupe River. The soils are formed on alluvia derived from sedimentary rocks. Three soil units were mapped and described in 1947 and 1963: Campbell silt clay loam, Mocho silty clay loam and Sunnyvale silty clay (Fig. 6). Field work by K&AES confirmed the findings of the 1963 soil survey. Some transitional soils were described at the boundaries of the mapped units where intermediate characteristics of both units occur.

The surface soils (12-18" deep) throughout the site are fairly uniform. Soil texture is silty clay loam to silty clay. They are fertile, low in salts and near neutral in pH. Subsurface soils (below 2') tend to be heavier in texture and lower in nutrients. In the northwest portion of the site, lime (calcium carbonate) is present in high concentrations. The Campbell silty clay loam area adjacent to the river has a clay subsoil at 36-60 inches depth.

K&AES noted there was buried trash on the east side of grid #5. Grids #29 and 30 have been used as a dump for sewage from chemical toilets.

Groundwater

Early surveys of the site reported that groundwater levels reached as high as 3' below the surface. The K&AES investigations found no evidence of high groundwater. No water was encountered in the pits to 6-8'deep, nor were there soil characteristics present indicating recent groundwater.

The groundwater level has dropped many feet and is not expected to rise again in this area for a number of reasons:

- Region-wide groundwater pumping has lowered the water table throughout the Santa Clara Valley.
- The Guadalupe River has been confined and de-watered, leading to a drop in the base level of the drainage system and a cessation of contributions to groundwater near the surface.
- Irrigation on this and adjacent sites has ceased and no longer contributes to perched groundwater.
- Flood control structures have prevented overland flow/recharge of near-surface aquifers during times of high waters.

Horticultural Implications of Soils and Hydrology

Most of this site is suitable to a wide variety of plant materials and uses. However, there are some constraints to horticultural uses that should be considered.

High lime soils:
Consideration of soil characteristics when planning future site uses is advised
in areas with high lime concentrations. Plants sensitive to lime (e.g. most Prunus sp., Citrus, many Australian natives, acid-requiring plants) develop iron deficiency symptoms and are stunted.

The high lime subsoils in Sunnyvale silty clay restrict root development. This affects irrigation requirements of plants in that area. As an example, Fremont poplars in grid #34 are in poor condition due to drought. In examining the soil profile near them we found that their rooting depth was limited to 18' due to the high lime accumulations below that depth. In contrast, Fremont poplars in grid #26 are in an area where the subsoil has much less lime. These trees had deeper root systems to 4' and were able to survive long periods of drought. Due to their deeper root system they were able to survive long periods with no rainfall.

**Slow drainage:**
Drainage on the west and east sides of the site is restricted by slowly permeable subsoils. Plant selection, irrigation design and management should take into account the slow percolation characteristics of these soils to ensure surface drainage and avoid ponding.

**Drop in groundwater:**
A significant horticultural effect of the drop in groundwater at the site is that it will no longer support riparian vegetation without supplemental water. Existing species and future plantings, except for truly drought tolerant plants, will require supplemental irrigation to survive the long summer dry period.

**Use of reclaimed water:**
Irrigation using reclaimed water is being considered for this site. The reclaimed water quality analysis supplied by the Santa Clara Valley Water District indicates that total salts, boron, sodium, chloride and bicarbonate are within the range that can cause slight to moderate problems to plants and soils. While there will probably be many areas in which the water could be used with no problems, there are some situations in which irrigation with better quality water would be preferred, such as:

- Plantings composed of salt-sensitive plants (lists of salt tolerance of most agricultural crops and many ornamentals are available)
- Poorly drained soil areas
- Plants under frequent sprinkler irrigation and high evaporation (except turf)

Irrigation with reclaimed water can be accomplished at this site with appropriate plant and site selection, irrigation design and management. Monitoring soil salinity, leaching and application of gypsum will be needed as a regular part of site management.
2.5.3 HABITAT

Guadalupe Gardens can be thought of as a "habitat island," a refuge for wildlife surrounded by city. It provides a source of food and shelter for a variety of birds and small mammals. The pressure on the habitat will be increased as grading activity in the Guadalupe River displaces wildlife. Animals and birds that are able to relocate to the Guadalupe Gardens site will undoubtedly do so.

While we did not attempt to survey the wildlife at the park, we did encounter a number of wildlife species in the course of our field work. These included:

- California ground squirrel
- Doves
- Burrowing owls
- Red-tail hawks

There is a significant over-population of California ground squirrels which have tunnelled under sidewalks and around trees.

Burrowing owls live in abandoned California ground squirrel burrows. Their ability to survive at the site is dependent on a continued supply of new burrows and therefore on the population of ground squirrels (the owls move into new burrows when theirs become too dirty).

Wildlife can be enhanced at Guadalupe Gardens with a number of techniques that increase the food supply and provide cover, water and living space. Plantings can be designed to attract and support specific birds or animals, based on their food and shelter preferences.

CONCLUSIONS

Guadalupe Gardens has a diverse and viable horticultural resource on which to build. The vegetation is composed of 111 taxa. About two-thirds of the population is reasonably healthy and can form the framework for the site's future landscape. By considering the placement and quality of the mature vegetation and the needs for wildlife when making land use decisions, the resource can be enjoyed and enhanced.
### TABLE 1. KEY TO INFORMATION COLLECTED IN THE VEGETATION SURVEY.

<table>
<thead>
<tr>
<th><strong>Tree No.</strong></th>
<th>Each tree was tagged with a numerical label. Tree numbers correspond to those on the Survey Map.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grid No.</strong></td>
<td>City blocks within the project limits were assigned individual location numbers.</td>
</tr>
<tr>
<td><strong>Common name</strong></td>
<td>Plant name.</td>
</tr>
<tr>
<td><strong>Height class</strong></td>
<td>Estimated height of tree.</td>
</tr>
<tr>
<td><strong>Diameter</strong></td>
<td>Size of the trunk, measured 54 in. above grade.</td>
</tr>
<tr>
<td><strong>Condition</strong></td>
<td>Overall condition and vigor, rated on a 1 to 5 scale where 1 = poor and 5 = excellent.</td>
</tr>
<tr>
<td><strong>Street tree</strong></td>
<td>Is the plant located in a planting strip between sidewalk and street?</td>
</tr>
<tr>
<td><strong>Structure</strong></td>
<td>Identifies specific characters of a plant’s crown structure.</td>
</tr>
<tr>
<td><strong>Problem/pest</strong></td>
<td>Identifies specific pest and cultural problems.</td>
</tr>
<tr>
<td><strong>Site constraints</strong></td>
<td>Identifies physical limitations on development such as the presence of overhead electric wires.</td>
</tr>
<tr>
<td><strong>Comments</strong></td>
<td>Additional remarks.</td>
</tr>
<tr>
<td>Indigenous species</td>
<td>No. of Trees</td>
</tr>
<tr>
<td>----------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Calif. buckeye</td>
<td>Aesculus californica</td>
</tr>
<tr>
<td>Calif. black walnut</td>
<td>Juglanis hindsii</td>
</tr>
<tr>
<td>Fremont cottonwood</td>
<td>Populus fremontii</td>
</tr>
<tr>
<td>Coast live oak</td>
<td>Quercus agrifolia</td>
</tr>
<tr>
<td>Valley oak</td>
<td>Quercus lobata</td>
</tr>
<tr>
<td>Elderberry</td>
<td>Sambucus caerulea</td>
</tr>
<tr>
<td>Calif. bay</td>
<td>Umbellularia californica</td>
</tr>
</tbody>
</table>

**Total:** Indigenous trees 116

<table>
<thead>
<tr>
<th>Exotic species</th>
<th>No. of Trees</th>
</tr>
</thead>
<tbody>
<tr>
<td>White fir</td>
<td>Abies concolor</td>
</tr>
<tr>
<td>Big-leaf maple</td>
<td>Acer macrophyllum</td>
</tr>
<tr>
<td>Boxelder</td>
<td>Acer negundo</td>
</tr>
<tr>
<td>Norway maple</td>
<td>Acer platanoides</td>
</tr>
<tr>
<td>Silver maple</td>
<td>Acer saccharinum</td>
</tr>
<tr>
<td>Silver wattle</td>
<td>Acacia baileyana</td>
</tr>
<tr>
<td>Blackwood acacia</td>
<td>Acacia melanoxylin</td>
</tr>
<tr>
<td>Tree-of-heaven</td>
<td>Ailanthus altissima</td>
</tr>
<tr>
<td>Silk tree</td>
<td>Albizia julibrissin</td>
</tr>
<tr>
<td>Flame tree</td>
<td>Brachychiton acerifolius</td>
</tr>
<tr>
<td>Incense cedar</td>
<td>Calocedrus decurrens</td>
</tr>
<tr>
<td>Bottlebrush</td>
<td>Callistemon viminalis</td>
</tr>
<tr>
<td>Pecan</td>
<td>Carya illinoensis</td>
</tr>
<tr>
<td>Chestnut</td>
<td>Castanea sativa</td>
</tr>
<tr>
<td>Horsetail pine</td>
<td>Casuarina stricta</td>
</tr>
<tr>
<td>Umbrella catalpa</td>
<td>Catalpa bignonoides 'Nana'</td>
</tr>
<tr>
<td>Catalpa</td>
<td>Catalpa sp.</td>
</tr>
<tr>
<td>Atlantic cedar</td>
<td>Cedrus atlantica</td>
</tr>
<tr>
<td>Deodar cedar</td>
<td>Cedrus deodara</td>
</tr>
<tr>
<td>European hackberry</td>
<td>Celtis australis</td>
</tr>
<tr>
<td>Chinese hackberry</td>
<td>Celtis sinensis</td>
</tr>
<tr>
<td>Carob</td>
<td>Ceratonia siliqua</td>
</tr>
<tr>
<td>Western redbud</td>
<td>Cercis occidentalis</td>
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* Species marked with asterisk are native to California.
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* Species marked with asterisk are native to California.
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<td>Brazilian pepper</td>
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<td><strong>Total:</strong></td>
<td><strong>Exotic trees</strong></td>
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**TOTAL**             **ALL TREES**                       **1016**
CHAPTER 3.0
GOALS & OBJECTIVES

3.1 MISSION STATEMENT

The Mission Statement is designed to guide future managers of Guadalupe Gardens in both the development and operations of the Gardens. GGAC discussions of the Mission Statement paralleled the review of space allocation studies and preliminary lists of potential activities and elements, the latter gathered not only from the DRC, GGAC and staff but also from earlier proponents of specific projects. In the search for an appropriate overall mission for the Gardens, contributions ranged from such "global" concepts as a "global garden and human survival center" to a 'garden and environmental center for the Pacific Rim.'

The statement agreed upon by the Advisory Council reflects the unique history and objectives of the San Jose community. As suggested by former Councilmember Shirley Lewis (and former Chair of the Guadalupe Gardens Advisory Council), the Mission Statement and its implementation objectives reflect both the past and the future of San Jose and, in particular, the two most significant facts which make it a unique place --its rich agricultural and gardening past as well its role as the Center of Silicon Valley.

CONCEPT:

A world-class complex and garden center of great beauty and worth consisting of educational, botanical, horticultural, agricultural, environmental and recreational elements in keeping with San Jose's image as the "Garden City."

GENERAL GOALS:

1. To provide residents of the city and visitors from the Bay region and beyond with the experience of a great civic open-space and activity center embracing visual respite, aesthetic pleasure, relaxation and recreation in the heart of the city.

2. To provide open air and enclosed exhibition, gathering and meeting spaces and places for garden clubs and appropriate organizations from throughout the community, the Bay Region and beyond.

3. To develop an educational and research center for the promotion and dissemination of knowledge related to horticulture, botany, agriculture and related fields.

IMPLEMENTATION OBJECTIVES:

1. Create a design for a physical environment which thoroughly integrates all functional and aesthetic components of the complex and is unified by landscape and spatial elements appropriate for a major civic open space.

2. Establish clear design standards and guidelines reflecting the Concept and General Goals to guide initial improvements, on-going operations, and future proposals for development or alteration.

3. Focus on educational programming, horticultural, agricultural and
environmental issues by:

- Encouraging "hands-on" orientation and a sense of participation for all visitors;
- Drawing upon resources of the site, of San Jose and the Santa Clara Valley for educational purposes;
- Addressing current environmental concerns (both local and global);
- Encouraging education, demonstration, experimentation & research activities focused on agriculture and horticulture;
- Integrating appropriate arts events and programs;
- Looking to the future while learning from the past, highlighting the region's horticultural/agricultural history;
- Making use of the latest available technology, as appropriate.

4. Respond to diverse needs and interests of San Jose and Santa Clara Valley community by:

- Appealing and being accessible to community members of all ages, physical and learning abilities;
- Appealing and being accessible to tourists and conventioneers;
- Representing diverse racial, ethnic and age groups of the San Jose community;
- Viewing community members as a vital resource in planning as well as ongoing operations and educational programming.

5. Retain and create appropriately located and designed physical environments including, but not limited to, a variety of gardens, open space areas, buildings, an arboretum and a conservatory.

6. Retain and create active recreational field and open space areas as is feasible and as integral elements of the total design of the complex.

7. Create a complex which expresses a commitment to public service and the highest possible design standards throughout.

8. Encourage community involvement in innovative and creative relationships such as volunteerism and public-private partnerships.

9. Create a complex which is sufficiently revenue-producing to:

- Recover public capital expenditures;
- Recover operating costs and/or minimize City maintenance burden.

10. Retain and protect as many components of the site's natural environment (such as viable trees and other plants, quality soils, ground water, air and wildlife) as is feasible.

11. Respect FAA/ALUC safety and other legally applicable jurisdictional regulations.
3.2 PROGRAMMING SUGGESTIONS AND INNOVATIONS

While a Master Plan focuses primarily on the physical environment and its development, the process involved often generates exciting suggestions and innovations for the type of programs that could take place within the physical environments to be created at the Gardens. In general, there was agreement among members of the DRC and GGAC as to the importance of a botanic garden and environmental center, but also as to the exciting potential to make major contributions to the San Jose community.

Of utmost importance was the creation of a complex that served the entire community, not just garden lovers or environmental advocates but all groups, advantaged and disadvantaged, from all ages and ethnic backgrounds. Another emphasis was community participation in various forms of activities at the Gardens in addition to the passive enjoyment normally associated with botanic gardens. In addition to providing facilities for educational events (i.e. indoor and outdoor classrooms and information centers) surrounding primary and secondary school districts as well as community colleges and local universities would be invited to make use of the facilities for various environmentally and horticulturally related programs. Many of these groups were contacted and interviewed as a part of this Master Plan preparation and many of the schools were enthusiastic about such participation. Records, participation and space needs forms are available from all of those interviewed as a part of the appendix of this document.

In serving the entire community, the Gardens’ programs should complement existing programs rather than competing. There are already a good many formats into which the Guadalupe Gardens could tie. This is described in the city’s proposed new programs (Leisure and Life 2000, Department of Public Works, May 1993) which has very similar objectives and commitments to youth, the elderly, the disabled, the preservation and interpretation of the city’s historic and cultural heritage and its “emphasis on supporting family life and healthy lifestyle, development for persons of all ages, ability levels and backgrounds.” For example, Gardens programs could be integrated with ongoing programs such as the “Tree Amigo” program offered by Our City Forest, as well as initiating complimentary programs of its own.

In determining the types of activities to be carried out at Guadalupe Gardens, particular attention should be paid to the physical characteristics of the site as well as the history and pre-history of the area. Educational programs and permanent displays involving riparian vegetation or air quality in an urban setting or even the effects of noise from overhead air traffic are all examples of program elements which respond directly to the site’s physical characteristics. Historical and pre-historical resources might lead to such programs as on-site re-creation of a Tamien Village and pueblo garden or classes and demonstrations on 19th century horticultural developments.

Programming should also respond to the diverse nature of the San Jose community involving multi-cultural and multi-generational populations as well as those with special needs in events, activities and overall program structure. The focus of Guadalupe Gardens should be on community building and education, recognizing the interdependence of people from diverse backgrounds, and, in turn, the dependence of all people on a healthy environment. Education about and actual care for the environment are program elements which can unify and utilize every facet of the San Jose community. Outreach into diverse populations will be an important mission.
of the Guadalupe Gardens staff, as will be the careful coordination of projects so that members of diverse populations will have the opportunity to come together and work towards common goals. Educational programs with school children, home gardening and composting demonstrations, ongoing grounds maintenance and special events (such as a community-wide Arbor Day tree planting project) are all examples of programming with wide appeal and potential for broad-range involvement.

Garden programming should also utilize state-of-the-art technological resources of the surrounding Santa Clara Valley, examining ways in which these resources may unify environmentally-interested citizens on a local, national and even global level. Through the use of computers, fiberoptics and video, it will be possible to connect Guadalupe Gardens with similar gardens and institutions throughout the world. Computer monitors could also be used to link the gardens to other sites throughout the San Jose community. For example, a school library might access information on plants through a computer linkage.

During discussions among members of various community organizations, Guadalupe Gardens consultants and Advisory Council, City staff members and representatives from botanical gardens throughout the U.S., several themes in garden programming have emerged. These include (but are by no means limited to): Cultural Diversity, Special Needs, Environmental Health and Restoration, Technology, Education, Arts in the Garden and Horticultural and Garden Arts. The following section offers suggestions for ways in which these themes may be implemented through actual on-site programs. However, it should be noted that the separation of these themes into distinctive categories below is solely for purposes of clarity, and that the goal of garden programming, from its inception, is to inter-weave each of these themes as vital threads in the overall and ongoing programs of Guadalupe Gardens.

Finally, it should also be noted that the following suggestions are intended for implementation over time and that, above all, programs must respond to the current needs of the site. Thus, appropriate implementation of specific programs will require the constant assessment and evaluation of available resources and of the current stage in the Gardens' development. For example, the most appropriate types of initial programs might include soil preparation, planting and composting -- all of which are activities that could serve as educational demonstrations, as well as outlets for volunteer energies from all facets of the San Jose community. Sensitivity to such factors as community needs and interests, physical characteristics of the site, budgetary constraints and availability of staff will insure the effectiveness and feasibility of garden programming.

Cultural Diversity:

While one objective of garden programming will bring together diverse groups working towards common goals (for example, restoring the riparian environment or planting trees), multi-cultural programming must also be pluralistic, recognizing the rich and distinctive traditions of these groups by providing them with space and institutional support. Perhaps the greatest resource that Guadalupe Gardens has to draw from is the San Jose community, and the many social enclaves and ethnic groups who make up that community.
The value of a central and publicly accessible space in which these groups can learn about and celebrate each other's heritage is immeasurable. One way in which this can be carried out is through heritage gardens, which will provide not only an educational resource, but an opportunity for physical involvement by members of these groups. Special events programming, such as celebrations of Black History Month, Cinco de Mayo or Chinese New Year can also provide opportunities for education and involvement and may very well develop into time-honored traditions at the Gardens.

Special Needs:

A diverse community also includes people of different abilities and to insure participation by all, both grounds and facilities must be fully accessible. In demonstration gardens, where visitors will have an opportunity to get their hands dirty, there must be raised beds for access by those in wheelchairs or those who are unable to bend down. Garden features can respond to a variety of special needs groups. For example, special paving can be laid down that guides the visually impaired, signalling different parts of the garden. A sensory garden with fragrant herbs and flowers or those with an unusual texture is also recommended.

Programming should be implemented which involves people of different abilities, including those with developmental disabilities, in the on-going maintenance of the site and in community-wide special events at the garden. One suggestion is the creation of a volunteer corps from a nearby group home (or homes) for the developmentally disabled which could be lead by a supervisor from the home and assisted by Guadalupe Gardens staff.

The impetus behind such programs is an awareness of the therapeutic value of working with plants. Thus, a horticultural therapy program assisted by professionals in this field might be developed over time on the Guadalupe Gardens site. Participants in this program could include senior citizens, people with disabilities, at-risk youth and people with terminal illnesses -- all of whom could, according to their wants and needs, work together or as separate groups. Activities could include soil preparation, garden design, planting, composting and harvesting. If produce is to be grown, this could go back into the San Jose community, either sold to restaurants to help fund the program, or donated to the institutions which serve these groups.

Environmental Health and Restoration:

A focus in this category is the interdependence of healthy people and animals, plants, soil, water and air. Nutrition and health become terms which are applied not only to humans, but also to the environment.

One way of demonstrating this is through air quality monitors placed in the Gardens and in various locations (such as the airport, the freeway and downtown). These would measure air quality at all points simultaneously and provide comparisons, thus illustrating the important concept that the presence of green life contributes to healthy air. The site should also address air quality by discouraging the use of fossil fuels by providing an environment that is pedestrian-oriented, easily accessible by bicycle and public transportation. The use of environmentally friendly alternatives to toxic pesticides should also be encouraged.

Water quality could also be monitored and facilities for treating biological
wastewater on site could be developed into an educational display.

The overall functions of the Gardens should also reveal sensitivity to the environment, using renewable energy resources such as sun, wind and water, where possible, and utilizing recycled materials in everything from building supplies to office paper. Materials used on site should be reused, recycled, composted and (in the case of water) recirculated. As these practices are employed, they should be accompanied by interpretive signage, informing the audience as to how a "green" institution functions.

Education:

An important objective in education at Guadalupe Gardens will be interaction, meaning that learning should not be a passive activity, but rather, one that requires involvement and participation. This goal can be implemented at every level, from children’s education to workshops for adults and even in traditionally passive elements such as signage. Following are just a few examples.

One excellent source for interactive educational programming ideas is the Austin Nature Center in Austin, Texas. Many classes taught at the Nature Center bring parents and children together to learn about their environment and usually involve one or two day sessions. Pre-schoolers and their parents can go for nature walks, dig for fossils, attend story tellings and meet live animals. Older children can go on a "bird hike" and make bird feeders, make and fly their own kites or create a garden. Ecology classes for kids include a garbage clean-up after which instructors show how to turn garbage into art. Another class, entitled "The 3 R's," demonstrates Reusing, Recycling and Reducing for 3 to 6 year olds.

At botanical gardens throughout the country, strong educational programs are usually associated with a strong link to local schools. Cultivating a working relationship with the schools in the San Jose area (from elementary up through the universities) is a vital responsibility of the Guadalupe Gardens education department. Classes from K-12 and from the University could be provided with space for research and other gardens. The ongoing presence of students will enrich the Gardens' daily activities and contribute to maintenance. Additional programs could develop such as class field trips and even "green" study units at the schools themselves with materials and guest speakers provided by Guadalupe Gardens.

Educational programs for adults might include hands-on workshops on agriculture, horticulture and composting. The UC Cooperative Extension Master Gardener’s program could be shifted to Guadalupe Gardens. A similar one at Santa Barbara Botanical Garden involves a 16 week training course offered by UC Cooperative Extension. Once trained, Master Gardeners help with plant propagation and grounds work and staff a telephone hotline providing help for local gardening enthusiasts. Special classes and lectures at the Gardens could also address such topics as ethnic gardens, ethnobotany (the use of plants for medicinal purposes in various cultures), organic gardening, non-chemical pest management, horticultural and gardening arts and innovative agricultural developments (such as bio-intensive agriculture).

Signage is another important educational element that can inform visitors not only about the plants that they see, but also about the processes at work
in the garden. For example, at the Missouri Botanical Garden, signs explain practices such as using composted materials or leaving grass clippings on the lawns (rather than raking them up), giving the environmental rationale behind these practices and, in turn, asking visitors if they will do the same in their own yards and gardens. Thus, there is an interactive element at work in the signs, as they create a dialogue with the readers. This idea can be taken even further by having places in the garden where visitors can actually respond to signage by answering questions such as "What does this place mean to you?" Responses could be in writing, via computer, or even video or sound. To broaden community participation, signs could also be created by students, artists, or others who are interested. The resultant interpretive signage would be temporary (a coordinator could schedule various groups to be responsible on a monthly basis) -- and perhaps could even be dismantled and sold as a source of revenue for the Gardens. In all of these ways, signs, which are traditionally a passive method of education, could become interactive elements.

Technology:

One of the advantages to the Guadalupe Gardens site is its proximity to Silicon Valley and the technological resources that nearby computer industries have to offer. By providing garden visitors with "state of the art" displays and learning facilities which utilize these resources, the Gardens will be easily distinguished from more traditional botanic gardens. The use of computer technology would also help to create a link between the Gardens and the community, as many members of the community work in the computer industry and have a vital interest in technology. An important benefit of this connection is that many companies with funding capacities are more likely to provide support to organizations that share their interests, and thus, both equipment donations and grant monies will be more available.

Computers in the garden will also serve a vital role in creating an interactive educational environment. The success of interactive computer-based educational programs has already been demonstrated at Clemson University (South Carolina) where an "Ecology Quiz" was developed for use in a free-standing kiosk. By answering questions regarding the environment and by rating their own concerns for environmental issues, students were able to compare their concerns with their actual "green" rating. The program is part of the "InteractiVision" line of software developed by The Educational Information Technology Laboratory at Clemson.

One use of computers discussed for Guadalupe Gardens is the linking of various parts of the garden to each other and to a central location in the garden center. Visitors in the center who want to see what is occurring simultaneously in various parts of the garden could do so, thus peaking their interests in various displays and drawing them out onto the grounds. Linkages could also be made between the Gardens and other sites in the community (such as schools, libraries and the Cultural Heritage Gardens) making information exchanges simple and immediate. Similarly, linkages could be made on a national and international level so that valuable horticultural information from around the world would be readily available.

Perhaps one of the more unique programming ideas discussed in the master plan process was the development of a "Multimedia Data Base" comprised of such media as still and moving images, sound and text -- all of which can be stored and transmitted through computers. This data base would be the
The collaborative creation of local artists, high school and university students (as well as any other interested parties) and would serve as a sort of "living archive" of the Gardens. The process of creating the database could begin immediately with students documenting the initial stages of the Gardens' development. Historical background of the site, as well as the agricultural and horticultural history of the region are also topics that could be researched and entered into the archives during this stage. The process of updating the "Multimedia Database" would be ongoing.

Creative uses of technology such as these would serve to distinguish the site as a forward-thinking center for environmental educational and as a major point of interest in the Santa Clara Valley.

Arts in the Garden:

Arts in the garden, like all garden programming, should respond to the physical characteristics of the site and should involve and represent the diverse populations that make up the San Jose community.

Arts should also help to convey the theme of environmental awareness -- for example, sculptures which serve to harness wind and water demonstrating these as renewable energy resources. Similarly, features might respond to the noise of overhead air traffic, creatively using this as a resource that can also be "harnessed." For example, a sound-activated water sculpture garden could be built in which fountains shoot more or less water into the air according to the noise levels. The effect would be a sort of "white-noise" created by the splashing water which would serve to both acknowledge and partially minimize the noise of overflying aircraft.

Features throughout the garden, like the signage described in the Education section above, as well as benches, light posts and even trash receptacles could all be "works of art" produced by local artists and students, creating a truly unique environment. These could, as is also mentioned above, be sold from time to time, providing a source of income for both the artist and the garden. This is also true of posters commemorating or advertising special events, which could be sold in the garden shop or bookstore. Another possibility is an annual show of "Art Inspired by the Garden," which is a tradition at Chicago Botanic Gardens and serves to raise funds for and heighten awareness of the gardens.

Horticultural and Garden Arts:

In keeping with San Jose's historic reputation as "the Garden City," Guadalupe Gardens should also promote horticultural and garden arts. The Gardens should not only provide examples of diverse forms of garden art (including historic, multi-cultural and even "state of the art"), but should also provide opportunities for visitors to contribute to the on-site features of the Gardens and to learn skills that they can apply in their own homes and yards. Ideally, the Gardens should not have a "hands-off" museum-like quality, but rather should invite hands-on participation as much as possible.

Garden design could become a participatory activity if a space is designated as available for periodically changing design schemes to be submitted by both professionals and non-professionals, students and even school children. Volunteers could assist with installation and upkeep of the space. Selection of designs could be via a special committee or the Outreach/Education
department.

Also through the Education department, there should be classes in horticultural arts for people of all ages and a variety of skill levels (from beginners to professionals). Class topics might include the growing of particular species of plants, special pruning techniques and floral arrangement. Garden design, the re-creation of historic gardens and bonsai growing are just a few examples of topics covered at other botanical gardens.

Special events at the Gardens can also serve to highlight the horticultural arts and have proven popular at gardens across the country. Events might include garden shows for both home gardeners and industry professionals, plant sales and festivals celebrating particular perennials. All of these will help to attract media attention, public enthusiasm and, oftentimes, much needed revenue.
CHAPTER 4.0
GARDENS, COMPONENTS AND THEMES

4.1 BASIC DESIGN THEMES

Several basic physical design themes are reflected in the physical design plan. These design themes are important and should not be underestimated by future gardens lest the resultant physical environment ten or twenty years from now lack continuity and a sense of the whole entity which has been conceived and proposed at this time.

Site Resources (natural and man-made):

In this respect the plan attempts to make the best of existing resources. For example, first-, second- and third-ranking trees of the horticultural evaluation should, until further investigation, be protected and incorporated into the Gardens. The Guadalupe River Park will eventually become an integral visual element of this entire area and its riparian plantings are extended well into the Gardens' site. Wherever possible the purchase and renovation of structurally solid buildings should be sought. This is particularly important north of Hobson Street since, according to land clearance agreements with the FAA, cleared land cannot be put to other uses besides "open space, park or agriculture." Thus, this precludes major new buildings and, for the most part, non-agricultural or open space-related structures northwest of Hobson Street. The Master Plan proposes nursery-type facilities, small kiosks and shade structures instead. The entire project is based on the assumption that, as a result of Santa Clara Valley Water District plans, there will in the future be abundant sources of reclaimed water available for use by the Gardens.

Continuity:

Two heavily traveled roads, West Hedding and West Taylor Streets, divide this otherwise unbroken plane into three large segments. They create physical as well as traffic "barriers" to free movement of pedestrians throughout the Gardens area and to prevent the viewer from sensing the Gardens area as a unit. Three different techniques are employed to overcome this. One is that of the repetition of riparian forests (angled at 45 degrees to the urban grid) at spacings of 200 to 600 feet. These will be the most visible stands as seen from Taylor, Coleman and SR-87. Secondly, groves of lower trees constituting the various arboreta collections extend from the northwest corner (Coleman at 880) generally paralleling Coleman Street to its intersection at Spring. Seen from the Coleman Street side of the Gardens, this will be the strongest continual visual mass linking the three segments. Third, an important view from the proposed Taylor Street spring (#64), across the existing rock garden and through the center of the Heritage Rose Garden, will become a strong visual connector to the Conservatory buildings to the southeast. This view corridor is over 1,500 feet long and, with the exception of Taylor and Hedding Streets themselves, will provide one of the longest through-axial vistas.

Bordering the GRP, the Guadalupe River Promenade, with its rhythmically spaced paired trees, plays both an aesthetic and functional role, providing a sort of visual connection as well as a vehicle-free pedestrian walkway. Finally, three "gateways" consisting of architectural arches or works of urban art will provide a strong sense of entry. Regardless of the direction of their
arrival on Hedding and Taylor Streets, drivers will be reminded that they are entering a contiguous zone.

Making Infrastructure and Maintenance Visible:

In general this design theme suggests making many of the functional and maintenance facilities and activities of the Gardens (those which would usually be "hidden") open to view to all visitors. For example, guided tours of the Corporation Yard would inform visitors of the very important functions and materials associated with this vital unit. It also makes the greatest educational use of utilitarian features. For example, the Santa Clara Valley Water District Valve (at Emory and the GRP) could be an exhibition, using the gigantic steel valve which is being removed (and replaced) in a plaza with an explanation of the Central California and Santa Clara Valley regional water supply system.

Similarly, due east of the Garden Center complex, PG&E plans to build a transition tower (connecting underground high voltage lines overhead to the Guadalupe River and the nearby sub-station). This, if designed in cooperation with PG&E could become an exhibit relating the tower and its functions to energy conservation. The programming possibilities along these lines are extensive and could include everything from informational signage along utility routes to classes observing emerging "environmentally kind" landscape maintenance techniques.

Subdue the Automobile:

In the early stages of planning the DRC/GGAC approved the approach of minimizing the impacts of the automobile and emphasizing the use of public and alternative transportation to and through the Gardens. The most prominent feature of this approach is that of the use of parking orchards (#11) instead of "parking lots." This involves the use of orchard or street trees spaced on a 22 foot grid in a decomposed granite paved courtyard. The trees would all be irrigated with sub-surface watering tubes and protection zones to prevent compaction and would be protected by bollards. The appearance would be that of a formal orchard. In addition, the parking areas are broken into smaller units and, with the exception of two small orchards off Ruff Drive, would be easily accessible from any of the three main access streets.

River Valley:

In essence, the recently cleared 140-acre Guadalupe Gardens site is, in geologic terms, a rediscovered river terrace. Even though the existing (and remaining) riparian forest will be totally removed along this portion of the river, it will be symbolically replaced by the plantings and the physical configuration of the mounds and pathways of the Guadalupe River Park. The Gardens extend this symbolism relying largely on five linear riparian tree forests (mentioned earlier) which will, by and large, repeat the plantings used in the Guadalupe River Park. Narrow meadows and swales draining from south to north would symbolize the meadows found along the tributary creeks of the Guadalupe River over 100 years ago. The riparian meadow and masses occur, as noted earlier, in all three segments of the Gardens.
Walking Loops

Not to Scale
State-of-the-Art Architecture:

The approach to all structures, not only those buildings in the Garden Center Complex, but also small utilitarian structures, information kiosks, shade plazas and the like should be designed to reflect the latest in sustainable architectural materials. This would mean the latest in materials that make use of renewable resources and recycled materials and relate to energy conservation, noise mitigation and the like. For example, solar and acoustic reflection panels and self-cancelling sound systems should be built into these structures. Experimentation structures (#45) could display, test and explain new materials and techniques as they emerge. In general, the type of structure proposed for the Garden Center Complex and minor structures is a modular space frame reflecting those typically found in greenhouse construction.

Another aspect of this "state-of-the-art" approach would be the extensive use of "green" architecture. This involves the use of trees and vines integrated with architectural structures, climbing wires and grids, trellises, arbors, etc., not only for visual purposes but for micro-climatic mitigation and control. The use of earth berms illustrated in the Conservatory cluster as well as the Garden Center building is another such idea since cooling and ventilation systems can make use of the variation between ground and air temperatures, particularly in greenhouse structures.

Accessibility:

Full accessibility is another important design theme. All major pathways will be paved with an all-weather skid-resistant surface (such as asphaltic concrete, Armorcoat or stabilized decomposed granite) since they must serve as emergency and service routes as well as being wheelchair accessible. All pathway gradients will meet the most recent ADA standards. The pedestrian bridge over West Hedding can be designed with access ramps and landings meeting ADA standards. Distance is also taken into consideration. The general arrangement of facilities is such that visitors may, starting from the Garden Center Complex, follow ten, twenty-five and forty-five minute walking loops. A sampling of exhibit types (i.e. Natural Landscape Systems, Walk Through History Exhibits, Varietal Gardens, Research/Academic & Commercial, etc.) would all be reachable even within the shortest ten minute loop. While a special accessibility garden (item #29) is planned near the Garden Center building, all of the Gardens area will be accessible to the disabled by virtue of the major and minor pathways planned. Even the smallest pathways would be a minimum of 48 inches wide allowing for wheelchair access. The pathway system provides a connection directly to all existing bus stops and to proposed bus stops at the terminus of the Guadalupe promenade with Coleman Avenue. Raised beds would be incorporated in the Community Gardens and Plots and all utilities, such as drinking fountains and restrooms would be accessible.
4.2 PROGRAM MASTER PLAN MAP & COMPONENTS
ACTIVITIES & ELEMENTS

In the early months of the planning process for Guadalupe Gardens, the efforts focused on the development of an "activities and elements" list for several reasons. One was to organize various ideas previously offered under reasonable and generic headings and as to provide a framework for additional ideas that might be contributed during the planning process. Secondly, this list was used to test potential space demands, by translating each element into estimated square footage or acreage figures. These area figures were, in many cases, reduced substantially as a result of specific design examinations. These examinations resulted in the regrouping of some of the elements under different headings as well as adding other uses in this design evolution. While some have taken new titles, almost all of the items included in the "Activities and Elements" list of February 1993 are included under the headings below. While the list reflects the location of a particular item or zone, many uses, such as Natural Systems or Walk Through History components, are spread throughout large areas of the Gardens. The February 1993 Activities and Elements List is reproduced in the Appendix to this document.

ACTIVITIES AND ELEMENTS:

Streetscape and Overall Landscape Design Framework
Garden Complex Center
Research/Academic/Commercial (Green Industry)
Natural Systems
Walk Through History
Varietal Gardens, Exhibits and Arboretum
Community Gardens and Plots
Commercial/Institutional (Research and Commercial?)
GG Corporation Yard and City Landscape Service Center
Active Recreation Area

Because of the general nature of the master plan and the likelihood of revision to specific exhibits and structures, only the total areas under each of the ten categories above are given. As discussed earlier, each element or exhibit given is a physical entity and the types of uses possible within each will vary greatly depending on the educational and development policies of the Guadalupe Gardens non-profit organization. In the lists which follow, those items which were originally included on the Activities and Elements list are shown with an asterisk (*). Numbered items are called out on the Guadalupe Gardens Program Master Plan Map.
GARDEN COMPONENTS

1. Courtyard Garden (II)*
2. Taylor Street Rock Garden (II)*
3. Main Meadow (multi-use, events)
4. Picnic Area*; Field Restrooms*; Shade/Rest. Pavilions*; Signage Structures*  
5. Major Pedestrian Path & Maintenance Security Road  
6. Minor Pedestrian Path  
7. General Landscape buffer Zones*  
8. Guadalupe River Promenade  
9. Hedging Street Pedestrian Bridge  
10. Taylor Street Pedestrian Undercrossing  
11. Parking Orchard  
12. "Gateway" Archways or Sculpture (3)
13. Information Kiosks  
14. Sidewalk Greenways (Taylor, Hedging & Coleman)  
15. Garden Center Building (multi-use) with overlook terrace*  
16. Conservatory*  
17. Meeting & classroom: active, volunteer space  
Galleries/orchard display*  
18. Garden Cafe*  
19. Garden Offices*  
Multi-media center*  
Library/herbarium  
20. Bookstores/plant, gift sales*  
Visitor, orientation center  
21. "Green" technology information reference Center  
22. Festival Plaza (multi-use)  
23. Conservatory Plants & Outdoor Gallery (w/ shade acoustic shelter)  
24. Green Market Place (plaza)*  
25. Children's Discovery Garden*  
26. Home Demonstration Garden*  
27. Activity terraces (tree shaded)*  
28. Energy conservation exhibit, PG&E Tower/Transit Station  
29. Whole Access Gardens* (special needs, fragrances, textile, therapeutic garden, etc.)*  
30. Rotating seasonal flower display beds*  
31. Environmental Process Art Terrace  
32. Acoustically activated fountain  
33. Maze garden*  
34. Gardens of the Future (S.J. Youth Garden)*  
35. Service/staff parking orchard  
36. Nursery Training Lab/Research Lab*  
37. Greenhouses, Shade houses*, Classroom*  
38. Water Resources:  
Education Center  
39. Xeriscape Demo. - Shrubs, trees  
41. Water Conserv. Irrigation Exhibits  
42. Hydroponics display*  
43. Reclaimed Water demo*  
44. Regional Water Resources Exhib. SCVWD valve  
45. Future Bldg. Techniques Ctr.: Renewable bldg. resource demo., research and structures  
Indigenous bldg. materials*  
Low impact bldg./land development*  
Noise pollution mitigation  
Pollution Prevention Information Center  
46. Crop Trees  
47. Urban Forestry Test and Demonstration Grove  
48. Flower Hybridization Center (Bldg. & Greenhouses)  
49. Green Industry Center: New garden supplies, equip., tools, exhibits  
50. Offices, Information Center*  
51. Computerized Commercially Available  
Plant Materials Reference Library  
52. Green Industry Display Plaza  
53. Small Retail Nursery  
54. Bio-intensive Demonstration plots*  
55. "Gene Bank" plant groupings*  
56. Coast Range Forest Trees: Cowichan  
57. Coast Range Forest Trees: Euroleaf  
58. Valley Oak Savannah Groves*  
59. Riparian Forests*  
60. Coastal Chaparral*  
Customer Exhibit  
59. Bay edge grasses & herbs "shoreline"  
60. Bay edge seasonal wetland*  
61. Borrowing Owl Observation Point*  
62. Guadalupe River Geomorphology & Flood Control Exhibit  
(at Taylor Street undercrossing)  
63. Tributary Creek bed (artificial, symbolic)*  
64. Tributary meadows (native meadow swales, grasses)  
65. Taylor Street Spring (artificial)  
66. Tamalies/Oblone Village Reconstruction*  
67. Mission Gardens*  
68. Pellar Monument*
69. Commodore Stockton Memorial* (home, garden, nursery)
70. Victorian "looping" houses & gardens*
71. 19th C. Agriculture: Wheat fields/pasture
72. * Hops
73. * Vineyards
74. * Row crops
75. * Demo orchard/fruit drying sheds/tableas
76. * Historic cultivars
77. Heritage Rose Garden
78. Hobson Bridge (to Pueblo S.J.) Interpretive Plaque
79. College Park School (looping) exhibit
80. Historic Garden Center Bldg.
* Herb display
* Balb Tower
* Ornamental Grasses
* Cloud Gardens
* Gardens representing world temperate zones
* Dwarf Plant Materials Garden
* California & SCV Endemic Plant Groupings
* Plants for Humanity Exhibit
* Palm Garden
* Desert Garden
* Shade Garden
* Plants for Humankind
* Biblical Plants Garden
* Medicinal Plants (from all continents and cultures)
* Ethnic Foods garden/exhibits
81. Garden Art Terrace
82. All-Skill Religious Ceremony Glade and Engineered Marshland
* Ethnic Heritage Gardens
83. Family & Individual Garden Plots*
84. Group on C.S.O. Garden Plots*
85. School Garden Plots*
* Small specialty crop commercial (restaurant, organic)
* "You Pick" free farm (small, short term operation)
86. C.G. Plot Offices & Center (exist residence)
87. C.G. Plot Warehouse, Workshop, Coffee shop (exist. tilt-up)
88. Farmer's Market square
89. Roadside Produce Stand
90. Offices & Service Blkgs./Red Cross & Traffic Conr
91. Service Yard
* Small office/service bldgs. (for start-up "green" firms)
92. Propagation Greenhouses & yards* (converted storage units)
* Hardening structures
93. Production Planting Plots*
94. Container Stock Gardens*
95. GG Service Building, offices, garage, workshop
* Materials, equipment and vehicle storage
* Staff parking
96. Materials yard, bins, mixing palettes, greenhouse, potting sheds, stock container storage
* Roadside Plant Sales Stand
97. City Landscape Service Center: Office and Workshop
98. * Greenhouses, shade struc., etc.
99. * Growing/Container storage grounds
100. Regulation Soft Ball Field
101. Regulation Soccer Field (portable goals)
102. Bleachers, restrooms, office, storage
103. Engineered Marshland

48
4.2.1 STREETSCAPE & OVERALL LANDSCAPE DESIGN FRAMEWORK

This category includes Gardens improvements which are already in place such as the Courtyard Garden and Taylor Street Rock Garden. They assume as well, the completion of improvements to Route SR87 (the Guadalupe Parkway). The meadows and riparian forests would repeat plant materials used in the Guadalupe River parkway, namely Bay, Laurel, California Sycamore, Coast Live Oak, Cottonwood and White Alder in order to insure continuity.

The River Promenade (a 12 foot paved section flanked by double rows of regularly spaced columnar trees) would repeat those used along the Riverside Drive to the south of Coleman. In the vicinity of Taylor Street, the promenade would "borrow" the twelve foot pathways presently planned for the Guadalupe River Park for short distances. A proposed pedestrian bridge over Hedding and a pedestrian undercrossing beneath the proposed Taylor Street off-ramp (from SR-87) would allow an uninterrupted pedestrian route from the southeastern to northwestern ends of the project. The main pathways in the gardens will be a minimum of eight feet wide allowing accessibility by service, security and emergency vehicles throughout most of the Gardens areas. Conversely, not all pathways will be open to the public. For example, it is anticipated that the public would only be allowed access to the Wholesale Nursery Complex and City Landscape Service Center areas north of Hedding Street during guided tours. Some of the pathways, such as those along the current alignments of University and Emory Streets are within easement rights-of-way required for drainage and major water supply lines planned by the Santa Clara Valley Water District and others and provide service access only.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

1. Courtyard Garden (E)*
2. Taylor Street Rock Garden (E)*
3. Main Meadow (multi-use, events)
4. Picnic Areas*; Field Restrooms*; Shade/Rest Pavilions*; Signage Structures*
5. Major Pedestrian Path & Maintenance Security Road
6. Minor Pedestrian Path
7. General Landscape buffer Zones*
8. Guadalupe River Promenade
9. Hedding Street Pedestrian Bridge
10. Taylor Street Pedestrian Undercrossing
11. Parking Orchard
12. "Gateway" Arches of Sculpture (3)
13. Information Kiosks
14. Sidewalk Greenways (Taylor, Hedding & Coleman)

The three gateway arches or sculptures proposed at Taylor and the SR-87 offramp and Hedding and Coleman will need to be designed at a later date. A design competition would, in this case, be an appropriate way of selecting high quality designs with a high profile event. The process would involve the development of design criteria and an invitation to artists/architects/environmentalist teams to propose various ideas. The pedestrian bridge at Hedding near the Guadalupe River Park would similarly be designed as a gateway, possibly involving signage and flags.
Shade/Rest Pavilions were included on the original Activities and Elements List. The idea has expanded to include information kiosks. These would be the small-scale structures continuing the architectural themes of the Garden Center Complex buildings and could include informational signage and hopefully other "high-tech" hook-ups, such as close-circuit video, for accessing general GCC library data or data regarding the exhibits or plants in the vicinity. The shade pavilions with accessible restroom facilities and drinking fountains, benches, bike racks and arbors would be set in small plazas for picnicking or resting. The arbors could incorporate some of the noise mitigation features proposed for the shade structure at the Conservatory Plaza.

The information kiosks and rest pavilions are located at important junctures in the trail and service road system. For example, they occur at the intersection of Emory and the pedestrian Riverside Promenade adjacent to a potential major exhibit regarding regional water resources. At this point, a valve and water transport pipe might be displayed. A large diverter is something that the Santa Clara Valley Water District plans to construct in the near future and the District should be approached regarding sponsorship of this exhibit. The pavilions also occur at the intersections of major paths where the entrance to four or more exhibits would be found. Thus, the information displayed in these would respond to surrounding displays, acting as a gateway to each. Other such points occur at the Victorian house (footprint) and garden exhibit area, at the entrance to the Heritage Rose Garden, at the entrance to the College Park School (footprint) exhibit and at the northwestern terminus of the Riverside Promenade.

Sidewalk greenways are proposed for portions of both sides of Hedding and Taylor and for the Gardens side of Coleman Avenue. The sidewalk and planting zone would be 30 feet wide. This would allow for an eight-foot-wide sidewalk flanked by a double row of standard shade trees (trimmed up to a minimum of eight feet clearance to allow maximum visibility from the streets into the Gardens’ exhibit areas, but conversely to allow for screen shrub planting along segments of Coleman Street where some screening would be appropriate.

Parking is accommodated in Parking Orchards throughout the Gardens, with the exception of a few utility areas. Labeled trees planted on a 22-foot square grid with tree guards or bollards could give the appearance of an orchard as well as providing for the testing of trees (as in the case of gene pools) for their adaptability to urban conditions. The pavement would be decomposed granite over compacted gravel base which would allow a certain amount of natural ground water drainage and air. Trees would be irrigated individually. While the spacing is less efficient than would be possible in a normal asphalt paved parking area, the arrangement reflects the idea that the automobile should not dominate in this environmentally sensitive environment. Other botanic gardens have begun to make similar use of their parking areas for educational purposes.

There are five linear tributary meadows which angle from south to due north (at a 45 degree angle to the existing street grid) from the Gardens to the Guadalupe River Park. In addition to their aesthetic function (to create a series of meadow/riparian forests combinations which by repetition link the three blocks of the Gardens) serve as gentle swales, guiding surface run-off toward the Guadalupe River Park boundary where it would filter through
Guadalupe River Promenade
High Point Overlooking  GRP & GG
Plan  Not to Scale
Guadalupe River Promenade
High Point Overlooking GRP & GG
Cross-section Not to Scale
Typical Pathway / Shade Pavilion Junction

Not to Scale
Guadalupe River Promenade

@ Typical Shade Pavilion / Info Kiosk

Cross-section Not to Scale
Taylor Street Pedestrian Underpass
Section Diagram
Not to Scale
Hedding Street Pedestrian Bridge
Perspective View - Parking Orchard
man-made "wetlands." These small, marshy areas would be designed with drop inlets and catch basins, submerged in graded gravels and concealed by a surface zone of hydrophytic plants. These would filter out particulate pollutants and the plants would make use of the non-particulate nutrients. The function and design of these elements would be illustrated with interpretive exhibits at their juncture with the promenade.

The regular spacing of these columnar trees of the River Promenade provides a visual rhythm that connects the many components of the Gardens. The open spacing, ± 30 feet will allow for cross views between the GRP and the Gardens. These trees will in general be taller than the arboretum groves closer to Coleman Avenue.

The River Promenade does not exactly parallel the Guadalupe River Park boundary, allowing the expansion of GRP type plantings into the Gardens in some areas. In other areas, where the Promenade pulls a sufficient distance away from the boundary, there will be room for Gardens exhibits. Examples include the Mission and Pueblo gardens near the Pellier Monument. Conversely, there are two short segments where the promenade "borrows" the 12-foot wide paths of the GRP by allowing the columnar trees to border the paths at the same spacing.

Some portions of the promenade parallel the proposed PG&E high-voltage underground line, precluding the planting of tall trees or the building of structures.
4.2.2 GARDEN CENTER COMPLEX

This complex has been located as closely as possible to the termination of the proposed River Park Drive and at the southeastern end of Guadalupe Gardens making it more accessible to pedestrians using GRP paths from the downtown area and elsewhere. All major structures are placed southeast of Hobson assuming general agreement between the City and the Federal Aviation Administration. Vehicular access to the site is convenient as well, connecting to the downtown area along Coleman and Market Streets. Coleman as well has a divided median allowing for left-turn pockets from both directions. It is assumed that the River Park Drive terminus will occur opposite the entrance to the Garden Center Complex. The Main Meadow, an important central component of the complex, also happens to be an area with a minimal number of valuable trees. It is also a site which should be relatively visible from the proposed raised urban intersection at Taylor and SR-87—particularly in the winter when bare deciduous trees allow a view through the riparian forest of the GRP. The major components of the Garden Center complex are as follows.

<table>
<thead>
<tr>
<th>Building</th>
<th>SF</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG&amp;E transition station</td>
<td>3,500</td>
</tr>
<tr>
<td>Garden Center Building (multi-use)</td>
<td>8,100</td>
</tr>
<tr>
<td>Conservatory</td>
<td>14,400</td>
</tr>
<tr>
<td>Meeting/Classroom/Docent Space</td>
<td>3,600</td>
</tr>
<tr>
<td>Garden Cafe</td>
<td>5,000</td>
</tr>
<tr>
<td>Multi-media Center</td>
<td>2,000</td>
</tr>
<tr>
<td>Library/Herbarium</td>
<td>3,000</td>
</tr>
<tr>
<td>Bookstore/Plant &amp; Gift Sales</td>
<td>6,000</td>
</tr>
<tr>
<td>Guadalupe Gardens Offices</td>
<td>3,000</td>
</tr>
<tr>
<td>Galleries and Enclosed Display</td>
<td>5,000</td>
</tr>
</tbody>
</table>

It is important to remember that many of the programs possible at this site can take place in the various plazas and pavilions surrounding or adjacent to these buildings. Even the Garden Center Building has an overlook terrace that can be used for events. The nature of these events will, of necessity, be defined by the airport activity and noise levels of approaching jet aircraft (and less frequently those taking off). Thus, those events such as flea market or other activities involving stalls and booths for sales of plant materials and environmentally-oriented goods might be feasible whereas outdoor concerts and performances would not be. However, in this day and age of avant-garde "events" and "process" art, it is even conceivable that environmentally-related performance events could incorporate the sounds of approaching aircraft.

The architectural techniques and materials would reflect the concept of sustainable or green architecture to the greatest degree feasible. The latest construction techniques mitigating sound (such as thermal acoustic glazing and self-cancelling sound projection systems) should be employed. Double-plate thermal acoustic glass would be used for major glass structures such as the conservatory. Other innovations might include the use of ground level fresh air intakes and upper level warm air exhaust to create natural circulation systems. Exhaust fans could be solar operated. The buildings themselves would illustrate how plant materials (vines, shade trees, etc.) can provide solar access during the winter and shade during the summer. Sloping vine walls, sod (and planted) roofs would all provide a visual and educational transition between the green environment and the proposed sheltered environment. The buildings are based essentially on "greenhouse"
Garden Center Complex
Not to Scale
Perspective View - The Conservatory
themes using a composition of triangular tubular space frames and pyramidal forms often associated with the roofs and pre-fabricated trusses of greenhouses. Because the roofs are steeply pitched, (depending on the location of the building), they would tend to deflect airplane noises back toward the source rather than to surrounding plazas. Wherever possible, interior uses would be open to adjacent outdoor use areas, either with gauged doors or windows -- again to maximize the awareness of the blending of buildings and landscape.

The field of sustainable architecture is expanding rapidly and standards reached in 1993 reflecting the use of non-toxic materials, energy conservation, noise mitigation, the use of renewable resources and recycled materials may be outdated by 1994 or 1995. While the majority of buildings in the Garden Center Complex will reflect the latest in materials and techniques (following the examples of the National Audobon Headquarters building in Washington D.C. and the Natural Resources Defense Council headquarters building in New York City), it is not expected that the Gardens Corporation can afford to constantly replace older/outdated materials.

Instead, this plan proposes the development of a "Future Building Technologies Center" located near the Western edge of the Garden Center Complex (item 45). Here structures, both permanent and removable, designed specifically for the testing and display of new materials, would be clustered near an office and library housing a Green Building Council. Thus, information on current and emerging physical site development and building technologies will be available to the public. This could take place in an existing building appropriate for rehabilitation. (Please see page 51.)

A green technology reference center is proposed southwest of the Conservatory and would be a small building with computer linkages to environmental and horticultural information sources in the Santa Clara Valley. Important outdoor use areas include a multiple use festival plaza, a highly visible open space serving as a visual terminus for River Park Drive. It could incorporate a kinetic fountain with a water jet increasing in height in response to approaching aircraft. The adjacent series of terraces reflect slight ground depression of 6 to 9 feet, in which the conservatory would be placed to minimize its height. The terraces could be grassed and used for informal lounging or intense activities such as flea markets, plant sales, festivals and other such events. Ramps would provide full access to all the levels. The Children's Discovery Garden (#25), could include many engaging features such as a sun dial, a walk through "Star Dome" and a sand covered geology based sculpture which could be rediscovered by digging children. This would be directly adjacent to the Home Demonstration Gardens allowing parents to "park" their kids under supervision while they visit and learn from the nearby displays. These would be designed for constant change and yearly garden festivals and should include a power grid, water sources and drainage built in to accommodate the various exhibits.

Just off Coleman Street, a highly visible sidewalk plaza should be set aside for changing exhibits of environmental or process art. Access for all people, as noted in the mission statement, should be a fundamental goal of the Guadalupe Gardens project, and a Whole Access Garden (#29) for people with special needs (including fragrant plants, tactile plants, sound-generating plants) is provided near the Conservatory. This garden should include information demonstrating the therapeutic value of gardening.
Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

15. Garden Center Building (multi-use) with overlook terrace*
16. Conservatory*
17. Meeting & classrooms; docent, volunteer space
Galleries/enclosed display*
18. Garden Cafe*
19. Garden Offices*
Multi-media center*
Library/herbarium
20. Bookstore/plant, gift sales*
Visitor, orientation center
21. "Green" technology Information Reference Center
22. Festival Plaza (multi-use)
23. Conservatory Plaza & Outdoor Gallery (w/ shade acoustic shelter)
24. Green Market Place (plaza)*
25. Children's Discovery Garden*
26. Home Demonstration Garden*
27. Activity terraces (tree shaded)
28. Energy conservation exhibit, PG&E Tower/Transition Station
29. Whole Access Gardens* (special needs, fragrance, tactile, therapeutic garden, etc.)
30. Rotating seasonal flower display beds*
31. Environmental Process-art Terrace
32. Acoustically activated fountain
33. Maze garden*
34. Gardens of the Future (S.J. Youth Garden)
35. Service/staff parking orchard
Conservatory - Floor Plan
Conservatory - Elevation

Conservatory - Section

Note: Environment is Computer Controlled to maximize Natural Ventilation
Garden Center Building - Elevation

Garden Center Building - Section
4.2.3 RESEARCH/ACADEMIC/COMMERCIAL

This area of activities and improvements is generally clustered along the curved portion of Coleman, approximately from its intersection with Taylor Street up to the edge of the main parking area for the Garden Center Complex. On the north side of Coleman, set behind a 30 foot 'sidewalk greenway' buffer of a double row of street trees in places backed up by hedges and shrubs, this area will involve the reuse and conversion of approximately eight existing structures which lend themselves to reuse. The uses anticipated here, originating with public, academic and commercial sponsors are, generally speaking, those that can take advantage of solid existing buildings and often fairly open simple spaces such as garages, lofts or warehouses. Nearby elementary, middle and high schools could participate in using these spaces and the adjacent yards, as could San Jose State and the University of Santa Clara. They would find space for research, experimentation, growing grounds, prep yards and greenhouses among other facilities. Local water districts and federal organizations such as the EPA might also be interested in participating in some of the earth and water resource displays and demonstrations. It is anticipated that the Green Industry Council would be the primary representative of the private commercial interests making use of converted existing buildings and plazas for display of new and more environmentally friendly landscape installation and maintenance techniques, materials, tools and equipment. Finally, a small retail nursery would be appropriate just to the north of the Coleman/Taylor intersection.

A Water Resources Education Center (#38), could, in keeping with the Gardens' mission, include the interesting history (and fate) of groundwater in Santa Clara Valley. Sponsors for such an exhibit might include the San Jose Water Company and the Santa Clara Valley Water District, among others.

The Future Building Technologies Center (#45), making use of an existing building next to the proposed Corporation Yard, would include temporary demonstration structures displayed on the linear plaza. Engineers, architects, students and contractors could be invited to participate in demonstrating new and more sustainable building techniques and materials. Materials and paints might also be tested for their resistance to weathering and their sound insulating qualities.

A Pollution Prevention Center (also at #45 and possibly satisfying a legal requirement of the City) would have a primarily educational purpose. One of the two buildings shown should be considered for this center. It would be accessible from the main Parking Orchard.

The Crop Tree demonstration grove (#46) should include not only wood-lot trees for firewood or structures) but also exhibits of the way crop trees can be used in the production of paper, methane, or synthetic fuels, etc.

Finally, as occurs in other parts of the Gardens, the informal groupings of shrubs and trees which are found adjacent to more formal orchard type plantings described above can serve for 'gene bank testing' -- that is, varieties of the same species would be planted in close proximity for research purposes such as comparison of growth rates, resistance to disease, response to different types of organic fertilization and Integrated Pest Management techniques, irrigation treatments, etc. At the same time, they serve as
buffers, particularly in those cases where buildings do not conform easily to proposed arrangement of landscape, hardscape and softscape elements or where visual screening is needed.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

36. Nursery Training Lab/Research Lab*
37. Greenhouses, Shade houses*, Classrooms*
38. Water Resources: Education Center
   " Xeriscape Demo. --Shrubs, trees
   " Xeriscape Demo. D.T., grasses, lawn subs.
   " Water Conserving Irrigation Exhibits
   " Hydroponics display*
   " Reclaimed Water demo*
43. Regional Water Resources Exh. SCVWD valve
44. Earth Resources: Organic resource, compost, mulch
   " Soil/plant demo. beds
   " Erosion control/slope stability
   " City Green Mulch storage/processing
   " Recycling/landfill reduction demo.
   " Biological Digester demo.
   " IPM exhibit
   " Agriculture of the future
45. Future Bldg. Technologies Ctr.: Renewable bldg. resource demo., research and structures
   " Indigenous bldg. materials
   " Low impact bldg./land development
   " Noise pollution mitigation
   " Pollution Prevention Information Center
46. Crop Trees
47. Urban Forestry Test and Demonstration Grove
   Flower Hybridization Center (Bldg. & Greenhouses)
48. Green Industry Center: New garden supplies, equip., tools, exhibits
   " Offices, Information Center
   " Computerized Commercially Available Plant Materials Reference Library
49. Green Industry Display Plaza
50. Small Retail Nursery
51. Bio-Intensive Demonstration plots*
52. "Gene Bank" plant groupings*
While the site has been almost entirely altered over the past one-and-one-half centuries, it does offer excellent opportunities for educational exhibits to inform the visitor of the "original" (pre-European) conditions and environments of the Santa Clara Valley and the surrounding coastal ranges. The site is a portion of a river plane, periodically flooded, and once covered with willow groves and oak savannah grasslands. Since the water table has dropped scores of feet, all remaining natural riparian plant communities will soon be removed and frequent flooding will theoretically be precluded in the near future. Thus, the Gardens must depend on symbols rather than "replicas" to do this job. Proposed riparian forest zones and adjacent tributary meadows are two of several types of symbols of these original conditions which also serve as important visual clues for orienting visitors, linking (by repetition) the three major sectors of the Gardens. Most of the Natural Landscape Systems' exhibits occur along the riparian plantings of the Guadalupe River Park and frequently act as transition plantings. Exhibits ranging from Coast Range forests to oak-savannah and coastal chaparral would be planted on slopes that would augment the imported fill slopes required for the proposed Taylor Street off-ramp. The Burrowing Owl Observation Point (#60), which would involve the construction of new habitat, is the only feature placed away from the GRP but occurs in a most isolated corner of the Gardens. Other items of special note are the Bay Edge Grass (#58) and Seasonal Wetlands (#59) exhibits at the far northern corner of the Gardens -- in other words, closest to San Francisco Bay. These are associated with an information kiosk and shade plaza which terminates at the River Promenade.

An educational opportunity would become available with the construction of the proposed Taylor Street off-ramp and viaduct where this plan proposes a pedestrian underpass. Since this would require reconfiguration of the retaining headwall as proposed by the engineers for SR-87, the construction could incorporate the design of permanent exhibits explaining the geomorphology of the Guadalupe River and touching on such issues as flooding and flood control.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

53. Coast Range Forest Trees: Coniferous
54. Coast Range Forest Trees: Broadleaf
55. Valley Oak Savannah Groves
56. Riparian Forests*
57. Coastal Chaparral@
   Ecotone Exhibit
58. Bay edge grasses & herbs "shoreline"
59. Bay edge seasonal wetland*
60. Burrowing Owl Observation Point*
61. Guadalupe River Geomorphology & Flood Control Exhibit
   (at Taylor Street under-crossing)
62. Tributary Creek bed (artificial, symbolic)
63. Tributary meadows (native meadow swales, grasses)
64. Taylor Street Spring (artificial)
4.2.5 WALK THROUGH HISTORY

Because a river corridor in Central California's semi-arid climate tends to become an actively used life-giving resource for both wildlife and human cultures, the site has a rich heritage of indigenous prehistoric and historic themes from which to draw. One of the main emphases of the Gardens here should be to remind the visitor of this past and of the important inter-dependence of past human cultures and the river, linking our modern lives with those of the many "ghosts" which "inhabit" the site, from the Tamien Native Americans to the commercial flower and seed growers who, up until the 1940s and 50s were dependent upon these same soils and waters.

Most exhibits are placed as closely as possible to identified historic locations. This holds true for the Tamien/Ohlone Village reconstruction (#65), the Victorian house and garden footprints (#70), the Pueblo Garden (#66) and the several 19th Century agricultural and horticultural exhibits (#71-76). In the case of the latter, not only should the fields and plots grow actual produce from that era (hops, grape vines, etc.), but they should be constructed to replicate the frames, lines, drying tables, etc. which were in use at that time. Construction of these could draw upon student resources (history, anthropology majors), local building trades and agricultural organizations such as the 4-H Club.

One of the most important exhibits and a central feature will be the Heritage Rose Garden displaying over 5,000 rose varieties which are "heritage" or historic originals, some of which are endangered. Gathered from California and Europe by enthusiasts, this collection of Old Garden Roses (catalogued before 1876) is estimated to be one of the largest in the U.S. Working drawings for the Heritage Rose Garden are in progress at this writing with planting anticipated during the winter of 1994/95 following ground-breaking in the spring. As a model of volunteer cooperation anticipated throughout the Gardens, the South Bay Heritage Rose Group has devoted thousands of hours to preparation, de-eyeing and budding in anticipation of this schedule.

Finally, the site for a Demonstration Orchard (#75) has already been prepared but will need modification in the future to conform to the lines and patterns of a master plan. The trees can with minor modifications be planted in a grid pattern which will be co-variant with the 45 degree angle (on a true north-south line) as proposed by the Master Plan. The value of this exhibit could be enhanced by the addition in nearby fields of orchard structures such as fruit drying tables, storage racks, etc.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

65. Tamien/Ohlone Village Reconstruction*  
66. Pueblo Garden*  
67. Mission Garden*  
68. Pellier Monument*  
69. Commodore Stockton Memorial* (house, garden, nursery)  
70. Victorian "footprint" houses & gardens*  
71. 19th C. Agriculture: Wheat fields/pasture  
72. " Hops  
73. " Vineyards  
74. " Row crops  
75. " Demo. orchard/fruit drying  

59
76. "
   "
   "
   sheds/tables
   (partially existing)
   Historic cultivars
   Nursery

77. Heritage Rose Garden
78. Hobson Bridge (to Pueblo S.J.) Interpretive Plaque
79. College Park School (footprint) exhibit
4.2.6 VARIETAL GARDENS AND EXHIBITS

As suggested by the title, this element of the Gardens is the most varied and is the largest user of open space resources. The potential list is long and the locations of most items have not been determined. It is anticipated, however, that those garden exhibits and plant collections involving the more exotic plant materials such as palm and desert plant materials, cloud gardens, etc. should occur further to the southwest and away from the zone of Natural Landscape Systems generally aligning the GRP. Conversely, plants such as California and Santa Clara Valley endemics and rare or endangered species should be placed within close proximity of the Natural Landscape Systems. Culturally oriented exhibits, such as the biblical garden, medicinal plants garden, an ethnic heritage garden, etc. should be placed within close proximity to information kiosks, plazas or the new Garden Center Complex. Since there are already several Cultural Heritage Gardens in the City, an ethnic garden in GG could inform visitors as to their location and as well symbolize the cultural melding of the Santa Clara Valley's many ethnic groups. It should not duplicate existing resources.

While most of the varietal gardens will focus on gardening and horticultural values and ideas, exhibits that involve the arts ("Art in the Garden") and other less conventional concepts of gardens should be encouraged.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

80. Historic Garden Center Bldg.
   Herb display*
   Bulb flower*
   Ornamental Grasses*
   Cloud Garden*
   Gardens representing world temperate zones*
   Dwarf Plant Materials Garden*
   California & SCV Endemic Plant Groupings*
   Plants for Humanity Exhibit*
   Palm Garden
   Desert Garden
   Shade Garden
   Plants for Humankind
   Biblical Plants Garden
   Medicinal Plants (from all continents and cultures)
   Ethnic Foods gardens/exhibits

81. Garden Art Terrace
82. All-faith Religious Ceremony Glade
    Ethnic Heritage Gardens

Additional Acceptable Suggestions for Varietal Gardens:

- Stonework
- Rock "Painting"
- Statuary
- Concr. ornamntl. benches
- Grotto area
- Wisteria arbor
- Dry arroyo cacti/succulents
- Juniper Garden
- Groundcover display/design
- Rustic Grape arbor/orangery
- Life-sized topiary scene
- "River" of iris
- Aquatic plants
- Perennial borders
- Sister City gardens
- Herb garden in a knot design
Mum garden
Bonsai display
Sunshine garden
Flower test garden plots
Japanese garden
Mediterranean garden

Tropic garden
Dwarf plant material garden
Wildflower area
Backyard garden ideas
Australian garden
4.2.7 COMMUNITY GARDENS AND PLOTS

Community gardens and plots appear to be of increasing importance throughout the nation not only as a reflection of the economy, but also because of the increasing interest in home-grown produce and flowers and the therapeutic value of gardening. In downtown areas, particularly where residents lack open space, community gardens are increasingly important. As noted, such population densities are likely to increase -- especially along the North First Street corridor. Furthermore, such gardens are increasingly seen as enhancing valuable patterns of social and community behavior, as is demonstrated by the work of the prisoners at the City of San Francisco’s San Bruno facility. There, inmates take great pride in providing food for their own tables as well as those of some up-scale San Francisco restaurants. There are programs in San Jose for at-risk youth working off misdemeanor sentences who could participate in garden plot construction and maintenance and even take responsibility for garden plots themselves. Under appropriate supervision, plots could be gardened by the homeless in cooperation with and perhaps under the direction of existing shelters.

The plots need not all be run on a "no" or "minimum" fee basis. Small entrepreneurs may be interested in growing organic and specialty restaurant foods. For example, growers of Chinese vegetables in the Half Moon Bay area seem to have prospered due to the high concentration of Chinese restaurants in San Francisco. It can be expected that the same could be true in the San Jose area as a result of the current redevelopment process generating many new restaurants. Even though on small plots, with the use of bio-intensive gardening techniques, high yields are possible. Thus, the lease or rental of small plots may be feasible. Such activities need not be limited to individuals, but could also be revenue-generating for community service organizations, churches and the like. Some of these operations could employ a "you-pick" approach where customers pick their own produce, or in the case of Christmas tree farms, cut the trees themselves.

The physical facilities of this area include the use of two existing buildings, one a two story concrete tilt-up, for a warehouse (#87), workshop and possibly small coffee shop, and the other an existing residence for offices for community garden plots area. A roadside produce stand (#89) might take advantage of the traffic concentrations and high visibility of the intersection of Hedding and Coleman.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

83. Family & Individual Garden Plots*
84. Group or C.S.O. Garden Plots*
85. School Garden Plots*
   Small specialty crop commercial (restaurant, organic)
   "You Pick" tree farm (small, short term operation)
86. C.G. Plot Offices & Center (exist residence)
87. C.G. Plot Warehouse, Workshop, Coffee shop (exist. tilt-up)
88. Farmer’s Market square
89. Roadside Produce Stand
4.2.8 WHOLESALE NURSERY COMPLEX

The area to the north and to the west of Emory Street is appropriate to the low intensity uses not involving frequent and large gatherings of individuals in conformance with the Airport Land Use Commission's general land use guidelines (see Airport Land Use Plan, Airport Land Use Commission, Sept. 1992). This large area of approximately 19.5 acres northwest of Hedding is appropriate for a wholesale-type nursery complex. This could be operated by either a for-profit or non-profit institution such as the Saratoga Horticultural Research Foundation. These operations require extensive acreage for growing, testing and research programs and the relatively high noise levels of approaching aircraft will be of little importance. The operations involve offices, workshops, vehicle, equipment and materials storage, outdoor working areas and mixing palettes, storage bins, greenhouses, shadehouses, hardening houses, growing grounds, container stock storage and the like. The first such building, currently occupied by the Red Cross, may become available in the near future. This building is adjacent to considerable open space land which has already been cleared and can be put to immediate agricultural or nursery use.

Another type of use which might be appropriate is a turf farm since large acreage is required which can be efficiently operated and maintained with machinery. The relative size of container stock storage and growing areas shown in plan could vary depending upon the character and number of lessees willing to make use of this area. The arboretum area could shrink in size according to these needs so long as the final arboretum area is sufficient to protect the existing trees in the area. Some of the best specimens in the project site are found in this far western corner of the Gardens.

Finally, many of the structures in the area are single story "U-Store" types of structures. The conversion to small greenhouses may be possible although it is not known whether it would be cost-effective. At the very least, existing footprints and paving could be used for future greenhouse structures. Some of these structures could be retained and used for start-up offices for "green" firms.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

90. Offices & Service Bldgs./Red Cross & Traffic Court
91. Service Yard
   Small office/ Service bldgs. (for start-up "green" firms)
92. Propagation Greenhouses & yarde* (converted storage units)
   Hardening structures
93. Production Planting Plots*
94. Container Stock Grounds*
Corporation Yard

The GG Corporation Nursery and Preparation Yard would make use of existing renovatable buildings adjacent to Coleman Avenue. These are large warehouse type, tilt-up concrete structures that appear to be adaptable to such renovation. While not centrally located, the Service Center has the advantage of easy access from Coleman and therefore to all other sections of the Gardens via public streets. About one-half of the service area would be devoted to service vehicle parking, storage bins, mixing palettes, low greenhouses, shade structures and the rest to container stock storage. One of the advantages of the location is its proximity to a major internal pathway connecting to the garden center complex. This area could also be for temporary storage of "green mulch" generated by the City's Yard Waste Recycling Program. The mulch could be available for sale to the public. The material consists of brush and grass/leaves which can be composted or used green. It is also useful in normal weed abatement as is being performed at many of the City's existing parks. The office of Environmental Management suggested that the Guadalupe Gardens would benefit by providing the public with literature or information regarding green mulch and its potential for use as topsoil enhancement, among other uses. There is adequate room for storage adjacent to West Hedding and easy vehicular access.

Any unsightly elements of the corporation yard could be screened by the 30 foot sidewalk greenways which, in addition to the two rows of matching street trees, would include hedge and shrub planting where such screening is required.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

95. GG Service Building, offices, garage, workshop
    Materials, equipment and vehicle storage
    Staff parking
96. Materials yard, bins, mixing palettes, greenhouse, potting sheds, stock container storage

City Landscape Service Center

Inquiries conducted well after the development of the original activities and elements list indicated possible interest by the City in a Landscape Service Center which could provide facilities for park and streetscape maintenance vehicles, supplies and possibly testing of a different species of street trees. The ultimate use of the site located directly on the north side of West Hedding Street could be a City nursery with shade structures, hardening structures and container storage. While the City may not perceive the need for such a facility at this time, in the view of the planning team, the use of such facilities could be cost effective. In keeping with the educational goals of the Guadalupe Gardens, this function could be made "visible" to the public by provision of a roadside plant sales stand on the intersection of Hedding and Coleman (on the east corner) placed in conjunction with the nearby Parking Orchard. The entrance to a small one-story service center office and workshop could be treated as a small plaza in conjunction with a roadside plant sales stand.
Because they will be new structures on land cleared with FAA funds, these, like all other small service structures (kiosks, shade pavilions, etc.) may require specific approval of the Federal Aviation Administration as specific components or areas of the Gardens are developed. However, as service structures, they fall within the general category of agricultural or park-type structures. None will draw high user populations, nor will they be tall enough (at ± 12' high) or so brightly lit as to pose hazards to aircraft.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

- Roadside Plant Sales Stand
- City Landscape Service Center: Office, Workshop
- " " " " Greenhouses, shade, etc.
- " " " " Growing/container storage grounds

GG CORPORATION YARD, NURSERY & PREP YARD

WHOLESALE NURSERY COMPLEX

ARBORETUM GROVES
4.2.10 ACTIVE RECREATION AREA

The City has for many years provided softball and soccer fields at Columbus Park on West Taylor Street. Because of its intensive use and because members of the Advisory Council felt strongly that the Gardens should incorporate useable recreation areas, these basic functions are retained and could be phased to the Coleman Avenue location. Buffering of recreation activities and flying softballs and soccer balls would be provided by the arboretum plantings surrounding the ball fields. The facilities are served by two parking orchards, one directly opposite University Street and one adjacent to the proposed small retail nursery at the corner of Taylor and Coleman.

Other elements by which the Gardens will serve the general open space and recreational needs of the community are the many trails, picnic areas and shade pavilions which are provided throughout the project area.

Refer to the Guadalupe Gardens Master Plan Map for the location of the following numbered items:

100. Regulation Soft Ball Field
101. Regulation Soccer Field (portable goals)
102. Bleachers, restrooms, office, storage
CHAPTER 5.0
TIMING, COST ANALYSIS AND PRIORITY PLANNING

5.1 TIMING

The pace of development of a project of this nature is difficult to predict. Some components may be built well in advance of a planned schedule simply because a sponsor with interest/energy and available funds may suddenly become active in the project. On the other hand, the larger and more costly elements, such as the Garden Center Building, may encounter fund-raising difficulties. The resultant slow-down could delay the development of related elements such as the Children’s Discovery Garden and Home Demonstration Gardens. The timing of construction of major utilities, SR-87 and the GRP will also have a direct effect on the installation pace and location of GG priorities.

The following schedule was provided recently by the San Jose Redevelopment Agency for Guadalupe River Flood Control and Recreation projects and the Guadalupe River Park. Only those related to GG are included:

COE Contract I
I-880 to Hedding

COE Contract II
Hedding St. to Coleman Ave.

SCVWD Central Pipeline Relocation
May 1994 - May 1995

Hedding St Bridge Const.

Taylor St. Bridge Demolition
by Apr. 1997

Taylor St. Bridge Construction
(Accelerated Rt-87 schedule)

The priority plans which follow the cost analysis suggest a sequence of development from one to five and thus take the above schedule into general consideration. However, since the development of the Gardens could take from 15 to 25 years, assuming intervals of approximately 3 to 5 years, most of the projects above should be completed by initiation of the priority 2 plan.
5.2 COST ANALYSIS & PRIORITY PLANNING

The projection of potential development costs over the development period of the Guadalupe Gardens (which could last several decades) is of questionable value. While the estimates developed here are given in 1993 dollars, the totals of costs beyond Priority 1 are useful primarily in comparison to the size, character and quality of subsequent developments. Also, the estimation of the cost of purchasing land and buildings is extremely difficult, especially in situations where the reuse value is largely dependent upon decisions and policies made outside of the local sphere (namely by the Federal Aviation Administration). This would be appropriate as the subject of a separate study conducted by qualified experts (such as real estate appraisers). This study has made coarse grain calculations based on assumptions of land and building costs of $12.00 and $75.00 per square foot, respectively. These square footage multipliers were provided by knowledgeable local contacts on a "top of the head" basis and assume normal reuse and redevelopment potential without consideration of the effect of FAA or other related land use constraints. Therefore, the following figures of $11,000,000 in land purchase costs and $21,700,000 in building purchase costs over the coming decades could, in 1993 dollars, be high. By comparison, the 1986 Golf Course Feasibility Study (for the "Airport Approach Zone") by Benz & Bellot quotes a figure of $17,500,000 for purchase of land (presumably including buildings) and $8,100,000 for business relocations in association with a regulation golf course. Demolition of structures is estimated at $1,000,000. DPW believes these estimates are based on 1982 or 1983 dollars.

Similarly, utility costs are difficult to estimate because of the lack of confirmed data on existing conditions, especially for underground lines. DPW estimates removal, abandonment and adjustment costs for all utilities in association with the completed Master Plan at $3,100,000 as follows:

- **Storm Sewers:** Seal and abandon or save and adjust to new final grades; preserve access to remaining local/area lines.
- **Sanitary Sewers:** Pump out or flush, seal and abandon where not needed; preserve access to remaining lines.
- **Domestic Water:** Seal and/or abandon feeder lines to former residential and commercial parcels.
- **Regal. Water Main:** Provide access to new and existing lines.
- **Gas:** Flush, flood and abandon.
- **Gas Main:** Preserve access; adjust to provide access.
- **TCI Cable:** Remove and relocate.
- **Telephone:** Remove and relocate.
- **Electricity:** Remove and relocate.

The estimates which follow are based on "contractor built" assumptions. By contrast, the Guadalupe Gardens concept is based on unusually large inputs of volunteer effort. The use of volunteers in the construction of many gardens, arboretum and riparian groves or other features which do not involve the technical and legal constraints associated with building construction or utilities could represent savings not calculated in these estimates. The possibility of individual or corporate donations of material and labor could also substantially reduce the totals for lessees and the Guadalupe Gardens Corporation.
Priority 1

The selection of items and areas for development in this category was made to take advantage of existing improvements such as the Courtyard Park and the recently completed rock garden path along Taylor Street as well as the momentum of projects already in the planning or demonstration process. Thus, the Heritage Rose Garden and the Demonstration Orchard are included. Also included would be a section of 19th-century agriculture (Walk Through History) which will link the Heritage Rose Garden to the pathway network of the GRP. The parking orchards north of Hedding, the City-owned building presently occupied by the Red Cross (soon to be vacated) and substantial adjacent acreage have been selected for Priority 1 development of the Wholesale Nursery Complex. This complex will include a commercial or nonprofit institutional nursery, growing grounds and service area, all of which would be serviced off Ruff Drive. Contact has already been made with seed growers regarding possible leasing in this area.

A small area, slightly under one acre, near the intersection of Taylor and Coleman at the corner of Walnut Street has been selected for this category as well. Currently cleared and in public hands, it would be dedicated to tree plantings as a part of the arboretum. Interested parties have already approached members of the Advisory Council to find areas to begin planting.

Some garden pathways, which also double as service/access roads for the local and regional water district as well as public works (for example, along University and Emory Streets where major drainage and water lines will be undergrounded), could be included in Priority 1 depending on timing of installation of these utilities. In any case, it is assumed that the construction of service roads in this respect could not be delayed until after development of later phases of the gardens (for example, Priorities 4 and 5).
SUMMARY OF LANDSCAPE COSTS: PRIORITY 1

Note:

The following potential costs are not included in the figures below:

1) Land purchase;
2) Building or utility purchase;
3) Undergrounding of or adjustment to utilities.

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<th>CITY SUBTOTAL</th>
<th>LESSEE SUBTOTAL</th>
<th>GG CORP SUBTOTAL</th>
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1.0 Garden Center Complex
- Bldg. renovation  
  
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2.0 Walk-thru History Gardens.
- Historic Rose Garden  
- Historic Orchard  
- Walk Thru. (183,276 SF)
  
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4.0 Natural Systems, typ.
- Clear., grub., demo. etc.
- Arboretum (30,400 SF)
- Meadows (36,400 SF)
- Riparian (35,248 SF)
  
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6.0 Comm. Growing (lessee)
- Clear., grub., demo. etc.
- Growing grounds (543,150 SF)
- Bldgs., exist. (renovate)
- Service yd., outdoor storage
- Bldgs., new
  
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10.0 Pathways
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11.0 Streetscp. improve. (ex. util.)
- Typ. (8'con, 12'DG, 36''box, 9'bed)
  
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**Subtotals**

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City             Lessee         GG Corp
Priority 2

One major goal of this priority is to install significant segments of the River Promenade and several related theme gardens which parallel the GRP. An underlying assumption of Priority 2 is that the momentum generated by Priority 1 activities, particularly improvements along West Taylor Street, will generate interest and therefore financial support to take a bolder step forward. Thus, three or four of the new buildings suggested for the Garden Center Complex are proposed. These include the Garden Center itself, as well as the nearby buildings housing arboretum offices, library, restaurant, herbarium, and the like. An important component will be the development of Natural Landscape Systems and Demonstration Gardens between the GRP border and the proposed promenade. Some of this development might be coordinated with PG&E’s construction of its new underground power line and a transition pole directly east of the Garden Center Building. Other issues associated with Priority 2 would be the transition areas directly south of the existing Courtyard Garden as a part of the varietal exhibits category with special gardens such as drought tolerant grasses and eventually a demonstration of reuse of water for irrigation. Some arboretum planting would be included as well. A small parking orchard would be built to the south of Taylor to encourage access to these demonstration gardens. Another important area for development in this category would be the Pellier Monument as a part of the Walk through History Garden and about 1/4 of the planting area providing plots for families, individuals and institutions. Also included would be the purchase of two parcels and the renovations of two buildings -- one, a tilt-up slab and the other a former wood-frame residence. The former would serve as a storage and work facility and the latter as office space for a community garden complex. A small parking orchard serving these areas would also be built just east of the proposed PG&E line. It would also be logical to construct a section of the promenade in between Hedding and Emory, roughly paralleling the edge of the Guadalupe River Park.

Some of the Walk Through History items, such as the Mission and Pueblo Gardens, would be appropriate directly east of the Promenade. If appropriate, and if a contractor or lessee is found, the community garden area could be developed under commercial offices given a time limit lease, since there has been interest in an active farmers’ and floral market based on the “pick it yourself” concept and a small cafe or restaurant, particularly in the existing wood frame building.

Finally, a Burrowing Owl Habitat would be restored in the far western corner of the Gardens to provide an alternative site for current owl habitats closer to the GRP. The Wildlife Department has developed a method of “passive relocation,” encouraging the burrowing owls to relocate themselves. At Sunnyvale Baylands Park, for example, the owls relocated to open areas which offered abandoned rodent burrows. Since many acres of the Gardens, especially those toward the north end, will convert to low-intensity non-manicured agricultural type uses, it is likely that the owls will be found throughout the area.
SUMMARY OF LANDSCAPE COSTS: PRIORITY 2

Note:

The following potential costs are not included in the figures below:

1) Land purchase;
2) building or utility purchase;
3) Undergrounding of or adjustment to utilities.

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Priority 3

As in Priority 2, one of the main emphases is the development of garden features south of Taylor, in this case centered around the Conservatory and adjacent water feature. Thus, development of some of the exhibit orchard terraces flanking the territory would be included as well as a maze garden and rotating annuals displays flanking the Great Meadow. A portion of the main parking orchard serving the Garden Center complex would also be included. It is assumed that at this point, the physical extent of developed gardens would be enough to justify the development of a Gardens Corporation Yard within existing renovated buildings directly off of Coleman near Hobson Street.

A large section of the symbolic riparian corridor linking the Great Meadow and Conservatory to the promenade could also be a part of Phase 3, as well as nearby historic agricultural exhibits near the demonstration orchard, including rare fruit tree cultivars and other 19th-century features.

Priority 3 also assumes that at about this stage (approximately 10 to 15 years hence) it would be appropriate to phase out the ball fields on Columbus Park thereby allowing further development of major areas of the varietal gardens south of the existing Garden Center building. The two softball fields, soccer field and bleachers along Coleman would be constructed at this time as there would be no loss of active recreation fields. In other words, the existing fields would not be removed until there is completion of the new fields and related facilities. Development in this area could include a large portion of riparian zone providing a partial north-to-south link between Taylor and Walnut toward the center of the gardens and thereby a triangular shaped parking orchard. Another important feature for possible development under this priority would be that of a City-operated growing and experimentation ground area directly north of Hedding, extending approximately from west of Walnut street to Spring Street. While this may start out on a modest scale, it is anticipated that it could develop into an operating City nursery in the future. A small parking orchard and drive-by sales terrace could be included thereby providing some level of revenue generation activity for the City.

Finally, Priority 3 includes expansion of a large parking orchard off Coleman as well as adjacent forested arboretum areas; that is, trees labeled and arranged for display purposes or demonstration of particular characteristics, either botanical, horticultural, commercial or resource-related.

It is obvious that the scale of development involved in the Conservatory (approximately $3 million) assumes that by this phase, ten to 15 years from now, the Gardens will have received the prominence needed to bring substantial increases in donors as well as participating lessee institutions, clubs and individuals to swell the ranks of volunteers needed to maintain the Gardens.
SUMMARY OF LANDSCAPE COSTS: PRIORITY 3

Note:

The following potential costs are not included in the figures below:

1) Land purchase;
2) Building or utility purchase;
3) Undergrounding of or adjustment to utilities.

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<td></td>
<td>-clear., grub., demo. etc.</td>
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<td>8.0</td>
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<td>Cost 2</td>
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<td></td>
<td></td>
</tr>
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<tr>
<td>Growing grounds (81,800 SF)</td>
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9.0 Rec., Active

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<td>2 ballfields (266,820 SF)</td>
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<td>$793,000</td>
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<td>$31,885</td>
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<td>Facilities, lighting</td>
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<td>allw</td>
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10.0 Pathways

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<td>Interior pathways (12')</td>
<td>5,110.0</td>
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<td>$12</td>
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11.0 Streetsc. improve. (ex. util.)

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<th>Cost 2</th>
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<tr>
<td>Typ. (8'con,12'DG,36&quot;box,9'bed)</td>
<td>2,870.0</td>
<td>LF</td>
<td>$177</td>
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<td>No trees (8'con,12'DG,9'bed)</td>
<td>300.0</td>
<td>LF</td>
<td>$82</td>
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<td>Arches, sculptural</td>
<td>2.0</td>
<td>allw</td>
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<td>$200,000</td>
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12.0 Parking Orchard

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<th>Cost 2</th>
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<td>Clear., grub., demo. etc.</td>
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<td>$10,715</td>
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<tr>
<td>36&quot;box,DG,aggr base 178,200 SF</td>
<td>4.1</td>
<td>A</td>
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SUBTOTALS $4,203,882 $1,357,068 $7,189,458

CITY    LESSEE    GG CORP
Priority 4

Perhaps the most important aspect of this priority is the development of the commercial/academic/research zone and arboretum along Coleman. Here, several parcels would require purchase and the demolition of several buildings along with the renovation of several more. The renovated buildings could house "green industry" offices and sales. Further to the south in the vicinity of Seymour and Hobson Streets, greenhouses biodegradable recycling and reclaimed water demonstrations, hydroponics, Indigenous Building Materials Center, flower hybridization and forest crop demonstrations would be included in this priority.

Priority 4 also includes development of major portions of the varietal gardens east of the proposed ball field complex. Completion of the community garden plot area and the adjacent arboretum forest paralleling Hedding Street are included. A College Park historical exhibit in a plaza at the corner of Coleman and Hedding would also be included. Extensive areas of the Arboretum could be completed inboard of the loop trail between Hedding and 1-880 to complete the entire loop trail system of Guadalupe Gardens.
SUMMARY OF LANDSCAPE COSTS: PRIORITY 4

Note:

The following potential costs are not included in the figures below:

1) Land purchase;
2) Building or utility purchase;
3) Undergrounding of or adjustment to utilities.

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<th>UNIT COST</th>
<th>CITY SUBTOTAL</th>
<th>LESSEE SUBTOTAL</th>
<th>GG CORP SUBTOTAL</th>
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<td>2.0</td>
<td>Walk-thru History Gardens.</td>
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<td>- meadows (53,560 SF)</td>
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<td>- bldgs. new</td>
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<tr>
<td>misc. hardscp. (plaza/wrk area)</td>
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<td>$20</td>
<td>$2,241,360</td>
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</table>

7.1 Maint. (Coleman)
- clear., grub., demo. etc.        | 0.5 A          | $5,227 | $2,614     |
- bldg. demo., etc.                | 4,225.0 SF     | $6     | $25,350    |
- bldgs. exist (renovate)          | 8,000.0 SF     | $80    | $640,000   |
- corp. yd., outdoor storage       | 21,400.0 SF    | $5     | $107,000   |

10.0 Pathways
- prom. (36" box, 16' DG, 14' conc) | 740.0 LF       | $175   | $129,500   |
- interior pathways (12')           | 4,500.0 LF     | $12    | $54,000    |

11.0 Streetscap. improve. (ex. util.)
- typ. (8' con, 12' DG, 36" box, 9' bed) | 2,180.0 LF     | $177   | $385,860   |
- no trees (8' con, 12' DG, 9' bed)    | 120.0 LF       | $82    | $9,840     |
- plaza @ Hedding/Coleman             | 7,848.0 SF     | $20    | $156,960   |
- pedestrian bridge (@ Hedding)       | 1.0 Allw       | $650,000 | $650,000  |
- arches, sculptural                 | 1.0 Allw       | $100,000 | $100,000  |

12.0 Parking Orchard
- clear., grub., demo. etc.         | 1.5 A          | $5,227 | $2,614     |
- 36" box, DG, aggr base (65,620 SF) | 1.5 A          | $325,000 | $162,500  |

SUBTOTALS $2,323,467 $7,928,442 $1,837,227
CITY LESSEE GG CORP
Priority 5

The bulk of Priority 5 areas are found at the center of the block bounded by Hedding and Taylor and along the periphery of the Gardens adjacent to I-880. These patterns reflect the desire to develop hidden areas last and, conversely, to target early priority areas that can enhance the views from major surrounding roads. One exception is the development of a variety of areas in the research/commercial zone adjacent to Coleman where, again, more parcels would need to be purchased with the removal of some buildings and the renovation of others. One of the major features here would be an orchard between Seymour and Hobson Streets that is partially a parking orchard, serving the green industry and related commercial areas at the intersection of Taylor and Coleman, as well as a testing ground for street trees. The completion of the varietal garden area at the center of the block between Hedding and Taylor would also be anticipated at this stage although it is assumed that lessees for all of these areas would essentially fill the areas incremental over time. This phase would also allow the completion of major cross pathways providing connections from the GRP in an east-west direction to the intersections of Taylor and Hedding with Coleman and as well the loop trail at the far northern end of the project area adjacent to Highway 880. Priority 5 also includes completion or expansion of the commercial/institutional growing grounds north of Hedding to remaining open space areas as well as expansion of the arboretum forest near the corner of Coleman and I-80. An area of Ohlone and other prehistoric exhibits near the GRP as well as a zone displaying San Francisco Bay edge vegetation near the intersection of I-80 with the GRP is also included.

The development of a hillside natural systems garden flanking Taylor St. demonstrating Coast Range forest and chaparral vegetation types has been designated as Priority 5. However, these two relatively independent sloping areas could be developed in conjunction with the proposed construction of the freeway offramp after 1997.
SUMMARY OF LANDSCAPE COSTS:  PRIORITY 5

Note:

The following potential costs are not included in the figures below:

1) Land purchase;
2) Building or utility purchase;
3) Undergrounding or adjustment to utilities.

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<th>ITEM</th>
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<th>UNIT</th>
<th>UNIT COST</th>
<th>CITY SUBTOTAL</th>
<th>LESSEE SUBTOTAL</th>
<th>GG CORP SUBTOTAL</th>
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<td>$100,000</td>
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<td>$30</td>
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10.0 Pathways
   - interior pathways (12’)
     2,000.0 LF $12 $24,000

11.0 Streetscapes improve. (ex. util.)
   - typ. (8’con, 12’DG, 36"box, 9’bed)
     1,270.0 LF $177 $224,790
   - plaza @ Taylor/Coleman
     5,000.0 SF $20 $100,000
   - plaza @ Hedding/Coleman
     7,848.0 SF $20 $156,960

12.0 Parking Orchard
   - clear., grub., demo. etc.
     0.5 A $5,227 $2,614
   - 36"box, DG, aggr base (22,680 SF)
     0.5 A $325,000 $162,500

<table>
<thead>
<tr>
<th>SUBTOTALS</th>
<th>CITY</th>
<th>LESSEE</th>
<th>GG CORP</th>
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<tr>
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<td>$1,582,000</td>
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<td>$4,203,882</td>
<td>$1,357,068</td>
<td>$7,189,458</td>
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<td>$2,323,467</td>
<td>$7,928,442</td>
<td>$1,837,227</td>
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<th>CITY</th>
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<th>GG CORP</th>
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<tbody>
<tr>
<td>10% CONTINGENCY</td>
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<tr>
<td>$1,332,414</td>
<td>$2,868,620</td>
<td>$1,982,259</td>
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<td>25% FEES &amp; MANAGEMENT</td>
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</tr>
<tr>
<td>$3,331,035</td>
<td>n/a **</td>
<td>$3,875,120 *</td>
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<tr>
<th>PRE-DONATION TOTALS</th>
<th>CITY</th>
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<tbody>
<tr>
<td>GRAND TOTAL</td>
<td></td>
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<tr>
<td>$17,987,590</td>
<td>$31,554,816</td>
<td>$25,679,964</td>
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</table>

<table>
<thead>
<tr>
<th>ASSUMED LABOR/MATERIALS DONATIONS LEVELS ***</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% REDUCTION</td>
</tr>
<tr>
<td>$11,991,727</td>
</tr>
<tr>
<td>25% REDUCTION</td>
</tr>
<tr>
<td>$9,993,105</td>
</tr>
<tr>
<td>35% REDUCTION</td>
</tr>
<tr>
<td>$8,660,692</td>
</tr>
<tr>
<td>50% REDUCTION</td>
</tr>
<tr>
<td>$6,662,070</td>
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</tbody>
</table>
* Of this amount, it is assumed an equivalent of $4,322,105 of the work will be installed and/or donated by volunteers, therefore obviating the 25% fee and management cost burden for that portion of the work. The projects in this category are open space and horticultural types rather than buildings which must meet City and FAA standards. Thus, the 25% burden is applied to only $15,500,480.

** Because the design and management of individual projects will be the responsibility of the Lessee, fee and management costs are omitted.

*** Because it is difficult to estimate the potential reductions which might result from the donation of labor and materials, a set of assumed levels are presented. The reductions shown are of the sub-totals -- that is, the actual construction costs before design fees and management costs. Obviously, the more public support the Guadalupe Gardens Corporation generates, the more such donations might be forthcoming. In general, in the open "market," materials costs can represent between 40 and 60 percent of a total construction budget.
CHAPTER 6.0
VOLUNTEER PROGRAM

6.1 INSTITUTIONAL MODELS:

The following section provides an overview of current volunteer programs at botanical gardens around the nation. Names of gardens and contact people were obtained through the American Association of Botanical Gardens and Arboreta (AABGA), a valuable network and information source on organizations throughout North America. Another source of information on existing gardens is the American Horticultural Society's (AHS) reference guide North American Horticulture, a handbook of horticultural organizations, plant societies, educational programs, gardens and the like. An annotated directory of the gardens contacted for this project along with brief descriptions, addresses and phone numbers together with names of informational organizations (such as the AABGA and AHS) can be found in the Appendix.

At each of the 10 botanical gardens surveyed, volunteers accounted for an enormous percentage of the organization's work force. The following list demonstrates the breakdown of volunteers to paid staff at a few selected gardens:

<table>
<thead>
<tr>
<th>Garden</th>
<th>Paid Staff</th>
<th>Volunteers</th>
<th>Annual Vol. Hrs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago Botanical Gardens</td>
<td>120</td>
<td>500</td>
<td>46,500</td>
</tr>
<tr>
<td>Denver Botanical Gardens</td>
<td>87</td>
<td>650</td>
<td>50,000</td>
</tr>
<tr>
<td>Missouri Botanical Gardens</td>
<td>200</td>
<td>600</td>
<td>80,000</td>
</tr>
<tr>
<td>Santa Barbara Botanic Garden</td>
<td>47</td>
<td>219</td>
<td>21,800</td>
</tr>
<tr>
<td>Strybing Arboretum, San Francisco</td>
<td>29</td>
<td>300</td>
<td>42,000</td>
</tr>
</tbody>
</table>

By totalling the number of hours worked and dividing that by the total number of volunteers, we found that the average volunteer works less than 110 hours a year. While this may be a fairly crude estimate, it serves to underscore the need for a highly organized volunteer program. Coordinating a large corps of volunteers who are each working only a few hours a week (or even month) requires a great deal of time and energy on the part of the organization. However, the rewards are well worth the effort. At Desert Botanical Garden, for example, the number of hours worked by volunteers were equivalent to those of 19 full time staff members.

The following is an overview of some of the more successful volunteer programs from around the U.S. While the type and extent of public involvement will vary from one community to another, our survey of other botanical gardens revealed some universal issues and ideas that may be applied at Guadalupe Gardens.

6.2 SUPERVISION OF VOLUNTEER PROGRAMS:

Perhaps the first and most significant step in the organization of a volunteer program is the appointment of a Volunteer Coordinator (ideally a paid full or part-time staff member). This person should be someone who is familiar with the San Jose community and who has demonstrated involvement in and awareness of the diverse populations that make up that community. The ideal candidate would demonstrate proficiency in more than one language, thus increasing the base from which to draw volunteers and facilitating
cultural diversity.

Marketing ability is also a vital asset in this position as the Volunteer Coordinator will need to effectively "sell" the project to prospective participants who might not be aware of the benefits of volunteering. Communication skills are also essential, particularly because of the need for coordination with other departments within the organization. Ideally, volunteers will have the opportunity to work within a variety of departments and will therefore fall under the supervision of various department heads. However, a central, overseeing entity (the Volunteer Coordinator) should be responsible for recruitment, tracking hours and organizing volunteer recognition events.

At the Desert Botanical Garden in Phoenix, Arizona, an overall lack of communication and structure in the volunteer program necessitated the creation of a volunteer management committee with representatives from each of the various departments. Working together with the Director, this committee came to a consensus on the priorities and direction of the institution so as to avoid confusion and conflicts of interest within different factions of the organization. Staff liaisons in charge of supervising volunteers are required to attend training workshops, make contributions to the volunteer newsletter and complete weekly work schedules. The Education Department was appointed to oversee and provide support for the volunteer group under the leadership of an assigned Volunteer Coordinator.

Establishing and maintaining a volunteer program requires a significant investment by the overseeing organization. Paying a coordinator's salary, investing in workshop and training programs and providing volunteer recognition should all be anticipated and figured into the volunteer program budget. At the Chicago Botanic Garden, annual recognition efforts alone require at least $20 for each of the 500 volunteers. This cost is small when compared to the monetary value of 46,000 hours of service, as well as the immeasurable contribution that volunteers make as enthusiastic spokespeople for the gardens.

6.3 THE VOLUNTEER PROCESS:

The volunteer process often begins with a simple application form, usually on the back of a fold-out flyer describing the volunteer positions available. At the Santa Barbara Botanic Garden, this application form asks the potential volunteer to indicate their area of interest (i.e. exhibits, research, shop, education, etc.), how many hours they can contribute per month and the days of the week and time of day they are available. This form is then returned to the Volunteer Coordinator who calls the individual and sets up an initial interview. At that time, more in-depth information can be exchanged.

If the prospective individual is still interested, he or she should be given a copy of a Volunteer Handbook. This handbook should provide background information on the garden as well as its mission statement, goals and objectives. It should also describe the various roles which a volunteer might pursue. These descriptions should be as clear and well-defined as possible. While volunteers should be given a certain degree of freedom within these roles, they should not be expected to define them. If not given proper direction, volunteers may unknowingly do more harm than good by taking actions that go against the goals of the organization. Clearly defined job descriptions will also ensure that volunteers know exactly what their job will
be before they make a commitment, thus saving themselves, and the garden, time that could potentially be wasted due to miscommunication.

The next step in the volunteer process is providing training. Various approaches are taken in this step and may range from informal "on the job" training with an overseeing staff member to a rigorous program of coursework, field work and even examinations. The extent of training will depend on the job to be performed. For example, a person working in the gift shop may not need as much training as a docent who will be leading tours through the gardens. However, there is no such thing as an over-trained volunteer and thus all volunteers should be encouraged to learn as much as possible about the garden's plants, facilities and programming -- even in areas they are not required to know about -- so they can best represent the gardens.

At Desert Botanical Garden, the team approach used in volunteer management is also used in training. Through the Department of Education, volunteers complete a 50-hour Volunteer Core Course. Experienced volunteers, known as Core Course Assistants, work as a team with staff trainers to explain DBG's goals and concepts in desert ecology. This process ensures a rapport among volunteer leaders, staff and new volunteers. After the Core Course, volunteers must then complete specialized training for their specific programs. For example, a docent may spend up to 27 hours learning about educational methods. Sales greenhouse volunteers are instructed in propagation and merchandising. In addition, for those who miss the Core Course, but want to begin volunteering anyway, an interim training program called "Sprouts" is available and prepares volunteers to assist in general activities until the next Core Course is offered. Training depends on staff members from every department and includes not only the initial specialized training, but also ongoing "continuing education" classes, luncheon lecture series and workshops.

6.4 VOLUNTEER ROLES:

A survey of volunteer programs at botanical gardens across the country uncovered a wide variety of tasks being performed by thousands of volunteers. Some of the positions found at virtually all of the gardens included groundskeepers, clerical help, gift and book shop volunteers and docents. One unusual outlet for volunteer energy was found at Santa Barbara where "Garden Guild" members make hand-crafted gifts from pods, seeds, shells and pine cones to sell in the Garden Shop. Santa Barbara also has a Master Gardeners program in which volunteers attend a 16-week training course offered by UC Cooperative Extension, similar to the program currently provided at Frusch Park on the Alameda in San Jose. Once trained, Master Gardeners help with plant propagation and grounds work and staff a telephone hotline providing help for local gardening enthusiasts. In San Jose, Master Gardeners from the local U.C, Extension program already participate as volunteers, contributing thousands of hours per year, for planting days and in workshops sponsored by the present Garden Center.

Another outlet for volunteer energy is in the organization and staging of fundraising events. At the Denver Botanical Gardens, 1,200 individuals work year-round to prepare for a two-day plant sale, a major fundraiser for the Gardens.

At many gardens, volunteers play a vital role in educational programming by
working in on-site libraries, leading tours of the grounds and even participating in outreach programs at local schools. San Francisco’s Strybing Arboretum offers weekend storytelling, gardening and craft activities for children as well as lectures, classes and workshops for adults, all of which require the energy of volunteers. Retired school teachers and college professors are a particularly valuable resource in these areas.

Many gardens also utilize volunteers in the daily maintenance of plants and facilities. At New York’s Central Park, a wide range of volunteers -- including school children, the elderly and the visually impaired -- undertake such tasks as bulb planting, pest management and bench painting. In a recent trend, public parks have benefitted from innovative rehabilitation programs which provide therapeutic work for substance abusers, prison inmates and individuals with disabilities. Some successful programs include a collaboration between Longwood Treatment Center (a substance abuse program) and Boston’s Emerald Necklace Parks, as well as placement efforts by correctional facilities in Newburgh, New York and Deer Island, Massachusetts (Birnbaum, Landscape Architecture, March 1993, p. 59).
CHAPTER 7.0
SELF-SUSTAINMENT, MAINTENANCE, FUNDING/DONATIONS

7.0 MAINTENANCE

A major concern at present (and to an increasing degree in the future) is the extent and cost of maintaining the Project's many acres of gardens and parklike landscapes. The principle of "self-sustainment" (the basis of this planning effort) reflects the current fiscal limitations within which San Jose (and indeed many other California cities) must operate with respect to public facilities such as parks. This Master Plan assumes that in addition to a lack of capital expenditures, the City will be unable to add to its current level of maintenance responsibilities and costs.

In addition, current annual costs for the cleared but undeveloped areas of Guadalupe Gardens are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disking</td>
<td>$57,000</td>
</tr>
<tr>
<td>Clearance trimming</td>
<td>5,000</td>
</tr>
<tr>
<td>Removal of dead trees</td>
<td>500</td>
</tr>
<tr>
<td>Emergency tree or line removal</td>
<td>200</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$62,700</strong></td>
</tr>
</tbody>
</table>

However, in order to save the remaining trees in good condition, regular maintenance operations such as watering, fertilizing and pest control are considered necessary by DPW. Thus the figures below added to the previous figures represent a minimum level of investment to maintain the "status quo."

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clearing and grubbing Ailanthus</td>
<td>$20,000</td>
</tr>
<tr>
<td>Watering</td>
<td>39,000</td>
</tr>
<tr>
<td>Fertilization</td>
<td>4,000</td>
</tr>
<tr>
<td>Pest control</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$73,000</strong></td>
</tr>
<tr>
<td><strong>Current expenditures</strong></td>
<td>62,700</td>
</tr>
</tbody>
</table>

**Subtotal** $135,700 *

* memo from DPW Div. Mgr. Gary D. Thompson to Councilmember David Pandori, 1/4/93

These figures do not include such periodic costs as contract document preparation, construction management and inspection or contingencies. They assume as well that maintenance of existing street trees and sidewalks along Hedding, Taylor and Coleman, however limited, is included.

Anticipated annual grounds maintenance costs for new additions to the Gardens can be estimated (in 1993 dollars) from data on other projects. Personnel and non-personnel (materials, equipment rentals, etc.) expenses for the existing Courtyard Park (approximately $20,000 per acre (1)) probably
represents the higher end of the range (comparable to the relatively complex high maintenance exhibits which will be built in the Gardens) while the estimate of ± $4,000 (2) per year for the historic Demonstration Orchard represents the low end of the range.

(1) Interpreted data from 9/11/92 memo from RPCS Senior Analyst J.A. Graves to site managers.
(2) Interpreted data from 9/20/90 letter from Charles Buckley to Councilmember Shirley Lewis.

Were the City to assume responsibility for grounds maintenance of the entire 140.45 acres of development (exclusive of any but minor buildings -- such as information kiosks and restrooms), the range (in 1993 dollars) would be as follows:

High: $2,809,000.00
Low: $561,800.00

However, this Master Plan assumes that City grounds maintenance will not be limited to those areas that do not logically come under the management responsibilities of the Guadalupe Gardens nonprofit Corporation or its many participant leases:

River Promenade (.8 miles), 2.9 A @ $20,000 = $58,800
Hedding, Taylor, Coleman sidewalk Greenways, 5.8 A @ $20,000 = 160,000
Pedestrian Bridge & Underpass, allow 5,000
Main Meadow, 2.4 A @ $4,000 = 9,600
Tributary Meadows (5), 4.9 A @ $4,000 = 19,600
Riparian Forest Groves (5), 9.6 A @ $6,000 = 57,600

The City Landscape Service Center is seen as essentially self-maintaining. Courtyard Park could become the maintenance responsibility of either the City or Guadalupe Gardens depending on how much of it can be seen as serving the programmatic and educational goals of the Gardens. Similarly, the maintenance responsibilities of the volunteer-based Heritage Rose Garden, which appear currently to have fallen to the City, could logically be taken on by the Gardens. The Design Review Committee of the Guadalupe Gardens Advisory Council recommended that maintenance of the Parking Orchards be the responsibility of the Gardens.

In the estimate which follows, it is assumed that current maintenance costs for Columbus Park will (in 1993 dollars) remain the same when the two new ballfields and soccer field are installed. On the other hand, maintenance of trees on Hedding, Taylor and Coleman are included as a new cost item.

City share of annual grounds maintenance expenses: $310,660

Since these are 1993 dollars and completion of the entire Guadalupe Gardens project could take from 15 to 25 years, actual dollar costs in the future could be significantly different.
7.2 PUBLIC/PRIVATE PARTNERSHIPS:

Guadalupe Gardens will be managed through a public/private partnership in which the City of San Jose and a newly-created private, nonprofit entity will share the responsibilities of maintaining the garden and its programming. While the specific details of this arrangement will be unique to Guadalupe Gardens, the idea of a public/private partnership is not an unusual one. In fact, the American Association of Botanical Gardens and Arboreta (AABGA) devoted their entire January 1993 issue of The Public Garden to the topic of public/private partnerships in botanic gardens. In this issue, Laurie S. Goldman and Bob Hyland of San Francisco’s Strybing Arboretum describe the ideal model as one which includes:

1) a single governing entity (the nonprofit);
2) a powerful board of directors with some degree of political clout and access to funding sources;
3) a public entity whose contributions are at a regular and consistent level.

Strybing Arboretum is one example of a successful public/private partnership consisting of dual staff and dual administration. The City staff consists of an appointed director and nine civil service gardeners, a garden foreman and nursery specialist who care for the grounds, a secretary and two custodians. The nonprofit Society, which designs, funds and provides 100% of the garden’s educational programming, consists of 13 paid staff members (including librarians, a volunteer coordinator, development staff and a collections manager), 27 trustees and almost 400 volunteers. Through fundraising efforts and the contributions of 3,000 members, the Society provides 40% of the overall funds for the annual operation of the gardens with the other 60% provided by the City.

This model varies somewhat from the proposed organization of Guadalupe Gardens. For example, the overall director of Strybing is a City-paid and appointed staff member while at Guadalupe Gardens, this position will be appointed by the nonprofit Board of Directors. However, the designation of grounds and maintenance responsibilities to the public entity and programming responsibilities to the private organization is a logical approach and a concept which could easily be adopted at Guadalupe Gardens.

Another issue of concern is how much of the funding will be provided by each entity. At the Chicago Botanic Garden, 70% of the operating budget comes from the county through taxes levied and distributed through the Forest Preserve District. The nonprofit is responsible for raising funds for capital improvements and special programming, as it is usually easier to solicit donations for these than for general operating costs.

Another example of a public/private partnership is the Denver Botanic Garden. Every year, the garden receives approximately $1.5 million (14% of the annual budget) from the County. This money is raised through a .1% sales tax that includes six counties and is dispersed to 11 set institutions as well as to smaller groups which apply for grants on an annual basis. While the public entity in this situation provides a substantial portion of the operating budget, the private Board of Trustees have complete jurisdiction over the gardens and are, for the most part, independent of the City and County. The one exception is that the Mayor may appoint two members to the Board of Trustees.
7.3 ORGANIZATION

Board of Directors:

The members of the Organization Committee for Guadalupe Gardens have prescribed a structure which includes a rotating Board of Directors with three to five new members appointed each year to serve two year terms. This type of organization reflects what Hadley Osborn, ex-Director of the Filoli Center, describes as ideal in an article for AABGA's Public Garden (Oct. 1989, pg.15). By limiting the length of the term, board members are given sufficient time to develop knowledgeable leadership while still allowing new blood. Hadley also warns against reappointing prior members who have taken time off. In many instances, the organization has changed in their absence and they may unknowingly return to prior, outdated concerns.

A counter-argument suggests that this continued turnover and phasing out of committed and experienced board members could result in the Board losing sight of its mission, the repetition of past mistakes and a loss of momentum. In either case, the Bylaws should provide flexibility and adaptability to the unique potentials of the community so that board composition will benefit from an optimal combination of experienced members along with new ones with fresh perspectives.

Another suggestion Hadley offers is devoting particular attention to staff/board relations. One hazard of the rotating board is that new members may assume that the missions of previous boards on which they have served will apply to the current one. If the Board and the staff are not both clear and agreed on the mission of the garden, the result could be a poorly run and tension-charged organization. Thus, it is the responsibility of staff to demand a new board member orientation process which is personal and on-site. Simply mailing a copy of the bylaws and minutes of recent meetings is not enough to prepare board members for their duties. Staff should also be involved in committees, alongside members of the board, as described in the section below.

Committees:

Article VII of the Bylaws of Guadalupe Gardens Corporation proposes the creation of working committees composed of members of the Board of Directors. It is suggested that the President establish a Nominating Committee, comprised of two directors and chaired by one non-director Friend. This committee will recruit, interview and educate potential directors to fill vacancies on the Board. When selecting the members of this committee, and especially the Chair, it will be important to find individuals who are active in the community, ideally with a wide range of contacts to insure continuing diversity on the Board.

In an article for AABGA's Public Garden, Richard Daley, Executive Director for the Massachusetts Horticultural Society, prescribes a viable model for organizing committees such as those described in Article VII. First, he suggests that the members of the Board be appointed by the Director to serve on the specialized committees. In addition to the Nominating Committee, these might include finance, development, membership, grounds, education, publications, auditing and visual arts. The number and type of committees, of course, varies from one institution to another. At most institutions, these committees are staff-driven, meaning that a staff member involved in the
area works with the director to set the agenda with the Committee Chair given the opportunity to change or add to that agenda.

For large boards, it is customary to have an Executive Committee which acts as the Board between meetings and may function as the personnel review committee for the director. Appointment to this committee may be set through the institutions bylaws (i.e. consisting of only key committee chairs) or may be appointed by the Board President.

One way of increasing the effectiveness of a committee is by diversifying it with non-board members. Former Board members are an excellent resource for working committees as they offer a wealth of experience. Members of the community at large should also be invited to serve on committees. For example, teachers might serve on an educational committee, local business leaders on a financing or development committee and community activists on an outreach committee (Public Garden Oct. 1989, p. 29).

Advisory Board:

Article VIII of the Bylaws states that the Board of Directors will establish and maintain an "Advisory Board" whose responsibilities will include advising and consulting the Board of Directors upon request. Members of the Advisory Board are to be appointed based upon the particular skills, affiliations, knowledge or experience they have to offer the organization. The Organizational Committee recommends that this board have at least one representative from the following fields: Parks and Recreation, garden clubs, business, fund raising, education, neighborhood groups, environment, San Jose International Airport, botany, horticulture, landscape design, San Jose Beautiful, County of Santa Clara, City of San Jose, San Jose Water District, cultural resources, Guadalupe River Park, history and archaeology.

TPA recommends that, in addition to these, representatives should be included from the following: major providers of funds, City of San Jose Office of Environmental Management, Santa Clara Valley Flood Control and Water District, San Jose Redevelopment Agency, Guadalupe River Park Advisory Board, school districts, community colleges and universities, agriculture and the field of advanced technologies. It is also recommended that the scope of participants be expanded from a local level to a national and even international one.

In addition, specific suggestions for a "bank" of human resources from which to draw support (provided by DFW) follows. This list should not be considered entirely complete. Interested parties may emerge in the future and the Gardens organization should continually consider inclusion of new members to insure the broadest possible community representation.

<table>
<thead>
<tr>
<th>Business:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport:</td>
<td>Southwest American</td>
</tr>
<tr>
<td>Associations:</td>
<td>Chamber of Commerce Real Estate Board</td>
</tr>
<tr>
<td>Communication/PR Firms</td>
<td>Construction Firms Hotels Sharks</td>
</tr>
<tr>
<td>Downtown:</td>
<td>San Jose National Bank Union Bank Stockbroker</td>
</tr>
<tr>
<td>Finance:</td>
<td>Southern Pacific</td>
</tr>
<tr>
<td>Property Owners:</td>
<td>PMC</td>
</tr>
</tbody>
</table>
Silicon Valley: Apple
IBM
Sun Microsystems
Convention Bureau
Council
Parks and Rec.; Community Gardens

Civic:

City:

Conservation Corps
County:
Ethnic Organizations
Historical Associations
Chinese
Filipino
Japanese
Mexican Heritage Garden
Vietnamese

Educational:
San Jose State University
Santa Clara University
K-12 schools with environmental emphasis

Environmental:
Audubon Society
C.A.A.P.
Creeks Coalition
Friends of Guadalupe River Park
Garbage Companies
Greenbelt Alliance
S.A.F.E.R.
Sierra Club

Horticultural:
Agricultural Organizations
Garden Clubs
Nurseries, Flower Growers and Maintenance Firms
Landscape Contractors
U.C. Co-op Extension Master Gardeners

Neighborhoods:
Garden Alameda
Hensley
Japantown
Rose Garden
Ryland
St. Leo's
Shasta Henschel

Non-profits:
Children's Discovery Museum
Tech Museum of Innovation
Vasona Discovery Center
Volunteer Exchange

Service Clubs:
4-H
Boy/Girl Scouts
Our City Forest
Rotary

Skills Representation:
Environmental Health and Engineering
Accounting
Law
Fundraising
PR/Advertising/Marketing
Landscape Architects
Architects
Interactive Communications
Civil Engineering
Education
Accessibility Experts

The Advisory Board will meet as needed and members will, from time to time, be asked to advise the Board of Directors in their respective areas of expertise. Unlike the Board of Directors, the Advisory Board will not be responsible for decision-making and will not have the power to vote on garden issues.

Executive Director:

One of the key responsibilities of the Board of Directors will be the selection of an Executive Director. For most gardens of the same scale as Guadalupe
Gardens, hiring an Executive Director often involves a nation-wide search. The first step should be the appointment of a Search Committee which will be responsible for prospect screening, selection of candidates, interviewing and recommending finalists to the rest of the Board.

The Search Committee should first draft a description of the position. This will involve consideration of the long-range goals of the garden as well as its current needs so that qualifications (such as management skills, academic background, horticultural/environmental sciences background, personality -- to name a few) can be prioritized. This description should be submitted to the rest of the Board and then advertised on a national level (if deemed necessary) via such publications as AABGA's newsletter and on a local level in area newspapers and the Bay Area's Opportunity Knocks, a listing of nonprofit job openings. Candidates should be screened, reference-checked and interviewed by the Search Committee with a finalist (or finalists) invited back for a second interview with the entire Board.

The responsibilities of the Executive Director will, of course, increase as the garden's programming and community involvement grow. As time passes, the garden's growth may necessitate the appointment of a Deputy Director. The Chicago Botanic Garden is one example of an institution with a Deputy Director who oversees the departments of Finance and Human Resources, the latter of which includes personnel, visitor services, security, food service, maintenance and gift shop. The Executive Director (in this model) is responsible for the areas of Development, Research, Education (including volunteers) and Horticulture.

**Staff:**

The Executive Director will be responsible for selecting and overseeing the department heads who in turn oversee the support staff and volunteers. It is recommended that the Executive Director and the department heads come with strong educational backgrounds. While they need not have degrees in education, specifically, they should demonstrate the ability to distribute knowledge and share experience. This skill will prove critical since a large portion of the intellectual and physical energies that will fuel the organization are provided by volunteers.

The Organizational Committee has recommended that the following department head positions be filled: Programming Coordinator, Development and Fundraising Coordinator, Business Manager, Public Relations Coordinator, Volunteer Coordinator and Buildings and Grounds Manager. Under the Programming Coordinator on the proposed organizational chart are the categories of Garden Center, Education Groups, Research and Environmental. Under Business Manager are Financial, Operations, Personnel, Payroll and Purchasing. Finally, under Public Relations is the single category of Marketing.

On December 14, 1993, TPA proposed an organizational chart which varied somewhat from that of the Organizational Committee, mainly in that the educational, public relations and volunteer related aspects of the organization were grouped under the same category rather than the three departments these fall under in the Committee's recommendation. TPA continues to believe that these areas, because they are so interdependent, should be the responsibility of one department -- particularly in the early stages of the garden's development. Thus, under the Education/
Communications/Volunteer heading, TPA has included the areas of Programming, Exhibits, Outreach, Promotion and Volunteers. While there may eventually be three separate coordinators who will work closely together under this department, one full-time head coordinator, supported by one half-time volunteer coordinator should be sufficient. The other department head positions recommended by TPA -- Development, Buildings and Grounds and Business Manager -- were all included on the Organizational Committee's recommendations. Thus, there appears to be general agreement that these are necessary to the organization.

Friends:

The proposed Bylaws also call for the formation of a support organization, the members of which will be called the "Friends" of Guadalupe Gardens. The Friends will provide financial support through payment of annual dues set by the Board of Directors. A separate category of "Corporate Friends" will be established for corporations, businesses and organizations which will also pay annual dues set by the Board of Directors. For a special fee, to be set from time to time, individual or corporate Friends may become "Life Associates." The title of "Honorary Friend" may also be awarded to individuals who have rendered notable service to the Gardens, and these individuals will also be Friends for life.

It is important to note that the Bylaws clearly assign responsibility for any actions requiring approval to the Board of Directors. Friends are to be notified of the Annual Meeting of the Guadalupe Gardens corporation, and while they may attend this meeting, they will not be allowed to make motions or vote unless they are members of the Board of Directors.

The structure of the Friends program will discourage the conflicts of interest that often arise when members help decide how funds are spent. However, the benefits of a more active membership should not be overlooked. Friends may provide a valuable service as fundraisers and volunteers. While their membership fees may become part of the general operating budget to be administered by the Board of Directors, the Friends who wish to have some input in their particular area of interest should be encouraged to join a committee. Eventually, a Friend who has shown consistent interest in and commitment to the Gardens may be asked to join the Board of Directors.
7.4 FUNDING RESOURCES: INSTITUTIONAL MODELS

Given the size of the gardens complex and the severe financial constraints which the City appears to be facing, the nonprofit institution running Guadalupe Gardens will be called upon to expend unusual energy and creativity in fundraising. In the following section, some of the more successful fundraising strategies employed by botanic gardens throughout the U.S. are described, as are some ideas for generating revenue through admission fees, facilities rentals, membership programs, restaurants and gift/book shops.

Funding for Special Programs vs. Operating Budgets:

Often the most successful funding requests are those that specify a particular project, program or infrastructural need. For example, the Los Angeles Arboretum received $25,000 in 1988-89 from the ARCO Foundation to fund the first of a two-year pilot program to establish a Volunteer Coordinator position, the objective being to improve management and recruit and train volunteers. An important strategy in obtaining support for a program such as this is convincing the donor that this is a one-time request and that once granted, the funding support will increase the self-sufficiency of the organization.

Capital improvements are often recipients of individual and corporate support as well. One of the most successful fundraising campaigns conducted by the Brooklyn Botanic Garden was for the construction of a new conservatory complex in 1986. The complex required $21.5 million, all of which came from private and corporate donations. BBG attracted several large contributions by offering incentives. For example, $5,000 secured a bronze name plaque in one of the buildings; $25,000 named a plant collection and $50,000 named a classroom in the Education Building (Public Garden, 4/1986, p.11). This strategy reflects the well-documented fact that donors prefer to see their money invested in a tangible product, rather than being consumed into an overall operating budget.

While harder to come by, unrestricted grants for general operating expenses are not unattainable. The Institute of Museum Services, for example, offers General Operating Support (GOS) grants to organizations which have demonstrated exceptional merit in their field. The awards are not based on extraordinary need and thus are not given as seed money. An article excerpted from AABGA’s Public Garden which offers suggestions for obtaining IMS funding is appended.

At institutions with a public/private partnership, the participating City or County entity often provides a substantial portion of the operating budget, leaving the financing of additional programs and special projects up to the non-profit organization’s fundraising efforts. Such is the case at the Chicago Botanic Garden where the county provides 70% of the general operating budget (such as grounds maintenance and paid staff) but none of the cost of capital improvements. At Guadalupe Gardens, the percent of support which the City will be able to provide (beyond the amount generated by the airport for maintenance of the area) has not been determined.

Resources for everyday maintenance and operations may also come in the form of in-kind services donated by local businesses and corporations. For example, gardening equipment, plants seeds and even office furniture are
just a few items that may be obtained through donations. In 1992, the Desert Botanical Garden received $3,000 worth of cellular radios for use by their eight-member horticultural department, $75,000 worth of advertising on bus shelter boards, $80,000 worth of printing services from a local newspaper as well as television public service announcements valued at nearly $10,000. The value of such contributions often exceed the amount that a private entity would be willing to donate in outright funds and definitely help to alleviate some of the major costs of operating a nonprofit institution.

The NEA and NEH:

The National Endowment for the Arts (NEA) and the National Endowment for the Humanities (NEH) are two valuable resources for program funding. As a private nonprofit organization, Guadalupe Gardens would be eligible for NEA support to fund a wide range of projects including Art in Public Places, landscape architecture, garden design or any other project which promotes the arts (including folk arts, dance, theater, music and visual arts). Under the Design Arts program, some examples of past awards include funding for a study of turn-of-the-century plants used in formal gardens; the design of an urban garden in Dorchester, Mass.; and the design of an exhibit at Wave Hill, Bronx, New York to acquaint the public with the landscape architecture design process. Art in Public Places awards have made possible numerous works in a variety of media (including neon, metal, plants, stone and water) at parks and gardens throughout the nation. The main criteria for such works is that a visual artist should be the lead designer and should be given a say in the selection of a site and subject matter.

Projects funded by the NEH must promote the humanities and could include archaeology, history and the study of the human relation to nature. Under the Program for Museums and Natural Organizations, funding has been awarded for projects involving research and collections management and the preparation of publications and exhibits. The Public Humanities Program has funded lectures, seminars, and workshops at many botanical gardens. The Desert Botanical Garden, for example, received a grant in 1982 for a series of workshops entitled "Desert Plants and Agriculture in the Native American Cultural Traditions."

Membership/Friends Programs:

All of the botanic gardens surveyed had some form of paid membership program (sometimes referred to as a "Friends" group) as part of their overall fundraising plan. According to Dana Hines, Membership Coordinator at the Missouri Botanical Garden, membership programs can provide from 10 to 20 percent of an organization's operating budget. Missouri Botanical Garden has an unusually successful program with 30,000 members contributing 20 to 25 percent of the overall budget. The success of MBG is based largely on the fact that the institution is 140 years old and, in the words of one employee, is "deeply entrenched in the culture of St. Louis where people are involved in the gardens literally since birth." Nevertheless, an emerging and less "established" botanic garden organization can benefit from the tactics used by MBG to increase and maintain current membership. For example, Hines, in an article for The Public Garden emphasizes the importance of creating yearly goals and objectives for growth rates based on projections of future memberships. At MBG, membership statistics are tracked carefully and broken down according to month and type of promotion (i.e. direct mail, on-site membership, etc.) so that general trends become apparent.
Hines attributes the success at MBG to an aggressive and creative membership acquisition effort. Among the tactics employed are direct mail, telemarketing, availability of gift memberships and visible point-of-purchase displays in on-site buildings and shops. MBG has an arrangement with local realtors who have purchased memberships as gifts to new home buyers or renters and has successfully promoted special occasion gift memberships (i.e. a flower and a membership card delivered on Valentine's Day).

Brooklyn Botanic Garden (BBG) provides another good model for a membership program. Unlike the majority of botanic gardens, BBG has a national program with members in distant places who have never even been to the garden. The popularity of this program is due to membership incentives which include a subscription to the publication, Plants and Gardens News as well as four gardening handbooks per year and a specially cultivated annual "BBG Signature Plant." As BBG has learned, providing useful information to horticultural enthusiasts is an effective way of creating a large membership.

**Admission Fees:**

The majority of the gardens surveyed do not charge an admission fee. Of those that did, the fees are as noted below:

**Desert Botanical Garden:**
General: $5; Seniors: $4; Children 5-12: $1; Children under 5: free

**Los Angeles State and County Arboretum:**
General: $3; Seniors/students: $1.50; Children: $0.75

**Missouri Botanic Garden:**
General: $2; Seniors/children: $1.

**Huntington Botanic Garden:**
Suggested contribution: $5.

**Santa Barbara Botanical Garden:**
General $3; Seniors/teens: $2; Children: $1.

Overall, the amount of money generated by charging admission to the gardens was relatively small. For example, at Santa Barbara, admissions account for only 7.8% of the annual income. Nevertheless, for a struggling garden, an admission fee is often an attractive and sometimes necessary means of self-support. The greatest drawback is that the garden will become less accessible to the public (especially to those with an economic hardship) and casual usage by passers-by would be limited. One compromise might be only charging on certain days or having a designated "free day" each week. Another is the request of a "suggested donation" (as is done at the Huntington Botanic Garden) rather than an enforced admission fee so that those who can afford to pay will do so and those who can't will still be able to enjoy the Gardens. Parking fees may also be charged in lieu of (or even in addition to) a general entrance fee, and would require only a minimal investment for implementation.
Facilities Rental:

Botanic gardens are popular settings for private parties, garden club luncheons, wedding ceremonies and even fashion shows. Many botanic gardens have capitalized on the popularity of such events by charging individuals and organizations for the use of their grounds and facilities. At Missouri Botanic Garden in St. Louis, for example, this source of funding is so vital that a "Facility Rental Department" has been established to handle the coordination, staffing and catering of on-site events. Some of the responsibilities of this department include pre-event administration and booking, event set-up and provision of a "bad weather back-up" plan. With an auditorium that seats up to 400 people, MBG hosts business meetings and trade conferences every week of the year. In the peak summer months, as many as three or four weddings a day are held on the grounds. MBG also charges professional photographers and advertisers for the use of their site as background scenery.

At Guadalupe Gardens, these uses could also be a source of revenue. Many local garden clubs have expressed an interest in holding regular meetings in the Garden Center and a modest fee for such use would help to defray the cost of building and maintaining the Center. In addition, the popularity of outdoor weddings in San Jose has already been demonstrated at the existing Municipal Rose Garden where in the summer months, an average of four weddings are held per weekend day, drawing approximately 7,000 people a year (Ron Zinn, Municipal Rose Garden). By offering scenic surroundings and a well organized facilities rental system, Guadalupe Gardens could easily attract as many, or more, private weddings and other gatherings.

Gift Shops:

Gift and book shops in botanic gardens have become more popular in recent years as cuts in local, state and federal spending have necessitated new and increasingly creative entrepreneurial efforts by nonprofit institutions. In addition to providing much needed revenue, on-site shops can (and should) help to fulfill the garden's mission statement by serving as a resource for hard-to-find books and periodicals on plants, horticulture and environmental issues as well as special tools and supplies needed by gardeners. The shop's inventory should offer items which aren't easily available through other sources -- items which are unique, like the line of children's gardening tools introduced in 1991 at the Santa Barbara Botanic Garden.

Lea Youngquist of Minnesota's Linden Tree Gift Shop suggests stocking items that correspond to special events at the garden. For example, when the Lily Society has a meeting, the shop will display books on lilies and gifts with lily motifs; during the Herb Conference, the shop stocks up on herb trays, prints, books and even scarves and aprons. Posters commemorating garden events are popular sellers, as are T-shirts and sweatshirts depicting wildflowers, herbs and annuals. The shop also has a garden center with bird houses, bonsai shears and flower arranging items among its many specialized tools and a jewelry and crafts section featuring work by local artists (Public Garden, Oct. 1990, p. 28).

In the fiscal year 1989-1990, with the help of one manager, two part-time employees and 16 volunteers who donated over 1,000 hours, the Linden Tree Gift Shop grossed $225,000. Youngquist attributes the success of the shop to the variety of merchandise, priced to fit a wide range of pocketbooks. Gifts
range from $0.25 to $560 with the average price being around $10.00. As a pricing standard, she suggests a 130 percent mark up on most goods, with the exception of books which should be priced at roughly 40 percent higher than cost.

At most gardens, a gift or book shop will not be a major source of revenue. At Rancho Santa Ana, the gift shop accounts for less than 2% of the annual income and at Santa Barbara Botanic Garden this figure is about 4.5%. Nevertheless, they can be an important garden feature that may attract visitors while providing a valuable resource to local gardeners. Because shops do not require much space and can easily be staffed by volunteers, they, in many cases, provide a reliable (albeit small) source of income without a huge investment on the part of the institution.

**Restaurants:**

In a 1990 AABGA survey of 125 botanic gardens around the country, less than half of those surveyed offered some form of food service. Of those, only one-half included table or cafeteria service and the remaining half offered only snack bars or vending machines. Thus, the survey revealed that food services in botanic gardens are not particularly common. However, with some research into audience needs and tastes, an attractive and marketable restaurant could be established. In addition to generating extra revenue from garden visitors, a desireable restaurant would also attract those who might not otherwise enter the garden, thus serving as a valuable public relations tool. A restaurant with full kitchen facilities can also prove helpful for catering on-site special events.

One proposed restaurant format for the Guadalupe Gardens is a sit-down cafe overlooking the River Park. Equipped with both indoor and outdoor dining areas, this facility would draw an audience year-round. By day, the restaurant could easily attract people who work in the area and would enjoy a noon-time stroll through the gardens and light lunch. A restaurant would also serve visitors who need a break during their tour of the 127-acre garden, as well as the numerous staff and volunteers who will spend considerable time on the site.

Most of the gardens with restaurant facilities operate them through contractual management, thus placing less of a burden on garden administrators and staff. However, contractual arrangements often generate less income for the garden than do food service operations owned and operated by the garden itself. One advantage, though, is that they provide less of a financial liability. Formulae used at gardens for handling financial agreements include: management fees paid to the contractor from net profits; gross sales percentages (ranging from 6 to 15 percent with or without a stated minimum); profit sharing and rental (Public Garden, Oct. 1990, pg 19). Which, if any, of these formulae would work best for Guadalupe Gardens depends greatly on the type of service to be offered, the garden’s assets and the projected earnings of the facility.
8.1 ANNOTATED DIRECTORY OF NATIONAL CONTACTS FOR A BOTANICAL GARDEN ORGANIZATION:

In the course of our research, we came across numerous organizations devoted to horticultural issues and public gardens. Those listed below include membership organizations as well as other botanical gardens who are eager to share information and experiences. During telephone conversations, several individuals from these organizations expressed an interest in learning of Guadalupe Gardens’ progress. It is suggested that those people who are to be involved in the on-going programming of the Gardens keep in touch with individuals in the national gardening community, as it is through these people that the most valuable and up-to-date information can be gleaned.

ORGANIZATIONS:

American Association for Botanical Gardens and Arboreta
P.O. Box 206
Swarthmore, PA 19081
(215) 688-1120 Sue Lathrop, Executive Director

AABGA is a membership organization supporting North American botanical gardens and arboreta by providing useful information and networking. The Public Garden, a quarterly publication, and a monthly newsletter are extremely valuable resources, as are the knowledgeable staff.

American Community Gardening Association
325 Walnut Street
Philadelphia, PA 19106
(215) 625-8280 Sally McCabe

A nonprofit organization of gardening and open space volunteers and professionals, ACGA "promotes the growth of community gardening and greening in urban, suburban and rural America." Publishes the ACGA Review, hosts an annual conference, provides valuable networking services and a monthly newsletter. Also, a 125-slide presentation with script or cassette tape is available to members, highlighting programs throughout the country. Ask about an organizational membership.

American Horticultural Society
7931 East Boulevard Drive
Alexandria, VA 22308-1300
(800) 777-7931 (703) 768-5700 Helen Walutes, Director

"The Society strives to inform, educate and inspire people of all ages to become successful, environmentally responsible gardeners." AHS members have access to the toll-free Gardeners’ Information Service which provides information on plants, horticultural supplies, educational services, etc. and publishes North American Horticulture, from the nation’s largest computer database of horticultural organizations and programs. Also offers a catalog of rare and unusual seeds (heirloom vegetables are a specialty). Ask about Affiliate Membership for botanical gardens and arboreta.

American Horticultural Therapy Assoc.
362A Christopher Avenue
Gaithersburg, MD 20879
(301) 948-3010
AHTA promotes horticulture as a means of therapy or rehabilitation for persons who are disabled or disadvantaged including those who are physically, developmentally or mentally disabled, elderly substance abusers, public offenders and socially disadvantaged. A membership organization, AHTA provides networking and information resources.

**Association of Science and Technology Centers**  
(202) 783-7200 Bonnie Van Doren

A valuable resource for information on natural history and science centers throughout the United States. Few members are affiliated with botanical gardens. However, contacts can provide information on the latest technologies being used in science and environmental education.

**National Gardening Association**  
Burlington, VT  
(802) 863-1308

**GARDENS:**

**Austin Nature Center, Austin, TX**  
301 Nature Center Drive  
Austin, TX 78746  
(512) 327-8181

An excellent source for innovative environmental education ideas, the ANC is a public facility with demonstration gardens, living library, hands-on science activities and rehabilitation facilities for injured wild animals. Some examples of programming include: classes for children in the "3 R's": Reusing, Recycling, Reducing; "The Good, the Bad and the Cuddly," a multimedia hands-on exhibit exploring feelings about animals; classes in paleontology, herpetology, geology and astronomy.

**Chicago Botanical Gardens**  
Chicago Horticultural Society  
P.O. Box 400  
Glencoe, IL 60022-0400  
(708) 835-8221 Mr. Chris Jarantowski, Assistant Director  
(708) 835-8217 Mr. Bernard Weiss, Finance

Established 26 years ago, this 300-acre "living museum" has in recent years played a more active role in aiding the Chicago community through education programs, horticultural therapy and the development of community gardens throughout the City. The Chicago Horticultural Society is known for its Environmental Education Awareness Program (EEAP) as well as its highly successful membership and volunteer programs.

**Denver Botanical Gardens**  
(303) 370-8049 Jody Arnold, Volunteer Coordinator  
(303) 370-8073 Bob Burns, Marketing

Denver Botanic Garden is located on a relatively small plot (about 20 acres), but has a comprehensive program with 87 paid staff members, including a horticultural therapist. DBG has been particularly successful in fundraising and receives $1.5 million from tax revenues annually.
Desert Botanic Garden
1201 North Galvin Parkway
Phoenix, AZ 85008
(602) 941-1225 Kathleen Socolofsky, Director of Education
(602) 941-1225 Dr. Robert B. Breunig, Executive Director

DBG is located on 145 acres of Sonoran Desert and is dedicated to the study, display and preservation of desert plants. Particularly strong programs here include volunteer training, environmental education and water-wise gardening methods.

Huntington Botanical Gardens
1151 Oxford Road
San Marino, CA 91108
818/405-2160 Danielle Rudeen, Assistant to the Director of the Gardens
818/405-2128 Rebecca Barton, Tour and Volunteer Department

The gardens cover 130 acres surrounding the Huntington Art Gallery. Features include Desert, Subtropical, Herb and Palm Gardens, Japanese Garden and Rose Garden showing the history of the rose over 2,000 years. The volunteer program consists mainly of docents who lead tours for adults and children.

Los Angeles County Arboretum and Botanic Gardens
301 North Baldwin Avenue
Arcadia, CA 91007-2697
(818) 821-3250 Charlette Larson, Secretary to the Director

This organization oversees the L.A. State and County Arboretum, the South Coast Botanic Garden, Descanso and Virginia Robinson Gardens. The largest of these, the L.A. State and County Arboretum occupies 127 acres, minutes from downtown L.A. "The Arboretum is a scientific and educational institution dedicated to the study, conservation and display of plants from the world over. It serves as a center of horticultural and gardening information and activities in Southern California." Programs include air pollution display greenhouses, water-wise gardening, Plant Science Library and geographic display of plants from six continents.

Missouri Botanical Garden
P.O. Box 299
St. Louis, MO 63166-0299
(314) 577-5142 Douglas Arnold, Public Relations Manager
(314) 577-5111 John McDougal, @ Climatron (for info. re: horticulture, research)

MBG, the nation’s oldest botanical garden, has a strong emphasis on environmental issues, particularly in the study and conservation of tropical ecosystems. The Climatron, a glass geodesic dome, recreates a tropical rainforest. MBG is also the organizational center for several national organizations including The Center for Plant Conservation, the Center for Home Gardening and the Flora of North America Project which aims to create a comprehensive database referencing all plants growing spontaneously in North America.
Rancho Santa Ana, Claremont, CA
1500 N. College
Claremont, CA 91711
714/625-8767

Rancho Santa Ana is similar in scale to Guadalupe Gardens and concentrates only on California native plants.

Scott Arboretum, Swarthmore, PA
Swarthmore College
Swarthmore, PA 19081
(215) 328-8025 Ms. Josephine Hopkins

Covering 110 acres of the Swarthmore College campus, Scott Arboretum features a rose garden, holly collection, cherry collection, a teaching garden and thousands of trees and various plants. Scott also has a large library and successful membership and volunteer programs.

Strybing Arboretum, San Francisco, CA
Ninth Avenue at Lincoln
San Francisco, CA 94122
(415) 661-0822 Diana Colby

Located on 70 acres in Golden Gate Park, Strybing is comprised mostly of demonstration gardens representing different regions of the world. Like Guadalupe Gardens, Strybing is run by a public/private partnership.
8.2 BOTANIC GARDEN STATISTICS:

The following lists are the product of telephone interviews conducted by Tito Patri & Associates during the spring of 1993.

Acreage, Yearly Attendance, Number of Volunteers/Staff, Organization:

Denver Botanic Gardens
Acreage: 20 acres
Attendance: n/a
Volunteers: 650 (50,000 hours) + 1,200 who help with preparations for 2-day plant sale
Paid staff: 87
Membership: n/a
Attendance Fee: No.
Private/Public Partnership?: Yes.
% of income from City: 14% (Receives $1.5 million annually from a .1% sales tax.)
In-kind Services: Yes.
Supervision: Board of Trustees has complete autonomy, but the Mayor may appoint 2 members to the Board of Trustees.

Desert Botanical Garden
Acreage: 145 acres
Volunteers: 412, 42,000 hours
Paid Staff: 41
Attendance Fee: $5 adults, $4 teens, srs.
Private/Public Partnership: No.
In-Kind Services?: No.
Supervision: Board of Trustees (self-elected) hire an Executive Director who oversees Department Heads in Research, Collections, Comm. Service, Education, Development, Facilities
Sources of Income: membership, gift shop, grants, COMPAS (a local nonprofit arts fundraising organization)

Los Angeles State and County Arboretum
Acreage: 127 acres; 195 parking spaces
Attendance: 291,000 (1989-90)
Volunteers: 300
Paid staff: 20 (?)
Membership: 4,000 ($187,000)
Attendance Fee: $3 adult; $1.50 srs., students; .75 children
Private/Public Partnership?: No.
Supervision: County Supervisors appoint Advisory Council.

Missouri Botanic Garden
Acreage: 80 acres, 512 parking spaces
Attendance: 1 million
Volunteers: 600 (80,000 hours)
Paid staff: 200+
Membership: 30,000
Attendance Fee: $2 adult; $1 srs. and children; free on Weds. and Sat.
Private/Public Partnership?: Yes.
% of income from City: 7% $2 million from local sales tax.
Huntington Botanical Gardens
Acreage: 207 acres, 1,200 parking spaces
Attendance: 550,000
Volunteers: 600 volunteers (includes docents for art museum, though)
Paid staff: 15 office, 42 gardeners
Attendance Fee: Suggested contribution $5; no required fee.

Zilker Garden Center, Austin, TX
Acreage: 60 acres (within 330 acre park), 85 parking spaces
Attendance: 51,000
Volunteers: n/a
Paid staff: n/a (maintenance crews come from Parks & Rec.)
Membership: 2,000 (through garden clubs)
Attendance Fee: No.

Zilker Nature Center, Austin, TX
Acreage: 80 acres (within 330 acre park), 20 parking spaces
Attendance: n/a
Volunteers: 12
Paid staff: 15
Membership: n/a
Attendance Fee: No.

Scott Arboretum, Swarthmore, PA
Acreage: 110 acres (within 330 acre campus), no separate parking
Attendance: n/a
Volunteers: 150
Paid staff: 21
Membership: 1,221
Attendance Fee: No.

Strybing Arboretum
Acreage: 70 acres, 25 parking spaces for staff only
Attendance: 250,000
Volunteers: 300 Volunteers, 42,000 hours
Paid staff: 29
Membership: 3,500
Attendance Fee: No.
Private/Public Partnership?: Yes.
% of income from City: 60% (40% comes from the Society -- a nonprofit org.)
In-kind Services: City appoints and pays Director and 14 staff; Society provides 13 staff.
Supervision: Board of 27 trustees; dual administration of staff and grounds by City and nonprofit with nonprofit taking responsibility for managing volunteers, fundraising, book shop, education, etc.

Chicago Botanical Garden
Acreage: 300 acres
Attendance: 500,000
Volunteers: 500, 46,481 hours
Paid Staff: 120 year round, 200 in the summer
Membership: 14,000
Attendance Fee: No.
Private/Public Partnership?: No.
% of income from County: 70% of operating budget comes from county
(through taxes awarded to Forest Preserve District) and garden is on county-
owned land.

In-kind Services: No.
Supervision: Board of Directors is elected by society and also includes two representatives from the county.

Other Sources of Income: Most of new construction and special projects are funded by private and corporate donations, 6.5% of income is from membership.

**Rancho Santa Ana, Claremont, CA**

Acreage: 86 acres, 40 parking spaces
Attendance: 75,000
Volunteers: 140
Paid staff: 50
Membership: 750
Attendance Fee: No.
Private/Public Partnership?: No.
% of income from City: 0
In-kind Services: No.
Supervision: Private, non-profit with Board of 5 Trustees and 13 Overseers
Sources of Income: 74% from endowment; 19% from grants and contracts largely due to on-site research efforts supported by Federal funds and local universities; tuition and fees for educational programming, gift shop, rentals, etc. account for the remaining 7%.

**Santa Barbara Botanical Garden**

Acreage: 65 acres, 73 parking spaces
Attendance: 100,000
Volunteers: 219, 21,756 hours
Paid staff: 47
Membership: 2,700
Attendance Fee: $3 adults; $2 srs., teens; $1 children 5-12.
Private/Public Partnership?: No.
% of income from City: 0
In-kind Services: No.
Supervision: Self-perpetuating Board of Trustees (12) nominates and elects individuals to serve 3 year terms; hire Executive Director, set policy, fundraise.
Sources of Income: 54% from Investments; 7.7% from Shop & plant sales; 7.8% from admissions; 7.2% memberships; 5.3% Contributions; 8.4% Program Fees; 5.4% grants

**South Coast Botanic Garden**

Acreage: 87 acres, 100 parking spaces
Attendance: 61,924
Volunteers: 26,560 hours
Membership: 3,280
### Activities & Elements List
February 1993 (superseded)

**Area Requirements by Category (total acreage)**

**A1 Garden Plots (6.5 - 9.0 A.)**
- *Family Gdn. Plots (50/A @ 800 SF)*: 2.0 - 4.0
- *Group Gdn. Plots (20/A @ 2000 SF)*: 0.5 - 1.0
- *School Gdn. Plots (2/A, 8 w/in 1.5 mi rad)*: 4.0

**A2 Research - Commercial (35.75 - 53.25 A.)**
- ACADEMIC - MUNICIPAL: 3.25 - 5.25
- Bio-Intensive (by Colleges): 1.0
- Forest Crop/Reforest'n (by City, also see C1): 0.25
- Research Pltg/Nursery (.5 A/College): 2.0 - 4.0

**PRIVATE LESSEE: 32.5 - 48.0**
- Flower/Seed Production: 2.0 - 3.0
- Experimental Growing Grounds: 5.0 - 8.0
- Gene Bank: 10.0 - 12.0
- Plant Propagation: 0.5 - 1.0
- Research Plantings/Nursery: 5.0 - 9.0
- Stock Growing Area: 5.0 - 8.0
- Production Planting: 5.0 - 7.0

**A3 Botanic Garden (33.75 - 49.0 A.)**
- NATURAL SYSTEMS: 5.0 - 7.0
- Chaparral/Coastal: 1.0 - 2.0
- Fate of Groundwater (display in bldg): (0.25 - 0.5)
- Oak Savannah: 1.0 - 2.0
- Riparian Demonstrn.: 1.0
- Seasonal Wetland: 1.0
- Wildlife Habitat (incl. in environments): ---
  - Burrowing Owl
  - Butterflies
  - Raptors

**Walk Through History Gardens: 21.5 - 24.5**
- *Spanish (Mission, Pueblo)*: 2.0
- *Native American (Ohlone/Tamien)*: 2.0
- *American Era*: ---
  - Comm. Stockton/19th C. nursery/Victor'n: 2.0 - 4.0
  - 20th C. (Victory/Sub./Ex-urb. /5/period): 2.5
  - Historic Cultivars (+Rare Fruit): 1.0 - 2.0
  - Hist. Orchard (incl. Demonstr'n Orch.): 4.0
  - Hops Field: 0.5
  - Vineyard: 0.5
  - Wheat Field: 0.5
  - Heritage Rose Garden: 4.0
  - Pellier Monument: 2.5
  - Pueblo/Hobson Br. Mon.: ---

**Exotic Communities: 3.0 - 6.0**
- *Desert/cactus Garden*: 1.0 - 2.0
- *Palm*: 1.0 - 2.0
- *Water garden (+Carp)*: 1.0 - 2.0
**VARIETAL DEMO. GARDENS: 16.5 - 27.0 A**

| *Herbs*          | 0.25 - 0.5 |
| *Iris Garden*    | 0.25 - 0.5 |
| *Ornamental Grasses* | 0.25 - 0.5 |
| *Seasonal/flowers* (rotating Gard. Club disp) | 0.50 - 1.0 |
| Cloud Garden     | 1.0 - 3.0  |
| Australian Garden | 1.0 - 3.0  |
| Mediterranean Garden | 1.0 - 3.0  |
| *Ethnic Foods*   | 0.5        |
| *Fragrance (also for visual impaired)* | 1.0 - 2.0 |
| *Water Efficient/Low Water Landscape* | 0.5 |
| Dwarf Garden     | 0.25 - 0.5 |
| Native Plant Garden | 4.0       |
| Plants for Humanity | 2.0 - 4.0 |

**A4 Special Displays (10.2 A.)**

| Courtyard Garden (E) | 4.0 |
| Taylor Street Rock Garden (E) | 0.2 |
| *Integrated Circuit Garden* | 2.0 |
| S.J. Youth Garden      | 4.0 |

**B1 Technologies (3.25 - 6.0 A.)**

**ACADEMIC - MUNICIPAL: 0.5 - 1.0**

| *Composite Flower Hybrid.* (in greenhouse) | -- |
| *Solar Energy Architecture* (in bldg.)     | -- |
| *Biological Pest Control* (by Colleges in bldg) | -- |
| *Hydroponics Display* (in greenhouse)       | -- |
| *Soil Experim./ Compost*                    | 0.5 - 1.0 |

**GREEN INDUSTRY: 2.75 - 5.0**

| *Energy Eff. Demonstrtn (primarily Bldgs)* | 0.25 (signage) |
| *Plants/products* (incl. thruout)          | 0.25 (signage) |
| *Plants/products Displays* (rotating)       | 1.0 - 2.0      |
| *Reclaimed H2O Display* (incl. waterfalls?) | 0.25 - 0.5    |
| Organics Recycle                           | 1.0 - 2.0      |

**B2 Events - Recreation (22.35 - 33.85 A.)**

| *Ball Fields* (2 existing, incl. soccer) | 7.1 |
| *Ceremonial/Religious* (w/Multi-use Meadow) | 0.25 |
| *Green Market*                            | 2.0 - 4.0 |
| *Multi-Use Event Meadow*                  | 5.0 - 10.0 |
| *Multi-Use Plaza* (incl. Art in Garden)   | 1.0 - 2.5 |
| *Multiple Cultures Gardens Ctr* (in bldg) | -- |
| *Picnic Areas*                            | 2.5 |
| *Play Areas* (incl. Children’s Discovery Garden) | 1.0 - 3.0 |
| *Maze Garden*                              | 4.0 |
| Volleyball (2)                             | 0.5 |

**C1 BUILDINGS: Principal Use (4.76 - 8.62 A.)**

**PRINCIPAL COMPLEX: 46,400 - 64,400 SF**

| *Bookstore / Plant Sales Shop* | 6000 SF |
| *Cafeteria / Restaurant*       | 5000    |
| *Meeting Rooms / Classrooms / Docents* | 3600 |

109
| Category                                           | Area/Size
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>*Conservatory / Greenhouse</td>
<td>10 - 20,000</td>
</tr>
<tr>
<td>*Galleries / Display</td>
<td>3000 - 6000</td>
</tr>
<tr>
<td>*Library / Herbarium</td>
<td>3000</td>
</tr>
<tr>
<td>*Multi-purpose Room / Auditorium</td>
<td>10 - 15,000</td>
</tr>
<tr>
<td>*Multi-Media Center</td>
<td>2000</td>
</tr>
<tr>
<td>*Offices</td>
<td>3000</td>
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<tr>
<td>Storage</td>
<td>800</td>
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**NURSERY / RESEARCH SUPPORT:** 161,000 - 311,000 SF

| Category                                           | Area/Size
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<tr>
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<tbody>
<tr>
<td>*Classrooms / Meeting Rooms (acad. + priv)</td>
<td>2000</td>
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<tr>
<td></td>
<td>(1200 + 800)</td>
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<tr>
<td>*Nursery Training Lab / Research Lab</td>
<td>6000</td>
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| Category                                           | Area/Size
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<tbody>
<tr>
<td>*Offices (acad. + private)</td>
<td>2000</td>
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<tr>
<td></td>
<td>(1000 + 1000)</td>
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<tr>
<td>Green/lath house (acad./municipal/private)</td>
<td>150 - 300,000</td>
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<td>(155+60+85)</td>
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<tr>
<td>Storage</td>
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**C2 BUILDINGS: Support (3.8 - 4.8 A.)**

| Category                                           | Area/Size
<table>
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<tbody>
<tr>
<td>*Field Restrooms</td>
<td>20 - 45,000</td>
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<tr>
<td>*Lookout Tower</td>
<td>---</td>
</tr>
<tr>
<td>*Shade/Rest Pavilions</td>
<td>45,000</td>
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<tr>
<td>*Signage Structure</td>
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</table>

| Category                                           | Area/Size
<table>
<thead>
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<tbody>
<tr>
<td>*Storage (acad. + municipal + private)</td>
<td>50,000</td>
</tr>
<tr>
<td></td>
<td>(10 + 20 + 20)</td>
</tr>
<tr>
<td>Garage (acad. + municipal + private)</td>
<td>50,000</td>
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<tr>
<td></td>
<td>(10 + 20 + 20)</td>
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</tbody>
</table>

**D Non-building Support (12.5 - 23.5 A.)**

| Category                                           | Area/Size
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>*Parking</td>
<td>4.0 - 8.0</td>
</tr>
<tr>
<td>Corporation Yards</td>
<td>2.0 - 4.0</td>
</tr>
<tr>
<td>Maint./Security Roads</td>
<td>4.0 - 6.0</td>
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<tr>
<td>Utilities Stations</td>
<td>0.5</td>
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<tr>
<td>Ped-Jog Trail System</td>
<td>1.0 - 2.5</td>
</tr>
<tr>
<td>Bicycle System/Area</td>
<td>1.0 - 2.5</td>
</tr>
<tr>
<td>General Landscape Buffer Zones</td>
<td>---</td>
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</tbody>
</table>