VOLUME 1 APPENDICES

Hakone Estate & Gardens

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THE PORTICO GROUP

CITY of SARATOGA 1956 CALIFORNIA

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APPENDIX 1

Site Analysis, Master Plan Goals, Needs

1. Site Analysis

A. National Trust for Historic Preservation

The National Trust lists Hakone Estate & Gardens as a historic district, and it falls under the guidelines of the National Park Service, California State Parks Office Historic Preservation and the city of Saratoga Heritage Preservation Commission.

1. Gardens

Three of the existing gardens are identified as contributing (C); one is listed as non-contributing (NC)

- Hill and Pond Garden (C)
- Tea Garden (C)
- Zen Garden (C)

- Bamboo Garden (NC)

2. Buildings

Two of the existing buildings are identified as contributing (C); six are listed as non-contributing (NC)

- Tea Waiting Pavilion (C)
- Moon Viewing House (Upper House) (C)

- Zen Garden House (Lower House) (NC)
- Residence (NC)
- Cultural Exchange Center (NC)
- Tea Service Room (NC)
- Gift Shop (NC)
- Office (Barn) (NC)

3. Structures

Six of the existing structures are identified as contributing (C), although repairs to the pavilions and arbor have used non-traditional lumber and joining, diminishing their historical attributes.

- Pump House (C)
- Main Gate ("Mon") (C)
- Wisteria Pavilion (C)
- Moon Bridge (C)
- Upper Pavilion (C)
- Wisteria Arbor (Fuji-dana) (C)

- Secondary Gates (from upper parking lot) (NC)
- Pine Moon (Shogetsu-an) (NC)

4. **Objects**
   Seven Lanterns, three Ritual Garden Stones, the Metal Crane sculpture and two Carved Stones are identified as contributing (C).

B. Gardens

Hakone contains six significant gardens each representing traditional Japanese garden types. In varying ways each can be strengthened by better edge definition and screening of views of the parking lot and service areas.

1. Hill and Pond Garden (strolling garden)
2. Zen Garden (rock garden)
3. Tea Garden (ceremonial garden)
4. Camellia Garden
5. Tea Plantation
6. Bamboo Garden (Kizuna-en) / Muko Saratoga Sister City Garden

C. Vegetation of the Saratoga Foothill Oak Woodland & Central California Coast

Hakone contains four native heritage California live oaks and a number of coast redwoods planted at the garden's beginning. Any proposed garden modifications should protect and save.

1. Native Trees
   a. Heritage California Live Oaks (*Quercus agrifolia*)
      i. 3 alongside parking lot
      ii. Anchor between Lower and Upper Courtyard
   b. Tan oak (*Notholithocarpus densiflorus*)
2. Collection Trees
   a. Coast Redwoods (Sequoia sempervirens)
      i. Two trees framing Mon or Main Gate
      ii. Multiple trees as backdrop to Koi Pond and water fall

D. Water

The Koi Pond and its two waterfalls form a central component of the Hill and Pond garden; all require renovation and upgrade to enhance water quality.

1. Garden Water Features
   a. Koi Pond
   b. Water falls (2) flowing into Koi Pond
   c. Lily Pond
2. Stormwater runoff contributes sediment into the pond, diminishing water quality

E. Parking and Access

The evolution of the estate to a public garden developed piecemeal over time. This has resulted in a non-accessible, confusing, less than functional and potentially dangerous entry road, arrival, parking and entry experience.

1. Big Basin Way
    a. Lack of sidewalk connection to downtown Saratoga
    b. Intersection and garden entry sign somewhat obscure and easy to miss; the non-90 degree aligned intersection is awkward.
2. Entry Drive
    a. Very steep, particularly the one-way final approach
    b. Lower portion of access trail from Big Basin Way to a point a hundred yards up the access drive is missing
3. Main Parking Lot
    a. Non conforming width to aisles and stalls – the current 60 degree angle parking is comprised of two 49 foot pair of parking bays, composed of an 18 foot wide outside stall, 15 foot aisle and 16 foot inside stall; recommended standards for safety and ease of use range from 60 to 64 foot wide parking bays
    b. Exceeds ADA accessible grades for parking and route of travel, existing slope 7 to 13% slope; ADA stalls must be less than 2%, route of travel less than 5%
    c. Significant stormwater runoff from Bamboo Garden and Parking Lot down entry road.
4. Inner Parking Lot
    a. Inefficient layout
    b. Exceeds ADA accessible grades
    c. Visually intrudes on the garden

F. Visitor Processional and Gathering Areas

Much of the visitor processional and gathering areas lack spatial definition and enclosure, resulting in unintentional views and intrusion of roads and parking into the visitor experience; several spaces exceed ADA guidelines for slope.

1. Processional Entry to Mon
    a. Exceeds ADA slope guidelines
    b. View from stairs to the east is of unsightly asphalt drive and passing cars and the back side of restroom
2. Lower Courtyard (west of Mon)
    a. Lack of edge definition
3. Upper Courtyard
    a. Lack of edge definition
4. Picnic Area
    a. Obscure location

G. Pedestrian Paths

Most pathways exceed ADA slope Guidelines

1. Koi Pond Loop
2. Tea Garden/Wisteria Arbor, Moonviewing House Loop
3. Camellia Garden Loop
4. Nature Trail

5. Bamboo Garden Loop

H. Solar Access

The sun tracks from east (Parking Lot) in the morning to west (Pine Moon pavilion) in the afternoon creating range of sunny and shady areas throughout the day.

2. Master Plan Goals

1. Goal: Connect to the Community

- Increase the role of Hakone Gardens as a valued, active member of the community
- Establish closer connections with the Saratoga business community and public schools
- Reinvigorate Foundation members, volunteers, docents and donors
- Expand the Gardens' audience to address both the growing retirement community and a younger generation

2. Goal: Restore the Legacy of the Gardens and Buildings and Structures

Gardens

- Improve the composition and experience of the core gardens
- Strengthen spatial definition "en" (the edge) of individual garden spaces
- Enhance the sequence of the visitor experience by controlling and framing views
- Upgrade koi pond, waterfalls and water filtration system
- Create a focal point garden at the Well southwest corner of the Moon Viewing House

Buildings & Structures

- Comply with requirements of National Trust for Historic Preservation District designation
- Provide accessibility improvements to the "Mon" and Moon Viewing House without compromising the character of the garden
- Identify and address functional deficiencies in the buildings (Kitchen, Structural, IT needs)
- Restore deteriorated structures and site features (Upper Pavilion, Wisteria Arbor, Wisteria Pavilion)

3. Goal: Expand Interpretive and Educational Opportunities

- Increase interpretive programs on site

- Promote year round festivals as special learning activities
- Develop a public outreach program for teachers highlighting links to the curriculum
- Create content emphasis exhibits about the history of Hakone Gardens, history of Japanese Gardens in Japan, principles underlying Japanese Gardens, and Japanese cultural influences
- Highlight the skills and techniques required to maintain an authentic Japanese garden like Hakone

4. Goal: Provide Adequate Space for Staff

- Increase administrative workspace to properly support garden operations and programs
- Upgrade Information Technology (IT) capability
- Provide additional grounds maintenance and material storage facilities

5. Goal: Enhance the Visitor Entry and Arrival Sequence

- Address American Disabilities Act (ADA) deficiencies in the parking lot, visitor arrival route, "Mon" stairs and Upper Courtyard
- Clarify visitor pathways, orientation and wayfinding
- Improve safety of pedestrian crossings and vehicle traffic
- Reduce visual clutter to create a clear and inviting entry

6. Goal: Improve Visitor Services and Amenities

- Provide new retail space and explore new merchandise offerings
- Add a simple food and beverage component to the retail space
- Upgrade restrooms to meet needs of visitation numbers and ADA requirements
- Add interior event and support space to minimize noise impacts in the surrounding neighborhood

7. Goal: Create a Sustainable Organization

- Ensure financial survival by examining a range of revenue sources
- Define and fulfill staffing needs for ongoing operations and programming
- Build a strong and dedicated volunteer pool
- Identify support for capital renewal and building projects
- Explore alternative uses for the Cultural Exchange Center apartment
- Highlight seasonality and the changing nature of the Gardens
- Explore rebranding and renaming possibilities (Hakone Japanese Garden)

3. Needs

1. Connect to the Community

Issue:
- Current membership of 350 is a modest number and low for the community, market area and Hakone's peer public gardens; the low number of members and resulting low revenue is reflective of the garden's reliance on event revenue.

Recommendation:
- Expand membership program.
- Offer free admission one day a month; gather email addresses of all admittees, use for marketing.

Issue:
- Current donation and grant income is very low in relationship with peer public gardens.

Recommendation:
- Participate in and connect with local and regional civic and business organizations to build grant and foundation support.

Issue:
- Very few youth educational programs and activities on site

Recommendation:
- Connect with the local schools and encourage educational field trips to the garden.

2. Restore the Legacy Gardens and Buildings

Gardens

Issue:
- Lack of edge definition allows spaces bleed into one another, diminishing sequence and surprise.

Recommendation:
- Define edges of Lower Courtyard through planting or fencing to add an element of surprise in discovering the Hill and Pond Garden.
- Define edges of Upper Courtyards to frame views of garden, hillsides beyond.

Issue:
- Unscreened views of parking intrude on garden experience, from the Hill and Pond Garden and the Moonviewing House deck.

Recommendation:
- Selectively plant or install fencing to obscure views of the parking areas.

- Replace the upper parking with gardens and compatible structures.

Issue:
- Framed views from windows of Tea Waiting Pavilion have been obscured by vegetation.

Recommendation:
- Selectively prune and plant to frame views within and beyond the garden.

Issue:
- Lack of space along the garden path inhibits enjoyment of the view of the Koi Pond and Moonviewing House from the Moon Bridge north landing.

Recommendation:
- Enhance viewpoint by widening the pathway, screening the view to the east of parking lot and of the Lower Courtyard; and consider elimination of stairway to Lower Courtyard.

Issue:
- Unattractive view from Mon (Main Gate) east toward entry road and driveways.

Recommendation:
- Enhance view by removing old driveway and replant to screen entry road and restroom building.

Issue:
- Koi Pond and connected waterfalls have low water quality and leaky bottoms.
- Shallow depth of koi pond may contribute to overheating and poor water quality.

Recommendation:
- Upgrade or replace water life support system.
- Replace stream and pond bottom with new waterproof liner and shotcrete bottom and reconstruct stream rockwork.

Issue:
- Path edging of inconsistent type and quality.

Recommendation:
- Replace round logs with stone or metal edging and enhance planting along edge of pathways.

Issue:
- The Well is a garden gem and can be enhanced as a garden experience

Recommendation:
- Expand moss and camellia collection as a backdrop to the Well.

Buildings & Structures

Issue:

- The Hakone National Trust for Historic Preservation registration is silent on the type of recommended treatment (Preservation, Rehabilitation, Restoration or Reconstruction). The city of Saratoga Planning Department has made the assumption that if a structure is considered "contributing" then it is probably limited to Preservation and Restoration treatments. For "non-contributing" structures the city assumes that any of the four treatments are possible:
  - ***Preservation*** focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time.
  - ***Restoration*** depicts a property at a particular period of time in its history, while removing evidence of other periods.
  - ***Reconstruction*** re-creates vanished or non-surviving portions of a property for interpretive purposes.
  - ***Rehabilitation*** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

Recommendation:

- Determine treatment options and recommendations for the overall district and individual gardens, buildings and structures.
- Prepare Cultural Landscape Report to document the development and evolution of the Historic District property overtime and provide guidance to restoration efforts.

Issue:

- Upper Pavilion and Wisteria Arbor and Wisteria Pavilion renovations used non-traditional dimensional lumber.

Recommendation:

- Reconstruct using traditional carpentry and joining.

Issue:

- Moon Viewing House deck railing is deteriorated.

Recommendation:

- Conduct and document structural condition of the building.

Issue:

- Kitchen facilities at the Zen Garden House (Lower House) are insufficient to meet the food service requirements of meetings and events.

Recommendation:

- Conduct code review and identify improvements to allow greater use of kitchen.

Issue:

- Moonviewing House deck is non-accessible.

Recommendation:

- Provide deck return to grade along northwest edge of Moonviewing House (Upper House).

3. Expand Interpretive and Educational Opportunities

Issue:

- Interpretive exhibits are modest and lack a comprehensive approach

Recommendation:

- Develop main message and delivery methods

Issue:

- Interpretive exhibits are located in dispersed locations in the Cultural Exchange Center and more limited temporary displays in the Moon Viewing House that are not readily apparent to the visitor.

Recommendation:

- Enhance on site interpretive program using docent tours, audio tours and by using limited amounts of signage, highlighting special views, buildings, cultural significance/history and people and plant connections or botany.

Issue:

- A range of special events interpreting Japanese culture would draw visitors and support the Gardens.

Recommendation:

- Interpretive exhibits are located in dispersed locations in the Cultural Promote year around festivals as special learning activities and opportunities for programming (tea ceremonies, ikebana flower arranging, ceramic and tea utensil exhibitions, Mochi rice cake making, Hina Doll festival, Boy's festival, Tanabata Star Festival, autumn moon viewing, cherry blossom viewing, night-time illumination of the garden, music and dance, lectures, soba buckwheat noodle workshops, Japan Fair, traditional Sado Ondeko demon drumming, Noh plays).

4. Provide Adequate Space for Staff.

Issue:

- Lack of adequate garden administrative workspace.

***Recommendation*:**

- Provide new or remodeled administration spaces including an entry space, executive director's office, a staff workroom sized to include four to six work stations and a large project table, an office storage/supply room, equipment room, and kitchenette.

Issue:

- The existing Caretaker's House, Barn and Pump Structure appears to be substandard in terms of bug infestation, dry rot, and potential structural improvements.

***Recommendation*:**

- Renovate as required.

Issue:

- Inadequate IT does not allow the garden to perform business tasks and internet-based community outreach

Recommendation:

- Upgrade the existing IT system. In addition, IT upgrades in CEC and Zen Garden House (Lower House) interior assembly rooms would provide additional capacity for and service to space rental meetings, special events and presentations.

Issue:

- Currently there is no dedicated, fenced ground for garden and facility maintenance, material storage lay-down, and nursery growing spaces. On-site spaces for these activities is limited and inconveniently located for garden access.

***Recommendation*:**

- Public gardens typically include compost piles, material bins, head house, green house, and shade and propagation yards. Identify permanent location for garden support spaces and provide convenient access to garden spaces.

5. Enhance the Visitor Entry and Arrival Sequence.

Issue:

- Vertical curve profile of entry road limits visibility at existing gift shop / ticketing / turnstile making it a dangerous pedestrian crossing.

Recommendation:

- Relocate garden entry, new ticketing and gift shop at location further uphill that does not require crossing of automobile traffic.

Issue:

- Visitor arrival sequence is confusing because of multiple former driveways, parking and gates.

Recommendation:

- Remove remnant paving and replant landscape.
- Remove upper parking lot and convert to gardens and support structures as a logical sequence of visitor experiences.
- Locate new ticket booth and retail on garden side of parking at a new entry.

Issue:

- Parking lot and visitor route of travel exceeds maximum slopes defined by the American Disabilities Act (ADA).

Recommendation:

- Regrade parking lot to provide level accessible stalls less than 2% in each direction; and regrade lot at slope less than 5% to prevent car door swings into adjacent parked cars.
- Realign and regrade at slopes less than 5% the route of travel.
- Add accessible ramp at the Mon stairs to allow all visitors to enter at same location.
- Provide accessible ramp to the Upper Courtyard or possible elevator within a new building.

Issue:

- Rule, regulatory and directional signs at entry confusing and not inviting to visitors.

Recommendation:

- Redesign entry so that wayfinding is obvious, lessening need for signs.
- Reduce visual clutter; provide consistent wayfinding signs only where needed.

6. Improve Visitor Services and Amenities.

Issue:

- Ticketing, retail and entry turnstile do not contribute to a gracious and holistic visitor arrival experience.

Recommendation:

- Provide safe and direct line-of-sight circulation to entry from parking lot and/or passenger drop-off.
- Co-locate visitor ticketing and retail in a new structure at the visitor entry.
- Design ticketing and retail so that a single staff member can service both ticket selling and retail transactions during low visitation periods and can staff up during high visitation periods.

Issue:

- Existing retail space is small and inadequate, not centrally located, lacks attractive finish, and the merchandise is crowded together.

Recommendation:

- Move retail so as to locate adjacent to primary visitor flow.
- Hire a retail consultant to design room finishes, lighting, displays and new merchandise offerings in a new or remodeled structure.
- Add plants to retail mix.

Issue:

- Little or no food service is provided to visitors to Hakone - only educational tea ceremonies and packaged food products sold in the retail space.

Recommendation:

- Add a simple food and beverage component to the retail space, including, at the beginning, hot beverages and a selection of snacks; expand in the future if demand and seasonality supports.

Issue:

- At Hakone, a full-service café will likely not generate revenue that could cover its operating costs.

Recommendation:

- The Tea Room should start as a low cost amenity that can provide visitors with simple hospitality, encourage an extended stay at the Gardens, and further develop a visitor's appreciation of the Japanese aesthetic of gardens, garden structures and tea culture.

Issue:

- The existing restrooms are not accessible from circulation paths that meet ADA accessibility criteria, and the restroom interior may not meet ADA criteria. On high attendance days the number of sinks, toilets and urinals are inadequate for the number of visitors.

Recommendation:

- Locate new restrooms near the new main visitor entry that meet ADA requirements for accessibility and use.

Issue:

- Weddings can generate vehicle traffic and noise that impacts neighbors.

Recommendation:

- If weddings are to continue being a significant revenue generator for the Gardens, then provide a new indoor space sized for 100 and 150 guests. In addition to the hall, supporting spaces should include an entry foyer, green room with restroom, storage of chairs and tables, catering staging room, and an outdoor shaded deck and garden space.

7. Create a Sustainable Organization.

Issue:

- Insufficient staff to care for the estate & gardens: deferred maintenance has led to a deterioration of gardens and structures.

Recommendations:

- Examine a range of possible revenue sources to meet annual operating expenses that might include one or a combination of all of the following:
    - Consider full city funding of operations
    - Grow an endowment from private individuals or foundations.

        - Enhance development activity so as to generate increased annual personal and corporate donations.
        - Expand membership.
        - Prepare foundation grants that support staff and other expenses, in particular for activities associated with education, children, services to the community and history.
    - Expand earned revenue activities and programs at the Gardens, including retail sales, festivals, weddings, personal/family and business event rentals.
    - Expand volunteer pool and its utilization so as to help cover maintenance and education activities.

Issue:

- Capital renewal and new building and grounds projects are required to provide adequate facilities for staff and visitors; funding sources not currently identified.

Recommendations:

- Examine a range of possible revenue sources including one or a combination of the following:
    - Public bond issues; other municipal support for individual projects
    - Individual and corporate donors
    - Foundation grants
    - Sponsorships
    - State and federal grant funding programs
    - Crowd sourcing

Issues:

- The apartment in the Cultural Exchange Center is an incompatible private use.

Recommendations:

- Renegotiate and tenant agreement and eliminate private use.
- Examine a range of possible other garden uses, including: public restrooms, kitchen facilities to serve garden events and activities, possible caretaker's residence.

APPENDIX 2

Business Plan

Business Plan Summary

Market Considerations

Hakone Estate & Gardens is easily accessible from a very large and prosperous market of over 4.2 million people. The bulk of the primary market for Hakone Estate & Gardens lies outside the City of Saratoga. Reaching the entire South Bay area through networking, partnership development and marketing should be an organizational goal.

- There should be good potential for above average fees for admissions, event rentals and education programming, as well as for donations
- Access for those with lower incomes should also be an important consideration, particularly children
- The number of young people within the market area will grow only modestly, whereas boomers (45-64) and retired (65+) will grow substantially
- There should be substantial opportunities to encourage donations as family wealth increases and retirement approaches; there will also be a growing opportunity for building the volunteer pool
- Area tourists are an excellent market for Hakone Estate & Gardens; these visitors look for a unique, authentic, good quality experience and are willing to pay relatively high fees

Projections and Recommendations

Hakone Estate & Gardens is a significant cultural and botanical attraction in the South Bay area and is unique in that it is not part of a larger facility such as a city park. Hakone Estate & Gardens has a substantial potential to increase its visibility and reputation, and to increase attendance and revenue.

- Several other West Coast Japanese gardens have annual attendance of 65,000 to 300,000; for analysis purposes, Hakone Estate & Gardens total attendance is projected to increase from the current 35,000 per year to 75,000 per year by Phase 4; membership and event activity are projected to increase as well
- Facility rentals for weddings and other events provide a substantial portion of the Garden's revenue
- While event revenue should be enhanced as the Master Plan is implemented, other sources, such a memberships, gate revenue, retail, donations and grants should be bolstered as well
- The Garden should pursue corporate and foundation grants to fund a more substantial educational program, focusing in particular on school-age children
- Budget projections corresponding to the three phases are provided, each showing projected increases in revenue, staff and other operating expenses
- The Garden should build an endowment to assist with operating expenses; this could be augmented with a sinking fund to assist with facility maintenance and renovation

Market Review

The following are primary considerations regarding current and future market conditions that are pertinent with regard to attendance, events and the potential for generating revenue; a summary and selected recommendations appear at the end of the section.

Demographics

Hakone Estate & Gardens is advantageously located in one of the most dynamic and desirable markets in the United States, offering valuable opportunities for growth and stability. Its primary market, which here is defined as the four-county area surrounding the southern portion of San Francisco Bay, includes over 4.2 million people, nearly all within 35 miles of the facility, a relatively easy day trip. This does not include the City of San Francisco. About 2.3 million within this area live within 20 miles of Hakone Estate & Gardens. The city of Saratoga, the immediate location of the facility, includes about 30,000 residents.

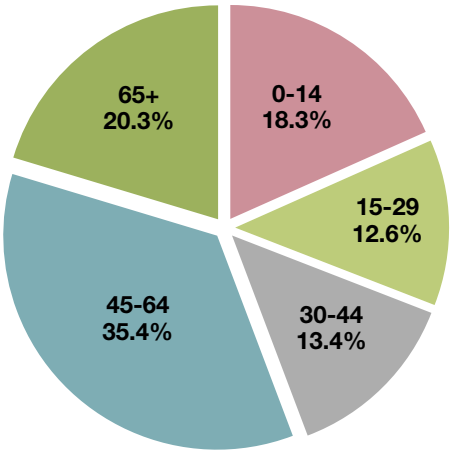
	Population 2010	% of State Population
20mi buffer	2,256,855	6.1%
35mi buffer	3,832,149	10.3%
City of Saratoga	29,926	0.1%
Santa Clara County	1,781,642	4.8%
Market Area	4,272,746	11.5%
California	37,253,956	100.0%

Age

Within the City of Saratoga nearly one of five residents are age 65+, about double the average for the primary market area. See the figures below. Accordingly, the market area has a higher proportion of younger residents, in particular families with children. Residents of retirement age serve as a good pool for recruiting volunteers.

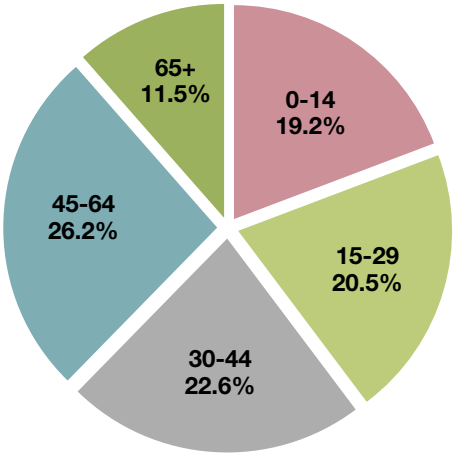
Age Distribution

City of Saratoga



Source: U.S. Census Bureau.

Primary Market Area

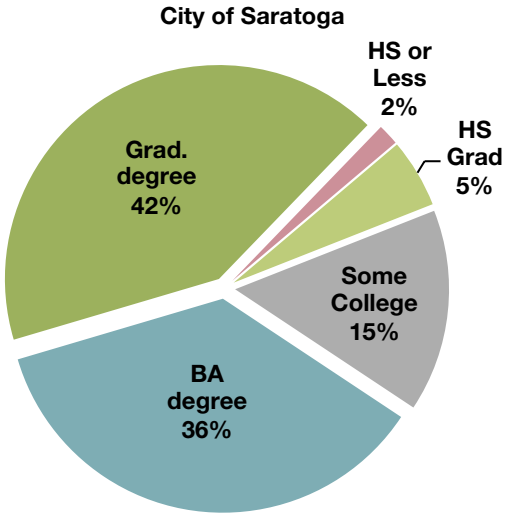


Source: U.S. Census Bureau.

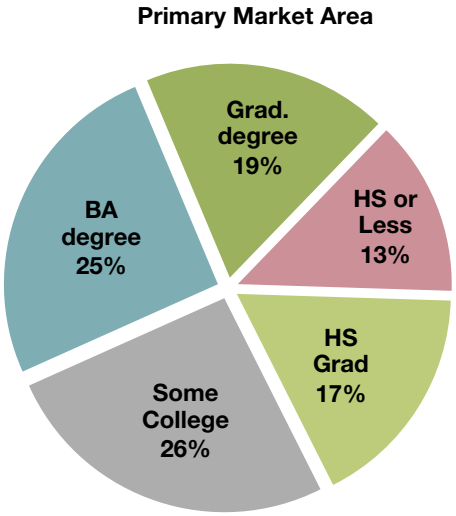
Education

Saratoga residents are highly educated, with nearly four in five possessing a bachelors or advanced degree. See the figure below. Over two in five have a graduate or professional degree. While not so highly educated, the primary market area still includes a high proportion of residents with bachelors degrees or more – 44% -- and a substantial proportion with at least some college education.

Education Attainment
Population 25yo and older



Source: U.S. Census Bureau.

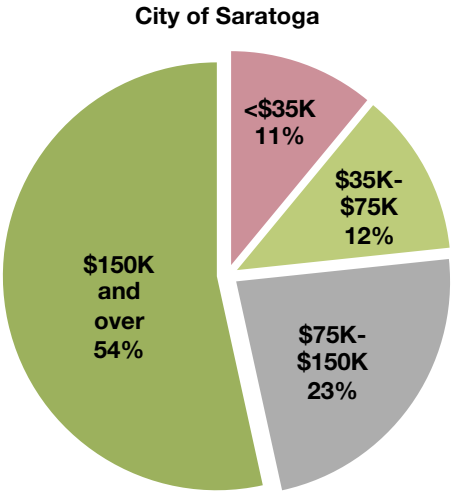


Source: U.S. Census Bureau.

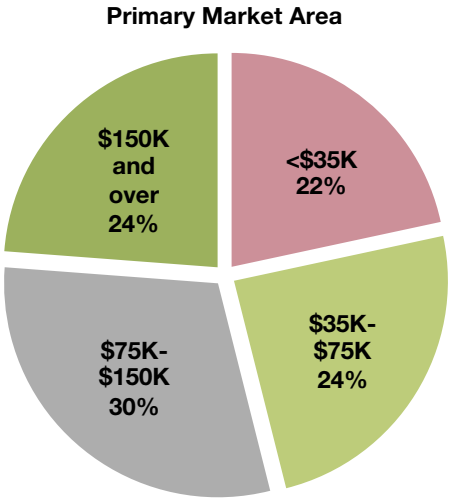
Income

Average household incomes in Saratoga are substantial, with over half earning $150,000 or more per year. See the figure below. In comparison, market area households earn less, although still substantial by national standards.

Income Distribution



Source: U.S. Census Bureau.

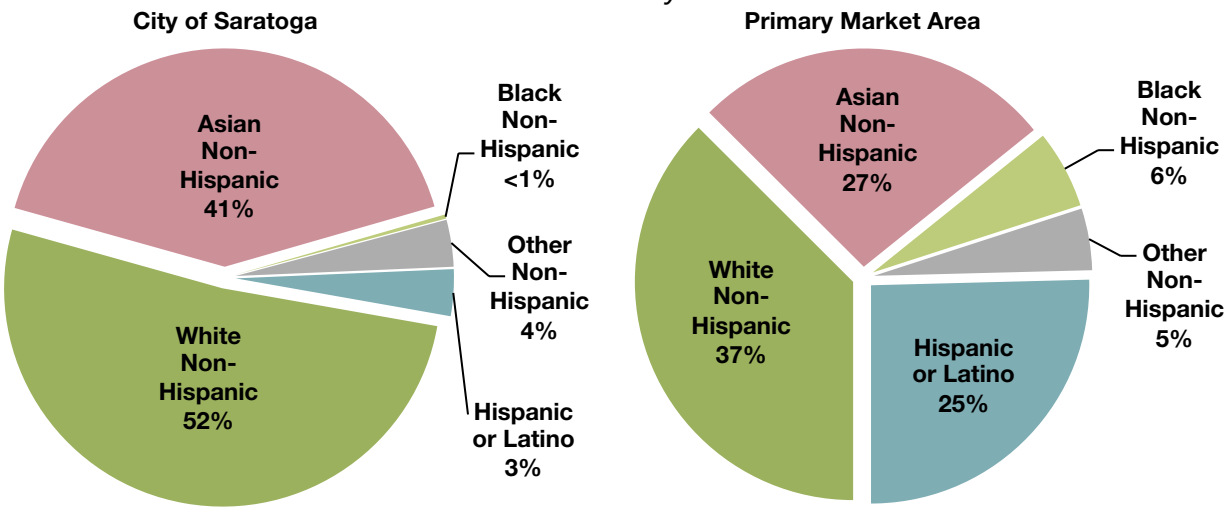


Source: U.S. Census Bureau.

Ethnicity

With regard to ethnicity, as defined by US Census categories, the City of Saratoga is about evenly split between white, non-Hispanic residents and others, with the bulk of the remaining residents being Asian non-Hispanic. See the figure below. In comparison, the primary market, while still including a substantial portion of residents with Asian ancestry, has a much higher proportion of Hispanic residents – one quarter of the total – and a higher proportion of African Americans. The high proportion of Asian ancestry residents in Saratoga and the primary market area suggests good potential for advancing the mission and objectives of Hakone Estate & Gardens.

Race and Ethnicity



Source: U.S. Census Bureau.

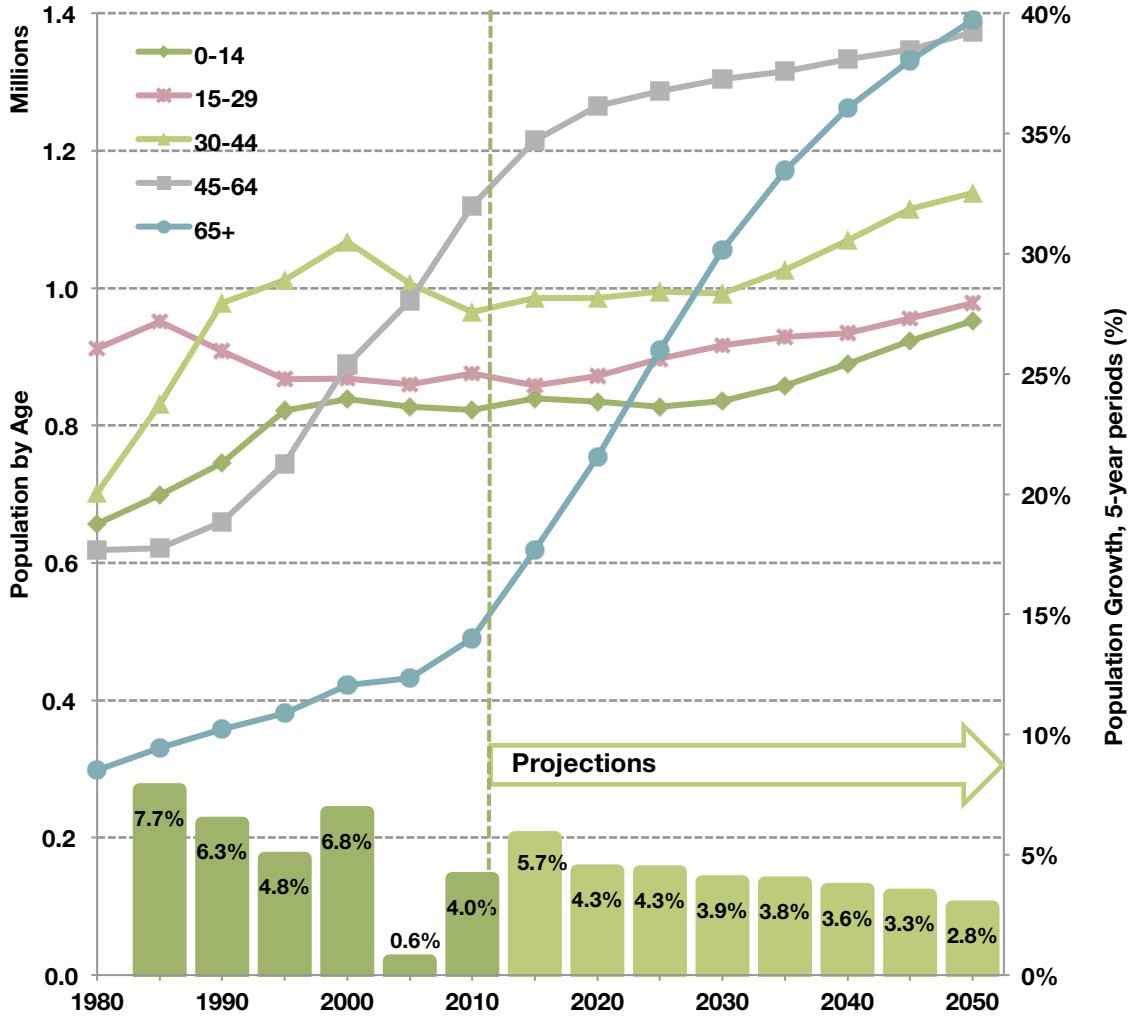
Source: U.S. Census Bureau.

Population Projection

Looking forward, population should increase in the primary market area, enhancing the opportunity for attracting more attendees to Hakone Estate & Gardens. The lower portion of the figure below shows population growth from 1980 to 2010 on the left-hand portion of the graphic, indicating growth rates of between 4% and 7% per five-year period, except for one. Projected population in the current period is over 5%, tapering down to around 3% over the next several decades.

Age dynamics within this population are particularly interesting, shown in the upper portion of the figure. The past several decades, shown to the left of the vertical dashed line, has been characterized by the rapid growth of the 45-64 age category, the "aging boomers." Growth in younger age categories has been relatively flat in recent years, but growth in the 65+ category has been accelerating.

Population by Age: 1980-2050p
Primary Market Area



Source: State of California, Department of Finance, State and County Population Projections by Race/Ethnicity, Detailed Age, and Gender, 1970–1989, 1990–1999, 2000-2010, 2010-2060; U.S. Census Bureau; Census 2000 Summary File 1; Census 2010 Summary File 1

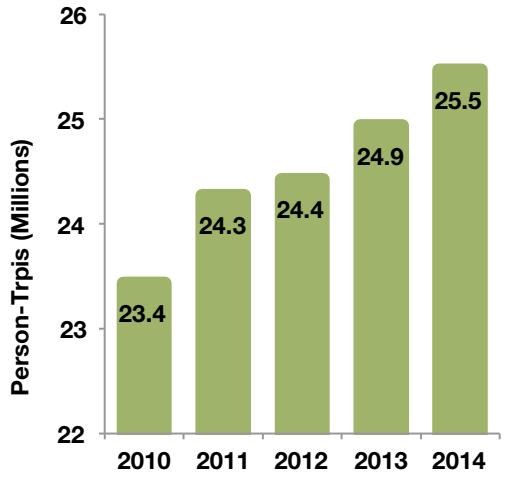
Looking forward, the boomer category will continue to grow, although more slowly, and will remain the largest single age category in the market area for some time. Those 65 and over, however, will increase rapidly, and within several decades will be the largest category in the market area. Younger categories will grow only modestly.

Travel and tourism

Travel to the South Bay area by visitors from elsewhere in California and from out of state represents a good market for Hakone Estate & Gardens, which is one of only a

few visitor destinations in the Santa Clara County area. This market has been growing steadily, as evident from the figure below. As Hakone Estate & Gardens develops further as a cultural, educational and recreational destination its visibility to visitors from out of the area will grow, increasing the potential for more attendance from this important segment. Area visitors are often less sensitive to admission and other fees than are residents, and can make good retail purchases.

Travel and Tourism Volume, Four-County Region



Summary of primary market considerations:

Primary Finding	Implications
Hakone Estate & Gardens is easily accessible from a very large and prosperous market of over 4.2 million people; the bulk of the primary market for Hakone Estate & Gardens lies outside the City of Saratoga	Networking, partnership development and marketing should focus on the entire South Bay area; the bulk of population growth will occur outside the City of Saratoga
The market area population, particularly that which is located in Saratoga, on the average is highly educated and enjoys good incomes; there is a substantial portion with relatively low incomes however	There should be good potential for above average fees for admissions, event rentals and education programming, as well as for donations; access for those with lower incomes should also be an important consideration, particularly children
The number of young people within the market area will grow only modestly	While young people are a particularly important segment for the Garden's education programming, the objective should be to penetrate those that are

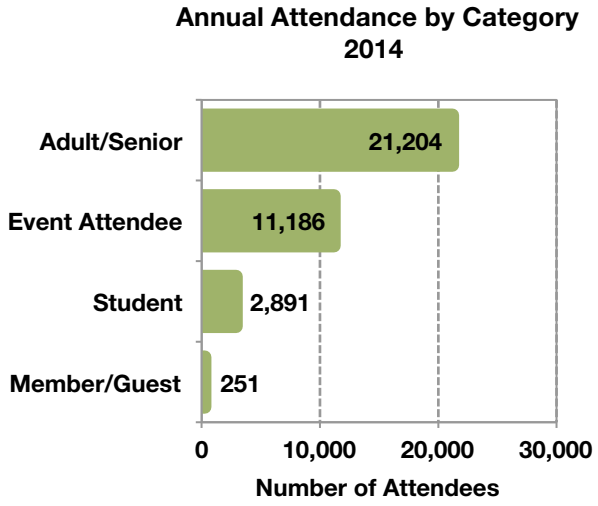
	there, rather than rely on growth of the market
Boomers (45-64) and retired (65+) will grow substantially	There should be substantial opportunities to encourage donations as family wealth increases and retirement approaches; there will also be a growing opportunity for building the volunteer pool
South Bay visitors will continue to increase	Area tourists are an excellent market for Hakone Estate & Gardens; these visitors look for a unique, authentic, good quality experience and are willing to pay relatively high fees

Operations Analysis

In order to assess current operations at Hakone Estate & Gardens, focusing particularly on attendance and events, we analyzed an available activities database of Fiscal Year 2014, allowing a detailed look at event patterns and associated revenues. Other data on calendar 2014 attendance was available as well. This information is useful for preparing financial and other projections.

Attendance

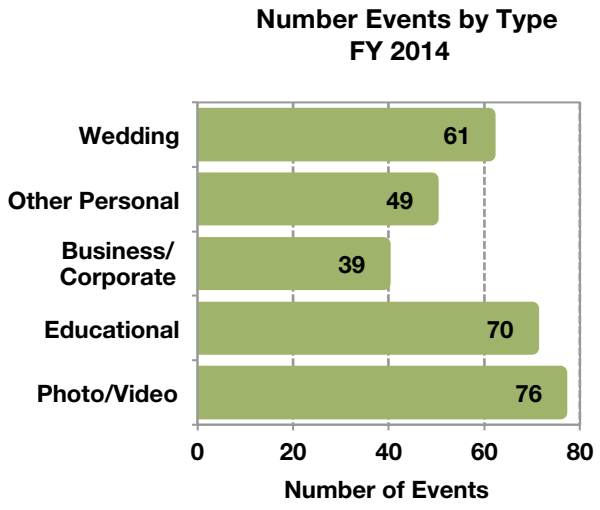
Total attendance amounted to about 35,000 people, the largest portion (about 21,000) was gate attendance and about 11,000 were event attendees. The 2,900 or so students appear to be a mix of students in groups and student-age gate admissions. The data show little attendance by members; this may be due to members counted among gate attendees or simply entering the garden on their own.

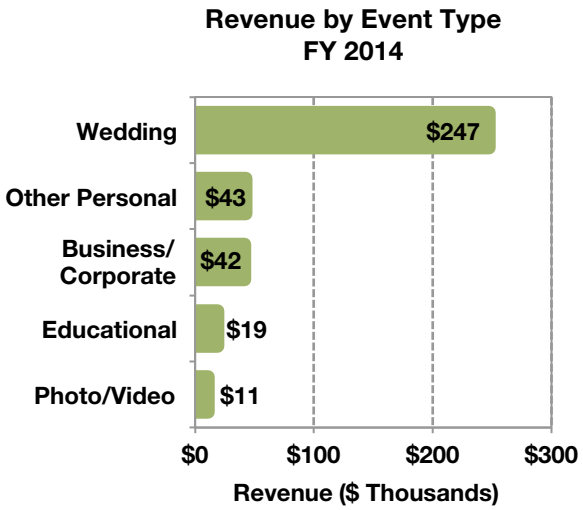


Events

Total events for the year amount to 225, including 70 educational events. The most common are photo or video visits, typically associated with a wedding. These are relatively simple activities that require only limited staff effort. Personal, wedding and corporate events are much more complex and, if a reception is involved, require extensive staff time. Educational events consist of a variety of tours, demonstrations and workshops, often conducted by docents or by contracted staff.

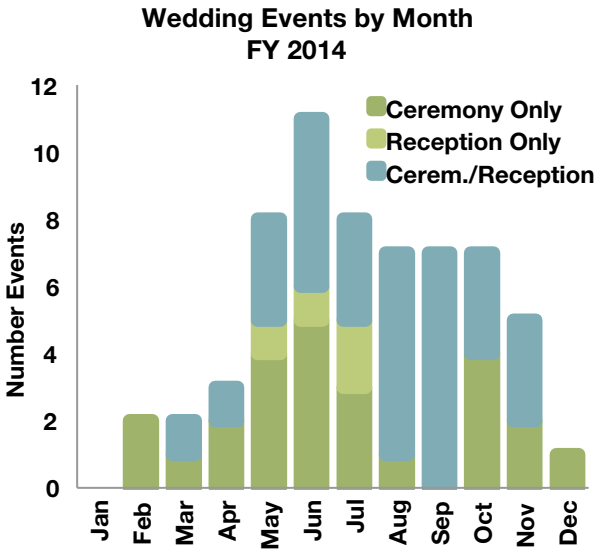
Event revenue derives primarily from weddings, due substantially to the relatively high fees involved. Educational events contribute relatively little revenue, which is appropriate given the significant role these events play in fulfilling the Garden's mission.



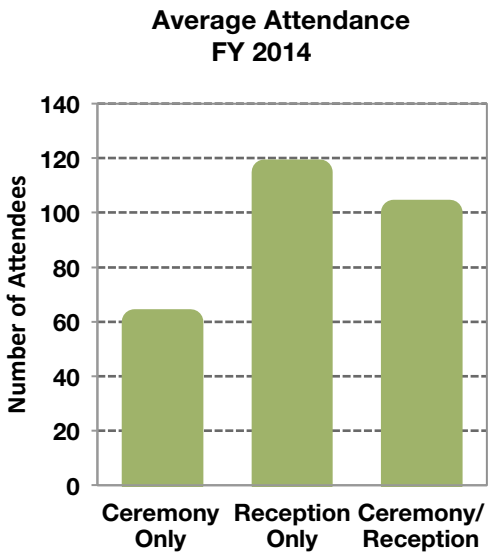


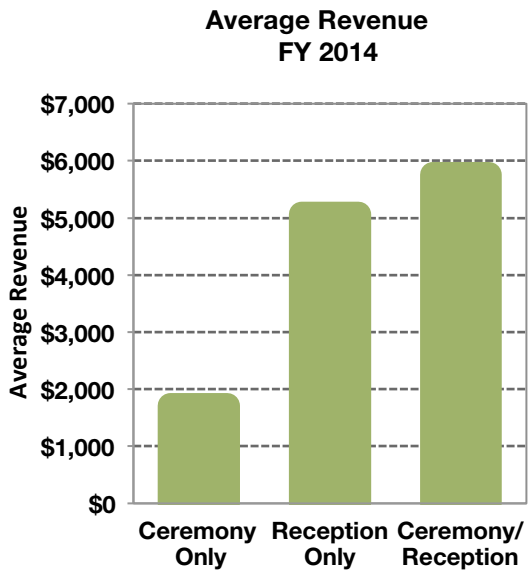
Weddings

Weddings occurred in all but one month, with the largest portion in May, June and July, with continuing activity through October. Weddings during June averaged about 2.5 per week, or nearly one per day for Friday through Sunday. If wedding activity is to increase it should be spread to other months to the extent possible. Increased capacity for indoor events would allow more events during the remainder of the year.



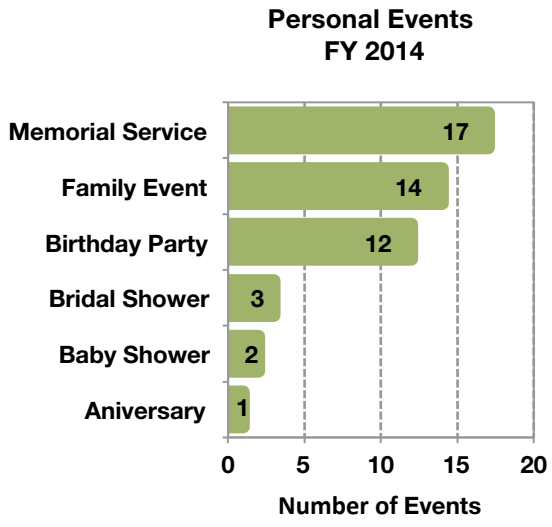
Average size for weddings and receptions is between 100 and 115, or 60 for a wedding only. Some of these are larger events however, ranging as high as 180 people. A number of larger events are around 150, which seems like a workable size for the facilities Hakone Estate & Gardens can offer. Revenue for weddings is good, particularly for those that include a reception.



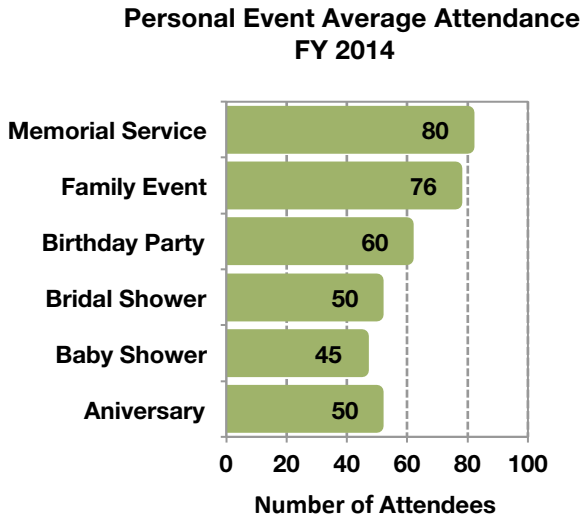


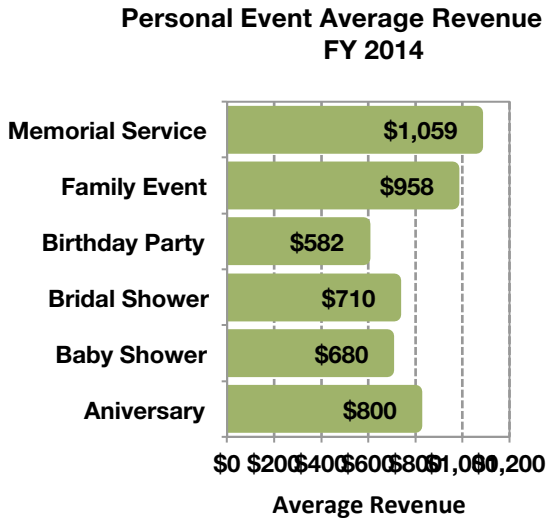
Personal Events

The most common personal events are memorial services, family events such as reunions, and birthday parties. Average attendance for these events ranges from about 50 to 80, size that is consistent with the indoor space available at Hakone Estate & Gardens.



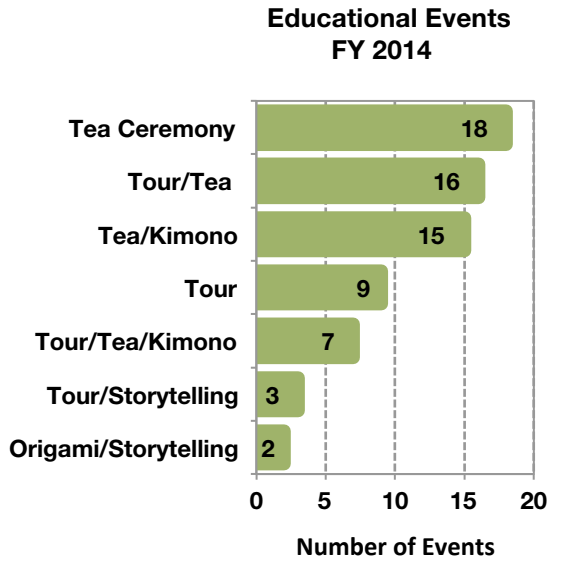
Average revenue ranges from about $600 to somewhat over $1,000 per event; note the comparison with average revenue for weddings.

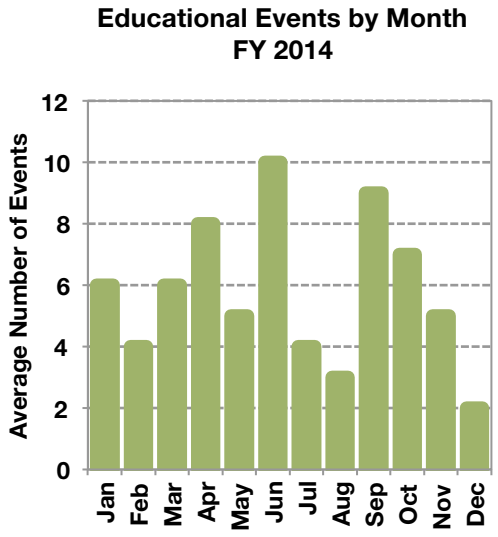




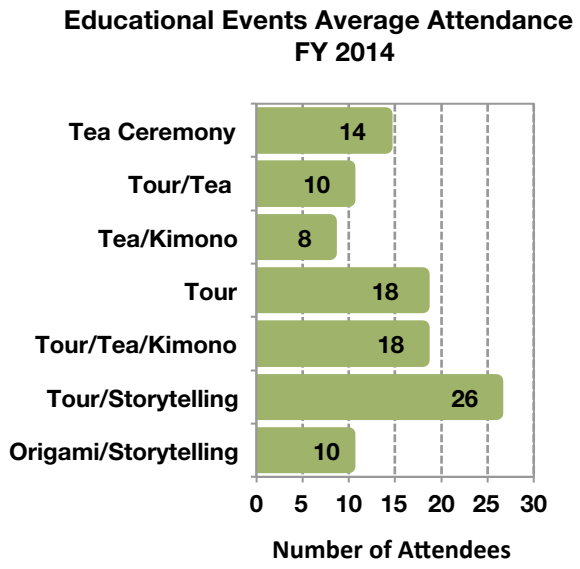
Educational Events

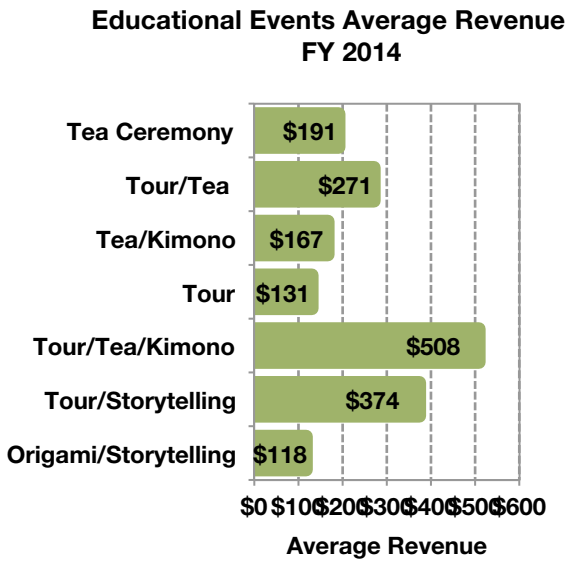
These events range from tea ceremonies, garden tours, demonstrations, workshops and storytelling, often combined in various ways. These events occur throughout the year – more so than weddings – and show a low point in July and August.





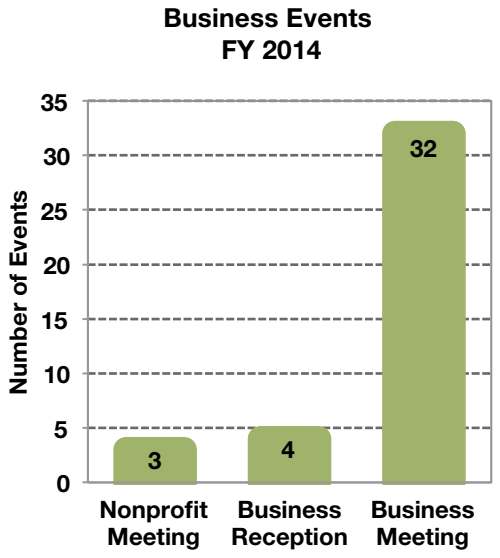
Average attendance at education events is much smaller than at other events, ranging from seven to about 25. Revenue is modest.

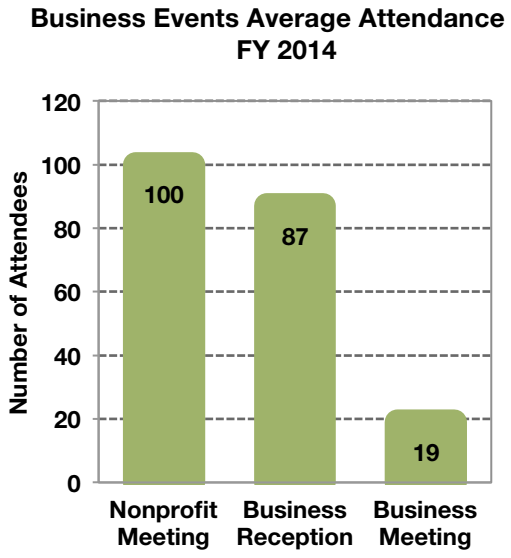




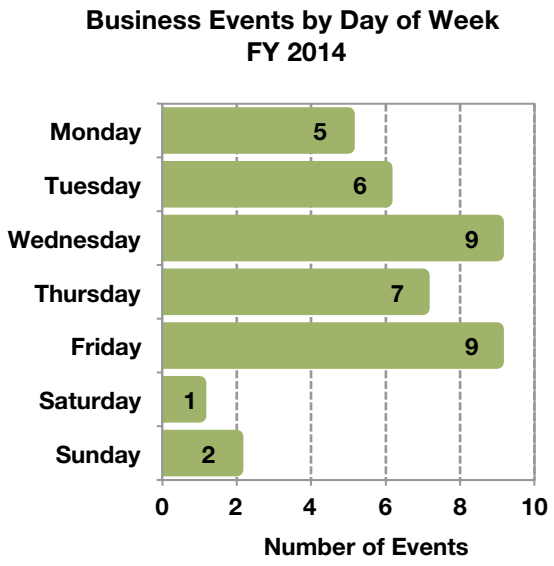
Business Events

The bulk of business meetings are indoor events averaging about 20 people, with some larger and involving an outdoor reception of around 100. Several nonprofit organization meetings are included in this category, which are about the same size as the average business reception but typically do not involve food service.

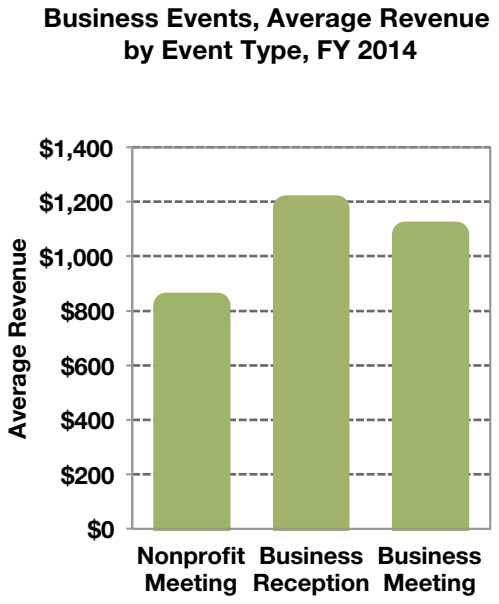


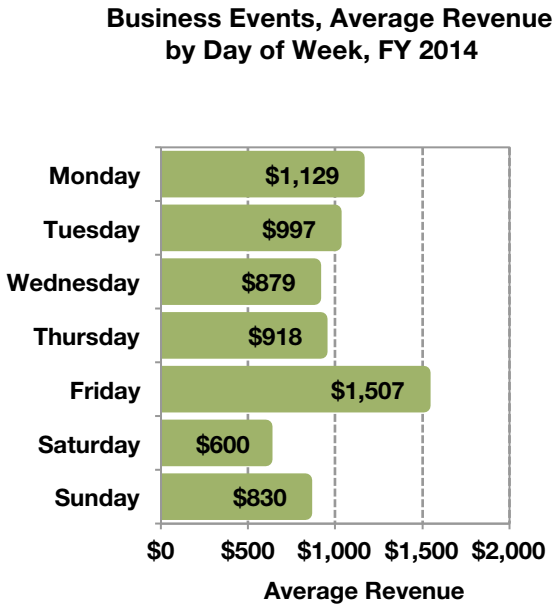


Most business meetings occur during the week, a useful complement to weddings, which are largely weekend affairs.



Average revenue is between $800 and $1,200, somewhat higher than is typical for personal events but substantially lower than for weddings.





Comparable Facilities

While Hakone Estate & Gardens is unique in many respects, reviewing other comparable garden facilities provides useful perspective on operations, finances and pricing. The review takes three perspectives: Japanese gardens specifically, public gardens in general, and facilities that offer space rental for weddings. For the first two the focus extends to the West Coast; comparable wedding facilities are limited to those in the immediate San Jose and Santa Clara area, including Saratoga.

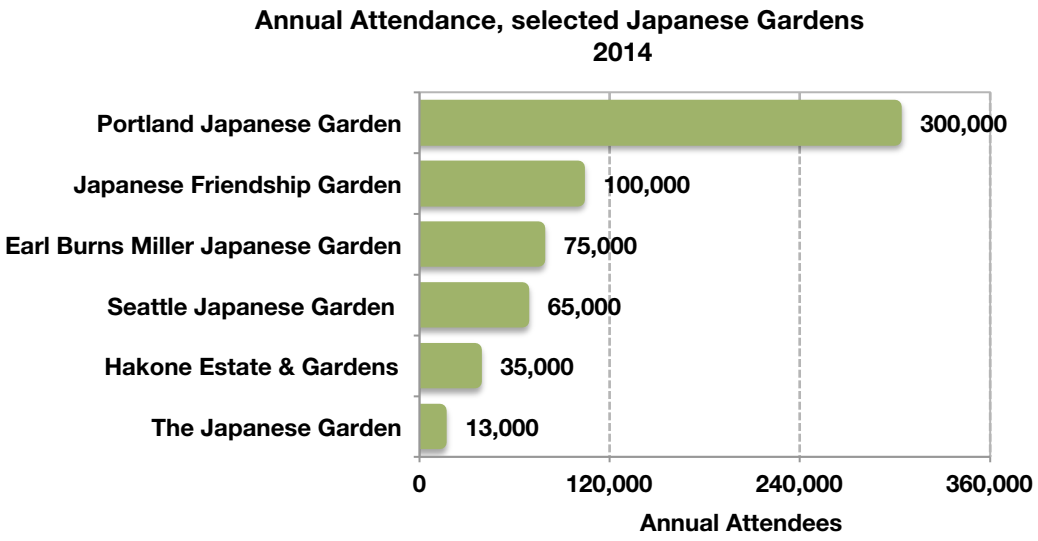
Japanese Gardens

West Coast Japanese gardens range from well established, stand-alone public facilities such as the Portland Japanese Garden and Hakone Estate & Gardens, to a variety of facilities that operate as a portion of larger facilities, including public gardens and parks, universities and community facilities. The Seattle Japanese Garden, for example, is situated as part of the Washington Park Arboretum, and the Japanese Friendship Garden in San Diego is part of Balboa Park. One popular facility, the Japanese Tea Garden, is a commercial concession within Golden Gate Park in San Francisco. In addition, some larger public Gardens, such as Huntington Botanical Gardens and Descanso Gardens in the Los Angeles area, have Japanese garden sections. The selection of gardens selected for this project appears in the table below.

Comparable Japanese Gardens

Facility	Location	Ownership	Founded	Size (acres)	Unique Features
Portland Japanese Garden	Portland OR	Private nonprofit	1967	6	Pavilion, expansion planned
Japanese Friendship Garden	San Diego CA	Private nonprofit	1979	11	Within Balboa Park; amphitheater; expansion underway
Earl Burns Miller Japanese Garden	Long Beach CA	CA State Univ., Long Beach	1981	1.3	Sculpture; university and cultural events
Seattle Japanese Garden	Seattle WA	Private nonprofit	1960	4	Located within Washington Park Arboretum
Hakone Estate & Gardens	Saratoga CA	Private nonprofit	1966	17	Multicultural focus
The Japanese Garden	Van Nuys CA	City of Los Angeles	1984	7	Tea house; cultural and educational events; movie settings
Japanese Friendship Garden	San Jose CA	Municipal	1965	6	Within a city park
Japanese Gardens	Hayward CA	Rec. and Park District	1980	4	Tea house, associated with a senior center
Japanese Tea Garden	San Francisco CA	City of San Francisco; concession	1894	5	Japanese garden within Golden Gate Park; operated as a concession
Shoseian Japanese Teahouse	Glendale CA	Private nonprofit	1974	NA	Tea house; located in Brand park

Attendance at most of these gardens is modest, under 100,000 per year. The figures from gardens that have data are shown below. A number of gardens are free and/or part of larger parks and no separate attendance figures are available. The Portland Japanese Garden sees 300,000 people per year, demonstrating that, under the right circumstances, a Japanese garden can be a major garden attraction.



Facility	Commercial Elements	Annual Attendance	Adm. Fee	Staff	Volunteers
Portland Japanese Garden	Retail, limited events	300,000	$9.50 adult, $7.50 youth	33 FT, 6 PT	600
Japanese Friendship Garden	Weddings, events; café, online retail	100,000	$6 adult, $5 youth	7 FT, 9 PT	5
Earl Burns Miller Japanese Garden	Weddings, events	75,000	Free	4 FT, 32 PT	500
Seattle Japanese Garden	Meeting room rental	65,000	$6 adult, $4 youth	5 FT, 3 PT	80
Hakone Estate & Gardens	Retail; weddings, events	35,000	$8 adult, $6 youth	5 FT, 16 PT	400
The Japanese Garden	Retail, event rentals; movies	13,000	$5 adult, $3 youth	4 FT, 2 PT	70
Japanese Friendship Garden	Weddings, events	NA	Free	NA	
Japanese Gardens	Weddings	NA	Free	NA	
Japanese Tea Garden	Retail, café; photo opportunities	NA	$8 adult, $6 youth; res. discounts	NA	NA
Shoseian Japanese Teahouse	Tea ceremony	NA	Associated with events	NA	NA

Other Public Gardens

The West Coast includes a number of other public gardens that offer some useful illustrations. The table below includes the primary public gardens within this region, excluding the largest gardens that are not suitably comparable to Hakone Estate & Gardens.

Most of these gardens have larger attendance than Hakone Estate & Gardens, although a few are similar. See the figure below. Most also have a substantially larger footprint, some extending over 100 acres.

Comparable Public Gardens

Facility	Location	Ownership	Founded	Size (acres)	Unique Features
Rancho Santa Ana Botanical Garden	Claremont CA	Private nonprofit	1927	86	Native plant garden, classes, musical events; research orientation
San Diego Botanic Garden	Encinitas CA	Private nonprofit	1960	35	Botanical garden; auditorium, bird sanctuary
Filoli Center	Woodside CA	Private nonprofit	1976	16	Historic house, botanical garden and nature preserve
Santa Barbara Botanic Garden	Santa Barbara CA	Private nonprofit	1926	78	Botanical garden; extensive education and research facilities and activities
South Coast Botanic Garden	Palos Verdes CA	Los Angeles County	1960	87	Botanical garden
Sherman Gardens	Corona del Mar CA	Private nonprofit	1951	2	Historical research institute and botanical garden, auditorium
Mendocino Coast Botanical Gardens	Fort Bragg CA	Private nonprofit	1961	47	Botanical garden and arboretum
Arboretum at UC Santa Cruz	Santa Cruz CA	Univ. of California Santa Cruz	1964	135	Arboretum and botanical garden; extensive education and research activity
University of California Botanical Garden	Berkeley CA	University of California	1890	34	Botanical garden, conference center, amphitheater, classroom, picnic area
Ganna Walska Lotusland	Montecito CA	Private nonprofit	1993	37	Botanical garden, estate

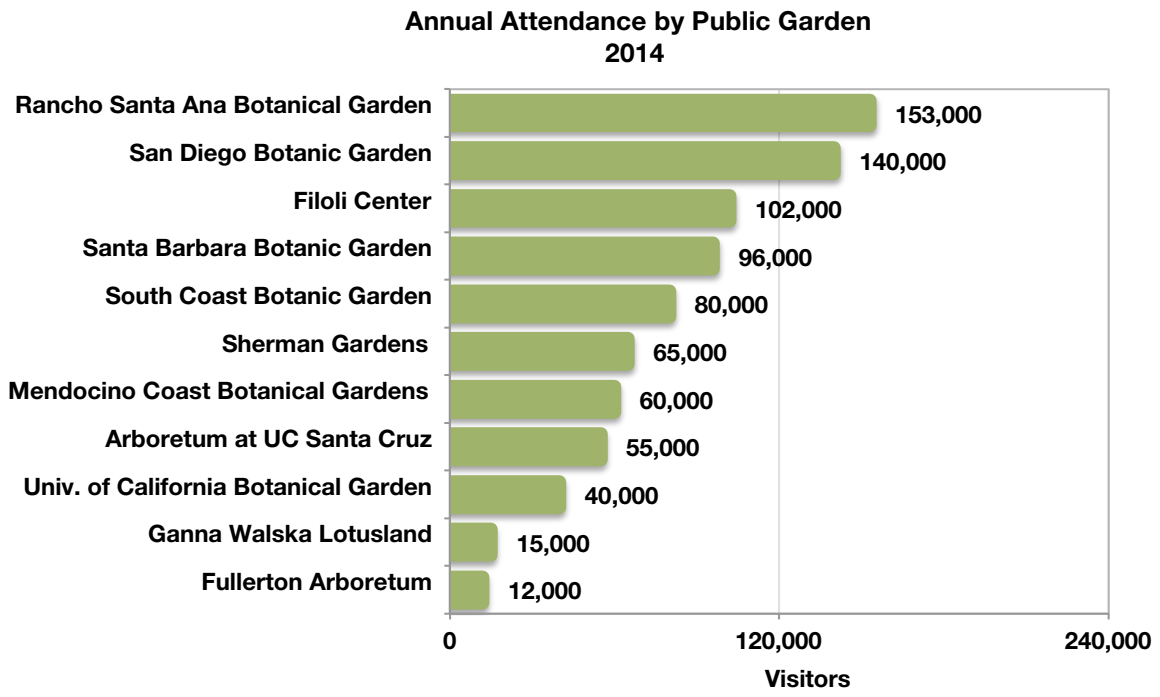
Fullerton Arboretum	**Fullerton CA**	**Municipal, University**	**1972**	**26**	**Arboretum and garden, historic house and collections**

A useful consideration of these gardens is on the 'commercial' features they include, in particular rentals for weddings and other events and food service. It is apparent that nearly all of the gardens offer facilities for weddings and other events. Few, however, include food service in the form of a café or restaurant. The two that do are modest in size – Mendocino Coast at 60,000 annual attendance and Sherman at 65,000 – suggesting that large attendance is not necessarily required to support this service. The Filoli Center (102,000) offers an afternoon tea.

Several of the facilities have free admission. For those that charge, admission fees range from around $5 for an adult to $15, with one facility operated only on the basis of more expensive tours.

Facility	Commercial Elements	Annual Attendance	Adm. Fee	Staff	Volunteers
Rancho Santa Ana Botanical Garden	**retail; tours, classes; native plant nursery; weddings, corporate events**	**153,000**	**$8 adult, $4 youth**		
San Diego Botanic Garden	**retail; classes, tours; weddings and corporate events**	**140,000**	**$14 adult, $8 youth**	**21 FT, 4 PT**	**19**
Filoli Center	**Afternoon tea; art access days; classes, tours**	**102,000**	**$15 adult, $5 student**	**36 FT, 31 PT**	**1,300**
Santa Barbara Botanic Garden	**Retail; events including weddings; tours, classes; day trips, travel**	**96,000**	**$8 adult, $4 youth**	**25 FT, 19 PT**	**300**
South Coast Botanic Garden	**Retail; classes, tours; weddings and corporate events**	**80,000**	**$8 adult, $3 youth**		
Sherman Gardens	**Classes; café; weddings, corporate events**	**65,000**	**$3 adult, $1 youth**	**9 FT, 9 PT**	**150**
Mendocino Coast Botanical Gardens	**Retail, café; classes, tours; weddings**	**60,000**	**$14 adult, $10 youth**	**10 FT, 6 PT**	**150**
Arboretum at UC Santa Cruz	**Retail, classes, special days, tours, amphitheater events**	**55,000**	**$5 adult**	**4 FT, 14 PT**	**200**
University of California Botanical Garden	**retail; classes, tours; weddings and corporate events**	**40,000**	**$9 adult, $5 youth**	**24 FT, 8 PT**	**260**
Ganna Walska Lotusland	**Retail; tours, classes**	**15,000**	**$45 adult (as a tour)**		

Fullerton Arboretum	Retail; tours, classes; weddings, corporate events	12,000	Free	10 FT, 12 PT	600



Wedding Venues

A number of venues operate in the general Saratoga area that offer garden- oriented wedding rentals. They represent the primary competition for Hakone Estate & Gardens for this type of activity and offer useful information regarding rates and services. A selection of these facilities appears in the table below.

Most venues offer only packages that include a catered meal, although several also provide for wedding ceremonies with no reception. Prices for ceremony-only rentals range from about $700 to $4,500 for Montalvo, the closest facility to Hakone Estate & Gardens. Weddings that include catered receptions, assuming an event of 150 guests, range up to $22,000. The most expensive facility charges are at Montalvo, with space rental charges of $10,000 for a Friday event and $12,000 for Sunday.

Venue (Location)	Description	Ceremony Fee	Reception Fee	Min. Venue Rental Fee	Mandatory in-house catering
Ainsley Gardens (Campbell)	ceremony and reception capabilities for 150 outside of the 1925 Tudor Revival Ainsley House	$1,250.00	$2,100.00	$2,345	No
Cinnabar Hills Golf Club (San Jose)	ceremony capabilities on the terrace and in the club house for up to 250 guests	$1,275.00	$1,995.00	$15,270	Yes
Elizabeth F. Gamble Garden (Palo Alto)	indoor and garden capabilities for 50 guests	-	-	$1,200	No
Freedom Hall and Gardens (Santa Clara)	outdoor garden ceremonies with receptions in Freedom Hall	$695.00	-	$12,145	Yes
Montalvo Arts Center (Saratoga)	ceremony, reception and dinner venues across the sweeping center grounds	$4,500.00	-	$18,500	Yes
Mountain Winery (Saratoga)	indoor and outdoor ceremony and reception venues with views of the Santa Cruz Mountains	$3,500.00	$2,000.00	$22,000	Yes
Ranch at Little Hills (San Ramone)	an intimate outdoor setting for 250 wedding guests in the Las Trampas Regional Wilderness	-	-	$3,995	No
Saratoga Country Club (Saratoga)	ceremony and reception venues with views of the Santa Clara Valley for 250 guests	$2,000.00	$2,000.00	$11,800	Yes
Saratoga Foothill Club (Saratoga)	an outdoor courtyard and vaulted ceiling indoor facility	$1,800.00	-	$11,745	Yes
Saratoga Springs (Saratoga)	wooded outdoor ceremony and reception venue near running water and soaring redwoods	-	$2,100.00	$8,243	Yes

Notes: Some venue fees are not applicable based on venue restrictions, such as mandatory in-house catering with reception rental. Minimum venue rental fee for a Saturday wedding with 150 guests. Includes all applicable ceremony and reception fees.

Attendance and Revenue Projections

The following projections of attendance and revenue show a baseline represented by Fiscal Year 2015 (ended in June 2015), with projected figures for the four phases of development proposed in the Master Plan. Figures for each phase represent conditions after the proposed development phase is completed and the new capacity that each creates is available to support additional activity and revenue generation. Since no specific timeline is available for implementation of each phase, all figures are in constant 2015 dollars, with no consideration of inflation. Over the coming years inflation will most likely occur, increasing expenses and requiring increases in revenue.

For analysis purposes the first two phases are combined, comprised of repairs to the existing pond and associated path and garden areas, plus renovation of the CEC and repairs to several of the other existing structures. Completion of this phase will enhance the garden experience substantially and provide additional event capacity in the renovated buildings.

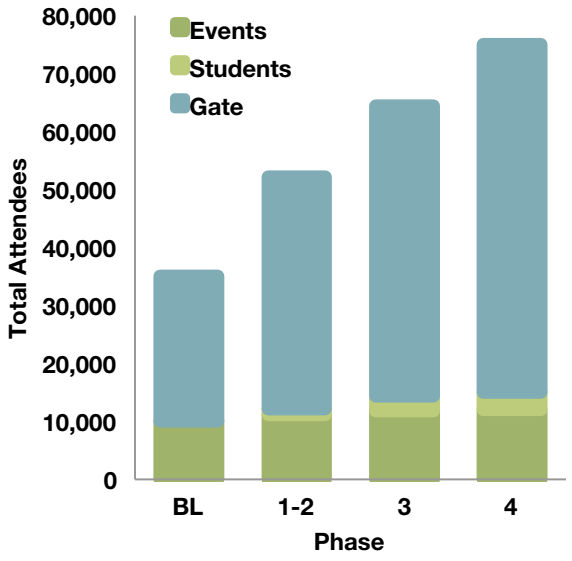
Phase 3 consists primarily of new construction and renovation focused on the entry area, which will further enhance the visitor experience and provide for additional event capacity. Phase 4 focuses on parking lot reconstruction, plus maintenance and administrative facility renovations, which will have some effect on the visitor experience but less so that the previous phases. However during this phase the Gardens will continue to build program, marketing, development and other capacity, increasing its potential to build attendance and revenue.

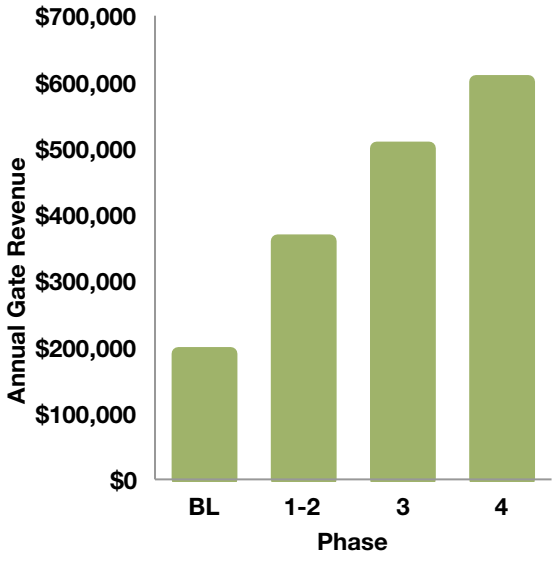
Gate admissions

Gate admissions are projected to increase steadily as the quality of the garden experience increases and additional membership, marketing, event and other programs are put in place. Current attendance is quite low given the size of the South Bay market, so considerable growth is possible if the garden can be properly positioned as an attraction and more effectively promoted.

Gate admissions are projected to increase from the current 25,000 to 40,000 in Phase 1-2, rising to 60,000 by Phase 4. Total attendance, which includes students and event attendees, rises from 35,000 to 75,000. Education program attendees are considered part of gate admissions. Admissions revenue is collected only from gate attendees.

Annual Attendance by Category **Annual Gate Revenue by Phase**





Average admission charge rises from the current $7.60 – which is a combination of adult, student and senior rates – to $9 for Phase 1-2 and $10 for Phases 3 and 4.

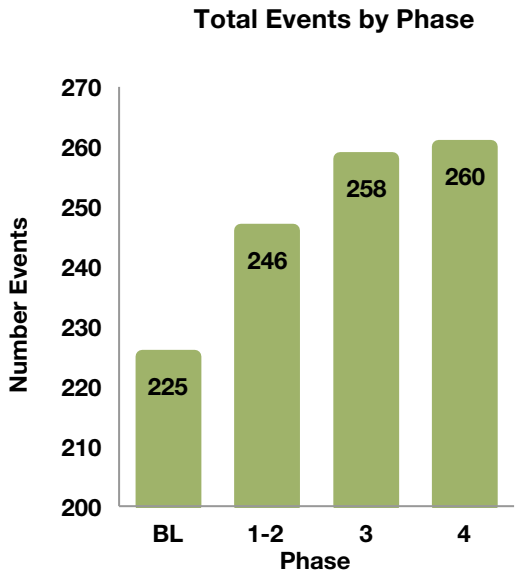
Event Revenue

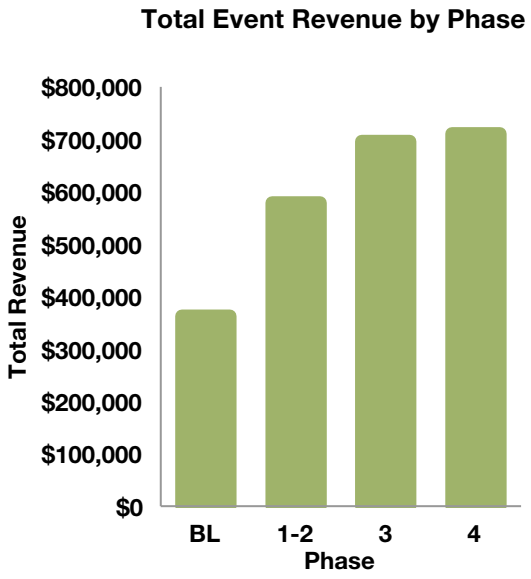
The projections for event numbers and the associated revenue are summarized here, with more detailed data included in the Appendix. For projection purposes separate figures appear for the following six event categories:

- Photo/Video shoots – typically wedding parties holding their events elsewhere but wanting a unique location for photographs; sometimes shoots for advertisements and other purposes
- Wedding ceremonies – ceremonies only, reception held elsewhere; can occur in a number of locations in the Garden, depending on size
- Weddings including reception – ceremony and reception typically held in a combination of the lower and upper courtyards, but can occur inside if the size is modest; expansion of CEC capacity will allow larger inside events
- Personal events – a combination of birthday parties, reunions and other family events, typically involving a meal; includes also memorials and other events that may use theater seating
- Corporate/Business events – a variety of meetings typically held inside, may include limited food service; upgrades of the Lower House and the CEC will provide increased capacity and quality, supporting increased fees
- Corporate/Business receptions – larger events involving good quality food service, often of the same size as large wedding receptions

The total number of events is projected to increase from the current level of 225 to 246 in Phase 1-2 and ultimately to 260 in Phase 4. Increases are a combination of weddings, family and corporate events and are described in more detail below. The increased number of events will occur in part due to more active programming and

marketing, as well as an increase in event capacity, occurring in particular during Phase 3.





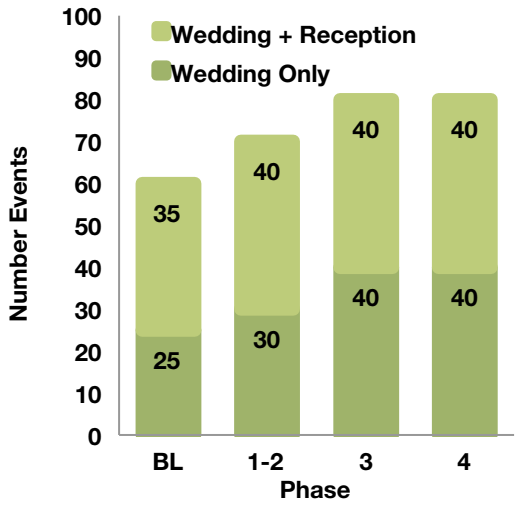
Event revenue will increase from the current level of $360,000 to about $580,000 in Phase 1-2, rising to somewhat over $700,000 in Phase 4. Revenue increases are due in part to increased event fees and to the increase in the number of events. Upgrading the quality and presentation of the garden will be very important with regard to the ability to increase event and other fees.

Weddings

Weddings are the most significant event revenue category for Hakone Estate & Gardens, and also require substantial staff effort and heavy use of Garden facilities. Currently there are about 25 wedding ceremony-only events per year, and about 35 weddings with receptions. Fees average about $1,900 and $6,000 respectively.

Weddings are projected in Phase 1-2 to increase modestly, to 30 and 40 respectively, as well as increases in the average fee, to $2,000 and $7,500 respectively. Further modest increases in the number of events are projected for the subsequent phases, with more substantial increases in the average fee. Increased fees will be supported by the uniqueness and quality of Hakone Estate & Gardens and as a wedding venue, enhanced in particular by the Phase 1-2 and 3 improvements.

Wedding Events by Phase **Average Wedding Event Revenue by Phase**



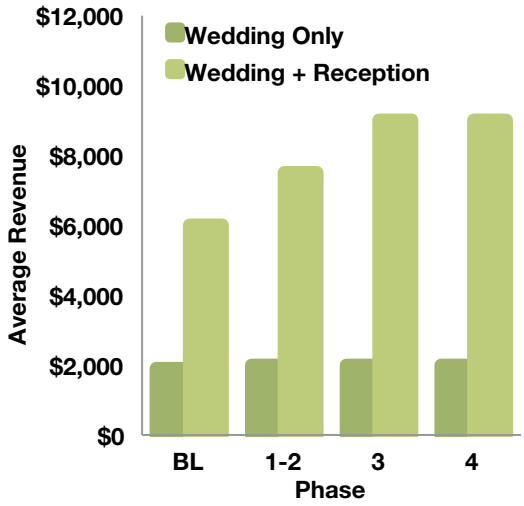


Photo and video shoots, which most often are associated with wedding activities, are assumed to remain constant in the years ahead. These are relatively simple to arrange and manage, but do not represent a very significant revenue source. If the Phase 3 improvements substantially increase the demand for shoots, perhaps fees can be increased.

Personal events

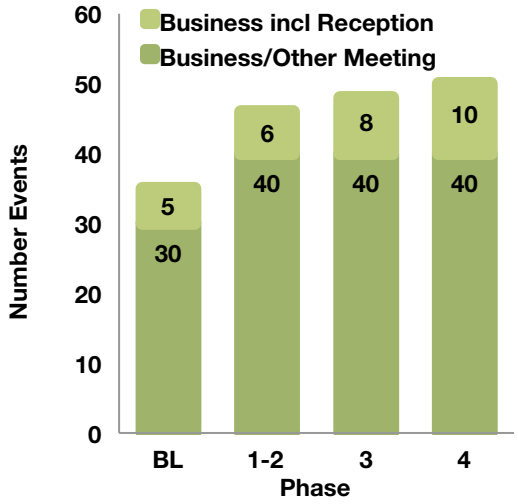
Hakone Estate & Gardens currently hosts about 50 personal events per year, with fees averaging $950. This level of activity is projected to remain constant, with average fees rising modestly to $1,000. While these are good events for cementing relationships within the community, the potential for increased revenue is limited, and increased capacity is better dedicated to events with more revenue potential.

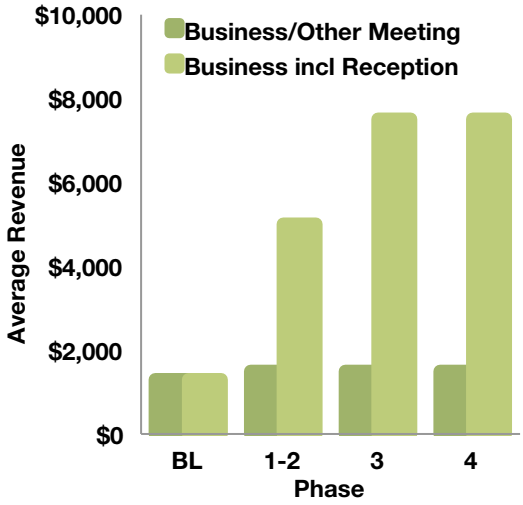
Corporate/Business events

At present Hakone Estate & Gardens hosts about 30 business/corporate events per year, plus another five that consist of receptions or larger meetings that make use of theater seating. Average fees are $1,300, the same whether a reception is included or not.

In Phase 1-2 the number of business meetings is projected to increase to 40 per year, plus six receptions. Improvements in both the CEC and Lower House will provide valuable new capacity for these meetings, and additional marketing can promote the improved outside spaces for these clients. In addition average fees should increase, to $1,500 for a meeting and $5,000 for a reception, with receptions rising further to $7,500 in Phase 3.

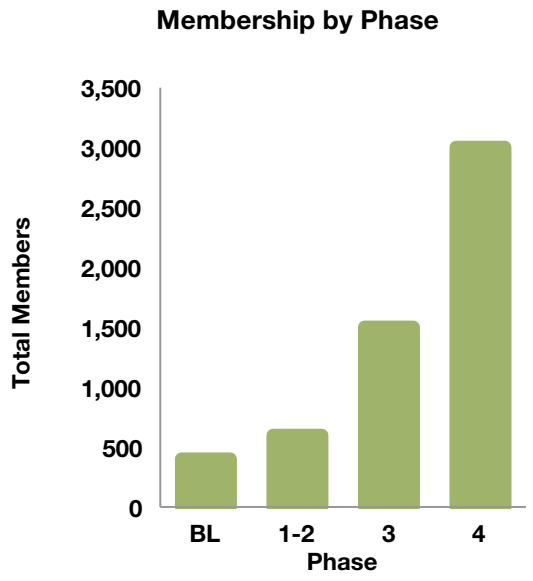
Business Events by Phase **Average Business Event Revenue by Phase**





Membership

Membership is a good indicator of the connection the Garden enjoys with the local and regional community. Enhancing membership helps boost attendance, volunteer recruitment and financial support and should be a high priority for the Garden. From the current level of about 400, membership is projected to increase to 600 for Phase 1-2 and further to 3,000 for Phase 4. Current cost structure is retained; consideration should be given to increasing membership fees if it seems appropriate, but building the number of members should remain a high priority.

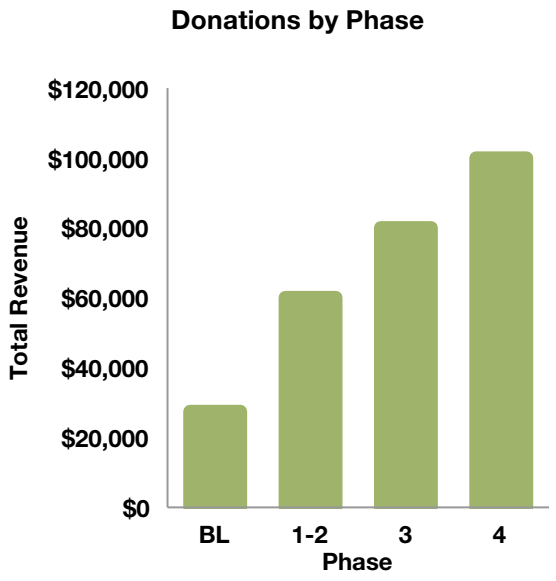


Education Programs

Education is fundamental to the Garden's mission and educational programming is another high priority. Revenue from education activity is limited for most gardens, particularly if children are a primary segment. For purposes of projections, education program revenue is assumed to remain the same as a proportion of gate revenue. Any substantial increases in programming for organized school groups, for example, will probably not be associated with much revenue growth. This activity, if possible, should be covered by foundation and other grant income.

Donations

Donation levels are another indication of connection with the local and regional community. Successful gardens attract personal and corporate donations via annual campaigns, fundraising events, and through special appeals for particular projects. Hakone Estate & Gardens has seen some success with regard to donations, but there is potential for more. From the current level of about $27,000 per year, donations are projected to increase to $60,000 for Phase 1-2 and ultimately to $100,000 for Phase 4. The process of implementing the Master Plan will be instrumental for presenting the Garden's plans for the future and illustrating how good an investment is represents for individuals and corporations in the community.



Foundation Grants

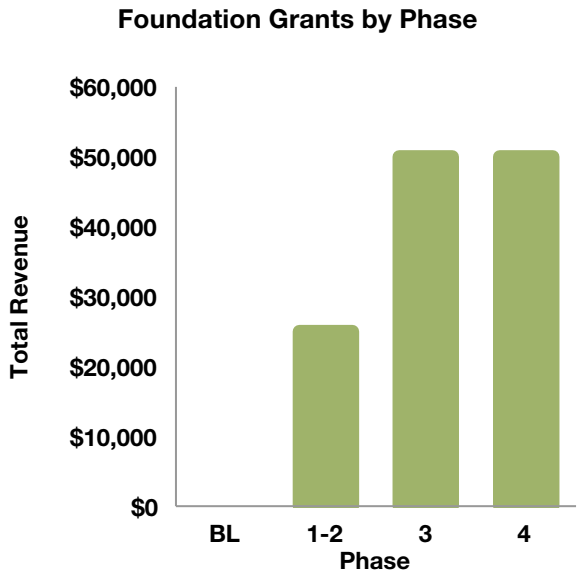
Hakone Estate & Gardens is in a good position to apply for foundation and corporate grants that support organizations with cultural and educational missions and that are in a position to enhance the services they can offer.

Two topic areas are good priorities. First, educational activities at Hakone Estate & Gardens can be enhanced, particularly those focusing on school-age children. Charitable foundations in particular often place high priorities on programs oriented to children and education. These can be priorities for corporate foundations as well. Financial support of this kind can help Hakone Estate & Gardens and fund additional staff and other resources and build a notable education program that represents a valuable asset for the community.

The other type of grant focuses on capacity building – assistance to an organization that is poised to "move to the next level" but needs an infusion of money in order to do so. Examples of activities that can be funded in this manner include:

- Hiring of staff focusing on development, volunteer recruitment and marketing, all oriented to building capacity for generating additional revenue and enhancing self-sufficiency; funds for enhanced administrative staff can be considered as well
- Building an educational program; enhancing connections to the community that funnel children and families to Hakone Estate & Gardens
- Topical programs, oriented to education/outreach and/or research, on current topics such as climate and habitat change, water use, culinary and sensory plants, plant conservation and plant-related cultural expression

Grant income is assumed to increase to $25,000 per year in Phase 1-2, increasing to $50,000 by Phase 4.



City maintenance

The current level of City of Saratoga maintenance at the Garden is assumed to continue. One-time City contributions to building and other projects would be in addition to this amount.

Preliminary Operating Budget

The preliminary operating budget that appears below represents a balance of anticipated revenue and operating expense associated with implementation of each phase of the master plan. All figures are in constant 2015 dollars.

	Baseline	Phase 1-2	Phase 3	Phase 4
Projections				
Non-school Attendance	25,000	40,000	50,000	60,000
Organized School Groups	0	1,000	2,500	3,000
Events	10,060	11,140	11,900	12,060
Total	35,060	52,140	64,400	75,060
Membership	400	600	1,500	3,000
Revenue				
Admissions	$190,310	$360,000	$500,000	$600,000
Fundraising events	$30,418	$50,000	$80,000	$100,000
Weddings	$282,564	$416,000	$492,000	$492,000
Other facility rentals	$110,514	$162,000	$203,660	$218,900
Retail sales	$59,706	$100,000	$150,000	$180,000
Memberships	$27,070	$40,605	$101,513	$203,025
Adult education programs	$6,394	$12,095	$16,799	$20,159
Donation	$27,491	$60,000	$80,000	$100,000
Foundation	$0	$25,000	$50,000	$50,000
City maintenance	$15,000	$15,000	$15,000	$15,000
Other	$247	$0	$0	$0
Total Revenue	$749,714	$1,240,700	$1,688,971	$1,979,084
Expenses				
Staff	$473,464	$756,206	$1,007,736	$1,183,080
Fringe @ 15% (20%)	$71,292	$113,431	$201,547	$236,616
Administration	$17,607	$23,160	$28,844	$34,427
General operations	$139,077	$206,830	$255,464	$297,750
Garden operations	$11,189	$16,784	$22,378	$22,378
Education	$0	$10,000	$15,000	$15,000
Retail	$23,025	$50,000	$75,000	$90,000
Event expenses	$17,840	$28,433	$34,221	$34,971
Maintenance/Repair	$5,774	$20,000	$30,000	$40,000
City maintenance	$15,000	$15,000	$15,000	$15,000
Other	$0	$0	$0	$0
Total Expenses	$774,268	$1,239,844	$1,685,190	$1,969,221
Net Revenue	-$24,554	$856	$3,782	$9,862

Notes: Organized school groups admitted at no cost. Retail sales of $2.25 per adult visitor.

Several overriding assumptions underlie these projections:

- Increased attention to design and maintenance of the Gardens, including plantings, pond, buildings and circulation
- Additional attention to building and maintaining connections to the community which will foster attendance, membership, volunteers, event attendance and donations
- preparation of new grant proposals to cover costs of educational programming, historic facility renovation, services to special needs populations, and other programs of interest to foundations
- positioning Hakone Estate & Gardens as a particularly unique, high quality destination, which can support ongoing requests for donations and other support and good fees for event rentals
- Development of a volunteer program that includes people oriented to education and gardening, thereby assisting with garden maintenance

Staff

Staff represent the primary expense for the Garden and are discussed separately here. Current staff amount to 10.5 FTE (Full Time Equivalents), with a staff budget of about $475,000. Staff overhead costs, such as employment taxes and insurance, are not included in this amount. This number represents conditions around the end of the fiscal year; average staff for all of FY15 was somewhat lower.

Staff are projected to increase to 15 FTE as part of Phase 1-2, rising to 23 FTE by Phase 4. Detail regarding staff by department and phase appears in the Appendix.

Budget Projection Assumptions

The following additional assumptions underlie the projections for operating expenses, which appear below in the preliminary operating budget:

- Staff expense is as described above
- The current percentage for employee overhead expense (15%) is used for the Phase 1-2 projections; this amount is increased to 20% for Phases 3 and 4 to allow for an increase in health insurance coverage and other expenses
- Administrative costs (materials and services primarily) increase in the same proportion as administrative salaries
- General operations expenses increase in proportion to total attendance
- Garden operations expense increase by 50% for Phase 1-2 to represent additional attention to pond, plantings and garden infrastructure; expenses double over current levels for Phase 3 and 4 to represent increased garden area and attention to quality; larger expenditures on garden operations may be justified in order to enhance garden quality and presentation

- Education expense increases to cover anticipated new education programming; these amounts should be covered by foundation grants, if possible
- Retail cost of sales taken as 50% of gross receipts
- Event expenses increase in the same proportion as event revenue
- Maintenance/repair expenses increased to $20,000 per year to represent increased attention to building and other maintenance

Total revenue for Phase 1-2 increases from baseline of about $750,000 to somewhat over $1.2 million, based largely on increases in gate and event revenue and additional foundation and donation support. Increases in expenses result largely from staff increases and the associated overhead, plus increases in operating costs due to increased levels of activity. Facility maintenance costs increase substantially, albeit from a low base. The City of Saratoga contribution for maintenance remains the same.

Revenue increases to nearly $1.7 million by Phase 3 and to nearly $2.0 million by Phase 4. Operating expenses increase as well, with the projected budget in balance.

Potential costs not included are a sinking fund for major building repair and renovation costs as well as a variety of potential capital costs.

In addition, there will be transition costs associated with the construction phase, which will disrupt facility operations and potential revenue. To the extent possible such costs should be capitalized as part of the construction budget.

Endowment

Hakone Estate & Gardens should build as large an endowment as possible with the objective of supporting operating costs in the years ahead. Typically, endowments are built from donations; endowment campaigns are often associated with capital campaigns for facility enhancements.

In the early years, while the endowment principal is building, withdrawals are often limited or curtailed completely in order to build capacity as quickly as possible. When withdrawals are initiated they typically are limited to an amount representing no more than the return on endowment investments, averaged over several years. In the past a rule of thumb annual withdrawal of 5% of principal was common. Currently, with available returns on capital as limited as they are, lower percentages are prudent.

An example for establishing an endowment goal for the Phase 1-2 project is as follows. This phase, which focuses on rebuilding the pond and its maintenance systems, improving the surrounding pathways and gardens to ADA standards, and renovating the CEC and other major buildings, will greatly enhance the associated areas of the garden when completed. Additional gardening staff allocated to these portions of the Garden can capitalize on the investments by upgrading plantings and other aspects of the area.

The cost of an additional full-time gardener, including direct overhead, and also including increased materials and other costs plus administrative overhead, might be taken as $100,000 per year. With an assumption of 4% per year available from principal, an endowment amount of $2.5 million is necessary to support this expense.

An alternative objective for the use of endowment funds could involve increased educational programming that the upgraded facility would support. An endowment contribution request could be submitted to corporate or charitable foundations, or to individuals, to support a proposed education program enhancement.

Sinking Fund

A sinking fund is one means of accumulating money that will be necessary for facility reconstruction or replacement. An annual revenue stream is set aside, often in an investment account similar to that used for an operating endowment, with the annual amount calculated to correspond to the ultimate revenue goal, the time period involved and an assumed annual return on investment. For example, accumulating an account principal of $1 million 15 years in the future, assuming an annual return of 5% on investments and annual compounding, would require an annual deposit of about $46,300.

Sinking fund contributions can be incorporated into a garden's operating budget, however for practical reasons they are rarely seen. Operating revenues for many gardens are often limited in light of necessary operating costs, leaving little room for such investments. In addition, large capital expenses are most often funded via capital campaigns rather than from savings.

That said, gardens should include expected costs for periodic repairs, perhaps including upgrades and relate improvements, as part of their annual budget. Such amounts are included in the budget forecasts here.

Branding

The limited gate attendance of Hakone Estate & Gardens indicates its current low visibility and appeal within the local and regional market. As investments are made in enhancing the Garden and its ability to provide a good visitor experience, attention should also be paid to its image within the market area. While the current name represents the Garden's significant history as a private estate it does not represent its Japanese character, one of its primary strengths from a branding perspective. In addition, an "estate" is not typically an important aspect of a visitor destination and adds little to the brand.

As the Garden moves forward we suggest that a name change be considered, to the Hakone Japanese Garden. This name retains the Garden's historic family connection and identity, and otherwise represents the primary attributes of the Garden today and as it will appear in the future. Such a change could take place in conjunction with initial

implementation of the first phase of the Master Plan, or at a later time as part of Phase 1-2 or later phase completion. In any event such renaming should be carefully planned and implemented as part of a marketing campaign that aims to significantly increase the Garden's visibility and appeal within the South Bay and larger markets.

Appendix

Hakone Estate & Gardens: Preliminary Event Projections

Factor	Photo Session	Wedding Only	Wedding + Reception	Personal Event	Corp. Meeting	Corp incl Reception	Total
2015 Baseline							
Events/year	80	25	35	50	30	5	225
Fee/event	$152	$1,900	$6,000	$950	$1,300	$1,300	
Total fee revenue	$12,160	$47,500	$210,000	$47,500	$39,000	$6,500	$362,660
Attendees/event	7	60	100	70	20	80	
Total attendees	560	1,500	3,500	3,500	600	400	10,060
Total revenue	$12,160	$47,500	$210,000	$47,500	$39,000	$6,500	$362,660
Phase 1-2							
Events/year	80	30	40	50	40	6	246
Fee/event	$200	$2,000	$7,500	$1,000	$1,500	$5,000	
Total fee revenue	$16,000	$60,000	$300,000	$50,000	$60,000	$30,000	$516,000
Attendees/event	7	60	100	70	20	80	
Total attendees	560	1,800	4,000	3,500	800	480	11,140
Catering charge/attendee	$0	$0	$100	$40	$40	$100	
Total catering charges	$0	$0	$400,000	$140,000	$32,000	$48,000	
Catering commission	10%	10%	10%	10%	10%	10%	
Catering revenue	$0	$0	$40,000	$14,000	$3,200	$4,800	$62,000
Total revenue	$16,000	$60,000	$340,000	$64,000	$63,200	$34,800	$578,000
Phase 3							
Events/year	80	40	40	50	40	8	258
Fee/event	$200	$2,000	$9,000	$1,000	$1,500	$7,500	
Total fee revenue	$16,000	$80,000	$360,000	$50,000	$60,000	$60,000	$626,000
Attendees/event	7	60	100	70	20	80	
Total attendees	560	2,400	4,000	3,500	800	640	11,900
Catering charge/attendee	$0	$0	$60	$60	$10	$10	
Total catering charges	$0	$0	$240,000	$210,000	$8,000	$6,400	
Catering commission	15%	15%	15%	15%	15%	15%	
Catering revenue	$0	$0	$36,000	$31,500	$1,200	$960	$69,660
Total revenue	$16,000	$80,000	$396,000	$81,500	$61,200	$60,960	$695,660
Phase 4							
Events/year	80	40	40	50	40	10	260
Fee/event	$200	$2,000	$9,000	$1,000	$1,500	$7,500	
Total fee revenue	$16,000	$80,000	$360,000	$50,000	$60,000	$75,000	$641,000
Attendees/event	7	60	100	70	20	80	
Total attendees	560	2,400	4,000	3,500	800	800	12,060
Catering charge/attendee	$0	$0	$60	$60	$10	$10	
Total catering charges	$0	$0	$240,000	$210,000	$8,000	$8,000	
Catering commission	15%	15%	15%	15%	15%	15%	
Catering revenue	$0	$0	$36,000	$31,500	$1,200	$1,200	$69,900
Total revenue	$16,000	$80,000	$396,000	$81,500	$61,200	$76,200	$710,900

Staff Projection: Preliminary Estimated Annual Average

	FY 2015			Phase 1-2		Phase 3		Phase 4	
Position	**Salary**	**FTE**	**Budget**	**FTE**	**Budget**	**FTE**	**Budget**	**FTE**	**Budget**
Administration									
Executive Director	$90,000	1	$90,000	1	$99,000	1	$108,000	1	$108,000
Bookkeeper	$62,400	0.45	$28,080	0.5	$34,320	0.5	$37,440	1	$74,880
Reception	$40,000	0	$0	0.5	$22,000	1	$48,000	1	$48,000
Subtotal		**1.45**	**$118,080**	**2**	**$155,320**	**2.5**	**$193,440**	**3**	**$230,880**
Marketing/Membership									
Marketing/Communications Director	$60,000	0	$0	0.5	$33,000	1	$72,000	1	$72,000
Membership Coordinator	$35,000	0	$0	0.5	$19,250	0.5	$21,000	1	$42,000
Subtotal		**0**	**$0**	**1**	**$52,250**	**1.5**	**$93,000**	**2**	**$114,000**
Development									
Development Director	$60,000	0	$0	0.5	$33,000	0.5	$36,000	1	$72,000
Staff	$35,000	0	$0	0	$0	0.5	$21,000	1	$42,000
Subtotal		**0**	**$0**	**0.5**	**$33,000**	**1**	**$57,000**	**2**	**$114,000**
Events Management									
Event Coordinator	$52,000	1.25	$65,000	1.5	$85,800	1.5	$93,600	1.5	$93,600
Event Consultant	$40,000	0.25	$10,000	0	$0	0	$0	0	$0
Event Office Assistant	$31,200	0.25	$7,800	0.5	$17,160	0.5	$18,720	1	$37,440
Event staff	$26,000	1.5	$39,000	1.5	$42,900	2	$62,400	2	$62,400
Subtotal		**3.25**	**$121,800**	**3.5**	**$145,860**	**4**	**$174,720**	**4.5**	**$193,440**
Education									
Education Coordinator	$40,000	0	$0	0	$0	0.5	$24,000	0.5	$24,000
Volunteer Coordinator	$40,000	0	$0	0.5	$22,000	0.5	$24,000	0.5	$24,000
Subtotal		**0**	**$0**	**0.5**	**$22,000**	**1**	**$48,000**	**1**	**$48,000**
Garden Operations									
Head Japanese Garden Specialist	$58,240	1	$58,240	1	$64,064	1	$69,888	1	$69,888
Assistant Gardener	$45,760	1.75	$80,080	2.5	$125,840	3	$164,736	3.5	$192,192
Subtotal		**2.75**	**$138,320**	**3.5**	**$189,904**	**4**	**$234,624**	**4.5**	**$262,080**
Buildings and Security									
Housekeeping	$31,200	2	$62,400	2	$68,640	2	$74,880	2	$74,880
Security	$35,000	0	$0	0	$0	0.5	$21,000	0.5	$21,000
Subtotal		**2**	**$62,400**	**2**	**$68,640**	**2.5**	**$95,880**	**2.5**	**$95,880**
Retail									
Gift Shop Manager	$58,240	0.25	$14,560	1	$64,064	1	$69,888	1	$69,888
Admissions/Retail staff	$22,880	0.8	$18,304	1	$25,168	1.5	$41,184	2	$54,912
Subtotal		**1.05**	**$32,864**	**2**	**$89,232**	**2.5**	**$111,072**	**3**	**$124,800**
Total		**10.5**	**$473,464**	**15**	**$756,206**	**19**	**$1,007,736**	**23**	**$1,183,080**

Notes: All salaries increased 10% in Phase 1, 20% in Phases 2 and 3. Fringe taken as 15% in Phase 1, 20% in Phases 2 and 3.

APPENDIX 3

Construction Cost Opinion

Oppenheim | Lewis

Hakone Estate and Gardens
Preliminary Budget Estimate

13 October 2015

Prepared for The Portico Group

Hakone Estate and Gardens
Preliminary Budget Estimate

Project Cost Summary

Phase 1		
Buildings & Structures	$507,052	
Sitework	2,258,698	
Water Systems Allowance	750,000	
Soft Costs	1,406,300	
Subtotal Phase 1		$4,922,050
Phase 2		
Buildings & Structures	$3,006,992	
Sitework	742,072	
Soft Costs	1,499,626	
Subtotal Phase 2		$5,248,690
Phase 3		
Buildings & Structures	$3,010,147	
Sitework	3,952,809	
Soft Costs	2,785,182	
Subtotal Phase 3		$9,748,138
Phase 4		
Buildings & Structures	$2,491,029	
Sitework	3,080,067	
Soft Costs	2,228,438	
Subtotal Phase 4		$7,799,534
Total Project Cost in July 2015 Dollars		**$27,718,411**

Notes:

Additional cost to provide a new building for events in lieu of renovating the Cultural Exchange Center.	$4,760,000
Additional cost to provide new utilities from Big Basin Way to the site if required.	$500,000

Hakone Estate and Gardens
Preliminary Budget Estimate

Estimate Assumptions and Definitions

This cost estimate dated 13 October 2015 is based on the master plan conceptual site plan produced by The Portico Group and its consultants from workshop three in July 2015 and updated through the end of August 2015. The estimate is also informed through site walks and meetings with the Hakone Estate and Gardens team. The estimate includes both construction costs and soft costs.

Construction costs in the estimate include costs incurred by the contractor(s) in performance of the work. These include the general contractor's costs and overhead / site management as well as the costs of the subcontractors. The construction costs for the project are broken into four phases which have been established by the design team as one possible methodology for constructing the project while maintaining operations in a manageable manner. The four phases are essentially Hill and Pond Garden; Historic Building Renovations; the Entry Courtyard, buildings and new garden; and the Parking Lot and Garden Operations. The phasing will need to be reviewed and approved by the Owner.

Soft costs include the non-construction costs. These include design fees, project management and administrative fees; permitting costs and agency fees (planning, utility, etc.); entitlement costs, including required consultants and legal support; an allowance for other fees and service which include non design consultants such as geotechnical, surveys, etc.; fixtures, furniture and equipment which are presumed to be purchased and installed by the owner directly, and for this project may include equipment for the maintenance of the newly installed elements or initial consumables for the garden. Soft costs are included as an allowance at 40% of hard costs.

The estimate includes three separate contingencies: first, a design contingency included in the construction cost which is intended to cover changes during the design phases (i.e. before construction begins) brought on by conditions which are currently unknown; second, a construction contingency included in the soft costs which is intended to cover changes in cost after the construction contract is executed. The third contingency is a soft cost contingency which is intended to cover any increases in the soft costs throughout the project duration. These changes may be due to changes in scope which require additional fees for a consultant or the need for a consultant on the project which is not currently foreseen.

There are other costs that are not direct development costs and not included in the estimate, but will still be incurred by Hakone Estate and Gardens. These include costs for fundraising and/or financing the project; an allowance for any maintenance or program endowment; any interruption of operations or loss of revenue during construction; and an allowance for other miscellaneous owner costs (misc. printing costs to support events directly related to the project, the cost of materials or food for workshops, travel for staff directly related to the project.

The cost estimate is in July 2015 dollars and no escalation to a future start date has been included.

The following abbreviations are used in the estimate:

Allow	Allow is used when the scope is not known and the line item is simply an allowance.
CY	Cubic Yard
Ea	Each
FF&E	Fixtures, furnishings & equipment which are part of the soft costs
Flt	Flight, as for Stairs
LF	Linear Foot
LS	Lump Sum is used to capture the cost of an element or system in its entirety
Lvs	Leaves for doors
SF	Square Foot

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 1 Buildings & Structures Summary

Rebuild Existing Wisteria Pavilion		$100,000
Koi Pond Water Systems Building		276,050
Subtotal		**$376,050**
General Conditions	10.0%	37,605
Bonds & Insurance	2.0%	8,273
Contractor's Fee	4.5%	18,987
Subtotal		**$440,915**
Design Contingency	15.0%	66,137
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$507,052**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 1 Buildings & Structures

Koi Pond Water Systems Building					
Foundations	18	CY	700.00	$12,600	
Slab on Grade	430	SF	20.00	8,600	
Pads & Curbs	1	LS		12,000	
Walls - Concrete	1200	SF	50.00	60,000	
Wall Finish	1200	SF	50.00	60,000	
Louvres	50	SF	80.00	4,000	
Exterior Doors	1	Pr	5,000	5,000	
Roof Structure	430	SF	40.00	17,200	
Roofing	430	SF	20.00	8,600	
Interior Construction					
Partitions		None			
GWB & Insl @ Exterior Wall		None			
Finishes - Paint Walls & Ceilings	1630	SF	5.00	8,150	
Millwork		None			
Specialties	430	SF	8.00	3,440	
Plumbing					
Hose Bibbs	2	Ea	1,000	2,000	
Sink	1	Ea	2,500	2,500	
Drains	2	Ea	1,000	2,000	
Roof Drainage	430	SF	12.00	5,160	
Rough In for Water Systems	1	LS		10,000	
Mechanical System - Exhaust Only	430	SF	20.00	8,600	
Fire Sprinkler System		None			
Electrical					
Power					
Panelboard	1	Ea	3,600	3,600	
Equipment Power	12	Ea	1,500	18,000	
User Power	8	Ea	600.00	4,800	
Lighting	8	Ea	900.00	7,200	
Telephone/Data	4	Ea	1,000	4,000	
Fire Alarm	430	SF	10.00	4,300	
Security	430	SF	10.00	4,300	
Subtotal Koi Pond Water Systems Building					$276,050

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 1 Sitework		
1.0 Demolition and Earthwork		$133,060
2.0 Mechanical Systems		140,600
3.0 Electrical Systems		59,800
4.0 Paving		18,750
5.0 Landscape & Irrigation		293,430
6.0 Other Sitework		1,029,500
Subtotal		**$1,675,140**
General Conditions	10.0%	167,514
Bonds & Insurance	2.0%	36,853
Contractor's Fee	4.5%	84,578
Subtotal		**$1,964,085**
Design Contingency	15.0%	294,613
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$2,258,698**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 1 Sitework	Quantity		Unit Price	Extension	Subtotal
1.0 Demolition & Earthwork					
Demolition					
General Site Clearing	14560	SF	1.00	$14,560	
Remove Existing Pond	5500	SF	7.00	38,500	
Remove Misc Structures & Obstacles	1	LS		15,000	
Tree & Landscape Removal		Included in General Clearing Above			
Tree Protection		Included in Div 5.0			
Erosion Control - Allow		Allow		7,500	
Barricades & Fencing for Staging & Access		Allow		5,000	
Miscellaneous	1	LS		5,000	
Earthwork					
Cut, Fill, and Recontouring - Allow	1000	CY	30.00	30,000	
Premium to Offhaul	500	CY	25.00	12,500	
Create Pads for Buildings/Structures	1	LS		5,000	
Subtotal 1.0 Demolition & Earthwork					$133,060
2.0 Mechanical Systems					
Sewer System					
Pump-Sewage Ejector		None			
Pipe-Sewer					
Remove Existing		None			
New Piping	200	LF	50.00	10,000	
Relocations		None			
Connection to Existing Sewer	1	LS		2,500	
Manholes	1	Ea	3,000	3,000	
Cleanout-Grade	2	Ea	750.00	1,500	
Potholing	1	LS		2,500	
Barricades & Protection	1	LS		5,000	
Misc. Valves & Accessories	1	LS		5,000	
Test & Clean	1	LS		5,000	
Grey Water System		None			
Storm Drainage System					
Pipe-Storm					
Remove Existing		None			
New Piping	300	LF	50.00	15,000	
Relocations		None			
Storm Inlet	4	Ea	2,000	8,000	
Manhole	1	Ea	3,000	3,000	

2.0 Mechanical Systems (Continued)					
Catchbasin	4	Ea	900.00	3,600	
Cleanout-Grade	2	Ea	1,000	2,000	
Bio Retention System Connections	1	LS		15,000	
Connect to Exist Storm System	1	LS		10,000	
Barricades/Protect Utilities	1	LS		2,000	
Potholing	1	LS		2,000	
Misc Accessories	1	LS		2,000	
Test & Clean	1	LS		2,000	
Domestic & Fire Water					
Remove Existing		None			
New Piping	300	LF	50.00	15,000	
Relocations		None			
Water Meters	2	Ea	2,500	5,000	
RPBFP	1	Ea	2,500	2,500	
Fire Hydrants		None			
Misc. Valves & Accessories	1	LS		2,500	
Fire Dept Connections		None			
Misc Manholes & Structures	1	LS		1,500	
Premium for Crossovers/Temporary	1	LS		2,500	
Barricades/Protect Utilities	1	LS		2,000	
Potholing	1	LS		1,500	
Misc Accessories	1	LS		1,500	
Test & Clean	1	LS		1,500	
Irrigation Connections					
Pipe - Irrigation Mains	100	LF	35.00	3,500	
Misc. Rough-Ins	1	LS		2,500	
Subtotal 2.0 Mechanical Systems					$140,600
3.0 Electrical Systems					
Power					
Demolition & Safe off	1	LS		$3,500	
New Switchgear & Transformers		None			
New Feeders to Existing POC	300	LF	75.00	22,500	
Relocations		None			
Grounding	1	LS		5,000	
Maintenance Outlets and Handholes Onsite	2	Ea	1,000	2,000	
Low Voltage					
New Feeders to Existing POC	300	LF	40.00	12,000	
Relocations		None			
Security Devices on Site		None			
Manholes and Handholes	2	Ea	2,400	4,800	
Testing & Inspection	1	LS		5,000	
Misc. Connections & Coordination	1	LS		5,000	
Subtotal 3.0 Electrical Systems					$59,800

4.0 Paving					
AC Paving		None			
Concrete		None			
Crushed Gravel Paving	2500	SF	7.50	18,750	
Curb & Gutter		None			
Subtotal 4.0 Paving					$18,750
5.0 Landscape & Irrigation					
Tree Protection at Existing		Allow		$12,000	
New Trees	20	Ea	1,500	30,000	
Planting					
Edge Planting	8000	SF	16.00	128,000	
Bio Retention	1000	SF	15.00	15,000	
Remaining	4110	SF	8.00	32,880	
Soil Preparation	13110	SF	1.50	19,665	
Irrigation	13110	SF	3.50	45,885	
Allow for Repairs to Edges / Adjacent Areas	1	LS		10,000	
Subtotal 5.0 Landscape & Irrigation					$293,430
6.0 Other Sitework					
Lighting	1	LS		$35,000	
Trench Drain		None			
Fencing					
Decorative		None			
Chain Link		None			
Gates					
Pedestrian		None			
Vehicle		None			
New Pond					
Concrete Slab	5500	SF	40.00	220,000	
Concrete Walls	2000	SF	50.00	100,000	
Shotcrete Shell	5700	SF	35.00	199,500	
Rockwork Edges & Waterfall	3000	SF	70.00	210,000	
Skimmers, Weirs & Misc	1	LS		50,000	
Stairs		None			
Retaining Walls & Foundations	2000	SF	70.00	140,000	
Railings		None			
Shade Structures		None			
Trash Receptacles		Included in FF&E			
Bicycle Racks		None			
Interpretive Including Signage & Wayfinding	1	LS		75,000	
Subtotal 6.0 Other Sitework					$1,029,500

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 2 Buildings & Structures Summary

Renovate Existing Upper House		$292,025
Renovate Existing Zen House		275,320
Renovate Tea Waiting Pavilion		75,000
Renovate Wisteria Upper Pavilion		75,000
Cultural Exchange Center (CEC)		1,362,760
Allow for Interpretive		150,000
Subtotal		**$2,230,105**
General Conditions	10.0%	223,011
Bonds & Insurance	2.0%	49,062
Contractor's Fee	4.5%	112,598
Subtotal		**$2,614,776**
Design Contingency	15.0%	392,216
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$3,006,992**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 2 Buildings & Structures

Existing Upper House					
Demolition	625	SF	30.00	$18,750	
Shoring	120	LF	200.00	24,000	
Foundations		Existing to Remain			
Slab on Grade - Refinish/Reseal Existing	625	SF	10.00	6,250	
Walls - Replace Exist Struct as Required	300	SF	50.00	15,000	
Remove & Reset Existing Siding & Patch	1500	SF	35.00	52,500	
Roof Structure - Replace Exist Struct as Required	625	SF	40.00	25,000	
Roofing - Remove & Reset	625	SF	35.00	21,875	
Painting / Sealing	625	SF	10.00	6,250	
Finishes	625	SF	25.00	15,625	
Millwork		Allow		25,000	
Specialties	430	SF	10.00	4,300	
Plumbing	625	SF	25.00	15,625	
Mechanical	625	SF	30.00	18,750	
Fire Sprinkler System		None			
Electrical					
Power					
Panelboard	1	Ea	3,600	3,600	
Equipment Power	6	Ea	1,000	6,000	
User Power	10	Ea	500.00	5,000	
Lighting	10	Ea	800.00	8,000	
Telephone/Data	8	Ea	1,000	8,000	
Audio Visual Rough In		None			
Fire Alarm	625	SF	10.00	6,250	
Security	625	SF	10.00	6,250	
Subtotal Existing Upper House					$292,025

Existing Zen House					
Demolition	865	SF	10.00	$8,650	
Shoring	130	LF	200.00	26,000	
Foundations		Existing to Remain			
Slab on Grade - Refinish/Reseal Existing	865	SF	6.00	5,190	
Walls - Replace Exist Struct as Required	200	SF	50.00	10,000	
Remove & Reset Existing Siding & Patch	800	SF	35.00	28,000	
Roof Structure - Replace Exist Struct as Required	865	SF	30.00	25,950	
Roofing - Remove & Reset	865	SF	25.00	21,625	
Painting / Sealing	865	SF	6.00	5,190	
Finishes	865	SF	25.00	21,625	
Kitchen Allowance	1	LS		25,000	
Plumbing	865	SF	20.00	17,300	
Mechanical	865	SF	30.00	25,950	
Fire Sprinkler System		None			

Existing Zen House (Continued)					
Electrical					
Power					
Panelboard	1	Ea	3,600	3,600	
Equipment Power	6	Ea	1,500	9,000	
User Power	16	Ea	600.00	9,600	
Lighting	12	Ea	900.00	10,800	
Telephone/Data	8	Ea	1,000	8,000	
Audio Visual Rough In		None			
Fire Alarm	865	SF	8.00	6,920	
Security	865	SF	8.00	6,920	
Subtotal Existing Zen House					$275,320

Cultural Exchange Center					
Foundations		No New Work			
Slab on Grade - Cut & Patch As Required	3200	SF	7.00	22,400	
Seismic Upgrade / Structural Alterations		Allow		75,000	
Repairs to Existing Deck	2350	SF	20.00	47,000	
Exterior Walls Patch as Required	4500	SF	25.00	112,500	
Windows		Included in Walls Above			
Doors - Replace Hardware	8	Lvs	1,500	12,000	
Roofing	4000	SF	35.00	140,000	
Interior Construction Renovation	5340	SF	40.00	213,600	
Stairs & Elevator	1	LS		250,000	
Plumbing	5340	SF	8.00	42,720	
Mechanical	5340	SF	25.00	133,500	
Fire Sprinkler System	5340	SF	7.00	37,380	
Electrical					
Power					
Switchboard	1	Ea	20,000	20,000	
Distribution Panels	2	Ea	9,000	18,000	
Panelboard	4	Ea	3,600	14,400	
Equipment Power	12	Ea	1,000	12,000	
User Power	60	Ea	500.00	30,000	
Lighting	75	Ea	900.00	67,500	
Telephone/Data	40	Ea	1,000	40,000	
Audio Visual Rough In	5340	SF	4.00	21,360	
Fire Alarm	5340	SF	5.00	26,700	
Security	5340	SF	5.00	26,700	
Subtotal Cultural Exchange Center					$1,362,760

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 2 Sitework		
1.0 Demolition and Earthwork		$27,500
2.0 Mechanical Systems		186,550
3.0 Electrical Systems		156,300
4.0 Paving		25,000
5.0 Landscape & Irrigation		40,000
6.0 Other Sitework		115,000
Subtotal		**$550,350**
General Conditions	10.0%	55,035
Bonds & Insurance	2.0%	12,108
Contractor's Fee	4.5%	27,787
Subtotal		**$645,280**
Design Contingency	15.0%	96,792
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$742,072**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 2 Sitework	Quantity		Unit Price	Extension	Subtotal
1.0 Demolition & Earthwork					
Demolition					
General Site Clearing	1500	SF	5.00	$7,500	
Barricades & Fencing for Staging & Access		Allow		5,000	
Miscellaneous	1	LS		5,000	
Earthwork		Allow		10,000	
Subtotal 1.0 Demolition & Earthwork					$27,500
2.0 Mechanical Systems					
Sewer System					
Pump-Sewage Ejector		None			
Pipe-Sewer					
Remove Existing		None			
New Piping	300	LF	50.00	15,000	
Relocations		None			
Connection to Existing Sewer	1	LS		2,500	
Manholes	1	Ea	3,000	3,000	
Cleanout-Grade	3	Ea	750.00	2,250	
Potholing	1	LS		2,500	
Barricades & Protection	1	LS		5,000	
Misc. Valves & Accessories	1	LS		5,000	
Test & Clean	1	LS		5,000	
Grey Water System		None			
Storm Drainage System					
Pipe-Storm					
Remove Existing		None			
New Piping	250	LF	50.00	12,500	
Relocations		None			
Storm Inlet	4	Ea	2,000	8,000	
Manhole	1	Ea	3,000	3,000	
Catchbasin	4	Ea	900.00	3,600	
Cleanout-Grade	2	Ea	1,000	2,000	
Bio Retention System		Allow		50,000	
Connect to Exist Storm System	1	LS		10,000	
Barricades/Protect Utilities	1	LS		2,000	
Potholing	1	LS		2,000	
Misc Accessories	1	LS		2,000	
Test & Clean	1	LS		2,000	

2.0 Mechanical Systems (Continued)					
Domestic & Fire Water					
Remove Existing		None			
New Piping	350	LF	50.00	17,500	
Relocations		None			
Water Meters	2	Ea	2,500	5,000	
RPBFP	1	Ea	2,500	2,500	
Fire Hydrants	1	Ea	2,800	2,800	
Misc. Valves & Accessories	1	LS		2,500	
Fire Dept Connections	1	Ea	2,400	2,400	
Misc Manholes & Structures	1	LS		1,500	
Premium for Crossovers/Temporary	1	LS		2,500	
Barricades/Protect Utilities	1	LS		2,000	
Potholing	1	LS		1,500	
Misc Accessories	1	LS		1,500	
Test & Clean	1	LS		1,500	
Irrigation Connections					
Pipe - Irrigation Mains	100	LF	35.00	3,500	
Misc. Rough-Ins	1	LS		2,500	
Subtotal 2.0 Mechanical Systems					$186,550
3.0 Electrical Systems					
Power					
Demolition & Safe off	1	LS		$3,500	
New Switchgear	1	LS		25,000	
Transformers	1	Ea	15,000	15,000	
New Feeders	650	LF	100.00	65,000	
Relocations		None			
Grounding	1	LS		5,000	
Maintenance Outlets and Handholes Onsite	2	Ea	1,000	2,000	
Low Voltage					
New Feeders	650	LF	40.00	26,000	
Relocations		None			
Security Devices on Site		None			
Manholes and Handholes	2	Ea	2,400	4,800	
Testing & Inspection	1	LS		5,000	
Misc. Connections & Coordination	1	LS		5,000	
Subtotal 3.0 Electrical Systems					$156,300
4.0 Paving					
Patch As Required	1	LS		$25,000	
Subtotal 4.0 Paving					$25,000

5.0 Landscape & Irrigation					
Patch As Required Incl Bioswale Area	1	LS		$40,000	
Subtotal 5.0 Landscape & Irrigation					$40,000
6.0 Other Sitework					
Lighting	1	LS		$15,000	
Trench Drain		None			
Fencing					
Decorative Wood @ Upper Court	100	LF	250.00	25,000	
Chain Link		None			
Gates					
Pedestrian		None			
Vehicle		None			
Stairs		None			
Retaining Walls & Foundations		None			
Railings		None			
Shade Structures		None			
Trash Receptacles		Included in FF&E			
Bicycle Racks		None			
Interpretive Including Signage & Wayfinding	1	LS		75,000	
Subtotal 6.0 Other Sitework					$115,000

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 3 Buildings & Structures Summary

Renovate Existing Caretaker's House for Administration		$324,150
Renovate Mon Gate - Allow		50,000
New Gate at Forecourt Entry		125,000
Tea Room		448,200
Retail & Restroom Building		1,057,120
Renovate Existing Pumphouse for Interpretive Node		83,760
Renovate Existing Restrooms		144,215
Subtotal		**$2,232,445**
General Conditions	10.0%	223,245
Bonds & Insurance	2.0%	49,114
Contractor's Fee	4.5%	112,716
Subtotal		**$2,617,519**
Design Contingency	15.0%	392,628
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$3,010,147**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 3 Buildings & Structures

Renovate Existing Caretaker's House for Administration					
Demolition	120	SF	20.00	$2,400	
Shoring	165	LF	150.00	24,750	
Foundations		Existing to Remain			
Slab on Grade - Refinish/Reseal Existing	1120	SF	10.00	11,200	
Walls - Replace Exist Struct as Required	500	SF	50.00	25,000	
Remove & Reset Existing Siding & Patch	2000	SF	35.00	70,000	
Roof Structure - Replace Exist Struct as Required	1200	SF	40.00	48,000	
Roofing - Remove & Reset	1200	SF	35.00	42,000	
Painting		None			
Plumbing	1120	SF	20.00	22,400	
Mechanical	1120	SF	30.00	33,600	
Fire Sprinkler System		None			
Electrical	1120	SF	40.00	44,800	
Subtotal Existing Caretaker's House					$324,150

Tea Room				
Foundations	28	CY	600.00	$16,800
Slab on Grade	825	SF	15.00	12,375
Roof Structure	1000	SF	50.00	50,000
Exterior Walls				
Framing & Finish	1400	SF	70.00	98,000
Windows	400	SF	125.00	50,000
Doors	6	Lvs	2,500	15,000
Roofing	1000	SF	35.00	35,000
Interior Construction				
Partitions	800	SF	18.00	14,400
Finishes	825	SF	40.00	33,000
Interior Doors	3	Lvs	2,500	7,500
Millwork		Allow		25,000
Specialties	825	SF	10.00	8,250
Kitchen		None		
Plumbing	825	SF	20.00	16,500
Mechanical	825	SF	35.00	28,875
Fire Sprinkler System		None		
Electrical				
Power				
Switchboard		Included in Cultural Exchange Center		
Distribution Panels		None		
Panelboard	1	Ea	3,600	3,600
Equipment Power	6	Ea	1,000	6,000
User Power	10	Ea	500.00	5,000

Tea Room Continued)					
Lighting	10	Ea	900.00	9,000	
Telephone/Data	4	Ea	1,000	4,000	
Fire Alarm	825	SF	6.00	4,950	
Security	825	SF	6.00	4,950	
Subtotal Tea Room					$448,200

Retail & Restroom Building					
Foundations	38	CY	600.00	$22,800	
Slab on Grade	1810	SF	15.00	27,150	
Roof Structure	2200	SF	50.00	110,000	
Exterior Walls					
Framing & Finish	2000	SF	70.00	140,000	
Windows	400	SF	125.00	50,000	
Doors	8	Lvs	2,500	20,000	
Roofing	2200	SF	35.00	77,000	
Interior Construction					
Partitions	1400	SF	18.00	25,200	
Finishes	1810	SF	40.00	72,400	
Interior Doors	10	Lvs	2,500	25,000	
Millwork		Allow		40,000	
Specialties	1810	SF	10.00	18,100	
Retail Buildout	1245	SF	150.00	186,750	
Plumbing	1810	SF	25.00	45,250	
Mechanical	1810	SF	40.00	72,400	
Fire Sprinkler System		None			
Electrical					
Power					
Switchboard		Included in Cultural Exchange Center			
Distribution Panels		None			
Panelboard	2	Ea	3,600	7,200	
Equipment Power	8	Ea	1,000	8,000	
User Power	35	Ea	500.00	17,500	
Lighting	35	Ea	900.00	31,500	
Telephone/Data	12	Ea	1,000	12,000	
Audio Visual Rough In	1810	SF	6.00	10,860	
Fire Alarm	1810	SF	6.00	10,860	
Security	1810	SF	15.00	27,150	
Subtotal Retail & Restroom Building					$1,057,120

Renovate Existing Pumphouse for Interpretive Node					
Demolition	145	SF	100.00	$14,500	
Shoring	50	LF	200.00	10,000	
Foundations		Existing to Remain			
Slab on Grade - New	145	SF	25.00	3,625	
Walls - Replace Exist Struct as Required	144	SF	50.00	7,200	
Remove & Reset Existing Siding & Patch	576	SF	35.00	20,160	
Roof Structure - Replace Exist Struct as Required	145	SF	40.00	5,800	
Roofing - Remove & Reset	145	SF	35.00	5,075	
Painting / Sealing	145	SF	20.00	2,900	

Existing Pumphouse (Continued))					
Plumbing - Hose Bibbs & Roof Drainage	145	SF	50.00	7,250	
Mechanical		None			
Fire Sprinkler System		None			
Electrical	145	SF	50.00	7,250	
Subtotal Existing Pumphouse					$83,760

Renovate Existing Restrooms					
Foundations		None			
Slab on Grade - Cut & Patch as Required	275	SF	10.00	2,750	
Roof Structure	400	SF	50.00	20,000	
Exterior Walls -Patch & Repair as Required	950	SF	35.00	33,250	
Doors - Replace Hardware	3	Lvs	1,500	4,500	
Roofing	400	SF	35.00	14,000	
Interior Construction					
Partitions	180	SF	18.00	3,240	
Finishes - Patch & Paint	275	SF	40.00	11,000	
Interior Doors		None			
Millwork		Allow		3,500	
Specialties	275	SF	15.00	4,125	
Kitchen		None			
Plumbing	275	SF	70.00	19,250	
Mechanical	275	SF	50.00	13,750	
Fire Sprinkler System		None			
Electrical					
Power					
Switchboard		Included in Cultural Exchange Center			
Distribution Panels		None			
Panelboard		None			
Equipment Power	2	Ea	1,000	2,000	
User Power	4	Ea	500.00	2,000	
Lighting	9	Ea	900.00	8,100	
Telephone/Data		None			
Fire Alarm	275	SF	10.00	2,750	
Security		None			
Subtotal Existing Restrooms					$144,215

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 3 Sitework

1.0 Demolition and Earthwork		$251,970
2.0 Mechanical Systems		344,100
3.0 Electrical Systems		240,050
4.0 Paving		455,075
5.0 Landscape & Irrigation		383,365
6.0 Other Sitework		1,257,000
Subtotal		**$2,931,560**
General Conditions	10.0%	293,156
Bonds & Insurance	2.0%	64,494
Contractor's Fee	4.5%	148,014
Subtotal		**$3,437,225**
Design Contingency	15.0%	515,584
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$3,952,809**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 3 Sitework	Quantity		Unit Price	Extension	Subtotal
1.0 Demolition & Earthwork					
Demolition					
General Site Clearing	36860	SF	2.00	$73,720	
Remove Misc Structures & Obstacles	1	LS		35,000	
Tree & Landscape Removal		Included in General Clearing Above			
Tree Protection		Included in Div 5.0			
Erosion Control - Allow		Allow		15,000	
Barricades & Fencing for Staging & Access		Allow		10,000	
Miscellaneous	1	LS		10,000	
Earthwork					
Cut, Fill, and Recontouring - Allow	2200	CY	35.00	77,000	
Premium to Export	850	CY	25.00	21,250	
Create Pads for Buildings/Structures	1	LS		10,000	
Subtotal 1.0 Demolition & Earthwork					$251,970
2.0 Mechanical Systems					
Sewer System					
Pump-Sewage Ejector		None			
Pipe-Sewer					
Remove Existing		None			
New Piping	600	LF	50.00	30,000	
Relocations		None			
Connection to Existing Sewer	1	LS		2,500	
Manholes	1	Ea	3,000	3,000	
Cleanout-Grade	8	Ea	750.00	6,000	
Potholing	1	LS		2,500	
Barricades & Protection	1	LS		5,000	
Misc. Valves & Accessories	1	LS		5,000	
Test & Clean	1	LS		5,000	
Grey Water System		None			
Storm Drainage System					
Pipe-Storm					
Remove Existing		None			
New Piping	1100	LF	50.00	55,000	
Relocations		None			
Storm Inlet	6	Ea	2,000	12,000	
Manhole	2	Ea	3,000	6,000	
Catchbasin	6	Ea	900.00	5,400	

2.0 Mechanical Systems (Continued)					
Cleanout-Grade	4	Ea	1,000	4,000	
Bio Retention System	1	LS		55,000	
Connect to Exist Storm System	1	LS		15,000	
Barricades/Protect Utilities	1	LS		4,000	
Potholing	1	LS		4,000	
Misc Accessories	1	LS		4,000	
Test & Clean	1	LS		4,000	
Domestic & Fire Water					
Remove Existing		None			
New Piping	950	LF	50.00	47,500	
Relocations		None			
Water Meters	4	Ea	2,500	10,000	
RPBFP	5	Ea	2,500	12,500	
Fire Hydrants	1	Ea	2,800	2,800	
Misc. Valves & Accessories	1	LS		5,000	
Fire Dept Connections	1	Ea	2,400	2,400	
Misc Manholes & Structures	1	LS		3,000	
Premium for Crossovers/Temporary	1	LS		5,000	
Barricades/Protect Utilities	1	LS		4,000	
Potholing	1	LS		3,000	
Misc Accessories	1	LS		3,000	
Test & Clean	1	LS		3,000	
Irrigation Connections					
Pipe - Irrigation Mains	300	LF	35.00	10,500	
Misc. Rough-Ins	1	LS		5,000	
Subtotal 2.0 Mechanical Systems					$344,100
3.0 Electrical Systems					
Power					
Demolition & Safe off	1	LS		$7,000	
New Switchgear & Transformers	1	LS		75,000	
New Feeders	1150	LF	75.00	86,250	
Relocations		None			
Grounding	1	LS		5,000	
Maintenance Outlets and Handholes Onsite	2	Ea	1,000	2,000	
Low Voltage					
New Feeders	1000	LF	40.00	40,000	
Relocations		None			
Security Devices on Site		None			
Manholes and Handholes	2	Ea	2,400	4,800	
Testing & Inspection	1	LS		10,000	
Misc. Connections & Coordination	1	LS		10,000	
Subtotal 3.0 Electrical Systems					$240,050

4.0 Paving					
AC Paving		None			
Concrete	1400	SF	16.00	22,400	
Stone over Concrete	9115	SF	45.00	410,175	
Crushed Gravel Paving	3000	SF	7.50	22,500	
Gravel		None			
Curb & Gutter		None			
Subtotal 4.0 Paving					$455,075
5.0 Landscape & Irrigation					
Tree Protection at Existing		Allow		$22,000	
New Trees	30	Ea	1,500	45,000	
Planting					
Existing Planting to Remain	2855	SF	2.00	5,710	
Bonsai Garden	1000	SF	25.00	25,000	
Bio Retention	5000	SF	15.00	75,000	
Remaining	11170	SF	9.00	100,530	
Soil Preparation	20025	SF	1.50	30,038	
Irrigation	20025	SF	3.50	70,088	
Allow for Repairs to Edges / Adjacent Areas	1	LS		10,000	
Subtotal 5.0 Landscape & Irrigation					$383,365
6.0 Other Sitework					
Lighting	1	LS		$100,000	
Trench Drain		None			
Fencing					
Decorative Wood	720	LF	250.00	180,000	
Chain Link		None			
Gates					
Pedestrian					
Single	2	Ea	6,500	13,000	
Double	3	Pr	12,000	36,000	
Double	1	Pr	30,000	30,000	
Vehicle		None			
Stairs - Stone	2	Flt	50,000	100,000	
Stairs - Stone	2	Flt	17,500	35,000	
Retaining Walls & Foundations w/ Stone	5100	SF	100.00	510,000	
Railings	180	LF	225.00	40,500	
Roof Between Retail & Tea Room	500	SF	125.00	62,500	
Trash Receptacles		Included in FF&E			
Bicycle Racks		None			
Interpretive Including Signage & Wayfinding	1	LS		150,000	
Subtotal 6.0 Other Sitework					$1,257,000

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 4 Buildings & Structures Summary

Renovate Existing Barn for Garden Storage		$174,675
Renovate Existing Retail Building for Garden Storage		204,750
Renovate Existing Pine Moon (Shogetsu-en)		25,000
New Shogetsu Machai at Existing Pine Moon		100,000
Renovate Existing Tea Waiting Pavilion (Azumaga)		100,000
Renovate Existing Upper Pavilion		100,000
Renovate Existing Wisteria Arbor		100,000
New Garden Operations Building		1,043,021
Subtotal		**$1,847,446**
General Conditions	10.0%	184,745
Bonds & Insurance	2.0%	40,644
Contractor's Fee	4.5%	93,278
Subtotal		**$2,166,112**
Design Contingency	15.0%	324,917
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$2,491,029**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 4 Buildings & Structures

Renovate Existing Barn for Garden Storage					
Demolition	415	SF	80.00	$33,200	
Shoring	80	LF	200.00	16,000	
Foundations		Existing to Remain			
Slab on Grade - Refinish/Reseal Existing	415	SF	10.00	4,150	
Walls - Replace Exist Struct as Required	300	SF	50.00	15,000	
Remove & Reset Existing Siding & Patch	1200	SF	35.00	42,000	
Roof Structure - Replace Exist Struct as Required	415	SF	40.00	16,600	
Roofing - Remove & Reset	415	SF	35.00	14,525	
Painting		None			
Plumbing - Hose Bibbs & Roof Drainage	415	SF	50.00	20,750	
Mechanical		None			
Fire Sprinkler System		None			
Electrical	415	SF	30.00	12,450	
Subtotal Existing Barn					$174,675

Renovate Existing Retail Building for Garden Storage					
Demolition	450	SF	80.00	$36,000	
Shoring	100	LF	200.00	20,000	
Foundations		Existing to Remain			
Slab on Grade - Refinish/Reseal Existing	450	SF	10.00	4,500	
Walls - Replace Exist Struct as Required	440	SF	50.00	22,000	
Remove & Reset Existing Siding & Patch	1500	SF	35.00	52,500	
Roof Structure - Replace Exist Struct as Required	450	SF	40.00	18,000	
Roofing - Remove & Reset	450	SF	35.00	15,750	
Painting		None			
Plumbing - Hose Bibbs & Roof Drainage	450	SF	50.00	22,500	
Mechanical		None			
Fire Sprinkler System		None			
Electrical	450	SF	30.00	13,500	
Subtotal Existing Retail Building					$204,750

Garden Operations Building				
Foundations	50	CY	600.00	$30,000
Slab on Grade	1163	SF	15.00	17,445
Retaining Walls	1500	SF	50.00	75,000
Second Floor Framing	1163	SF	40.00	46,520
Roof Structure	1500	SF	40.00	60,000
Exterior Walls				
Framing & Finish	2500	SF	60.00	150,000
Windows	600	SF	115.00	69,000
Doors	8	Lvs	2,500	20,000
Doors - Overhead	1	Ea	15,000	15,000

Garden Operations Building (Continued)					
Roofing	1500	SF	20.00	30,000	
Interior Construction					
Partitions	2000	SF	18.00	36,000	
Finishes	2326	SF	30.00	69,780	
Interior Doors	8	Lvs	2,500	20,000	
Millwork		Allow		25,000	
Specialties	2450	SF	10.00	24,500	
Stairs (No Elevator)	1	LS		50,000	
Plumbing	2326	SF	17.00	39,542	
Mechanical	2326	SF	35.00	81,410	
Fire Sprinkler System	2326	SF	8.00	18,608	
Electrical					
Power					
Switchboard	1	Ea	20,000	20,000	
Distribution Panels	2	Ea	9,000	18,000	
Panelboard	5	Ea	3,600	18,000	
Equipment Power	20	Ea	1,000	20,000	
User Power	30	Ea	500.00	15,000	
Lighting	30	Ea	900.00	27,000	
Telephone/Data	10	Ea	1,000	10,000	
Audio Visual Rough In	2326	SF	4.00	9,304	
Fire Alarm	2326	SF	6.00	13,956	
Security	2326	SF	6.00	13,956	
Subtotal Garden Operations Building					$1,043,021

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 4 Sitework

1.0 Demolition and Earthwork		$294,400
2.0 Mechanical Systems		280,550
3.0 Electrical Systems		59,800
4.0 Paving		498,500
5.0 Landscape & Irrigation		214,800
6.0 Other Sitework		936,250
Subtotal		**$2,284,300**
General Conditions	10.0%	228,430
Bonds & Insurance	2.0%	50,255
Contractor's Fee	4.5%	115,334
Subtotal		**$2,678,319**
Design Contingency	15.0%	401,748
Escalation to Construction Start	0.0%	0
Total Construction Cost		**$3,080,067**

Hakone Estate and Gardens
Preliminary Budget Estimate

Phase 4 Sitework	Quantity		Unit Price	Extension	Subtotal
1.0 Demolition & Earthwork					
Demolition					
General Site Clearing	47950	SF	2.00	$95,900	
Remove Misc Structures & Obstacles	1	LS		25,000	
Tree & Landscape Removal		Included in General Clearing Above			
Tree Protection		Included in Div 5.0			
Erosion Control - Allow		Allow		7,500	
Barricades & Fencing for Staging & Access		Allow		5,000	
Miscellaneous	1	LS		5,000	
Earthwork					
Cut, Fill, and Recontouring - Allow	3600	CY	35.00	126,000	
Premium to Export	1000	CY	25.00	25,000	
Create Pads for Buildings/Structures	1	LS		5,000	
Subtotal 1.0 Demolition & Earthwork					$294,400
2.0 Mechanical Systems					
Sewer System					
Pump-Sewage Ejector		None			
Pipe-Sewer					
Remove Existing		None			
New Piping	250	LF	50.00	12,500	
Relocations		None			
Connection to Existing Sewer	1	LS		2,500	
Manholes	2	Ea	3,000	6,000	
Cleanout-Grade	1	Ea	750.00	750	
Potholing	1	LS		2,500	
Barricades & Protection	1	LS		5,000	
Misc. Valves & Accessories	1	LS		5,000	
Test & Clean	1	LS		5,000	
Grey Water System		None			
Storm Drainage System					
Pipe-Storm					
Remove Existing		None			
New Piping	500	LF	50.00	25,000	
Relocations		None			
Storm Inlet	4	Ea	2,000	8,000	
Manhole	1	Ea	3,000	3,000	
Catchbasin	4	Ea	900.00	3,600	
Cleanout-Grade	2	Ea	1,000	2,000	

2.0 Mechanical Systems (Continued)					
Bio Retention System	1	LS		60,000	
Improvements to Stormwater Pond & Basins	1	LS		70,000	
Barricades/Protect Utilities	1	LS		2,000	
Potholing	1	LS		2,000	
Misc Accessories	1	LS		2,000	
Test & Clean	1	LS		2,000	
Domestic & Fire Water					
Remove Existing		None			
New Piping	600	LF	50.00	30,000	
Relocations		None			
Water Meters	2	Ea	2,500	5,000	
RPBFP	1	Ea	2,500	2,500	
Fire Hydrants	1	Ea	2,800	2,800	
Misc. Valves & Accessories	1	LS		2,500	
Fire Dept Connections	1	Ea	2,400	2,400	
Misc Manholes & Structures	1	LS		1,500	
Premium for Crossovers/Temporary	1	LS		2,500	
Barricades/Protect Utilities	1	LS		2,000	
Potholing	1	LS		1,500	
Misc Accessories	1	LS		1,500	
Test & Clean	1	LS		1,500	
Irrigation Connections					
Pipe - Irrigation Mains	100	LF	35.00	3,500	
Misc. Rough-Ins	1	LS		2,500	
Subtotal 2.0 Mechanical Systems					$280,550

3.0 Electrical Systems					
Power					
Demolition & Safe off	1	LS		$3,500	
New Switchgear & Transformers		None			
New Feeders to Existing POC	300	LF	75.00	22,500	
Relocations		None			
Grounding	1	LS		5,000	
Maintenance Outlets and Handholes Onsite	2	Ea	1,000	2,000	
Low Voltage					
New Feeders to Existing POC	300	LF	40.00	12,000	
Relocations		None			
Security Devices on Site		None			
Manholes and Handholes	2	Ea	2,400	4,800	
Testing & Inspection	1	LS		5,000	
Misc. Connections & Coordination	1	LS		5,000	
Subtotal 3.0 Electrical Systems					$59,800

4.0 Paving					
AC Paving - Permeable	34630	SF	12.50	$432,875	
Concrete - Permeable	300	SF	20.00	6,000	
AC Paving @ Material Yard	2550	SF	10.00	25,500	
Crushed Gravel Paving	1350	SF	7.50	10,125	
Curb & Gutter	1000	LF	24.00	24,000	
Subtotal 4.0 Paving					$498,500
5.0 Landscape & Irrigation					
Tree Protection at Existing		Allow		$12,000	
New Trees	30	Ea	1,500	45,000	
Planting					
Bio Retention	6740	SF	15.00	101,100	
Remaining	1000	SF	8.00	8,000	
Soil Preparation	7740	SF	1.50	11,610	
Irrigation	7740	SF	3.50	27,090	
Allow for Repairs to Edges / Adjacent Areas	1	LS		10,000	
Subtotal 5.0 Landscape & Irrigation					$214,800
6.0 Other Sitework					
Lighting	1	LS		$100,000	
Trench Drain		None			
Fencing					
Decorative Wood	200	LF	250.00	50,000	
Chain Link		None			
Gates					
Pedestrian	3	Ea	4,000	12,000	
Pedestrian	5	Pr	8,500	42,500	
Vehicle	3	Pr	18,000	54,000	
Stairs		None			
Retaining Walls & Foundations	3400	SF	70.00	238,000	
Allow for Shoring/Underpinning @ East Edge	1	LS		75,000	
Allow for Repairs to Path System	1	LS		75,000	
Allow for Repairs to Perimeter Fencing	1	LS		50,000	
Railings		None			
Soil Bins	535	SF	100.00	53,500	
Trellis @ Soil Bins	1150	SF	75.00	86,250	
Trash Receptacles		Included in FF&E			
Bicycle Racks		None			
Interpretive Including Signage & Wayfinding	1	LS		100,000	
Subtotal 6.0 Other Sitework					$936,250

APPENDIX 4

Facility Program

HISTORIC DISTRICT BUILDINGS

Improvements

Zen Garden House (Lower House) — **Add area**

General Improvements
** Treat dry rot & mold
** Renovate kitchen to meet building code
** Add high speed data link
** As needed - Repair exterior wall finish & paint/stain

Moon Viewing House (Upper House) — **Add area**

** Repair and upgrade foundations, structural system, at stairs & viewing balcony
** Treat dry rot & mold
** As needed - Repair exterior wall finish & paint/stain

Restrooms		**Net Area**	**Gross Area**
Women's		120	
Men's		120	
	includes circulation & walls		**155**

General Improvements
** Replace existing fixtures and accessories
** Repair existing cracks in ceiling, walls & slab
** Treat dry rot & mold
** As needed - Paint or stain exterior wall finishes

Interior Renovation & Change in Use

Cultural Exchange Center - Renovate For Events Space		**Net Area**	**Gross Area**
Upper Floor			
Event Space	Remove raised floor tatami space & tatami room - expand events space	2,533	
Green Room	Convert apartment spaces to expanded exhibit/event space	345	
Catering Space	Renovate existing kitchen and patio for catering space	512	
Restrooms	Renovate existing restrooms for (2) new restrooms	144	
Lower Floor			
Existing Office		220	
Existing Storage Space		520	
Existing Storage Space		492	
New Multi-Use Space	Expand lower floor spaces under viewing deck outward at north east corner	574	
New Support Spaces	Add elevator & elevator machine room at east side of the CEC deck	210	
	includes circulation & walls		5,340
Viewing Deck	West, north & east sides	2,357	

General Improvements
** Add new partition interior walls, finishes, electrical system & lighting
** As needed - Replace roofing / flashing to eliminate water intrusion
** Repair exterior deck to eliminate water leaks
** As needed - Paint or stain exterior wall finishes

Caretaker's Residence - Renovate For Administration Building	**Net Area**	**Gross Area**
Director's Office	110	
Staff Workspace (4)	200	
Workroom / Breakroom	160	
Files, Storage, Equipment	110	
Toilet	50	
Front/Rear Entry & Central Aisle	230	
includes circulation & walls		**1,120**

General Improvements
** Repair/Upgrade of building structural system
** Treat of infestations, dry rot & mold
** Add new interior partition walls, finishes, electrical system, lighting & AC with on-grade heat pump
** As needed - Replace exterior wood siding & flooring
** As needed - Replace roofing material
** As needed - Replace windows & doors

Pump House - Renovate for Interpretive Node	**Net Area**	**Gross Area**
Exhibit Room	145	
includes circulation & walls		**145**

General Improvements
** Treat of infestations, dry rot & mold
** Add electrical system & lighting
** As needed - Repair structural system
** As needed - Replace exterior wood siding & flooring
** As needed - Replace roofing material
** As needed - Paint or stain exterior wall finishes

Barn - Renovate For Garden Storage	**Net Area**	**Gross Area**
Garden Storage	415	
includes circulation & walls		**415**

General Improvements
** Treat of infestations, dry rot & mold
** Add electrical system & lighting
** As needed - Repair structural system
** As needed - Replace exterior wood siding & flooring
** As needed - Replace roofing material
** As needed - Paint or stain exterior wall finishes

Gift Shop - Retail Storage / Garden Storage	**Net Area**	**Gross Area**
Garden Storage	225	
Garden Storage	225	
includes circulation & walls		**450**

General Improvements
** Treat of infestations, dry rot & mold
** Replace existing sliding doors with solid secured doors
** Add electrical system & lighting
** As needed - Repair structural system
** As needed - Replace exterior wood siding & flooring
** As needed - Replace roofing material
** As needed - Paint or stain exterior wall finishes

HISTORIC DISTRICT STRUCTURES

Improvements

Repair/Upgrade/Replace structural system
Treatment of infestations, dry rot & mold
Replacement of exterior wood siding & flooring as needed
Replacment of roofing material as needed
Aesthetic Improvements

	Gross Area
Wisteria Arbor	
** Rebuild entire pavilion	**284**
Tea Waiting Pavilion (Azumaya)	**300**
** Renovate structure, walls, flooring & aesthetic improvements	
Wisteria Upper Pavilion	**394**
** Renovate structure, walls, flooring & aesthetic improvements	
Shogetsu	**95**
** Renovate structure, walls, flooring & aesthetic improvements	
Mon Gate	**Add**
** As needed - Replace wood elements	
Service Gate	Add
Rebuild gate using existing elements	

NEW BUILDINGS

Gift Shop		**Net Area**	**Gross Area**
Ticketing Space		80	
Cashwrap		80	
Sales Floor		840	
	includes circulation & walls		**1,245**

Restrooms		**Net Area**	**Gross Area**
Women's	2 toilets, 2 lavatories	160	
Men's	1 toilets, 1 urinal, 2 lavatories	160	
Mech / Elect Room		100	
	includes circulation & walls		**565**

Tea Room		**Net Area**	**Gross Area**
Entry & Seating		460	
Patron Ordering Space		110	
Storage & Janitor Closet		100	
	includes circulation & walls		**825**

Koi Water Treatment		**Net Area**	**Gross Area**
Water Process Room		240	
Tokonoma Alcove		150	
	includes circulation & walls		**430**

Garden Operations

Upper Floor		**Net Area**	**Gross Area**
Gardener's Desk Space		320	
Files Room		125	
Special Tool Storage		145	
Support Room		90	
Interior Stairs		175	
Lower Floor			
Work Shop		270	
Tool Storage		270	
Lumber Storage		270	
Interior Stairs		175	
	includes circulation & walls		**2,325**

NEW STRUCTURES

Garden Material Storage	**Net Area**	**Gross Area**
Woody Debris	120	
Compost	120	
Top-soil	80	
Mulch	80	
Gravel/Crushed Stone	80	
		480

New Gate to Mon Forecourt

Gate	128

NEW BUILDING ALTERNATE TO RENOVATING THE CEC FOR EVENT SPACES

Event Hall	**Net Area**	**Gross Area**
Upper Floor		
Entry Foyer	320	
Events Hall	2200	
Elevator	100	
Storage	200	
Lower Floor		
Lower Foyer	180	
Green Room	200	
Women's	250	
Men's	250	
Catering Kitchen	200	
Set-up Storage	240	
Events Storage	180	
Elevator	100	
Elevator Machine Room	120	
Mech/Elect Room	540	
		5,080

APPENDIX 5

Existing Structures Capital Improvements Projects– Small Projects

Capital Improvements – Small Projects

Hakone Azumaya – Restore covered outdoor seating structure.

Auxiliary Entry Gate Repair – Repair entry gates to provide additional access to the garden.

Bamboo Garden Access Road – Upgrade accessibility of maintenance vehicles to Shogetsu and the Bamboo Gardens.

Cultural Exchange Center – Replace deck railing around CEC.

Cultural Exchange Center – Restore exterior material and finish of CEC.

Cultural Exchange Center – Enclose the inner courtyard on the deck of the CEC.

Cultural Exchange Center – Repair and patch water leaks in the inner courtyard and ceiling of office space below.

Cultural Exchange Center – Repair and patch roof water leaks to the interior of the building.

Garden Fixtures – Purchase and install a variety of site fixtures such as signage, drinking fountains and benches.

Garden Lighting – Purchase and install lighting fixtures to provide safely and improve garden aesthetics.

Hakone Gardens Gift Shop – Renovate the gift shop structure, make improvements that incorporate ADA requirements, and improve its general appearances.

Hakone Loading Ramp – Improve the flow of materials and equipment from the roadway to the upper courtyard.

Lower House – Rebuild the entire roof ridge, refinish interior walls in the inner hall and in the Engawa, and rewire and install telecommunications.

Moon Viewing House – Rebuild and structure the exterior railing facing the garden.

Hakone Gardens Office Attic – Evaluate improvements for building for structural, accessible and usable space.

Parking Lot Gate – Replace two access/service gates: one from the road and one from the parking lot.

Hakone Gardens Path System – Improve walking surfaces, control storm runoff, and make a greater portion of Gardens ADA accessible.

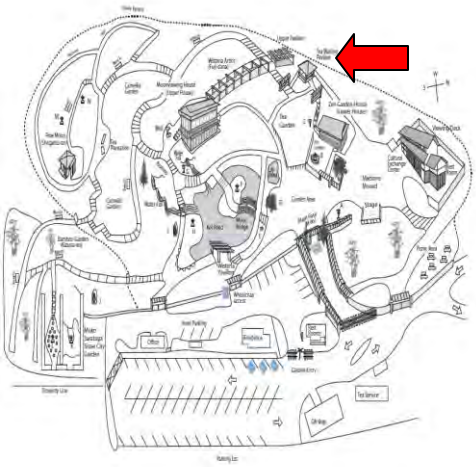
Hakone Garden Perimeter – Upgrade perimeter fencing to preserve the inner gardens from pests, foraging animals, and vandals.

Wood Structures – Enact a maintenance plan that treats wooden structures and buildings for termites, carpenter ants, and other pests

Public Restrooms – Repair restroom plumbing, fixtures and accessories, and remodel building exterior to update its appearance and authenticity.

Shotgetsu-en Finishing – Repair the exterior and interior of the structure, provide electrical power, renovate the landscape surrounding the Shogetsu-en, and build a tea waiting enclosure.

Hakone Gardens Wisteria – Restore the pavilion and viewing deck in its entirety.



Project Name Hakone Azumaya

Description This project will restore the covered outdoor seating structure.

Location This structure is located on the north western garden ridge, adjacent to the Lower House.

Project Background The Azumaya is a covered structure designed to serve as a waiting area for guest of Japanese tea ceremony. This Azumaya is constructed in a very basic style, using widely available materials. Much of the building is still very much intact and structurally sound. This project would focus on redoing the shake material on top of the roof. It will include minor foundation work, replacement of original shoji windows, redoing of the steps that lead around the exterior, adding a small portion to the deck, removing the concrete path along the front of the structure, and minor aesthetic work.

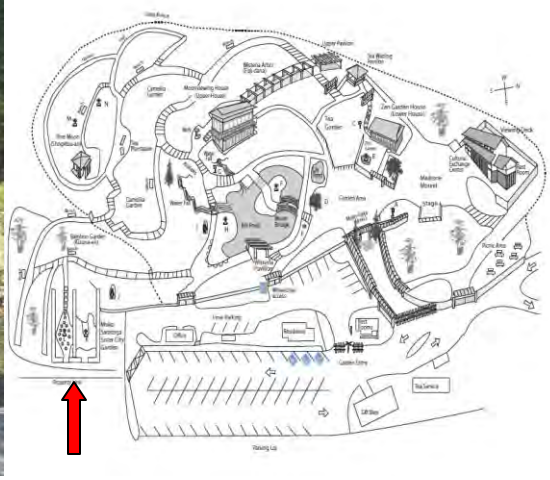
This structure is contributing, so all work must be approved and adhere to the original design, and craftsmanship.

Currently this structure shows evidence of carpenter ants, termites, improper footings, and leaking roof

Budget Staff estimates a total budget of $25,000 to complete the project, which includes $20,000 for construction costs, and a 25% contingency of $5,000.

Project Name	Auxiliary Entry Gate Repair

Description	Repair of two auxiliary entry gates providing guests additional access to the garden. One of the gates is ADA compliant.
Location	Hakone Gardens near parking lot.
Project Background	The support beams and structures on both gates have started to decay. They are both wooden gates designed and built using authentic Japanese woodworking techniques. The supports need to be replaced, while maintaining much of the original design and aesthetic. The gate doors themselves can be reused.
Budget	Staff estimates a total budget of $9,375 to complete the project, which includes $7,500 for the gate construction costs, and a 25% contingency of $1,875.



Project Name Bamboo Garden Access Road

Description This project is intended to upgrade the accessibility of maintenance vehicles to Shogetsu and the Bamboo Gardens.

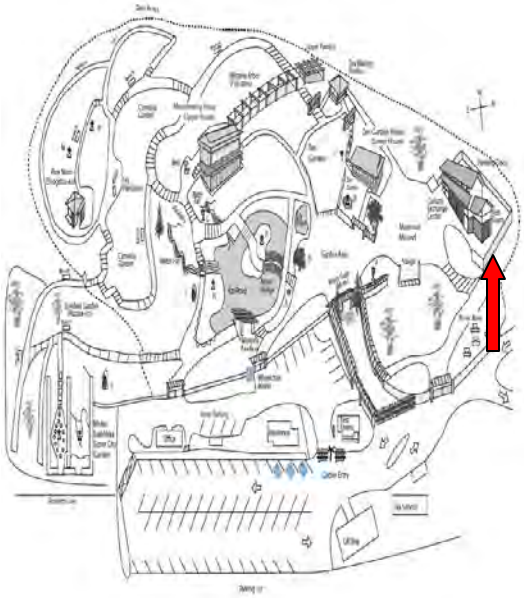
Location The existing trail begins at the South end of Hakone's parking lot and continues up the slope along the perimeter fence line.

Project Background The 400 linear feet length of this trail is currently only accessible by 4x4 vehicles. The safe and efficient use of this route is critical to the proper maintenance of the gardens higher in elevation than the Moon Viewing House. This route will also be used to move materials for future projects.

The edges of the trail should be edged with a bamboo resistant material to a depth of at least 2'. The driving surface should be consistently wide enough for a dump truck to navigate the slope. A turn around should be added at the highest elevation. Drainage will need to be considered as the storm runoff from neighboring properties runs the steepest portion of the slope. A rain water collection plan needs to be established before construction of this project begins to ensure that it works in unison with rain water collection throughout the garden. Permeable concrete was mentioned.

A metal gate should be installed separating the inner and outer parking lots in this area. This gate should be motorized, and remotely controlled from as far away as the barn office which is approximately 90'.

Budget Staff estimates a total budget of $56,250 to complete the project, which includes $25,000 for grading costs, $20,000 for edging/retaining walls/gate costs, and a 25% contingency of $11,250.



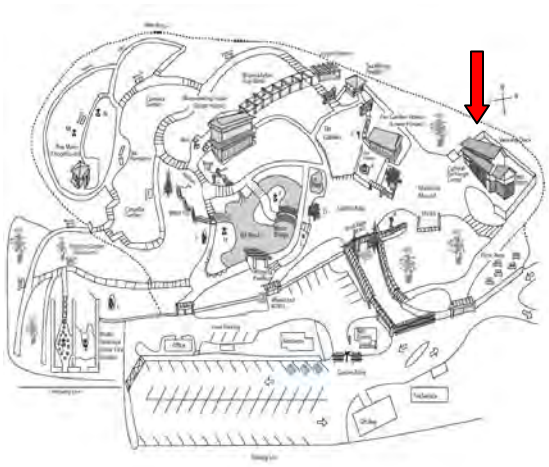
Project Name Cultural Exchange Center deck railing

Description This project will replace the deck railing around the Cultural Exchange Center.

Location The Deck railing encompasses all of the upper level of the building save for the South East. Located in the Northwest corner of the Garden.

Project Background The railing was constructed with the rest of the CEC over 20 years ago. Termite damage and dry rot have contributed to its decay. The bolts anchoring the posts to the concrete deck may also need to be replaced in places as the old posts are removed. Total railing length is approximately 210'. The style does not need to be identical to what is currently in place, but should have continuity with the rest of the building it surrounds.

Budget Staff estimates a total budget of $20,125 to complete the project, which includes $15,000 for rail work, $1,500 for design, and a 25% contingency of $4,125.



Project Name Cultural Exchange Center Exterior Refinishing

Description This project will restore the exterior of the CEC. It will include stripping, finishing, painting, and repairing damages in the stucco of the exterior walls and on the support beams of the CEC.

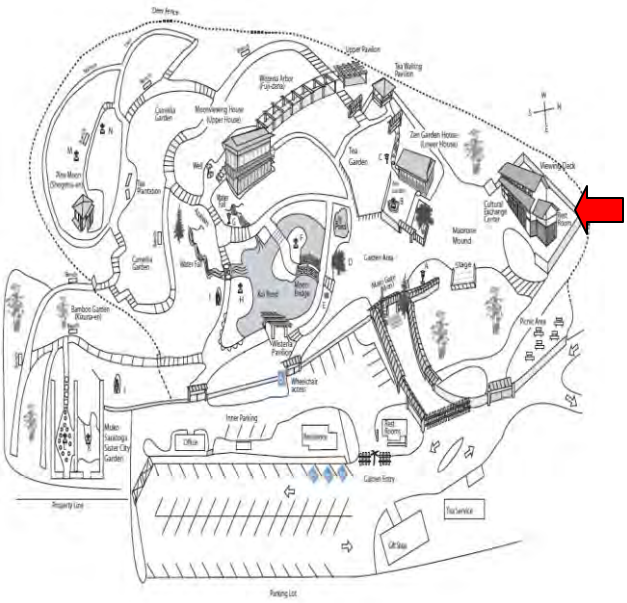
Location The Cultural Exchange Center (CEC) is located at the North-eastern corner of the garden directly across from the Lower House and to the right of the Main gate.

Project Background The exterior walls of the existing structure needs to be stripped and the damaged areas repaired. The exterior of the building as a whole needs to be repainted with the appropriate paint for both location and purpose of building. Japanese building experts should be consulted for stucco repair, and support beam repair.

Budget Staff estimates a total budget of $12,500 to complete the project, which includes $8,000 to restore exterior work, $2,000 for design, and a 25% contingency of $2,500.

Project Name	Cultural Exchange Center Inner Courtyard

Description	Closed courtyard on the deck of the CEC.
Location	CEC.
Project Background	The courtyard is just outside the artist in residence apartment in the Cultural Exchange Center. It is approximately 6’ x 18’. It is currently a simple concrete courtyard, but was intended to be a type of dry landscape garden. The original designers of the building should be contacted about their intent with the space. Authentic Japanese designs and building practices need to be used to ensure continuity with the rest of the building.
Budget	Unknown estimate for budget construction costs until design is complete. An estimated budget of $5,000 for Design costs.



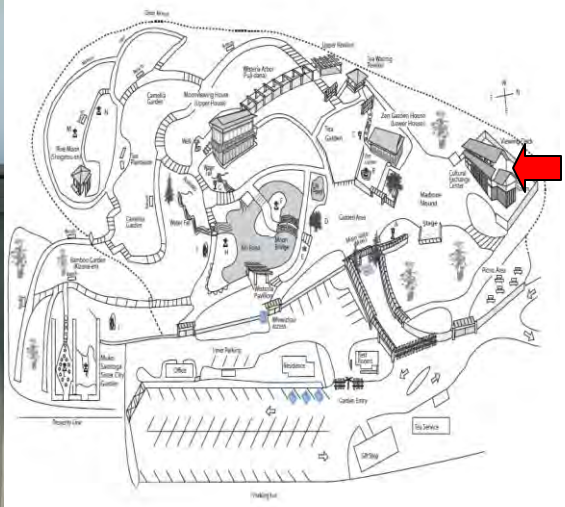
Project Name Cultural Exchange Center Office Leak

Description This project will find the source of the leak, repair any damaged/corroded areas of the building or drainage piping, and patch the concrete both in the inner CEC courtyard and the ceiling of the bookkeeper's office.

Location The area of damage is located on the South side of the building at the exterior of the tea preparation room within the courtyard.

Project Background Water is leaking from the inner courtyard on the upper level of the CEC down into the bookkeeper's office below the courtyard. First step is to locate the leak, then repair any water damage, repair corroded pipes, and repair the concrete.

Budget Staff estimates a total budget of $18,750 to complete the project, which includes $15,000 for leak repair costs, and a 25% contingency of $3,750.



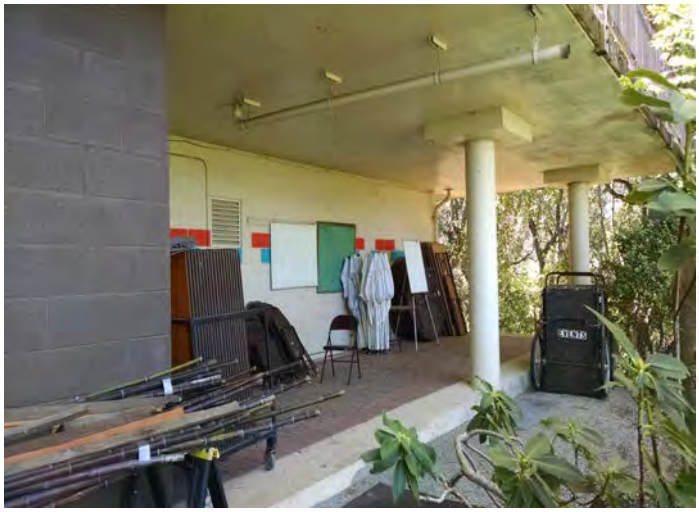
Project Name Cultural Exchange Center Roofing Leak

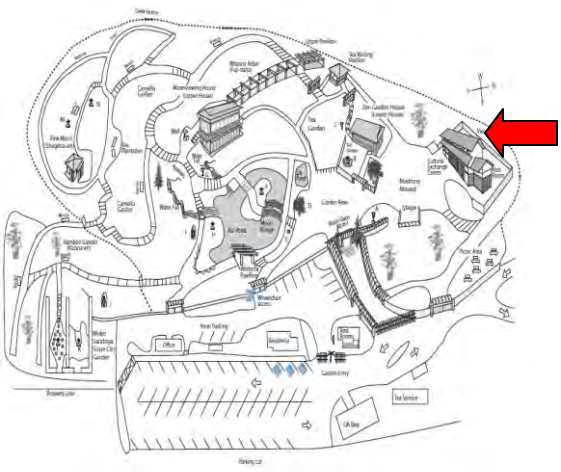
Description This project will find the source of and repair a leak causing damage to the interior of CEC.

Location The area of damage is located on the South side of the building at the exterior of the tea preparation room within the courtyard.

Project Background This repair may require specialty contractors including Japanese stucco and Shoji screen repair.

Budget Staff estimates a total budget of $6,250 to complete the project, which includes $5,000 for leak repair and a 25% contingency of $1,250.





Project Name Hakone Gardens Craft Area

Description This project will enclose and finish an underutilized space at the CEC.

Location The space is located underneath the Cultural Exchange Center's deck on the north east side of the building.

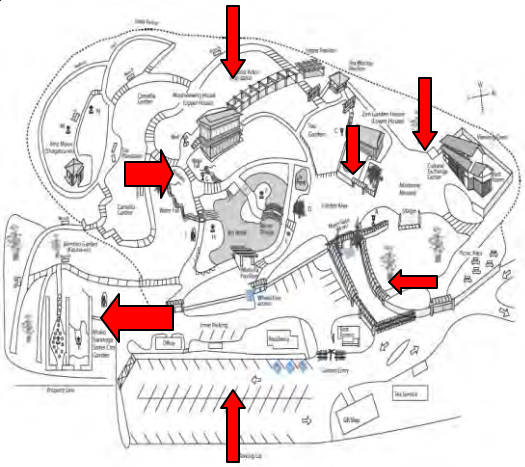
Project Background The purpose of this project is to increase usable office, rental, and storage space. Currently the area is used for craft classes during the summer months, but during the winter months it is unused.

Staff recommends repurposing this space for other uses, such as a bridal changing suite, a small business meeting "break out" space, class room, or offices. To accommodate these new uses, a toilet, hand washing sink, and heat should be installed in conjunction with enclosing the North Eastern sides and finishing the two existing walls.

Budget Staff estimates a total budget of $48,125 to complete the project, which includes $3,500 for design costs, $35,000 for construction costs, and a 25% contingency of $9,625.

Project Name	Garden Fixtures

Description	A variety of fixtures need to be designed and installed in the garden that includes signage, drinking fountains, and bench program.
Location	Various locations within the Gardens.
Project Background	The project will develop a new bench program, including design and installation at various locations in the garden, new drinking fountains, and new signage. The new signage program will adhere to our marketing brand and convey all required information in a practical, aesthetic, and non-distracting way.
Budget	Staff estimates a total budget of $46,875 to complete the project, which includes $2,500 for signage design costs, $7,500 for signs, $8,000 for 2 drinking fountains, $5,000 for plumbing costs, $12,000 for 8 benches, $2,500 for program development and a 25% contingency of $9,375.



Project Name Garden Lighting

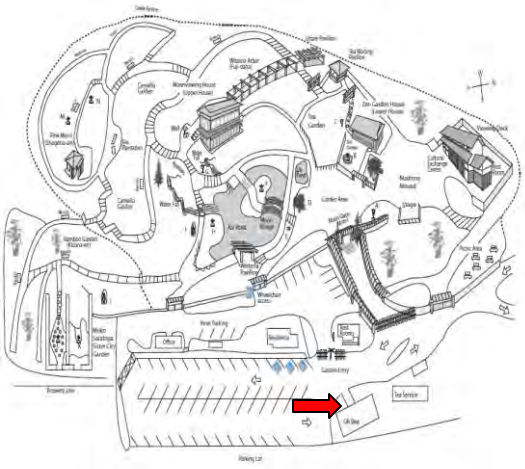
Description This project is intended to safely, aesthetically, and professionally light Hakone Gardens

Location Outdoor lighting throughout Hakone Gardens.

Project Background The existing lighting at Hakone Gardens is in need of upgrading. Much of the infrastructure is still useful, but the fixtures need to be replaced and relocated.

A lighting designer with experience with Japanese Gardens must be hired to plan the aesthetics of this project. Special attention should be given to safety concerns in event spaces.

Budget Staff estimates a total budget of $68,750 to complete the project, which includes $5,000 for design work, $50,000 for the lighting installation, and a 25% contingency of $13,750.



Project Name Hakone Gardens Gift Shop

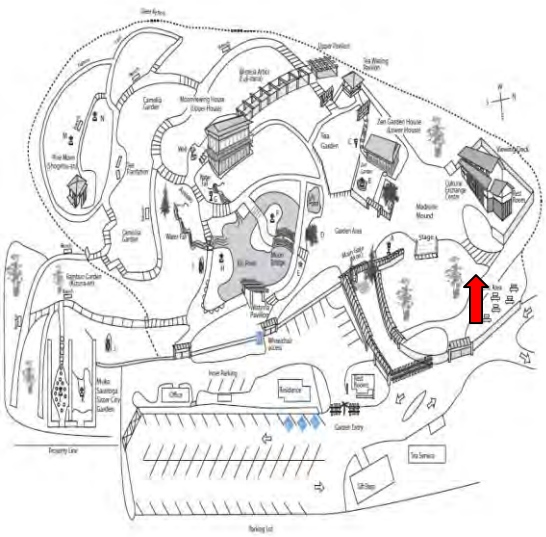
Description This project is for the renovation of Hakone's Gift shop building. Goals are to ensure structural stability, accommodate ADA requirements, and improve general appearance and flow.

Location This structure is located at the entrance to the main parking lot, and across from the Garden entrance.

Project Background This structure was originally built as a garage. It was remodeled and purposed as a Gift shop which it continues to serve as today.

The structure's integrity should be evaluated and much of the original remodel should be updated. A circuit breaker panel should be installed, the ceiling should be replaced or removed, lighting and flooring should be updated, a more secure door locking mechanism and easier to open doors should be included, and an ADA compliant ramp should be installed. A portion of the building may be repurposed for office space.

Budget Staff estimates a total budget of $35,625 to complete the project, which includes $2,500 for Design work, $20,000 for the roof, $3,00 for interior refinish, $3,000 for electrical work and a 25% contingency of $7,125.



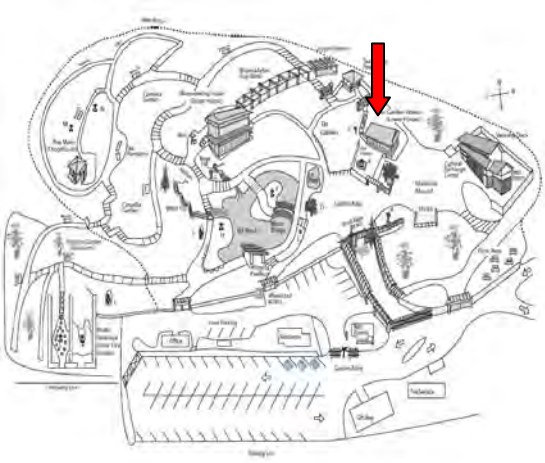
Project Name Hakone Loading Ramp

Description This project will allow materials and equipment to be moved from roadways to event spaces safely.

Location The ramp is located between the Mound area and the Cultural Exchange Center basement.

Project Background The existing ramp has steps making it difficult to use carts to carry items to and from event spaces. The steps should be removed and the grade evened out. Widening the ramp would accommodate carts and small vehicles. This project should also include the replacement of the loading gate at the bottom of the loading drive way. The gate should be metal, motorized, and remotely controlled from both the CEC and gift shop. The ramp is 5-8” wide at various points, and has about 85” of linear run.

Budget Staff estimates a total budget of $27,500 to complete the project, which includes $2,000 for Design costs, $20,000 for ramp construction costs, and a 25% contingency of $5,500.



Project Name Lower House

Description The ridge on the roof of the lower house needs to be rebuilt entirely. The floors need to be refinished and there is water damage along the walls around the inner hall and in the Engawa. Telecommunications in this building need to be addressed.

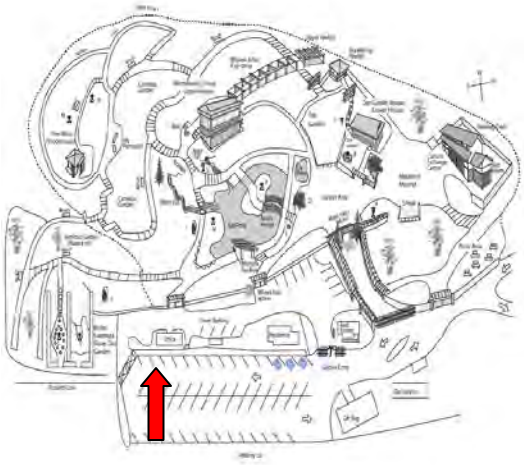
Location The Lower House is located in the north eastern area of the garden directly across the mound from the CEC.

Project Background The roof ridge has become increasingly damaged from water and pest exposure. It needs to be demolished and rebuilt as is. The design should remain the same. The water damage throughout the building is coming from several leaks. Telecommunications needs rewiring throughout the building. New wiring and metal conduit are required to complete the project. The inner walls need restoring from the water damage once the roof leaks are addressed. The building should also be treated for pests.

Budget Staff estimates a total budget of $37,500 to complete the project, which includes $20,000 for the roof ridge repairs, $2,500 for floor repairs, $7,500 for utility repairs and a 25% contingency of $7,500.

Project Name	Moon Viewing House (MVH) Railing

Description	The railing on the Moon Viewing House needs work to be structurally sound. The original materials can be reused.
Location	Moon Viewing House.
Project Background	The stairs and railing reach an approximate linear footage of 120”.. The MVH is a contributing structure, so the replacement needs to be restored and made to the same design as originally intended.
Budget	Staff estimates a budget of $11,250 to complete the project, which includes $8,000 for rail work, $1,000 for design work and a 25% contingency of $2,250.



Project Name Hakone Gardens Office Attic

Description This project will include a full evaluation of the building's supporting structure, and converting the attic into a safely accessible and usable space.

Location This structure is located near the top of the parking lot.

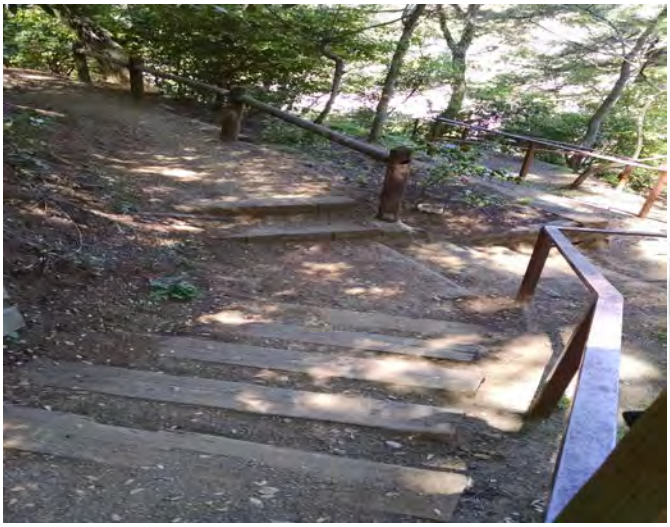
Project Background This building is original to the site and was constructed as a horse barn. It was remodeled to be used as office space on its lower level by the Hakone Foundation.

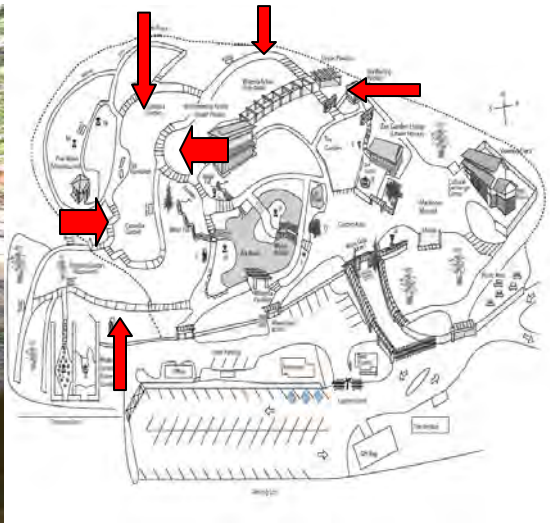
After the structure is evaluated for the new use, the ceiling and walls should be insulated and finished with adequate ventilation in the attic. Soil needs to be pulled away from the wooden base and the foundation repaired. It will need a new interior staircase to be ADA compliant if the upper level is to be an office space. A new entrance door and telecommunication closet to house network switches, routers, and pbx system is desired.

Budget Staff estimates a total budget of $61,250 to complete the project, which includes $35,000 for construction costs, $10,000 for utility upgrades, $4,000 for design, and 25% contingency in the amount of $12,250.

Project Name	Parking Lot Gate Replacement

Description	Replacement of the two access gates: one for the inside parking lot and a second one to allow access to the loading ramp beneath the CEC.
Location	Parking Lot.
Project Background	The gates have been in disrepair for a number of years. They are both simple wooden gates on hinges with a latch lock. Both are falling apart and have reached the end of their lifespan. Hakone should have new motorized steel gates on a track which are controlled remotely.
Budget	Staff estimates a total budget of $33,750 to complete the project, which includes $25,000 for gate construction, $2,000 for design, and a 25% contingency of $6,750.





Project Name Hakone Gardens Path system renovation

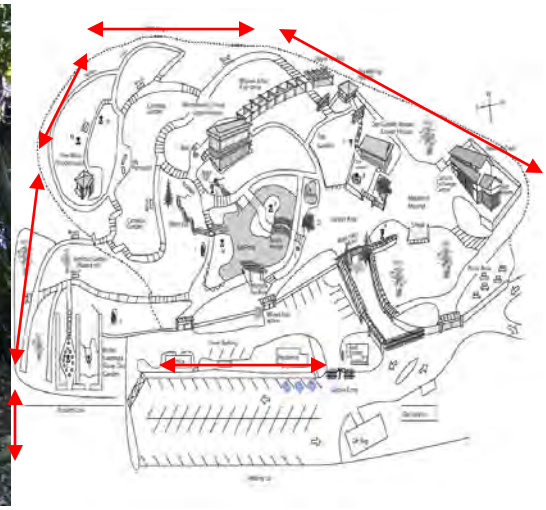
Description This project is intended to improve walking surfaces, control storm runoff and make a greater portion of the Gardens ADA accessible.

Location Most of the pathways in need of upgrading are located on the slope above the Moon Viewing House (in elevation). Others are located in the Bamboo Garden.

Project Background About 800 linear feet of pathways are in need of edging on both sides (1600' edging) at varying heights. The lack of edges leaves them subject to erosion. Also the approximately 170 steps currently made from rail road ties should be built with matching stone. Many are not properly compacted and in some areas lack handrails. Hakone's Head of Grounds Maintenance is recommending dry stacked boulders as a retaining edge in conjunction with about 350' of French drainage in some areas. The steps should be made using mortar and matching stone.

The possibility of re-grading/re-directing routes, 235' of new handrails, and surfaces will need to be accessed by an architect to determine the possibility of ADA compliance.

Budget Staff estimates a total budget of $43,750 to complete the project, which includes $10,000 for rail work, $15,000 for edging, $10,000 for grading, and a 25% contingency in the amount of $8,750.



Project Name Perimeter Fencing

Description Upgrade perimeter fencing to preserve the inner gardens from pests, foraging animals, and vandals.

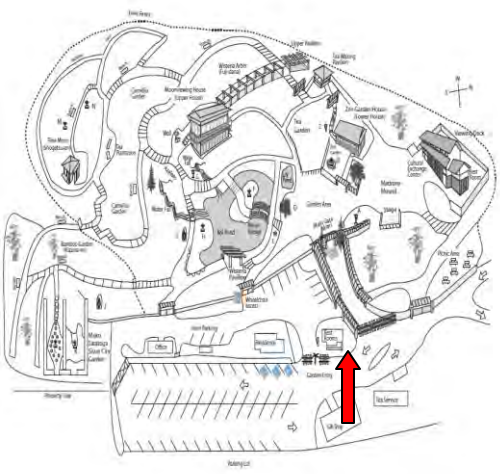
Location Hakone Garden perimeter.

Project Background Deer fencing is currently in use around the perimeter of the garden to keep it secure from pests and foraging animals. This fence is failing. The fence should be sturdier and require little maintenance as some areas are difficult to get to and maintain. Aesthetics should be considered as a portion of the fence will be facing the main parking lot. The fence should be uniform, practical, and aesthetically authentic to a Japanese garden setting. The length of the fence is approximately 1,500 LF.

Budget Staff estimates a total budget of $30,000 to complete the project, which includes $1,500 for design costs, $22,500 for construction and a 25% contingency of $6,000.

Project Name	Pest Control and Extermination

Description	The existing wooden structures in the garden suffer from termite, carpenter ants, and/or some other form of pest. Pests need to be addressed routinely.
Location	Various locations within the Gardens.
Project Background	The main eight buildings that are used on a regular basis should be the priority of pest treatment and prevention. Those buildings include: CEC, lower house, Moon viewing house, Barn office, Gift shop, tool shed, caretaker's cottage, and Shogetsu-en. The ten other wooden structures that need to be addressed are: Mon, Upper pavilion, Lower pavilion, auxiliary entry gates (2), wisteria trellis, bridges spanning ponds (2), and wisteria arbor.
Budget	Staff estimates a total budget of $18,750 to complete the project, which includes $15,000 for termite/pest extermination, and a 25% contingency of $3,750.



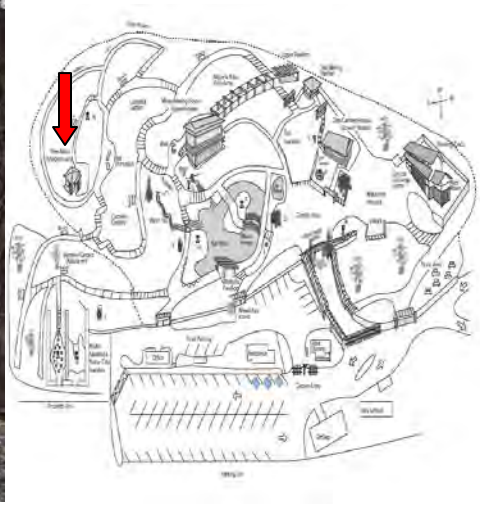
Project Name Public Restroom Repair

Description The Public Restroom Building is in need of remodeling.

Location The bottom of the main parking lot, directly across from the gift shop.

Project Background The bathrooms need to be remodeled to update appearance and authenticity. This needs to include upgrades in both plumbing and fixtures in addition to outside appearance. Currently, the bathroom walls and the ceiling have numerous cracks running throughout. Additional storage is needed for cleaning supplies. Water heaters need to be enclosed or moved outside the building.

Budget Staff estimates a total budget of $25,625 to complete the project, which includes $15,000 for renovation costs, $3,500 for plumbing work, $2,000 for fixtures and a 25% contingency of $5,125.



Project Name Shogetsu-en Finishing

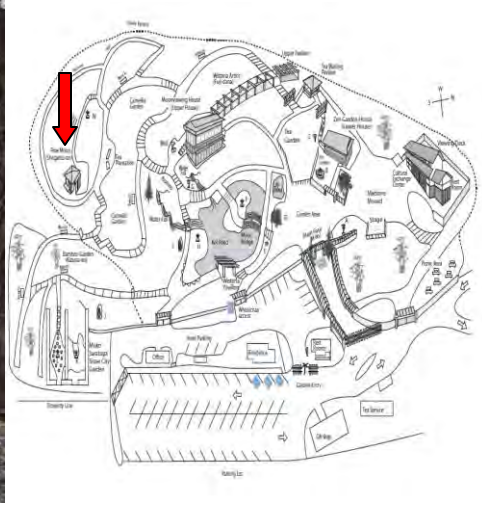
Description There are three projects that are required to make Shogetsu-en a fully functional and traditionally authentic tea ceremony room. Proper Japanese Tea Garden landscaping needs to be completed in the area surrounding Shogetsu-en. A machai, or tea waiting enclosure, needs to be constructed. Electricity needs to be ran to Shogetsu-en at the top of the hill.

Location Shogetsu is located at the top of the Garden, behind the Moon Viewing house.

Project Background The space around Shogetsu is unfinished. An expert Japanese tea garden consultant should be brought into develop a landscaping plan appropriate for this specific type of tea house in its current location. Moreover, the structural construction phase of Shogetsu-en in incomplete. It can be finished by providing a waiting structure for the tea ceremony room. Shogetsu-en is a tea room originally built in Japan then transferred to Hakone. It is used to host tea ceremony: a centuries old practice of great discipline. Prior to entering the tea room guests are asked to wait in a partially enclosed, covered structure called Machai to contemplate the surrounding gardens. When Shogetsu was installed a Machai was planned, but was never completed. An expert to consult on the structures design and construction methods will be retained.

Staff intends to electrify the tea room (Shogetsu-en) by running approximately 250” of conduit and wire from the Moon Viewing House. A circuit breaker and wiring exist inside Shogetsu. Electricity will be used for light and a hot plate during tea ceremony. An electrician will need to be consulted to evaluate the electrical capacity at the Moon Viewing House source. A trench and conduit will need to be installed between the two structures, and wire will need to be pulled and connected. The trench will likely need to be dug by hand. We will need a minimum of 120 volts to be pulled to Shogetsu, if possible without changing capacity going into Moon Viewing House.

Budget Staff estimates a total budget of $56,250 to complete the project, which includes $30,000 for construction costs, $7,500 for electrical work, $7,500 for design, and a 25% contingency of $11,250.



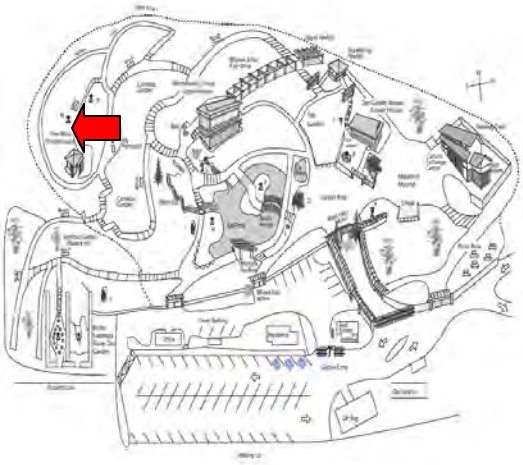
Project Name Shogetsu-en Landscape

Description Proper Japanese Tea Garden landscaping needs to be completed in the area surrounding Shogetsu-en

Location Shogetsu is at the top of the Garden, behind the Moon Viewing House.

Project Background The space around Shogetsu is unfinished. An expert Japanese tea garden consultant should be brought into develop a landscaping plan appropriate for this specific type of tea house in its current location.

Budget Staff estimates a total budget of $11,875 to complete the project, which includes $1,500 for design costs, $8,000 for landscape work and a 25% contingency of $2,375.



Project Name Shogetsu Machai- Tea waiting structure

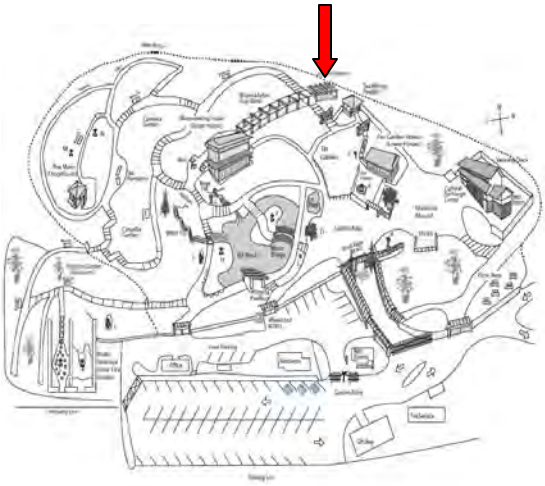
Description This project will complete the structural construction phase of Shogetsu-en by providing a waiting structure for the tea ceremony room.

Location Shogetsu-en is located near the top of the slope at Hakone Gardens.

Project Background Shogetsu-en is a tea room originally built in Japan then transferred to Hakone. It is used to host tea ceremony: a centuries old practice of great discipline. Prior to entering the tea room guests are asked to wait in a partially enclosed, covered structure called Machai to contemplate the surrounding gardens.

When Shogetsu was installed a Machai was planned, but was never completed. The Hakone Foundation will be responsible for finding an expert to consult on the structures design and construction methods.

Budget Staff estimates a total budget of $10,625 to complete the project, which includes $7,500 for construction, $1,000 for design, and a 25% contingency in the amount of $2,125.



Project Name Hakone Gardens Wisteria- Upper Pavilion

Description This project will restore the pavilion/viewing deck at Hakone Gardens.

Location The Upper wisteria pavilion is located at the end of the wisteria arbor opposite the Moon Viewing House.

Project Background The existing structure should be completely rebuilt with stable footings. The attached arbor was re-constructed in 2012. The design should be uniform with the other out structures in the garden, and outside the concrete footings. The design and construction should follow authentic Japanese building techniques.

Budget Staff estimates a total budget of $41,250 to complete the project, which includes $30,000 for construction, $3,000 for design, and a 25% contingency of $8,250.

APPENDIX 6

Koi Pond Assessment

FIELD ASSESSMENT REPORT AND RECOMMENDATIONS

Based on Koi Pond Life Support Systems Site Visit – April 29, 2015

Project Name:	Site Location:	Date:
Hakone Gardens	Saratoga, California	6/30/2015

GN	GENERAL NOTES

Introduction:

Mr. Paul Cooley, National Aquatics Leader of PCA, completed a site visit of the Hakone Gardens Koi Pond on April 29, 2015.

Based on discusssions with staff Jacob Kellner, Gardner for Hakone Gardens, we have developed a flow schematic, which illustrates the current system. (See Figure I)

SUM	Summary of Recommendations

We have reviewed the design and operation of the system and have the following recommendations:

1. Immediate and Shortterm (See Alternative 1 Schematic)

Based on our current understanding we recommend the following shortterm improvements.

a. Double the Flow through the Pond. Increase the flow rate through the pond by doubling the flow through the gravity gravel filters. We believe the filters can handle twice the flow they are currently operating. This would require a redesign of the pumps, sizing the system and validating the pipe sizes. Hopefully this can be done without significant piping changes. If the Hakone Gardens wants to accomplish this without major engineering costs we could probably increase individual pumps one-at-a-time until the piping sizes are maxed out. PCA would be willing to work with the staff to accomplish this. Now as the flow increases, the gravel filters will probably need to be cleaned more frequently, but that is the purpose, to get more solids out of the system at a more rapid rate. This will require more operator time.
b. Re-operate the pressure sand filter/UV system. The system is probably not really adding any benefit to the pond water quality. We would recommend checking the filter media (size, quality), rebuilding the filter, if necessary, remove the pump suction from the sump and connecting it to the gravel filter discharge, increase the flow (doubling it), increase the size of the UV unit and develop a budget and preventative maintenance on the UV bulb replacement, develop a method of correctly backwashing this filter by either installing a separate backwash pump that connects to the gravel filter discharge and wastes to a storage tank (this water can be used for irrigation) or try and utilize the waterfall pump to double duty as the filter backwash pump. Validation of using the waterfall pump would require some investigation into the actual size of this pump and the hydraulics to and from the pump location to the pressure filter site. The cost of a new pump vs. using the waterfall pump would need to be compared.
c. Get a rigorous vacuuming in place. The staff has an improved vacuuming pump on order. The existing pump is inadequate. A new positive displacement (preferably a diaphragm pump) needs to be used and the vacuuming procedure needs to be developed and rigidly provided until the water system can be improved.
d. Review feeding procedures. We believe the poor fish health is a result of high levels of bacteria in the system caused by overfeeding and an inadequate filtration to remove the accumulated organics and subsequent bacteria. Either the system will need to be upgraded or the amount of feed needs to be reduced (or both) to improve water quality and fish health. The adjustment of the feeding procedures needs to occur in conjunction with a fish (Koi) expert.

e. Monitor temperature, ammonia and nitrate. We believe the nitrate test is not measuring correctly. Either the test kit needs to be upgraded or samples should be sent out to an outside lab. It would be nice to know the nitrate level. In addition, it would be nice to measure total bacteria in the pond. This could be sent out to an outside lab.

2. Long Term Solutions

Once money is available we would recommend the following long term solutions (See Alternative 2 Schematic)

a. Replace the entire filter system with a bead filter/UV system. Double the flow.
b. Redesign the entire pool by installing supply and return pipes that distribute the flow more evenly through the pond (eliminating dead spots and short circuiting).
c. Deepen the pool in at least one area to give the fish a sanctuary from predators.
d. Move the LSS equipment away from the current location to allow for adequate space and isolation from the public. (Location to be determined)
e. Develop a full wastewater recycling system within the water system to allow complete utilization of the bead filter backwash for soil amendment on the Garden site.
f. Consider (after carefully monitoring the temperatures) installing temperature control on the system to reduce stress on the fish. This might include heating and/or chilling.
g. Monitor pond nitrates to determine the buildup of nitrate in the system. Adjust the flushing to control nitrates below acceptable levels.

GN	GENERAL NOTES

Basically, the system consists of the following components:

1. A return sump
2. Five filter and recirculating pumps
3. Four gravity gravel filters
4. One pressure sand filter
5. An Ultraviolet Disinfection system (currently not functional)
6. Blower
7. A waterfall pump
8. Vacuum pump (currently not working very well)
9. Well. The system can be supplied from a small 2gpm well. This operated only intermittently. Most of the fill is done off the potable water system.

Water currently leaves the pond through a single pipe outlet located in one corner of the pond and gravity flows to a return sump. This return sump is 95-inches x 45-inches and approximately 12 feet deep (18.5 gallons/inch). The sump is cleaned yearly (4 hours/year).

GN	GENERAL NOTES

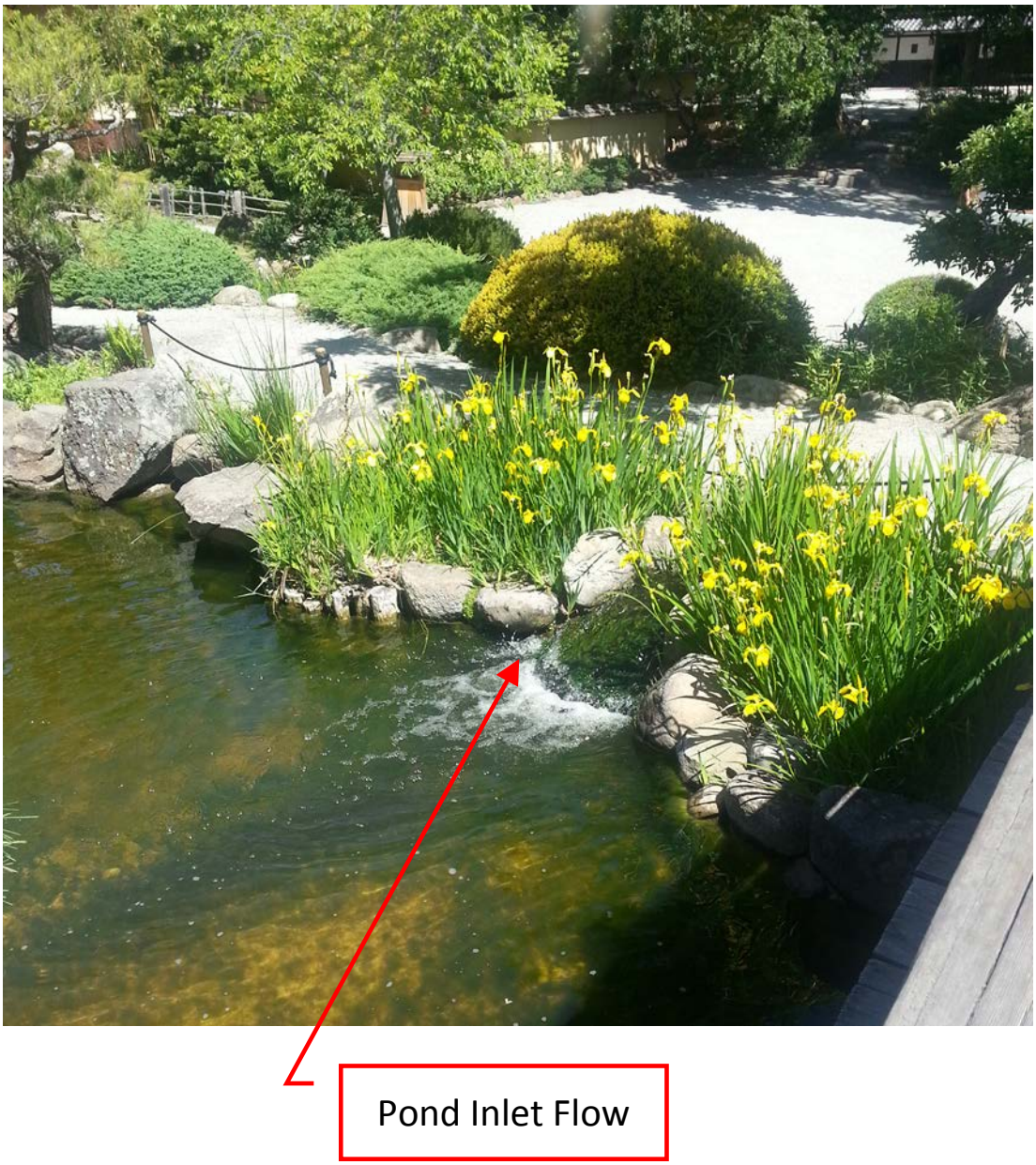
Water is drawn out of the sump with five small fractional horsepower pumps (1/4HP/pump, 2-inch line, measured flow approximately 27gpm/each by timing the drop in the sump level with the pond outlet blocked).

GN	GENERAL NOTES

Four of the recirulating pumps discharge to four gravity gravel filters. The filters are backwashed by stopping the flow, draining the water back into the sump, refill from the bottom and aerate, drain back into the sump, scrape the detritus off the top of filter (along with some gravel), separate the gravel, put gravel back into the filter, dump the remaining detritus into the garden, turn on filter pump. This is done weekly and it takes about 30 minutes/filter x 4. Every year the entire media is removed and cleaned and replaced into the filter. This takes about 2 hours/filter x 4. The filter's media is usually pretty clean in the yearly cleanings.

GN	GENERAL NOTES

Water flows by gravity from the gravity gravel filters back to the pond through a single inlet.



GN	GENERAL NOTES

One of the recirulating pumps flow from the return sump to a single 36-inch pressure filter. The pressure filter is backwashed once or twice a week to the storm drain. The blower is operated to assist backwashing.

GN	GENERAL NOTES

Discharge from the pressure filter returns to the common discharge from the gravity filters through an in-line UV unit, which is currently not operational. The staff said that the cost of replacement bulbs was excessive and no observed benefit was observed when the UV was operational.

UV Unit

001	COMMENTS

General Animal Loadings:

Currently there are approximately 30 large Koi, 20 small Koi and 8 turtles in the pond. There are also one Heron and a couple of migratory ducks on a regular basis. The loading is low.

General Water Quality Testing:

The day of the site visits, the exhibit water quality was observed. Fish were visible and water clarity was viewed as adequate. The operators said that they clean the pond daily (probably 4-5 days a week) by brushing the pond using a swimming pool brush and then netting the floating algae using a swimming pool net. This usually yields one to two buckets of algae per cleaning (depending on the time of year). Algae grows considerably faster in the summer time when temperatures and lighting are higher. If the cleaning doesn't occur the algae grows up, preventing the fish viewing.

pH, ammonia, nitrite and nitrate were measured and showed:

1. pH above 8.8 (exceeded to range of the test)
2. Ammonia, nitrite and nitrate were all reading near zero. Note: it is highly unlikely that the nitrate is zero in this system.

002	COMMENTS

Vacuum System

The system currently has a portable vacuum system that consists of a pump with attached strainer and bag filter. This system doesn't work because the bag filter clogs quickly. This needs to be replaced with a diaphragm pump and hose that can discharge into the gravity filters.

003	COMMENTS

Water Supply

Water is supplied to the pond through either a small well (which only operates intermittently and shuts down automatically on low level) or from the potable water system. The majority of the fill water is coming from the potable water system. The potable water for the entire garden comes from a private water system which receives water by tanker trucks. The cost of this water was unknown. The Garden needs to get the cost of this water to PCA. Currently, the majority of the water entering the system is needed to make up for backwash of the pressure filter and leakage/evaporation. The Garden has estimated this to be approximately 11000 gal/month**.**

Pond Feeding Schedule

Currently the Koi pond is fed from three sources:

1. Guest Purchase Feed. Visitors are allowed to purchase fish food ($1/half cup) and allowed to feed to Koi. Feeding quantities vary seasonally but staff estimate the total food at 150-200 lbs/year. When water temperature drops below 50 degree F, zero cups. When water temperature is between 50 and 60 Degrees F, 7 cups per day (depending on sales). When temperature is above 60 Degree F feed rate is 10 to 11 cups/day.
2. Supplement from staff. When sales are low, the staff supplements the feed.
3. Public uncontrolled. The public are discouraged from bringing their own feed but some violate this request.

Staff adjust the feeding based on the foraging activity of the fish. When the fish show less interest the feed is reduced.

Animal Health

Currently, the Koi present have considerable health problems and mortalities are observed throughout the year. The cause of the health problem is unknown but it assumed that it is related to water quality. PCA recommends that a biologist be utilized to determine the exact cause of poor animal health. Causes could be:

1. Water quality
    a. Temperature Fluctuations. The pond has no positive temperature control and reaches high temperatures in the summer (when ambient temperatures rise above 100°F) to low temperatures during the winter when air temperature drops below freezing. There are times when the top of the pond actually freezes.
    b. pH Fluctuations
    c. Algae
    d. DO
    e. Pathogens
2. Nutritional
3. Husbandry
    a. Feeding Methods
4. Predators

004	COMMENTS

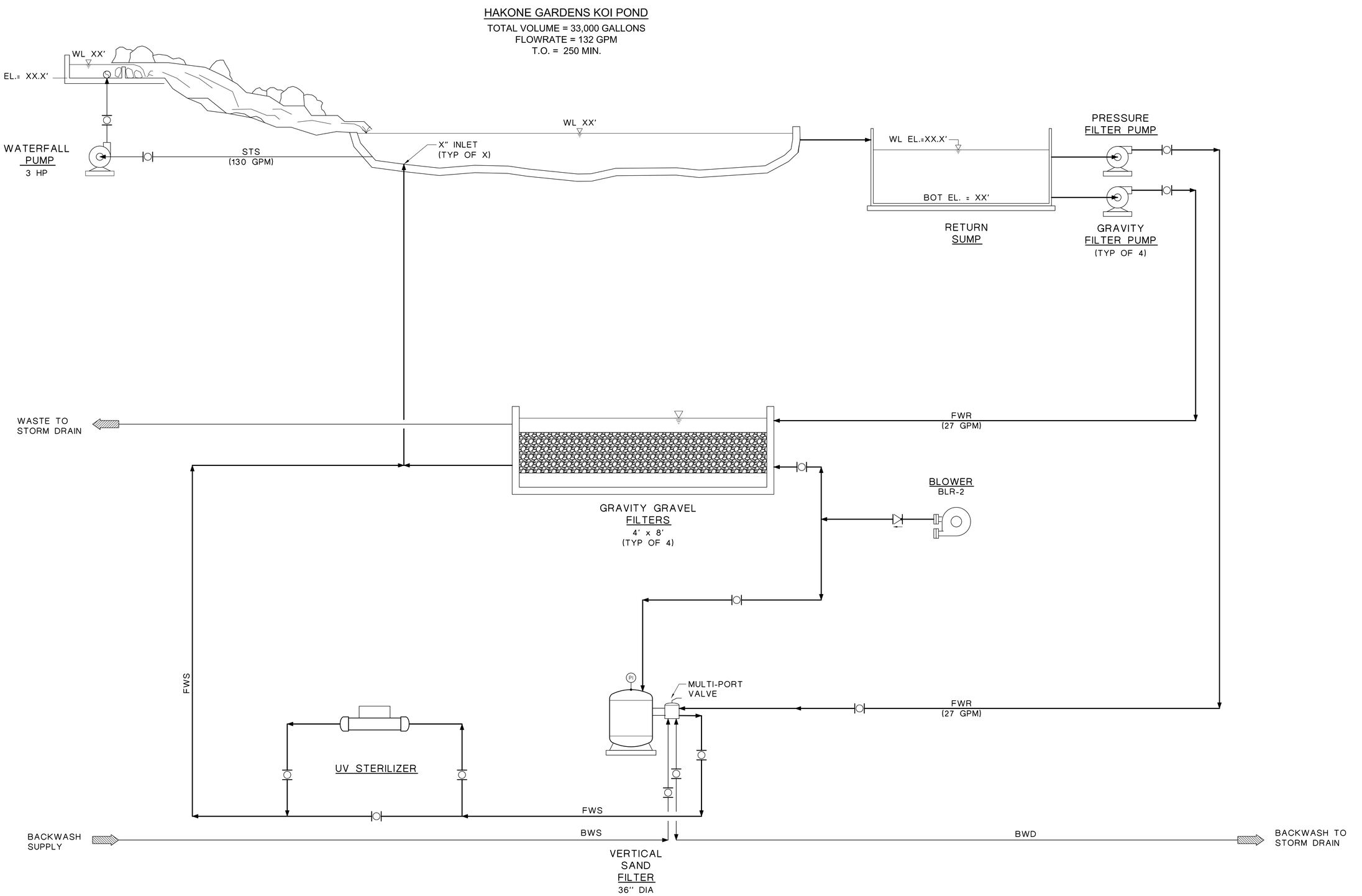
Dechlorination

The operators currently are using Crystal Clear for dechlorination of the potable water when water is added. Crystal Clear is a sodium thiosulphate based material and is therefore a reducing agent. The procedure for adding this material needs to be reviewed and adjusted.

005	COMMENTS

Waterfall

The waterfall is important to the operation of the pond. It provides for circulation and aeration. The system consists of a 3HP pump which is variable speed. The pump was indicating a flow of 130gpm. This wasn't verified. Flow out of waterfall seems closer to 250gpm. The piping is designed to allow for a smaller side river located adjacent to the water fall. It is currently not working because of leakage.



HAKONE GARDENS KOI POND - LSS PROCESS FLOW DIAGRAM
EXISTING CONDITIONS
Figure 1

Date of Last Update: 05-16-15

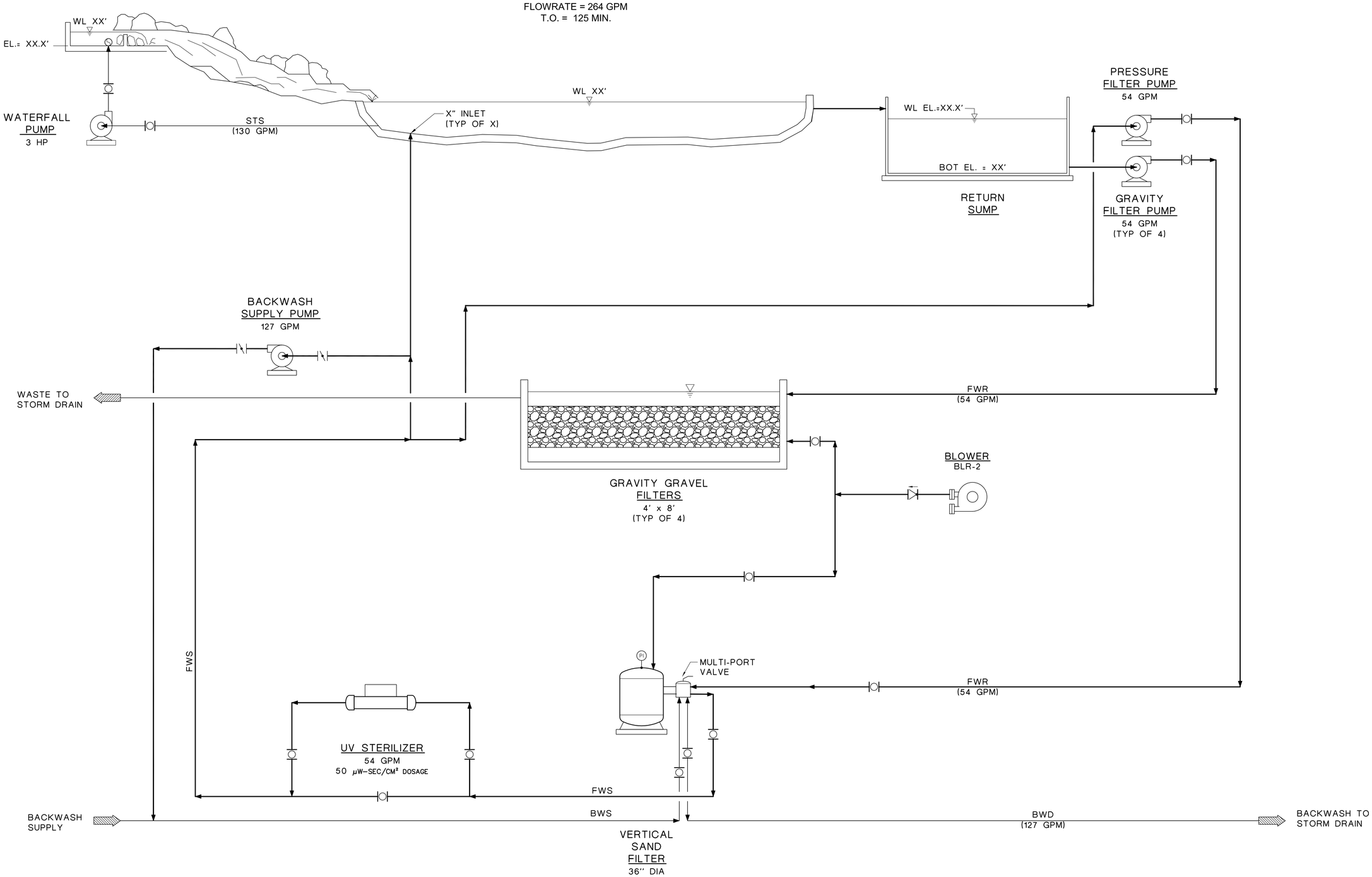
PRELIMINARY
NOT FOR CONSTRUCTION

pca
Intelligent Design & Process Management

ALTERNATIVE 1 MODIFICATION

HAKONE GARDENS KOI POND

TOTAL VOLUME = 33,000 GALLONS
FLOWRATE = 264 GPM
T.O. = 125 MIN.



HAKONE GARDENS KOI POND - LSS PROCESS FLOW DIAGRAM
ALTERNATIVE 1 MODIFICATION

Date of Last Update: 06-16-15

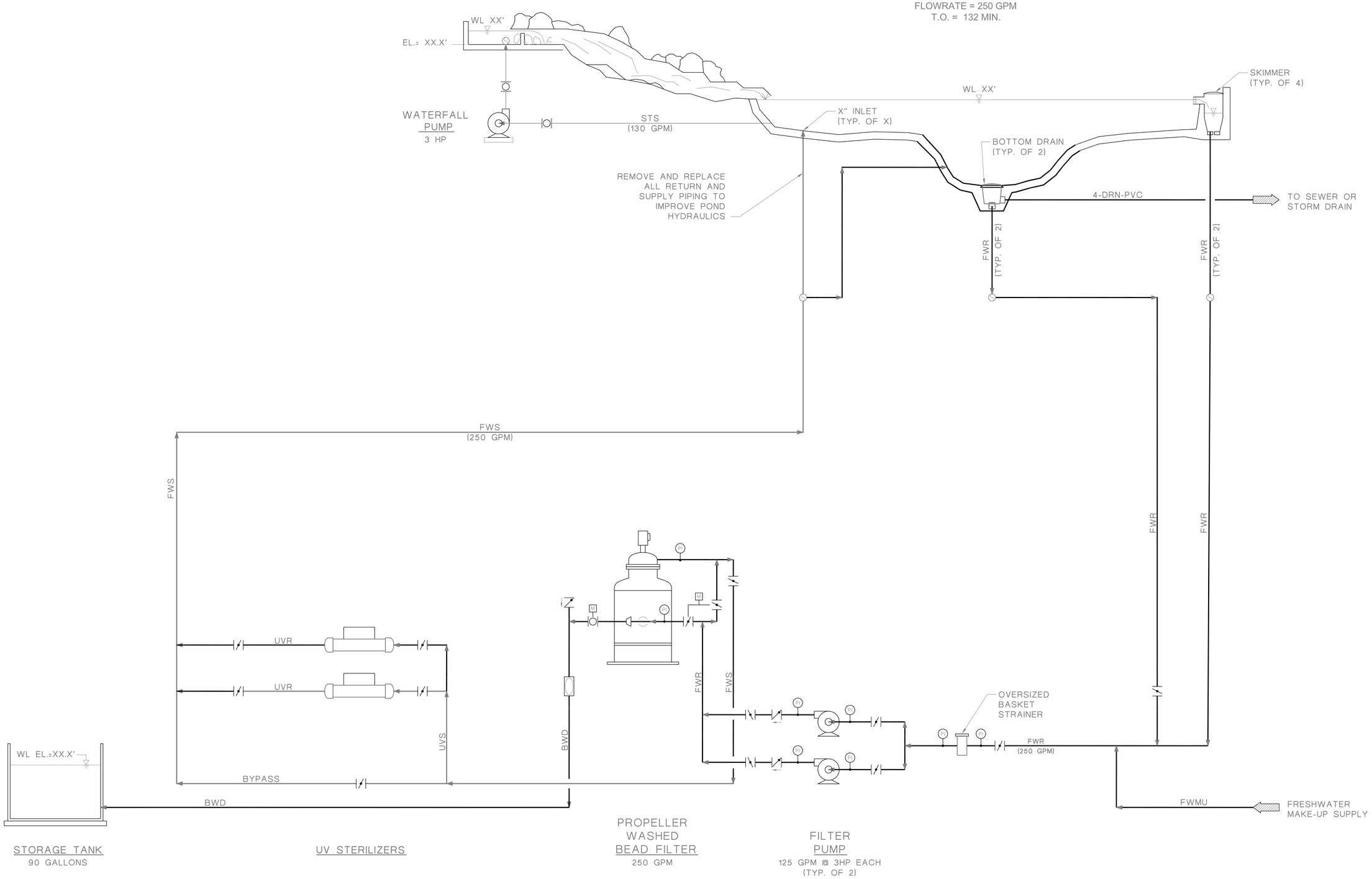
PRELIMINARY
NOT FOR CONSTRUCTION

pca
Intelligent Design & Process Management

ALTERNATIVE 2 MODIFICATION

HAKONE GARDENS KOI POND

TOTAL VOLUME = 33,000 GALLONS
FLOWRATE = 250 GPM
T.O. = 132 MIN.



HAKONE GARDENS KOI POND - LSS PROCESS FLOW DIAGRAM
ALTERNATIVE 2 MODIFICATION

Date of Last Update: 06-16-15

PRELIMINARY
NOT FOR CONSTRUCTION

pca
Intelligent Design & Process Management

APPENDIX 7

Storm Water Assessment

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MEMORANDUM

Date:	8/23/15
To:	Paul Sorensen and Dennis Meyer, The Portico Group
From:	Nicole Stern, Biohabitats, Inc.
RE:	**Hakone Estate & Gardens**
	Stormwater Management

A. EXISTING CONDITIONS

Hakone Estate & Gardens, a historic Japanese garden and National Trust for Historic Preservation site, is located in the foothills of the Santa Cruz Mountains within the City of Saratoga. The property is owned by the City of Saratoga and leased to the Hakone Foundation.

Biohabitats' landscape architect, Nicole Stern, visited the site and met with Jacob Kellner, Head of the Grounds Maintenance, on July 5th, 2015. The following existing condition observations related to stormwater management are based on this site visit.

Upper Site

The Hakone Estate & Gardens property sits on a steep hillside slope. The Hakone site receives stormwater runoff from the mostly forested slope uphill of the gardens as well as from neighboring residential properties. (Biohabitats has not analyzed the extent of the sub-watershed or the runoff flowing onto the site but could perform this analysis in the future given more extensive topographic map data from the City of Saratoga). The upper elevations of the property are predominantly permeable gardens with gravel or stabilized pathways. While much of the stormwater runoff presumably infiltrates into the permeable garden areas, there is no formal stormwater management system for the upper gardens and some stormwater runoff enters the koi pond. According to Jacob Kellner, Head of the Grounds Maintenance, while storm events are infrequent during the current drought, when it does rain, stormwater from uphill flows through the gardens, cutting gullies into pathways.

Lower Site

Stormwater which doesn't infiltrate in the upper gardens flows to the parking lots and entry area. There are catch basin storm drains near the entry, restrooms, and at the low point where the parking lot meets the entry road in front of the gift shop. One gated, residential road accessed through the main parking lot drains runoff from hardscape of multiple

residences into the Hakone parking lot. Jacob Kellner relays that the combined runoff from the upper site, entry, parking lot, and neighboring residential property areas clog and flood the main catch basin drain in front of the gift shop. Surface stormwater runoff leaving the parking lot which is not drained through the catch basin system is conveyed via curb and gutter down the entry road. The City of Saratoga installed a series of newer curb cuts and catch basins along the upper exit road (the entry/exit road splits into two, one-way lanes). The catch basin system (as well as at least one other exposed culvert from residential areas and the direct road drainage) drains to a vegetated basin between the entry and exit roads. Jacob Kellner observed that the retention capacity of this basin is minimal with most of the stormwater quickly overflowing through a culvert under the entry road. (Further analysis is needed to determine the functionality of this basin as well as potential retrofit opportunities to improve this function). This culvert drains to an eroding gully on a steep slope, into another culvert flowing under Highway 9/Big Basin Way and into Saratoga Creek.

Larger Watershed Context

The Saratoga Creek watershed is part of the San Tomas Aquino watershed, within the Santa Clara Basin sub watershed to the larger San Francisco Bay Watershed.

B. MASTER PLAN

The Portico Group is currently working with the Hakone Foundation to develop a new master plan for the estate and gardens. The plan includes renovation of existing structures and addition of new structures and buildings to improve the function, event capacity, maintenance facilities, and visitor experience on the site. Some issues to be resolved through the master plan include clarifying the arrival experience, ADA accessibility, and stormwater management on the site. Most of the new structures and buildings are planned to replace the inner parking lot and will therefore replace existing impervious cover. Some new structures may replace pervious cover while some impervious cover may be replaced with new permeable garden area. The existing main parking lot may also be regraded and resurfaced to reduce steep slopes and improve ADA access.

C. STORMWATER REGULATION BACKGROUND

Properties within the City of Saratoga and the County of Santa Clara, must comply with all relevant stormwater permitting requirements (see Appendix A for an expanded explanation of these regulations). The Hakone Estate & Gardens property is owned by the City of Saratoga (leased to the Hakone Foundation) and also a National Trust for Historic Preservation site. Therefore, the site may or may not be subjected to the same stormwater regulations as other sites would be. In order to determine this, more specific discussions with the City and County are needed which are beyond the scope of Biohabitats' preliminary analysis.

The three regulatory stormwater permits and their stormwater management requirements which could apply to the site, based on the County of Santa Clara Department of Planning and Development Clean Water Questionnaire, include:

1. **State Construction General Permit** - applies if disturbed area is ≥ 1 acre
2. **Municipal Regional Stormwater Permit (MRP) Provision C.3** – applies if project adds or replaces more than 10,000 sq. ft. of impervious cover
3. **Hydromodification Management (HM)** – applies if project adds or replaces ≥ 1 acre of impervious cover AND has a net total increase of impervious cover.

D. DESIGN SCENARIOS & RECOMMENDATIONS

Based on Biohabitats' initial analysis and regardless of applicable regulations, the existing stormwater management for the Hakone Estate & Gardens property appears inadequate – anecdotally, stormwater flow through pathways and into the koi pond in the upper portion of the site create maintenance issues; accumulated flows on the lower end of the property clog and flood catch basins; and runoff quickly overflows and drains through the vegetated collection basin between the entry driveways. Further analysis beyond this scope would be required to determine actual stormwater runoff quantity and quality. However, based on preliminary observation of the outfall for the property, the site is likely contributing to erosion and increased suspended solids in Saratoga Creek. Typical parking lot pollutants such as oil and metals as well as any fertilizers applied to the gardens may also be flowing from the site into Saratoga Creek. Biohabitats recommends that Hakone address these issues holistically for the master plan area as well as the full property through a variety of practices to harvest, slow, filter, and infiltrate stormwater on the site.

Scenarios

The Portico Group has developed two potential Master Plan scenarios:

1. The Ramp Concept without the parking lot improvement

2. The Ramp Concept with the parking lot improvement

Recommendations for Scenario 1: Ramp Concept without parking lot improvement

Based on Portico's preliminary calculations, the Ramp Concept version of the Master Plan concept design would add/replace approximately 15,000 sq. ft. of impervious cover.

Since the Limit of Disturbance (LOD) is greater than 1 acre, the State Construction General Permit is required. The new and replaced impervious cover is over 10,000 sq. ft. Therefore, the Municipal Regional Stormwater Permit (MRP) Provision C.3 applies. The percent replacement of impervious cover within the LOD is greater than 50%. Hence, the MRP stormwater management measures (source control, site design, and treatment) will be required for all area within the LOD (not just for the new/replaced impervious area). The total area of new and replaced impervious cover for this scenario greater than 1 acre but the total post-project impervious cover is less than the existing impervious cover area.

Therefore, the Hydromodification Management (HM) regulations do not apply. See the table below for estimated areas for Scenario 1:

a. Total Site Area: 18 acres	**b. Total Site Area Disturbed: 1.4 acres** (including clearing, grading, or excavating)			
	Existing Area (sq. ft)	**Proposed Area (sq. ft)**		**Total Post-Project Area (sq. ft)**
		Replaced	**New**	
Impervious Area				
Roof	2436	0	1173	3609
Parking	50346	0	0	34009
Sidewalks and Streets	6664	3303	10555	15769
c. Total Impervious Area	59446	3303	11728	53387
d. Total new and replaced impervious area		15031		
Pervious Area				
Landscaping	44595	20726	7544	54039
Pervious Paving	0	0	0	0
Other (e.g. Green Roof)	0	0	0	0
e. Total Pervious Area	44595			54039
f. Percent Replacement of Impervious Area in Redevelopment Projects (Replaced Total Impervious Area / Existing Total Impervious Area) x 100% = 63.37%				

The State Construction General Permit will require development and implementation of a Storm Water Pollution Prevention Plan (SWPPP). With some overlap in measures, the MRP will require source control, site design, and treatment. To responsibly manage stormwater on the Hakone Estate & Gardens Master Plan improvements site, Biohabitats recommends the following strategies:

1. While regulations presumably only require managing stormwater from within the LOD area, Biohabitats recommends accounting for stormwater flowing through the site as well to reduce maintenance on the site and to responsibly protect the larger Saratoga Creek and San Francisco Bay Watersheds.

2. In accordance with a SWPPP, Biohabitats recommends erosion and sediment control and monitoring during and after construction.

3. Biohabitats recommends implementing as many of the site design measures recommended by the County as possible (see Appendix A). Some likely measures from this list which could apply to the Hakone project include:
    a. Minimize land disturbed
    b. Minimize impervious surfaces
    c. Minimum-impact parking lot design

d. Cluster structures/pavement
e. Disconnected downspouts
f. Pervious pavement
g. Green roof
h. Directing runoff from impervious cover to pervious (planting areas or other permeable surfaces)
    - Microdetention in landscape
    - Other self-treating and/or self-retaining area
i. Rainwater harvesting and use

4. Biohabitats recommends implementing as many of the source control measures recommended by the County as possible (see Appendix A). Some likely measures from this list which could apply to the Hakone project include:
    a. Alternative (non-toxic/leaching) building materials
    b. Wash areas, dumpsters, material storage and other pollutant contributing maintenance areas drain to sanitary sewer and are covered
    c. Proper maintenance (pavement sweeping, catch basin cleaning, etc.)
    d. Beneficial landscaping – minimize irrigation, runoff, pesticides & fertilizers; use of landscape area for treatment and infiltration

5. Biohabitats recommends Treatment Systems in accordance with the County's requirements. Further analysis is needed to select and determine sizing for stormwater LID and Biotreatment practices. However, Biohabitats initially recommends the following integrated system of practices (pursued in this order):
    a. Rainwater/Stormwater Harvesting and Reuse. Harvest rainwater from structures in above or below ground rainwater cisterns and/or surface stormwater at low points in underground stormwater cisterns; reuse harvested rainwater and stormwater for garden irrigation.
    b. Infiltraton/Bioinfiltration (Basin, Trench, or other). Soil testing in specified areas will be needed to determine the ability of existing soil to infiltrate stormwater (a key factor in sizing these practices). If soil allows sufficient infiltration, grading should direct runoff to pervious infiltration areas. These areas can be planted or gravel/rock surfaces with sub-surface media to encourage infiltration.
    c. Biotreatment/Bioretention. If soil infiltration capacities are insufficient or harvesting and infiltration practices are infeasible, stormwater runoff may be treated and retained in bioretention areas (similar to bioinfiltration but with piped under drains and overflow strategies).
    d. Retrofit of existing vegetated detention basin. If the above strategies are insufficient to manage the regulated runoff volumes, the existing vegetated detention basin between the entry roads may be given credit for detention. This would likely require a retrofit (excavated/regraded for more depth/detention capacity and revegetated with appropriate planting). Ideally the overflow swale

flowing under Highway 9 to Saratoga Creek would be stabilized with rock work and planting to address erosion as well.

Recommendations for Scenario 2: Ramp Concept with parking lot improvement

Based on Portico's preliminary calculations, the Ramp Concept with parking lot improvement version of the Master Plan concept design would add/replace approximately 53,000 sq. ft. of impervious cover.

Like Scenario 1, Scenario 2 also has an LOD of over 1 acre, adds and replaces over 1 acre of impervious cover, but the total proposed impervious cover is less than the total existing impervious cover. Therefore, the State Construction General Permit and MRP Provision C.3 apply for the LOD area. See the table below for estimated areas for Scenario 2:

a. Total Site Area: 18 acres	**b. Total Site Area Disturbed: 2.4 acres** (including clearing, grading, or excavating)			
	Existing Area (sq. ft)	**Proposed Area (sq. ft)**		**Total Post-Project Area (sq. ft)**
		Replaced	**New**	
Impervious Area				
Roof	2436	0	1173	3609
Parking	50346	34370	3206	37,576
Sidewalks and Streets	6664	3303	10555	15769
c. Total Impervious Area	59446	37673	14934	56954
d. Total new and replaced impervious area		52607		
Pervious Area				
Landscaping	44595	20726	9444	54039
Pervious Paving	0	0	0	0
Other (e.g. Green Roof)	0	0	0	0
e. Total Pervious Area	44595			54039
f. Percent Replacement of Impervious Area in Redevelopment Projects (Replaced Total Impervious Area / Existing Total Impervious Area) x 100% = 63.37%				

Recommendations for Scenario 2 are the same as for Scenario 1. However, with the significant addition of replacing the main parking lot area impervious cover, treatment practice sizing will likely be larger and retrofitting the existing detention basin will most likely be required.

References

1. California State Water Resources Control Board. *Storm Water Program: Construction Storm Water Program.* http://www.swrcb.ca.gov/water_issues/programs/stormwater/construction.shtml. Accessed Aug. 7, 2015.

2. County of Santa Clara Department of Planning and Development. *Clean Water Questionnaire*. https://www.sccgov.org/sites/dpd/DocsForms/Documents/Water_Questionnaire_Worksheets%28LID%29.pdf. Dec. 2011. Accessed Aug. 7, 2015.

3. Santa Clara Valley Urban Runoff Pollution Prevention Program. http://www.scvurppp-w2k.com. Accessed Aug. 7, 2015.

4. Santa Clara Valley Urban Runoff Pollution Prevention Program. *C.3 Stormwater Handbook: Guidance for Implementing Stormwater Requirements for New Development and Redevelopment Projects*. http://www.scvurppp-w2k.com/pdfs/1112/C3_Handbook_Chapters-042012-Web.pdf. April 2012. Accessed Aug. 7, 2015.

5. West Valley Clean Water Program. http://www.cleancreeks.org/. Accessed Aug. 7, 2015.

APPENDIX A: STORMWATER REGULATION BACKGROUND

Properties within the City of Saratoga and the County of Santa Clara, must comply with all relevant stormwater permitting requirements.

Regulatory Background

Stemming from the 1987 amendment to the federal Clean Water Act, the resulting US EPA's National Pollutant Discharge Elimination System (NPDES) stormwater and Municipal Separate Storm Sewer System (MS4s) programs, storm sewer systems serving populations of 100,000 or greater are required to obtain a permit and implement a stormwater management program to control pollutants conveyed through storm sewers into the larger watershed and waterbodies.

The San Francisco Bay Regional Water Quality Control Board, a subset of the California EPA State Water Resources Control Board, has issued NPDES permits to Counties and Cities within the San Francisco Bay Watershed since the 1990s. The most recent Bay Area Municipal Regional Stormwater Permit (MRP) was issued in 2009. Provision C.3 of the MRP requires post-construction stormwater controls for development and redevelopment projects.

The Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), an association of fifteen agencies in the Santa Clara Valley (including the City of Saratoga) with a common discharge permit for the South San Francisco Bay, formed in 1990 to facilitate compliance with the NPDES requirements. SCVURPPP prepared the 2012 C.3 Stormwater Handbook which provides guidance on implementing the MRP provision C.3. More locally, The West Valley Clean Water Program, a cooperative between the Cities of Campbell, Monte Sereno, Saratoga, and the Town of Los Gatos, also collaborates to control pollutant discharge into local creeks and the larger San Francisco Bay watershed.

The State Construction General Permit also stems from NPDES and was also issued in 2009 for construction sites which disturb one acre or more. This permit requires development and implementation of a Storm Water Pollution Prevention Plan (SWPPP).

The State Water Resources Control Board also issues Hydromodification Management (HM) permits for sites with one or more acres of impervious cover. HM focuses on preventing impacts to receiving channels, such as Saratoga Creek, by stormwater runoff. Practices required for HM are aimed at flow duration control such as larger retention and detention areas.

The County of Santa Clara Department of Planning and Development summarizes applicability of these three permit types through their Clean Water Questionnaire, a document to be completed as part of project permitting for development and redevelopment projects within the County.

Regulatory Requirements

Specific stormwater management requirements are based on quantity of impervious surface cover within the site LOD. Impervious surfaces include any surface which does not allow stormwater to infiltrate into the soil such as buildings and other structures, paved walkways, driveways, parking lots, and other hardscape. Square footage of interior remodeling or re-paving as part of typical maintenance, as in the case of retrofitting existing buildings or re-paving (without regrading) parking lots, does not count towards this area.

The County of Santa Clara Department of Planning and Development Clean Water Questionnaire uses the following table to determine applicability of regulatory requirements:

a. Total Site Area: _____ **acre**	**b. Total Site Area Disturbed:** _____ **acre** (including clearing, grading, or excavating)			
	Existing Area (ft^2)	**Proposed Area ($ft^{2)}$**		**Total Post-Project Area (ft^2)**
		Replaced	**New**	
Impervious Area				
Roof				
Parking				
Sidewalks and Streets				
c. Total Impervious Area				
d. Total new and replaced impervious area				
Pervious Area				
Landscaping				
Pervious Paving				
Other (e.g. Green Roof)				
e. Total Pervious Area				
f. Percent Replacement of Impervious Area in Redevelopment Projects (Replaced Total Impervious Area ÷ Existing Total Impervious Area) x 100% = _____%				

Scenarios of applicability of regulations to project:

1. State Construction General Permit
    a. If the Total Site Area Disturbed (Limit of Disturbance) is equal to or greater than 1 acre (cell b in the table above), the project must apply for a State Construction General Permit.
2. MRP Provision C.3
    a. If project creates or replaces less than 10K sq ft of impervious cover (cell d in the table above) → MRP C.3 regulations likely don't apply (but still need to confirm with local agency)
    b. If project creates or replaces more than 10K sq ft of impervious cover (cell d in the table above) → MRP C.3 regulations apply.
        i. Percent replacement of Impervious area (cell f) is equal to 50% or more → Source control, site design, and treatment requirements apply for entire site (LOD) area

ii. Percent replacement of Impervious area (cell f) is less than 50% → Source control, site design, and treatment requirements only apply to impervious area created and/or replaced

3. Hydromodification Management (HM)
    a. If project creates and/or replaces 1 acre or more of impervious surface AND the total post-project impervious area is greater than pre-project (existing) impervious area → continue to b below (if not, the project is exempt from HM).
    b. If project is located in area of HM applicability on the HM Applicability Map (areas with less than 65% impervious cover → HM requirements apply (Hakone is located in one of these areas)

Page 3 of the County of Santa Clara Department of Planning and Development Clean Water Questionnaire form lists potential stormwater control measures to meet applicable regulations:

6. Selection of Specific Stormwater Control Measures:

Site Design Measures

- ❑ Minimize land disturbed
- ❑ Minimize impervious surfaces
- ❑ Minimum-impact street or parking lot design
- ❑ Cluster structures/ pavement
- ❑ Disconnected downspouts
- ❑ Pervious pavement
- ❑ Green roof
- ❑ Microdetention in landscape
- ❑ Other self-treating area
- ❑ Self-retaining area
- ❑ Rainwater harvesting and use (e.g., rain barrel, cistern connected to roof drains) [1]
- ❑ Preserved open space: _____ ac. or sq. ft (circle one)
- ❑ Protected riparian and wetland areas/buffers (Setback from top of bank: _____ft.)
- ❑ Other _____

Source Control Measures

- ❑ Alternative building materials
- ❑ Wash area/racks, drain to sanitary sewer[2]
- ❑ Covered dumpster area, drain to sanitary sewer[2]
- ❑ Sanitary sewer connection or accessible cleanout for swimming pool/spa/fountain[2]
- ❑ Beneficial landscaping (minimize irrigation, runoff, pesticides and fertilizers; promotes treatment)
- ❑ Outdoor material storage protection
- ❑ Covers, drains for loading docks, maintenance bays, fueling areas
- ❑ Maintenance (pavement sweeping, catch basin cleaning, good housekeeping)
- ❑ Storm drain labeling
- ❑ Other _____

Treatment Systems

- ❑ None (all impervious surface drains to self-retaining areas)

LID Treatment

- ❑ Rainwater harvest and use (e.g., cistern or rain barrel sized for C.3.d treatment)
- ❑ Infiltration basin
- ❑ Infiltration trench
- ❑ Exfiltration trench
- ❑ Underground detention and infiltration system (e.g. pervious pavement drain rock, large diameter conduit)

Biotreatment [3]

- ❑ Bioretention area
- ❑ Flow-through planter
- ❑ Tree box with bioretention soils
- ❑ Other _____

Other Treatment Methods

- ❑ Proprietary tree box filter[4]
- ❑ Media filter (sand, compost, or proprietary media)[4]
- ❑ Vegetated filter strip[5]
- ❑ Dry detention basin[5]
- ❑ Other _____

Flow Duration Controls for Hydromodification Management (HM)

- ❑ Detention basin
- ❑ Underground tank or vault
- ❑ Bioretention with outlet control
- ❑ Other _____

[1] Optional site design measure; does not have to be sized to comply with Provision C.3.d treatment requirements.
[2] Subject to sanitary sewer authority requirements.
[3] Biotreatment measures are allowed only with completed feasibility analysis showing that infiltration and rainwater harvest and use are infeasible. Fill out Forms 1, 2 and 3 to determine feasibility, as applicable.
[4] These treatment measures are only allowed if the project qualifies as a "Special Project".
[5] These treatment measures are only allowed as part of a multi-step treatment process.

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