



MILLER COMPANY  
landscape architects

# BUENA VISTA PARK

## Needs Assessment and Cost Analysis Final Report

July, 2020

# ACKNOWLEDGEMENTS

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## Special Thanks to the Neighbor’s of Buena Vista Park

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# CHAPTER 01

## EXECUTIVE SUMMARY

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## 1.1 EXECUTIVE SUMMARY

The Buena Vista Park Needs Assessment and Cost Analysis Report provides an updated analysis of the park's current conditions, expanding upon the Buena Vista Park Capital Improvement Plan that was completed in 2015. This report identifies areas and components of the park that are in need of repair and restoration. Design opportunities for various park improvements have been explored. Feedback and dialogue with the neighbors and community members have been gathered during three community meetings held in 2019 and 2020, and a Sunday community site walk. Public input has inspired many of the proposals included in this document. Cost estimates associated with infrastructure needs and opportunities for improvement projects are provided to help prioritize projects and support future fundraising.

The park is located in the northern central section of San Francisco in the heart of the city. Accessing from various entry stairs and perimeter walkways, the park becomes a densely vegetated space with an intricate network of paved and rustic pathways. Visitors enjoy the sounds of resident and migrating bird species and are afforded views of the city and nearby region through windows of mature foliage. Buena Vista Park is a one-of-a-kind urban park known for its densely forested setting that provides a space of respite for wandering and relaxing.

The park is used by residents of the surrounding neighborhoods, including Buena Vista, Corona Heights, Ashbury Heights, Upper Haight, Cole Valley, and the Castro. Activities in the park include exercising, and dog walking along the paved pathways and trails that traverse the park's topography through the verdant urban forest. Some people enjoy relaxing on a bench or sitting on the grass. Program areas include a small children's playground, two tennis courts and a park maintenance area. Due to its beauty and proximity to the Haight Street business district, the park attracts many tourists from all over the world.

Despite its unique and attractive setting, the park is in need of improvements due to failing infrastructure. Perimeter sidewalks, interior paved walks, rustic pathways, park entrance stairways, and various types of retaining walls are in poor condition. With its steep slopes and sandy soil, the park suffers from chronic erosion throughout the year. Many trees in the park are nearing the end of their life cycle and declining with age while others are suffering due to extensive erosion. The park's understory includes many invasive species. The efforts of the San Francisco Recreation and Park Department's maintenance crews, combined with organized groups of neighbors and volunteers, help sustain the park's current condition, however the park is deteriorating and requires robust restoration and improvement.

A key stakeholder and active participant spearheading this project is the Buena Vista Neighborhood Association (BVNA). The organization has initiated the project working together with the San Francisco Recreation and Park Department (SFRPD) with the goal of understanding the costs associated with the complex physical needs of the park. Miller Company Landscape Architects was selected as the lead consultant and has been assisted by a team of professional consultants to undertake this work and has facilitated a community process engaging neighbors and park advocates in the creation of the final Needs Assessment and Cost Analysis report.





# CHAPTER 02

## INTRODUCTION

**2.1 - *brief history***..... pg. 10

**2.2 - *park overview***..... pg. 12

## 2.1 BRIEF HISTORY

Established in 1867 and originally named Hill Park, Buena Vista Park is San Francisco's oldest park within the city park system. The site's elevated topography and potential for views from the commanding prospect motivated city leaders to establish it as a public park. Hill Park was renamed Buena Vista Park in 1894. Following Golden Gate Park, John McLaren Park, and Glen Canyon Park, Buena Vista Park is the fourth largest park in the City.

In 1894, under the supervision of John McLaren, the Superintendent of the Parks Department, internal pathways were constructed and the park began its forestation efforts to expand the forest beyond the native Coast Live Oaks by planting Monterey Cypress, Monterey Pines, Eucalyptus, Redwood, and Toyon trees. San Francisco public school students planted seedlings from 1894 to 1898 on Arbor Day each year.

A few years after the 1906 earthquake devastation, residents around the park organized a committee to advocate for the restoration of the park. The City installed new staircases, hardscape pathways and two tennis courts. Twenty years later, at the end of 1930s the Works Progress Administration (WPA) stone retaining walls and drainage gutters were constructed along the pathways to address the severe erosion problems. The gutters that run along the edges of the park's pathways have a unique story. They are lined with stone recycled from the slabs of unclaimed tombstone marbles from the Lone Mountain Cemeteries, renamed Laurel Hill Cemetery, when the San Francisco relocated its cemeteries to Colma. In respect for the deceased, the pieces of tombstone marble were laid with the inscriptions face-down, however some were missed and some of the engravings were exposed and are still visible to this day.

Despite its unique beauty, Buena Vista Park has suffered a long history of decline. A sale was proposed in 1896 by James D. Phelan, prior to his becoming mayor, due to its disuse and run-down

state. This initiative never succeeded due to resistance from the community. In 1967 The Summer of Love attracted newcomers to the park. Problems associated with drug use and encampments occurred and the park fell into further disrepair. Illicit social activities in 1970's and 1980's posed difficult physical challenges to the park. Short cuts and side trails ("social paths") created by park users caused further erosion resulting in yearly occurrences of sand washing down the park's hillsides. In the late 1970's the City allocated funds to address erosion issues. A plan was developed with input from a newly formed neighborhood organization, Friends of Buena Vista Park. The plan was implemented adding internal pathways and wood stairs to interior portions of the park in an effort to stabilize the park. The erosion control project included seeding of native grasses and installation of erosion blankets on the sandy hillsides. In 1987 a master plan was developed by SFRPD and BVNA, and major improvements followed. The summit was altered from a parking lot to a grassy knoll while the tennis courts were resurfaced and a children's playground rebuilt on the west side of the park.

Since then, BVNA has helped lead community efforts to support and improve the park through monthly workdays for gardening and maintenance, annual tree planting and project fundraising. Members of the neighboring Walden House, a substance abuse rehabilitation program, are also involved in some of the gardening tasks. Enterprise for Youth, many corporate and non-profit groups have been essential volunteers.

Despite grassroots efforts made by BVNA, neighbors, and ongoing maintenance provided by SFRPD many elements of the park are in need of significant attention and renovation. The Capital Improvement Plan in 2015 was developed by the City with the intention to identify strategies to help sustain and improve, however as of today no funding has been allocated to the park's

improvements.

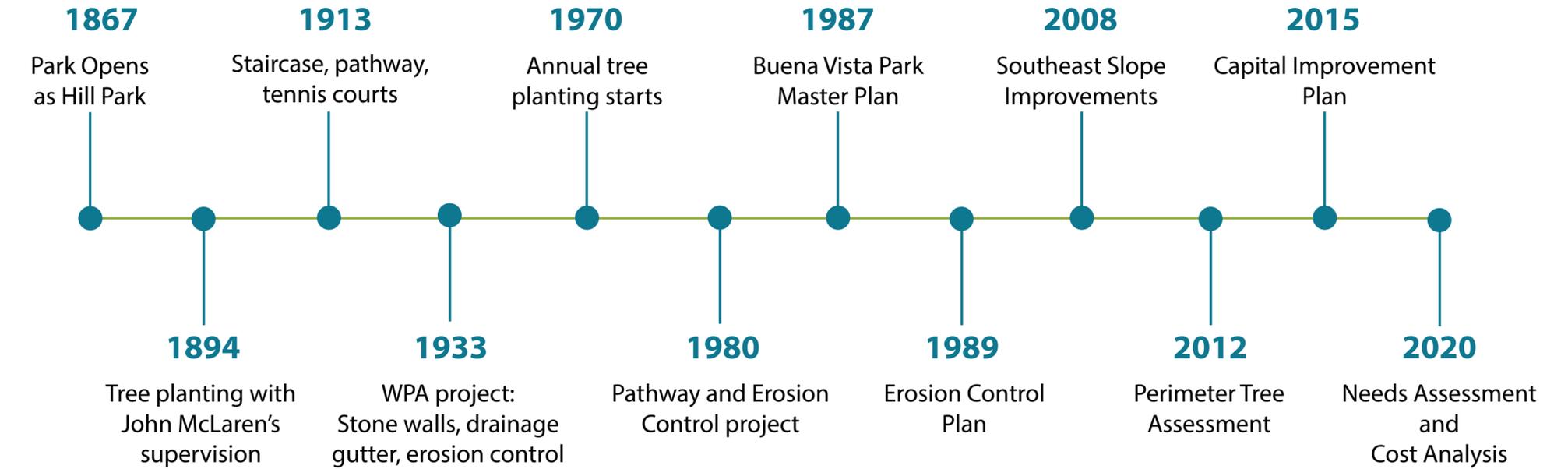


BUENA VISTA PARK IN 1886



BUENA VISTA PARK IN 1970s

## PARK HISTORY TIME LINE



BUENA VISTA PARK PRESENT

## 2.2 PARK OVERVIEW

Situated in the heart of the San Francisco, Buena Vista Park stretches across 37 acres and is a steep hillside park that peaks up to 575 feet. The park is located in the Haight Ashbury neighborhood and bounded by Haight Street at the north, Buena Vista West, and Buena Vista East Avenues adjacent to the Haight Ashbury Business District with small shops, bars and restaurants. Buena Vista Park is distinctively unique from other neighborhood parks as it is densely forested. The park contains remnant native flora and fauna that predates the creation of the park and is recognized as a significant natural resource area in San Francisco.

A concrete sidewalk with brick accents encompasses the park along Buena Vista Avenue West and East and a resurfaced concrete sidewalk borders the park on Haight Street. A linear strip of sloped landscaped area exists on both the east and west sides of the park separating the perimeter walks from the surrounding streets. The area is intermittently planted with shrubs and trees with an understory of turf grass.

Park users access the park from five main entry points. Historic entry stairs are located on the west side at Frederick Street, on the east side at Waller Street, and on the north side at Haight and Buena Vista West, Lyon Street, and Baker Streets. Several informal stairs have been added over the years to facilitate pedestrian access from the surrounding neighborhood to the perimeter sidewalks. Several other points of pedestrian access from the perimeter pathway into the park exist on both the east and west sides of the park.

In recent years an accessible pathway was constructed on the east side of the park adjacent to the service road near Upper Terrace Street. This pedestrian pathway connecting the south side of the park to the central area is partially constructed with on-grade resin-based paving that merges with an above-grade boardwalk. The resin-based portion, adjacent retaining walls, and fencing

are showing signs of decay due to erosion of the steeply sloping eastern hillside.

Pedestrians and maintenance vehicles share access to the park from the west side where Waller Street meets Buena Vista West and on the south edge where Upper Terrace terminates at the edge of the park. As one enters into the lush urban forest, a network of secluded, winding, wide asphalt pathways and rustic trails with stairs and earth pathways runs throughout the park.

Asphalt paved pathways within the park serve both pedestrians, maintenance and emergency vehicles. Many of these paths are in poor condition due to unstable underlying soils. The secondary system of trails provides pedestrian access to the forested interior which consists of wood stairs that traverse steep hillsides and sandy earth pathways that follow the grade. These stairs were built in the 1980's with a limited budget and are deteriorating with erosion and age. The rustic trails have declined over the years and signs of decay are present throughout. Despite the condition the trails are heavily used by residents and visitors.

The park landscape includes large areas of urban forest and several areas of lawn that are enjoyed by park users. A large swath of lawn located on the northwest edge of the park facing Haight Street, is a popular destination for many park users. The lawn extends southward along the west edge of the park terminating at the Waller Street asphalt entry path. A smaller lawn is located at the park's edge across from Manor House. A third area of lawn is centrally located in an area known as The Summit.

While the park's main features are the forested walkways, trails, stairways, and vista points, it also offers a few programmatic areas. Two tennis courts on the east side of the park at the intersection of Duboce and Buena Vista East have been resurfaced and re-fenced in the recent years and are frequently utilized. A small playground located on the west side of the park above the northwest lawn

area consists of an aging play structure set in a sand surface. Along Buena Vista West, there is a small unfenced dog run that has no seating or water. The sandy dog run is surrounded by many trees including Oaks, Cypress and Eucalyptus. Erosion in this area is apparent with many tree roots being undermined by shifting soil. The intricate network of the walkways allows the entire park to be used by dogs and dog walkers for strolling, but this dog area is sometimes utilized for resting and playing.

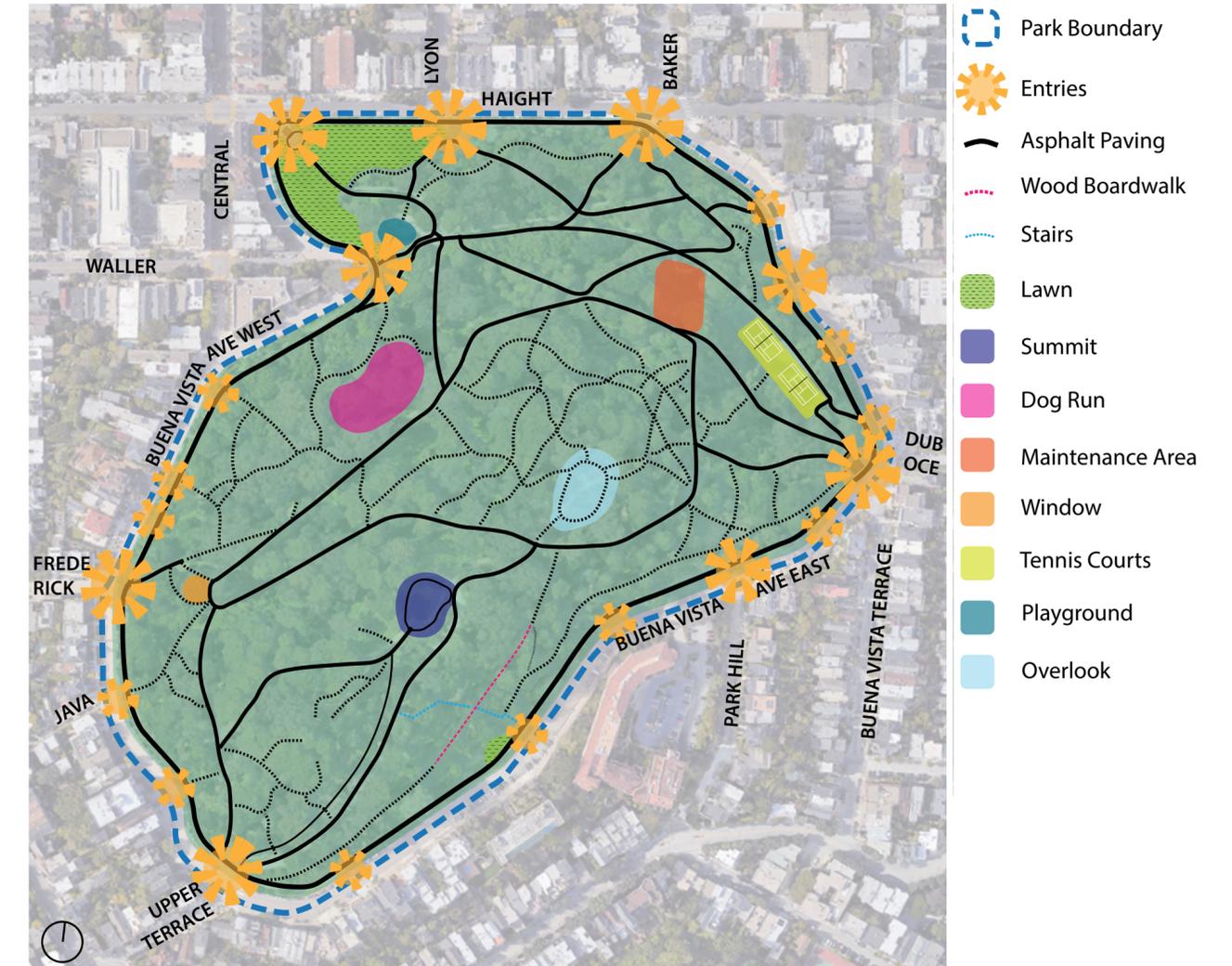
There are three major vista points in the park: 1) The Summit - a grassy knoll with a small seating area constructed of salvaged granite curb stones, offers a wide view of the city stretching from the Pacific Ocean, Golden Gate Bridge, the Marin Headlands, and downtown. The Summit is open to the sky and marks the central destination point of the park's trails where urban trekkers take a rest, sunbathe, and take in the beautiful view; 2) The Overlook - provides another sweeping view similar to the Summit, but includes downtown San Francisco and the East Bay. It is one of the most beloved and exciting features of the park. The Overlook covered by a canopy of mixed conifers is terraced with wood retaining walls and provides a bench for park users to enjoy; 3) The Window - a viewpoint on the west side of the park looking out to St. Ignatius Church, Golden Gate Park and the Pacific Ocean.

A dedicated maintenance area is centrally located adjacent to the tennis courts. The flat maintenance yard is surrounded by steep rock outcrops created by historic quarrying activities carried out early in the park's history. Heavily eroded hillsides surround the area. Failing retaining walls and cyclone fencing on the south east side of the area have caused extensive damage to pathways above the area. There used to be a large retaining wall on the east side, but it failed and has been removed. As a result there is heavy hillside erosion and damage to the landscape. Five shipping containers, used for equipment storage, are located in a flat area at

## PARK OVERVIEW: SITE PLAN

the base of the maintenance area. Adjacent open space in this area is used for vehicular access, plant storage, and green waste. A WPA-era bathroom building is located above the maintenance area on the east side. The building has been closed to the public since the 1980s and is used solely by maintenance staff to secure small-scale tool storage.

The extensive forest is perhaps Buena Vista Park's most significant amenity. The verdant forest is not only enjoyed by the public but also provides important habitat for birds, insects, and other urban wildlife. Significant stands of Monterey Cypress, Eucalyptus, Oaks, Redwoods, and Monterey Pines exist throughout the park. Many other species of trees exist in the park. Having been planted in the early 1900's, numerous trees have reached the limit of their expected lifespan. Dying and damaged trees have been removed from the park by park staff and contracted crews. Sporadic reforestation has taken place over many years with work being provided by SFRPD and neighborhood groups pitching in to plant new trees. A centrally located sign in the park provides a graphic illustration and timeline of the community efforts to preserve and enhance the forest. In some areas of the park trees were overplanted in the belief that a significant percentage would not survive. With more trees thriving than had been anticipated these areas require significant thinning and pruning.



# CHAPTER 03

## GOALS AND FOCUS OF PROJECT

- 3.1** - *brief recap of the capital improvement plan* ..... pg. 16
- 3.2** - *goals* ..... pg. 17
- 3.3** - *focus of project* ..... pg. 18
- 3.4** - *other specific improvement opportunities* ..... pg. 19

### 3.1 BRIEF RECAP OF 2015 CAPITAL IMPROVEMENT PLAN (2015 BVP CIP)

The Buena Vista Park Capital Improvement Plan and Community Consultation Report (2015 BVP CIP), was undertaken in 2015 by San Francisco Recreation and Park Department (SFRPD) and Department of Public Works (DPW) in coordination with Buena Vista Neighborhood Association (BVNA) in an effort to build consensus around capital improvement projects for the park. A community engagement process included three community meetings over a four-month period with neighbors and stakeholders. Several general project typologies were identified along with priorities for the park improvement.

As of 2020, aside from the ongoing maintenance performed by SFRPD staff and volunteer programs, the improvements identified in the 2015 BVP CIP have not yet been carried out due to a lack of available funding. The chronic erosion issues continue and have been managed by maintenance crews on an as needed basis. Many existing trees have fallen during the recent winter storms while others are declining with age and disease. As noted in the executive summary, the magnitude of the declining conditions in the park requires a holistic repair approach as opposed to stop-gap, temporary measures.

The 2015 BVP CIP, can be reviewed through SFRPD's website in the following link:

[sfrecpark.org/DocumentCenter/View/13504/2015-Buena-Vista-Park-Capital-Improvement-Plan-Report\\_202001112323356857](https://sfrecpark.org/DocumentCenter/View/13504/2015-Buena-Vista-Park-Capital-Improvement-Plan-Report_202001112323356857)

### 3.2 GOALS

In order to support current and future fundraising efforts, BVNA initiated the Needs Assessment and Cost Analysis Project to build on the priorities established in the 2015 Capital Improvement Plan. The goals of this project are threefold:

1. Identify the physical problems plaguing the park with a focus on infrastructure, forestry, and erosion issues.
2. Provide a schematic design plan for the park that addresses restoration, repair, and opportunities.
3. Provide a detailed estimate of costs associated with the restoration, repair, and potential improvement of the park.

The design team has conducted an analysis of the park's current condition based on site observations and review of archived improvement plans dating back to the 1930's. Detailed site maps of existing conditions in the park have been prepared. Areas requiring restoration and repair have been identified. The design team investigated design opportunities for potential park improvements with feedback from the stakeholders including BVNA community members, and SFRPD's maintenance staff, Capital Improvement Division, and the Natural Resources Division. The initial improvement design and cost estimates were presented to the community to solicit feedback. The improvement design and cost estimates were refined and priorities identified for the project funding needs. Final park analysis, improvement plans, and cost estimates have been presented to the community and are included in this report.

The design team worked with the community and stakeholders to chart a course that assures the future of this magnificent public space. The schematic level design plan outlines steps to improve the long term health of the forest, addresses implementation strategies to control erosion, provides for safe pathways and

overlooks, brings the children's playground into compliance with the current safety standards, provides a secure dog run area, improves the gathering areas and spaces for contemplation, provides for well-functioning facilities that support ongoing maintenance and inspires visitors with meaningful insights into the history of this important place.

#### GOALS: Conduct a parkwide needs assessment and cost analysis based on the 2015 Buena Vista Park Capital Improvement Plan & Community Consultation Report.

- Identify and document the park existing conditions, investigate design solutions, and present options to the community.
- Incorporate community input, maintenance needs, and future visions for potential park improvements.
- Provide detailed cost estimates for the highest priority areas to identify project funding needs.

### 3.3 PROJECT FOCUS

The Needs Assessment and Cost Analysis project has three overarching areas of focus:

1. Circulation and Hardscape
2. Forest Management and Habitat Enhancement Planting Opportunities.
3. Water Management and Erosion Control.

Circulation and Hardscape needs have been identified. As the bones of the park, the elements include: historic entry stairways, perimeter walks, ramps, and stairs, asphalt paving leading the visitors throughout the park, walls supporting the hillside from major erosion, stone walls and tile gutters adding historic aesthetic value to the park, the rustic trails system, park lookout viewpoints, and community gathering areas. Due to the aging of the infrastructure and site erosion, all elements are deteriorating and are detrimental to the overall health of the park.

An assessment of the condition of the park's trees in terms of age, size and health is included in the report's section 5 focused on Forest Management and Habitat Enhancement Planting Opportunities. Reforestation recommendations of appropriate species and locations are included. Removal of hazardous and invasive trees and understory vegetation and opportunities for reforestation is noted within the plan.

The plan addresses the needs for Water Management and Erosion Control and provides solutions to the most significant threats to Buena Vista Park's long-term health and viability, that of human and environmental impact on the hillsides, trails and amenities.

All of these topics are intertwined and repairing these elements holistically will be essential to restore the park to a healthy and sustainable condition.

This report identifies the findings of the existing conditions and provides recommendation to resolve each of these elements.

Schematic design solutions are documented and are the basis of the cost analysis. The cost analysis information supports the prioritization of improvement projects that are identified at the end of the report. The report provides guidance for the stakeholders to move the project forward and bring the restoration work to fruition.

#### 1. CIRCULATION / HARDSCAPE

- Entries
- Perimeter stairs
- Interior asphalt pavement
- Rustic hillside stairs
- Sand Path
- Perimeter sidewalks
- Walls
- Emergency Road
- Lookouts / Vista Points

#### 2. FOREST MANAGEMENT / HABITAT ENHANCEMENT PLANTING OPPORTUNITIES

- Identify hazardous trees
- Identify overall state of trees
- Prioritize reforestation
- Vision and goals for the forest and ecology
- Park-wide habitat for birds and other wildlife
- Perimeter Planting

#### 3. WATER MANAGEMENT / EROSION CONTROL

- Identify severe erosion areas
- Assess circulation
- Erosion and soil management
- Stormwater and irrigation management
- Re-establishment of understory planting
- Assess irrigation system condition

### 3.4 OTHER SPECIFIC IMPROVEMENT OPPORTUNITIES

In addition to the three core focus areas of the project, other specific improvement opportunities were identified and are part of the Needs Assessment and Cost Analysis project. These were identified during the CIP process, and were reinforced during the various community meetings for this project. Following is the list of the specific improvement opportunities:

- Wayfinding and park signage
- Children's Playground
- Lawn along Haight Street
- Designated dog run
- Park Summit
- Park perimeter lighting
- Park perimeter landscape
- Site Furniture
- Emergency Road
- Maintenance Facility Needs



*Children's Playground*



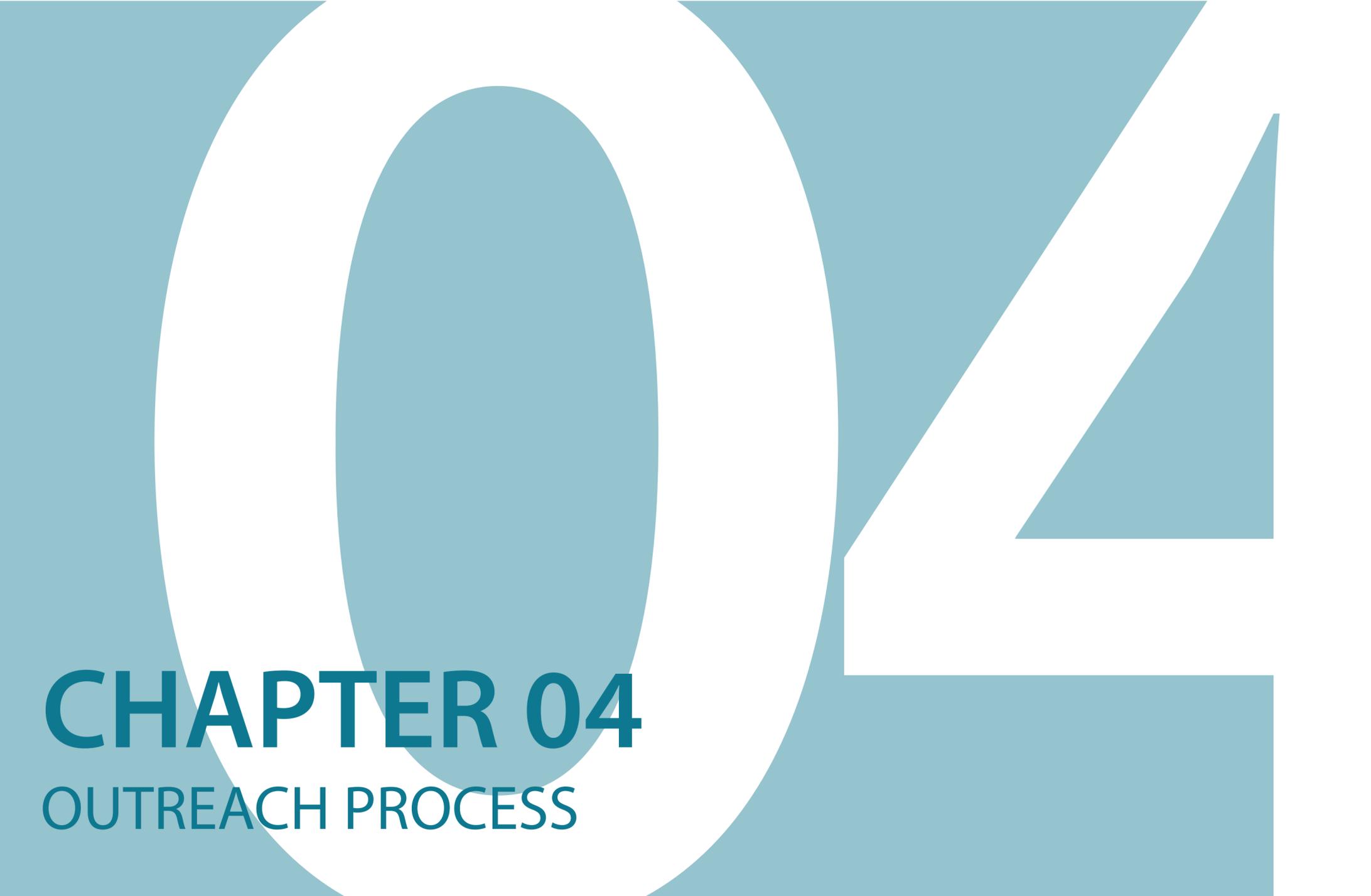
*The Overlook*



*The Dog Run*



*Maintenance Yard*



# CHAPTER 04

## OUTREACH PROCESS

<b>4.1 - community meetings</b> .....	pg. 22
<b>4.2 - stakeholder meetings</b> .....	pg. 23
<b>4.3 - community site walk</b> .....	pg. 24

## 4.1 COMMUNITY MEETINGS: SCHEDULE AND OVERVIEW

Three community meetings were held from Fall of 2019 to Spring of 2020 to engage with neighbors, park advocates, and visitors. Each meeting was held during a weekday evening at the Randall Museum of Science, Nature, and the Arts. These meetings averaged approximately 50 participants who provided feedback and positive support for the efforts to restore the park. The desire for park restoration and improvements are prevalent amongst the community members and discussions about the future environment and sustainability occurred during these meetings. In addition, a Sunday Community Site Walk was held in November 2019 to walk through the park with community members and gather hands-on feedback..

The Needs Assessment and Cost Analysis Report was developed through the following community meetings:

**Meeting #1:** October 7, 2019 7:00 p.m.

Introduction of the Project, presentation of the existing condition analysis, Q& A and discussion with the community members to gather public input.

**Community Site Walk:** November 17, 2019 10:00 a.m.

A morning walk-through Buena Vista Park with the Community members divided into four groups for each four routes.

**Meeting #2:** February 26, 2020 7:00 p.m.

Presentation of the draft of recommendations for restoration and initial cost analysis, Q& A and discussion with the community members to gather public input.

**Meeting #3 (Virtual):** June 2, 2020 6:00 p.m.

Presentation of the final recommendations of the report and cost

analysis and gathering feedback for final consensus.

The first community meeting introduced the project, and the specific improvement opportunity areas. Existing conditions which were documented from the site assessment performed by the design team were presented in detail. The existing conditions covered in the meeting are described in Chapter 05 Findings of Existing Site Assessment. During the Q & A and discussion with the participants, several topics were considered such as the lack of bathrooms in the park, whether the park deterioration could be halted or reversed through the current maintenance program, and whether the design team could provide an overall design vision in addition to concentrating on restoration and repair. The community meeting ended with positive support for the project and included an open-ended discussion of climate change, sustainability of the park including the significance of the wildlife habitat, as well as urban forestry and future planting.

At the second meeting the initial recommendation for restorations and the schematic design of improvements were presented. The draft cost estimate for these improvements was reviewed in detail. Comments included a request to prioritize the most important issues facing the park given the expected lack of funding to address all the park needs in the near future.

The third meeting was held virtually due the Covid-19 shelter in place order. The cost estimate summary for the entire project was presented followed by detailed cost projections for projects that were considered as high priority. Funding resources and the upcoming 2020 bond information were presented at the end of the presentation.

Priority projects were identified using the following criteria:

1. Life safety concerns.
2. Park components that have decayed significantly in which

delaying repair or restoration will result in a significantly worsened condition.

A Q&A session followed with comments from the community submitted in writing and responded to by the stakeholders and design team. Many comments touched on enhancing biodiversity in the park with new planting and new trees. Questions that were submitted during the meeting included:

- What measures will be taken to control excessive runoff from the asphalt paving?
- Will view corridors from the overlook be enhanced?
- How can the safety of park users be increased?
- What can be done in the dog park area to control erosion?
- How will the improvements be paid for given the dire City budget situation.

Answers to most questions were responded during the Q&A session. Remaining questions were responded and posted through SFRPD's website.

All of the concerns and issues raised during the community meeting, are addressed in the existing condition assessment and recommendation for improvements made in this final report.



## 4.2 STAKEHOLDER AND CONSULTANT MEETINGS: OVERVIEW

In conjunction with the public community meetings, multiple meetings were held with the stakeholders including SFRPD's project manager, Park Service Area and Natural Resources managers, the Buena Vista Park and Natural Resources supervisor who manages maintenance crews, and BVNA representatives and the SFDPW Landscape Architect who facilitated the 2015 BVP CIP process. The stakeholder's team and Miller Company worked closely together to assure that all of the issues in the park were addressed, including the three focus areas and specific park features. Maintenance staff needs and facility improvements were discussed and feedback from the group that have first-hand knowledge of the park are incorporated into this report. All stakeholders reviewed the findings of the existing conditions, design solutions, project recommendations, and cost estimates with a keen eye and have provided valuable input to the design team. The report reflects these meetings along with the community members feedback.

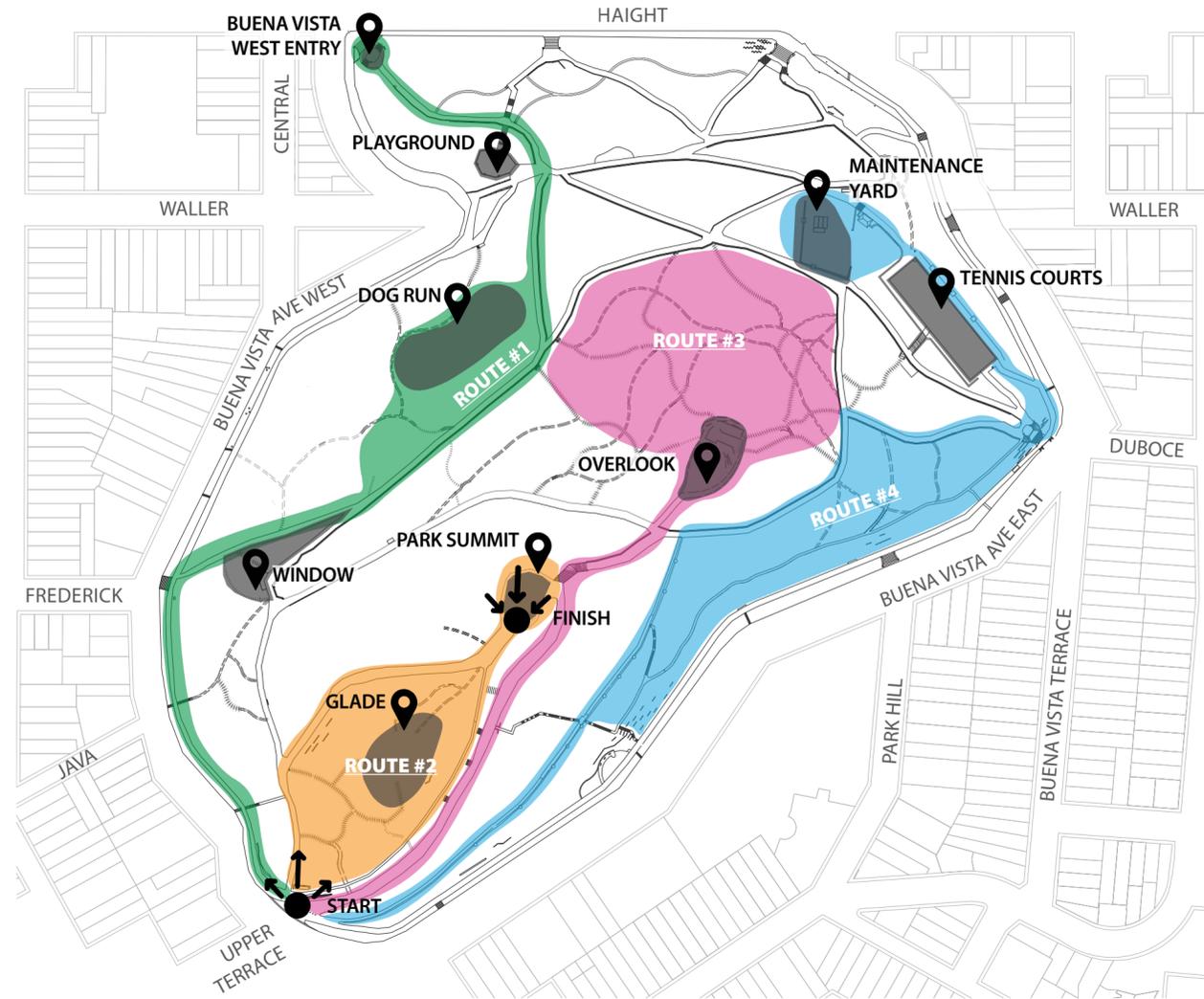
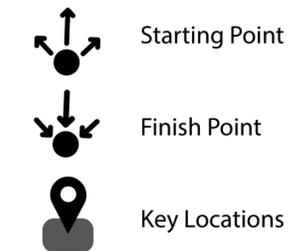
Miller Company met with the consultant team for a kick off meeting and site walk in the park at the outset of the project. The walk was attended by SFRPD staff including members of the SFRPD Natural Resources division who advocated for a redesign of the current layout of rustic pathways in Buena Vista Park. The design team participated in an informative Oak Woodlands trail walk in Golden Gate Park facilitated by the Natural Resources division staff. Construction techniques and layout strategies used for the Oak Woodlands trail system were explained in great detail and the design team was encouraged to incorporate similar methods into a newly designed rustic trail system for Buena Vista Park. Additionally, the design team received considerable feedback from many park neighbors who are knowledgeable of the park's condition which has proven to be useful information for this report.



### 4.3 SUNDAY COMMUNITY SITE WALK: ROUTES MAP

To engage the Buena Vista neighborhood community, a site walk was organized in the park with assistance of BVNA and SFRPD. The goal of the site walk was collecting information, comments and feedback on the current state of the park for the Needs Assessment Project. Around 30 people were handed a brief survey as well as a map of Buena Vista Park outlining four separate routes. Starting at the Upper Terrace entry to the park, the four routes focused on key locations throughout the park. Participants were invited to go on a guided tour of one of the routes and focus on hardscape, erosion and vegetation issues as well as general concerns or suggestions regarding the park. At the end of the site walk, all contributors were asked to meet at the Park Summit, where final comments and survey responses were collected.

Buena Vista Park was described as wild and forested, and a place of refuge from the urban San Francisco landscape. All survey answers were carefully analyzed and summarized to be included in the Needs Assessment Report.



### SUNDAY COMMUNITY SITE WALK: COMMUNITY IDENTIFIED ISSUES



30 PARTICIPANTS



4 ROUTES

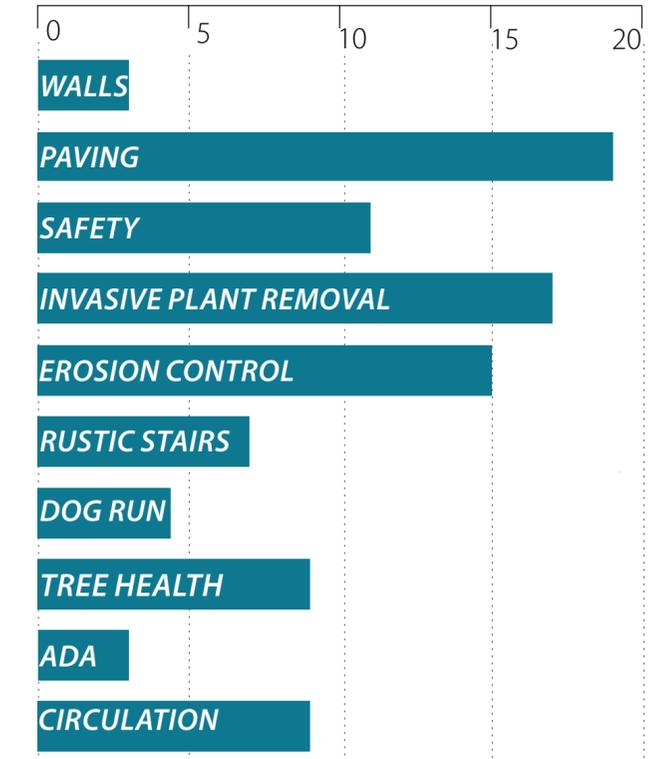
Following are some of the quotes from the survey regarding the community member's concerns about the existing conditions. The survey questions included:

1. What do you think about the condition of the asphalt paving, stone and wood walls?
2. Please note any erosion issues you see on your walk and mark up on the plan.
3. What are your impressions about the Urban Forestry (trees) and vegetation throughout the park?
4. Please let us know your thoughts, concerns or observations about the park features and wildlife habitat.

#### Quotes of park issues:

- "Overall state of the paving are deteriorating and need long term preservation"
- "Overgrown vegetation and trees with low branches cause safety issues"
- "Dog area is severely eroded and tree roots are exposed"
- "Buena Vista entrance is not a desirable entrance for the community"
- "Can we route water to bioswales?"
- "More definition of 'Overlook' with renovation"
- "Rustic stairs and paths are in disrepair"
- "The wild landscape within the park should be maintained but inter planted with appropriated native species."
- "Central intersections need signage"

#### NUMBER OF VOTES



#### ISSUES IDENTIFIED IN THE PARK

Above is a bar graph that shows the issues identified in the park. It is a summary of the tallied numbers taken from the survey.

## SUNDAY COMMUNITY SITE WALK: DESIGN OPPORTUNITIES

Below are some of the quotes from the survey which community members suggested as potential opportunities. The diagram to the right exhibits the opportunities identified for upgrades, redesign, and additional features. A tally was taken from the survey and the diagram summarizes the findings from the survey.

Despite the park's degraded condition, the park is well loved and the community members expressed the reasons why they love the park. The graphic on the next page summarizes the qualities that community members love about the park. The sizes of the letters are relative to the number of collected tallies.

### Quotes for potential opportunities:

- "The park's perimeter walkway has several problem areas where the brick is separating from the concrete"
- "Remove invasive species and encourage natives"
- "Several trees seem to obscure the park's priceless views and could be removed, especially when invasive"
- "There is an opportunity to enhance the signage [...] (wayfinding, interpretive signage, elevation indexes, nature/habitat maps, recreation features, etc.) throughout the park"
- "Trees are often the same age"
- "The main overlook is the main highlight of the park"

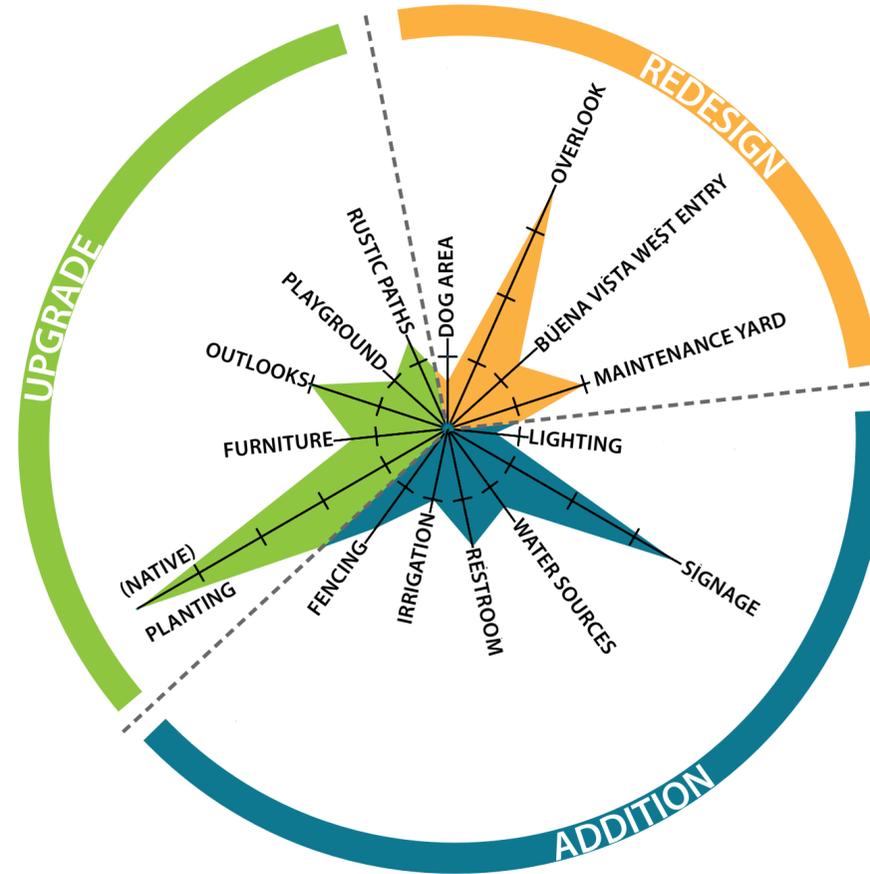


DIAGRAM FOR DESIGN AND IMPROVEMENT OPPORTUNITIES

## SUNDAY COMMUNITY SITE WALK: PARK CHARACTER

views

"Variety of open views through the trees and dense planting"  
"The main overlook has the best views"

forest

"The wooded character"  
"This beautiful "wild" forest"

habitat

"The park provides great habitat for a lot of bird species!"

wilderness

"Keep the park wild"

"Overall, it should be kept secluded, wooded and natural"

history

"The history of this park is very interesting!"

"Interpretive signage about the History of the park would be a benefit!"

### WHY DO YOU LOVE THIS PARK?

# CHAPTER 05

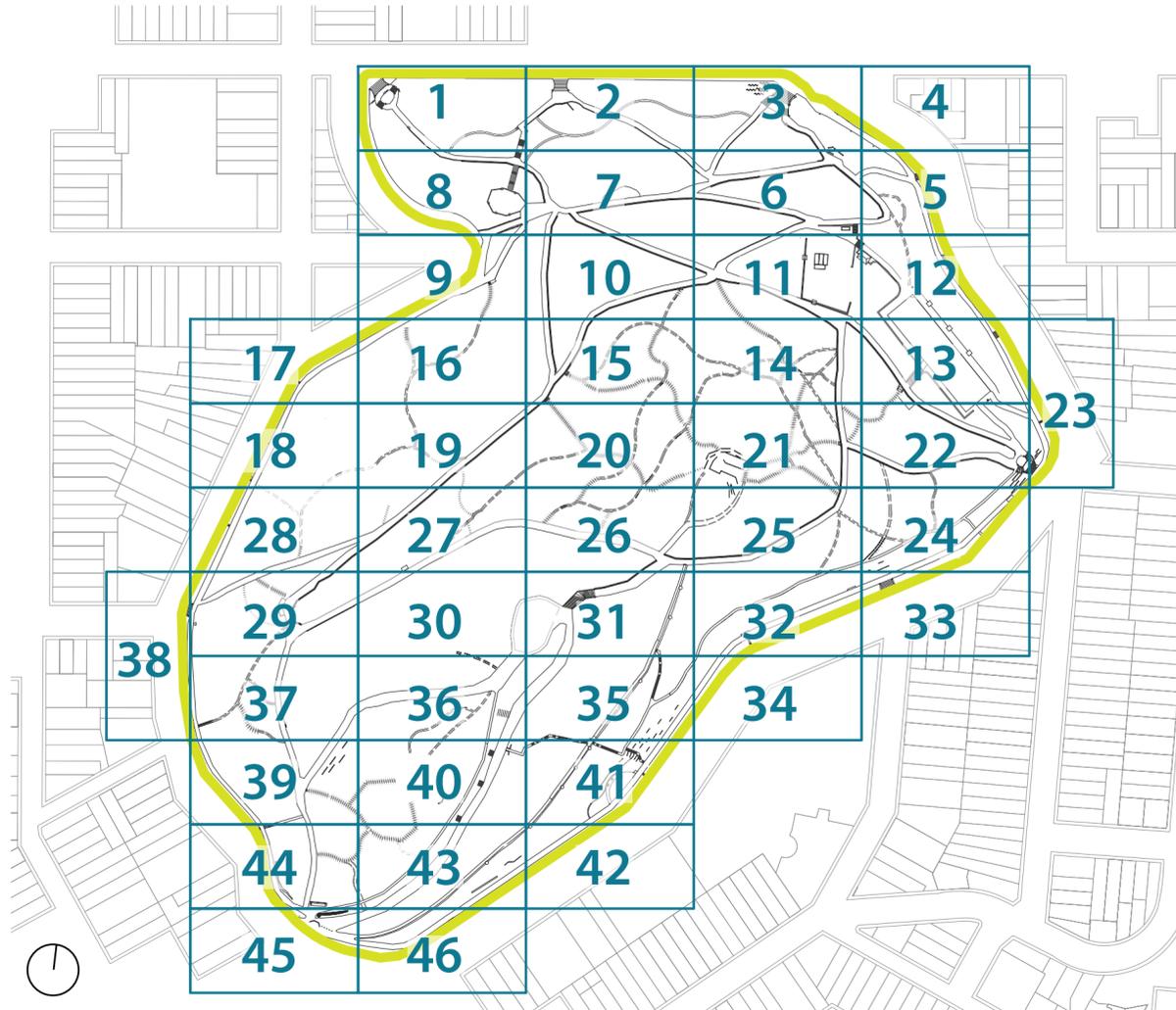
## FINDINGS OF EXISTING SITE ASSESSMENT

<b>5.1 - quadrant site assessment</b> .....		pg. 30
<b>5.2 - hardscape and circulation</b> .....	<b>a - entries</b> <b>b - asphalt paving</b> <b>c - rustic trails system</b> <b>d - wall and fence conditions</b> <b>e - viewing opportunities</b>	pg. 32
<b>5.3 - water management and erosion control</b> ...	<b>a - erosion issues</b> <b>b - existing irrigation system</b>	pg. 54
<b>5.4 - urban forestry</b> .....		pg. 58
<b>5.5 - furniture and wayfinding</b> .....		pg. 66
<b>5.6 - locations of interest</b> .....	<i>playground</i> <i>tennis courts</i> <i>maintenance yard</i> <i>dog run</i> <i>summit</i> <i>overlook</i> <i>the window</i> <i>southwest summit</i>	pg. 69

## 5.1 - a QUADRANT SITE ASSESSMENT

The project began with a comprehensive site assessment by subdividing the park into 46 quadrants of equal dimensions. The team conducted a quadrant by quadrant site analysis throughout the park, taking inventory of existing hardscape, erosion control, water management and forestry issues. Findings were documented and mapped with referencing photographs. The map is annotated with numbers appended to the exhibits of photographs. A caption under the photos describes the condition and its issue. Each condition was assigned one of three levels of deterioration; high, medium, and low, assessed by the severity of the damages. Color coded side bars refer to the designated focus area, which are: hardscape and circulation, forest management and planting, and water management and erosion control.

The detailed analysis has been gathered into a holistic perspective of the park and its issues. An overall map for each important focus area was then assembled highlighting the critical findings from our quadrant site analysis.



## EXAMPLE OF QUADRANT SITE ANALYSIS



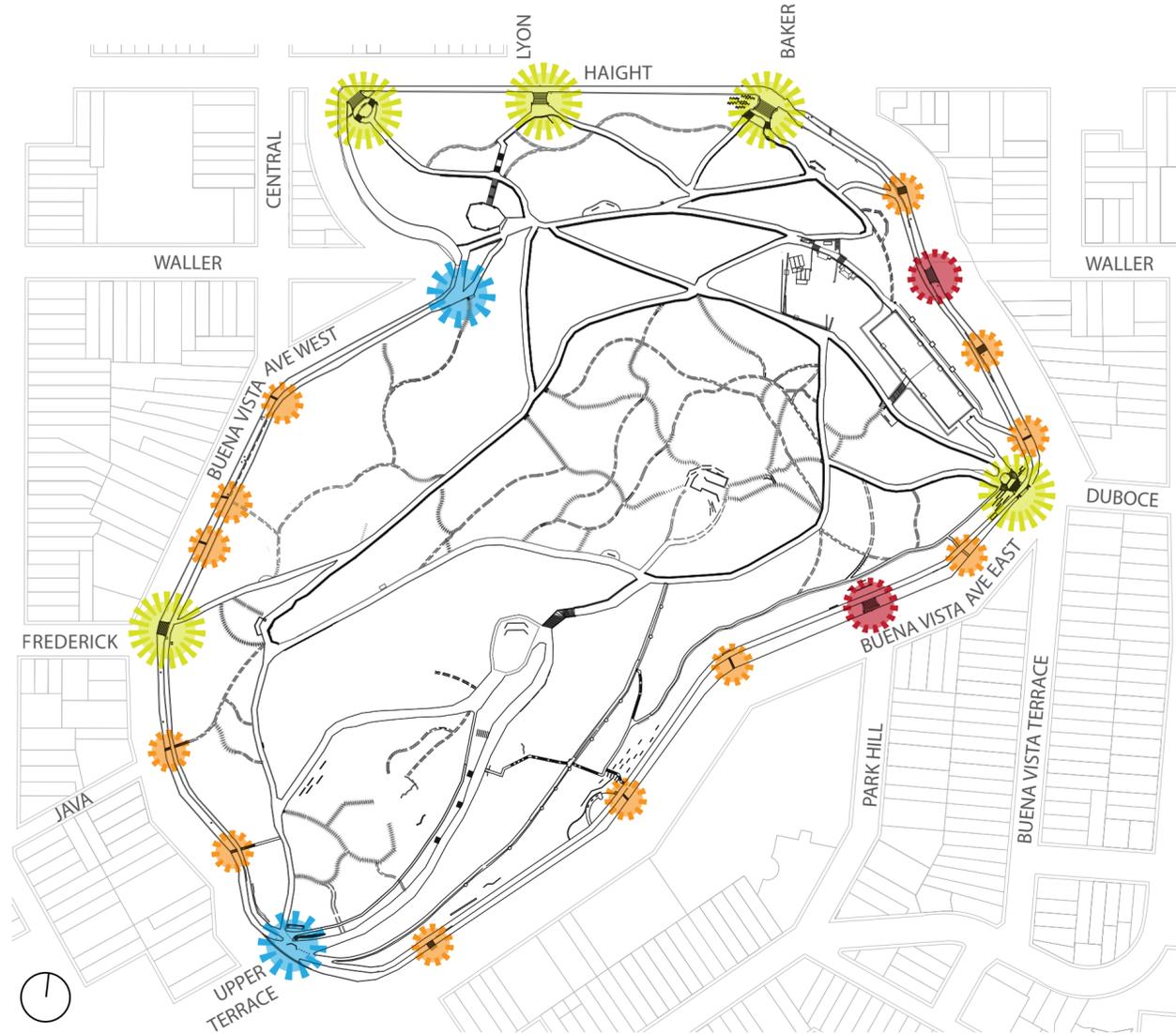
## 5.2 - a HARDSCAPE & CIRCULATION: ENTRIES MAP

There are five major historic entry stairs located around the park including Haight Street West, Lyon Street, and Baker Street on the north side, Frederick Street on the west side, and Duboce Street on the east side. Historic stairs were built around 1913 with financial support coming from the park's adjacent neighbors.

Two historic secondary entries are located along Buena Vista Ave East.

Two accessible entries were built in the recent years at Upper Terrace and the intersection of Waller street and Buena Vista Avenue West adjacent to the existing playground.

The historic entries are supplemented by smaller and informal stairs which are installed along the steep landscape strip that stretches between the street and the park's perimeter sidewalk. These informal stairs are generally built in wood, a combination of wood and concrete, or stone. The construction materials used in these informal stairs are inconsistent throughout the perimeter of the park.



-  Historic Primary Entry
-  Historic Secondary Entry
-  Accessible Entry
-  Informal Stairs:  
Wood, Concrete, and Stone

## HISTORIC ENTRIES

Three of the five historic primary entries are high steep hillside staircases: Lyon Street entry, Baker Street entry, and the Duboce Street entry. Structural issues appear in each including concrete staircase cracking and sidewall separation where erosion is causing the walls to lean outward.

Piecemeal repairs with varying types of materials used to patch the stairs have been implemented. Erosion issues on steep slopes adjacent to the stairs have been temporarily mitigated with erosion control coirs and felled trees creating informal terraces. The painted concrete walls and columns have chipped edges and cracks and have been repainted in differing colors. The various repairs create an inconsistent appearance and do not address structural concerns. These main historic walls, columns and stairs are in need of long term restoration strategies for structural and cosmetic enhancement.

Many residents and visitors tend to avoid the Haight Street West entry stair due to vandalism and loitering. Efforts have been made with the installation of newly planted areas of drought-tolerant shrubs surrounding the stairs however problems linger. Discussions of overhauling the entry has been ongoing, however the historic significance of these stairs has impeded a complete replacement.

The Frederick Entry stairs along Buena Vista Avenue West are crumbling and in disrepair. Hollywood Juniper trees have damaged the stairway's flanking columns in which they were planted. A full replacement of the stairs, while protecting the trees, is an ideal solution. Historic review may be required to address this stairway.

Both secondary historic entries along Buena Vista Avenue East have structural problems similar to the main entries including wall surface cracking and unmatched paint color repairs.



*Buena Vista Ave. East & Duboce Street Entry*



*Haight Street West Entry*

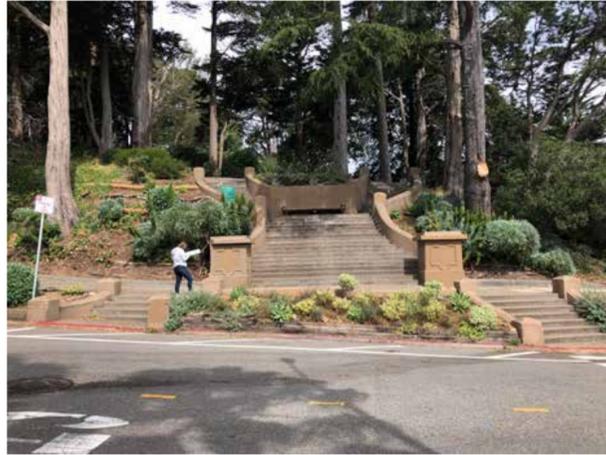


*Buena Vista Ave. West & Frederick Street Entry*



*Cracking at Baker Street Entry*

## HISTORIC ENTRIES



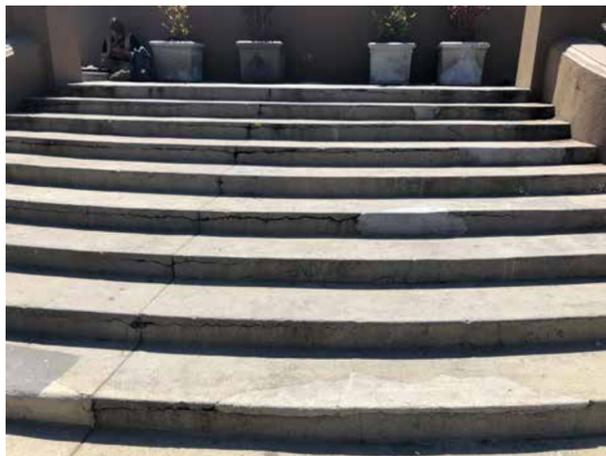
*Buena Vista Ave. East & Duboce Entry*



*Cracking at Buena Vista Ave East & Duboce Entry*



*Secondary Historic Stairs at Buena Vista Avenue East*



*Damage at Buena Vista Ave East & Duboce Entry*



*Buena Vista Ave West & Frederick Entry*



*Secondary Historic Stairs at Buena Vista Avenue East*

## INFORMAL PERIMETER STAIRS

Twelve informal stairs have been installed along Buena Vista Avenue East and West to provide secondary entry access from the street to the perimeter pathway. These stairs were installed by different groups at different points in time, and the material varies. Some are built of wood which show signs of age and decay, some are informally placed recycled curbstone slabs, some are concrete stairs with wooden plank side walls, and a few have galvanized steel pipe handrails.

Visibility of these informal stairs is problematic in that they are situated in the steep landscape strips between the street and elevated perimeter sidewalk and are obscured by overgrown edge planting or cars parked along the curb. Safety concerns are present where the bottom of the stair lands into unprotected vehicular streets buffered from traffic only by parked cars.



*Red Traffic Cone at Wooden Stairs*



*Red Curbing at Wooden Informal Stairs*



*Stone Informal Stairs with Fading Red Curb*



*Wood and Concrete Informal Stairs*

## WALLER STREET WEST ENTRY

The entry adjacent to the playground located on Buena Vista Avenue West and Waller Street is a highly visible and utilized entry in need of major improvements.

This entry is the main playground entrance, but it is also the roadway access point used by service vehicles entering the park heading toward the maintenance area. Due to heavy vehicular use, the asphalt paving is damaged with cracks and potholes. The roadway is flanked by several logs functioning as makeshift curbs. While the slopes adjacent to the roadway are gentle, it lacks a clean edge to retain mulch and soil. Signage at the entry is poor and lacks a sense of welcoming entry for park users.

An accessible pathway runs south of this entry connecting the sidewalk to the playground. The walkway was built with wood retaining walls on the park side and is in fairly good condition.

Drought-tolerant and native planting that have been installed on the south side of the Waller Street West Entry is charming.



[Waller Street West Entry to playground](#)



[Accessible walkway between south of entry and playground](#)



[Waller Street West Entry](#)



[Drought tolerant and native planting adjacent to the entry](#)

## UPPER TERRACE ACCESSIBLE ENTRY

The southernmost entry to the park, located at Upper Terrace between Buena Vista Avenue East and West, features a service entry road and the park's only accessible pedestrian entry point. The entry has been recently refurbished with new stone retaining walls, a swale of cobbles and planting for stormwater mitigation, and a curbless sidewalk providing smooth access for vehicles and pedestrians. The concrete sidewalk at the entry is finished in exposed aggregate and the stone walls are constructed with materials in warmer colors than the gray historic stone walls in the park.

The entry road is protected with removable timber bollards and provides access to the summit of the park for large service and emergency vehicles. The accessible pedestrian pathway provides a route for users with disabilities to move deeper into the park.



[Upper Terrace Accessible Entry](#)



[Upper Terrace Accessible Entry](#)



[Upper Terrace Accessible Entry](#)



[Southeast accessible walkway](#)

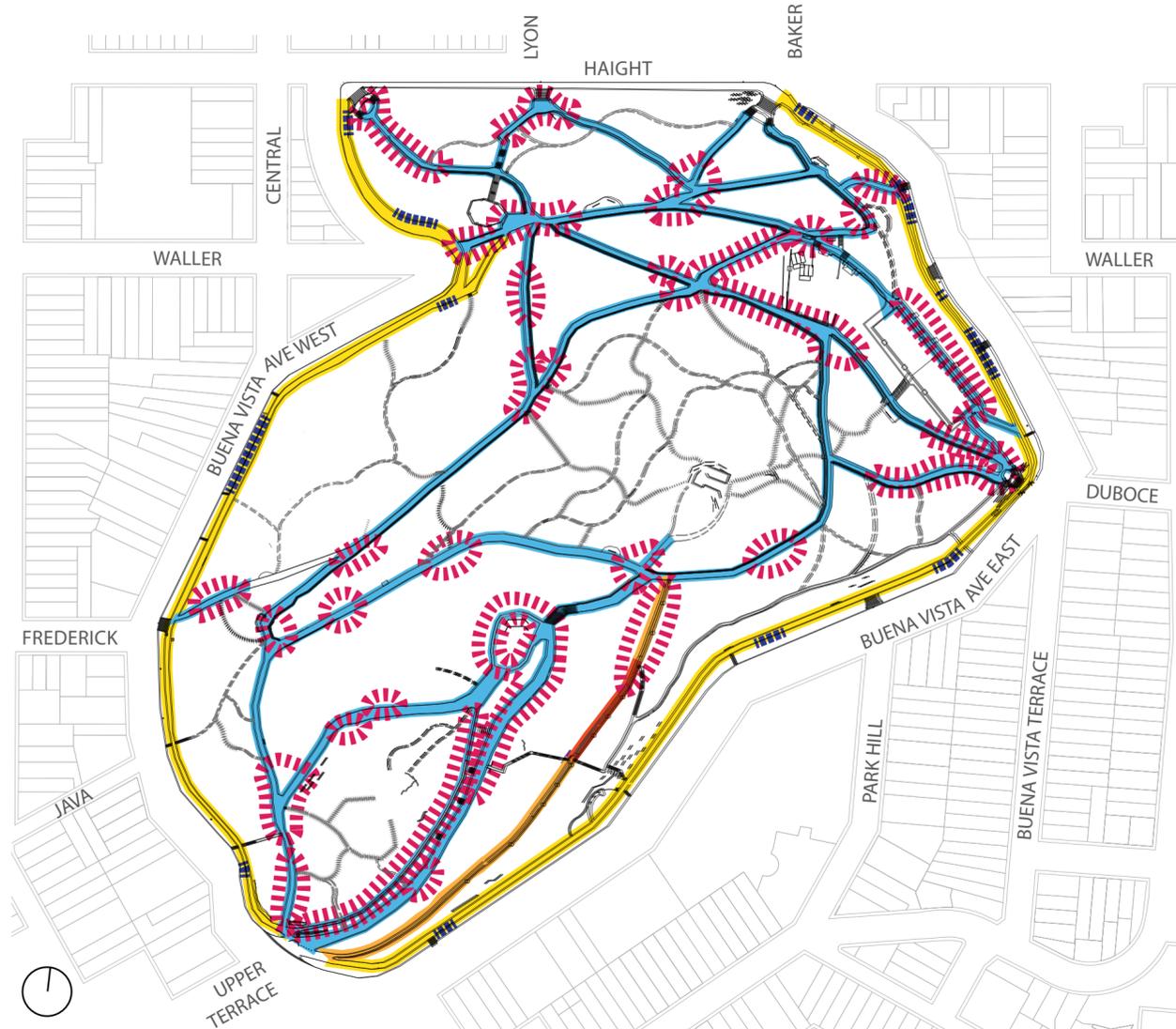
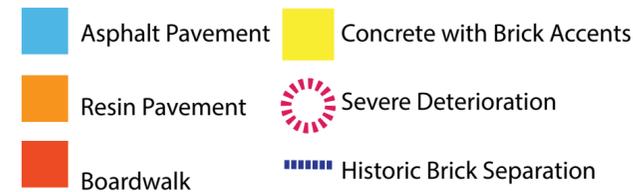
## 5.2 - b HARDSCAPE & CIRCULATION: ASPHALT PAVING AND PERIMETER WALKWAY MAP

The park's internal movement system consists of a network of paved pathways, rustic stairs and earthen trails, and a perimeter walkway that encompasses the park boundary. Most of the main internal hardscape pathways are paved with asphalt. The paths are used by pedestrians, park maintenance staff, San Francisco Fire Department (SFFD) and San Francisco Police Department (SFPD) in emergencies, and wind through the park running up and down through the steep slopes.

The perimeter sidewalk surrounding the park runs along Haight Street, Buena Vista Avenue East and West. Newly installed concrete sidewalks along Haight Street are wide and in a good condition suitable for bus shelters and stops for Muni's 7 Haight and 6-Parnassus bus lines, whereas the perimeter concrete sidewalks with brick accents along Buena Vista East and West have sections that are failing.

Rustic stairs and earthen trails in the more secluded areas inside the park provide an intimate and wonderful hiking experience throughout the forest leading to the overlooks, however they are in great need of repair, improvement, or replacement. As noted earlier in the report the redesign of the rustic pathways and stairways is recommended.

Overall, paving throughout the entirety of the park shows significant signs of deterioration and will be discussed in the following sections. The map on this page shows the initial assessment studies of the hardscape paving materials.



## PERIMETER WALKWAY

The perimeter walkways along Buena Vista Avenue West and Buena Vista Avenue East are built with concrete paving, brick paver edges and diamond shaped brick accents typical of paving designs built in the 1970's. Along several sections, the brick edges are pulling away from the concrete walkway caused by earth movement and erosion on the sloped landscape strips between the walkway and the street. The diamond accents, as well as several portions of the brick edging have been patched or repaired in ways that do not match the original paver installation.

Paving repair all along the walkway is necessary for addressing trip hazards and preventing falls. Some portions along the interior uphill side of the perimeter walkways are bordered with low concrete curbs while other sections are bordered with a low wooden curbs that have deteriorated.



*Brick and Concrete Deterioration*



*Brick Edge Separation*



*Low Wooden Curbs on uphill side of the Perimeter Walkway*



*Patching of Brick Embedded Accent*

## ASPHALT PAVEMENT

Asphalt paving makes up the park's main pathway system and is in a considerable state of decay. Asphalt paving is a flexible material compared to concrete and is an appropriate material for pathway paving in areas with steep slopes. However, most of the asphalt paving throughout the park has potholes, cracks and spalling due to slippage, pavement edge deterioration, sandy and erosion-prone soil, vehicular impact, runoff, and failing retaining walls pulling the asphalt paving downslope. From our field assessment, it is fair to say that most of the asphalt paving was never installed with an aggregate base. The inadequate design of the current asphalt paving has caused considerable amounts of stormwater to sheet flow onto adjacent downhill slopes, often displacing significant amounts of soil and debris into the nearby streets.

The overall state of the existing asphalt paving throughout the park is in need of replacement with consideration of long lasting strategies. When upgrading the asphalt paving system, redesign will need to take into account better stormwater control throughout the park instead of discharging it into the surrounding fragile landscape.



*[Asphalt fissures](#)*



*[Asphalt pothole](#)*



*[Severe asphalt cracking and edge deterioration](#)*

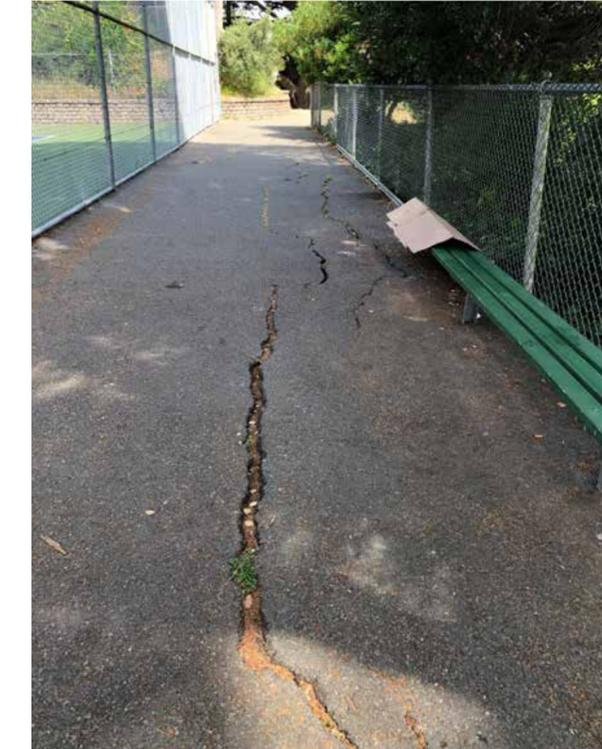


*[Asphalt seam cracks and fissures](#)*

## ASPHALT PAVEMENT



*[Asphalt paving at Summit](#)*



*[Asphalt linear crack along north east of tennis court](#)*



*[Asphalt crack along north of maintenance yard](#)*

## DRAINAGE

Historic drain gutters run along the base of many of the parks stone retaining walls built as part of the Works Progress Administration (WPA) program. These shallow gutters and catch basins cannot manage the heavy flow of water directed from the asphalt pathways during winter rain events. When the gutters overflow major flooding occurs within and outside of the park. Flooding also causes major erosion problems washing soil and water into drain inlets in the street. Stormwater control and mitigation is a critical high priority for the park.



[Drain Inlet](#)



[Rolling Curb](#)



[Historic tombstone tile gutter](#)



[Broken Drainage gutter tiles](#)

## EMERGENCY ACCESS ROAD AND SOUTH EAST ACCESSIBLE PATHWAY

Buena Vista Park's emergency access road leads to the park summit from the southmost entry at Upper Terrace and is the sole roadway wide enough for emergency vehicles accessing the park. The summit, a former parking lot, is now a grassy knoll and while it does not carry a heavy traffic load, it does permit access for heavier and wider vehicles to the top of the park.

Currently, the asphalt access road shows severe signs of fatigue with cracking and spalling of the pavement. A four-foot wide pedestrian walkway runs along the access road with a buffer of sloping landscaping which may be redundant and could reasonably be removed as the roadway is seldom used for vehicular access.

A five-foot wide accessible pathway runs towards the south east from the Upper Terrace Entry to the intersection of the walkways to the park summit and overlook.

The recently installed eastern walkway is the only accessible pathway that leads to the interior of park. The walkway is flanked by a wood wall on the upper hillside and a rustic wood fence with wire-mesh panels along the steep slope on the downhill side, eventually transitioning to a welded mesh fence which is leaning and falling apart. Paving materials are mostly resin-bound paving on the south and north side of the walk with the middle section comprised of a wooden boardwalk. This boardwalk improved this eastern portion of the park as pedestrians are no longer in contact with the delicate soils. Midway along the boardwalk a wood stair supported with concrete leads up to the emergency access road or down to the perimeter sidewalk near by the beautiful Buena Vista Manor House. The resin-bound paving is in rather poor condition with cracking occurring at the edges despite its known flexibility. Views along the pathways are stunning and the walkway provides a nice alternative route into the park.



[Emergency Access Road](#)



[Southeast Accessible Pathway](#)



[Southeast Accessible Pathway north end](#)



[Wood stairs between boardwalk and southeast perimeter sidewalk](#)

## 5.2 - c HARDSCAPE & CIRCULATION: RUSTIC TRAILS SYSTEM MAP

While the Haight Street District and Buena Vista Park has seen increased pedestrian traffic since the late 1960's cultural movement, the park has suffered neglect and disrepair through the 1970's to the present day. Efforts were made in the early 1980's to address the literal wearing down of the park via erosion by introducing a system of rustic trails with erosion control jute mesh and seeding native grasses in the west and central forest zones. The rustic trail system is composed of wood timber stairs and sandy soil pathways inviting exploration of the more secluded and forested areas of the park. The stairs, trails and wood walls have since decayed in certain areas and off-trail pedestrian tracks across steep slopes of the park destroy protective groundcover and native grasses exposing the site's sandy soil.

In addition to the rustic stairs built in the 1980's, new wood stairs were built in 2013 by the San Francisco's Conservation Corps as an erosion control project in the central zone. Some of the rustic stairs abruptly stop at a stone retaining wall forcing hikers to jump off the wall. While off-trail pedestrian tracks provide information about the route park visitors wish to use while navigating the park, these makeshift pathways continue eroding hillsides and slopes.

Trails need to be redesigned in a manner consistent with other successful trail projects implemented by SFRPD. These projects have developed best practices that focus on a long term preservation strategy.

A sandy soil pathway along the southeastern edge between the Duboce entry and accessible pathway is another important pathway that needs immediate attention and stabilizing this section of the pathway is crucial.

- Rustic Trail
- - - - - Rustic Stairway



## RUSTIC STAIRS AND PATHWAYS



*Erosion at rustic stairs*



*Southeast sand path*



*Severe erosion at rustic stairs*



*Alternate pathway created along rustic stairs*



*Erosion at rustic stairs*



*Pedestrian tracks off trails*

## 5.2 - d HARDSCAPE & CIRCULATION: WALL AND STAIR CONDITIONS MAP

Buena Vista Park has suffered constant erosion since rising from humble sand dunes. Over time, masonry and concrete walls have been employed to stabilize the earth movement.

One of the main wall infrastructures in the park are the historic stone walls running on the upper hillside of the asphalt path lined with marble tiled drainage gutters.

As previously described, historic painted concrete walls and columns line the main and secondary entries as well.

In more recent times, masonry walls were installed at the Upper Terrace accessible entry with different materials and colors from the historic masonry walls built much earlier.

Other types of walls located inside and outside of the park are timber and shotcrete walls at a short section of the southwest side of the park; cobblestone walls around the tennis court, the former bathroom building and maintenance yard; stone walls built into the hillside of the existing outcrop at the maintenance yard; a low asphalt curb wall along the asphalt pathway adjacent to the tennis court and the concealed gabion walls south side of the slope.

The map on this page show walls that are in poor condition throughout the park.

-  Wall Deterioration
-  Historic entry wall
-  Cobblestone wall
-  Historic stone wall
-  Asphalt curb wall
-  Wood wall
-  Maintenance yard retaining wall



## HISTORIC STONE WALLS AND STAIRS

Stone is used for walls and stairs throughout the park. The stone walls built in the 1930's through the WPA program are distinctive feature in the park. The stone walls fit beautifully with the surrounding forest and are a significant historic remnant of San Francisco's past and an important legacy of craftsmanship. Despite several areas showing distress, the walls have lasted for decades and should be preserved wherever possible. A significant wall failure is evident at the northeast section of the park, just past the Haight Street West Entry. The walls are bulging out and crumbling. Tree roots and trunks of large Monterey Cypress and Redwood trees have fractured the walls in few areas along the edge of the central zone. In other areas, vegetation overgrows the wall entirely. At the central zone rustic stair entry, the corners of the walls are separating and lean outwards towards the stairs.

Cobblestone walls and stairs were also built between 1914 and 1917 around the maintenance area and tennis courts. These walls and stairs are in fairly good condition and have not shown any structural failure except for a few minor chips.

A narrow and short stone stairway north of the central forest area leading into the rustic trails is somewhat hidden due to the overgrown vegetation, but demonstrates skilled craftsmanship displayed in the adjacent historic stone walls. Another stone stairway was built on the northeast side of the Summit with curbstone walls and a stone gutter. Minor chipping and damage on the walls, stairs and gutter should be repaired as well.



*Historic stone wall bulging out at northwest side*



*Historic stone wall separation and leaning*



*Historic stone wall breakage caused by tree root*



*Overgrown vegetation at historic stone wall*

## STONE WALLS AND STAIRS



*Cobblestone wall and stairs below maintenance area*



*Stone stairway at northeast side of Summit*

At the Upper Terrace entry, small segments of stonewalls were built when the accessible walkway and entry were implemented. A flared U-shaped wall provides a sunny seating area and protects the overflow drainage bioswale behind the wall. A stone wall also lines the east side of the Upper Terrace entry leading to an accessible pathway and transitioning into a wood wall. Compared to the interior historic gray stone walls, these walls have a warmer beige tone and are quite different in texture. While the material and color contrasts sharply from the interior historic walls, the warmer color of these stone walls can provide a distinctive character to the perimeter pathways.



*Cobblestone wall and stairs at Maintenance Yard*



*Overgrown vegetation at historic stone stairway*



*Stonewall at Upper Terrace*

## MAINTENANCE YARD RETAINING WALL

Buena Vista Park's maintenance yard is tucked into the interior of the park, west of the tennis courts. There is approximately 37 feet of elevation change from the flat maintenance area at the bottom of the area to the upper asphalt paving walkway. The retaining wall at the top of the area on the southside of the maintenance yard has failed causing a slow-moving land slide. A six-foot high chain-link fence installed on top of the wall is moving with the wall. The retaining wall is sliding down the slope toward the maintenance yard taking vegetation with it that currently covers the steep incline. A hazardous condition exists in both the asphalt pathway above the wall immediately south of the maintenance area and in the maintenance yard as well. Repairs to this area are urgent as the pathway will soon be unpassable.

On the west side of the yard, a rusted and aged chain-link fence runs along the top of the sloped outcrop and is covered with heavy vegetation. Land is sliding on the east side of the yard as the retaining wall that once existed has failed and is no longer present. An eight-foot tall cobblestone wall along the northeast side of the yard below the former public bathroom is holding up well.

Major renovation is needed along three sides of the maintenance yard at the south, east and west sides to shore up the surrounding slopes.



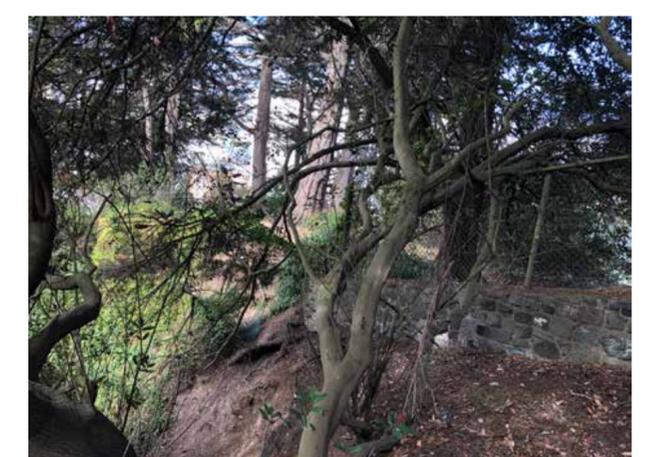
*Retaining Wall Separating*



*Severe Wall Breakage*



*Stonewall failure on east side of the maintenance yard*



*Fence Failure and Erosion*

## WOOD WALLS

Wood walls are installed in locations throughout the park.

Overlooks such as the Window and Main Overlook along with the retaining walls were built when the erosion control project occurred in the 1980's and the retaining wood walls have aged and decayed since then. The steep slopes on the east side of the park are supported by standing wood walls which are rotted and falling. Some of these walls are holding back mature trees and soil and will eventually need to be replaced with more robust materials.

Relatively new wood walls have been installed at the accessible pathway along the south side of the playground and Waller west entry, the southeast accessible pathway from Upper Terrace Entry, across from the Window overlook and above a historic stone wall at the west side of the park, and behind the small semi-circle lawn on the east side of the park across from the Buena Vista Manor House.

The wood wall along the eastern accessible pathway composed of metal I-beam posts and wood boards embedded between the posts is known as a "Sutter Wall" and is in good condition and is the current prevailing detail used throughout the trails in San Francisco's parks. This soil retention method allows easy replacement of the boards when they decay without removing the entire wall. There is discussion whether these walls are the appropriate material for highly mobile sand-based soils. Wood walls at the base and midpoint of the steeply sloping eastern edge are currently failing. These walls should be removed and replaced with stronger materials, preferably stone walls as they are highly visible to neighbors facing the park.

Timber curb walls run around the perimeter of the park at the bottom of the landscape slopes. The wood is starting to decay and there is a need to replace them.



*Wood wall along southeast side*



*Sutter wood wall at southeast accessible pathway*



*Wood wall across the Window overlook*



*Wood wall along accessible pathway adjacent to Waller West Entry*

## OTHER TYPES OF WALLS

Several other walls require attention. A shotcrete wall along a short section of the southwest side holds up a very steep hillside. The wall's condition appears to be fair, however further inspection should be made by a structural engineer to assure the wall will not fail in the near future.

Chain-link fence posts are embedded in a thick asphalt curb wall located on the east side of the park at the top of slope adjacent to the tennis courts. Long cracks with wide gaps have appeared in the asphalt paving in the area between the courts and the chain-link fence indicating that the earth is moving eastward down the steep slope. The slope is currently planted with Mayten trees and is vegetated with invasive species. A robust method for retaining this hillside is required in order to secure the tennis courts.

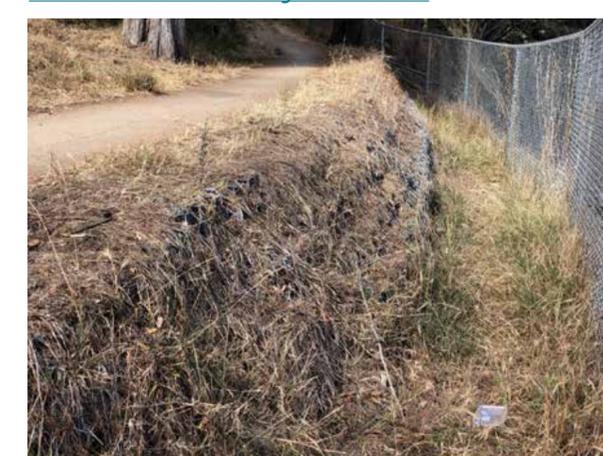
A small section of rock filled gabion wall runs along the southeast earthen pathway on the downhill side. The buried gabion is effectively holding up this portion of the pathway.



*Shotcrete concrete wall along southwest side*



*Asphalt curb wall along east side of tennis courts*



*Gabion wall along southeast pathway*

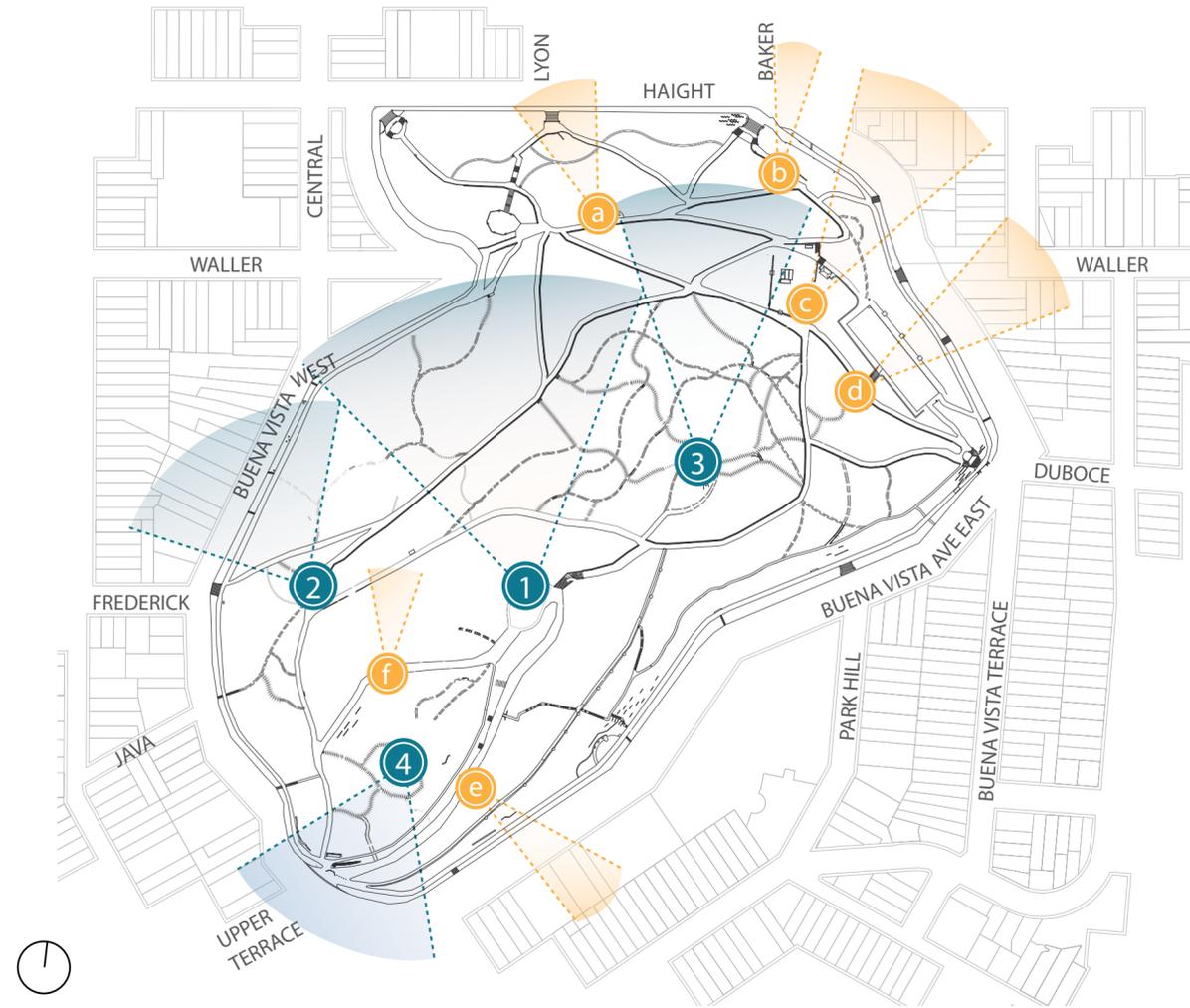
## 5.2 - e HARDSCAPE & CIRCULATION: VIEWING OPPORTUNITIES MAP

As its name implies, Buena Vista (“Good Views”), delivers stunning views that surprise visitors along their walk through the thickly wooded forest. Some of the views are framed or obscured between the thick and large trees, whereas new views have appeared when large trees have fallen through age and decay.

There are four dominant vista points in the park: 1) the Summit at the top of the park which has a panoramic view towards the St. Ignatius Church, the Golden Gate Bridge and the Marin Headlands, 2) The Window on the west side of the park offers narrow vistas toward the Golden Gate Park and the Pacific Ocean beyond, 3) The Main Outlook in the central forest zone is the prize rewarding visitors hiking up the rustic stairs with another panoramic view towards Downtown and the northeast of the City, and 4) the Southwest plateau that is less traveled, but provides a view toward Mount Sutro and Twin Peaks with a little hike up the rustic stairs.

There are other views towards Corona Heights and Bernal Heights Park toward the southeast and a magnificent view towards the East Bay from the east side of the park. While all these main vista points are highly popular, there are several other view opportunities that could take advantage of Buena Vista’s prime elevation.

- Major Vista Point
- Minor Vista Point



## VIEWING OPPORTUNITIES



View towards St. Ignatius Church and Golden Gate Bridge from Summit



View towards St. Ignatius Church and Marin Headlands from "The Window"



View towards Golden Gate Bridge and Marin Headlands



View towards Marin Headlands and SF Bay from Overlook



View towards San Bruno Mountains from Southwest Summit



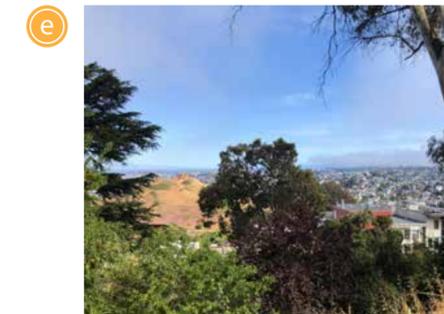
View towards north side of City and Alcatraz



View towards the City (tree to be removed)



View towards downtown



View towards Corona Heights park and San Bruno Mountains



View towards St. Ignatius church

### 5.3 - a WATER MANAGEMENT AND EROSION CONTROL ISSUES: EROSION CONTROL ISSUES MAP

Sirdrak (dune) soils under Buena Vista Park are highly susceptible to erosion. In past years, the park suffered significant erosion washing soil downhill onto Haight Street in times of heavy rainstorms. Another major cause of erosion continues to be pedestrian and dog off-trail movement traversing steep slopes of the park trampling protective groundcover and native grasses and exposing the sandy soil. Many rustic pathways, stairs and small-scale wood retaining walls have decayed over time. Water management, vegetation management, and circulation must be acknowledged as related factors in the park's ecosystem that are contributing to chronic erosion.

The erosion control projects in the early 1980's resulted in a system of rustic pathways, jute netting and native grass seeding installed in the western and northern sections. In more recent times, the accessible boardwalk was constructed along the eastern edge leading to the top of the park. The boardwalk has improved this portion of the park as pedestrians are no longer in contact with the delicate soils, however the eastern portion is in need for further erosion control measures.

The overall erosion control issue map identifies erosion conditions in three degradation levels: high, medium and low. Severe erosion happens on the extremely steep slopes on the park's east side washing a great amount of sand down Buena Vista East every rainy season causing major headaches for the limited maintenance staff.

- High Priority Area
- Medium Priority Area
- Low Priority Area



### WATER MANAGEMENT AND EROSION CONTROL ISSUES EXISTING CONDITIONS

Water management problems originating in the center and western sides of the park cause high volumes of water, sand and soil to cascade down the hillsides, pathways and asphalt paving eventually pooling in a large flood toward the corner of Buena Vista West and Haight Street.

The west side of the park where the dog park is located is covered with sand that easily erodes during heavy storms and exposes webs of Monterey Cypress roots. Maintenance staff and volunteers installed erosion coirs and blankets, but a long-term strategy and solution is needed.

As previously described in the section, 5.2, "Hardscape and Circulation," long linear cracking in asphalt paving indicates where retaining walls at the maintenance yard are failing and earth is pulling away down the extreme slopes along the northeast side of the tennis court.

As Buena Vista Park's soil is perpetually moving, erosion will always be the greatest challenge the park faces. Managing stormwater runoff flow and direction, using current Green Infrastructure techniques that will prevent discharging rainwater into the sewer system, and re-establishing understory planting on hillsides are important methods to consider in developing an erosion control plan.



*Sand Erosion*



*Exposed Tree Roots*



*Erosion at Perimeter*



*Erosion at Stairs*

### 5.3 - b WATER MANAGEMENT AND EROSION CONTROL ISSUES: EXISTING IRRIGATION SYSTEM MAP

In 2015, through the San Francisco Public Utilities Commission (SFPUC) Landscape Technical Assistance Program (LTAP), a report was developed assessing the existing irrigation system and making recommendations for water conserving improvements. Overall, Buena Vista Park uses very little water. Water consumption data for the park shows that it uses 32% of the calculated water allotment. Annual water consumption has been reduced by 75% from 2010 - 2015. In the report, the park's four separate irrigation systems were identified. Two were determined to be operational, but in need of improvements, and two were not operational

1. Haight Street lawn irrigation: Pop up sprayer system is old, but is operational and has head-to-head coverage. This system needs a new irrigation controller and enclosure.
2. Small Lawn at Buena Vista Avenue East: a new irrigation system has been installed recently.
3. Buena Vista East: two drip irrigation systems are not operational and have been abandoned.
4. Upper Terrace and Buena Vista Avenue West: booster pump at backflow preventer is not operational.

Following are other observation notes and recommendation from the LTAP report:

- a. The mainline pipes have no leaks and are in good shape. Currently, the main lines are galvanized steel pipes. Recommend installing Schedule 40 or Class 315 PVC.
- b. Irrigation main lines are potentially interconnected. Shut off valves are difficult to locate. Map the locations of BFP, mainline,

- Existing Quick Coupler
- Automatic irrigation



### IRRIGATION EXISTING CONDITIONS

- a. isolation valves, and quick couplers.
- c. Backflow preventers (BFP) are operating properly and to code. Uncertain if former restroom used as gardener's office has a backflow preventer. Check and install if BFP is needed.
- d. Pressure taken from quick couplers: 35 psi at the top of hill and 90 psi at the bottom of the hill.
- e. Remote control valve (RCV) are in good condition and are operating from controller.
- f. All Hunter controllers to have solar sync weather sensor.
- h. Leit solar powered controller to be cleaned up and checked.

Since the report was developed, several improvements were made. Irrigation systems with pop up sprayers were installed for the entire perimeter planting apron along Buena Vista Avenue East and West and are automatically controlled. 12 remote control valves are located throughout the perimeter apron. Summit lawn has a new irrigation system with commercial rotors and a booster pump at Upper Terrace was replaced in 2016. Haight Street irrigation system has been revamped with a new master valve, flow sensor, controller and enclosure.

The irrigation system for the remaining park zones are mainly composed of quick couplers which maintenance staff utilizes to hook up water hoses. The existing quick coupler valves are located along the park perimeter, the southeast side and around the summit area, however the central part of the park lacks water sources save for a handful of quick couplers.



Quick Coupler



Quick Coupler



Quick Coupler

## 5.4 URBAN FORESTRY: EXISTING CONDITIONS MAP

Originally a sand dune, the Park's forestation efforts started in 1894 under the supervision of John McLaren, a horticulturist and superintendent for San Francisco's Parks system. Monterey Cypress, Eucalyptus, Coast Redwood and Australian Tea trees were planted, some from seedlings by the San Francisco school children on Arbor Day, adding to the few groves of existing native Coastal Live Oaks and Toyon trees.

Today, Buena Vista Park is a verdant forest beloved by the visitors and also by wild habitat. The park features an isolated peak flanked by forested green space with a wide range of exposures, hydrology, and topographic variation. These abiotic factors create conditions that can support at least six overlapping native and non-native plant communities depicted in this map.

An Urban Forester consultant was engaged in this project who assessed the park in units delineated by vegetation type and created a forest management plan. Following are the findings of the existing conditions including the overall tree health and physical disposition. The Urban Forestry report is included in the Appendix.

Dominant species in the park include Monterey Cypress, Coast Live Oak, Coast Redwood, Monterey Pine, Torrey Pine, Blue Gum Eucalyptus, European Olive, Mayten, several Toyons and California Buckeyes along with invasive species.

- Mixed Species
- Eucalyptus species
- Pine species
- Coast Live Oak
- Monterey Cypress
- Coastal Redwood



## EXISTING TREE HEALTH

As the oldest urban park in San Francisco, the park contains many mature trees. Despite its age there are surprisingly few urgent forestry management needs related to overall tree health, but there are some noticeable problems in the park that must be managed in order to maintain a healthy and safe urban forest.

Several large trees near interior and perimeter pathways have structural problems and will need to be removed for safety reasons. Three pine tree species scattered throughout the park are all severely stressed, dying or dead. In particular, the Canary Island Pines and Monterey Pines are infested with pests. Pines should not be considered for future planting as they are susceptible to many diseases including pine pitch canker and will not adapt well to a warming climate. Some exotic trees in the park include a few Eucalyptus species which thrive in the park and have tall canopies, however smaller Tasmanian Blue Gum (*Eucalyptus globulus*) that are in poor health and are under 30 feet high should be removed to prevent spreading. Monterey Cypress trees are one of the most iconic trees in the park. The existing mature trees are for the most part healthy considering their age, which dates back to early planting efforts more than 100 years ago. Natural Cypress regeneration occurs infrequently in the park due to the limited light falling on the forest floor, therefore, future planting of Monterey Cypress trees must be carefully located in areas where they can receive light and water.

There is a small patch of Redwood trees in the center of the park. The Redwood trees have been thriving, however due to their location on the west side the trees tend to be wind swept by the prevailing afternoon onshore breezes.

One of the precious and important tree species in this park are the native Coast Live Oaks, especially in the natural areas designated by SFRPD, which are remnants of the original oak woodlands preceding the planting efforts that occurred in the

park. These native oak trees are healthy and not affected by Sudden Oak Death (SOD). Enhancing the health of the existing native oak woodland is essential. Removing invasive trees and understory species and planting native habitat shrubs will allow the younger oak trees to regenerate and promote a multi-aged forest. Companion plants promote wildlife habitat such as Toyon, California Coffeeberry, and Coast Silktassel. There is discussion regarding introducing other types of native oaks and diversifying the oak woodland outside of the designated natural areas. In the event of a SOD outbreak, SOD-resistant native oaks would help contain the spread.

Other existing species in the park are fruitless European Olive, Mayten trees and Australian tea trees. A grove of Catalina Ironwood is thriving and Big Leaf Maples are successfully growing. Newly planted native trees such as California Buckeye are performing well and provide wildlife habitat in the park.

Invasive species throughout the park will need to be removed as described in following sections of this report.

Ongoing monitoring and management is needed and further recommendations are described in Chapter 6.

The list of the dominant tree species on this page describes the overall health condition of each dominant tree species in the park. Much of the findings regarding the existing forestry condition are described in detail in the Urban Forester's report which is included in the Appendix in Chapter 9.

### DOMINANT TREE SPECIES

- Monterey Cypress (*Hesperocyparis macrocarpa*) are healthy, but a few specimens are aging out.
- Monterey Pines (*Pinus radiata*) are infested by red turpentine beetle
- Coulter Pines (*Pinus coulteri*) are becoming dangerously large.
- Coast Live Oaks (*Quercus agrifolia*) are healthy within the park.
- Coast Redwoods (*Sequoia sempervirens*) are not extremely large, but surviving.
- Eucalyptus species (*Eucalyptus* spp.) are generally not performing ideally. Near the summit, several large Eucalyptus trees hinder favorable views.
- Mayten Trees (*Maytenus boaria*) are healthy, however suckers are a problem.
- Olive trees (*Olea europaea*) are performing well.
- Australian tea trees (*Leptospermum laevigatum*) are in poor condition.
- Catalina Ironwood (*Lyonothmanus floribundus*), Big Leaf Maples (*Acer macrophyllum*), and California buckeye (*Aesculus californica*) are performing well.

TREE SPECIES



Coast Live Oaks in West Natural Area



Coast Live Oaks



Eucalyptus



Coast Redwoods



Mayten and Olive Trees



Monterey Pine

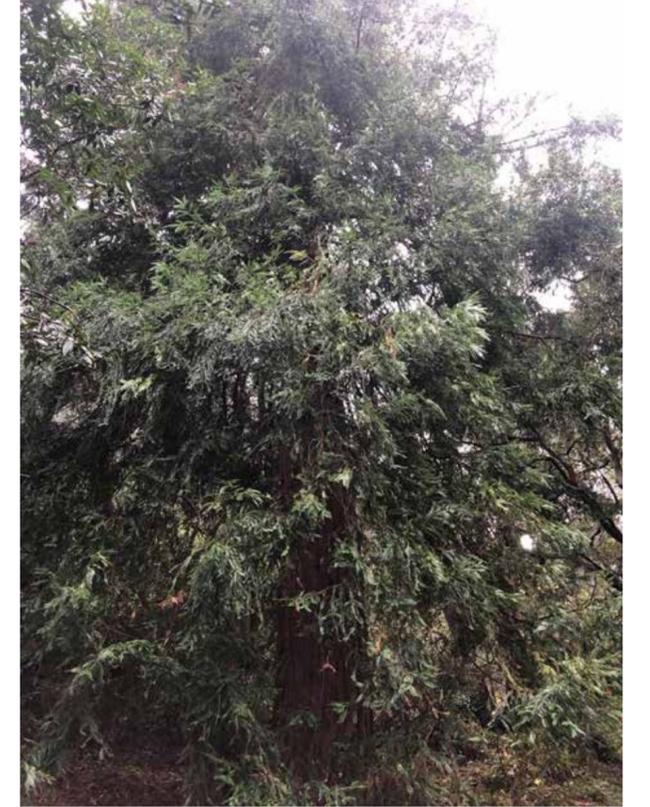
TREE SPECIES



Monterey Cypress



Catalina Ironwood



Coast Redwood

## INVASIVE SPECIES

Buena Vista Park provides a wide range of biodiversity and ecological function and removing invasive species is vital for sustaining and enhancing habitat throughout the park. Tree of Heaven, a non-native tree which tolerates urban environments, deep shade and extreme soil conditions, is highly active and spreading throughout the park. It creates thickets of considerable area by root sprouts and displaces native vegetation. Acacias, Green Wattle and Black Wattle, are notoriously invasive spreading through rhizomes and seeds. Their fallen leaves potentially have allelopathic effects that prevent growth of native understory plants. Tall Eucalyptus trees provide wind break in the park, but the invasive Tasmanian Blue Gum performs poorly in the park and has unfavorable effects on native plants and wildlife.

Invasive understory plants, such as the English Ivy and Himalayan Blackberry compete with native species throughout the park's understory and overrun important native planting negatively impacting native habitat and wildlife in the park.

Low ground vegetation provides critical nesting opportunities for several native bird species. As part of the San Francisco's food network for birds and wildlife habitat, maintaining and diversifying the understory planting with native and habitat plants is very important. While non-native species such as Himalayan Blackberry support wildlife in the park, their sheer volume can limit sightlines and can be replaced with native blackberries. English Ivy does not provide wild habitat but does help erosion in the park. Removing invasive understory plants should be implemented in phases to avoid disturbing the current habitat and increasing erosion.

### REMOVAL OF INVASIVE SPECIES

- Tree of Heaven (*Ailanthus altissima*) is highly active and spreading throughout the park
- Green and Black Wattle Acacia (*Acacia decurrens*, *A. mearnsii*)
- Tasmanian Blue gum (*Eucalyptus globulus*)
- Pineapple Guava (*Feijoa sellowiana*)
- Cotoneaster (*Cotoneaster* spp.)
- English Ivy (*Hedera helix*)
- Sweet Fennel (*Foeniculum vulgare*)
- Bermuda butter (*Oxalis pes-caprae*)
- Ehrhart grass (*Ehrharta erecta*)



*Common Invasive Species*



*Common Invasive Species*

## PERIMETER PLANTING

Overall, the park's perimeter planting strip between the street and perimeter sidewalk is inconsistent, sporadically planted and covered mostly with weeds and invasive grasses. Some of the larger plants grow near and obscure the perimeter stairs and pathways. Most of the landscape strips are very steep and prone to erosion. As sandy soil washed onto the streets, timber curbs were installed at the base of the slopes to mitigate the erosion problem adding a rather undesirable appearance. This inconsistent edge planting or lack of planting is unappealing. The park frontage along the perimeter deserves better landscaping and presents opportunities for planting enhancement.

Careful plant selection and placement is important to prevent erosion, maintain sight lines and reduce maintenance. In the past, the entire apron was hydro-seeded with native plant mixes, but was not well received by the neighbors. The feeling was that it looked "too wild" as the native plants grew taller than the grass and the weeds grew in. Currently the area is regularly mowed down to keep the perimeter neat. Woody shrubs and groundcover with varying root depths and wide coverage is preferred to reduce maintenance for the small park staff. The existing level of invasive grasses will need major eradication efforts followed by installation of hardy, spreading pollinator plants to enhance this strip.

On a positive note, an automated irrigation system for the perimeter planting area has recently been installed by SFRPD and the perimeter apron is ready for future planting.



## HABITAT MANAGEMENT CONCEPTS AND OPPORTUNITIES

Buena Vista Park contains one of the highest value habitat areas in San Francisco and is home to remnants of flora and fauna surviving from the days when the park was first established. The park is home to one of the remaining coast live oak woodlands in the City that covers approximately 3.3 acres of the park. SFRPD has designated this area to be a Significant Natural Resources Area. Native and migratory birds, pollinators and wildlife have a long history in the park due to its complex food network and vegetation especially in the Oak Woodlands.

The park provides habitat suitable for foraging, nesting and roosting for a wide variety of species due to the multi-story vegetation structure whereas nearby parks provide foraging habitat primarily for raptors. In all, at least 33 species of native birds nest in Buena Vista Park and an additional 20 species use the park annually during winter migrations. Despite the rich environment of the park, there are areas with sparse understory and other parts where low invasive plants provide little habitat value. In areas of scant scrub vegetation there is insufficient habitat for smaller birds. The park contains diverse ecological conditions which can support a more diversified understory planting palette which would enhance the park's ecosystem and food-web for local and migrating butterflies and birds.

More information is found in the consulting ecologist's reports included in the Appendix. In addition, the Significant Natural Resource Areas Management Plan (SNRAMP) developed in 2006 by SFRPD includes valuable information. Following is the link for the SNRAMP and specific section for Buena Vista Park is Section 6.10.

<http://sfrecpark.org/1402/Natural-Resource-Management-Plan>



*West Coast Lady*



*Anise Swallow Tail*



*Dark Eyed Junco*



*Bushtit*

## HABITAT MANAGEMENT CONCEPTS AND OPPORTUNITIES



*California Slender Salamander*



*Black Tailed Bumblebee*



*Anna's Hummingbird*



*Orange Crowned Warbler*



*Hermit Thrush*

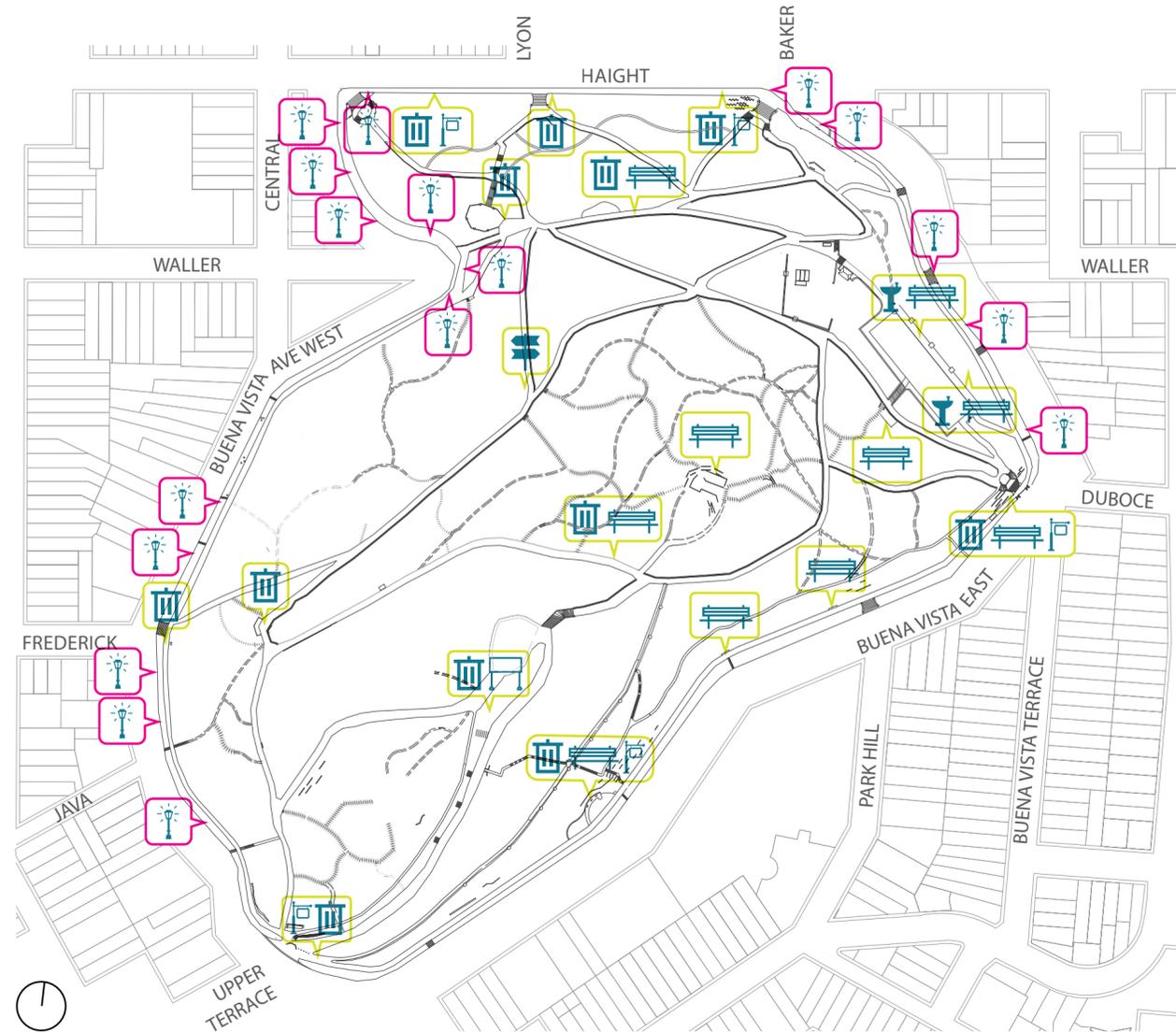


*Brown Creeper*

## 5.5 FURNITURE AND WAYFINDING: EXISTING SITE FURNITURE CONDITIONS MAP

Buena Vista Park's furniture is very limited. Wood benches are outdated and decaying. Many of the trash receptacles have been replaced with new animal-resistant trash receptacles. There is a solitary drinking fountain located near the tennis court. Picnic tables and benches do not exist in the park, except for one at the maintenance yard for staff use. Although picnic tables were once located near the maintenance yard, they were removed due to arson and vandalism.

Street lighting along the perimeter provides illumination for vehicles on the street. Additional perimeter lighting for pedestrians along the perimeter walkway was identified as one of the priorities in the 2015 Capital Improvement Plan report, and also identified as a desirable improvement during recent community meetings.



## WAYFINDING AND SIGNAGE

Overall, signage throughout the park is scarce. There are four menu-board welcome signs, four hanging perimeter entry signs, and two signs; dog run signage and historic tree map, posted in the interior of the park. Despite the intricate network of pathways and its large size, there is a lack of directional and informational signage within the park. The dog run area is indicated with a small sign that can become obscured by vegetation. A historic tree map identifying some of the trees in the park along with the years that they were planted is one of the interesting informational signs in the park.

Wayfinding signage is needed to help visitors orient themselves in the park's interior pathway network and dense vegetation. Informational signage can educate park users about Buena Vista Park's rich history, ecological significance, forestry and habitat. There is a Bay Area Ridge Trail sign posted at the Upper Terrace entrance as Buena Vista Park is part of the vast Bay Area Ridge Trail.



Informational Tree Signage



Dilapidated "Dog Run" Signage



Perimeter Entry Signage

### SIGNAGE ISSUES:

- General absence of signage throughout the park
- Sense of disorientation due to lack of directional signage
- Numerous opportunities for educational signage

## FURNITURE

The visitor experience at Buena Vista Park can be greatly improved with the introduction of additional site furnishings. Most of benches sprinkled throughout the park are decaying. Strategically selected furniture placed carefully in well-traveled areas can discourage vandalism and allow park staff and visitors to monitor use.

New wood benches at the semi-circle lawn on the east side of the park are cherished by neighbors and is a great spot for enjoying the sun.

A single old wood bench located at the Outlook provides a popular destination to take in the north facing view.

Older trash receptacles have been replaced with new bear saver trash receptacles sited in various locations in the park. A few older trash receptacles remain and should be replaced with these new models.

Watering stations for pets and humans are inadequate for a park of this size with only one drinking fountain existing next to the tennis court. A new drinking fountain is highly desired at the playground.

Overall the park lacks furnishing amenities. Furniture replacement and new additions should be made with careful selection and placement.



*Benches*



*Drinking Fountain near Tennis Courts*



*Wildlife Proof Trash Receptacle*



*Benches at Overlook*

## 5.6 LOCATIONS OF INTEREST: KEY LOCATIONS MAP

Passionate and vigorous devotion from the neighbors brought conservation, sporadic improvements and additions of programmatic areas in the park.

While Buena Vista Park is most popular for passive recreational activities such as strolling, hiking or jogging along its network of walkways and rustic trails, a few programmatic spaces dispersed within the grounds provide active recreation experiences.

These programmatic spaces include a Children's Playground, two Tennis Courts, a Dog Run, and a maintenance yard which is adjacent to the tennis courts.

Three existing vista points that include the Summit, the Window and the main Overlook will be discussed in this section.

Another point of interest is the Southwest Summit. Because of its topography, the park does not offer many expansive horizontal surfaces which makes it difficult to introduce new programmatic spaces. All existing points of interest in the park are showing various signs of decline and require improvements.



## PLAYGROUND

### KEY PLAN:



The playground is located in one of the prime locations of the park in a sunny area sheltered from wind, tucked away in the northwest corner, with pleasant views. The existing wooden play structure was constructed in the 1980's and is in need of an upgrade to meet current safety standards. The existing underlying sand makes the playground inaccessible for wheelchair users. A rolled asphalt curb installed in front of the gate has been installed to mitigate flooding, further hindering safe wheelchair access to the area. Community members noted that the playground does not cater to older children.

A new playground is recommended for Buena Vista Park and future designs should account for wind and sun protection of the facility.



### PLAYGROUND CONDITIONS:

- Outdated play structures
- Inaccessible play surface
- Inaccessible entry



## TENNIS COURTS

### KEY PLAN:



The tennis courts located in the north-eastern portion of the park are popular within the Buena Vista neighborhood. While the tennis courts have been recently resurfaced and are in good condition, as described in the previous section, the soil along the north east steep slopes is moving constantly and stabilizing this slope is crucial to assure that the tennis courts do not slide with the earth movement.



## MAINTENANCE YARD

### KEY PLAN:



The existing maintenance yard is located in the north east quadrant of the park adjacent to the convenience station. The convenience station is now used as storage for maintenance staff. The building was built in 1917 and only repaired during WPA era. A flat open area is used for small operations such as chipping and storage for green waste materials, plant materials, and erosion coirs. There are five shipping containers situated in the yard for storage. The area lacks security as there is no fencing in place to protect maintenance materials and equipment. Stabilizing the surrounding topography is essential as noted earlier in the report. Upgrading the maintenance facility will ease the burden of the small maintenance staff who are working hard to keep the park safe.



## DOG RUN

### KEY PLAN:



The Dog Run is located in the proximity of the Buena Vista Avenue West and underutilized in its current condition. The unfenced shaded area is surrounded by tall trees. Various alternative locations have been suggested, however a suitable location has not been agreed upon. Erosion in this area caused by both humans and dogs has exposed the roots of the surrounding large Cypress trees. Exposed sand in the area regularly washes away during storm seasons.

Neighborhood volunteer groups and maintenance crews install erosion blankets prior to the rainy season on a yearly basis, however the area is in need of more permanent repairs. The entire park is available for on-leash dog walking. Despite the minimal use of the dog run, its removal is not desired by the community as there is still a need for an area for dogs to be safely off leash.



## SUMMIT

### KEY PLAN:



The highest peak of the park, the Summit, is a grassy knoll with magnificent panoramic views toward the northwest and east. The sunny exposed lawn is very popular for both passive and active recreation.

Changing the character of this Summit is not desirable by the community though there are opportunities to plant the south side with lower growing vegetation that will maintain the view corridor. Some of the surrounding Cypress trees growing on the north side of the area will eventually block the views.

Preserving tall trees on the west side of the Summit is recommended as they function as a windbreak keeping the grass area comfortable. Native planting efforts have been made surrounding the asphalt pathway margins and these efforts, along with removing invasive plants, are encouraged. Asphalt paving around the lawn circle is in poor condition and should be replaced. The low seating area looking out northward toward the open view was installed by volunteer community groups from recycled curbstones and should be preserved.



## OVERLOOK

### KEY PLAN:



Another vista point with stunning views is the Overlook. It is positioned at the peak of the Central zone and offers a gratifying respite after a rather strenuous hike through the forest. The backdrop of this vista point contrasts the Summit, in that it feels fairly sheltered with the surrounding tall trees. Despite being one of the most captivating places in the park, the Overlook is unkempt, with worn out terraced wood retaining walls and an outdated bench. The drop at the edge is not alarmingly high, but is rather precarious. Erosion coirs circle a relatively flat space above the terraced bench area to control hillside erosion. The underused and randomly planted elevated flat area offers potential expansion of this important viewpoint.



## THE WINDOW

### KEY PLAN:



Ascending the forested park, views emerge periodically between the trees. One notable spot is the Window located on the west side of the park. Views span Golden Gate Park, the Pacific Ocean and, on a clear day, the cliffs of Drake's Bay.

The Window was established in the 1980's when a high, wood retaining with a wooden railing was installed as a part of an erosion control project. After 40 years, the wood material is showing age and the railing is starting to lean. Rustic stairs leading up to the Window are deteriorating. Replacing the wooden retaining wall with durable materials and improving planting is needed to ensure this important overlook can thrive.



## SOUTHWEST SUMMIT

### KEY PLAN:



Tucked in the southwest quarter, a grove of cypress and stairs lead up to a fairly level area with scenic panoramic views of the City through the tree branches. The views are spectacular towards Corona Heights and Bernal Heights. The plateau is utilized as both an active and passive recreation area by neighbors exercising, contemplating and resting against the fallen logs. The Southwest Summit has great upgrade potential while maintaining its rustic character.



# CHAPTER 06

## RECOMMENDATIONS FOR IMPROVEMENT

<b>6.1 - hardscape and circulation</b> .....	<b>a - entries</b> <b>b - perimeter</b> <b>c - asphalt paving</b> <b>d - rustic trail system preliminary study</b> <b>e - walls</b> <b>f - fences</b> <b>g - overlooks</b>	pg. 80
<b>6.2 - water management and erosion control</b> ....	<b>a - erosion control</b> <b>b - irrigation</b>	pg. 98
<b>6.3 - forestry management</b> .....	<b>a - removal</b> <b>b - reforestation</b>	pg. 102
<b>6.4 - furniture and lighting</b> .....		pg. 114
<b>6.5 - wayfinding and signage</b> .....		pg. 116
<b>6.6 - playground</b> .....		pg. 118
<b>6.7 - maintenance yard</b> .....		pg. 119
<b>6.8 - dog run</b> .....		pg. 120
<b>6.9 - the glade</b> .....		pg. 121

## 6.1 - a HARDSCAPE AND CIRCULATION: ENTRIES

All entries throughout the perimeter of the park are in need of restoration. Proposed improvements for historic entries include structural retrofitting along with aesthetic repairs. Four out of five main entries, at Haight Street West, Lyon Street, Baker Street, and Duboce Avenue, have structural issues that need to be evaluated by a structural engineer. Similarly, the secondary historic stairs, though with less elevation change and seemingly fewer structural issues, will also require evaluation. Recommendations are made for walls to be retrofitted structurally by either underpinning, buttressing, or supporting the footings and completely replacing the concrete stairs. Depending on the engineer's recommendations, the wall and stairs may require doweling to keep them from separating. Repairs for cracks and chips, and resurfacing the walls and columns, will provide a much needed face-lift for the walls along with new handrails on both sides of the stairs.

The historic entry at Frederick Street is in worse condition than the remaining historic entrances due to the damage caused in the columns and stairs by the Hollywood Juniper trees flanking the bottom of the stairs. The Hollywood Juniper trees have matured handsomely and preserving the trees is desired by the community. Therefore, it is recommended that the stairs be rebuilt narrowing toward the bottom allowing room for the trees to grow. A complete replacement of the Frederick Street entrance is identified as an alternate item in the cost estimate due to the historic review required by the City. For the purposes of this report, the base scope of work for the Frederick Street entrance is to restore it along with the rest of the historic entrances.

As described previously in the existing conditions (section 5.2), the informal stairs along Buena Vista Avenue West and East are inconsistent in material and sometimes hard to locate. Wood stairs are deteriorating and stone stairs are unsafe. All perimeter

informal stairs are recommended for a replacement with concrete stairs, curb walls and columns - all more durable materials which can withstand erosion and soil movement. New handrails are needed for easier access. A bulb-out landing at the bottom of the stairs is recommended and will provide a buffer between the street and stairs while deterring parking directly in front of the stairs. This proposed addition will require a more detailed review and coordination with City agencies including, but not limited to, SFDPW and SFMTA. This item is also identified as Alternate item in the cost estimate.

The Waller Street West Entry, leading towards the playground and into the park, is one of the main vehicular access points. Improvements for this entrance include new low concrete retaining walls and entry columns, new asphalt paving that endures heavy traffic loads, wood bollards matching the Upper Terrace entry road, new signage and planting along the north side of the pathway with a similar plant palette along what exists on the south side of the pathway with drought tolerant, shrubs and groundcover. The recently installed accessible pathway on the south side of the Playground along Buena Vista Avenue West will remain in its current condition.

The accessible entrance at Upper Terrace has been newly installed with stone retaining walls and planting in a bioswale. This entry does not require any new improvements.

### ENTRY IMPROVEMENTS:

- Historic Entrance Restoration (7):
  - Remove existing failing concrete stairs.
  - Structurally retrofit walls.
  - Repair cracks, chips and resurface walls as needed.
  - Install new stairs.
  - Add handrails.
- Historic Entrance Entire Replacement at Frederick Street (Alternate #1)
  - Remove existing stairs and walls.
  - Ensure health of existing trees.
  - Construct new stairs, walls and columns.
- Waller Street West Entrance
  - Remove timber log walls.
  - Install new walls and columns.
  - Improve signage and planting with drought tolerant plants.
- Perimeter Stair Replacement
  - Remove existing stairs and walls.
  - New concrete stairs and columns.
  - Add new handrails.
  - Bulb-out landing to be added at bottom of stairs. Coordinate with Landings with SFDPW and SFMTA. (Alternate #3)

## HARDSCAPE AND CIRCULATION: ENTRIES MAP



**HARDSCAPE AND CIRCULATION: ENTRY RENDERINGS**



*EXISTING FREDERICK STREET HISTORIC ENTRANCE*



*EXISTING MAIN HISTORIC ENTRANCE (TYPICAL)*



*RENDERING OF FREDERICK STREET HISTORIC ENTRANCE REPLACEMENT (ALTERNATE #1)*



*RENDERING OF HISTORIC ENTRANCE RESTORATION*

**HARDSCAPE AND CIRCULATION: ENTRY RENDERINGS**



*EXISTING WALLER STREET WEST ENTRANCE*



*EXISTING PERIMETER STAIR (TYPICAL)*



*RENDERING OF WALLER STREET WEST ENTRANCE IMPROVEMENT*



*RENDERING OF PERIMETER STAIR REPLACEMENT*

## 6.1 - b HARDSCAPE AND CIRCULATION: PERIMETER

Improvements for the perimeter apron between the park boundary and street includes the perimeter walkway and sloped landscape strip. Sidewalk design could employ a combined slab and curb approach to reinforce the edge along the sloped landscape strip in order to mitigate earth movement. Replacement can be done in sections where the sidewalk edging is failing (identified as a base scope of work) or the entire perimeter walkway can be overhauled (as identified as an alternate solution). If the walkway is entirely replaced for a consistent appearance, two designs are suggested:

1) a simple concrete walkway with the exposed aggregate finish,

2) a concrete walkway with brick edging and accents as in the original condition.

Another hardscape improvement has been identified at the base of the sloped landscape where erosion is currently mitigated with mostly stacked timber curbs currently showing decay. A permanent and durable material is recommended while locating the new wall further inside the landscaped area allowing a paving buffer along parked cars. The new wall will need to be approximately 30 inches high and the recommended material is stone. Paving buffers are recommended between the new walls and existing curb to prevent damage to parked cars. An 18-inch

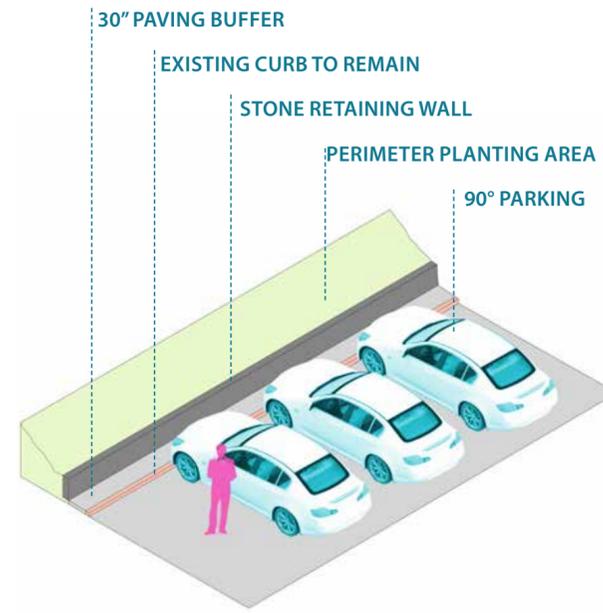
buffer is recommended for parallel parking and 30 inches for perpendicular parking.

The cost estimate identifies concrete walls as a base item and the stone as an alternate item for cost considerations. The perimeter is an important frontage and a more attractive and durable material is recommended for replacement of the existing stacked timbers.

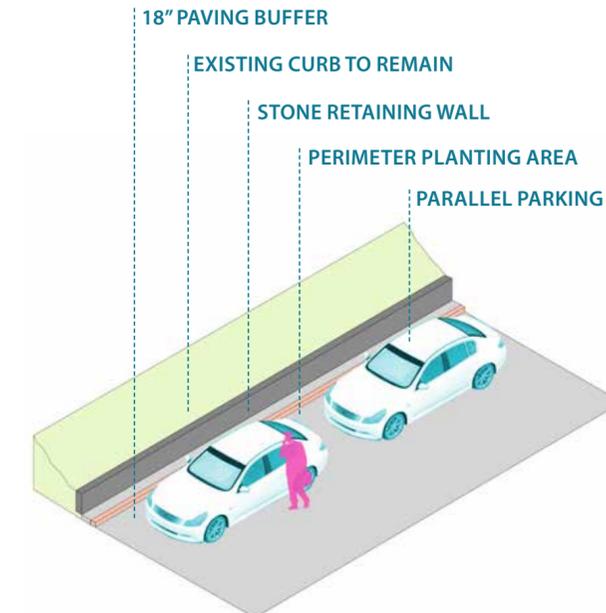
Landscape improvement is a critical component of perimeter apron improvements and is discussed in the recommendation for planting in Section 6.3-b.

### PERIMETER IMPROVEMENTS:

- Replace concrete sidewalk where damaged, with brick edge, accents and extended curb.
- Replace concrete sidewalk entirely and inner curb along the park boundary.
- **Alternate #6.1:** Concrete exposed aggregate finish
- **Alternate #6.2:** Concrete with brick edge and accents
- Replace makeshift walls with permanent wall
- **Base Scope:** Concrete retaining wall
- **Alternate #4:** Cobblestone retaining wall
- **Alternate #5:** Timber retaining wall
- Install paving buffer along parking areas within the site's property line.
  - 18" paving buffer at parallel parking
  - 30" paving buffer at perpendicular parking



90 DEGREES PARKING CURB EXTENSION



PARALLEL PARKING CURB EXTENSION

## HARDSCAPE AND CIRCULATION: PERIMETER MAP

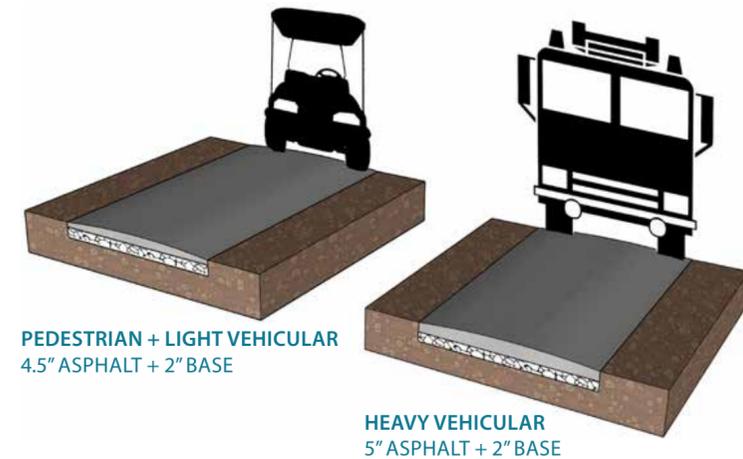


## 6.1 - c HARDSCAPE AND CIRCULATION: ASPHALT CONCRETE PAVING

Replacing the entire asphalt (AC) paving throughout the park is recommended due to its overall poor condition. The new paving should be designed for two different types of traffic and load rates, and assumes that the sandy soil is compacted under the existing paving: a) light vehicular and b) heavy vehicular. Three options are proposed by the project civil engineer: 1) thick AC paving with no base, 2) AC paving with recycled base materials, and 3) AC paving with imported aggregate base.

The profile below illustrates Option 2, where on-site asphalt paving is harvested and reused as a crushed and compacted base material. The two-inch section of base material is the estimated amount of existing pavement that can be reused. If more existing material is harvested the base thickness may be increased. This design is proposed to reduce cost associated with material hauling to and from the site, and to repurpose the existing asphalt pavement materials. The calculation and method proposed follows recommendations outlined in the Caltrans Highway Design Manual

### ASPHALT PAVING TYPES



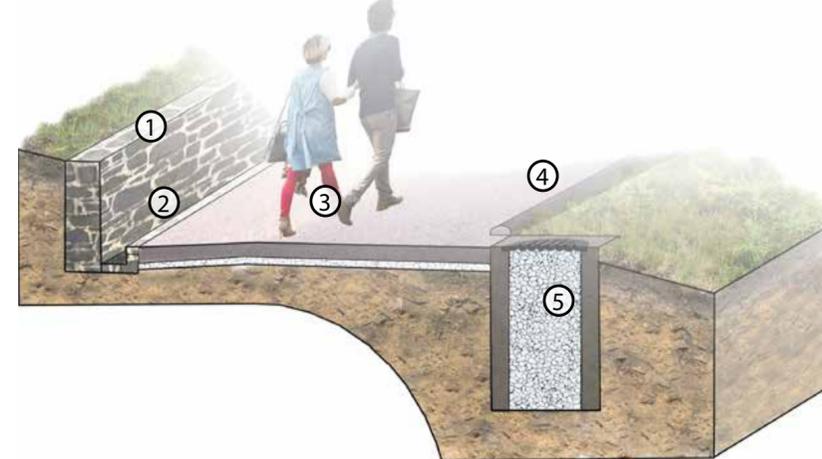
Section 630. A report by a civil engineer is included in the appendix of this document.

Several design improvements are recommended for controlling rainwater runoff onto paths during heavy storms:

- 1) Crowned surfaces for diverting water to both sides of the pathway thereby easing the overwhelmed drainage gutter.
- 2) A dry well installed every 100-feet on the downhill side for capturing rainwater.
- 3) Construction of asphalt dikes at the edge of new paving to divert runoff water away from downhill slopes.

A thicker asphalt paving profile will require a raised stone curb for the edging along the gutter on the uphill side. The deeper drainage gutter allows greater rainwater runoff capacity and mitigates overflow onto the paving. A successful paving installation must be implemented in unison with erosion control strategies.

### DRAINAGE SYSTEM

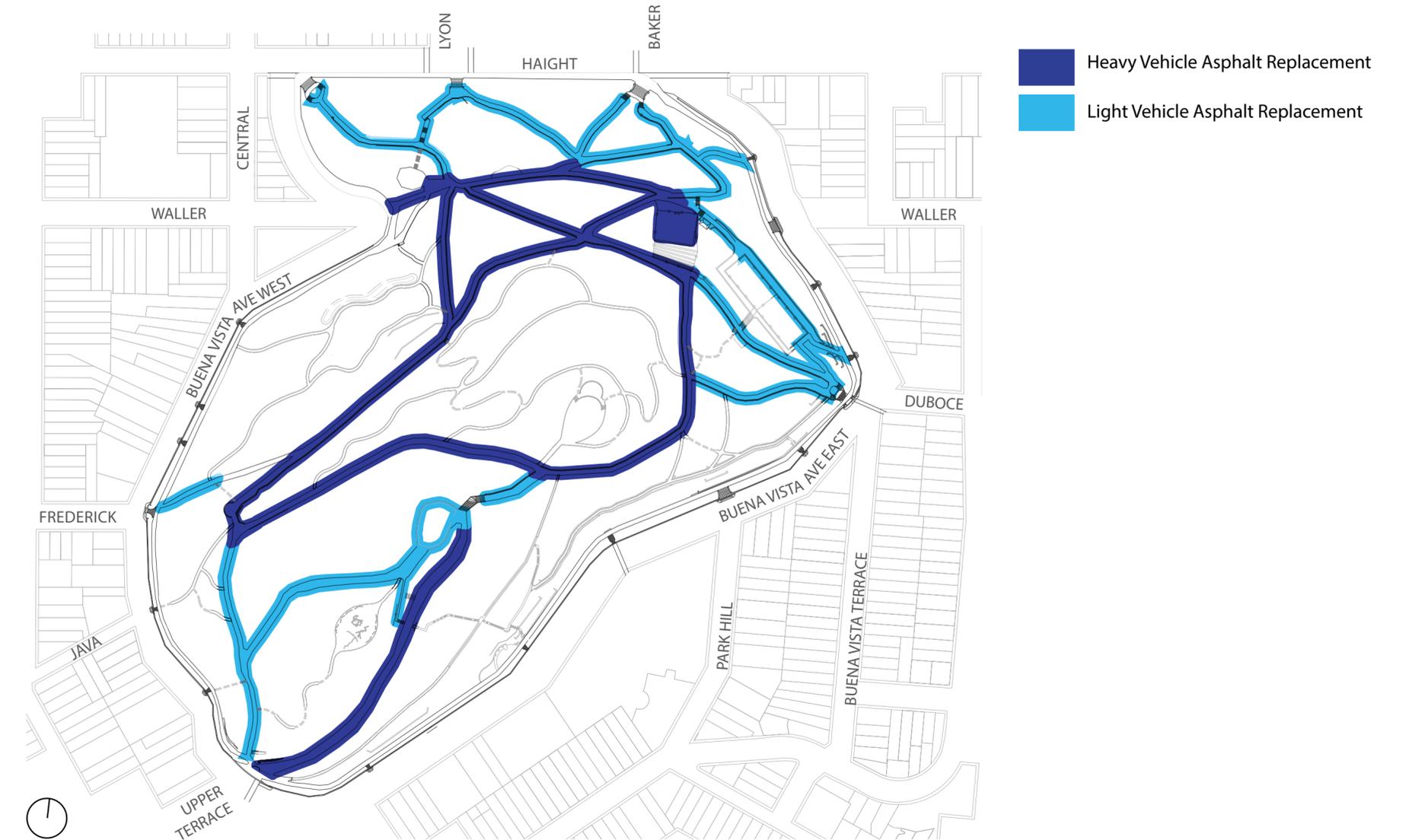


### ASPHALT PAVING IMPROVEMENTS:

- Demolish and salvage existing asphalt paving. Recycle as crushed asphalt for new paving aggregate base. Import aggregate as needed.
- Install new asphalt paving:
  - Asphalt paving engineered for appropriate use and traffic load.
  - Crown paving surface
  - Add asphalt dike along downhill pavement edge.
  - Divert stormwater run off to dry wells along the downhill side.

- ① Existing stone wall
- ② Historic drainage gutter with extended stone curb
- ③ Crowned asphalt paving
- ④ Asphalt dike
- ⑤ Dry well

## HARDSCAPE AND CIRCULATION: ASPHALT PAVING MAP



## 6.1 - d HARDSCAPE AND CIRCULATION: RUSTIC TRAIL SYSTEM PRELIMINARY STUDY

The entire rustic path and stair system requires replacement and realignment. The timber stairs installed on steep hillsides in the current trail alignment are deteriorating due to age and erosion. In addition, several trails end suddenly, or are completely overgrown with vegetation. All of these factors encourage park visitors to diverge from existing routes and contribute to erosion and further trail degradation.

Realigning trails with the park's hillside contours is recommended. A proposed trail map in this section illustrates a preliminary study of new routes.

Additional assessment is required once an accurate survey is performed, but the overall logic of the suggested routes allows for a more gentle walk improving accessibility for all park users. Similar methods have been implemented by SFRPD with success in other city parks.

The proposed trail design increases the path width to six feet, allowing for larger groups and passing traffic to flow more easily. A timber wall will retain the hillside, allowing for this increase in width. Rustic fencing on the downhill sides of the path discourages people and pets from diverging from the trail system and creating new "social paths." These fences, designed to reflect Buena Vista Park's current wild character, would be made out of split rail wood and wire screening.

The durable and stable material currently used in San Francisco's park trail system is Park Tread made from quarried shale and chert rock processed to meet durability standards. As a low maintenance surfacing material, Park Tread is preferable to simple compacted earth surfaces. The current eastern pathway running from Duboce to the accessible walkway is also highly recommended for a Park Tread surface in order to mitigate severe erosion occurring on this side of the park.

The total number of rustic stairs within the site's premises would

decrease as stairs would only be present where necessary.

Restored rustic stairs will be built with timber on three sides creating a box and containing Park Tread surface material. As many of the current timber stairs have served for the last 40 years, this new method will be more durable than the simple wooden treads currently utilized on-site.

The bucolic nature of Buena Vista Park will be enhanced through the implementation of a topographically appropriate pathway layout that uses rustic materials which visually blend with the natural environment.

### RUSTIC TRAIL SYSTEM IMPROVEMENTS:

- Replace all existing rustic stairs and trails
- Re-route pathways to align with contour lines and create a meandering trail system
- Install timber box stairs
- Install park tread path surfaces
- Install low timber walls and rustic fencing to assist with erosion control



RUSTIC TRAIL SYSTEM EXAMPLE

## HARDSCAPE AND CIRCULATION: RUSTIC TRAIL SYSTEM PRELIMINARY STUDY MAP



## 6.1 - e HARDSCAPE AND CIRCULATION: WALLS

Crumbling and decomposing walls are a common theme throughout Buena Vista Park's boundaries. Durable materials are needed to replace the wood walls that are failing throughout the park.

The historic stone walls running along the asphalt paths are greatly admired and for the most part in good condition. In some areas mature trees growing close to the walls have damaged stretches of masonry while a section in the park frontage is structurally undermined. These walls need to be repaired with matching stone materials.

New stone walls are proposed for the steep slopes which are particularly extreme along the east side of the park.

Gabion walls in low visibility areas are recommended. More aesthetic stone walls are to replace randomly placed deteriorating wood walls in high visibility zones along perimeter sidewalks with clear sight lines. Sutter walls are proposed along the southeast rustic pathway for their utility as their wood boards may be replaced easily between the metal I-beams as they age. Sutter walls are also recommended in the west woodland area where large Cypress tree roots are exposed by erosion. Terraced gravity block or gabion walls are recommended at the Maintenance Yard area to stabilize the extreme elevation of the surrounding hillside. Planting within the terraces will soften the impact of these walls.

### WALL IMPROVEMENTS:

- Historic stone wall repair and replacement
  - Remove and recycle dilapidated materials
  - Construct as per existing design
- Terraced gravity block wall
  - Located at Maintenance Yard
  - Covered with vegetation
- Stone wall
  - Used in highly visible and traffic areas
- Gabion wall
  - Limited to non-visible areas with high likelihood of soil movement
- Sutter wall and timber walls
  - Used along rustic trail system and varies based on wall height



SUTTER WALL EXAMPLE



STONE WALL EXAMPLE



GABION WALL EXAMPLE



GRAVITY WALL EXAMPLE

## HARDSCAPE AND CIRCULATION: WALLS MAP



## 6.1 - f HARDSCAPE AND CIRCULATION: FENCES

Several different types of fences and guardrails are proposed throughout the park to mitigate erosion caused by foot traffic, wildlife habitat disturbance from people and pets, and to prevent safety risks in fall zones or steep elevation changes along the rustic trail system and overlooks.

A rustic fencing system composed of split wood rails and galvanized screen material is proposed for the downslope side of the rustic path system to prevent park users from straying into the more secluded areas of the park's forest, causing further erosion and compromising understory vegetation. The fencing regulates pedestrian traffic with minimal impact to the character of the park. Galvanized wire mesh nailed to the split rail posts prevents pets

from running down the hillsides and disturbing native habitats. This type of fence is especially beneficial at the dog run area to prevent dogs from running into nearby streets.

More robust metal fencing is proposed for steep and unsafe areas, such as the Maintenance Yard and steep slopes along the east side of the park. Currently, deteriorating and unappealing chain-link fence exists in portions of the park and should be replaced with painted metal fencing with welded wire mesh panels with openings of less than two inches to minimize visual impact.

Metal picket guardrails are to be installed at several high-profile areas on site, such as the redesigned overlooks to safeguard visitors enjoying the park's splendid city views.

The accessible path located on the southeastern section of the park requires fence replacement as some of the wood posts with wire mesh panels are failing. Sturdy metal guardrail fences are recommended at a height complying with current building codes.

### FENCE IMPROVEMENTS:

- Rustic Fencing
  - Install along rustic trail system
  - Rustic split rail design
  - Concrete footings
  - Recommended wood material: Western red cedar for post and rails
  - Galvanized wire mesh panels
  - Visually transparent
- Tall Metal Fencing
  - Protect users from steep hillsides on east side and Maintenance Yard
  - Concrete footings
  - Painted metal posts
  - Galvanized welded wire mesh panel with openings less than 2 inches
  - Accessible gates installed at southeast rustic pathway
  - Wide double gate installed at Maintenance Yard
  - Visually transparent
- Metal Guardrail
  - Located at several overlooks and southeast accessible rustic path
  - All painted metal materials and design varies depending on intended use
  - Visually transparent



RUSTIC FENCING EXAMPLE



METAL AND TALL FENCE EXAMPLE



METAL GUARD RAIL EXAMPLE

## HARDSCAPE AND CIRCULATION: FENCES MAP



## 6.1 - g HARDSCAPE AND CIRCULATION: OVERLOOKS

As mentioned earlier, “Buena Vista” lives up to its name by offering stunning views over the City and beyond. Before the park trees matured, the hilly promontory allowed panoramic views of bordering neighborhoods and clear vistas of the Marin Headlands and East Bay. In addition to the existing viewpoints, there are several other viewshed opportunities in the park that should be explored. During the Sunday site walk, attendees identified several views toward Corona and Bernal Heights, South San Francisco, and a significant viewshed opportunity within the northern section of the park looking over Golden Gate Park to the bridge and the Headlands. Community members identified three small overlook spaces where visitors can fully enjoy the view by expanding paving in these overlooks and installing rustic stone seat walls mirroring existing stone walls in the park. The development of these small overlooks are classified as alternate items in the cost estimate and can be implemented when funding is available.

Of the three existing major viewpoints, the Overlook and the Window require major restoration. Community members and park visitors described the Overlook as dark and unsafe due to constricted sightlines. The current wood walls terracing the Overlook have structural concerns. The proposed Overlook design recommends more durable terraced stone walls alleviating erosion, a paved park tread platform in keeping with the rustic look and the addition of tall conifer trees like Monterey Cypress as a backdrop. The stone wall material should match the existing park stone walls in tone and texture. Tall shrubs should be removed to increase sightlines. Metal guardrails mounted on the upper terrace wall will blend into the site while the bottom terraced area remains open with seating opportunities facing the view.

On the west side of the park, the Window is another beloved park feature, with a small paved area focused on views of Golden Gate Park, St. Ignatius church, and the Pacific Ocean. As with the main

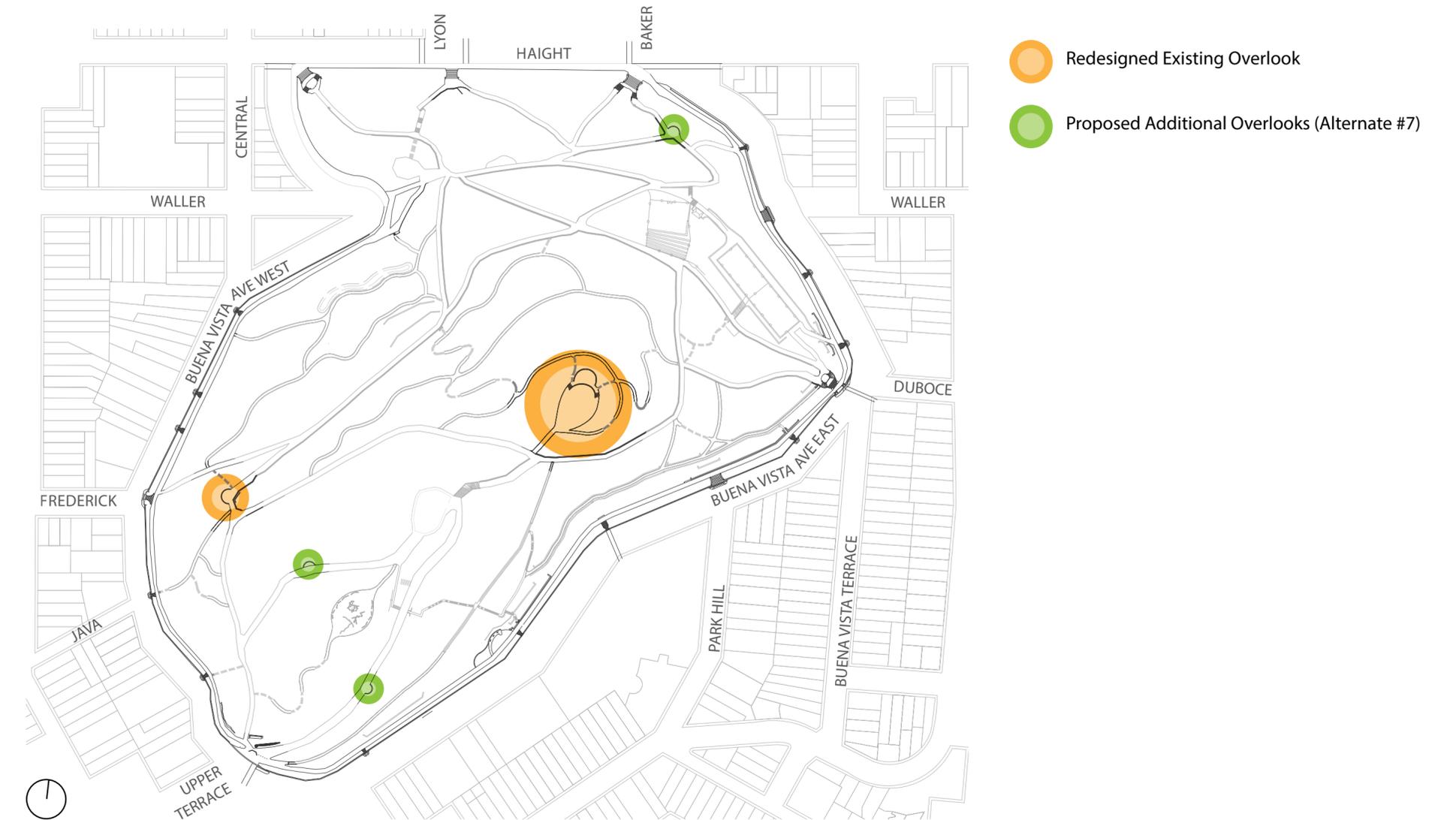
Overlook, the decayed wood retaining wall and wood guardrail need replacing with sturdier and more durable materials. Redesign of this area includes a stone retaining wall conforming with the existing gray stone walls within the park and new asphalt paving. The circular wall will feature stone columns with sections of metal guardrails.

Buena Vista park’s main recreational value as a rustic promenade is greatly magnified by its vistas. Therefore, improving these assets must be a priority.

### OVERLOOK IMPROVEMENTS:

- Main Overlook Redesign
  - Construct stone retaining and seat walls to create two terraced areas
  - Integrate overlook within the rustic trail system
  - Install a metal guardrail for the upper terraced area
  - Install park tread paving
  - Preserve all healthy cypress trees
  - Add four new conifer trees at the backdrop of the paved area
- Redesign the Window Overlook
  - Remove failing wood walls
  - Construct new overlook with durable stone walls
  - Install metal guardrail between stone columns
  - Replace all dilapidated asphalt paving
- Three new additional Small Overlooks (Alternate #7)
  - Install stone retaining and seat wall
  - Replace all asphalt paving

## HARDSCAPE AND CIRCULATION: OVERLOOKS MAP



HARDSCAPE AND CIRCULATION: RENDERINGS



RENDERING OF PROPOSED MAIN OVERLOOK

HARDSCAPE AND CIRCULATION: RENDERINGS



RENDERING OF PROPOSED OVERLOOK "THE WINDOW"



EXISTING OVERLOOK "THE WINDOW"



EXISTING NORTH EAST VIEW



RENDERING OF PROPOSED SMALL OVERLOOK (ALTERNATE #7)

## 6.2 - a WATER MANAGEMENT AND EROSION CONTROL: EROSION CONTROL

As detailed in chapter 5, erosion control on this hilly and sandy site is the core focus of this project. The future success of improvements to the paved walkways, trails and walls cannot be achieved without controlling erosion.

Areas of high, medium, and low levels of erosion were identified through the site assessment process, including feedback from the maintenance staff of SFRPD. Erosion control blankets are recommended for low risk zones, while more problematic, steeper areas require a more robust combination of erosion control blankets with coir. Durable coconut fiber erosion coir is recommended for use throughout the park. Erosion blankets and coir combined with native plantings are commonly installed in San Francisco parks whenever new trails and stairs are built. This practice should be utilized in Buena Vista Park and especially when invasive understory plants are removed in order to avoid accelerating erosion. Careful placement of erosion control materials is required so they do not disrupt native plant species and wildlife habitat.

The project civil engineer and design team propose several stormwater management features. Rainwater gardens and bioswales are recommended for low points along the slopes where water can be collected. Infiltration basins that store and gradually percolate water into the soil are no longer in the base scope of work due to high cost, but may be implemented as funding allows.

Other recommended stormwater management features along the slopes are:

- 1) Level spreaders, an excavated depression and erosion control device for reducing high-velocity stormwater surface runoff.
- 2) Rock check dam and channels, a small dam constructed across a channel lowering the velocity of runoff flow.
- 3) Cascading berms, a compacted and vegetated berm designed to slow runoff and divert sediment.

Each of these measures will reduce peak storm flows, reduce sediment runoff and preserve wildlife habitat.

### EROSION CONTROL IMPROVEMENTS:

- Erosion control blankets and coir combination
  - Place along rustic trail + stair system
  - Place in high risk erosion areas
- Erosion control blanket
  - Place in medium to lower risk erosion areas
- Install stormwater management features
  - Rainwater garden
  - Inline swale
  - Bioswale
  - Swattle (Erosion blanket and swale)
  - Level spreader
  - Rock check dam and channels
  - Cascading berm



RAINWATER GARDEN EXAMPLE



SWALE EXAMPLE



EROSION CONTROL BLANKET AND COIR EXAMPLE

## WATER MANAGEMENT AND EROSION CONTROL: EROSION CONTROL MAP



## 6.2 - b WATER MANAGEMENT AND EROSION CONTROL: IRRIGATION

The irrigation system assessment performed in the 2015 SFPUC's Landscape Technical Assistance Program (LATC) provided insight for the existing conditions in the park and many of the recommended improvements were implemented by the City maintenance staff. Booster pump and controllers were repaired or retrofitted and new irrigation systems were added to the lawn area of the summit and the perimeter landscape apron along the street. A summary of the LATC report and improvements have been described in Chapter 5 Existing Conditions.

Automatic irrigation systems are limited to the lawn areas of the park frontage and summit and a small lawn on the southeast. Remaining areas are irrigated manually by maintenance staff as needed with hoses connected to quick coupler valves.

Additional main lines and quick couplers spaced in utility boxes are recommended along the pathways and the central areas of the park providing easy access for maintenance crews. Regular irrigation is required to support urban forestry restoration and the growth of new trees and understory plants. New trees are typically irrigated with gator bags which release water slowly. Extension of the existing quick coupler system will assure that new plantings will receive needed water during the establishment period. Drought conditions may necessitate manual watering for as many as five years.

### IRRIGATION IMPROVEMENTS:

- Install Quick Coupler valves along the park interior circulation system
- Expand the mainlines to the quick coupler valves and connect to existing source
- Trench and backfill installation to be implemented carefully
- Planted trees shall be irrigated with gator bags or equivalent which will be filled once each month during the dry season for at least the first two years after planting. Drought conditions may necessitate irrigation up to five years.

## WATER MANAGEMENT AND EROSION CONTROL: IRRIGATION MAP



### 6.3-a FOREST MANAGEMENT / HABITAT ENHANCEMENT PLANTING OPPORTUNITIES: REMOVAL

As described in Chapter 5 Existing Conditions, urban forestry issues in the park require the removal of trees that are either performing poorly, aging or becoming too large. Invasive specimens disrupt ecological integrity and reduce biological diversity in the park.

This project engaged an urban forestry specialist who prepared a forestry report that is attached in the appendix. A tree survey has been prepared that documents the location of varying tree species by percentage composition within the specific areas of the park as well as the dominant understory vegetation. Large specimen trees are noted. The report includes an assessment of tree health and considers the presence and potential for regeneration. Diseased trees and those in poor health are noted, as are dead trees with trunks greater than 6" in diameter.

Recommendations noted in the Forest Management Plan include:

- Mitigation of risk associated with declining and dead trees. Trees identified for removal are listed in the summary.
- Embed logs perpendicular to the slope to retain soil moisture, slow erosion and add habitat.
- Mitigate safety risk of overhanging branches and leaning trees along Buena Vista Avenue East and West.
- Perform all work identified in HortScience report dated 2017 and update if necessary.
- Limit future undesirable tree species establishment in the park. Removal of existing undesirable trees are listed in the summary. Perform an annual sweep of the park to remove any new invasive plant seedlings or sprouts.
- Enhance native understory. Remove invasive small trees and large shrubs listed in the summary.
- Remove large Monterey Cypress at vista points and replace with lower-growing native Scrub Oaks which will also open up views.

- Employ mulch over the landscape with the exception of the designated Natural Area to amend soil and improve tree health. All chipping from tree removals should be kept on-site and spread under tree canopies at depths of 2 inches to 4 inches. Avoid piling mulch against tree bases and using mulch from culled invasive species.
- Mitigate risk of injury from branch failure by installing signage alerting park visitors to be cautious during windy conditions. Prioritize removing damaged tree limbs near pathways by park staff or hired contractors.

Refer to the urban forester report in the appendix for detailed and comprehensive action plans.

Recommendations for forestry management, including tree planting and understory planting, are described in the following section. A detailed tree removal plan is also included in the preliminary cost estimates and drawings.

#### TREE AND PLANTING REMOVAL:

- Remove all diseased Canary Island pines (*Pinus canariensis*) near south entrance.
- Remove dead Monterey Pines (*Pinus radiata*).
- Remove decaying Monterey cypress (*Hesperocyparis macrocarpa*) over path.
- Remove all Acacia (*Acacia spp.*) and Tree of heaven (*Ailanthus altissima*) of any size in the park.
- Remove all Cotoneaster (*cotoneaster spp.*)
- Remove all Pineapple guava (*Feijoa sellowiana*).
- Remove all Australian tea tree (*Leptospermum laevegatum*).
- Removal of eucalyptus trees shall be targeted to invasive Tasmanian blue gum (*Eucalyptus globulus*).
- Monitor Torrey pine (*Pinus torreyana*) and remove if they get dangerously too large.
- Remove Pine trees in general as they are not performing well in the park.
- Remove invasive undestory plants and implement erosion control and planting:
  - English ivy (*Hedera helix*)
  - Ehrhart grass (*Ehrharta erecta*)
  - Bermuda buttercup (*Oxalis pes-caprae*)
  - Sweet Fennel (*Foeniculum vulgare*)
  - Himalayan blackberry (*Rubus armeniacus*)

### FOREST MANAGEMENT / HABITAT ENHANCEMENT PLANTING OPPORTUNITIES: REMOVAL MAP



### 6.3 - b FOREST MANAGEMENT / HABITAT ENHANCEMENT PLANTING OPPORTUNITIES: REFORESTATION

Recommendations noted within the Forestry Management Plan and future reforestation efforts should involve comprehensive discussions with stakeholders including SFRPD's maintenance staff, Natural Resources division and neighboring communities who have invested in planting the park. The urban forestry report includes an action plan, recommendations and long-term goals and provides guidance about how the park will look in 30 to 50 years as the existing trees age out and are replaced by future planting. The vision for urban forestry is for the park to immerse visitors in a healthy, diverse, resilient and sustainable forest ecosystem and provide high quality habitat for wildlife in the heart of San Francisco. Ongoing conversations regarding the forest's future are open-ended as it is uncertain how climate change and environmental factors will affect the forest.

Regarding reforestation, the Urban Forestry Plan recommends dividing the park into distinct management areas as follows:

- Oak Woodland outside of Natural Areas: dominant species shall be Coast Live Oak, however other California oak species may be planted to see what will thrive. Source from local trees to maintain local genetics. Investigate Southern California sources if climate continues to warm. Plant associated species such as California buckeye (*Aesculus californica*), Toyon (*Heteromeles arbutifolia*), Coast Silk Tassel (*Garrya elliptica*), Coffeeberry (*Frangula californica*) and other compatible native species.
- Mixed Hardwood: similar to existing oak woodland, but less reliant on Coast Live Oak with wider species diversity. Recommended species for new plantings include, but not limited to: Coast Live Oak (*Quercus agrifolia*), Blue Oak (*Quercus douglasii*), Santa Cruz Island Oak (*Quercus tomentella*), Canyon Live Oak (*Quercus chrysolepis*), Scrub Oak (*Quercus berberidifolia*), Leather Oak (*Quercus durata*), Big Leaf

Maple (*Acer macrophyllum*), Catalina Ironwood (*Lyonothamnus floribundus*), Pacific Madrone (*Arbutus menziesii*), Toyon (*Heteromeles arbutifolia*), Coast Silk Tassel (*Garrya elliptica*).

- Mixed Conifer: maintain tall conifer trees in central area in order to preserve the character and keep safe sight lines. Drought and shade-tolerant cultivars of Redwood trees (*Sequoia sempervirens* 'Aptos Blue') are recommended in the shady central forest as adaptations to climate change. Other recommended California native conifers associated with Redwood are Douglas Fir (*Pseudotsuga menziesii*) and Incense Cedar (*Calocedrus decurrens*). Limit understory planting with closely associated species. These recommended plants appear in the urban forestry report and map.
- Cypress Groves: Monterey Cypress (*Hesperocyparis macrocarpa*) stands have very little growing in the understory and very few trees share overstory. The open understory should be maintained and planted sparsely with drought-tolerant hardy native shrubs. For new trees, plant smaller Cypress cultivars including "Aurea" and "Saligna Aurea".
- Low Perimeter Planting: mitigate risk of falling trees and branches onto roadways by limiting future planting within 60 feet of the perimeter sidewalk to trees with a maximum 40-foot mature height. The perimeter apron between the street and sidewalk shall be limited to low growing plant palettes as listed in the following planting section.
- Natural Area: the area is governed by the Significant Natural Resource Areas Management Plan. Plants in Natural Areas shall be sourced only from local sources including understory plants.

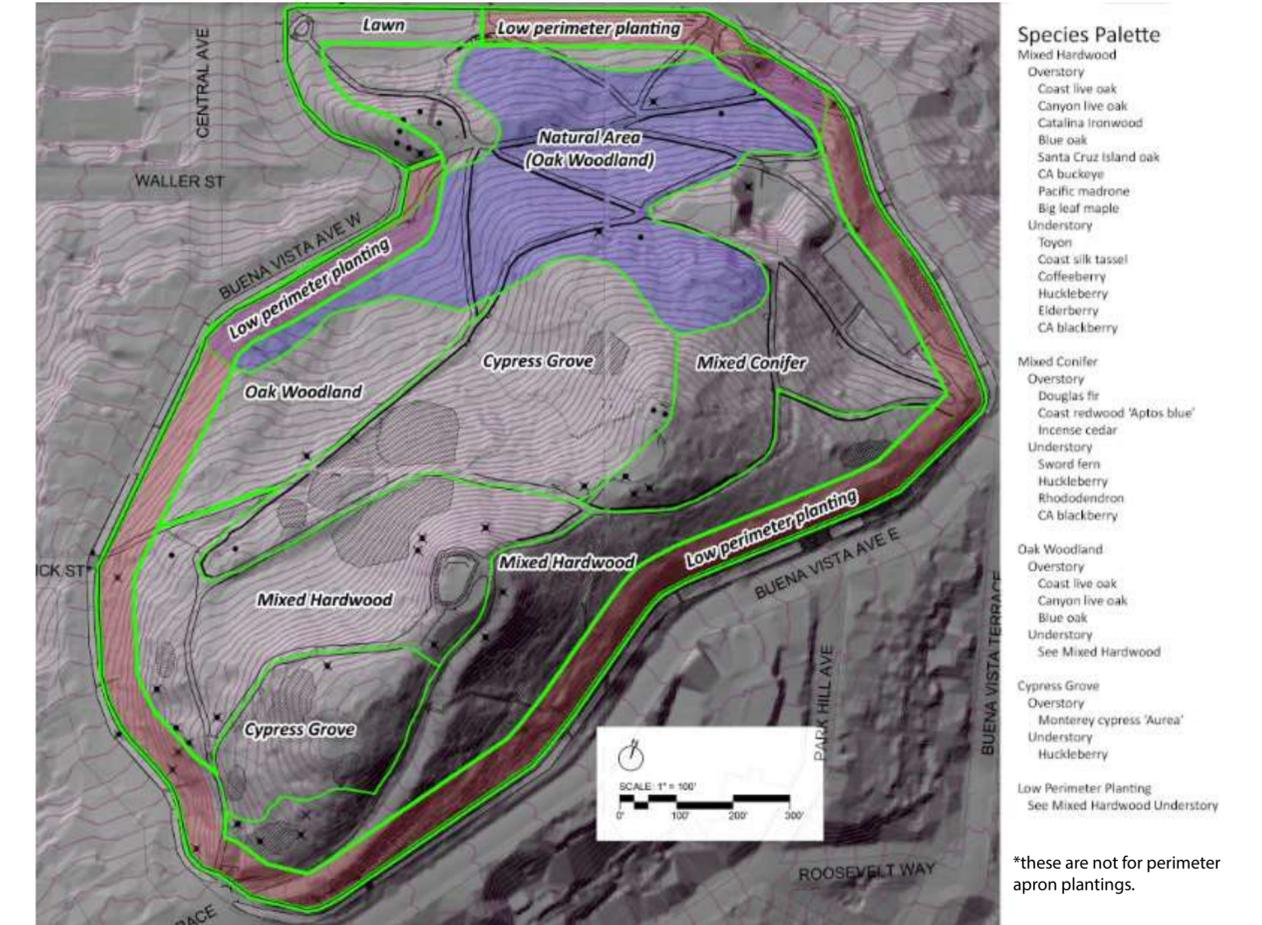
The above areas are delineated mostly by existing pathways and a map is developed by the Urban Forester shown on the following page. Long-term goals and strategies are listed and described

in the directory in the following page. Detailed information of the Forest Management Plan developed by the urban forester is included in Chapter 9 Appendix.

### FOREST MANAGEMENT / HABITAT ENHANCEMENT PLANTING OPPORTUNITIES: REFORESTATION MAP

#### REFORESTATION LONG TERM GOALS AND RECOMMENDATION:

- Promote establishment of management units shown in map and divide forestry to six distinct management sections:
  - Oak Woodland
  - Mixed hardwood
  - Mixed Conifer
  - Cypress Grove
  - Low perimeter planting
  - Natural Resource Area
- Limit planting in the management units to species found in those ecosystem types.
- Maintain an inventory of the trees in the park and update every five years. Include digital map of tree locations with data points showing species, trunk diameter, health and structural rating and photo of each tree.
- Promote age diversity in Cypress forest while maintaining characteristic feel of a pure cypress grove. Interplant with smaller cultivars when declining trees are removed.
- Maintain sight lines in central forest for safety.
- Reduce size of tree around perimeter of the park that target the road and limit all future planting within 60 feet of the road to shrubs and tree species with a maximum height of 40 feet. No trees in the perimeter apron.



EXCERPT OF URBAN FORESTRY REPORT: RECOMMENDED MANAGEMENT WITH PLANTING UNIT AND FUTURE CONDITION MAP

## FOREST MANAGEMENT / HABITAT ENHANCEMENT PLANTING OPPORTUNITIES: PLANTING

The vision for urban forestry is described in the previous section 6.3-b. This vision also applies to the understory planting associated with the various forests and low-growing plants for open areas including shrubs, groundcover and grasses as they significantly impact wildlife habitat and overall forest health. The park has a wide range of exposures, soils types, hydrology and topographic variation. Through observations by the habitat ecologist, seven distinct areas were identified by condition: dry shade, moist shade, steep moist vegetated slopes, open areas with exposed sand, Oak woodlands, summit and perimeter apron, lowland spots with runoff. Detailed information of each area is described in the habitat ecologist's report and is included in the appendix.

The biodiversity potential for the park was a subject of many comments received from the community members, and request to local native plants to be selected for the site. Careful plant selection must be considered with the emphasis on drought-tolerant and a mostly native plant palette that enhances wildlife habitat and hardy, woody plants that are suitable for each area of the park. Low maintenance plants and enhancing sight lines are also important considerations.

Recommended plants in this section represent only a few examples and a suggested planting list is included in the appendix. When funding is available for future planting implementation, a comprehensive planting plan will need to be developed and reviewed by SFRPD prior to the installation.

Recommendations made in the habitat ecologist report and urban forestry report are summarized briefly below:

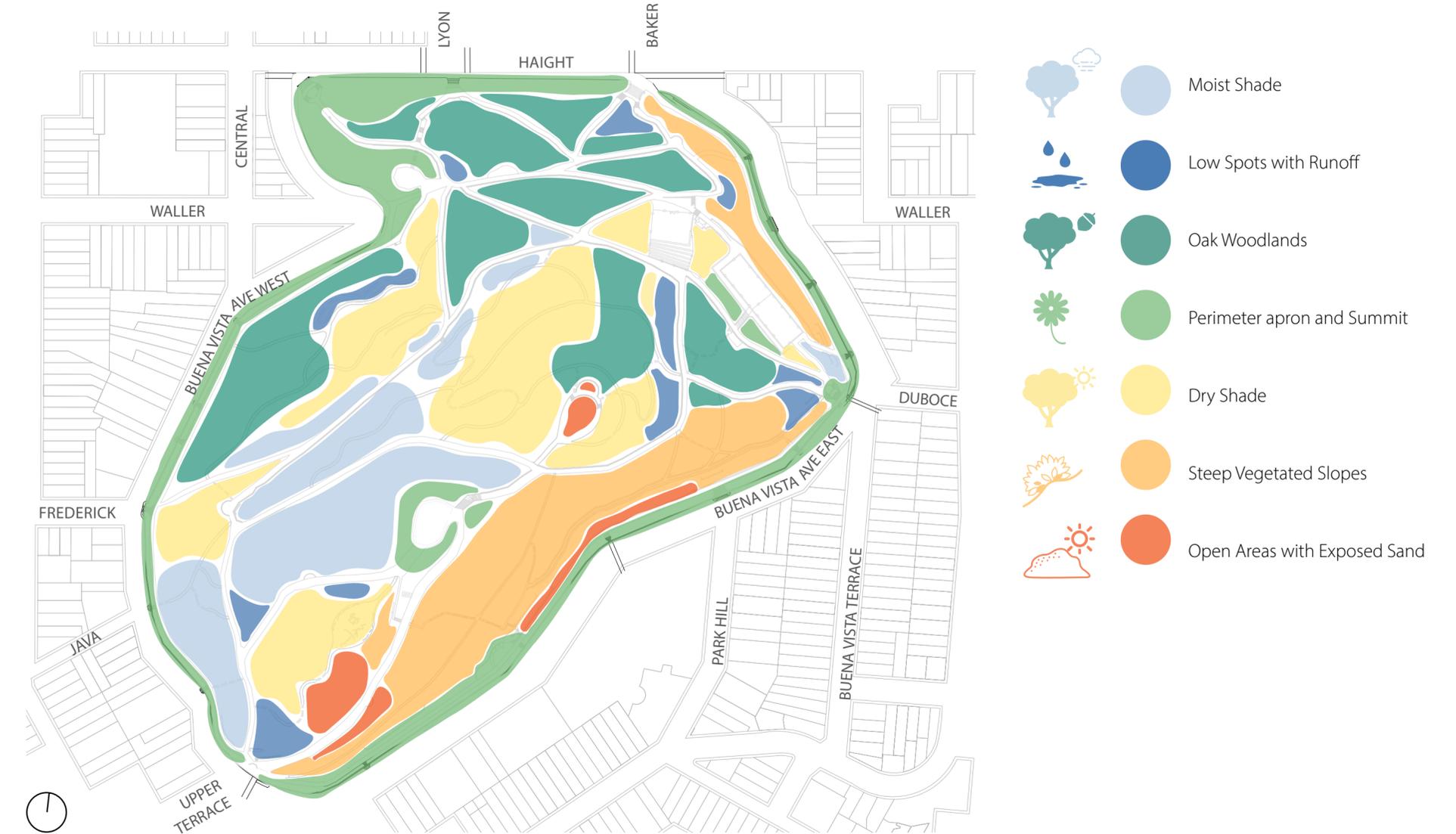
- Dry shade areas: these areas are in the Cypress groves and Cypress Tree needles limit the plant palette. Replant with soil amendments and spot mulching after removing invasive Erhart Grasses to help retain moisture.

- Moist shade area: these zones, mostly in the west side of the park, tend to be fed from fog drip and overhead irrigation. Erosion control measures and planting should occur in phases to maintain resident fauna while removing invasive species.
- Steep vegetated slopes: removal of invasive species along the steep southeast slopes must be implemented carefully with erosion control. Himalayan Blackberry dominates the hillsides. While benefits include support of wildlife this large tall plant should be replaced with lower native blackberry. Careful removal and replacement of Himalayan Blackberry with native plants must be mindful of this wildlife refuge. Arroyo willows observed in this area should be increased for their outstanding habitat value and ability to stabilize the base of slopes.
- Open areas with exposed sand: warm zones denuded of vegetation with exposed sand should be replanted with dune-adapted plants as moisture is present. Nectar producing plants and larval food plants are recommended for supporting native butterflies.
- Oak Woodlands: remove and replace invasive plants with wildlife enhancing native species found naturally in Oak Woodlands.
- Summit and Perimeter apron: these exposed areas have little or no tree coverage. Low-growing, hardy, drought-tolerant planting supporting pollinators is recommended.
- Low spots for runoff: raingardens are recommended for low-lying areas to support water management strategies. Populate these areas with plants that tolerate summer dry spells and seasonal flooding. Plants assisting erosion control while providing overwinter habitat for pollinators are recommended.

### PLANTING GOALS:

- Promote understory planting that are associated to the each forest and create a healthy, diverse and resilient ecosystem throughout the park.
- Plant appropriate plant species according to a wide range of exposures, soil types, hydrology and topographic variation.
- Provide preventative measures during planting and renovation of the park to mitigate wildlife intrusion.
- Provide opportunities for migrating and dispersing Hill topping butterflies in the summit.
- Install rustic fences along the rustic paths to keep human traffic within the paths and not into the important habitat areas.
- Maintain sight lines in central forest and in throughout the park for safety.
- Promote pollinator woody plants that are mostly native and hardy along the perimeter apron, summit and other planting beds.
- Prepare detailed planting plan prior to implementation.

## FOREST MANAGEMENT / HABITAT ENHANCEMENT PLANTING OPPORTUNITIES: PLANT PALETTE MAP





## MOIST SHADE



**EVERGREEN HUCKLEBERRY**

*Vaccinium ovatum*



**COFFEEBERRY**

*Frangula californica*



**WOODLAND STRAWBERRY**

*Fragaria vesca*



**FLOWERING CURRANT**

*Ribes sanguineum*



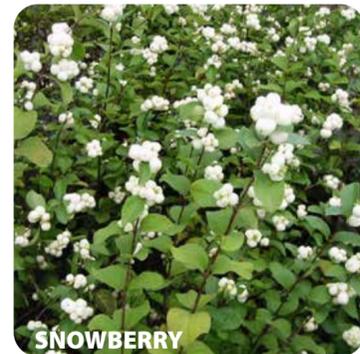
**WESTERN SWORD FERN**

*Polystichium munitum*



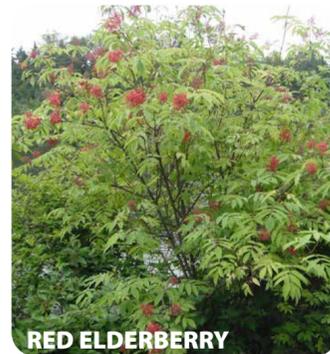
**CALIFORNIA BLACKBERRY**

*Rubus ursinus*



**SNOWBERRY**

*Symphoricarpos albus*



**RED ELDERBERRY**

*Sambucus racemosa*



## LOW SPOTS WITH RUNOFF



**STICKY MONKEY FLOWER**

*Mimulus aurantiacus*



**HUMMINGBIRD SAGE**

*Salvia spathacea*



**ARROYO WILLOW**

*Salix lasiolepis*



**DOUGLAS IRIS**

*Iris douglasiana*



**BLUE RUSH**

*Juncus patens*



**WESTERN COLUMBINE**

*Aquilegia formosa*



**YELLOW EYED GRASS**

*Sisyrinchium californicum*



**BASKET SEDGE**

*Carex barbarae*



## OAK WOODLANDS



**MANZANITA**

*Arctostaphylos 'Pacific Mist'*



**OCEAN SPRAY**

*Holodiscus discolor*



**EVERGREEN HUCKLEBERRY**

*Vaccinium ovatum*



**ELDERBERRY**

*Sambucus nigra*



**CALIFORNIA BEE PLANT**

*Schropularia californica*



**COFFEEBERRY**

*Frangula californica*



**TOYON**

*Heteromeles arbutifolia*



**FUCHSIA FLOWER GOOSEBERRY**

*Ribes speciosum*



## PERIMETER AND SUMMIT



**CEANOTHUS**

*Ceanothus spp.*



**BUSH LUPINE**

*Lupinus albifrons*



**GOLDENROD**

*Solidago spp.*



**CALIFORNIA YARROW**

*Bacharis pilularis*



**COYOTE BUSH**

*Bacharis pilularis*



**SAGE**

*Salvia sonomensis*



**JOHN DOURLEY MANZANITA**

*Arctostaphylos 'John Dourley'*



**BUCKWHEAT**

*Eriogonum fasciculatum*



### DRY SHADE



**WOODLAND STRAWBERRY**

*Fragaria vesca*



**CREeping WILD RYE**

*Leymus triticoides*



**EVERGREEN HUCKLEBERRY**

*Vaccinium ovatum*



### OPEN AREAS WITH EXPOSED SAND



**SEASIDE WILD BUCKWHEAT**

*Eriogonum latifolium*



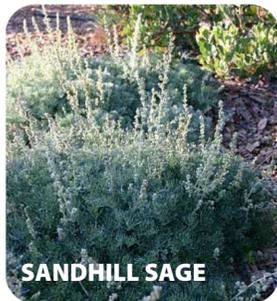
**LIZARD'S TAIL**

*Eriophyllum staechadifolium*



**COYOTE BUSH**

*Bacharis pilularis*



**SANDHILL SAGE**

*Artemisia pycnocephala*



### STEEP, VEGETATED SLOPES



**BUCKWHEAT**

*Eriogonum spp.*



**SAGE**

*Salvia sonomensis*



**SAGEBRUSH**

*Artemisia californica 'Canyon Gray'*



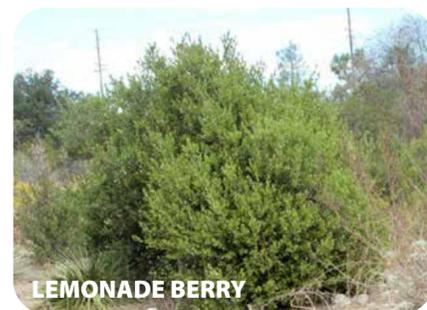
**CEANOTHUS**

*Ceanothus thyrsiflorus*



**MANZANITA**

*Arctostaphylos 'Sunset'*



**LEMONADE BERRY**

*Rhus integrifolia*



**FLANNEL BUSH**

*Fremontodendron californicum*



**SILK TASSEL BUSH**

*Garrya elliptica*

## 6.4 - FURNITURE AND LIGHTING

The limited number of furniture and amenities that exist throughout the park are mostly aged and outdated benches. Recommendations include replacement of all obsolete benches and additions of others in the park. Benches that both blend with the rustic nature of the park and are made of durable materials are recommended.

Community members expressed interest in picnic tables in the southern summit area where a rare flat area exists. A few picnic tables are proposed for the small, flat area between the maintenance yard and playground where a view can be enjoyed along with open sun and sky.

Bear Savers trash receptacles resistant to wildlife intrusion are recommended throughout the park. Installation of pedestrian pole lights spaced 100 feet apart along the perimeter sidewalk is included in this cost estimate and identified as an Alternate Item.



WOOD AND STONE BENCH EXAMPLE

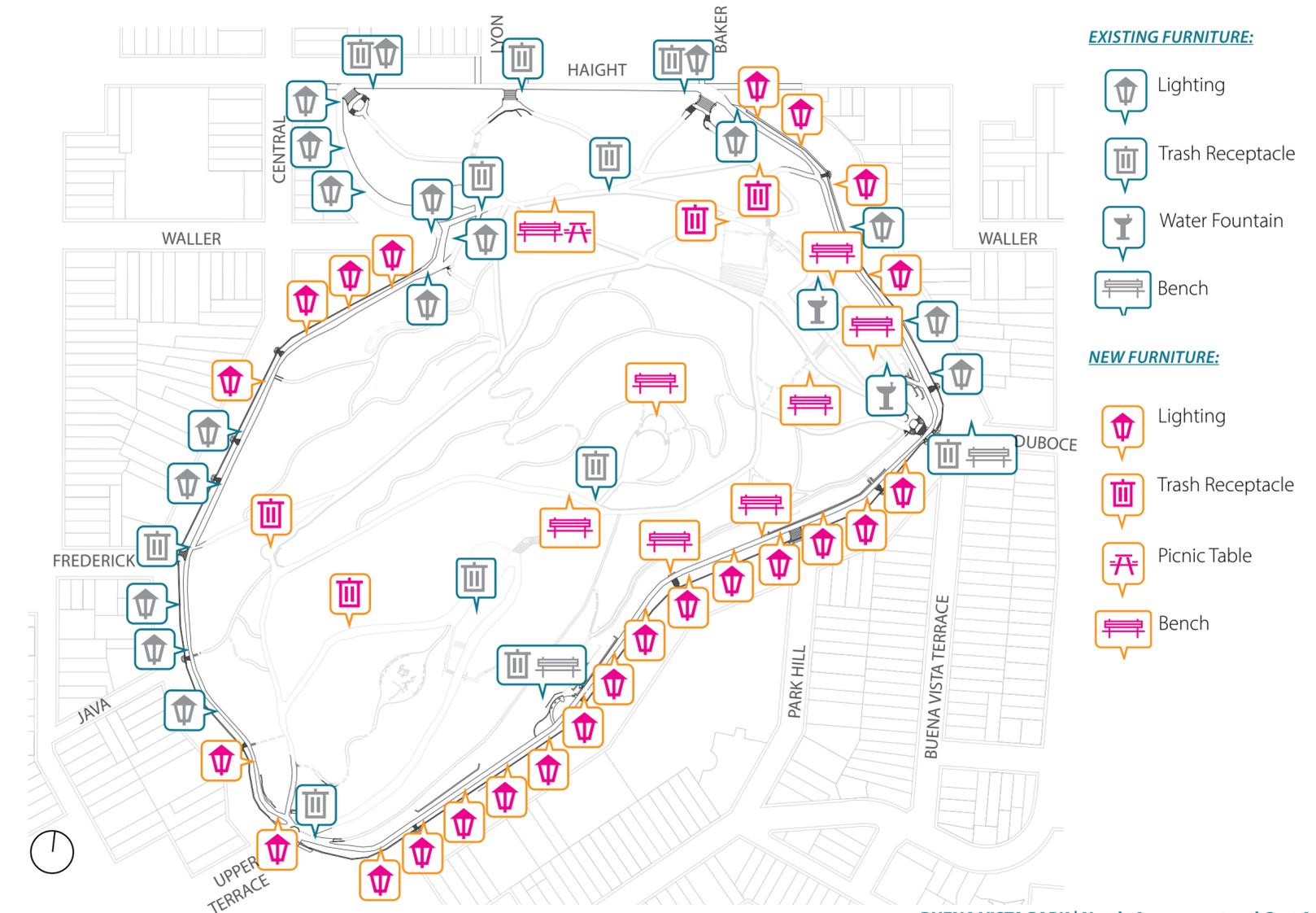


PERIMETER LIGHTING EXAMPLE

### FURNITURE AND LIGHTING IMPROVEMENTS:

- Replace existing benches with new benches
- Standards of furniture to be further explored
- Add picnic tables at the small flat area between the maintenance yard and playground
- Wildlife proof receptacles to be added
- Ensure furniture and amenities are distributed throughout the park premises
- Cater to all site users and demographics
- Pedestrian pole lights to be placed every 100 feet along the perimeter sidewalk (Alternate #8)

## FURNITURE AND LIGHTING



## 6.5 - WAYFINDING AND SIGNAGE

Additional types of signage are proposed in the park including:

- 1) Orientation and directional signs located at entries and areas where walkways diverge to assist navigation.
- 2) Viewshed signage to describe points of interest.
- 3) Historical signage noting components of the park and events in the park of historic interest.
- 4) Ecological signage describing the rich habitat and botanic composition of the park.
- 5) Dog Run signage noting its location in the park.

Taken together, informational and educational signage provide opportunities for tourists and regular park visitors to enrich their experience in the park while finding their way and learning about Buena Vista Park's rich history, ecology and surrounding context.

It is recommended that the existing sign located just south of the Summit describing the history of the community's efforts to preserve the forest be refurbished.



EDUCATIONAL SIGNAGE EXAMPLE

### WAYFINDING & SIGNAGE IMPROVEMENTS:

- Install a variety of wood and metal signage
- Provide educational opportunities regarding the ecological and historical background of the site
- Help users locate themselves within the park by installing orientation signage



ORIENTATION SIGNAGE EXAMPLE



## WAYFINDING AND SIGNAGE



-  Orientation Signage
-  Viewshed Signage
-  Historical Signage
-  Ecological Signage
-  Dog Run Signage

## 6.6 - PLAYGROUND

It is recommended that the playground be replaced before needing to be retired for safety reasons. Buena Vista Park's playground will benefit from a creative and innovative design maximizing the intimate space and rustic character of the park while accounting for wind and shade.



### PLAYGROUND IMPROVEMENTS:

- Playground renovation to include:
  - Replace play structure
  - Replace safety surface to a wheelchair accessible material
- Encourage rustic and natural aesthetic
- Promote natural science education
- Sun and wind effect to be factored in



*NATURE BASED PLAYGROUND EXAMPLES*

## 6.7 - MAINTENANCE YARD

The current maintenance yard is located in one of the scarce flat areas in the lower part of the park easily accessed by small and large vehicles.

Creating an environment that assists the maintenance staff's efficiency and productivity is key to the health of the park and its daily upkeep.

Issues with the failure of the surrounding hillsides have been discussed in previous sections and should be addressed in the near future. With the small maintenance staff, a constant surveillance of the area is difficult and planting materials and tools are occasionally stolen. Security fence surrounding the area is recommended as are new shipping containers for secure storage of equipment. New electrical connections for charging electric power tools, security lighting and potential security cameras of the area is recommended. During winter hours, light in this area is poor and lighting will increase safety and ease of operation.

### MAINTENANCE YARD IMPROVEMENTS:

- Replace current shipping containers with new
- Replace failing chain-link fence surrounding the maintenance yard with new tall metal fence and lockable gate
- Provide electrical source for future lighting and other operating tools
- Replace failing wall with terraced gravity wall with planting

## 6.8 - DOG RUN

Rustic fencing employed elsewhere in the park for keeping park users on trail and protecting understory planting is also recommended for the dog run to help contain dogs within the area.

Erosion control is critical in the dog run area as major soil movement issues originate from this sandy area. Erosion control strategies recommended are sutter retaining walls at the exposed tree roots, new understory planting and erosion control blankets, coir around the dog run, and a bioswale across the west side of the area as described in the Erosion Control Recommendation.

### DOG RUN IMPROVEMENTS:

- Install new signage
- Install rustic trails with rustic fence which will run across the dog run area preventing dogs from running into the street
- Erosion control strategies to be implemented to keep the sand from eroding.
- Understory planting

## 6.9 - THE GLADE

The south summit area is one of the areas identified in the Existing Condition assessment. It is located on the south end of the park containing a flat area where large fallen logs are placed and where park visitors exercise or enjoy the stunning views.

As programmatic areas are rather scarce in the park, an adult fitness zone with seating opportunities is recommended in this area. The design team has characterized this south summit area as The Glade, an apt name for rare open area in the forest. The area can be enhanced with sun-loving planting.

Adult fitness equipment is recommended for this area and designated as an Alternate Item in the cost estimate.



*EXISTING FLAT AREA*

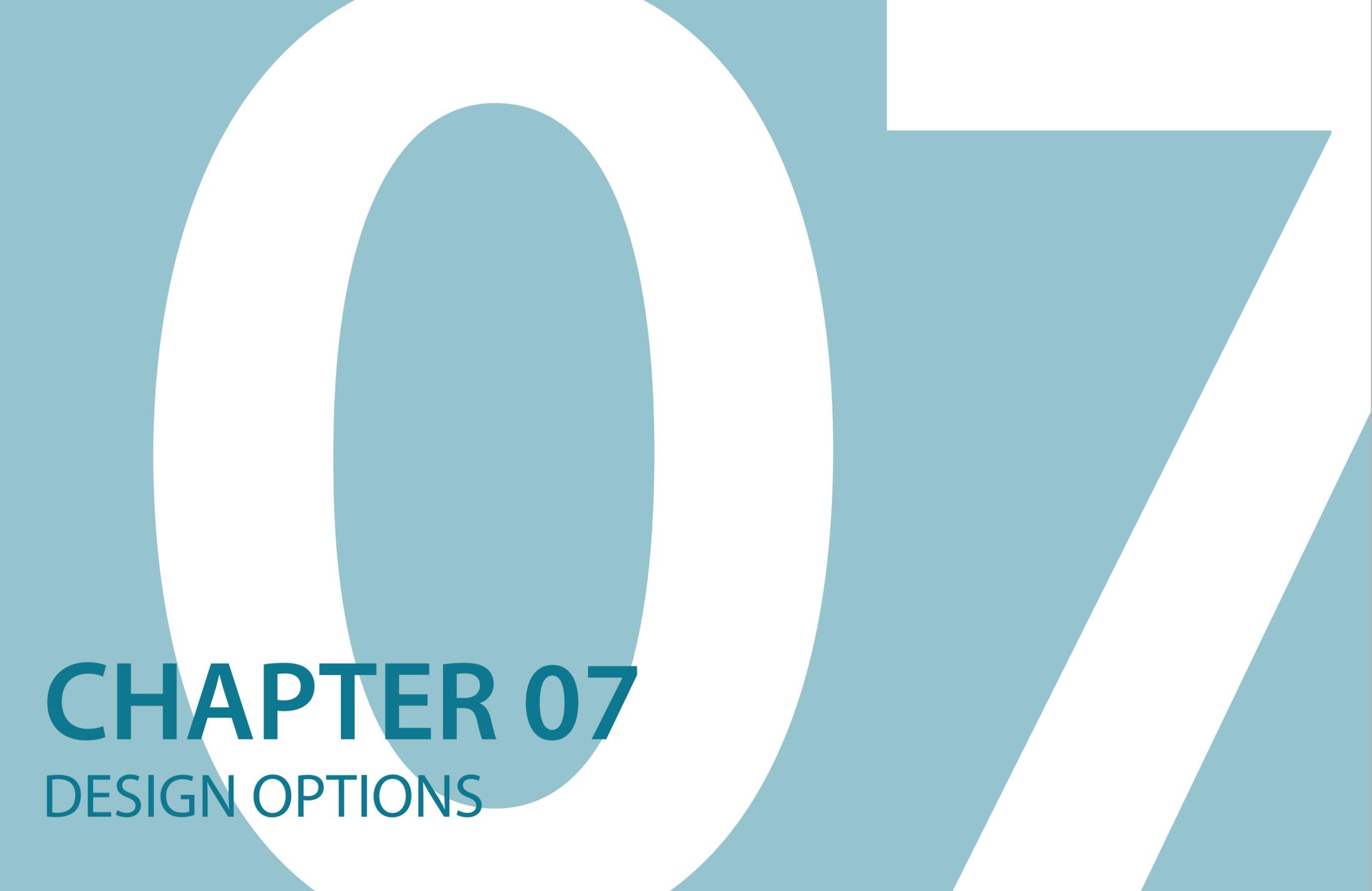
### THE GLADE IMPROVEMENTS:

- Remove wood stairs
- Install rustic trail and stairs
- Stabilize highly eroded areas with erosion control measures
- Remove diseased trees (Monterey pine)
- Clear and grub understory planting that are invasive
- Plant new trees and understory planting
- Preserve large wood logs
- Install adult fitness equipment (Alternate #2)



*ADULT EXERCISE PROGRAMMING EXAMPLE*





# CHAPTER 07

## DESIGN OPTIONS

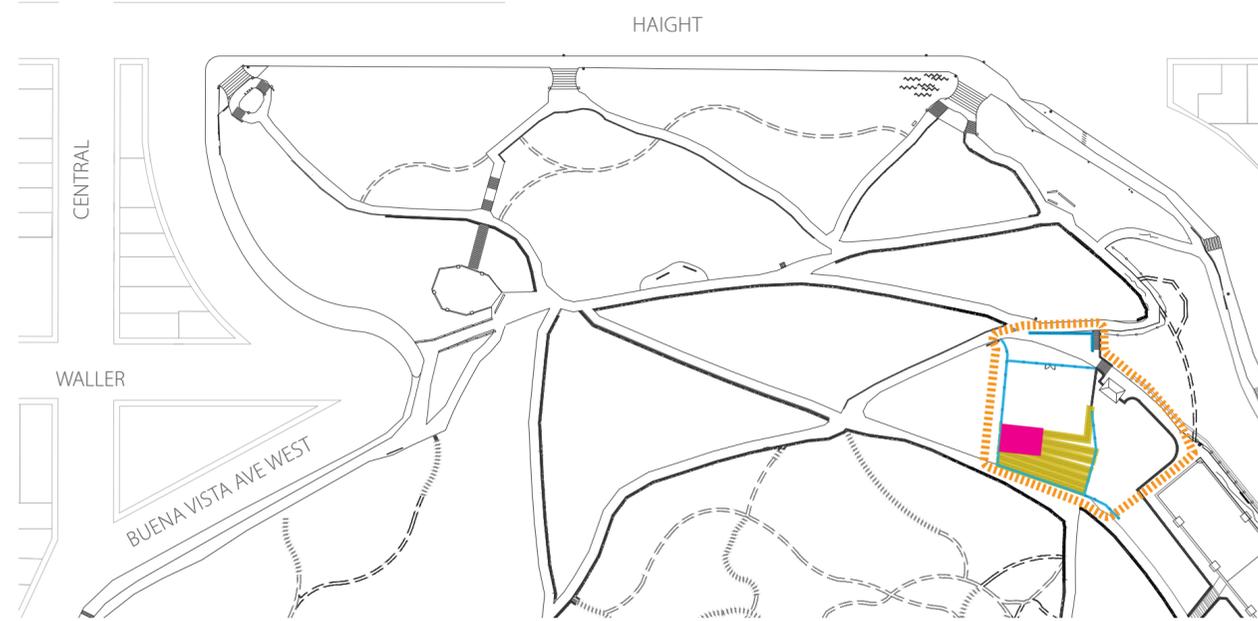
<b>7.1 - design option 1</b> .....	pg. 124
<b>7.2 - design option 2</b> .....	pg. 125
<b>7.3 - design option 3</b> .....	pg. 126

## 07 - DESIGN OPTIONS

There are three design options involving the maintenance area, the playground and a picnic area desired by some members of the community. Option 1 keeps the maintenance area and playground in their respective zones with no added picnic areas. Option 2 recommends moving the playground and keeping the maintenance area in its current location with added picnic tables and Option 3 involves moving the playground and the maintenance area while adding two new picnic areas.

### 7.1 - DESIGN OPTION 1: NEW MAINTENANCE FACILITY BUILDING AT CURRENT LOCATION

A new maintenance building is proposed as a design Option 1 in lieu of the existing shipping containers that are currently used for equipment storage. The new maintenance facility would be designed with reclaimed and repurposed shipping containers tucked into the terraced walls noted in the previous sections of this report. Several San Francisco parks utilize adapted shipping containers as maintenance facilities cleverly designed with cladding and fenced enclosures fitting each park's context. As a 37 acre park in San Francisco, Buena Vista Park will require a maintenance building composed of five shipping containers for storing utility vehicles, devices and tools. Large open spaces are needed for operations and maneuvering vehicles. A secure enclosure is recommended for protecting plant and landscape materials. New electrical and internet service lines are recommended.



#### KEY PLAN:



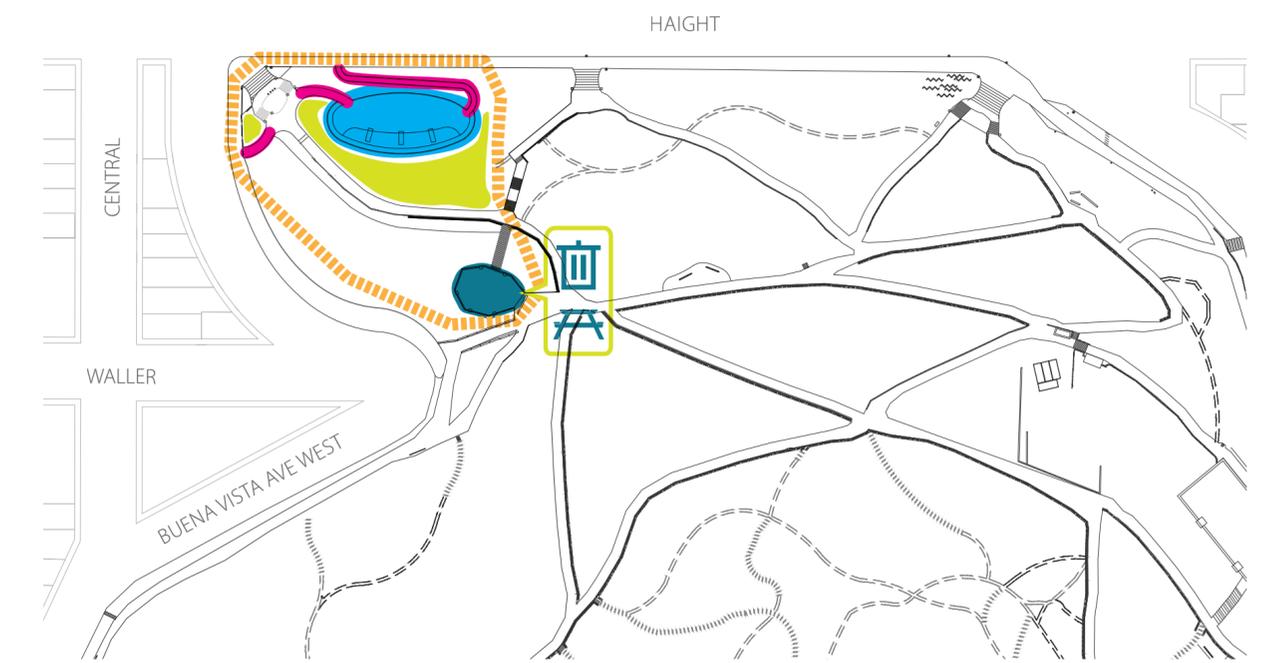
-  Area Outline
-  Maintenance Building
-  Gravity Wall
-  Maintenance Yard Fence



ADAPTIVE SHIPPING CONTAINER BUILDING DESIGN EXAMPLE

## 7.2 - DESIGN OPTION 2: NEW RELOCATED PLAYGROUND AND PICNIC AREA AT CURRENT PLAYGROUND

A key opportunity suggested by community members involves activating the highly visible Haight Street West entry with a more family-friendly program. Replacing portions of the sloping lawn area with a new playground is proposed as a design Option 2. A playground in this area can creatively utilize the moderate slopes for a wide range of accessible activities like slides, scrambles, and climbing elements on embankments. This converted corner with its clear sightlines and increased family activity would provide a welcoming entrance to the park. Shade and wind protection will need careful consideration for the relocated playground. Moving the playground opens up opportunities for transforming the current playground site into a picnic area with tables as requested by the community.



#### KEY PLAN:



-  Planted Areas
-  Playground
-  Picnic Area
-  Area Outline
-  Paths
-  Picnic Table
-  Trash Receptacle



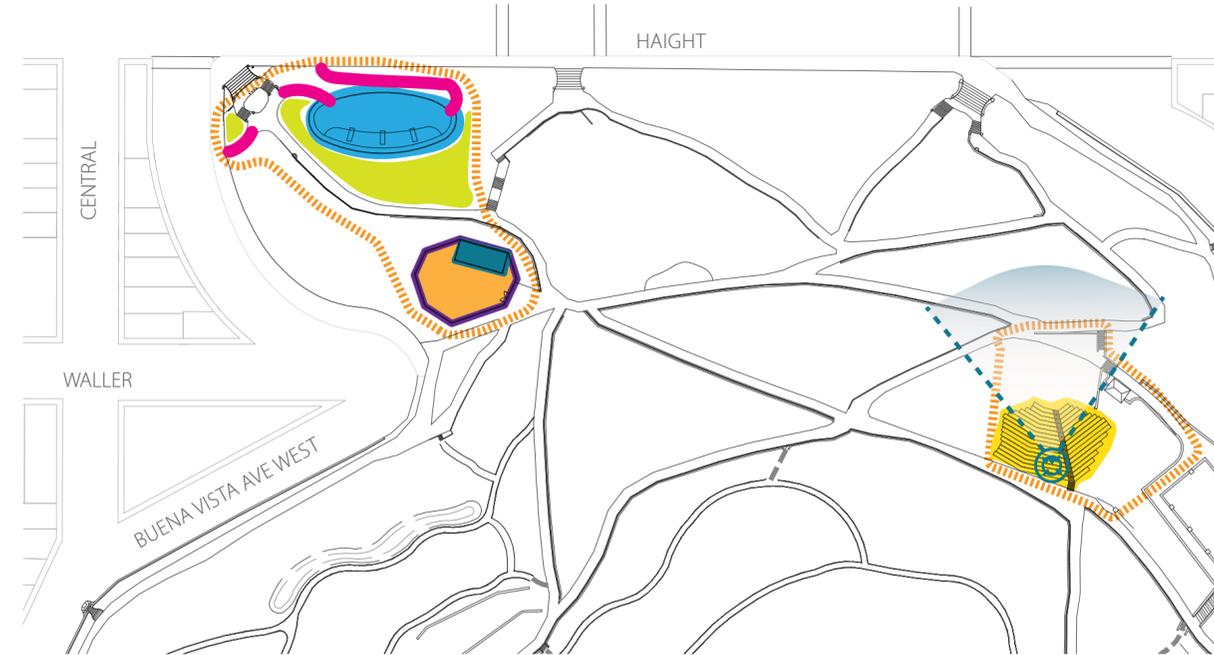
SLIDE PLAYGROUND EXAMPLE

### 7.3 - DESIGN OPTION 3: NEW RELOCATED PLAYGROUND, NEW STONE AMPHITHEATER, + RELOCATED MAINTENANCE YARD

Option 3 includes relocating the playground to the northwest park frontage, relocating the current maintenance yard to the former playground site, and constructing a new public amphitheater in the current location of the maintenance yard.

Relocated maintenance yard to the location of the current playground includes a new maintenance facility building with a bathroom, and an open area measuring approximately 50'x 80'. The relocated maintenance yard in this location will be easily accessed from the Waller Street West entry.

The amphitheater would provide an important and useful cultural destination within the park. The concept of creating an amphitheater in the former quarry site is conceived to take advantage of the terraced wall system noted in earlier section 6.1- e of this report, with walls being constructed with stone rather than gravity block or gabions. The new public amphitheater can be used by park visitors for seating and contemplating the views on a daily basis, and occasionally used for performance and events in the park. As park visitors ascend the terraced walls, spectacular views toward the northern part of San Francisco and the Marin Headlands will appear.



#### KEY PLAN:



- |                      |                     |
|----------------------|---------------------|
| Area Outline         | Amphitheater        |
| Maintenance Yard     | Playground          |
| Maintenance Building | Planted Areas       |
| Maintenance Fence    | Playground Pathways |
|                      | Views               |

### DESIGN OPTION 3: NEW STONE AMPHITHEATER RENDERING





# CHAPTER 08

## COST ESTIMATE

<b>8.1 - base design cost summary</b> .....	pg. 130
<b>8.2 - priority projects</b> .....	pg. 148
<b>8.3 - alternate item costs</b> .....	pg. 156
<b>8.4 - design option costs</b> .....	pg. 157

## 8.1 - BASE DESIGN COST SUMMARY

Concluding the Buena Vista Park Needs Assessment and Cost Analysis project, a detailed cost estimate was developed based on the recommendations made in the previous chapters. The cost estimate is based on information gathered in the assessment phase and concept drawings focused on restoration of hardscape, implementation of erosion control and water management measures, urban forestry management, and other park infrastructure requiring needed repair. The cost estimate includes the cost for construction, escalation fees for a mid-point of construction for 4 years, as well as soft costs for design fees, project management cost, and permit fees charged by various agencies.

The cost estimate is broken down into three categories:

- 1) Base Design Scope including all of the elements that are in need of immediate improvement throughout the park.
- 2) Alternates are added costs for items and features in addition to the base design, or items that add enhanced programmatic value to the park.
- 3) Design Options include ideas of relocating specific program areas and adding new programmatic spaces.

Detailed cost estimates were prepared by the cost estimator and are based on the recommendation drawings. Both documents are included in Chapter 9, Appendix. The cost estimate is based on two different methods:

- 1) Focus of the design
- 2) Park features.

In order to easily identify and prioritize projects, the cost estimate is broken down to specific areas mostly delineated by pathways and specific components.

The park feature cost summary is a conducive tool for prioritizing improvement projects as funding becomes available. In this cost summary, the park features were summarized and broken down to a few key components. If the funding is limited for certain projects

improvements can be completed in phases or extracted as priority projects. A map delineating the park feature areas is included in the following pages.

The cost estimate study based on the park wide assessment indicates that the park improvement requires \$50 million dollars in total for the base scope of work. The park has challenging issues including crumbling infrastructure, broad areas of soil erosion, challenging topography, and declining forestry. Social pressures have contributed to the park's decline as well. There is no current funding allocated for any of the improvements outside of the yearly budgeted maintenance program. Existing funding resources are not adequate to address the extensive restoration measures needed for long-term park sustenance. Current funding sources are SFPRD's bond program, the playground bond program, community fundraising programs, philanthropic activities, state grant programs and other agency funding programs such as the SFPUC water conservation program. Leveraging these funding sources will require significant future efforts by the City with community support.

## BASE DESIGN COST SUMMARY : TOTAL COST FOR BASE DESIGN

### BASE DESIGN SUMMARY

#### 1. CIRCULATION

- Features include: Entries, Perimeter Stairs and Sidewalks, Interior Asphalt Paving, Rustic Stairs and Paths, Walls, Overlooks

#### 2. FOREST MANAGEMENT + HABITATION

- Features include: Removal of Invasive Trees and Planting, Reforestation, Planting

#### 3. WATER MANAGEMENT + EROSION CONTROL

- Features include: Erosion Control, Stormwater Management, Irrigation

#### 4. MISCELLANEOUS IMPROVEMENTS

- Features Include: Signage, Playground Renovation, Maintenance Yard Renovation, Dog Area Renovation, Lighting, Furniture

### TOTAL PROJECT COST (BASE DESIGN)

### COST

\$23,780,000

\$10,804,000

\$13,052,000

\$2,451,000

\$50,087,000 \*

\* THE COST ESTIMATE NUMBERS INCLUDE MARK UPS AS DESCRIBED IN THE COST ESTIMATE MARK UP DETAILS.

### COST ESTIMATE MARK UP DETAILS:

#### 1. DESIGN CONTINGENCY

30%

#### 2. CONSTRUCTION MARK UPS:

- GENERAL CONDITIONS REQUIREMENT: 15%
- BONDS AND INSURANCE: 2%
- OVERHEAD AND PROFIT: 8%
- CONSTRUCTION CONTINGENCY: 10%

#### 3. ESCALATION TO MID POINT OF CONSTRUCTION ASSUMED MIDPOINT 2/14/2025 FOR 4 YEARS CONSTRUCTION STARTING FROM 2/14/2023:

33.20%

#### 4. SOFT COST:

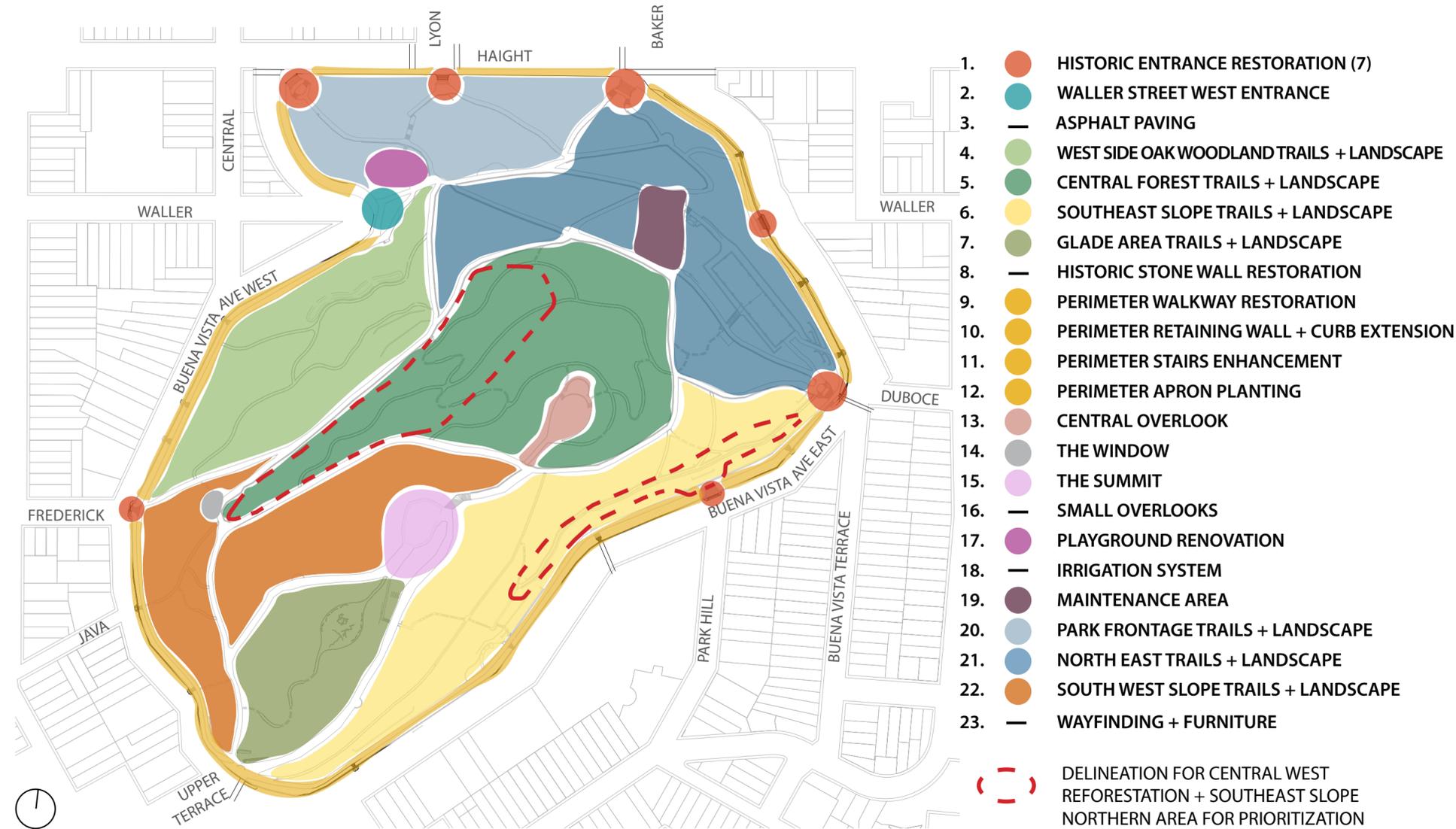
DESIGN FEES, SFRPD PROJECT MANAGER FEES,  
PERMIT FEES, ETC.

30%

\*\*Project costs will vary due to project size and project delivery method. Soft cost varies 30-50% depending on how project is packaged and delivered.

Date of Cost Estimate: June 4, 2020.

## BASE DESIGN COST SUMMARY: MAP OF PARK FEATURE AREAS



## BASE DESIGN COST SUMMARY: PARK FEATURES OVERALL COST

FEATURES:	COST
1. HISTORIC ENTRANCE RESTORATION (7)	\$2,614,000
2. WALLER STREET WEST ENTRANCE	\$42,000
3. ASPHALT PAVING	\$3,151,000
4. WEST SIDE OAK WOODLAND TRAILS + LANDSCAPE	\$7,467,000
5. CENTRAL FOREST TRAILS + LANDSCAPE	\$8,774,000
6. SOUTHEAST SLOPE TRAILS + LANDSCAPE	\$6,709,000
7. GLADE AREA TRAILS + LANDSCAPE	\$3,523,000
8. HISTORIC STONE WALL RESTORATION	\$159,000
9. PERIMETER WALKWAY RESTORATION	\$1,507,000
10. PERIMETER RETAINING WALL + CURB EXTENSION	\$1,346,000
11. PERIMETER STAIRS ENHANCEMENT	\$702,300
12. PERIMETER APRON PLANTING	\$1,353,000
13. CENTRAL OVERLOOK	\$1,391,000
14. THE WINDOW	\$152,000
15. THE SUMMIT	\$394,000
16. SMALL OVERLOOKS	SEE ALTERNATE ITEM #7
17. PLAYGROUND RENOVATION	\$2,038,000
18. IRRIGATION SYSTEM	\$733,000
19. MAINTENANCE AREA	\$992,000
20. PARK FRONTAGE TRAILS + LANDSCAPE	\$969,000
21. NORTH EAST TRAILS + LANDSCAPE	\$1,951,000
22. SOUTH WEST SLOPE TRAILS + LANDSCAPE	\$3,760,000
23. WAYFINDING + FURNITURE	\$363,000
<b>TOTAL COST</b>	<b>\$50,090,000</b>

**BASE DESIGN COST SUMMARY: PARK FEATURES**

**1. HISTORIC ENTRANCES RESTORATION (7)**

PROJECT COMPONENT	COST
Removal of Concrete Stairs, etc.	\$280,600
New Concrete Stairs	\$1,125,200
Handrail (Galvanized steel)	\$416,900
Wall Restoration	\$785,000
Erosion Control	\$6,300
<b>TOTAL</b>	<b>\$2,614,000</b>



**2. FULLY RENOVATED ENTRANCE AT WALLER STREET WEST ENTRANCE**

PROJECT COMPONENT	COST
Removal of Logs	\$2,200
Concrete Column + Low Retaining Wall	\$25,700
Bollards (removable)	\$14,100
Asphalt Paving (See #3 Asphalt Paving)	
<b>TOTAL</b>	<b>\$42,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**3. ASPHALT PAVING**

PROJECT COMPONENT	COST
Removal of Asphalt Paving	\$645,000
Asphalt Concrete Paving 4.5" thick	\$807,000
Asphalt Concrete Paving 5" thick	\$1,103,000
Recycled AC 2" base + Prime Coat	\$479,000
Rock Well	\$117,000
<b>TOTAL</b>	<b>\$3,151,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**4. WEST SIDE OAK WOODLAND TRAILS + LANDSCAPE**

PROJECT COMPONENT	COST
<i>4a. Trails and Erosion</i>	
Removal of Rustic Stairs, Fallen Log, etc.	\$9,400
Rustic Trail and Stairs	\$851,600
Rustic Fence and Timber Wall at Trail	\$468,700
Sutter Wall for Tree Roots Protection	\$425,100
<u>Erosion Control + Stormwater Management</u>	<u>\$3,273,300</u>
Sub Total	\$5,028,100
<i>4b. Reforestation and Planting</i>	
Tree + Invasive Planting Removal	\$452,000
<u>Reforestation and Planting</u>	<u>\$1,986,900</u>
Sub Total	\$2,438,900
<b>TOTAL</b>	<b>\$7,467,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**5. CENTRAL FOREST TRAILS + LANDSCAPE**

PROJECT COMPONENT	COST
<i>5a. Trails and Erosion</i>	
Removal of Rustic stairs, Wood walls	\$68,600
Rustic Trail and Stairs, Repair Stone Stair	\$2,088,500
Rustic Fence and Timber Wall at Trail	\$1,242,000
<u>Erosion Control + Stormwater Management</u>	<u>\$3,350,700</u>
Sub Total	\$6,749,800
<i>5b. Reforestation and Planting</i>	
Tree + Invasive Planting Removal	\$464,800
<u>Reforestation and Planting</u>	<u>\$1,559,400</u>
Sub Total	\$2,024,200
<b>TOTAL</b>	<b>\$8,774,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**6. SOUTHEAST SLOPE TRAILS + LANDSCAPE**

PROJECT COMPONENT	COST
<i>6a. Trails and Erosion</i>	
Removal of Wood Wall, Fence	\$128,800
Rustic Trail and Stairs	\$893,200
Rustic Fence, Metal Fence + Gates	\$918,300
Sutter Wall at Trail	\$1,227,500
Stone Wall along Slopes	\$665,300
Gabion Wall along Trail	\$214,600
<u>Erosion Control + Stormwater Management</u>	<u>\$1,725,000</u>
Sub Total	\$5,772,700
<i>6b. Reforestation and Planting</i>	
Tree + Invasive Planting Removal	\$383,400
<u>Reforestation and Planting</u>	<u>\$552,900</u>
Sub Total	\$936,300
<b>TOTAL</b>	<b>\$6,709,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**7. GLADE AREA TRAILS + LANDSCAPE**

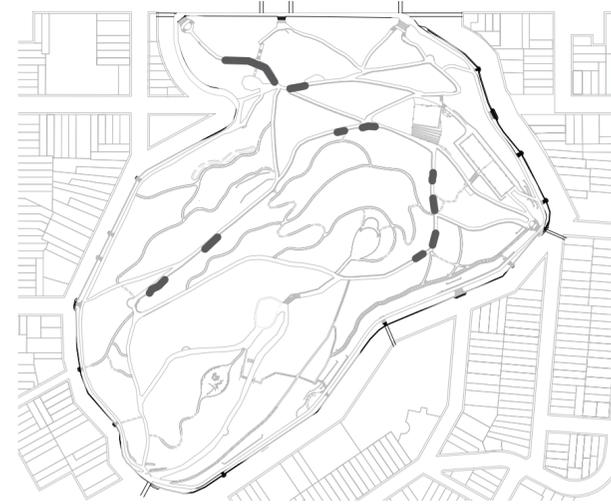
PROJECT COMPONENT	COST
<i>7a. Trails and Erosion</i>	
Removal of Rustic Stairs, Fallen Log, etc.	\$30,000
Rustic Trail and Stairs	\$988,000
Rustic Fence and Timber Wall at Trail	\$19,300
Wood Stairs with Metal Railing	\$44,000
<u>Erosion Control + Stormwater Management</u>	<u>\$1,541,400</u>
Sub Total	\$2,622,700
<i>7b. Reforestation and Planting</i>	
Tree + Invasive Planting Removal	\$113,300
<u>Reforestation and Planting</u>	<u>\$787,000</u>
Sub Total	\$900,300
<b>TOTAL</b>	<b>\$3,523,000</b>



## BASE DESIGN COST SUMMARY: PARK FEATURES

### 8. HISTORIC STONE WALL RESTORATION

PROJECT COMPONENT	COST
Removal of Damaged Stone Retaining Walls	\$11,500
Replace Damaged Historic Stone Wall	\$128,500
Repair Historic Wall	\$19,000
<b>TOTAL</b>	<b>\$159,000</b>



### 9. PERIMETER WALKWAY RESTORATION

PROJECT COMPONENT	COST
Replace Concrete Paving and Brick Accent	\$1,507,000
<b>TOTAL</b>	<b>\$1,507,000</b>



## BASE DESIGN COST SUMMARY: PARK FEATURES

### 10. PERIMETER RETAINING WALL + CURB EXTENSION

PROJECT COMPONENT	COST
Removal of Timber Curb	\$72,200
Concrete Retaining Wall 30" high	\$966,000
Concrete Paving Buffer	\$307,800
<b>TOTAL</b>	<b>\$1,346,000</b>



### 11. PERIMETER STAIRS ENHANCEMENT

PROJECT COMPONENT	COST
Removal of Wood, Concrete, Stone Stairs	\$49,300
Concrete Entry Stairs	\$217,300
Concrete Curb Wall	\$72,400
Handrail (Galvanized Steel)	\$363,000
<b>TOTAL</b>	<b>\$702,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**12. PERIMETER APRON PLANTING**

PROJECT COMPONENT	COST
Tree + Invasive Planting Removal	\$796,700
Reforestation and Planting	\$556,300
<b>TOTAL</b>	<b>\$1,353,000</b>



**13. CENTRAL OVERLOOK**

PROJECT COMPONENT	COST
Removal of Wood Wall, Bench	\$7,300
Stone Wall w/ Footing, Backfill, Drainage	\$494,500
Concrete Stairs	\$45,200
Metal Guardrail and Handrail	\$95,000
Park Tread Paving	\$749,000
<b>TOTAL</b>	<b>\$1,391,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**14. THE WINDOW**

PROJECT COMPONENT	COST
Removal of Wood Wall	\$2,500
Stone Wall and Column w/ Footing	\$107,300
Metal Guardrail and Handrail	\$42,200
Asphalt Paving (See #3 Asphalt Paving)	
<b>TOTAL</b>	<b>\$152,000</b>



**15. THE SUMMIT**

PROJECT COMPONENT	COST
Tree + Invasive Planting Removal	\$41,000
Reforestation and Planting	\$241,500
Replace Lawn	\$111,500
Asphalt Paving (See #3 Asphalt Paving)	
<b>TOTAL</b>	<b>\$394,000</b>



## BASE DESIGN COST SUMMARY: PARK FEATURES

### 16. SMALL OVERLOOKS - See Alternate #7

#### 17. PLAYGROUND RENOVATION

PROJECT COMPONENT	COST
Playground Renovation	\$2,038,000
<b>TOTAL</b>	<b>\$2,038,000</b>

#### 18. IRRIGATION SYSTEM

PROJECT COMPONENT	COST
<i>18a. Irrigation along Pathway</i>	
Mainline and Connection to Existing	\$160,600
Quick Coupler	\$96,000
Trenching and Backfill	\$286,700
Sub Total	\$543,300
<i>18b. Irrigation in Central Forest</i>	
Mainline and Connection to Existing	\$56,500
Quick Coupler	\$26,400
Trenching and Backfill	\$106,800
Sub Total	\$189,700
<b>TOTAL</b>	<b>\$733,000</b>



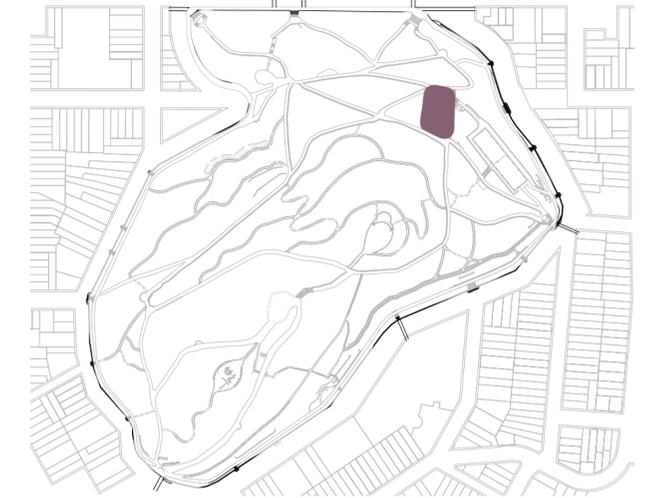
## BASE DESIGN COST SUMMARY: PARK FEATURES

#### 19. MAINTENANCE AREA

PROJECT COMPONENT	COST
Metal Fence and Gate 10' high	\$355,500
Terraced Gravity Block wall	\$321,700
New Shipping Containers	\$40,800
Removal Hardscape and Planting	\$52,100
Planting	\$86,400
Electrical Line to (E) Transformer	\$135,500
<b>TOTAL</b>	<b>\$992,000</b>

#### 20. PARK FRONTAGE TRAILS + LANDSCAPE

PROJECT COMPONENT	COST
Removal of Wood Wall, Steps, etc.	\$26,900
Concrete Stairs w/ Curb Wall	\$47,100
Rustic Stairs at Playground	\$81,100
Rustic Fence at Trail	\$31,100
Stone Wall at Top of Haight Central Entry	\$34,700
Erosion Control + Stormwater Management	\$370,800
Forestry + Invasive Planting Removal	\$109,900
Reforestation and Planting	\$267,400
<b>TOTAL</b>	<b>\$969,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**21. NORTH EAST TRAILS + LANDSCAPE**

PROJECT COMPONENT	COST
Removal of Gutters, Rustic stairs, fence	\$21,800
Gabion Wall at Steep Slopes	\$211,200
Rustic Trail and Stairs	\$346,800
Rustic Fence	\$170,200
Repair Gutter	\$27,400
Erosion Control + Stormwater Management	\$305,500
Forestry + Invasive Planting Removal	\$293,500
Reforestation and Planting	\$574,600
<b>TOTAL</b>	<b>\$1,951,000</b>



**22. SOUTH WEST SLOPE TRAILS + LANDSCAPE**

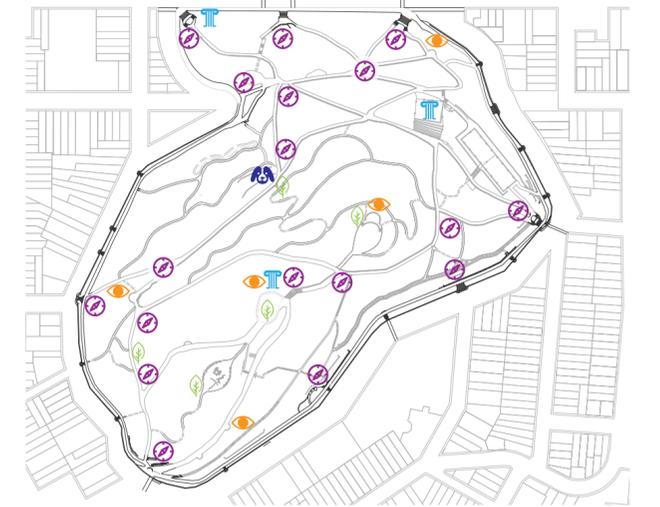
PROJECT COMPONENT	COST
Removal of Rustic Stairs, Fence, Gutter	\$19,200
Rustic Trail and Stairs	\$558,400
Timber Wall at Trail	\$33,900
Erosion Control + Stormwater Management	\$1,746,500
Forestry + Invasive planting removal	\$469,200
Reforestation and Planting	\$932,800
<b>TOTAL</b>	<b>\$3,760,000</b>



**BASE DESIGN COST SUMMARY: PARK FEATURES**

**23. WAY FINDING + FURNITURE**

PROJECT COMPONENT	COST
Bench	\$100,500
Trash Receptacle	\$31,400
Picnic Table	\$125,600
Signage	\$104,700
Refurbished Historical Tree Signage	\$800
<b>TOTAL</b>	<b>\$363,000</b>



## 8.2 - PRIORITY PROJECTS

The following are specific projects that have been identified as priority projects by the stakeholders and design team. These projects were identified by two main criteria: current life safety concerns and issues in which delay to address an element will result in a significantly worsened condition. The priority projects were presented to the community members at the final public meetings and have been generally accepted without any objections. At this time, funding has not been allocated for these projects by SFRPD, though it is recognized that San Francisco general obligation bonds have been the main source for past city park project capital funding. Potential funding sources are identified in anticipated bond measures, grant programs, annual city budgets, and individual and corporate philanthropy. When funding is identified, further design and community outreach will take place.

With the above criteria taken into account, following are the nine priority projects recommended:

- Asphalt paving replacement of the entire site. Retaining wall replacement along the south and east side of the maintenance yard and north east of the tennis court area: Retaining walls are required to stabilize the upper pathway system and the hillsides surrounding the maintenance yard. This area requires immediate attention.
- Perimeter walkway restoration: The brick are in poor condition and present a hazard.
- Southeast slope northern area trails and landscape: Major erosion of the steep slopes along the east side of the park is causing failure in the trail system. It was determined that the north section of the east facing slope is in need of improvement and cost figures have been extracted specifically for the trail, erosion control and planting project.
- Central Forest west reforestation: Within the Central Forest

zone, many of the trees have fallen or have been removed due to their declining health. The western section of this area is in need for reforestation. Without the reforestation, the forest as a whole will decline. Understory planting and erosion control is needed to accompany the reforestation.

- Central Forest trail system: Many of the rustic stairs were installed in the 1980s and are in need of replacement. The project should be done in conjunction with the Central west reforestation project.
- Restoration of three historic entrances at Baker Street, Duboce Street, and Frederick Street. Both entrances at Baker Street and Duboce Street are along steep hillsides. The Frederick Street

entrance is failing due to damage to the columns, stairs and walls. The three entrances have immediate issues and should be repaired as a priority. Along with the historic entrances, failing historic stone walls inside the park require immediate repair.

- Irrigation along paved pathways: Installation in tandem with asphalt paving replacement is highly recommended.
- Playground renovation: The playground is in poor condition and should be renovated to create an accessible play area.
- Central Overlook: The restored and improved overlook will alleviate erosion with the installation of terraced stone walls.

### PRIORITY PROJECTS:

PRIORITY PROJECTS:	COST
• ASPHALT PAVING, MAINTENANCE YARD RETAINING WALL, RETAINING WALLS NORTHEAST OF TENNIS COURT	\$4,292,200
• PERIMETER WALKWAY RESTORATION	\$1,507,000
• SOUTHEAST SLOPES NORTHERN AREA LANDSCAPE	\$887,120
• SOUTHEAST SLOPES NORTHERN AREA TRAILS	\$1,853,500
• CENTRAL WEST REFORESTATION	\$1,037,200
• CENTRAL (ENTIRE) TRAIL SYSTEM	\$5,496,800
• HISTORIC ENTRANCE RESTORATION (3 ENTRANCES: Frederick, Baker, and Duboce)	\$1,535,400
• HISTORIC STONE WALL RESTORATION	
• IRRIGATION ALONG PAVED PATHS	\$543,300
• PLAYGROUND RENOVATION	\$2,038,000
• CENTRAL TERRACED OVERLOOK	\$1,391,000

\* THE COST ESTIMATE NUMBERS INCLUDE MARK UPS AS DESCRIBED IN THE COST ESTIMATE MARK UP DETAILS IN THE PREVIOUS PAGE.)

## PRIORITY PROJECTS

### ASPHALT PAVING MAINTENANCE YARD RETAINING WALL RETAINING WALLS NORTHEAST OF TENNIS COURT

PROJECT COMPONENT	COST
<i>Asphalt Paving</i>	
Removal of Asphalt Paving	\$645,000
Asphalt Concrete Paving 4.5"	\$807,000
Asphalt Concrete Paving 5"	\$1,103,000
Recycled AC 2" Base + Prime Coat	\$479,000
Rock Well	\$117,000
<b>Sub Total</b>	<b>\$3,151,000</b>

<i>Maintenance Yard Retaining Wall</i>	
Terraced Gravity Block Wall	\$321,100
Metal Fence 10' high	\$289,400
Removal Hardscape and Planting	\$205,700
<b>Sub Total</b>	<b>\$816,200</b>

<i>Retaining Walls @ Northeast of Tennis Court</i>	
Gabion Walls	\$211,500
Removal of Cyclone Fence	\$6,900
Rustic Fence 3'-6" high	\$106,600
<b>Sub Total</b>	<b>\$325,000</b>

**TOTAL** **\$4,292,200**



## PRIORITY PROJECTS

### PERIMETER WALKWAY RESTORATION

PROJECT COMPONENT	COST
Replace Concrete Paving and Brick Accent	\$1,507,000
<b>TOTAL</b>	<b>\$1,507,000</b>



## PRIORITY PROJECTS

### SOUTHEAST SLOPE NORTH AREA LANDSCAPE

PROJECT COMPONENT	COST
Erosion Control / Stormwater Management	\$575,000
Tree + Invasive Planting Removal	\$127,900
Reforestation and Planting	\$184,300
<b>TOTAL</b>	<b>\$887,200</b>

### SOUTHEAST SLOPE NORTH AREA TRAILS

PROJECT COMPONENT	COST
Removal of Wood wall, Fence, Wood Steps	\$58,800
Rustic Trail and Stairs	\$389,600
Metal Fence + Gates	\$369,400
Sutter Wall at South Section of Trail	\$599,300
Stone Wall along Slopes	\$221,800
Gabion Wall along Trail	\$214,600
<b>TOTAL</b>	<b>\$1,853,500</b>

*\* Reforestation and trail systems in the Southeast Slope North Section are interdependent projects which should be planned and designed in tandem.*



 DELINEATION FOR SOUTHEAST SLOPE NORTHERN AREA

## PRIORITY PROJECTS

### CENTRAL WEST REFORESTATION



PROJECT COMPONENT	COST
Erosion Control/Stormwater Management	\$273,400
Tree + Invasive Planting Removal	\$244,000
Reforestation and Planting	\$519,800
<b>TOTAL</b>	<b>\$1,037,200</b>

### CENTRAL (ENTIRE) TRAIL SYSTEM

PROJECT COMPONENT	COST
Removal of Rustic Stairs, Wood Walls	\$68,600
Rustic Trail and Stairs, Repair Stone Wall	\$2,088,500
Rustic Fence and Timber Wall at Trail	\$1,242,000
Erosion Control/Stormwater Management	\$2,097,700
<b>TOTAL</b>	<b>\$5,496,800</b>



 DELINEATION FOR CENTRAL WEST AREA

## PRIORITY PROJECTS

### HISTORIC ENTRANCE RESTORATION (3 ENTRANCES: Baker, Duboce and Frederick) HISTORIC STONE WALL RESTORATION

PROJECT COMPONENT	COST
<i>Historic Entrance Restoration @ Frederick</i>	\$294,000
<i>Historic Entrance Restoration @ Baker and Duboce</i>	
Removal of Concrete Stairs, etc.	\$172,300
New Concrete Stairs	\$386,000
Handrail (Galvanized steel)	\$204,200
Wall Restoration	\$313,600
Erosion Control	\$6,300
<b>Sub Total</b>	<b>\$1,082,400</b>
<i>Historic Stone Wall Restoration</i>	
Removal of Damaged Stone Retaining Walls	\$11,500
Replace Damaged Historic Stone Wall	\$128,500
Repair Historic Wall from Damage	\$19,000
<b>Sub Total</b>	<b>\$159,000</b>
<b>TOTAL</b>	<b>\$1,535,400</b>



## PRIORITY PROJECTS

### IRRIGATION ALONG PAVED PATHS

PROJECT COMPONENT	COST
Mainline and Connection to Existing Quick Coupler	\$160,600
Trenching and Backfill	\$96,000
TOTAL	\$286,700



### PLAYGROUND RENOVATION

PROJECT COMPONENT	COST
Playground Renovation	\$2,038,000
TOTAL	\$2,038,000



## PRIORITY PROJECTS

### CENTRAL OVERLOOK

PROJECT COMPONENT	COST
Removal of Wood Wall, Bench	\$7,300
Stone Wall w/ Footing, Backfill, Drainage	\$494,500
Concrete Stairs	\$45,200
Metal Guardrail and Handrail	\$95,100
Park Tread Paving	\$749,000
TOTAL	\$1,391,000



### 8.3 - ALTERNATE ITEM COSTS

The cost for alternate items are additional to the base design cost. Alternative items are either alternative materials or added components that will benefit the park. Seven alternate items are identified and are described in the recommendations:

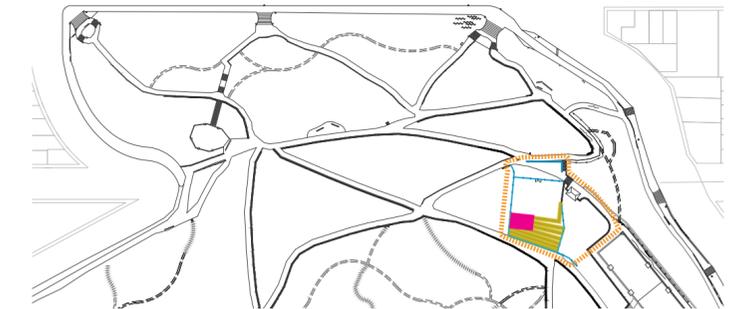
1. Frederick entry replacement: The base scope cost included repair and restoration of Frederick Street entry, however a complete replacement is highly recommended.
2. Adult fitness equipment: This is recommended in the Glade area and is an added asset for the park.
3. Street bulb-out: at the bottom of the perimeter stairs will provide a safer landing. Further review is needed by SFMTA and SFDPW.
4. Cobble stone retaining wall at perimeter: Concrete retaining walls at the bottom of the perimeter landscape apron is recommended in the base scope design. Construction of the walls with stone to maintain the character of the historic park is recommended as alternate item in the cost estimate.
5. Timber retaining wall at perimeter: This is the same retaining wall along the bottom of the perimeter landscape noted above and is a material suggested as a last resort if funding is limited.
6. Perimeter walkway entire replacement: the base scope is to repair the perimeter walkway where it is failing, however for a more cohesive appearance, replacing the entire walkway is recommended as an alternate.
7. Small overlooks: Three of these vista points have been identified as important viewpoints that will add value to the park.
8. Lighting at the perimeter walkway: For additional safety, in addition to the streetlights, pedestrian light poles are identified as an alternate item.

ALTERNATES:	COST
<b>ALTERNATE #1</b> <i>Frederick Entry Replacement</i>	<b>\$86,000</b>
<b>ALTERNATE #2</b> <i>Adult Fitness Equipment</i>	<b>\$110,000</b>
<b>ALTERNATE #3</b> <i>Street Bulb-out</i>	<b>\$342,000</b>
<b>ALTERNATE #4</b> <i>Cobblestone Retaining Wall at Perimeter</i>	<b>\$1,082,000</b>
<b>ALTERNATE #5</b> <i>Timber Retaining Wall at Perimeter</i>	<b>(\$387,000)</b>
<b>ALTERNATE #6</b> <i>#6.1 Perimeter Walkway Entire Replacement (Concrete w/ Exposed Aggregate Finish + Curb)</i>	<b>\$2,700,000</b>
<i>#6.2 Perimeter Walkway Replacement (Concrete w/ Brick Edge and Accents + Curb)</i>	<b>\$4,747,000</b>
<b>ALTERNATE #7</b> <i>Small Overlooks</i>	<b>\$209,000</b>
<b>ALTERNATE #8</b> <i>Lighting at Perimeter Walkway</i>	<b>\$151,000</b>

### 8.4 - DESIGN OPTION COSTS

Three design options are proposed and described in Chapter 7. The cost for design options are additional to the base design cost. Design options are either proposed alternative designs for new programmatic areas or relocations of the program areas. While the focus of this project is on assessment of existing conditions with cost projections associated with repair and restoration, the design team was tasked to explore design opportunities. Costs associated with the opportunities explored are outlined in the cost estimate.

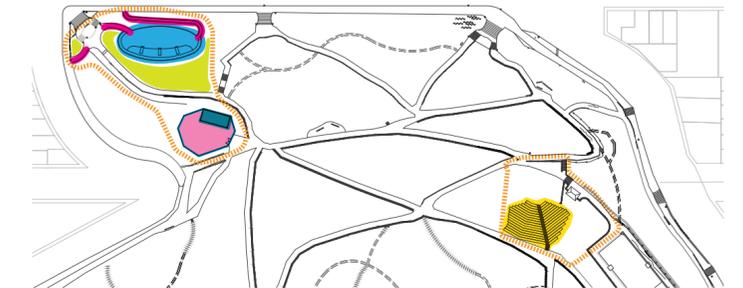
DESIGN OPTIONS:	COST
<b>DESIGN OPTION #1</b> <i>New Maintenance Facility Building at Current Location</i>	<b>\$900,000</b>
<b>DESIGN OPTION #2</b> <i>New Relocated Playground and Picnic area at Current Playground</i>	<b>\$1,307,000</b>
<b>DESIGN OPTION #3</b> <i>New Relocated Playground, New Stone Amphitheater Relocated Maintenance Yard</i>	<b>\$7,406,000</b>



DESIGN OPTION #1: DIAGRAM



DESIGN OPTION #2: DIAGRAM



DESIGN OPTION #3: DIAGRAM