King Estate Park

Oakland, California

King Estate Park
Master Plan

Prepared by
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With Significant Assistance from
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And Additional Assistance from
Iris Cheng

In Cooperation with the
Oak Knoll/King Ridge Neighborhood Improvement Association
City of Oakland Office of Parks and Recreation
May 1995

OAK KNOLL NEIGHBORHOOD IMPROVEMENT ASSOCIATION
8800 FONTAINE STREET, OAKLAND, CALIF. 94605
(415) 569-0689

Chairperson Anne Woodell
Parks and Recreation Advisory Commission
Office of Parks and Recreation

November 2, 1995

Subject: King Estate Park
Oakland, California

Dear Mrs. Woodell;

The Oak Knoll Neighborhood Improvement Assn. (OKNIA) recommends that the City of Oakland Parks and Recreation Advisory Commission accept the master plan as proposed for the King Estate Park as further described in the submitted plans dated May 1995.

We further recommend the commission provide it's good offices to present to and request the City Council of Oakland to:

(1) Adopt the master plan (MP).

(2) Establish the necessary zoning for an open space park (OSP).

(3) To provide the means to develop formal plans for construction consistent with the (MP).

(4) To authorize Parks and Recreation to administer and operate the (OSP) and it's environs in accordance with the adopted master plan.

This request is made with the overwhelming support of OKNIA and the pledge for our continued efforts for King Estate Open Space Park which we hope will be valued by all the citizens of Oakland.

Recognizing there are additional steps to be accomplished before our community request becomes earth, plants and sky above, the association is prepared to join with Parks and Recreation in each step forward until completion.

This letter of full endorsement does not address the details of implementation as long as the commission recognizes and values the association's continued participation in this important city project.

From inception, the Oak Knoll Neighborhood Improvement Association consisting of some 1500 families, has approached the development of the park as a city park and all that it implies. In such recognition, OKNIA required the planners to consider the specific needs of the surrounding community. Those needs

relating to the physical plan are included without a negative impact to current use.

There are, however, those needs that will require the support and cooperation of other city offices - public works, fire dept., police dept. and others. OKNIA is prepared to assist in securing the support of these agencies.

Fundamentally it is far better to develop the land than leaving it fallow.

As our city grows, more space for people follows. Controlled development lessens the event of another disastrous fire. Programmed use and involvement of the public schools and neighbors assures a positive use rather than use for criminal intent and as important as any group of benefits, it's development speaks to the bay area that Oakland cares.

This recommendation would not be possible were it not for the support of the University of California, Berkeley School of Landscape Architecture. Their efforts as well as those of many others is eloquently stated in the "Introduction - The Life of the Park" and in the Executive Summary.

From OKNIA, we would have to provide a volume of names to which the undersigned say thanks for your support. Among those we must recognize, Mr. Glen Daniel, who led the way until his death and Pastor Ronald Moore of Our Saviour's Lutheran Church who unselfishly provided that sanctuary for the association's activities.

We thank the staff and management of Parks and Recreation for their valued service, advice and leadership support to bring the plan to this stage.

The Oak Knoll Neighborhood Improvement Assn. requests the commission to accept our master plan, our endorsement and request to recommend City Council adoption.

Sincerely,

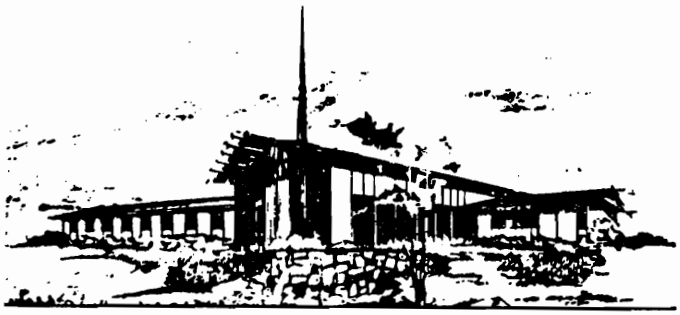
Clyde H. Grimes Sr
Chairman, Park Comm.

Barbara Sutherland
Barbara Sutherland
President, OKNIA

Lorna Dare
Lorna Dare
Secretary, OKNIA

Sharon Robinson
Sharon Robinson
Past Treasurer, OKNIA

cc: Pastor R. Moore, Our Saviour's Lutheran Church
Mrs. Desi Woods-Jones, Councilperson, 7th District
Mr. Nate Miley, Councilperson, 6th District



Our
Saviour's
Lutheran
Church

3800 FONTAINE STREET • OAKLAND, CALIFORNIA 94605 • 569-0689 (AREA CODE 510)

November 13, 1995

Chairperson Anne Woodell
Parks and Recreation Advisory Commission
Office of Parks and Recreation

Subject: King Estate Park
Oakland, California

Dear Mrs. Woodell,

Please add my name in enthusiastic support for the master plan proposed for the King Estate Park and the accompanying recommendations as recommended by Oak Knoll Neighborhood Improvement Association(letter dated 11/2/95).

Many meetings have taken place at Our Saviour's Lutheran Church and I know the serious efforts that have been made to get serious involvement from the surrounding community.

The submitted master plan entails a great deal of community time, input and serious reflection. It is a good plan with many long term benefits.

Sincerely,

Rev. Ronald S. Moore

Pastor Ronald S. Moore
Our Saviour's Lutheran Church

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Introduction - The Life of the Park

21st Century Park

This Master Plan for King Estate Park represents a vision for 21st century parks in California that are ecologically healthy, place specific, and well integrated into the social and spiritual life of their communities. After 350 years of dramatic landscape transformation initiated by various phases of European settlement in the area, it is time to really learn and know the uniqueness and beauty of the California landscape. Instead of transforming the Park landscape to reflect any one cultural tradition's vision of a park, this plan allows the King Estate Park landscape to set the tone of the relationship with its surrounding neighborhood and with park users.

This Master Plan is an outline for a process whereby the community and the park grow together over many years each coming to inform the other. This plan is not a blueprint for a park that one can go build tomorrow. The restoration of native grasslands will take many years. New Coast Live Oak trees planted next year won't be large trees for 30 years. Equally importantly, it will take many years for the community groups, the schools next to the site, and Oakland Office of Recreation and Park staff to develop the working partnerships that turn their investment of time and labor into a restoration of the native plant communities of King Estate Park.

The Character of the Park

King Estate Park is a dynamic and changing landscape. One major ridge line forms the spine of the park, and this entire ridge line is sliding and tumbling west away from the Hayward Fault. Up in the Park, you can sense the geological drama beneath the surface in the camel back slopes rolling down toward the bay, the slides opening up along road scars, and the unusual mix of heavy clay soils and sterile Rhyolite base rock differing from that of the nearby hills.

The vegetation of King Estate Park is a remnant piece of the open savanna that characterized the East Bay Hills prior to European settlement. There is a constant interplay between the Grassland and the North Coastal Scrub and the Oak Riparian plant communities. The scrub will expand into the grassland until a fire sets it back. The oaks will gradually grow up out of the wetter places in the scrub forming a canopy that shades out the scrub. This interplay is repeated throughout the

California landscape and is a basic structure for many local variations and patterns.
It is very fortunate that there is such a piece of it remaining in a town that was named for its beautiful groves of California Live Oak trees.

Middle Ground

Both in a landscape sense, in terms of an intervening ridge line between the East Bay Hills and the San Francisco Bay, and in a social sense, as an integrated middle class community in East Oakland, the park occupies a middle ground. Modest middle class neighborhoods surround the park on three sides. These neighborhoods are an integrated mix of a majority of African American homeowners, with many European American, Latin American and Asian American homeowners.

On the west side of the park, just below Golf Links Road, these neighborhoods are adjacent to the hard times along MacArthur Boulevard south of 73rd Street. This area, known as the Castlemont area, contends with relatively high rates of street crime. On the east side of the Park, the 580 Freeway cuts the King Estate and Oak Knoll neighborhoods off from the increasing affluent and European American communities ascending the East Bay Hills. The 580 Freeway has been the traditional dividing line in Oakland between rich and poor, white and black, but the neighborhoods around King Estate Park defy that dichotomy and establish a zone of transition, harmony and continuity of good relations.

The Oak Knoll and King Estate communities, and other communities near the park have worked hard to increase the safety and comfort of their neighborhoods through means such as community policing, reporting illegal dumping, and cleaning up littered areas. In a time when many communities are turning their back on parks as dangerous and uncontrollable areas, this neighborhood wants to create a natural open space park for the enjoyment of all. In this sense too, this community, in creating their vision for the park, creates a middle ground. In King Estate Park, they will bring the natural wildness of the East Bay Hills into the urban environment of East Oakland.

The Process is the Product

The King Estate Master Plan draws much of its strength from the extensive involvement in the design process of community members living near the park. Their visions and concerns wrought together over time give the plan many more dimensions and layers than a small number

of designers could do on their own. The community design process focused on creating coherent relationships between the different elements people envisioned for the park and successfully challenged participants to construct a common vision for the park. (For further discussion of the community design process please see Appendix A; see also Jonathon London's 1995 City and Regional Planning Professional Report "King Estate Park: A Case Study in Community Design" in the University of California at Berkeley Environmmental Design Library)

Over a hundred community members attended at least one of a marathon series of meetings over the last two years. From the beginning of the community design process, there was a solid group of park advocates in the Oak Knoll Neighborhood Improvement Association who supported the entire process with their conviction that King Estate Park could be a great asset for the community and the city of Oakland. Many of these same individuals had fought for the preservation of the King Estate lands as open space, and they have continued to work with the city staff, city council, and the neighborhood association to improve the lands into a natural open space park. The realization of King Estate Park is clearly due to the sustained efforts of this community, particularly their ability to not be derailed by their differences, and to reach agreement on their strongest objectives.

Where to From Here?

King Estate Park will grow and change as fast as the community and the city work together to make it happen. This change will be low impact and gradual. There is nothing proposed for the park that will not continue to grow and change over the years. Almost every element in the design could be built by community members.

This pacing of the park development process will ensure that the control over the process will rest with the community members . The involvement of the community members in the park design and park construction will create a long lasting reciprocal relationship between the community members and the park. This represents a potential for a new type of public park, an open space managed in partnership between city park staff and community participants. King Estate Park as a landscape is more akin to a "commons" than a traditional urban park in the sense that individuals and groups can conceive of and carry out projects in the park within the general framework of this Master Plan.

The Life of the Park

The life of King Estate Park as a small, natural open space currently exists within the matrix of the urban/suburban neighborhoods surrounding it. Yet as the native landscape is restored, it will provide a template for what the East Bay Hills once looked like and how they might become more locally diverse and ecologically healthy. One day the life of the park might grow to become the matrix within which East Bay communities exist. That dream has already begun to live in the park.

Executive Summary/ Introduction

The proposed King Estate Park, located on nearly 80 acres of hilly grassland, chaparral and oak woodland, will be a precious asset to the local community and the city of Oakland as a whole. It will maintain and enhance the largest natural open-space resource in East Oakland west of the 580 Freeway as well as create new recreation, education, and social interaction opportunities for visitors. Whether the visitors are students studying field ecology in one of the outdoor classrooms, senior citizens enjoying the gentle wild flower loop trail, a family picnicking on the saddle area, youths tossing a football on the meadow, or a couple strolling on the ridge-line enjoying a summer sunset; the King Estate Park will come to play a central and valued role in the community life of the entire area..

The four above-mentioned elements -- natural open space, low-impact recreation, education, and social interaction -- form the basis of the community vision of the Park, as communicated through an extensive citizen participation process with the Oak Knoll Neighborhood Improvement Association and other area residents. This has been an on-going collaborative process (21 months to date) including the Neighborhood Improvement Association, area community members, a design and planning team from the University of California at Berkeley, and the City of Oakland Office of Parks and Recreation (OPR). This process represents the visions of the community as expressed in a series of over 40 community meetings and interviews, and countless informal conversations between community members, Oakland Office of Parks and Recreation (OPR) staff, and the University design team. Community input has been coupled with a technical analysis of the site's soils, hydrology, geology (seismic issues) vegetation, wildlife, view analysis, noise vectors, fire hazards, area land use and Park use patterns. Please see "Master Plan Responses to OPR and Community Concerns" charts pp. 4-5.

This Master Plan is therefore an important information resource for the site's ecological and social factors, and a design and management framework meant to guide the future design, development, and construction processes. This framework is illustrated in a series of maps, sections, and perspective drawings and described in a narrative account of the design. Together the illustrations and the narrative account provide an outline of the design of facilities and improvements necessary to realize the community's vision for the Park.

As an on-going community design process, the local and city wide communities will play active roles in the implementation, maintenance, and overall care for the Park. The design of the site suits a community construction process, capable of being constructed practically and feasibly through

community and city partnership Such active involvement will cultivate both community and the Park itself.
The design framework of the Park is organized through a series of design goals which capture both the community's vision and the designers' technical and observational analysis of the site. These are the following.

Goal 1: Wind and panoramic views on the open ridge will play major roles in the experience of the site
Goal 2: Create a trail system that suggests and invites movement along the site's dramatic topography
Goal 3: Enhance and promote exploration of the Wilds
Goal 4: Use trees and ravines to embrace visitors
Goal 5: Create entrances and a Park design welcoming and accessible to visitors inclusive of age, social grouping, and differences in mobility
Goal 6: Integrate Park with the everyday rhythms of the community
Goal 7: Community will be involved in the on-going design, care, and life of the Park
Goal 8: Create a Park that invites the visitation and participation by the diverse local and surrounding communities
Goal 9: Promote integration of the site with itself and with the surrounding community

The Plan also utilizes an innovative, integrated approach to fire and vegetation management. The overall concept is that the management guidelines for both issues interact in a mutually supportive fashion. This dual management plan is summarized by the following management goals.

Goal 10: Restore and enhance the native plant communities of King Estate Park.
Goal 11: Design the park for fire safety for surrounding residences and
park users.
Goal 12: Create and support habitat areas for wildlife.
Goal 13: Involve community groups and local school children in the process of restoring the park landscape and reducing the fire hazards.
Goal 14: Provide public safety through a vegetation and fire management plan that is practical, manageable, and economical for Oakland Parks and Recreation staff to implement.

The opportunity to create a Master Plan for this proposed Park has been created through the local and city-wide efforts to protect this vestigial open space from a series of development proposals throughout the 1980s. This struggle culminated in the Oakland Office of Parks and Recreation purchasing the site in the early 1990s with city bond funds as a permanent open space Park.

The Master Plan is organized into six major sections.

Section I contains this executive summary, an introduction, letter of endorsement from the community and a brief description of the site's setting. **Section II** provides background in the physical, natural, and social context of the site as well as a summary of constraints and opportunities. **Section III** is the design framework for the Park and provides design and management objectives and design elements for the following nine goals. **Section IV** addresses fire and vegetation management and provides a comprehensive management plan. **Section V** discusses some scenarios for phasing the implementation of the project and underlines the importance of continued community involvement. As a site protected by citizen action and designed with maximum feasible community participation, it is crucial that such active involvement continue through the construction and long-term care of the Park. **Section VI,** a series of appendixes, provides detailed information on site-appropriate plant species, site analysis maps, home-owner fire management guidelines, brief accounts of the protection and acquisition of the site as city Park land, and names and contact information of individuals and institutions involved in the creation of the Master Plan.

Master Plan Responses to OPR concerns:

OPR Concern	Master Plan Response
Orchard cost and maintenance	• Relative numbers of fruiting to non-fruiting trees determined by community commitment. • Active involvement of schools as part of curricula and clubs • Option to contract with local farmers • Species chosen for low maintenance qualities
Orchard irrigation	• Drip irrigation, terraces, and drains to minimize runoff • Orchard plantings and terraces help stabilize slope and absorb runoff
Fontaine Oak Parkway irrigation	• Drip irrigation and drains to minimize runoff and maximize efficient use of water.
Fontaine Oak Parkway traffic slow-down	• Traffic slow down will be minimal and will be off-set by aesthetic improvement to street and entire area
Saddle meadow irrigation and maintenance	• Drought tolerant grass species chosen • Small turf area proposed
Litter and graffiti	• Community care and active use of park to help prevent problems and community clean-up days to clean up
Portable toilet cost	• Toilets to be concentrated in easy access areas • Cost out weighed by need to encourage everyday use of park
Trail caused erosion	• Most trails on gentle slopes. • Trails on steep slopes designed to prevent erosion and discourage short cutting
Security in oak dells	• Oak dells not entirely isolated and out of view • Oak dells off main pathways to prevent non-intentional entrance.
Vague definition of Wildlife Enhancement Area	• Area will provide important habitat for numerous species of birds and mammals. • Habitat enhancement will be balanced with fire safety measures.
Fire risk of chaparral areas	• Fire Management Plan provides comprehensive actions to reduce fire risk in chaparral and other plant communities
Integration of schools and Park	• Plan calls for joint use of school facilities by Park users and of Park by schools

Master Plan Responses to Community Concerns

Community Concern	Master Plan Response
Safety in Park	• Park design and facilities increase number of users and promote relationship of care between users and Park • Concentrated social areas to create "eyes on the park" • Safety features" solar emergency phones, motion detector lighting around schools, gates and fences to prevent vehicle entry, main paths on clear visible routes, dusk to dawn park curfew
Minimize build environment/ hardscape	• Park concept emphasizes natural open-space character and use values. • Facilities and developments blend with landscape
Encourage wildlife and native plant communities	• Restoration and enhancement of native plant and animal communities are the focus of the Vegetation and Fire Management Plan and include treatment of trees, shrubs, grasses, and wild flowers
Provide education opportunities for local schools	• Educational facilities include outdoor classrooms adjacent to each school, education signage, wildlife look out platforms, educational trails
Toilets or no toilets	• Compromise solution of portable toilet stalls at strategic areas near main entrances to Park.
Fontaine Oak Parkway traffic slow-down	• See response to OPR
Maintenance and vandalism of orchard	• See response to OPR
Active vs. passive recreation	• Compromise solution of providing opportunities for trails, benches, grassy areas for passive recreation (hiking, jogging, socializing, picnicking), informal and small-scale ball games, as well as play structure for young children. • Formal active recreation to be directed to fields and courts at adjacent schools
Tot lot or no tot lot: concern over disruption to neighbors	• Tot lot will be screened by pleasing earthen walls. • Site will provide family-oriented play opportunities • Tot Lot will be phased to mitigate neighborhood impacts
Impact from controlled burns	• Burns will be done on rotations in small areas to minimize aesthetic disruption. • Controlled burns will enhance and promote healthy, beautiful plant communities and provide an opportunity to reestablish native plants.
Loss of control to City	• Public participation will be integral to park planning, implementation, and on-going evaluation and modification

Section II

Site Setting

The Setting

King Estate Park is the largest stretch of open space in East Oakland west of the 580 Interstate Freeway. (See Map 1: Regional and Local Setting) The land straddles nearly 80 acres of a north-south ridge overlooking the East Bay Hills to the east and a panorama of the Bay and its cities to the north, south, and west. The site is located in Oakland's Elmhurst District, and is bordered by the Oak Knoll, King Estate , and 82nd Street neighborhoods. (See Map 2: Project Site and Vicinity) Fontaine Street sweeps along the eastern edge of the site, then turns to run east-west over the ridge, bisecting the Park. The majority of area residents (those in the two census tracts bordering the site) are middle class African-American home owners. Neighborhood land marks include the Our Savior's Lutheran Church, the Howard Elementary School and the King Estate Junior High School. To the east of the site (across the Freeway) are the Oak Knoll Naval Hospital, and the Knowland Park Arboretum and Zoo. To the west is the Holy Redeemer Compound, the Arroyo Viejo Creek, and 82nd Avenue which runs towards the Coliseum and the Bay.

Natural Factors:

Like a giant roller coaster, the elevation changes 250 feet from lowest point to highest point as three quarters of the site have slopes between a 15 and 60% grade. This dramatic topography is the dominant feature of the site consisting of easterly and westerly facing sloped hillsides leading up to a primary north-south running ridge line. There are also a number of significant ravines between the east-west running ridges: some of which create a complete "natural" experience -- blocking out all views and sounds of the city. Please see Slope Map p. 81

The vegetation represents a remnant of the Perennial Grasslands and Oak Savannah that once covered the East Bay, spotted by creeping North Coastal scrub and ravines containing stands of Coast Live Oaks. Significant communities of native grasses have been preserved on the site. Exotic tree species such as Monterey Pine and Acacia and exotic shrubs such as French Broom have either been planted and invaded other major portions of the site. These species, significant fuel ladders, and steep slopes creates very high fire risks. Please see Fire Hazards Map p. 83.

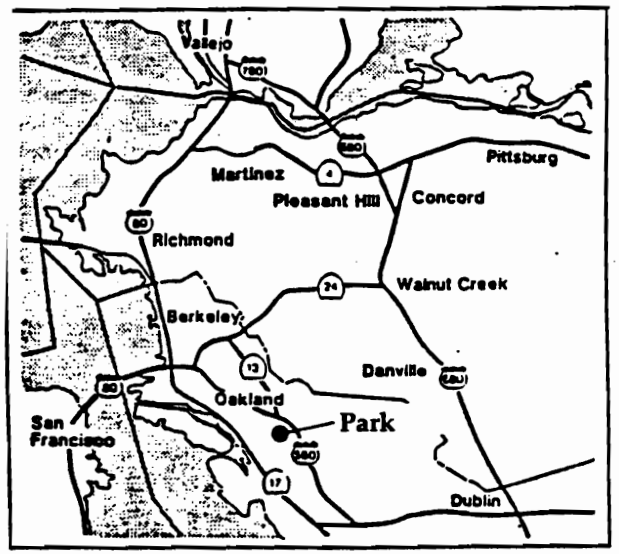
The site is also adjacent to several substantial natural features and open spaces including the Arroyo Viejo Creek, the grounds of the Holy Redeemer College, the vegetated 580 right of way, and an EBMUD Reservoir, all to the west of the site. While there are significant barriers between these sites and the Park, as a natural open space area in an heavily urban area, the King Estate Park will help enhance the potential for a wildlife corridor for numerous local species.

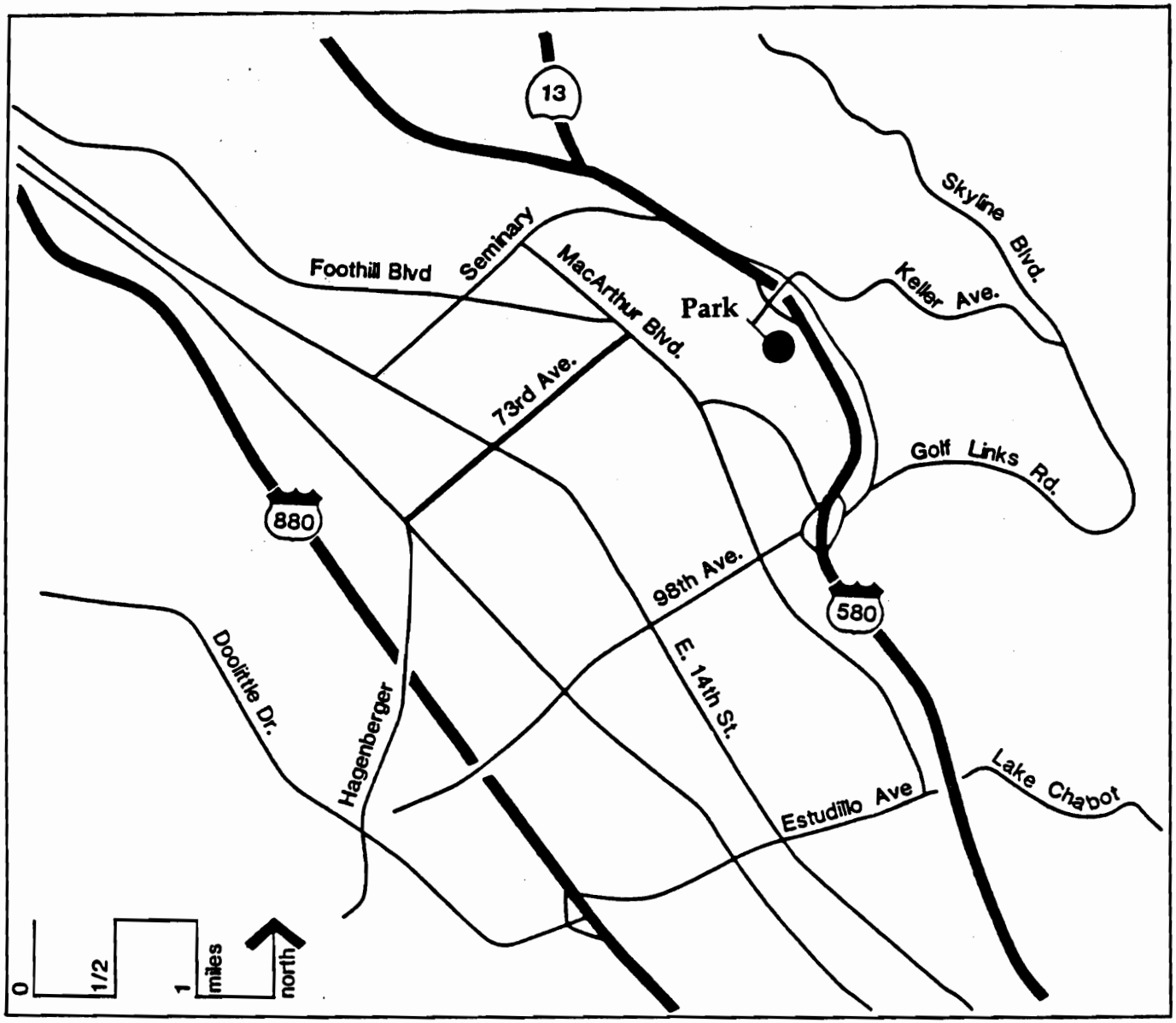
The site lies over a bedrock consisting primarily of Leona Rhylolite which is directly below the surface on 6.5 acres on the southern portion of the site. A layer of Quaternary gravels, sand, and clay over lay the bedrock in the remainder of the site. There are six major historic or present landslides on the site totaling almost ten acres mostly on the east facing slope. The majority of these slides are superficial ranging up to 18 feet in depth. One bedrock slide exists on the east-west portion on Fontaine Street which extends down to 40 feet below the surface.

Social Factors:

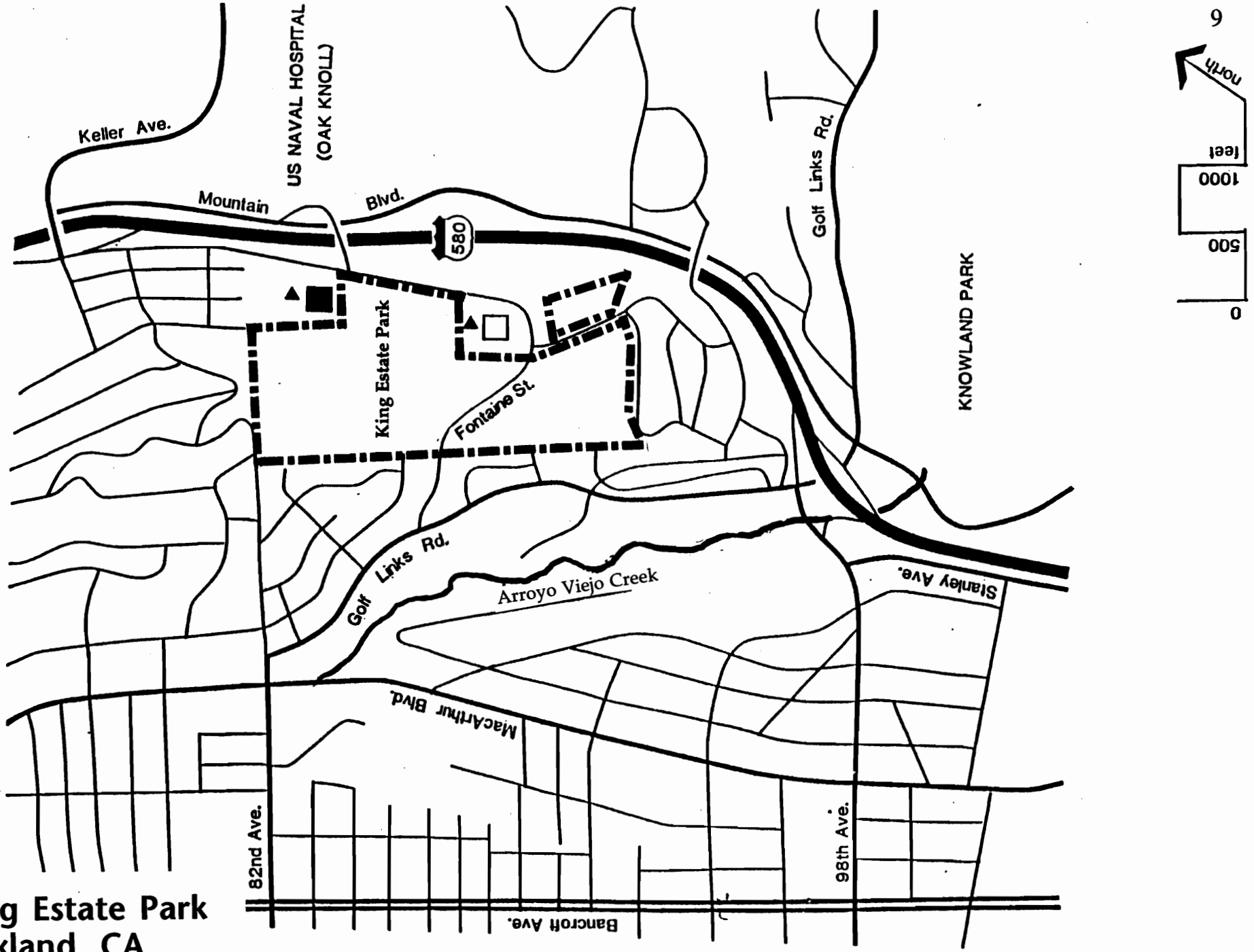
According to students at the King Estate Junior High School, the site is called "The Trails" which captures the predominate use of the site -- walking. Neighborhood residents walk and run on the site at all hours of the day with most use concentrated on weekends and in the late afternoon when people return from work. One long-time neighborhood resident's account of "standing on the ridge and feeling the wind blow" represents many users' focus on the ridge for its spectacular views over the city -scape and across the Bay. Dog walking is a also common activity. Students from the two schools use the site as a short cut to and from school and between the schools as well as a place to play and "hang out." Many residents identify the Park as a central and positive identifying landmark for their neighborhood. The heavy clay content of the soils limits winter (wet season) use, however.

The site is also sometimes used as an illegal dirt bike and motor bike course (along with the occasional car). The site and the roadways surrounding it are often used as dumping grounds for appliances, yard waste, contractors' waste, and household trash. Many community members complain about these latter activities. Cal TRANS used the site in the late 1980s as a debris stockpile for a landslide repair project on Fontaine Street. This debris was cleaned up and site for the most part restored.





King Estate Park
Oakland, CA
Regional & Local Setting



King Estate Park
Oakland, CA
Project Site & Vicinity

Western Slopes Drawing

Summary of Site Constraints and Opportunities

Opportunities

- Large, mostly undeveloped open space
- Significant native plant communities
- Important wildlife habitats
- Breath-taking views
- Dramatic topography including a broad ridge line and numerous steep ravines and slopes
- Relatively easy access from most surrounding neighborhoods, schools, and city as a whole
- Existing use patterns and care of Park by area residents and schools
- Existing trail system
- Connection to regional recreational and natural features
- View of Park as natural landmark from surrounding city

Constraints

- Steep slopes, few flat areas, and significant land slide potential limit hard surface development and facilities as well as irrigation regimes
- Alteration of original topography and vegetation create a less than pristine natural experience of the site
- Local and city concerns about increased crime, safety, and maintenance issues in and around Park
- Office of Parks and Recreation agreement with Cal TRANS not to irrigate in the site due to slide potential
- Moderate to severe fire danger due to seasonal high winds, fuel loads, and pattern of arson on site

Section III

Design Framework

Park Design Framework

Park Concept

This poetic piece was created to represent the "spirit" of the site and to serve as inspiration and a frame of reference to guide the creation of the Park design. Its phrases and images are drawn from the experiences of the designers in interviews with community members, informal walks and formal on-site studies. Each of its six lines serve as organizing principles for the Master Plan's design framework.

The winds sweep my imagination
across the horizon.
We move over the hills
exploring the wilds
and the oaks embrace us.
Here, in this place for everyday
we cultivate community.

The following design framework is organized by a concept phrase followed by a general goal, one or more specific objectives, and a list of elements to implement this objective. The design elements may be listed under more than one objective, because they were designed to integrate as many functions as possible. Design elements are bold-faced when listed beneath their major objective.

Detailed information on the technical, and operational aspects of these elements can be found in the following section entitled "Fire and Vegetation Management." The Design Framework will also refer the reader to various maps, sections, and sketches which illustrate the elements described herein.

Summary of Design Goals

The winds sweep my imagination across the horizon

Goal 1: Wind, and panoramic views on the open ridge play major roles in the experience of the site.

We move over the hills

Goal 2: Create a trail system that suggests and invites movement.

exploring the wilds

Goal 3: Enhance and promote exploration of the Wilds

and the oaks embrace us.

Goal 4: Use trees and ravines to embrace visitors

Here, in this place for everyday

Goal 5: Create entrances and a Park design welcoming and accessible to visitors inclusive of age, social grouping, and differences in mobility

Goal 6: Integrate Park with the everyday rhythms of the community

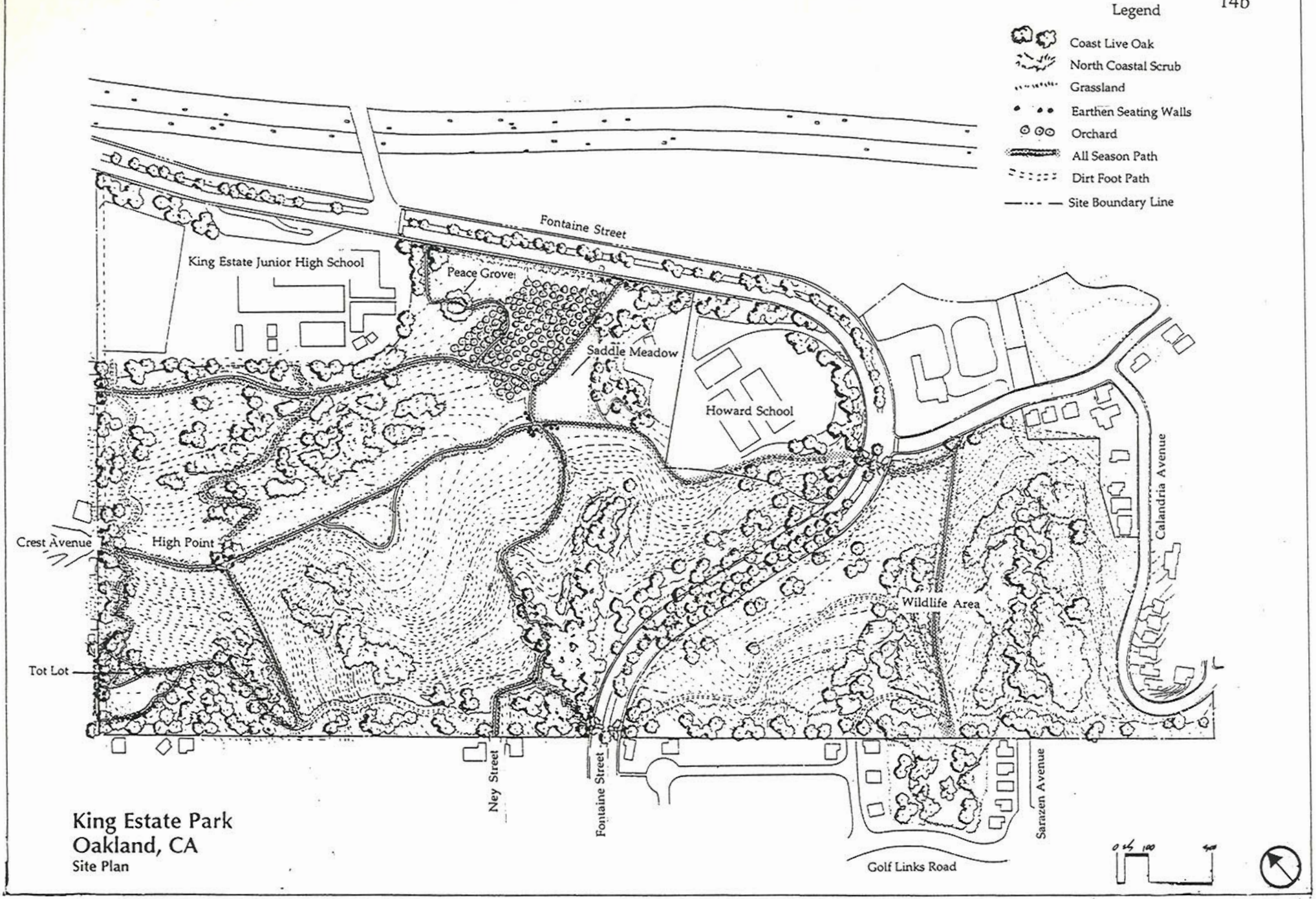
we cultivate community.

Goal 7: Community will be involved in the on-going design, care, and life of the Park

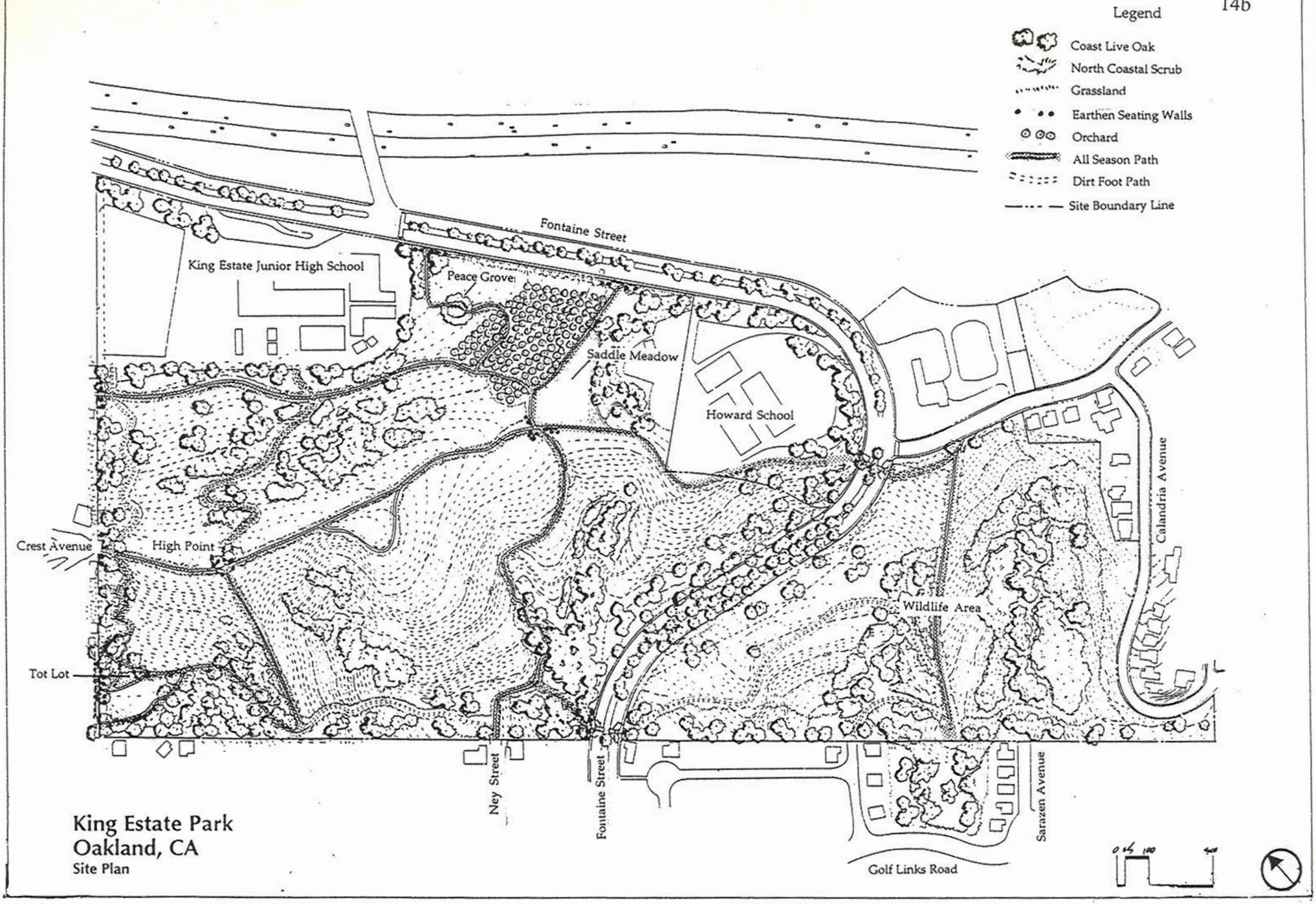
Goal 8: Create a Park that invites the visitation and participation by the diverse local and surrounding communities

Goal 9: Promote integration of the site with itself and with the surrounding community

King Estate Park
Oakland, CA
Site Plan



King Estate Park
Oakland, CA
Site Plan



King Estate Park
Oakland, CA
Site Plan

The Winds Sweep My Imagination Across the Horizon

The Ridge Experience

Goal 1: Wind and the open ridge play major roles in the experience of the site.

Objective A. Emphasize the openness of the ridge to provide the experience of exposure to the wind and the sweeping on-site and broader views.

Elements:

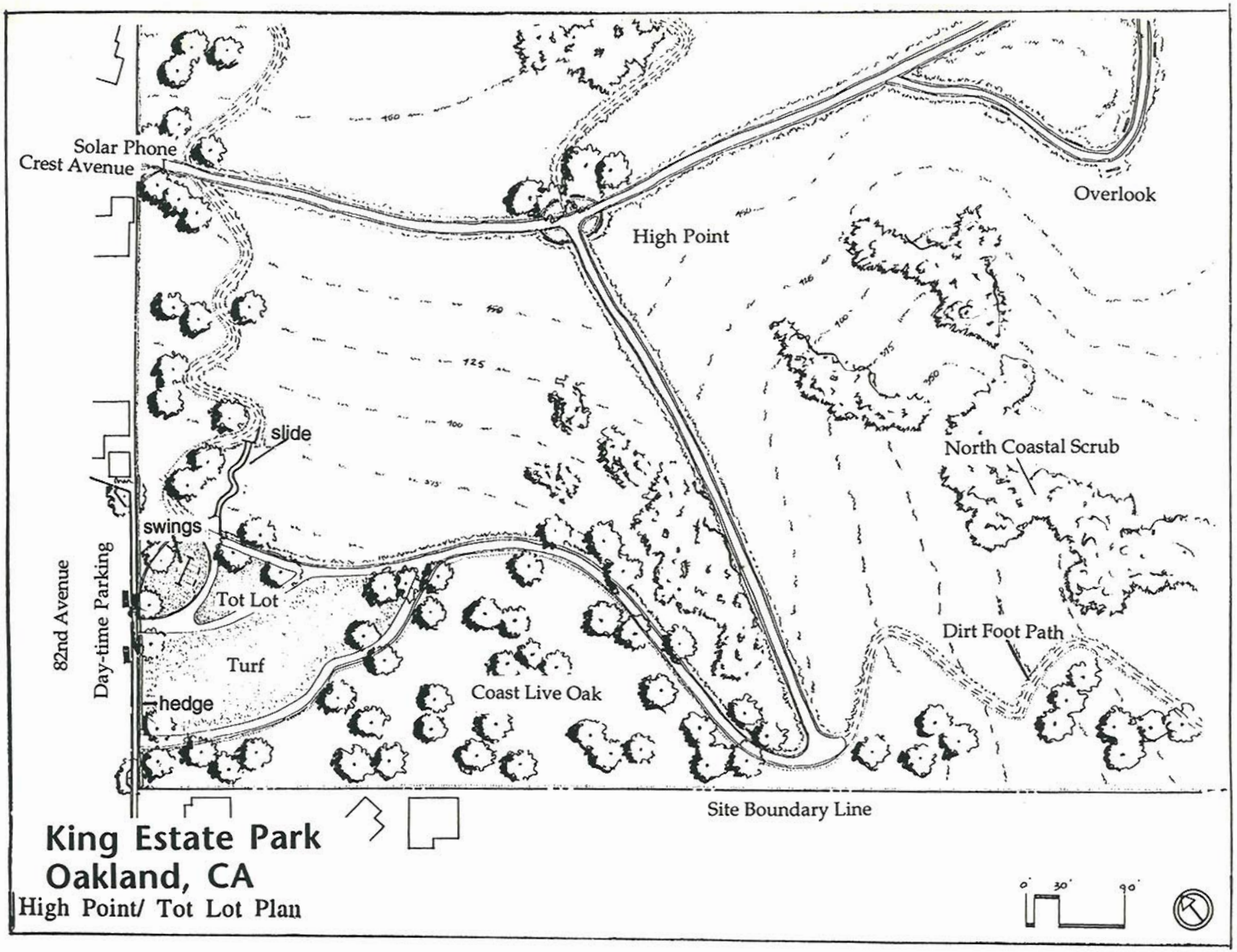
1. **A Ridge trail** running east-west along the length of the ridge highlighting the panoramic views of the city and the Bay.

2. **The High Point** on the ridge for a resting place with panoramic views. The "high point" on the ridge will be built-up with soil fill to raise it to its original height and shape. Low earthen wall segments for sitting (henceforth called "traces") will be placed on the east and west sides of the high point. A cluster of oak trees will be planted on the east side of the high point to sit under and to emphasize the highest point on site as well as, in contrast, the openness of the ridge.

(See High Point/ Tot Lot Plan p. 16, High Point Drawing p. 17 and High Point Section p. 18)

3. **Seating areas along the ridge line.** These areas will have stone benches with pleasing and inspiring views of Oakland, the Bay beyond and on-site trees and vegetation. The benches will be offset from standing view areas for a sense of privacy.
(See Saddle/ Cross Roads Terrace Drawing p. 23)

4. **The "Saddle Meadow "** a relatively flat area at the low point of the ridge to the north of Howard School will feature a mowed grass meadow, sitting and picnic areas, and an outdoor classroom/ gathering area. Several main trails will converge at this point (the Cross Roads Trace)making it the social heart of the Park. It features pleasing on-site views of the orchard, and broad views of the East Bay Hills to the east and the city and Bay to the west. Visitors will experience sitting, walking, and playing on the roof of the world.
(See Saddle/ Orchard Plan p. 38 and View from Saddle from Ridgetop Drawing p. 40)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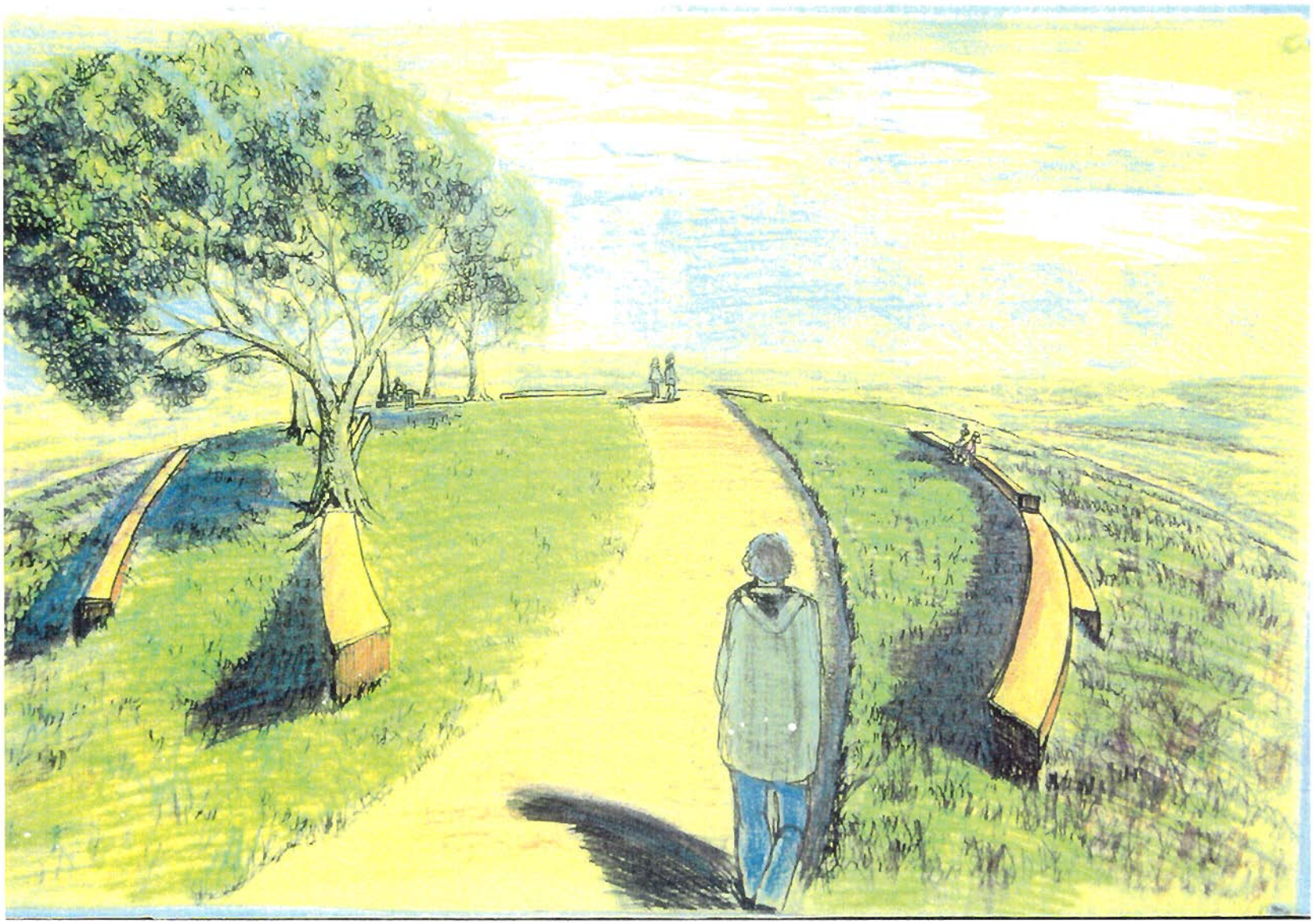
High Point
slide
North Coastal Scrub
swings
82nd Avenue
Day-time Parking
Tot Lot
Turf
Dirt Foot Path
hedge
Coast Live Oak
Site Boundary Line
King Estate Park
Oakland, CA
High Point/ Tot Lot Plan



High Point Perspective Drawing

Objective B. Create places which invite the visitor to become absorbed in their imagination.

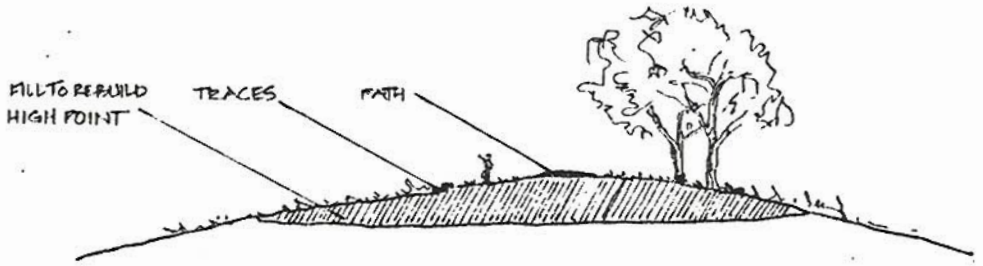
Elements:

1. **Overlooks**: sitting areas, offset from the trail with a backing of slope or vegetation (when topographical possible) and open sky and views in front.

2. Tot-lot set in natural bowl and surrounded by stands of oaks with curving and whimsical path ways.
(See p. 33 for more details and p. 16 for a Tot Lot plan)

3. Trails which weave through vegetation. and tree clusters. See especially the "Oak Ravine Trail" below Howard School described below.

4. Earthen wall "traces" serving as sitting areas and as orchard terraces which evoke an imagined past.
(See Saddle/ Cross Roads Terrace Drawing p. 23)



High Point Section
(Looking North)

We Move along the Hills

Trails and the Experience of Topography

Goal 2: Create a trail system that suggests and invites movement.

Objective A. Create a trail system that allows visitors to explore the site's topography and other natural features as they pass across, up and down the sloping and varied landscape.

Elements:

1. The **Wild Flower Trail** : a short loop trail that will guide visitors out onto the broad brow of the hill, by areas of vibrant wild flower and native grass communities.

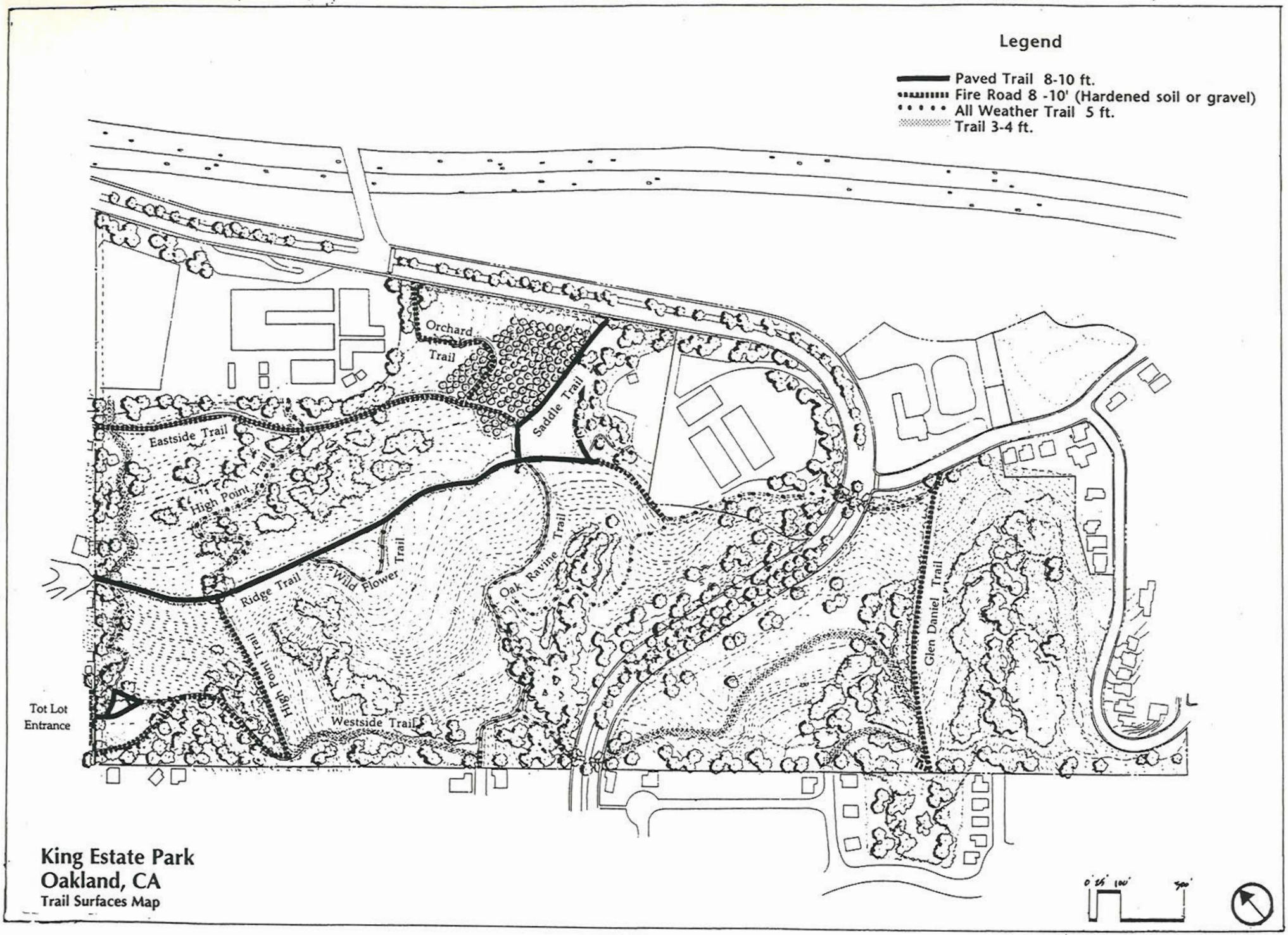
2. The **Saddle Trail** which leads from the Meadow Entrance on Fontaine Street between the schools by the orchard. This is designed to guide visitors up to the meadow on the saddle and the main sitting area on the most gentle and accessible slope.

3. The **Oak Ravine Trail** which leads from the east side of the Park at the Oak Ravine Entrance on Fontaine along-side and into an oak-filled ravine.

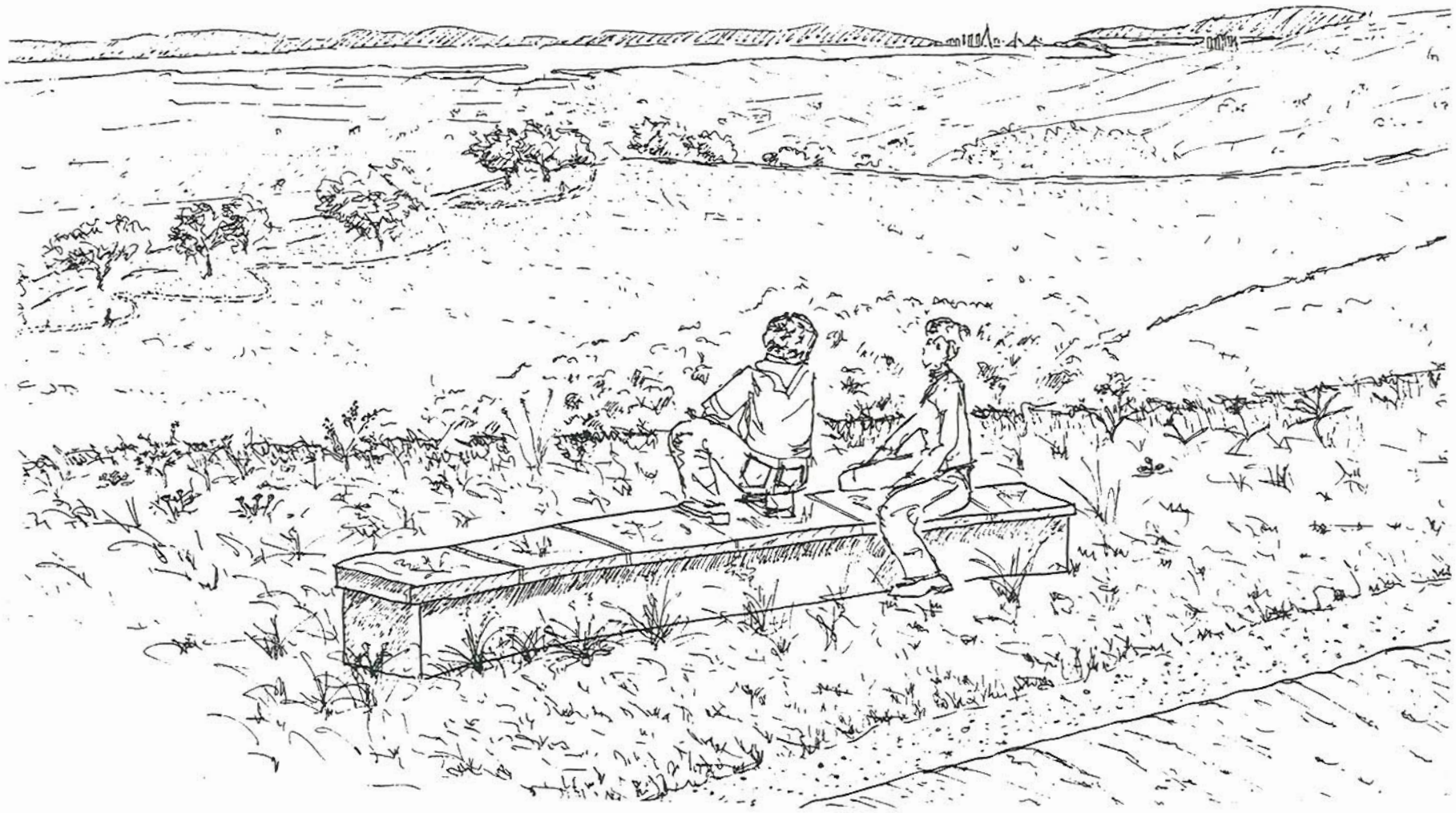
4. The **Orchard Trail** which leads from the Peace Grove Entrance north of King Estate Junior High School through the Peace Grove circle of olive trees through the orchard and up to saddle meadow.

5. The **Ridge Trail** which runs north-south along the spine of the Park with panoramic views of the Bay to the west and the East Bay Hills to the east.

6. **The Glenn Daniel Memorial Trail** named in appreciation for the selfless service of long-time resident and President of the Oak Knoll Neighborhood Improvement Association, Glenn Daniel. This trail begins on at the southern Crest Avenue entrance and runs west towards the Wildlife Enhancement Area. (See Trail Surfaces Map p. 20 for exact trail locations)



King Estate Park
Oakland, CA
Trail Surfaces Map



View West from Wild Flower Loop

Objective B. Create design elements which suggest movement and which highlight the undulating landforms.

Elements:

1. **Curving low earthen wall "traces"** on saddle and main sitting area. Traces will be set into slope to express the shape of the landform and will be low (6"-2$^{1/2'}$) capped earthen wall structures which can be sat on or against. (See Saddle/ Cross Roads Terrace Drawing p. 23)

2. **Curving terraces in the orchard** which follow the contours of the land. Terraces will be low (1'-2 1/2') low stone wall structures which offer sitting areas as well as provide slope stability.

3. Shape of meadow on saddle and of the reflects the natural flatness formed between the Howard School graded peak and the existing high point on the ridge.

4. Slide in tot lot which follows the natural hill side in a wavy, contoured shape

5. Curving lines of Oak trees across the face of the Howard School, down the slope of the ravines, and in fuel breaks

Objective C. Create trails with a variety of slopes and surfaces for a variety of movement experiences and mobility abilities.

Elements:

1. Trail system which includes **paved flat (or up to 8%) grade, universally accessible trails** from entrance to major sitting/gathering area and along main ridge.

2. All weather **"soil mix" surface** on main unpaved trails.

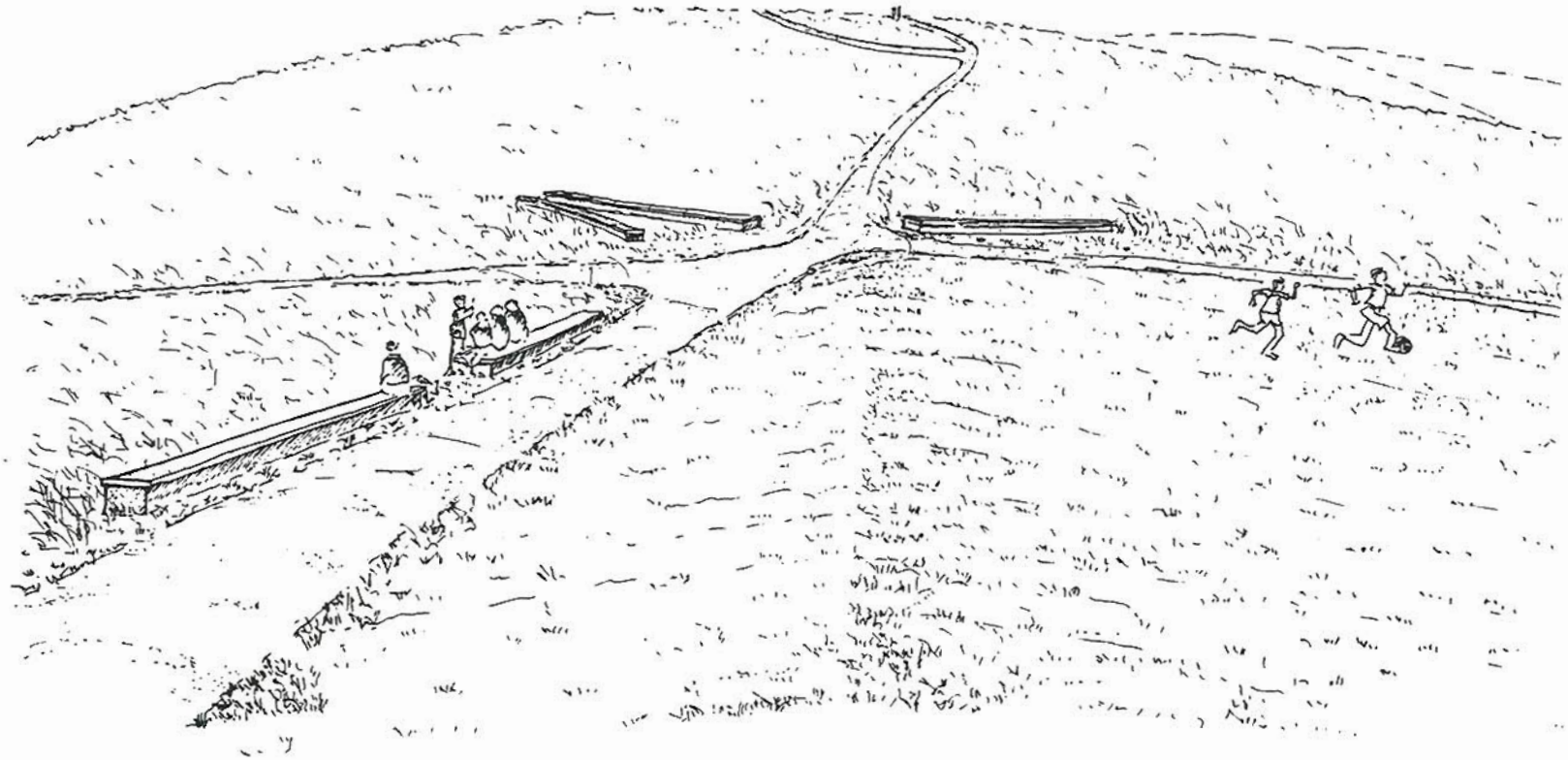
3. Trails at main street entrances for easy access from surrounding neighborhoods and which meet existing user needs such as hiking, dog walking, short cutting, and exercising..

4. **Trail heads and entrances at both adjacent schools** to encourage access to Park

5. Trails which are useful in transportation (i.e. between schools, from the neighborhoods to the schools; and between entrances and commonly used areas i.e. the main sitting area, as well as near bus stops).

6. Convenient **sitting/resting areas** along paths.

7. Stairs with **handrails, resting platforms, and trails with switch backs** to reduce slope where appropriate.



Saddle/Cross Roads Traces Perspective Drawing

Exploring the Wilds

Wildlife, Vegetation and Fire Management

Goal 3: Enhance the Wilds

Objective A. Develop an integrated vegetation and wildlife management plan that promotes diverse, healthy and aesthetically pleasing plant and animal habitat through plantings of native plant species and removal of selected exotic species.

Elements:

1. **Enhanced native grasses, wild flower, northern coastal scrub, oak savanna, and riparian plant communities.**
   - below ridge on west facing slope.
   - on east facing slope above King Estate Jr. High School
   - In Wildlife Enhancement Area on south side of Fontaine Street

2. **Remove invasive species** such as acacia, eucalyptus, French broom, and cotoneaster to protect desired plant communities.

3. **Fire management plan** which minimizes fire danger while harmonizing with vegetation plan's goals of enhancing native plant and animal communities.

   - Small, rotated burns to reduce fuel loads timed to favor native plant communities.

   - Establish plant communities with lower fuel loads and some fire resistance to reduce the potential for high intensity fires.

   - Widely spaced and trimmed-up clusters of oaks in fire breaks.

   - System of strategic fire breaks, fire roads, and fuel breaks.

(Please see Fire and Vegetation Management Section p. 43 for detailed information on vegetation including Vegetation Zone Map)

4. Plant clusters of native Coast Live Oak in the fuel breaks, along the edges of the site, and in ravine areas throughout the site.
(See Oaks Section p. 27 for locations).

Objective B. Enhance wildlife habitat and viability on site.

Elements:

1. Create **Wildlife Enhancement Area** on south side of Fontaine Street by not including any trails and allowing vegetation to grow into protective thickets with several strategic fuel breaks. This 20 acre area is the most ecologically intact having suffered relatively little land grading, human use, and vegetation disturbance. It contains the best quality and most diverse wildlife habitat and is also adjacent to the Arroyo Viejo Creek, the grounds of the Holy Redeemer College, and the EBMUD reservoir creating the potential for a valuable wildlife corridor. Signage explaining "Wildlife Enhancement Area" and "wildlife corridors" should be posted about respecting wildlife and plants throughout the Park.

3. Provide interiors and "edges" of diverse vegetation types and cover/shelter habitats.

4. Provide food sources (i.e. rodent habitat for fox and raptors, and fruit/berries for song birds).

5. No trails in thickets and ravines near critical habitat to minimize use (remove some existing trails and/ or making vegetation thicker to exclude human entry) in ravine on south side of Fontaine Street, portions north of Fontaine, and south facing ravine below high point.

(Please see Fire and Vegetation Management p. 42)

6. Social areas are areas of heavy human use are sited on degraded habitat and will not cause further habitat loss.

7. **Dog Policy**:
- Dogs must be on leash or under voice control
- Dogs are not allowed on South side of Park in Wildlife Enhancement Area
- Dog waste must be picked up by owners and disposed of in trash cans or at home.

8. Evaluate **wildlife corridor** from South West corner through to the Arroyo Viejo Creek including the enhancement of vegetative cover at this end of the Park to encourage the movement of deer and other mammals across the site.

Objective C. Provide facilities for the education use of the site's natural environment

Elements:

1. **Outdoor classrooms**: one adjacent to the Howard School, the other in the enhanced "Peace Grove" of olive trees adjacent to the King Estate Middle School will provide learning spaces for the schools and other educational institutions in which to base their site-based programs. In addition, the Orchard will provide numerous educational opportunities and spaces.

2. Trail system which **explores different ecological zones** and features:

- Oak Ravine Trail running through oaks, and past seepage spot, and Rhyolite rock outcrop.
- High Point trail from high point to King Estate Junior High School through Oak and Toyon Savannah. (prime bird habitat)
- **Look-out stations** on the Glenn Daniel Trail that provide visual access into the Wildlife Enhancement Area
- East Side and West Side Trails weave through diverse plant communities and wildlife habitats

3. **Educational signage** that helps visitors learn about and appreciate the local plant and animal communities as well as the site's overall ecological and physical features

4. Coordinated efforts with the local schools to integrate biology, chemistry, physics, vocational arts, fine arts, English and other classes with on-site resources

5. *Future possibility* : native plant nursery and education center between schools (school/and or community run).

The Oaks Embrace Us

Oak Enhancement & the Fontaine Oak Parkway

Goal 4: Use trees and ravines to embrace visitors

Objective A. Plant coast live oaks and enhance existing oak clusters to increase the tree mass and strength of visual image

Elements:

1. **Plant a cluster of oak trees at the high point** to serve as a "prospect refuge" sitting area and to emphasize the otherwise open ridge.

2. **Plant oaks at entrances as part of the "signature"** and identity of the Park
(See Main Entrance/ Earthen Trace Drawing p. 32)

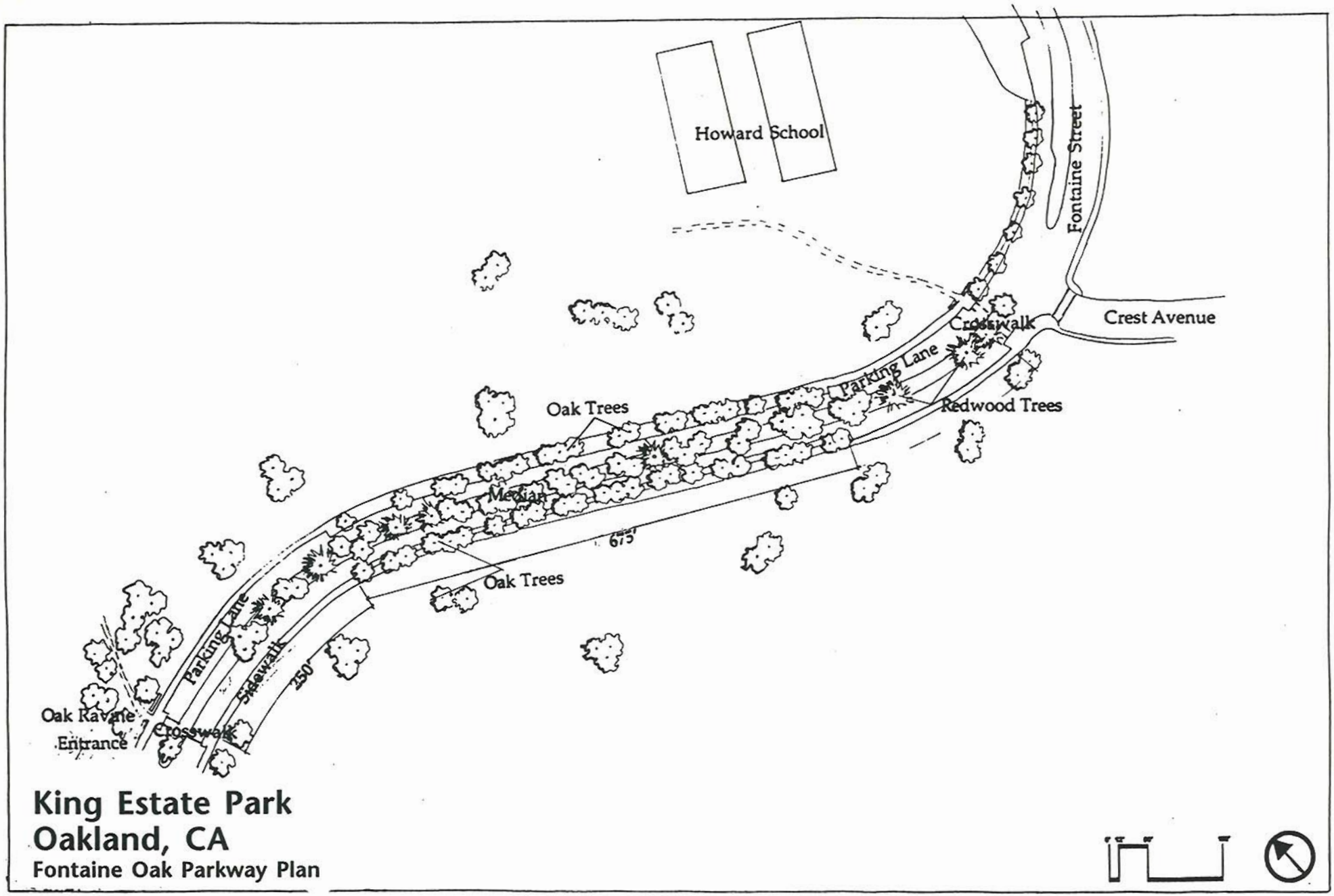
3. **Plant additional oaks in ravine and along Oak Ravine Trail** west of Howard School down to meet Fontaine Street above Golf Links Road.

4. Create **Oak Parkway** along Fontaine Street. Oaks will be planted on both sides of Fontaine and along the median to create a canopy effect. The thick oak plantings, along with the new configuration of the roadway will serve to "knit" the two sides of the Park together. This reconfiguration will include: widening the median; narrowing the street from two to one lane in either direction; adding a bicycle lane in each direction. The Fontaine Oak Parkway will serve a unique function for those city residents who simply drive by the site.
(See Fontaine Street/Oak Parkway Plan p. 28 and Sections p. 29)

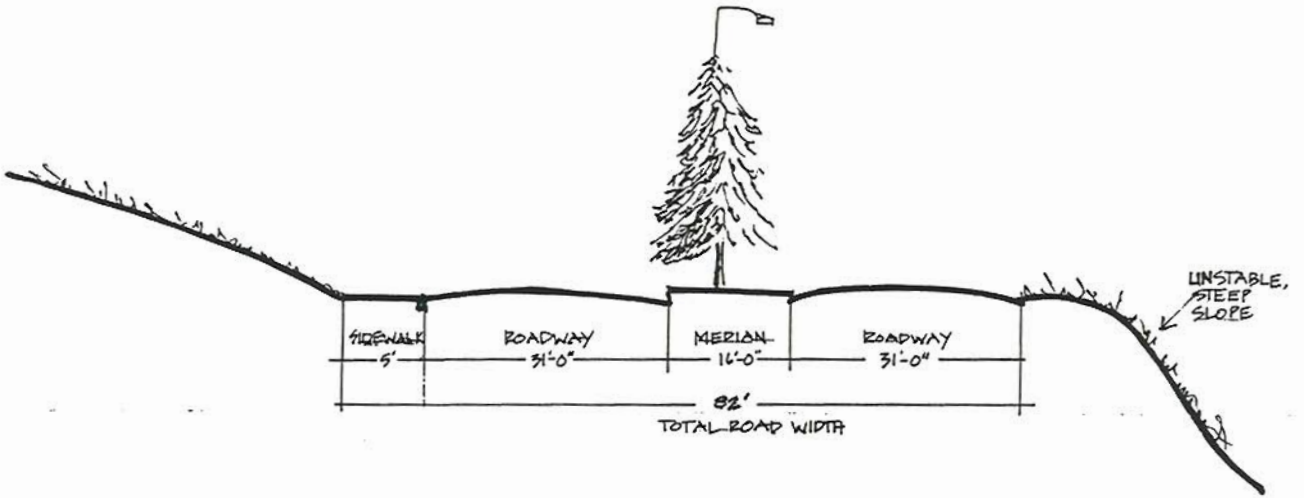
5. **Plant oaks to replace existing acacias in hollow west of the Tot Lot** in a Woodland cluster at the center of the hollow and spreading into Oak Savannas at the edges.

6. **Plant oaks to replace existing fire prone trees** (e.g. Monterey Pines, Cedar) around both school sites as partial visual screens. At Howard School, this drifting tree mass will recall the phantom peak of the hill, graded flat to build the school.

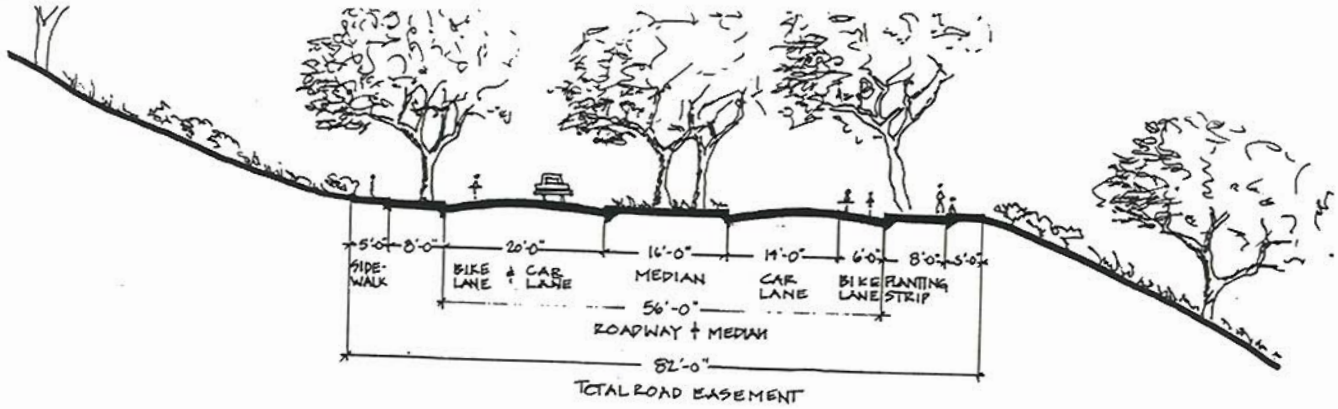
7. **Plant oaks, widely spaced and "limbed" up** (branches pruned to 8 feet) in fuel breaks along site boundaries as fire protection and to define the edge of the site.



King Estate Park
Oakland, CA
Fontaine Oak Parkway Plan



Section - Fontaine Street



Section -- Proposed Fontaine Street

Objective B: Create peaceful and contemplative sitting areas in oak "dells"

Elements:

1. A **swing underneath a lone oak** west of Howard School.
(Please see Site Plan p. 14 or Facilities Maps p. 34 for exact location of swing)

2. **Several solitary or small group sitting areas in oak dells** in the ravine below Howard school, on the terraced area on the south side of Fontaine Street, in Oak/Toyon Savannah on east facing slope below high point and in the (future) Tot Lot oak grove. Areas will be visible from the outside to address safety concerns.

Here, In This Place for Everyday

Park Facilities, Safety, Signage Entrances, & Accessibility

Goal 5: Create entrances and a Park design welcoming and accessible to visitors inclusive of age, social grouping, and differences in mobility

Objective A. Create physically accessible and inviting entrances.

Elements:

1. Design of entrances to include Park signage and earthen wall "traces", inviting and defining a sense of entry and representing a "cared for" Park identity.

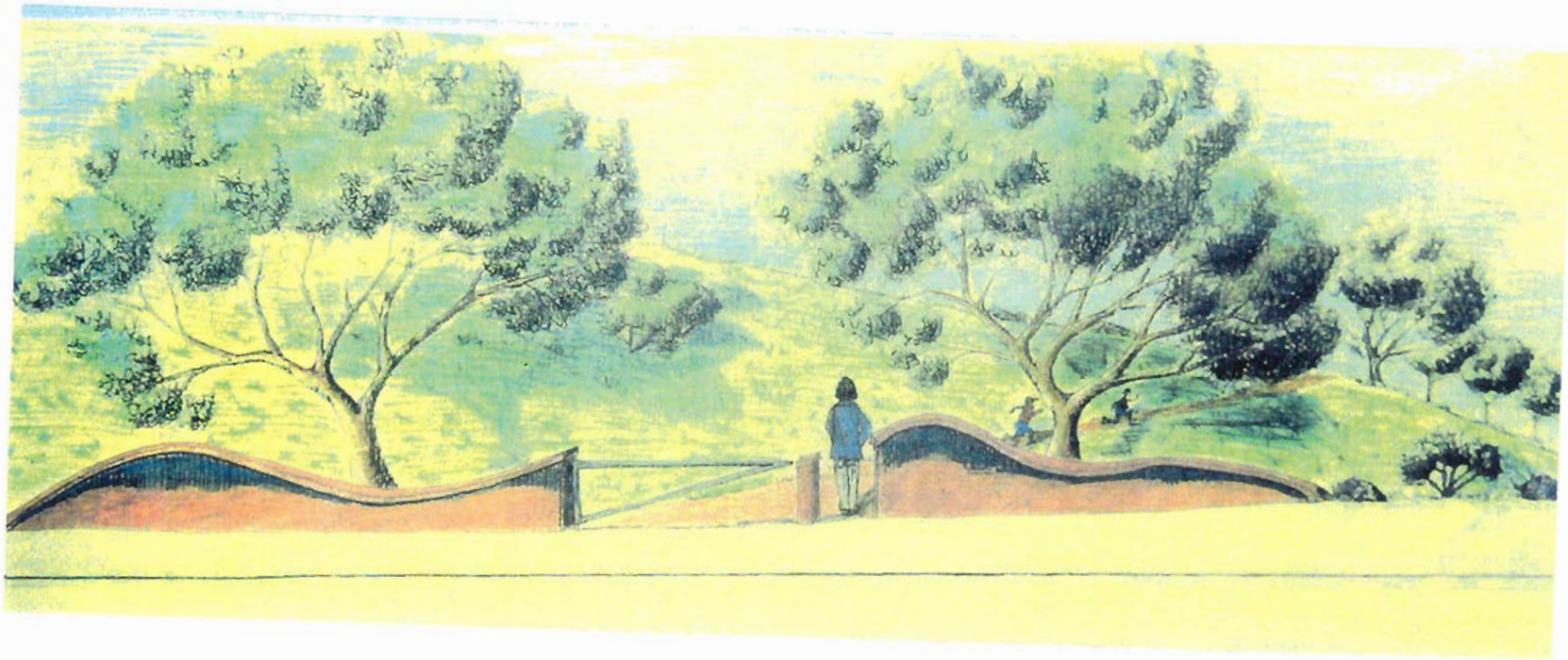
2. **Main Entrance** (Meadow Entrance) on Fontaine Street north of Howard school.
   - slopes ≤ 8% (universally accessible)
   - paved walkway
   - sight-line into Park to assure safety
   - nearby parking
   - universally accessible entrances (well-sited curbs, ramps, accessible turnstiles)

(See Main Entrance/ Earthen Traces p. 32)

3. **Universally accessible parking** on Fontaine Street at Main Entrance, at 82nd Avenue tot-lot, near Orchard Entrance and at the High Point off of Crest Avenue. This parking area will provide spaces close to entrances, large enough to accommodate wheelchairs, and with accessible slopes into Park.

4. **Universally accessible portable toilets** at edge of Saddle Meadow and at tot-lot.

5. Signage at points of entry which clearly identifies Park and orients visitors and identifies trail surfaces and steepness of trail.



Main Entrance/ Earthen Trace Drawing

Goal 6: Integrate Park with the everyday rhythms of the community

Objective A. Provide a site design and range of facilities which encourage everyday use for all user groups.

Elements:

1. **Tot-lot play area on 82nd Avenue** for young children and families. Lot will have play ground equipment, such as swings, slides and a jungle gym as well as dirt mounts, a sand box, and ramps. Lot will also use the natural hill slope as a setting for slides and swings. There will also be a grass free play space as well as several benches for parents to gather and watch their children. Tot lot will be developed in phases, beginning with vegetation management (including grass turf) and improving the roads and pathways for better safety, circulation and access. At each phase of implementation, the impacts on the neighborhood will be assessed and the input of the neighbors will be actively sought for the next phase.
(See High Point/ Tot lot Plan p. 16)

2. Picnic areas on saddle meadow to encourage family and recreational use.

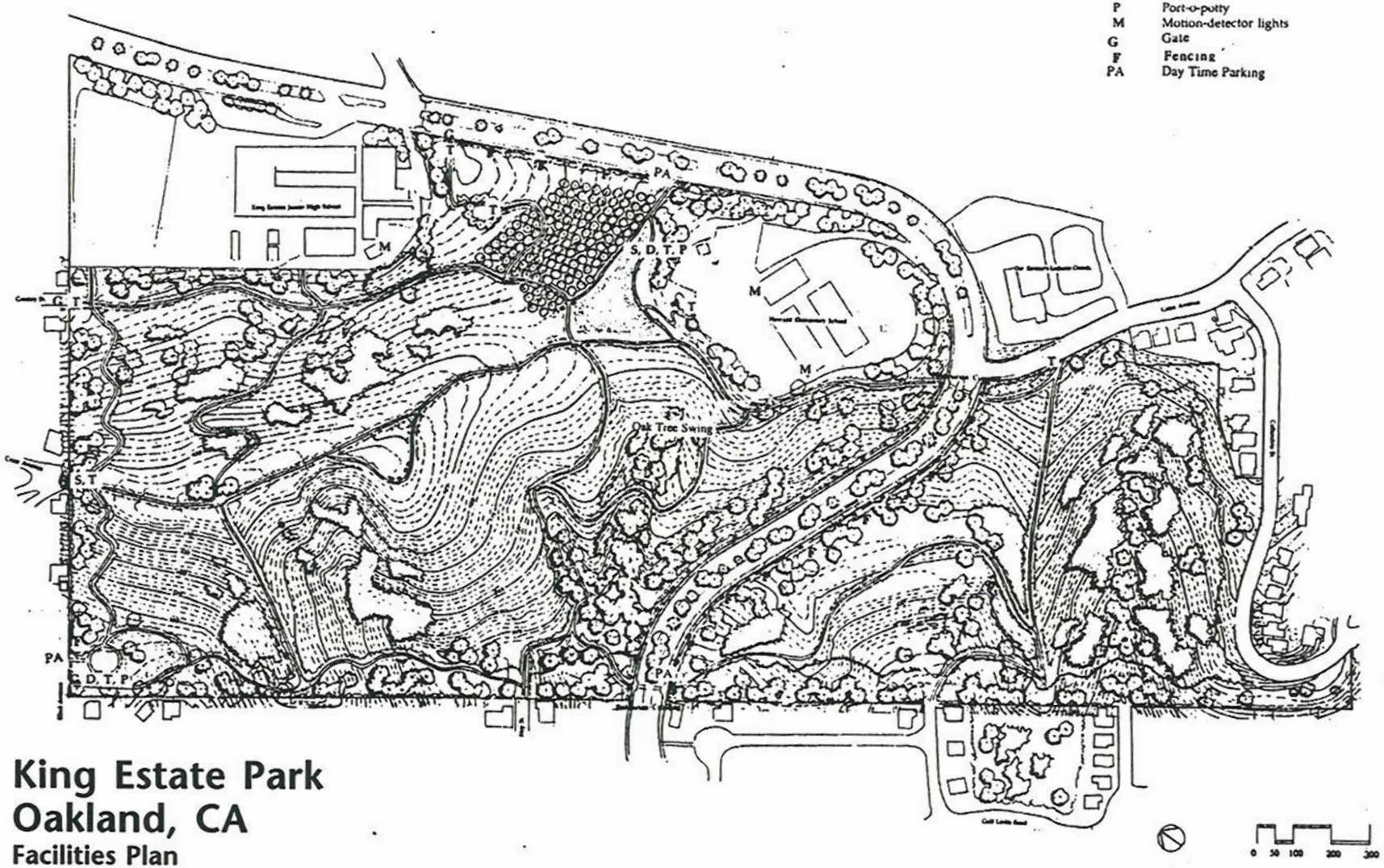
3. Outdoor classrooms to integrate school functions into the Park

4. **Drinking fountains** in the tot-lot and near the main sitting area

5. **Trash cans** will be placed in the main sitting area, at the tot-lot, and in the Peace Grove.
6. **Portable toilets** will be provided near the Orchard Entrance and near the tot-lot.

7. **Bag dispensers** near the main entrances for dog walking.

(See Facilities Plan p. 34 for locations of all facilities)



King Estate Park
Oakland, CA
Facilities Plan

Objective B. Enhance the park's sense of safety to encourage everyday use.

Elements:

1. **Solar emergency phones**
   - near main sitting area.
   - on ridge near Crest Avenue Entrance.

2. Some trails which stay on **clear, visible routes.**

3. **Range of trail widths** (8', 5', 3') to allow visitors to choose the trail type that feels comfortable.

4. Main sitting and social area on the saddle encourages group gathering to create critical mass of users and "eyes on the Park".

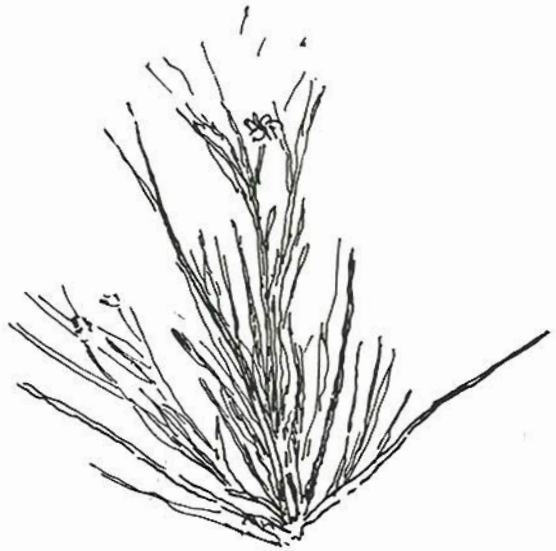
5. A **maintenance shed and office for OPR staff** in or near orchard

6. **Vehicle barriers consisting of large boulders with sturdy vegetation planting** (i.e. manzanita shrubs) along Fontaine Street and gates at all entrances to control vehicle access.

7. Aesthetically-pleasing **earthen walls around the tot-lot** for safety .

8. **Motion-detector lighting** around both schools to deter night-time use.

9. **Dusk to dawn Park curfews** in Park including Park parking areas.



Goal 7: Community will be involved in the on-going design, care, and life of the Park

Objective A. Create a Park in which visitors can "get their hands dirty" and mix the sweat of their labor with the Park.

Elements:

1. An **active community role in all elements of Park management** including fire management, safety, and recreation involving a liaison role with relevant City Departments.

2. Community and school involvement in the design, construction, of site features: i.e. tot lot, "traces", entrances, trails, and fences,.

3. Community involvement in native plant community restoration.

4. Active community and school involvement in the planning, development and maintenance of the orchard

5. Community organized **Park clean up** and on-going maintenance.

6. **"New tradition" events** (for example sunset ridge walk, spring wild flower walk, harvest festivals, kite festivals) run by community members and organizations.

Community Participation at Work: Building Earthen Wall "Traces" and Ceramic Caps
(Sustainable San Domenico Project, Ecological Design Institute, San Rafael, CA)

We Cultivate Community

Community Participation and Active Involvement

Goal 8: Create a Park that invites the visitation and participation by the diverse local and surrounding communities

Objective A. Create social gathering areas.

Elements:

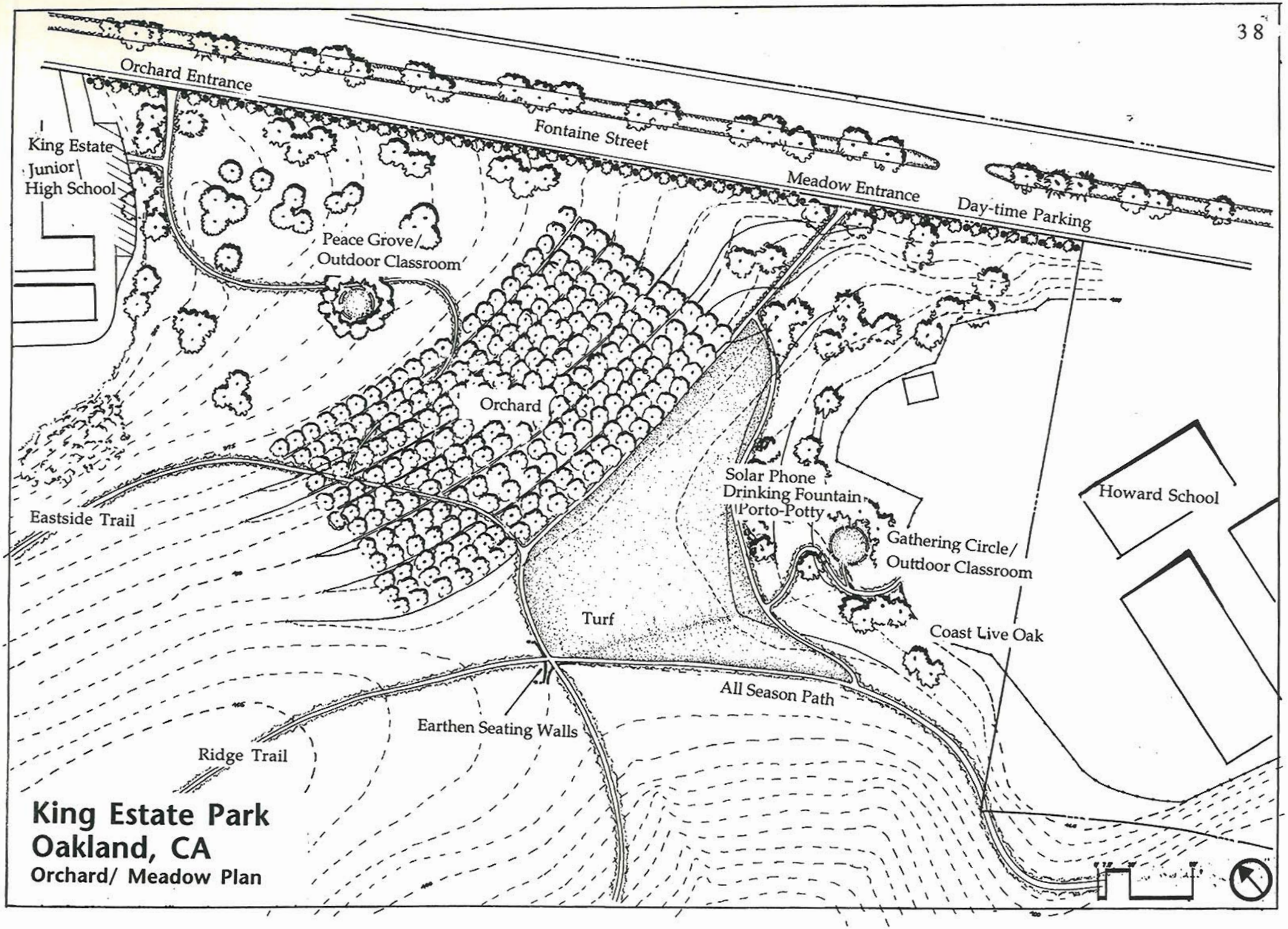
1. Main **social gathering** area on the saddle just north of Howard School

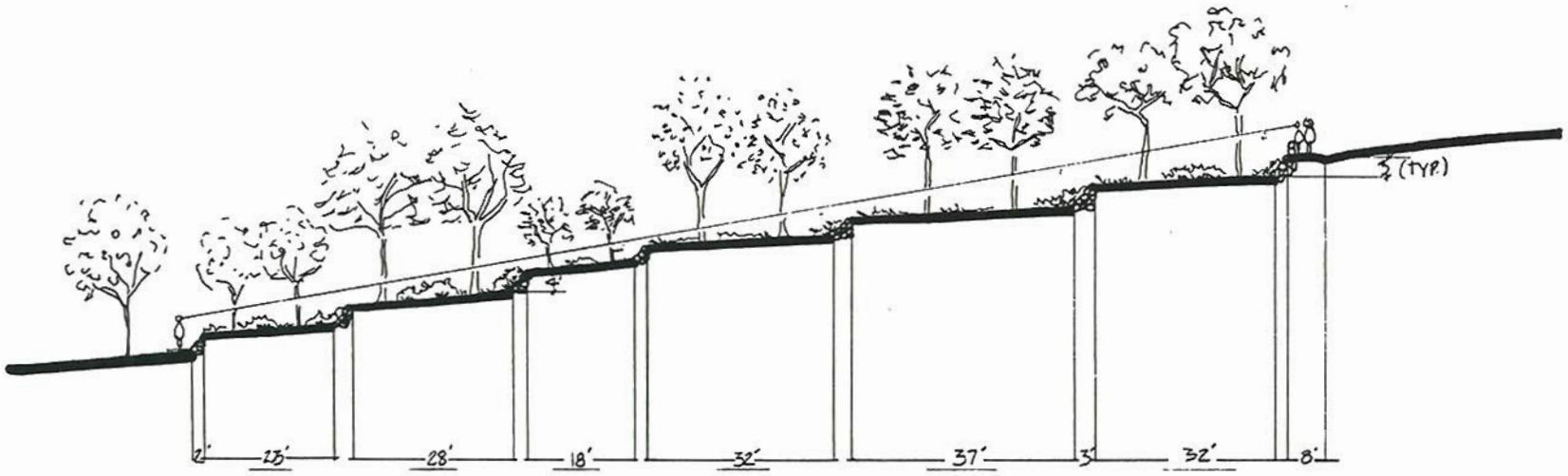
2. Circular "**Peace Grove**" of olive trees between schools will be formalized and enhanced to create a circular form with a sitting area and classroom in the middle.

3. An **Orchard** of apple, pear, and other fruiting and non-fruiting trees (roughly 200) will be planted on low stone terraces between the schools. The goal is to develop a community orchard where trees will be adopted by individuals and groups, as well as by school classes. A mix of fruiting to non-fruiting trees will be determined by the extent of interest adopting and caring for the trees. A second alternative is to contract out to a local farmer to maintain the orchard and harvest the fruit. (See Orchard/ Meadow Plan p. 38 Orchard/Terrace Section p. 39, and p. 63 in the Fire and Vegetation Management Section)

4. Trails which converge at main sitting area (on saddle) to bring people together and encourage socializing.

5. Tot-lot will create a multi-generational gathering spot with easy access for community on northwest edge of the Park.


Orchard Entrance
Fontaine Street
King Estate
Junior
High School
Meadow Entrance
Day-time Parking
Peace Grove/
Outdoor Classroom
Orchard
Solar Phone
Drinking Fountain
Porto-Potty
Howard School
Eastside Trail
Gathering Circle/
Outdoor Classroom
Turf
Coast Live Oak
All Season Path
Earthen Seating Walls
Ridge Trail
King Estate Park
Oakland, CA
Orchard/ Meadow Plan



Orchard Terrace Section

View of Saddle from Ridge Drawing

Objective B. Encourage (and provide spaces for) community events in the Park.

Elements:

1. Grassy meadows on Saddle and at Tot lot can be used for:
   - music concerts
   - theater
   - poetry readings
   - festivals
   - kite flying events
   - educational events
   - recreational sports

2. Two social gathering/outdoor classroom spaces, in Peace Grove and above grass meadow at Saddle.

3. Orchard can be used for community harvest festivals.

4. Oak Ravine, Wild Flower Loop, and Glenn Daniel Memorial Trails can be used for informal and formal nature walks.

Goal 9. Promote physical and operational integration of the site with itself and with the surrounding community

Objective A. Promote shared use of school and Park facilities

Elements:

1. **Joint use of schools recreational facilities** (for example, north section of Howard Elementary School lot, King Estate athletic fields)

2. **Use of the Park by the schools** as a site for the development of problem-solving, planning, industrial arts, and landscaping skills

3. Create **entrances to the Park where students currently travel**
   - at one of the existing holes in the King Junior High north-south fence.
   - on north side of Howard school. Entrance used for students access to and from home and to access outdoor classroom and grassy meadow.

Objective B: Create trails and other design elements which link the different areas of the Park together and which link to other recreational/ open-space areas and functions in the city.

Elements:

1. Create sight-lines between the schools and from the school into the Park by pruning up and removing selected existing vegetation.

2. Create all-weather paths connecting the schools and other key areas in the Park.

3. Fontaine Oak Parkway will knit the two sides of the Park together.

4. A trail which leads from the tot-lot south up to east-west running ridge and welcomes visitors from the west into the rest of the Park.

5. Entrances placed to invite larger city population.
- Meadow and Peace Grove Entrances will open eastward to welcome visitors from newly purchased City Park land at the former Oak Knoll Naval Facility.
- 82nd Street entrance will welcome visitors from the neighborhoods to the south of the Park

6. Connect with the city/regional bike trail along Fontaine Street. Possible other connections to the Bay Area Ridge Trail.

7. Wildlife corridor to Arroyo Viejo Creek. (This will need to be studied in more detail) Arroyo Viejo corridor may also include connection to Bay Trail.

Objective C: Create landmarks which identify the Park to on-site visitors and to the surrounding city.

Elements:

1. Fontaine Oak Parkway including a line of oaks and existing redwood trees in the median.

2. Orchard, visible from Fontaine Street, the 580 Freeway, and the Oakland Hills.

3. Oak cluster on the ridge high point visible from the neighborhoods west and east of the site.

4. Entrance gate structures designed to reflect the topography of the ridge line including oak trees in the "ravines."

5. Seasonal **wildflower blooms** visible from the west-- including the Coliseum BART and the 880 Freeway.
(See "View West from Wild Flower Loop Drawing" p. 21)

Section IV

Fire and Vegetation Management

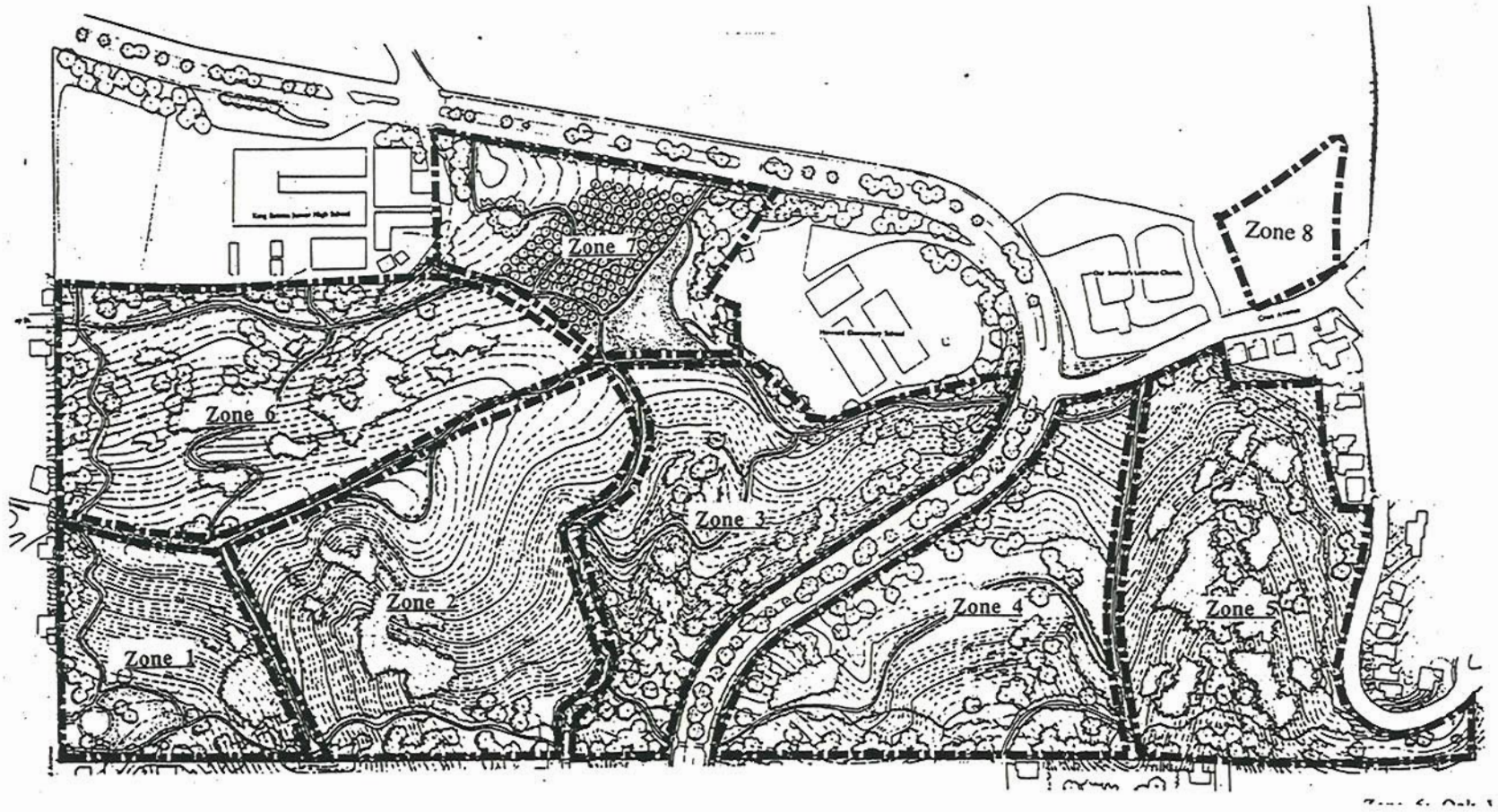
Vegetation and Fire Management Plan

The King Estate Park Master Plan seeks to balance ecological and social goals in creating a park that provides people recreation, incredible views, and contact with nature. The character and health of the plant and animal communities inhabiting King Estate Park will create the setting and define the character of the park as a vibrant, natural open space. Over many years, the park's landscape has deteriorated due to various land uses and neglect. Therefore, this plan proposes an extensive, though gradual, restoration of the ecology of the plant and animal communities native to the site. This vegetation and fire management plan will guide the development of vegetation management techniques in order to create this setting and to provide fire safety for surrounding residences, schools and site visitors. Each of the goal statements below reflect a careful choosing of priorities for the park, and the means for achieving each goal has been integrated and balanced with the other goals.

Given the park's residential urban context, managing and reducing the park's fire hazard is critically important. Reducing the fire hazard will result both from fuel reduction techniques and the restoration of native plant communities that create lower fuel loads and are more resistant to fire. A combination of methods, prescribed burns, revegetation, goat grazing and hand crews, are proposed as integrated management tools to reduce fuel loads and to assist in restoring native plant communities.

Summary of goals

Goal 10: Restore and enhance the native plant communities of King Estate Park.
Goal 11: Design the park for fire safety for surrounding residences and park users.
Goal 12: Create and support habitat areas for wildlife.
Goal 13: Involve community groups and school children in the process of restoring the park landscape and reducing the fire hazards.
Goal 14: Make the vegetation and fire management plan practical, manageable, and economical for Oakland Parks and Recreation staff to implement.



King Estate Park
Oakland, CA
Vegetation Zones Map

Vegetation & Fire Matrix

Zone	Existing Vegetation Type	Desired Future Vegetation Type	Perimeter Fuel Break	Fuel Reduction/Removal of Invasive Exotic Plants	Prescribed Burning	Native Plant Restoration/Plantings	Time to Reach Goal	Additional Comments
1	California Annual Grassland, Acacia stands	California Perennial Grassland	1. Construct trail along north boundary to delineate interior edge of Fuel Break 2. Layout and grade new road alignment along west boundary to delineate interior edge of Fuel Break. 3. Begin Goat Grazing bi-annually w/in Fuel Break.	Remove stands of Acacia along west perimeter. Manage to replace California Annual Grassland with California Perennial Grassland. See Vegetation Management Plan text for further explanation	Prescribe burn on 3-5 year rotation. Protect Oaks by pruning up and removing any fuel ladders. Burn timing ? to competitively disadvantage annual grasses.	1. Plant Coast Live Oak acorns/seedlings in small clusters (1-4) in fuel break 2. Seed native grass, and forb (including wildflower) species adapted to steep slope, clay soils and western aspect after burning	Estimated 10-15 years before noticeably improved perennial grass cover. Once well established perennial grassland should be self-sustaining with 5-7 year burn regime.	Replacing California Annual Grassland (which despite the name consists largely of invasive exotic grasses) with California Perennial Grassland will reduce the fuel load, increase fire resistance, and increase local biodiversity and habitat value.
2	California Annual Grassland, Coyote Brush Scrub, Acacia and French Broom Stands	California Perennial Grassland, North Coastal Scrub	1. Demolish old road bed and construct new trail along west boundary to delineate fuel break 2. Begin Goat Grazing bi-annually w/in fuel break	Remove Acacia along west perimeter. Manage to replace California Annual Grassland with California Perennial Grassland.	Prescribe burns: grassland on 3-5 year rotation, North Coastal Scrub on 10-15 year rotation. Time burning to competively disadvantage annual grasses. Prune up Coast Live Oaks and other trees to protect in prescribed burns.	1. Plant Coast Live Oak acorns/seedlings in clusters (1-4) in fuel break 2. Seed native grass, and forb (including wildflower) species after burning 3. Seed plant North Coastal Scrub species (see list) to diversify "pioneer" stand of Coyote Brush.	10-15 years to noticeable improvement of perennial grassland cover, increase in North Coastal Scrub diversity. Oak seedlings will establish in 3-5 years, but will take 15 years before approaching tree-like proportions.	This south facing drainage could develop a diverse stand of North Coastal Scrub. It is already favored by birds and could become more so. Regrading of the area at the bottom of the slope would improve drainage patterns into Zone 3.
3	California Annual Grassland, North Coastal Scrub, Oak Riparian	California Perennial Grassland, Coast Live Oak Woodland with North Coastal Scrub	Establish Fuel Break by removing Acacia below housing and plant widely spaced clusters of Coast Live Oaks. Plant fire resistant plantings along Fontaine (eg. Salvia Sonomensis, Epilobium californica) to prevent roadside fire from spreading upslope.	Remove Acacia and French Broom in drainage. After Coast Live Oak plantings established, remove Monterey Pine et at. at Howard School. Replace California Annual Grassland with Native Perennial Grassland. Prune up Oaks and remove fuel ladders underneath.	Prescribe burn grassland every 3-5 years. Prescribe burn North Coastal Scrub every 10-15 years. Prescribe burn Oak Riparian 20-30 years.	Seed native perennial grasses, wildflowers, and forbs after prescribed burns. Plant fire resistant ground cover and small clusters of Coast Live Oak along Fontaine (See Fontaine Plan). Plant additional Coast Live Oak in riparian zones (See Site Plan).	In 10-15 years will see increased cover of native perennial grasses and many small oak seedlings. In thirty years will see strong development of Oak Riparian Woodland in the drainages just above Fontaine.	This Oak Riparian zone is currently the only large stand of Coast Live Oak on the site. Here one can feel 100% surrounded by nature. Extending and thickening this stand of trees will improve this experience.
4	California Annual Grassland, North Coastal Scrub w/ Oaks	California Perennial Grassland, North Coastal Scrub with Coast Live Oak	1. Construct trail along west boundary to delineate interior edge of Fuel Break 2. Begin Goat Grazing bi-annually w/in Fuel Break. Plant fire resistant species along Fontaine St. (See list in Appendix)	Begin reducing fuel loading and connectivity as soon as possible by cutting a mosaic of fuels (see diagram in plan), removing fuel ladders, and pruning up Oaks (see diagrams in plan). May burn piles of cut brush.	Prescribe burn grassland every 3-5 years. For North Coastal Scrub w/ Oaks must create fuel mosaic and burn piles of cut fuel. After clearing away from under Oaks may prescribe burn Scrub/Oak area every 10-15 years.	Plant fire resistant ground cover and small clusters of Coast Live Oak along Fontaine St. Seed native perennial grasses, wildflowers and forbs after prescribed burns.	In 10-15 years will begin to see transition from annual to perennial grassland. In that time will also see many small Coast Live Oak trees developing, though it will be some thirty years before there are any large trees.	The plantings of Coast Live Oak in this area will cause it to develop into more of an open Oak Woodland type habitat with less cover in North Coastal Scrub. The heavy grading of the land into terraces from the construction of Fontaine will persist.
5	Oak Riparian, North Coastal Scrub	Coast Live Oak Riparian with North Coastal Scrub	1. Begin establishing 100' fuel break along south perimeter w/ goat grazing annually. Revegetate edges w/ more fire resistant species than tall annual grasses.	Begin reducing fuel loading and connectivity as soon as possible by cutting a mosaic of fuels (see diagram in plan), removing fuel ladders, and pruning up Oaks (see diagrams in plan). May burn piles of cut brush.	Prescribe burn upland grassland edges every 3-5 years. Create fuel mosaic and burn piled slash. Will be difficult to ever prescribe burn in this area due to topography and vegetation.	Aggressively remove annual and exotic grasses and forbs in grassland edges. Revegetate with perennial grasses and forbs.	10-15 years to noticeable improvement of perennial grassland cover, increase in North Coastal Scrub diversity. Oak seedlings will establish in 3-5 years, but will take 15 years before approaching tree-like proportions.	As the primary wildlife area, management efforts must be minimal but effective to protect upslope housing from high intensity fire. Revegetation with perennial grasses within fuel break will reduce need for goats which degrade the slope and vegetation.
6	California Annual Grassland, Exotic Scrub w/ Toyon, Oak	Oak Savannah	1. Construct trail along north boundary to delineate fuel break interior edge. Begin goat grazing annually. After perennial grasses established goat graze less often and use hand crew moving or small burns to reduce build up of dead grass material.	Remove eucalyptus and broom, and cotoneaster. Open up (remove shrubs and prune up) area along school boundary. Prune up Oaks and Toyon in preparation for prescribed burns and to remove fuel ladders.	Prescribe burn open areas with care or exclude areas near Oaks and Toyon until trees have grown larger	Revegetate with perennial grasses and forbs	10-15 years to noticeable improvement of perennial grassland cover, increase in North Coastal Scrub diversity. Oak seedlings will establish in 3-5 years, but will take 15 years before approaching tree-like proportions.	Strong potential for eventual Oak Savannah with Toyon in this area. Toyon will get quite beautiful and distinctive as age, and will provide great bird habitat.
7	California Annual Grassland w/ Exotic Scrub/Trees	Orchard of Flowering/Fruiting Deciduous Trees, Turf Grass, California Perennial Grassland with Large California Deciduous Trees	Establish Fuel Break along Howard School. Remove scrub to separate clusters into small islands. Goat grazing necessary until orchard, turf meadow planted	Remove fire receptive pine and cedar along school edge after relplacement oak seedlings/acorns and planting plan prepared. Remove Cotoneaster and other invasive exotic species around both schools and in olive grove area.	Not necessary unless Orchard and Saddle Meadow Plan not to be carried out	Plant large deciduous trees throughout lower area below Peace Grove. May want to keep annual grasses and mow for "turf".	Depends largely on funding for Orchard and Saddle Proposals. Deciduous tree planting should wait until review of drainage structure at bottom of slope (if not adequate, earth works required). Orchard will take 10 after planting to mature.	This area must be managed to keep fuel loads low and disconnected until plan for Peace Grove, Orchard and Saddle ready for construction. Keep fuel loads low but maintain slope vegetation to prevent erosion and slides.
8	North Coastal Scrub	North Slope Oak Woodland	Establish 100' Fuel Break with hand crews and goats and maintain every 2-3 years	Separate flammable and heavy tree and shrub masses w/in fuel break. Create fuel mosaic. Prune up large trees.	None currently planned in this area due to low priority and lack of area definition.	None currently planned		

Goal 10: Restore and enhance the native plant communities of King Estate Park.

Discussion:

As described in the Design Framework, the King Estate Park is designed to expose visitors to the open views from the ridge line and to lead them to explore the surrounding Grassland, North Coastal Scrub, Oak Riparian, and Oak Savannah plant communities. These plant communities are described and mapped on the "Vegetation Zones Map".

Objective 1: Manage each plant community within the park with both short and long term objectives to increase their health and habitat value over time.

Elements:

1. Define vegetation zones by sub-watershed and vegetation types. (See "Vegetation Management Zones Map")

2. Manage each of the Zones 1-8 as indicated on "Vegetation and Fire Management Matrix" plan with specific short and long term objectives.

3. Use vegetation and fire management techniques to support a mosaic of diverse multiple aged plant communities through the combination goat grazing, hand crews, prescribed burns and plantings. In this way, a spectrum of different habitats and niches for wildlife will be created, and an entire plant community won't become over-aged at the same time.

Objective 2: Long term restoration of native perennial grassland (Coastal Prairie) along the ridge line and slopes of the park including wildflowers and herbaceous plants.

Elements:

1. Increase the percentage of native perennial grasses from an estimated 15% to 50-75% over a 15 to 25 year time period.
2. Establish a community and/or school program to collect native grass, wildflower, and forb seeds and to plant the seedlings after they have been propagated by a native plants nursery. Seedling should be planted in the fall to take advantage of cooler conditions and fall rains.

   All native plant seeds should be collected on or near the King Estate site to avoid genetic contamination. Planting seed from another locale could reduce the special adaptations of on-site native plants through interbreeding. Please see "Native Plant List for Grassland Restoration" in Appendix.

3. Use goat grazing in spring time to limit seeding efforts of annual grasses.

King Estate Park
Oakland, CA
Vegetation Plan

Scale 1"= 200'

4. Use prescribed burns in late summer to prepare soil for seeding native grasses and reduce the competition from annual grasses.

5. When grading roads or facilities on site, seed road and trail edges with native grasses, or other native species to reduce influx of weed species.

6. Contract with a grassland ecologist to review and further develop plans for grassland restoration.

Discussion:
There are many grass species native to the site varying in size, form and hue. For example, Blue Wild Rye (*Elymus glaucus*) grows throughout the eastern slope of the site and amidst the Coyote Brush in the western ravines and forms a thick coarse bunch growing 2'-4' in height of a glaucus blue shade . Purple Needle grass (*Stipa pulchra*) grows throughout the site, is medium textured growing 1'-2' in height, and casts purple highlights in the spring. California Melic Grass (*Melica californica*) grows in the western ravines, is finely textured, under 18" in height and colored bright apple green. (Please see "List of Native Plant Species" in Appendix A for additional native grassland species found on site).

Native perennial grasses coexist well with wildflowers and herbaceous plants such as the California Poppy and Sky Lupine. As opposed to annual grasses that grow in continuous masses and "choke out' the wildflowers, native perennial grasses grow in separate bunches leaving space between them for the wildflowers. Perennial bunch grasses in contrast to annual grasses live for many years. They stay green at the base all summer and "green up" earlier in the fall making them more fire resistant than annual grasses. The bunch, or cluster at the base of the native perennial grasses inhibits air flow which will also resist or slow down the process of burning in addition to the living (green) material at the base in late summer.

Objective 3: Diversify the North Coast Scrub community of plants in Zones 2, 4 - 6 while limiting its spread into park grasslands.

Elements:

1. Enhance north coastal scrub areas for habitat value and visual and aesthetic interest by planting some additional native shrubs for example Elderberry *(Sambucus mexicana)*, Monkey Flower (*Diplacus sp.)*, Manzanita *(Artostaphylos palllida)* , Toyon *(Heteromeles arrbutifolia)*.. Please see "Native Plant List for North Coastal Scrub Restoration" in Appendix for additional species names.

2. Remove aggressive exotic species: for example the Scotch Broom (*Cytisus sp.)* on east side near King Estates school, and on west side at Fontaine

and the Oak Ravine Trail. *Cotoneaster* spp., and *pyrocanthus* sp. located on the eastern slope of the site should also be removed.

3. Use prescribed burning in mid to late summer on a 10-15 year rotation to prevent build up of over mature and dead woody material, to recycle nutrients, and to keep scrub from spreading over grasslands.

4. Use hand crews and goat grazing in the spring to maintain lower fuel loads in the perimeter fuel break and other areas inappropriate for prescribed burning. The goats would graze these areas on an annual basis, while the hand crews would come into each area on a three to five year cycle.

Discussion:
The North Coastal Scrub plant community on King Estates Park grows in the ravines on the West-facing slope and throughout the east facing slope. (Please see "Vegetation Zone Map", Figure Z. It provides important wildlife habitat and some of the most attractive native plants on the site. Currently most of the scrub areas on the site are entirely made up of Coyote Brush (*Baccharis pilularis*) which is a "pioneer" scrub species likely to invade the grasslands. Additionally, there are some areas dominated by aggressive non native species like French Broom (*Cytisus sp.*), and *Cotoneaster* spp. that also form impenetrable thickets. The vegetation management plan intends to limit the expansion of the North Coastal Scrub and to diversify the scrub plant community by planting additional scrub species found elsewhere on the site.

The southernmost ravine on the site supports a diversity of shrub species and provides excellent wildlife habitat, and the goal is to encourage similar development of the other scrub areas. This will be accomplished through removal of some Coyote Brush and plantings of other scrub plant species, and through prescribed burning on a 10 to 15 year rotation. The prescribed burning will remove dead plants and stimulate new growth.

Limiting the expansion of North Coastal Scrub will preserve the open character of the upland grasslands, and reduce the amount of dense thickets of brush. This will enhance park visitors' safety and comfort by providing view corridors through the vegetation. In the dynamics of wildland fire, old ("decadent") scrub often acts as the connecting link between a grassland fire and a more severe scrub and woodland fire.

Objective 4: Assist the development of Oak Woodland plant communities in Zones 3 - 6 on the east slope, and the development of Oak Riparian plant communities in the ravines on the west slope.

Elements:

1. Plant additional Oaks (*Quercus agrifolia*) in the ravines on the west side of the ridge and other associated Oak Riparian plant species such as Elderberry (*Sambucus mexicana*), Toyon (*Heteromeles arbutifolia*), California Bay Laurel (*Umbellaria californica*). Please see "Plant List for Oak Riparian Restoration" in Appendix B.

2. Plant additional Oaks (*Quercus agrifolia*), Big Leaf Maple (*Acer macrophyllum),* and Buckeye (*Aesculus califonica*) on the East slope and other associated plants of the Oak Woodland Community. Please see "Plant list for Oak Woodland Restoration" in Appendix B.

3. Remove exotic *Acacia, Cytisus, Eucalyptus spp..* that form dense thickets and compete for sunlight and water with native plants.

4. Protect Oak Woodland and Oak Riparian areas from high intensity fire to realize the long term investment in growing large, mature trees in all zones.

Discussion:
There is a strong potential for developing an Oak Woodland or Oak Scrub community on the east side of the ridge with long term management. Like the North Coastal Scrub, the Oak Woodland community could be fostered by planting additional Oaks (*Quercus agrifolia*) and other associated species, for example Big Leaf Maple (*Acer macrophyllum),* California Bay Laurel *(Umbellaria calilfornica),* and Toyon *(Heteromeles arbutifolia*).

The Oak Riparian communities occur along the seasonal drainages of the site. In the long run these trees will grow taller and create a larger canopy shading out some of the understory plants provided they are protected from a high intensity fire. They would also benefit from plantings of additional Oaks and associated species.

Goal 11: Design the park for fire safety for surrounding residences and park users.

Discussion:
There are three main elements to consider in planning to reduce the risk of fire at King Estate Park. The first is the context of high risk due to the Oakland area's dry climate, and the predominant grassland and scrub vegetation throughout the park. The second is how to manage the vegetation to reduce the risk of fire. The third is how to design program elements such as entrances, signage and trails to reduce the risk of high intensity fire, and increase the safety of firefighters, residents and park users in case of fire.

Objective 1: Accurately Assess the Risk of Fire at King Estate Park, and Develop Short and Long Term Strategies to reduce that risk.

Elements:

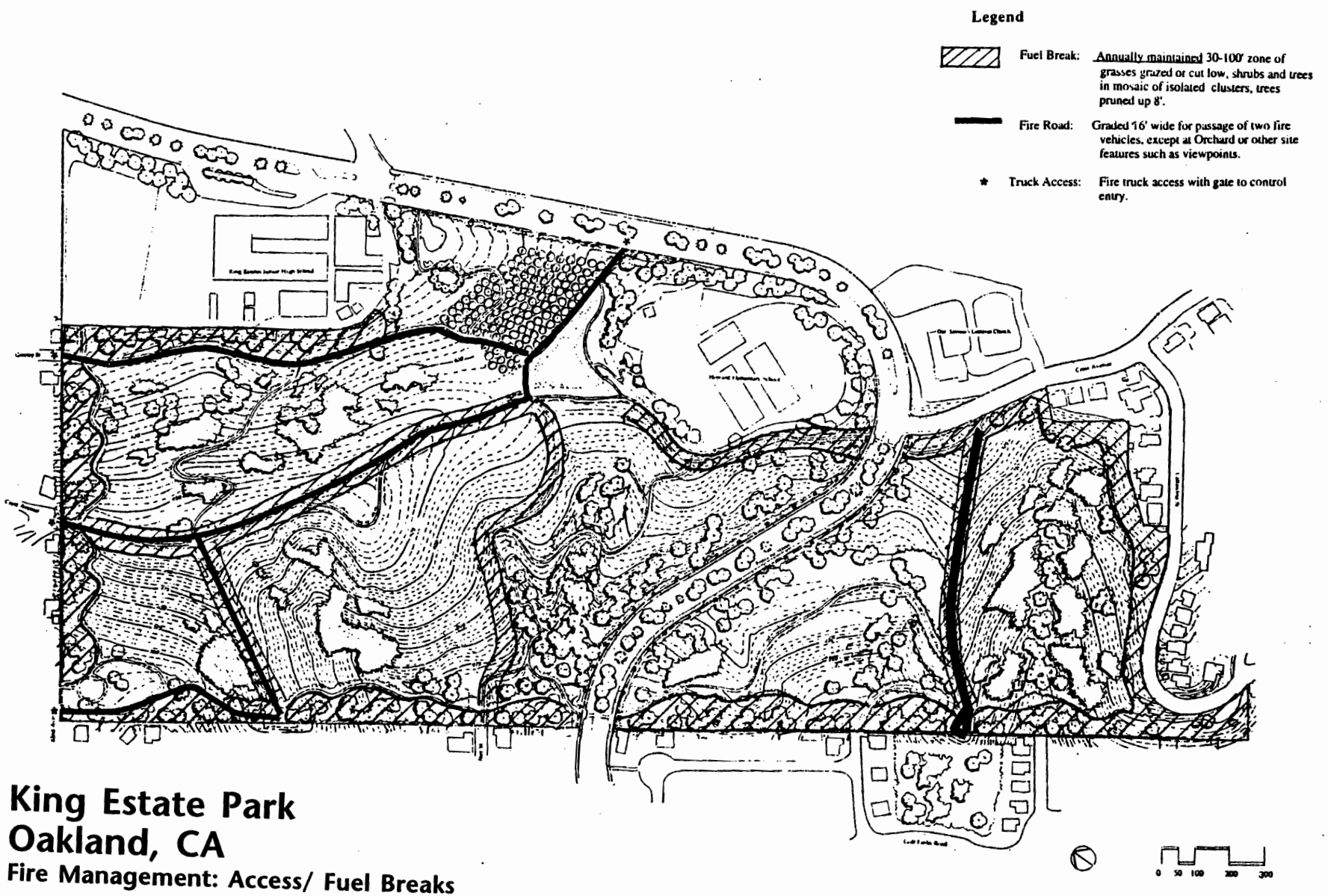
1. Design fuel and fire break system throughout the park to limit the potential for larger fires. Please see Fire Management: Access/ Fuel Breaks p. 53 delineating the fuel and fire breaks throughout the park.

2. Work with neighborhood and community groups to design a fire safety program to include: limiting park access during critical fire days, establishing a fire watch volunteer patrol, distributing information and assisting residents in making home fire safety improvements . Please see Homeowner Fire Safety Instructions Appendix C.

3. Develop and implement a long range vegetation management plan that will reduce the build up of dry fuels and encourage the establishment of less fire prone plant communities. This includes the use of goat grazing, hand crew removal of brush and limbing up of trees, and rotational prescribed burns. (See Figure - Fire/Vegetation Management by Zones for specific details)

4. Inform the public of fire safety issues and programs by installing park signage indicating the seasonal level of fire danger and explaining fire precautions in place.

Discussion:
The worst fires in California occur during a number of critical days during the year when air temperature rises to 100 degrees, relative humidity drops to near zero and hot dry north or east winds blow at high velocities. Fires burning under these conditions have two characteristics: rapid spread and high intensity. Oakland is defined as having a Class II Critical Fire Weather Frequency, meaning Oakland experiences an annual average of 1 to 9.5 days of this very high to extreme fire weather. The risk of high intensity fire at King Estates peaks between mid summer and early fall due to the



King Estate Park
Oakland, CA
Fire Management: Access/ Fuel Breaks

drying out of the annual grassland, and the occurrence of the critical fire weather described above. The site has faced as many as 15 fires every summer and fall for the past 10 years (estimate by Ron Carter, Battalion Chief, Oakland Fire Department). Most of these fires have been set intentionally and all have been quickly and successfully put out by the Fire Department.

In the short term the site must be designed and managed to protect the adjacent schools and residences from fires coming out of the park. Adequate fuel breaks, fire fighting access and homeowner safety programs must be set in place. In the long run, steps must be taken to reduce the amount of dry fuel in park vegetation which would feed a high intensity fire. Over the long run the fuel loads will be reduced by encouraging the restoration of native, fire resistant plant communities through vegetation management techniques. Arson must be addressed through community watch programs, school education programs and park policing.

Objective 2: Coordinate fire management and vegetation management so they work together to enhance the visitor's experience of the park and to reduce the risk of a high intensity fire.

Elements:

1. Manage the vegetation of the park to increase the percentage of native plants, and create viable native plant communities.

2. Remove fire prone plant species, for example Acacia spp. and Eucalyptus. See High Fire Hazard Plant List, Appendix C.

3. Further develop a specific revegetation strategy for establishing more native perennial grasses on the site.

4. Use a combination of goat grazing, hand crew work and prescribed burning to implement the vegetation and fire management techniques by zone as described in Figure U. These strategies are much more effective together than applied singly.

5. Develop a contract or working relationship with a native plants nursery to propagate native seeds from on-site or nearby sources.

Discussion:
As outlined above, the long term strategy for reducing fire risks at King Estate relies principally upon reducing the fuel loads over time through fostering less fire prone plant communities. Managing each vegetation type to reduce fuels can make a tremendous difference in fire intensity and rate of spread. In order to reduce annual

maintenance costs, the long term vegetation management strategy at King Estate Park is to foster the develop of plant communities with lower fuel loads than those existing on the site today. The principal plant communities needing long term vegetation management are the grassland and the north coastal scrub.

Native California grasslands are largely made up of perennial bunch grasses that burn slower and cooler than non-native annual grasses. This is due to two main factors. Perennial grasses stay green longer in the summer, and green up earlier in fall because they live much longer than one year. More importantly, their tighter growth pattern stemming from a bunch at the base of the plant resists fire by limiting air flow. In contrast, air flows well through the stalks of bone-dry annual grasses making them burn fast and hot. The native grasses respond well to prescribed burning because it reduces their competition from the annual grasses. There would probably be fewer native grasses and wildflowers on the site today if it hadn't burned so often in the past. In general, fire will stimulate the recycling of nutrients and the regeneration of new plants and will inhibit the spread of plant and soil diseases.

Managing for native perennial grasslands at King Estate Park will involve coordinating goat grazing in the springtime, prescribed burning in the late summer, and the seeding of native grasses in the fall. The prescribed burns in the grassland should occur on a 3 to 5 year rotation to remove any build up of dead grass material. Prescribed burning of the grasslands will also act to limit the expansion of shrub species which have a greater fire hazard. *Reducing the flammability of the grasses on the site is the most critical aspect of reducing the fire hazard through vegetation management.* The grasses are the most likely element to start to burn and to spread the fire.

The native scrub burns much more readily than the oaks and can burn quite hot if dead wood has built up. Therefore, it has to be kept away from the oaks and residences in general. Prescribed burning on a 10 to 15 year rotation, or hand removal of dead wood, will prevent excessive fuels from building up in the north coastal scrub areas while allowing mature communities to develop. The prescribed burning will recycle nutrients to become available to new plants, which will stimulate the production of new food sources for wildlife species. Most of the native chaparral species resprout after a fire or regenerate well in seedlings.

The Coast Live Oak trees generally resist fire. Their very acidic leaf litter retards the growth of other plants under their canopy limiting the development of fuel ladders. This tendency to prevent fuel ladders becomes more effective when they grow together to create a woodland overstory. Therefore even though they are high in fuel load,

they resist fire better than the grassland or north coastal scrub as long as fuel ladders are removed beneath them. Coast Live Oaks heal quickly from low intensity fires with little damage, and fire will help the establishment of new seedlings by clearing the ground and increasing available soil nutrients. Managing the park vegetation into a fuel mosaic as described above, will protect the oaks from high intensity fire and encourage the development of larger trees.

Objective 3: Use fuel and fire breaks to limit the potential spread of fires.

Elements:

1. Provide a perimeter fuel break separating the park from surrounding homes that controls fuel levels within 100 feet residential property lines.

   a. Remove highly flammable plants in the perimeter fuel breaks (some scrub and tree species, high grass). See appendix A for Highly Flammable Plant List.

   b. Reduce fuel ladders by eliminating the shrub layer, hand pruning small tree clusters up 8 feet and using goats to graze grasses in late spring below 6 inches in height within the perimeter fuel break.

   c. Construct trails that run along the edge of fuel breaks so that the park community can see and evaluate their condition so that they become a part of the environment.

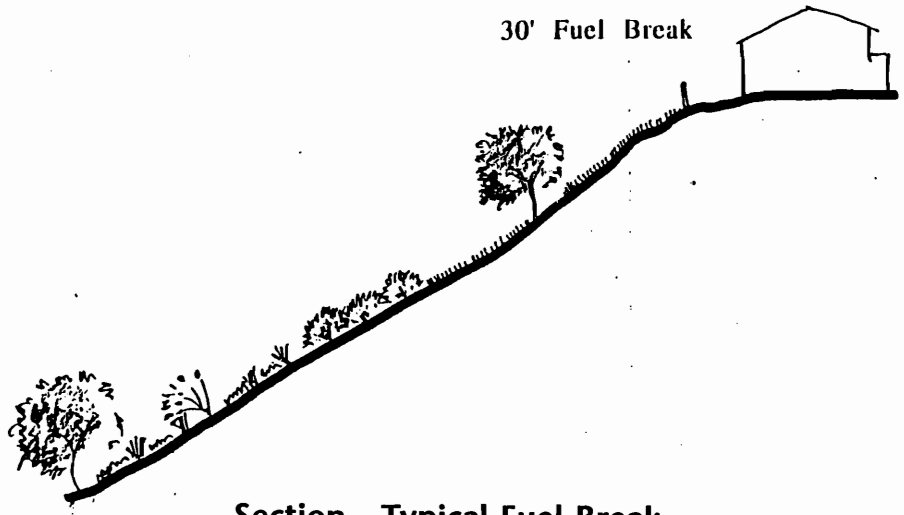
Objective 4: Create a fuel mosaic throughout the park.

Elements

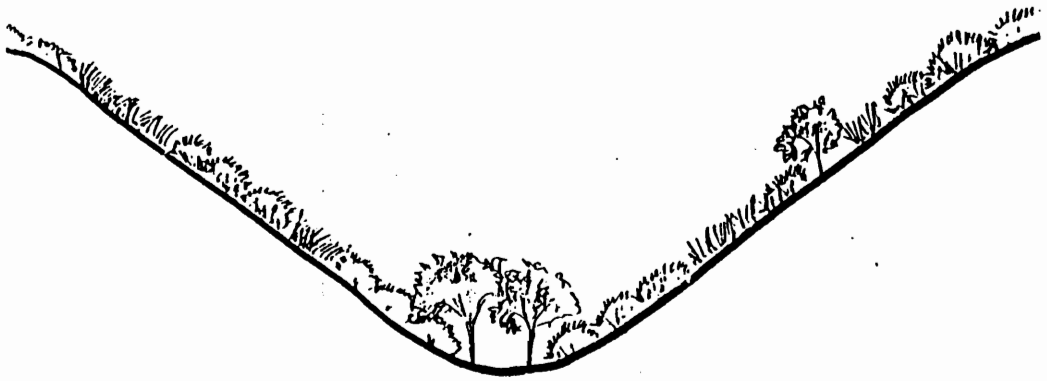
1. Use prescribed burns in each vegetation zone to create a mosaic of fuels by burning grasslands on a 3 year rotation, and north coastal shrub on a 10 to 15 year rotation. This will prevent the build up of dead wood, recycle plant nutrients and encourage diverse species and ages of plants. In areas inappropriate for prescribed burning, goat grazing may be used.

2. Provide hand crews on a five year rotation to remove shrubs and prune trees and shrubs on a five year rotation in each zone of the park interior.

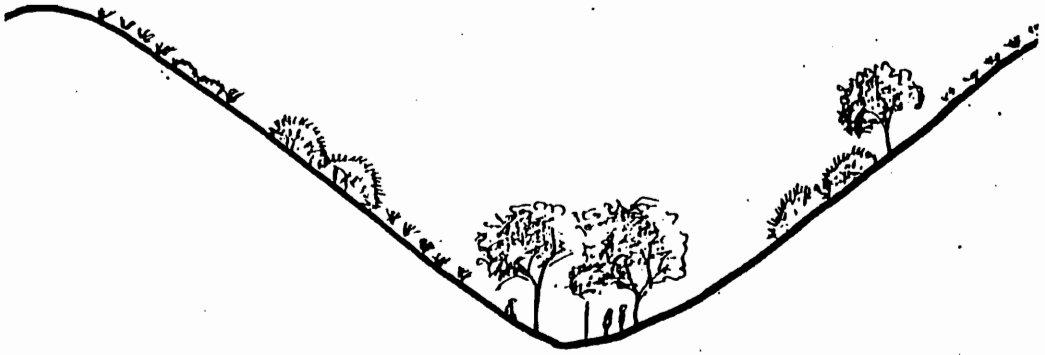
Section- Typical Fuel Break with Downhill Housing



Section - Typical Fuel Break with Uphill Housing



Typical Existing Drainage



Typical Managed Drainage

3. Site and maintain trails through annual brushing to 8 feet by 10 feet minimum clearance as a separation between vegetation types.

4. Diversify the shrub plant community and increase the percentage of perennial grasses in the grasslands to break up continuity of similar fuels. (Please see Goal 1 for further description)

Discussion:
In unmanaged open space areas different types of vegetation tend to grow together and to create fuel ladders and concentrated build up of fuels. For example, high grasses grow up under tall older shrubs that grow up under oaks. This creates a ladder of fuels from easy to ignite grasses, to kindling size shrubs to thick woody oak tree branches. The oak tree in this scenario would be very hard to ignite without the intervening fuels. Therefore its important to manage the connection between masses of fuels so that should a fire start in one area, it will not gain intensity enough to spread quickly. In the same vein, large shrub masses need to be occasionally broken up by hand removal of some plants and removal of dead wood. *The separation of different fuel types (grass, shrub, tree) and the breaking up of large masses of one fuel type are the two main elements behind the concept of creating a fuel mosaic throughout the park.*

The word mosaic describes how these separations are created through removing patches and portions of vegetation rather than shorn straight line swatches. The perimeter fuel break is a mosaic of fuels where clusters of brush or trees break up the monotony of the shorn grasses and provide visual interest and screening. Where the fuel break has at maximum 30% coverage of trees and shrubs in the grassland, the interior park fuel mosaic would have at maximum 30% removal of any plant species growing in large clusters in order to separate them from other vegetation types and break it into smaller clusters.

Objective 5: Provide good access and defensible space for fire fighting.

Elements:

1. Maximize fire truck access for fire fighting near housing and schools.

   a. Provide fire roads graded 16 feet wide for fire truck access where slopes less than 15% with at least two points of access and egress.

   b. Each fire truck access point would have a locking 20 foot swing gate.

   c. Maintain use of fire hydrants near fire truck access points. (According to Battalion Chief Ron Carter there are currently adequate fire hydrants around the park.)

d. Provide paths along or within several hundred feet of the edge of the perimeter fuel break to improve foot access for fire crews.

2. Fire roads designed and maintained to be wide enough to act as fire breaks and provide defensible space for fire fighting.

a. Fire roads graded to mineral soil to 16 feet wide will act as permanent fire breaks.

b. Fuel breaks will be cut annually 5 to 8 feet on either side of the fire road to enlarge the defensible space to at least 2 1/2 times the height of adjacent vegetation.

Goal 12: Create and support habitat areas for wildlife.

Objective 1: Increase the amount of viable wildlife habitat by restoring the site's native vegetation.

Elements:

1. Use vegetation management practices to encourage the establishment of diverse native grassland, oak woodland, and chaparral plant communities.

2. Develop and sustain a range of different types of plant communities, for example, Oak Riparian, and Oak Savannah.

Objective 2: Utilize the vegetation and fire management system of working in different zones on a rotating basis to stimulate and support wildlife habitat.

Elements:

1. Avoid having all plant communities in the same stage of development especially in the wildlife areas. Rather some communities should be old and some new, to provide a further diversity of habitat. Dead trees and shrubs provide excellent food sources and shelter for wildlife, and where possible should remain.

2. Remove non-native plants that have little habitat value and that compete for the limited water and soil nutrients. For example, French Broom (*Cytisus sp*), European Oat Grasses, Mustard, Thistle etc.) Allow the wildlife areas (Zones 4 and 5) to grow more densely and inhibit human access in order to provide safe nesting places.

Objective 3: Minimize the impacts of the fuel management practices on the amount and quality of wildlife habitat.

Elements:

1. Site fire and fuel breaks and trails on the edges of the site in order to minimize their intrusion on the interior habitat of the site.

2. Create perimeter fuel breaks that are mosaics of reduced vegetation rather than swaths of shorn vegetation in order to provide cover for wildlife. Within the fuel break mosaic at least 30% of brush and tree species remain in the fuel break irregularly grouped

2. Plant small clusters of Coast Live Oak in the fuel breaks to provide cover for wildlife, prevent erosion and reduce the "weed highway" into the site.

3. Create a mosaic of fuels in the dense stands of North Coastal Scrub as a means of reducing fuel loads, rather than cutting away strips of vegetation.

Objective 4: Establish wildlife corridors as means for larger animal to access the site.

Elements:

1. Establish a wildlife corridor to Arroyo Viejo Creek as indicated on the site plan from Zone 5 across Golf Links Road down to Arroyo Viejo Creek.

2. Seek to establish a wildlife corridor to the CalTRANS property on the park side of the 580 Freeway which would involve crossing Fontaine Street or Crest Ave.

3. Work to enhance Arroyo Viejo Creek as a wildlife corridor from the Bay to Leona Heights Regional Preserve.

4. Connect the two major pieces of the park across Fontaine via narrowing the road width and planting the medium strip with Coast Live Oak and native ground cover.

Objective 5: Site Social Areas with minimal effective area needed for purpose and where the landscape can absorb the impact w/ min. degradation.

Elements:

1. Site social and recreational spaces on areas that are not currently high in wildlife value.

2. Design the size of site features such as the Saddle Meadow, Tot Lot, and Orchard at minimal scale to meet recreational objectives.

3. Design and construct site features to have minimal impact on vegetation and wildlife:

minimize grade changes and drainage changes, use non toxic materials.

4. Plant native species throughout the site, including the Orchard to minimize habitat edges, and maximize the habitat provided on site. (utilizing a Permaculture ™ type model)

Goal 13: Involve community groups and school children in the process of restoring the park landscape and reducing the fire hazards.

Objective 1: Educate the community and schools regarding the fire management program and the effects of fire ecology on the site.

Elements:

1. Create a brochure to distribute to the community and the school district describing the Fire Management Program and encouraging their input and participation in its implementation.

2. Provide information and support to home owners bordering the site to encourage them to update their roofing and landscaping to optimal fire safety standards, as recommended by the East Bay Municipal Utility District's Firescape Manual, and the City of Oakland's Fire Safety Ordinances.

3. Provide signage at park entrances detailing the day's degree of fire danger.

4. Close the park on days of extreme fire danger and provide park personnel and/ or community fire watch group to monitor the site.

5. Organize educational site walks and talks led by naturalists about the site's plant and animal communities and fire ecology.

Objective 2: Involve school and community groups in native plant restoration projects and in removal of invasive non native plants

Elements:

1. Establish a class or volunteer group to collect native seed from the park or nearby sites. Such seed may be propagated by the same group or the propagating may be contracted out to a native plants nursery.

2. Develop seasonal work parties of school and or community groups: Spring -seed collection, Summer- fuel reduction, Fall- Seed Sowing, Winter-relax.

Objective 3: Develop plans for the Orchard and Peace Grove of Olives that the Schools and Community groups can construct and manage in partnership.

Elements:

1. Develop an appropriate mix of fruiting and non fruiting trees equal to the level of community interest in maintaining the orchard and grove. Non fruiting trees would require lower maintenance.

2. Grow the orchard slowly using a mix of fruiting and non-fruiting tree and tall shrub species in order to reduce maintenance and labor.

3. Develop a low maintenance ground cover and mulch (native preferably) that would inhibit weed growth, hold in soil moisture and prevent top soil loss and compaction.

Goal 14: Make the vegetation and fire management plan practical, and economical for Oakland Parks and Recreation staff to implement.

Elements:

1. Establish native plant communities that reproduce themselves and maintain lower fuel volumes. This will create long term annual savings in vegetation and fire management.

2. Plant drought tolerant grass species for the irrigated grass areas. This will reduce water costs, costs for irrigation maintenance and lawn-care requirements such as fertilization and aeration. Several choices of grass species are listed in Appendix C, Drought Tolerant Grasses.

3. Plant oaks and the orchard to reduce erosion and landslides and mitigate the effects of these problems on downslope housing and roads.

4. Plant low maintenance, drought tolerant fruit trees such as pears, apples, and citrus in the orchard to minimize irrigation and maintenance.

2. Research and select Orchard fruiting and non-fruiting tree species as part of a specific implementation plan requiring low irrigation and maintenance while providing high fruit quality and quantity, spring flowering and fall color.

4. Develop a low flow, drip irrigation scheme appropriate to selected tree species.

5. Develop a grading and drainage scheme with proposed terrace walls to retain soil slippage on this slope and prevent possible shallow landslides. Drainage to utilize existing drain basin at west edge of Peace Grove (this drain may need improvement).

6. Select ground cover mix for terrace plantings to complement tree plantings. This ground cover mix will act to inhibit weed growth should be aided by specify a mulch for weed inhibition.

Section V

Implementation Plan

Phasing

The King Estate Park Plan is an ambitious, innovative, and entirely achievable vision for the site. The Plan's implementation will occur over an extended period of time as a living, on-going process. This type of process is necessary for several reasons:

- The site will evolve through the continued interaction and hands-on participation of neighborhood members, students, and other users
- The finite financial resources of the city and the community will necessitate a phased approach to Park developments involving on-going fund-raising.
- The Vegetation and Fire Management Plan involve a gradual process of natural and human-enhanced ecological adaptation and change of the site's natural areas.

Therefore, following are a set of implementation priorities which reflect the ecological, social, and strategic factors which must be activated to bring the Park into being.

(Please see Implementation Table for a summary of this Phasing Plan.)

There are two major qualities which must be enhanced for the site to begin functioning as a Park: visitors must perceive it as a **safe and comfortable** place to visit and spend time; and it must be clearly **identified and function as a park.**

The first quality will be developed through the initiation of the Fire and Vegetation Management Plan and the installation of the safety facilities described in the design framework. The second quality will be developed through the improvement of the trail system, the installation of signage, and the building of Park entrances.

Following these elements should be the initiation of the (non-fire related) vegetation management plan and the development of the site features such as the tot lot, outdoor classrooms, and turf meadow. Finally, based on the success of the preceding elements and the level of community support, the most ambitious development -- the orchard -- can be designed and planted.

It is highly recommended that City Office Parks and Recreation personnel be assigned to the site and a maintenance shed and office be built for their use. One possible site for this building is near the orchard which would bring a supervisory presence to the orchard, the main sitting area and the area between the schools. This would also improve the on-going vegetation management and cleanliness of the site as a whole. OPR staff could also be a resource for the schools' and other educational programs in the Park. On-site OPR staff should be included in community meetings regarding the Park to establish cooperative and communicative working relationships.

PHASING IMPLEMENTATION PLAN

PHASING	KEY ACTIONS	RESOURCES
		Oakland Office of Parks and Recreation &...
IMMEDIATE (1 year)		
Identify site as a Park	Signage at entrances and along trails	Local artists and crafts people
	Build park entrances	Local artists and crafts people
	Construct gates/ fences	
	Improve and construct trail system	East Bay Conservation Corps/ Project Yes!
	Plant "symbolic oaks" at High Point	California Native Plant Society
Increase actual and perceived safety	Fire management plan to decrease fire risk	
	Open sight lines through vegetation into park and along trails	East Bay Conservation Corps/ Project Yes!
	Install solar emergency phones	
	Motion-detector lighting around schools	
	Dusk to dawn park and parking area curfews	Neighborhood improvement association
	Community "Fire Watch" and safety patrols	Neighborhood improvement association
Enhance Park's natural beauty and health	Initiate Vegetation and Fire Management Plan	
	Construct fire breaks, fuel breaks, fire roads,	East Bay Conservation Corps/ Project Yes!
	Vegetation thinning	East Bay Conservation Corps/ Project Yes!
	Vegetation modification at Tot Lot	Neighborhood improvement associations
	First in series of rotated burns	Oakland Fire Department,
Develop Park programs	Develop School environmental ed. program	Commencement 2000, Local environmental education organizations
	Park celebrations (kite flying, sunset walks, trail days, wild flower walks, community picnics etc.)	Local and surrounding area neighborhood improvement associations
	Community Fire Education Program	Oakland Fire Department, Neighborhood improvement association

PHASING	KEY ACTIONS	RESOURCES
		Oakland Office of Parks and Recreation &...
MID-RANGE (2-5 years)		
Continue Vegetation &Fire Management Plan	Remove selected exotic/invasive plants	East Bay Conservation Corps/ Project Yes!
	Seed with native plants and grasses	California Native Plant Society
	Plant oak trees throughout site	Oakland LLAD funds
	Plant native grasses and flowers	East Bay Conservation Corps/ Project Yes!
	Enhance Peace Grove	King Estate Junior High School
	Continue controlled burns and revegetation	Oakland Fire Department
Tot Lot	Design and build Tot Lot play structures	Local schools and artists/ crafts people
	Benches	Local artists and crafts people
LONG-TERM/ ON-GOING (5+ years)		
Continue Vegetation & Fire Management Plan	Orchard	Local farmers East Bay Urban Gardeners
	Develop Fontaine Oak Parkway	CalTRANS
	Continue controlled burns and revegetation	Oakland Fire Department
	Conduct research on grassland/ savanah management	UC Berkeley Department Environmental Science, Policy and Management

Community Involvement

King Estate Park came into being through active community involvement in the prevention of housing development, gaining Park zoning, the site's purchase by the city, and in the creation of this Master Plan. While the City of Oakland (through the Office of Parks and Recreation) will provide the majority of the funding, construction personnel and equipment, and on-going maintenance, for the Park to be successful as a community facility, this active local involvement must continue and further diversify. Local residents should be actively involved at every stage of the park process, including planning and design, construction and implementation, and on-going evaluation. Such involvement can help transform a somewhat neglected landscape into a "place of heart" with which community members can develop intimate and caring relationships. This can occur in a number of ways.

The first should be the continued involvement in the Master Plan process. These efforts can involve the NIA, other community members, and students and staff at the adjacent schools in providing their input into the final form of the Master Plan and then lobbying for its official adoption by the City Council.

Funding for the Park will be obtained on a competitive basis from both public and private sources. Therefore, the community must play an active role in creatively seeking funds for this purpose. This Master Plan can be used as a powerful fund raising tool by representing a strong statement of City and local support for the design and as clear description to funders of proposed developments. Sections of the Design Framework and the Vegetation and Fire Management Plan can be adapted for grant proposals. Potential elements of the design for which funding can be sought include: native plant restoration; the orchard; the tot-lot; community-school participation; trail building; connection to other city and regional outdoor and open space systems such as the Arroyo Viejo Creek, and the City-wide bicycle route,; and outdoor artwork.

Even before funding is secured, the community can begin to implement the Master Plan through volunteer efforts and working with the City and other agencies in trail maintenance and construction and vegetation fire management, two fundamental elements to the site. Continued community efforts in site clean-up will affirm the Park identity even before it is fully funded. The issue of safety can be partially addressed through continued community neighborhood watch efforts.

The adjacent schools can be involved in the Park in all of the above-mentioned ways. In addition, courses in almost all subjects can be planned to include units which use the Park as an educational resource. Biology, chemistry and physics classes can conduct field investigations and experiments; industrial arts classes can participate in the design and buiiding of benches, gates, and entrances; English and art classes can use the site as inspiration and subject matter for the creative process and drama classes or clubs can stage performances in the Park. The Park could also provide numerous sites for temporary or permanent installations of sculpture -- created by the schools and/or the wider community.

Students can also be involved in naming areas special to them as well as consulting to the Park builders on elements which they will use such as the outdoor classrooms, the paths between the schools and from the schools into the Park. Classes can also "adopt" trails, sitting areas or orchard trees and share in the responsibility to maintain and care for them. The could build temporary or permanent site installations relating to the ecology or social history of the area. Ideally, by encouraging this direct involvement, students will be a potent force to protect and watch over the Park. Such an active role will engender a greater investment in the Park thus providing a potent source of inspiration, creativity and care. It will also increase the educational potential of the site by transforming it from an inert hillside to a rich site of ecological, interpersonal, and personal learning. In this way, the youth can become a model for the community as a whole.

As an on-going community design process, the local and city wide communities will play active roles in the implementation, maintenance, and overall care for the Park. The site design has been purposefully structured to require a level of technological and financial investment accessible to community efforts. Such active involvement will cultivate both community and the Park itself.

Community Resources

The King Estate Park will involve a wide variety of institutions and individuals in its development, implementation and long term management. Principal among these are the local community and the Oakland OPR. In addition, there are a number of other institutions which could provide helpful assistance and expertise. These include:

- The California Native Plant Society for technical expertise in native plant restoration. This could include the use of their native plant nursery run jointly with the East Bay Regional Parks District in Tilden Regional Park;
- The East Bay Conservation Corps and their summer Project Yes! for trail building and vegetation management assistance;
- Commencement 2000, run by the US Forest Service as an environmental education training program in the public school (now active in the King Estate Junior High);
- Local high school students (e.g. from Castlemont and Bishop O'Dowd) who can assist Park development activities as part of community service clubs;
- Local colleges and universities (e.g. UC Berkeley's Department of Landscape Architecture and Department of Environmental Science, Policy and Management) which can conduct long-term ecological studies and provide resource management expertise;
- Local farmers who could assist in the management of the orchard.
- Area Neighborhood Improvement Associations and other local community organizations for organizing broader community involvement in Park implementation and Park events
- The Citizens for Oakland Open Space (COOS) for assistance in obtaining political and financial support
- Local artists and crafts people for assistance in designing various site features such as signs, benches, entrances, and outdoor artwork.
- East Bay Urban Gardeners (EBUG) help set up community gardens throughout the East Bay and could provide technical assistance as well as labor to implement the community orchard and other vegetation management activities.

Section VI

Appendices

Appendix A
Community Design Process

In the summer of 1993, the Oak Knoll/King Estate Neighborhood Improvement Association (NIA), representing the neighborhoods adjacent to the Park made plans to inquire at UC Berkeley for assistance creating a design for the Park. At the same time, Professor Louise Mozingo of the UC Berkeley Department of Landscape Architecture arranged with Barry Miller, a planning consultant for the City of Oakland, to have her class work on the King Estate Park design as a class project.

Contact between UC Berkeley and the NIA began with a preliminary meeting in late August when plans were confirmed for Professor Mozingo's Landscape Architecture class in "Natural Factors and Site Design" to participate in designing the site. Shortly thereafter, Professor Randy Hester brought in several students from his class on "Citizen Involvement in Planning" to help facilitate a participatory and interactive design process between the students, community members, and city officials.

Students from the latter class conducted in-depth interviews with the five core NIA steering committee members as well as with a teacher from the adjacent King Estate Junior High School. They also facilitated a meeting with the general NIA membership in which concerns and visions for the Park were articulated and recorded. This information, along with a demographic analysis of the two local census tracts was compiled and presented to the design class for use as social factor information.

Students in the design class coupled this information with their own research into the social factors of the site as well as a comprehensive survey of its natural factors including soils, hydrology, geology (seismic issues) vegetation, wildlife, view analysis, noise vectors, fire hazards, area land use and Park use patterns. Based on this data, five design alternatives were presented to the community at a NIA meeting in early November. Community members were given feedback sheets to critique the designs. Office of Parks and Recreation Planner Kerry Jo Ricketts and Department Chief Clive Williams attended this meeting.

One week after this meeting, another general membership meeting was used as a design workshop for the community members themselves. Students facilitated a design process in which teams of community members created their own ideal Park designs using base maps and a variety of design materials. Department of Parks and Recreation Parkland Resources Supervisor Martin Mataresse participated in this meeting.

Based on these designs, feedback on the students' design alternatives, and earlier interviews and meetings, students created a synthesis plan which was presented to the community for feedback. In early December, another general meeting was held to gather comments on the synthesis plan and discuss issues on which the community held diverse views.

A design team of five students from the two Fall semester classes continued to work on the King Estate project for the Spring semester. Through late February they distilled the community input, and technical data, as well as discussions with members of the OPR, and outside Park experts into an ordered foundation for the Park design. The design team used this information to create a "Preliminary Draft Master Plan" which they presented to the community for feedback in early March. Senior administrators from the two adjacent schools were present at this meeting.

The design team incorporated the community feedback to the "Preliminary Draft Master Plan", revised the plan, and submitted to OPR to initiate a "3002" review process in which relevant city departments and state agencies provide written comments. These agencies included, the OPR, Department of Public Works, the Oakland Transportation Department, The Planning Department, and the California Department of Transportation. The design team also provided preliminary plans to officials at the Oakland Unified School District and the Fire Department. The feedback from those agencies which responded was later incorporated into the plan.

The UC Berkeley design team also presented this preliminary plan to the Committee for Oakland Open Space (COOS) in mid-March which subsequently endorsed the plan. Kerry Jo Ricketts and Mark Salaznar as well as two Parks and Recreation Commissioners were in attendance.

The design team made presentations at three meetings with the NIA in April and May to collect additional feedback and to resolve a number of design issues. The design team also met with Battalion Chief Al Nero and Captain Ron Carter from the Oakland Fire Department, as well as several members of the King Estate Junior High administration during this time.

Over the summer and fall of 1994, the UC Berkeley design team continued to refine the Draft Master Plan. This process included several community meetings in which successive drafts of the Plan were reviewed and commented upon by community members. The first of two publicly noticed meetings was held in early December in which community feedback on the plan was solicited. A final noticed public meeting was held in April 1995 which resulted in the official endorsement of the Draft Master Plan by the NIA and a general consensus of support for the plan by community members.

Appendix B
History: Protecting the Site

The King Estate site has had a long and tumultuous history. In 1956, the City of Oakland purchased 26 acres on the east side of the ridge from the King family estate to be used for a Park between Howard Elementary School and King Estate Junior High School. Park developments stalled a year later after a newly installed football field began to slump due to geological instability. Grading of the site for roads and the construction of the schools has substantially altered the topography by cutting off the ridge line high points and spreading fill on the eastern side of the site. Prior to 1956, the Trust For Public Lands (TPL) purchased 52 acres west of the ridge, including the area south of Fontaine Street, and held them pending a development offer.

Throughout the 1960s and into the 1980s a number of local firms and city agencies used the site for various purposes. General Motors used the site as a test driving range and the California Department of Transportation (caldrons) used it as a storage site for construction materials. Arsonists have often targeted the site, and it has suffered from almost daily dumping of household and construction waste materials. Beginning in the 1980s, the site began to attract developers who wished to build housing on the open hillsides and ridge line. The site's ambiguous land use designation -- included in the Office of Parks and Recreation (OPR), parks list but zoned as medium density housing -- made it an ideal target. The last of these proposals was made in 1987 and included plans for knocking 30 feet from the ridge line, filling the oak ravines, and building 177 units of low to middle income housing.

Neighborhood opposition was catalyzed both by the threat of losing a precious recreational and open space resource and the fear of decreased neighborhood quality due to congestion and crowding. Neighborhood associations jumped into action joined by city-wide open space interest groups to defeat the proposal. These associations and their allies defeated the proposal and influenced the developer not to renew its option on the land. The same coalition of activists successfully lobbied the City to change the site's zoning to one compatible with Park use ("unzoned"), and to purchase it under the City Bond Measure K which provided funds to the OPR for parks and open space purchases.

Since the City's purchase of the site, the Oak Knoll/King Estate Neighborhood Improvement Association (NIA) -- representing the adjacent neighborhoods -- has been involved in an organizing and design process to create a Master Plan for the Park and to gather support for the plan.

Appendix C
Plant Lists for King Estate Park Site

Note: Native as used here does not necessarily mean the plant is native to the site but rather to Northern California. Plants believed to be currently on the site are noted with an asterisk (*)

Native Trees And Shrubs: (Moderate Fire Resistance, High Fuel Volume)

Arctostaphylos species - Manzanita
*Baccharis pilularis** - Coyote Brush (more flammable when decadent)
Ceanothus species - Wild Lilac
Rhamnus species - Buckthorn, Coffeeberry
Comarostaphylis diversifolia - Summer Holly
Garrya species - Silk Tassel
Heteromeles arbutifolia* - Toyon
Rhus species* - Poison Oak

Native Flower Species: (Low Fuel Volume)

Eriophyllum species - Yarrow
Escholzia californica - California Poppy*
Lotus scoparius - Deerweed
Lupinus species - Lupines*
Diplacus species - Monkey Flower*
Penstemon species - Penstemon
Salvia columbariae - Chia
Salvia sonomensis - Creeping Sage
Trichostema lanatum - Woolly Blue Curls
Zauschneria species - California Fuchsia

Native Shrub Species: (Highly Flammable, Medium Fuel Volume)
Artemisia californica - California Sagebrush *
Salvia species - Sage

Non-Native Tree Species: (Highly Flammable, High Fuel Volume)
Acacia species - Acacia*
Cedrus species - Cedar*
Calocedrus decurrens, Incense Cedar*
Cytisus species, Scotch, French brooms
Eucalyptus globulus - Eucalyptus, Blue Gum*
Pinus radiata, Monterey Pine*
Pinus sabiniana, Grey Pine** (uncertain if native to site or if highly flammable?, there is only one on site)

Non-Native Species: (Fire Resistant And/Or Low Fuel Volume)

Cotoneaster species

Appendix D
Recommended Plants for Revegetation

These recommendations based on plants found on site, or in nearby similar habitat, that have high habitat value for birds, mammals or insects, and that are fire resistant or low in fuel volume. This is a draft list that needs further verification before implementation.

Trees

Quercus agrifolia*, Coast Live Oak

Shrubs

Rhamnus species, Coffeeberry
Sambucus species*, Elderberry
Heteromeles arbutifolia*, Toyon
Diplacus*, Monkey Flower
Arctostaphylos, Manzanita
Rhus integrifolia, Lemonade Berry
(Ribes viburnifolium)
(Atriplex lentiformus, Quailbush)
(Ribes quercetorum, Rock Gooseberry)

Perennials and Annuals

California poppy*
Lupine*
Scrofularia*
Stipa pulchra*
bromus carenatus*
festuca rubra*
nacella lepida*
calaria*
Elymus glaucus*
Erioganum*
Melica*
Sisyrinchium californicum*
Brodiea*
Zigadenus*
Danthonia*
Rush*
Lathyrus vashdus*
Castalea*

References

Fire and Vegetation Management Program,
(Appendices A and B)

The plan is based on research of written sources, consultations with local environmental resource experts, and personal work experience. The following City of Oakland staff provided comments and suggestions regarding the plan: Martin Mataresse, Parklands Supervisor; Al Nero, Battalion Chief, Fire Department; and Ron Carter, Captain, and Wildlands and Training Coordinator, Fire Department. Their concerns were addressed as much as possible while balancing the other objectives of the park design team and the community sentiments. Other individuals providing input included: Charlie Danielson, consultant on native plant revegetation and member of the California Native Plant Society; Rod Trip, currently conducting studies in native grassland revegetation for the East Bay Municipal Utility District; and Ed Leong, Park Supervisor and Fuel Break Coordinator for the East Bay Regional Park District.

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Libby, William J. and Rodrigues, Kimberly A.. " Revegetating the 1991 Oakland-Berkeley Hills Burn," Fremontia, Vol. 20, No. 1, Jan. 1992.

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Perry, Bob. Trees and Shrubs for Dry California Landscapes: Plants for Water Conservation, San Clement CA: Land Design Publishing, 1989.

Appendix E
Home Owners Landscaping Guide Lines

Since a 30 foot clearance is not always

possible, divide the landscape into zones, working from the house out. The number and size of zones will vary with the size of the lot. Lots can be grouped into three general categories:

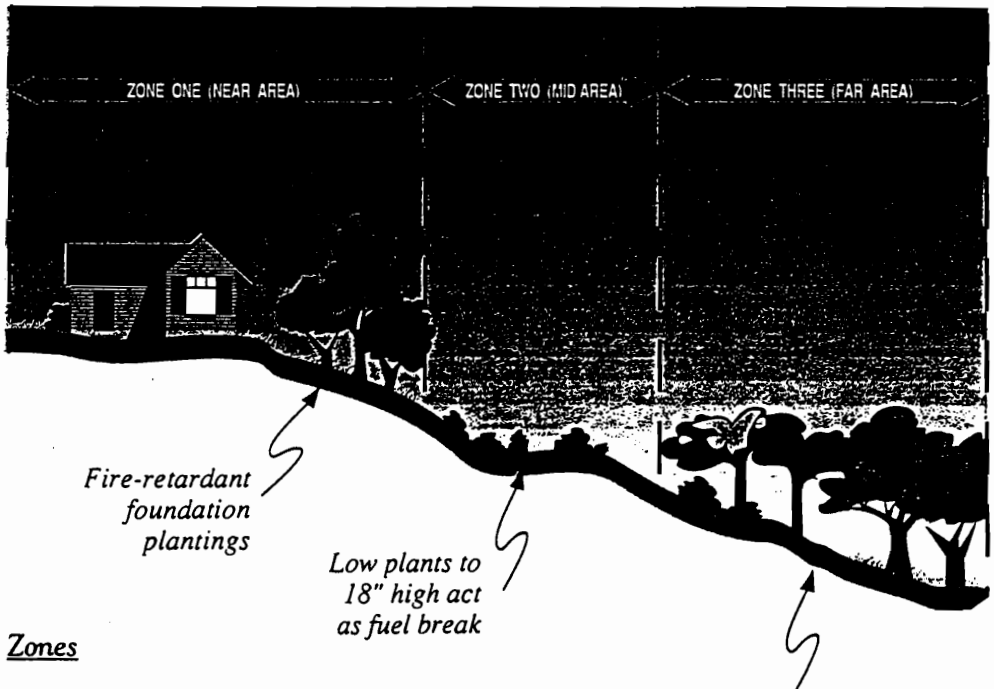
- Small lots, with houses close together
- Large lots, which may contain some wildlands, and
- Common open spaces

Zone one is the first 30 feet around the house, or up to the property line for smaller lots. This is the landscape zone, for foundation plantings. It may contain traditional trees, shrubs, groundcovers, and lawn. Plants here need to be the most fire-retardant, and should not include any pyrophytes that are high in oils and resins, such as pines and greasewood (adenostoma fasciculatum). Thick succulent or leathery leaves are the most fire-retardant, while paper-thin leaves and small, twiggy branches are the least retardant. Trees and shrubs often reseed themselves, and you may find unwelcome strangers; regular maintenance is important.

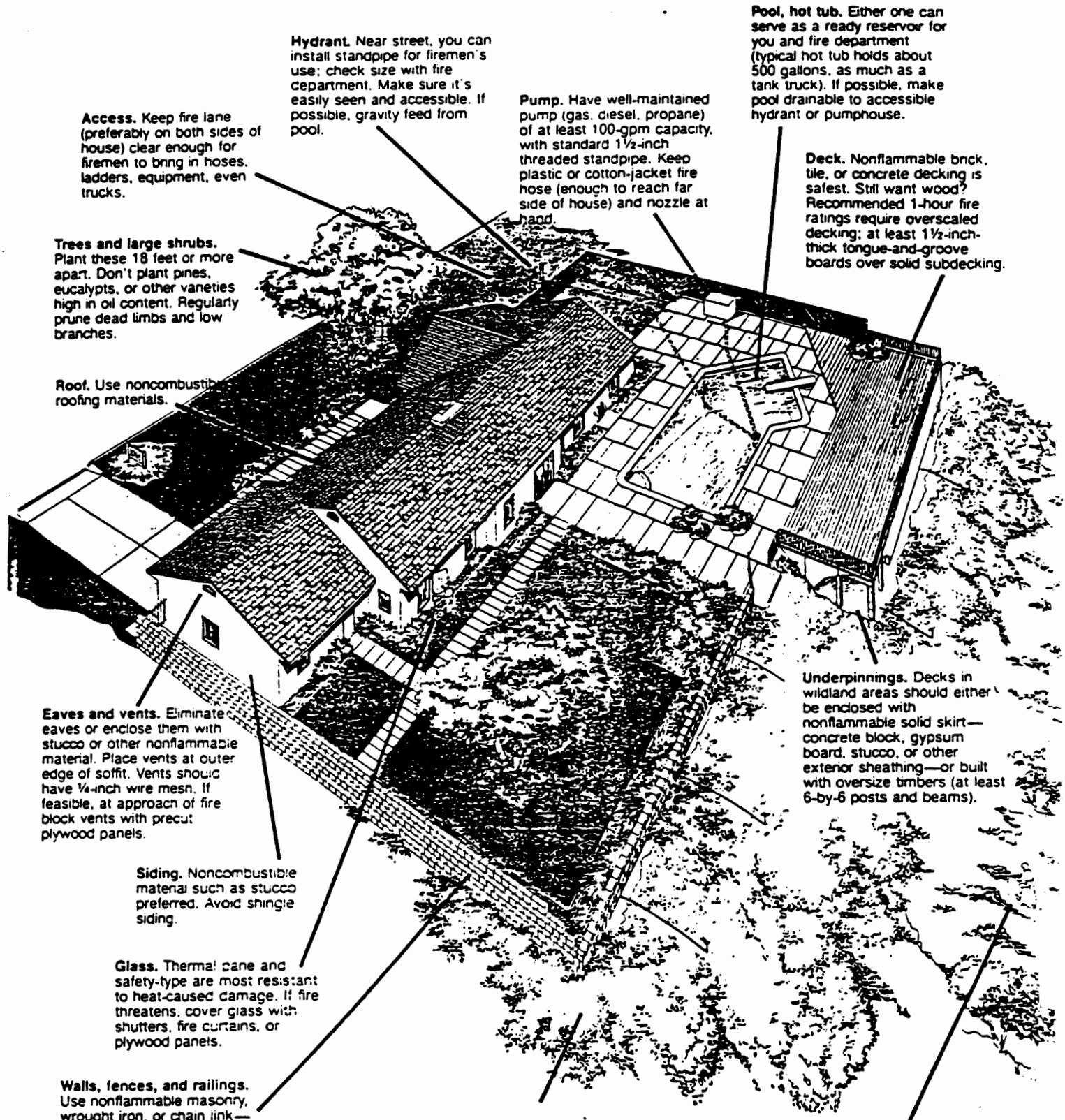
Use more of your available water in zone one than in the rest of the garden. Plants with high moisture content are much less likely to burn. If the house is on a small lot, you may only have space for zone one. Non-flammable patios, walkways, rock, and gravel mulch are useful fuel breaks for zones one and two.

Zone two is the middle area, the next 30-to-70 feet away from the house. This zone should include low plants, up to 18 inches high, such as fire resistant groundcovers, to act as a fuel break and prevent the spread of ground fires. Larger lots should use zone two, and zone three as well.

Zone three includes fringe areas adjacent to wildlands or open space. The synthetic wildland, a mixture of native and introduced vegetation, should be trimmed and thinned within and immediately adjacent to your yard, to help prevent a fire in the wild area from spreading to your home. Be cautious with slopes. If you have a large lot, the fringe areas should be maintained regularly to eliminate a buildup of dry brush and other litter.



Zones



SUNSET MAGAZINE, SEPT. 1985 LANE PUBLISHING

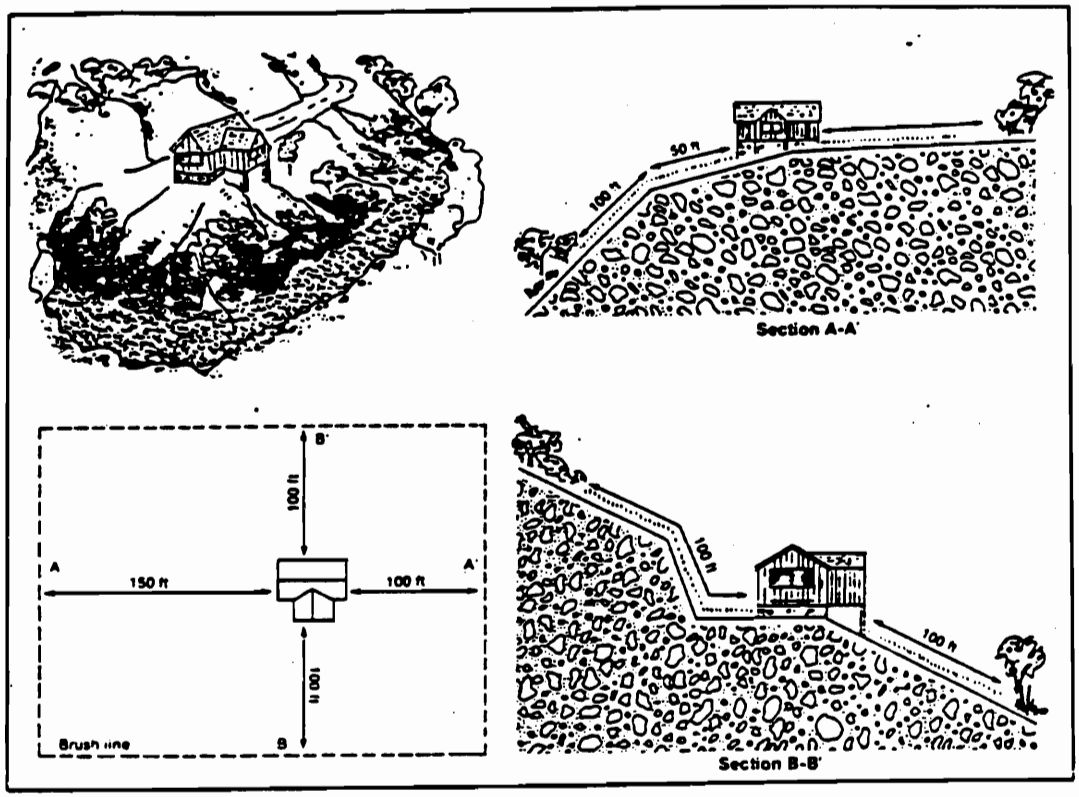


Figure 20—Minimal safety distances from a building to brush recommended by insurance firms will vary by the slope of the land.

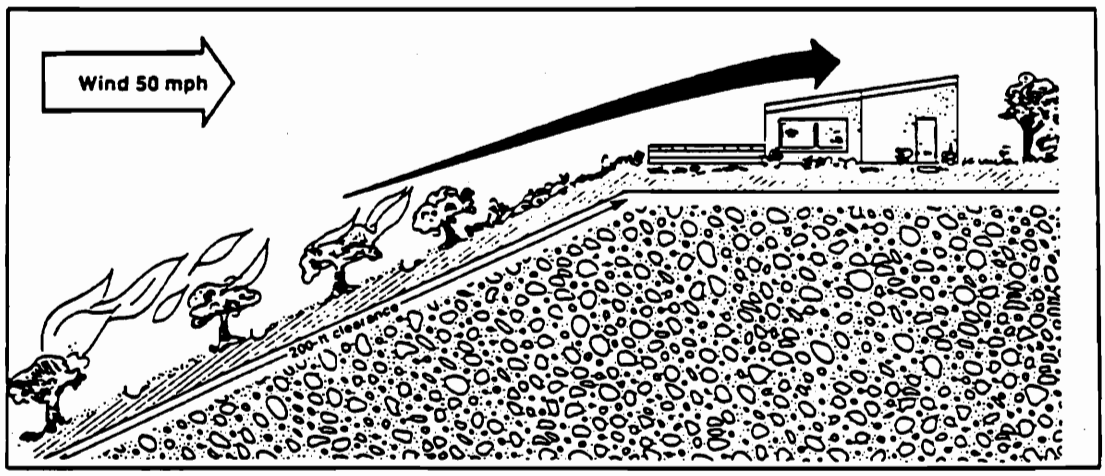


Figure 21—Fire safety can be increased by reducing fuel to twice the legal minimum distance of 100 feet (30.5 meters). To maintain slope stability, retain native plant species within the 18-foot (5.5 m) recommended distance for fuel separation. Flame length is still continuous, but the amount and duration of heat output is less than when brush is cleared to the legal minimum.

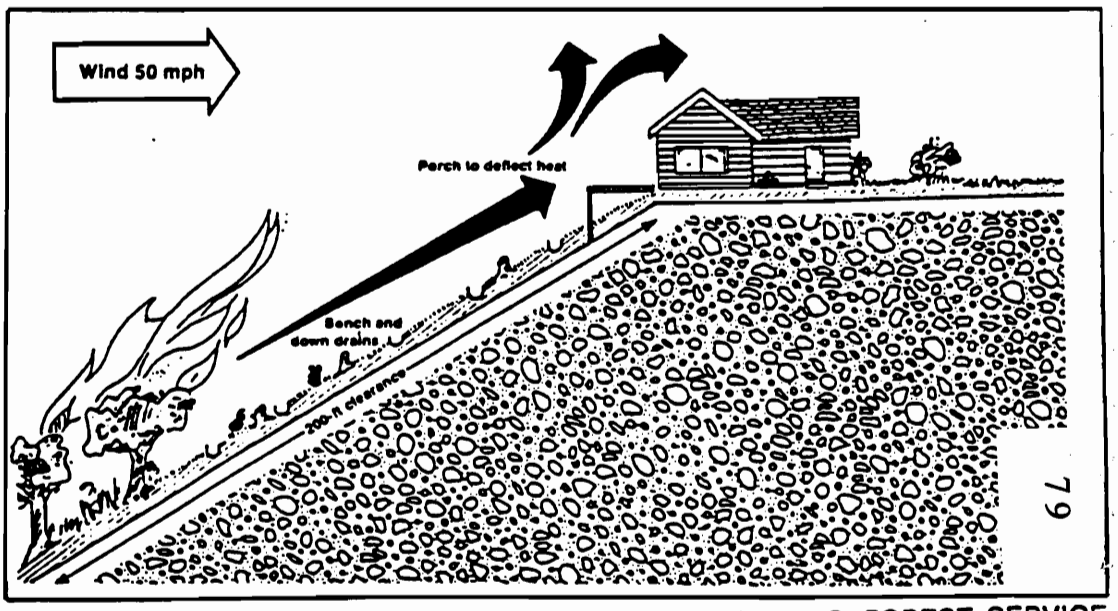
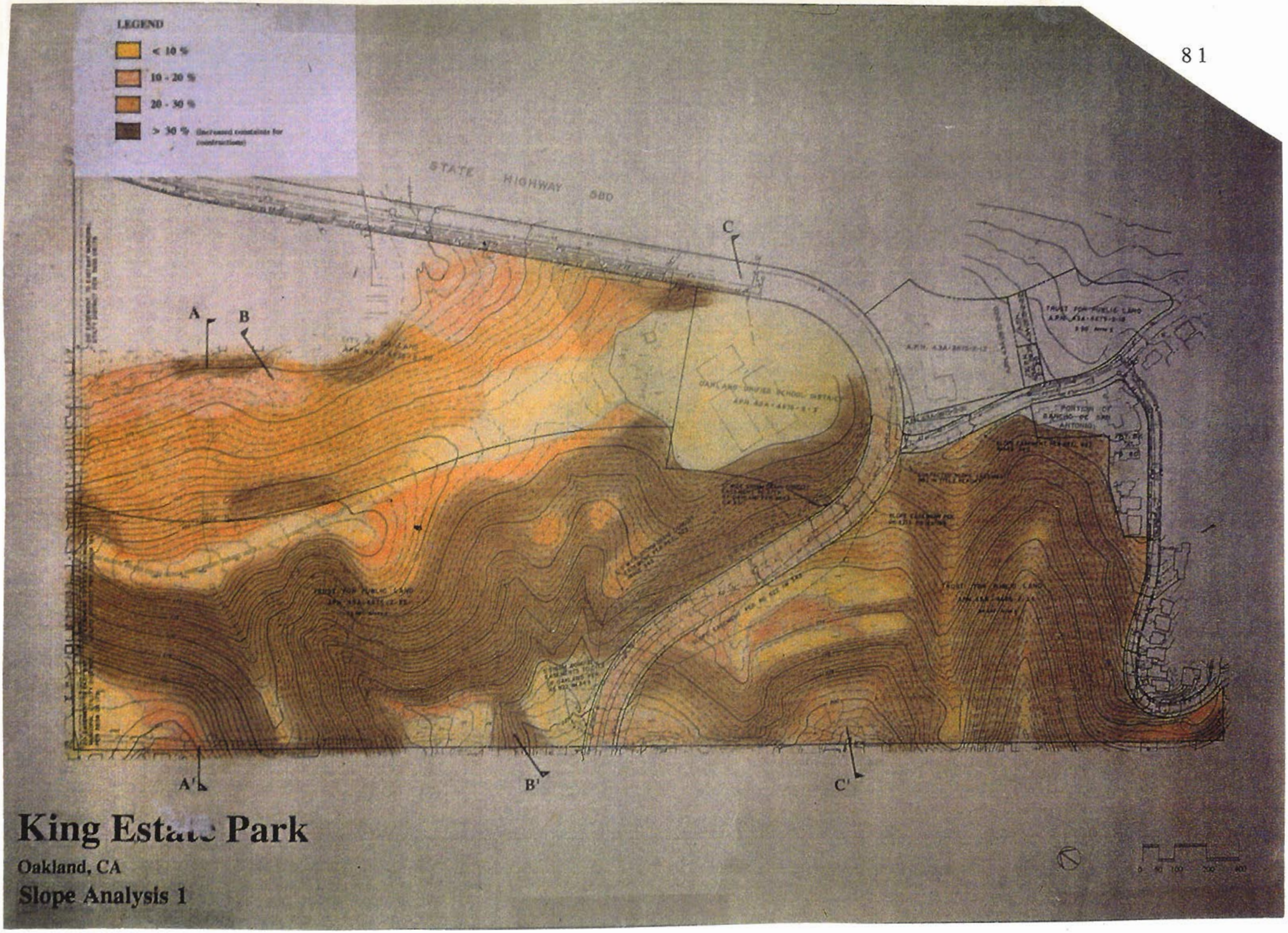


Figure 22—Homeowners can modify their homes to overcome negative characteristics. But they should seek the help of geological, engineering, and erosion control specialists when planning intensive fuel modification on steep slopes. Drastic fuel reduction can lead to slope instability.

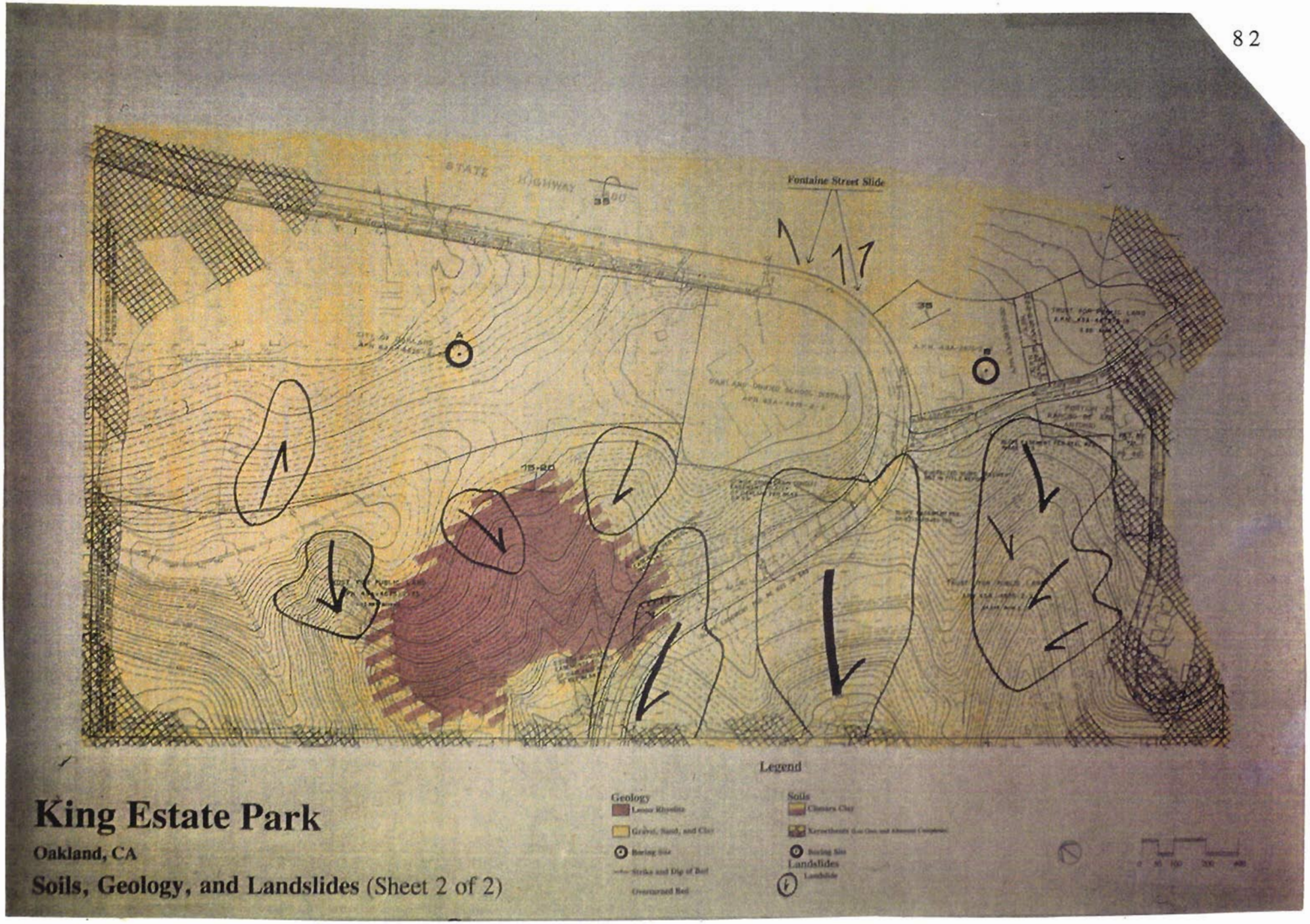
Appendix F
Site Analysis Maps



King Estate Park

Oakland, CA

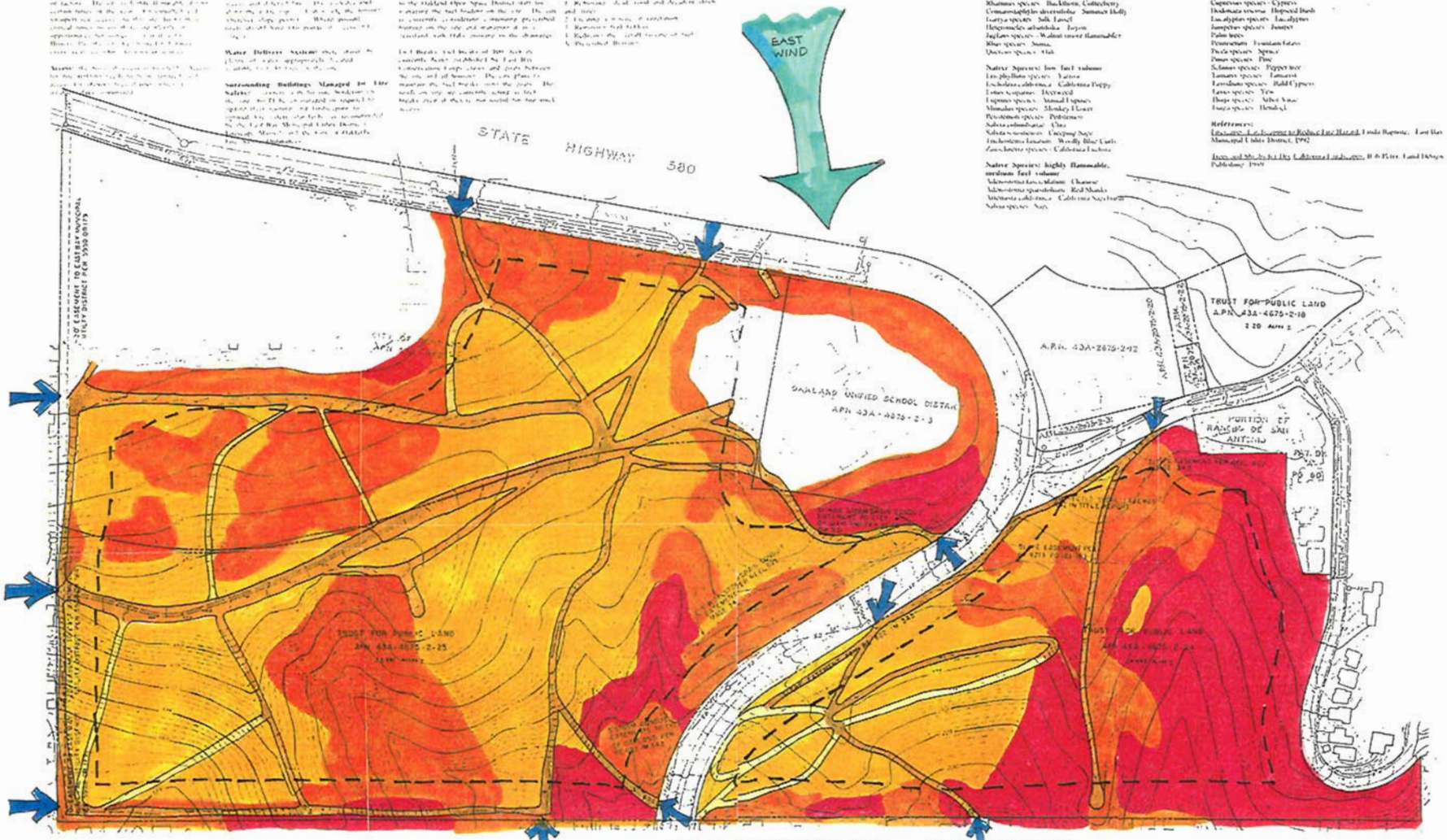
Slope Analysis 1



King Estate Park

Oakland, CA

Soils, Geology, and Landslides (Sheet 2 of 2)



King Estate Park

Oakland, CA

FIRE HAZARD ANALYSIS

Matte Barnes, Ann Baker, Erika Campos, Neha Friend, Andrew Callens