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APPROVED  
BY THE CITY COUNCIL

DEC 13 1988

OFFICE OF THE  
CITY CLERK

DEPARTMENT OF PARKS  
AND COMMUNITY SERVICES

ROBERT P. THOMAS  
DIRECTOR

G. ERLING LINGGI  
ASSISTANT DIRECTOR

WALTER S. UEDA  
DEPUTY DIRECTOR

CITY OF SACRAMENTO  
CALIFORNIA

December 6, 1988

1231 I STREET  
SUITE 400  
SACRAMENTO, CA  
95814-2977

916-449-5200

CITY MANAGER'S OFFICE

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DIVISIONS:  
CROCKER ART MUSEUM  
GOLF  
METROPOLITAN ARTS  
MUSEUM AND HISTORY  
PARKS  
RECREATION  
ZOO

City Council  
Sacramento, California

Honorable Members in Session:

SUBJECT: Sacramento Zoo Master Plan and Environmental Impact Report

*see 2 bound  
books following  
folder*

SUMMARY

This report provides information on the Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area. Further, this report recommends: (1) certification of the Environmental Impact Report (EIR); (2) approval of alternative B-3 from the Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area EIR with modifications; (3) establishment of the Land Park Special Revenue Fund account; (4) establishment of weekend and holiday rate differentials for select William Land Park fee activities; and (5) that park use permit fees be increased for William Land Park.

JOINT COMMITTEE ACTION

The attached report will be heard by the joint Budget and Finance/Transportation and Community Development Committee at their meeting of December 13, 1988. Results of that meeting will be presented orally to the Council.

RECOMMENDATION

It is recommended that the City Council, by resolutions:

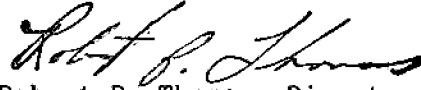
- A. Certify the EIR as complete.
- B. Approve the modified version of Alternative B-3 from the Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area;
- C. Authorize the establishment of the Land Park Special Revenue Account;
- D. Approve the recommended weekend and holiday fee differentials for the Sacramento Zoo, Fairytale Town, park permits, and ballfield and amphitheatre rentals; and



December 6, 1988

- E. Approve the recommended fee increases for Land Park park permits and reservations and amphitheatre and ballfield rentals.

Respectfully submitted,



Robert P. Thomas, Director  
Parks and Community Services

Recommendation Approved:



Walter J. Slye  
City Manager

RPT:ja

December 13, 1988  
District No. 4

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CITY CLERKS OFFICE  
CITY OF SACRAMENTO  
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**RESOLUTION No.**

**Adopted by The Sacramento City Council on date of**

**RESOLUTION CERTIFYING THE ENVIRONMENTAL IMPACT REPORT  
FOR ZOO-2002: MASTER PLAN FOR THE SACRAMENTO ZOO  
AND SURROUNDING AREA**

WHEREAS, the City of Sacramento has caused to be prepared the document entitled "Environmental Impact Report for Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area"; and

WHEREAS, said document was circulated for public review and comment pursuant to the California Environmental Quality Act, the State CEQA Guidelines, and City Environmental Procedures; and

WHEREAS, the City has conducted one noticed public hearing on said document, on June 9, 1988; and

WHEREAS, the City Council has reviewed and considered the documentary and oral evidence submitted at the public hearings and during the public review process; and

WHEREAS, the City Council has received and reviewed the City Department of Parks and Community Services' staff report recommending certification of the EIR;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SACRAMENTO that it hereby finds that the Environmental Impact Report for Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area is adequate and has been prepared in compliance with the California Environmental Quality Act (CEQA), the State CEQA Guidelines, and the City Environmental Procedures; and that the City Council has reviewed and considered the information contained in the EIR.

\_\_\_\_\_  
MAYOR

ATTEST:

\_\_\_\_\_  
CITY CLERK

APPROVED  
BY THE CITY COUNCIL

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OFFICE OF THE  
CITY CLERK



**RESOLUTION No. 88 - 1076****Adopted by The Sacramento City Council on date of**

**RESOLUTION APPROVING ALTERNATIVE B-3 MODIFIED OF ZOO-2002:  
MASTER PLAN FOR THE SACRAMENTO ZOO AND SURROUNDING AREA; AND  
ESTABLISHING THE LAND PARK SPECIAL REVENUE FUND ACCOUNT**

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

1. That Alternative B-3 Modified of Zoo 2002: Master Plan for the Sacramento Zoo and Surrounding Area, incorporated herein by reference and attached as Attachment I, is hereby approved. Any expansion of the Zoo beyond the exterior boundaries delineated in B-3 Modified of Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area Environmental Impact Report, as shown in Attachment I, will require a new EIR.
2. That the need to commit funds for implementation of Alternative B-3 Modified of the Sacramento Zoo Master Plan, and the need to renovate Land Park, requires the establishment of the Land Park Special Revenue Account. Revenues from park permits and amphitheatre and ball field rentals (in paragraph three below) are to be deposited in the Land Park Special Revenue Account as outlined in Attachment II.

\_\_\_\_\_  
MAYOR

ATTEST:

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CITY CLERK

APPROVED  
BY THE CITY COUNCIL

DEC 13 1988

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CITY CLERK



CONDITIONS PERTAINING TO ZOO-2002: MASTER PLAN FOR THE  
SACRAMENTO ZOO AND SURROUNDING AREA

1. The formal gardens at the north of the Zoo shall be maintained outside the fenceline for public use.
2. The City Engineer indicates that a left turn lane on Sutterville Road entering Land Park Drive appears to be feasible. This project will be submitted and prioritized as part of the normal Street Division CIP budget process.
3. New off-street parking facilities shall not be constructed in William Land Park. Additional off-site parking during peak weekend and holiday periods shall be obtained (if feasible) at the State of California leased office space on Sutterville Road.
4. No pedestrian or other overcrossing or undercrossing traversing Land Park Drive shall be constructed.
5. No lights, with the exception of security lighting, and amplified sound shall be placed on the open space/picnic area of the Zoo located at the northwest corner of the zoo boundaries so as to minimize impact on the adjacent residential area.
6. New perimeter fencelines shall have landscaping installed to improve their unsightly appearance.
7. No animal exhibits or commercial or restroom facilities shall be constructed below the crestline of the slope on the northwest of the Zoo. The purpose of the northwest slope area of the Zoo is to provide a buffer between animal exhibits and the residential neighborhood and for zoo visitor use. Acceptable uses include picnicking, and other open space park uses.
8. Scheduling of all zoo activities shall be coordinated with other park activities on a master Land Park calendar to minimize the simultaneous promotion of major community events.
9. An education/administration building shall be constructed adjacent to Fairytale Town according to the adopted plan. The building shall be two stories with a footprint between 4,000-6,000 square feet. The purpose of the facility is to provide educational services. As such, the facility shall include meeting space, classrooms and offices associated with the educational programs. All other administrative offices shall be constructed within the Zoo fence line. The facility shall also be available on a reservation basis to community groups for meetings and programs.
10. The final boundaries for the Zoo shall be Land Park Drive on the east and the fence line on the north (as depicted in the adopted Master Plan). Any further expansion of the Sacramento Zoo or construction of ancillary facilities for the Zoo shall take place elsewhere than in William Land Park.

LAND PARK SPECIAL REVENUE ACCOUNT

ZOO ACCOUNT	FAIRYTALE TOWN ACCOUNT	PARK ACCOUNT
-1/3 of amusement rides rent	-1/3 of amusement rides rent	-1/3 of amusement rides rent
-Zoo weekend and holiday differential	-Fairytale Town weekend and holiday differential	-Park use permits revenue
-Zoo concession rent	-Fairytale Town admissions -Pony rides rent	-Ball field rental revenue  -Amphitheatre rental

Estimated revenue from these sources is as follows:

<u>Zoo Account</u>	<u>Fairytale Town Account</u>	<u>Park Account</u>
1st year estimated revenue: \$314,000	Total: \$369,000 Operating Cost: \$337,050  Available for Improvements: \$ 31,950	\$ 86.993
5th year estimated revenue: \$382,000	Total: \$447,000 Operating Cost: \$409,686  Available for Improvements: \$ 37,314	\$122,587

## RESOLUTION No.

Adopted by The Sacramento City Council on date of

RESOLUTION APPROVING ALTERNATIVE B-3 MODIFIED OF ZOO-2002:  
MASTER PLAN FOR THE SACRAMENTO ZOO AND SURROUNDING AREA;  
ESTABLISHING THE LAND PARK SPECIAL REVENUE FUND ACCOUNT;  
AND AMENDING VARIOUS FEES AND CHARGES FOR THE DEPARTMENT  
OF PARKS AND COMMUNITY SERVICES (PARKS AND ZOO DIVISIONS)

1. That Alternative B-3 Modified of Zoo 2002: Master Plan for the Sacramento Zoo and Surrounding Area, incorporated herein by reference and attached as Attachment I, is hereby approved. Any expansion of the Zoo beyond the exterior boundaries delineated in B-3 Modified of Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area Environmental Impact Report, as shown in Attachment I, will require a new EIR.
2. That the need to commit funds for implementation of Alternative B-3 Modified of the Sacramento Zoo Master Plan, and the need to renovate Land Park, requires the establishment of the Land Park Special Revenue Account. Revenues from the weekend and holiday fees differential together with the revenue from park permits and amphitheatre and ball field rentals (in paragraph three below) are to be deposited in the Land Park Special Revenue Account as outlined in Attachment II. Revenues from the weekend and holiday fees differential from zoo admissions are to be deposited to the General Fund for the remainder of FY 1988-89.
3. That the fees and charges of the Department of Parks and Community Services, Zoo and Parks Divisions, as follows:
  - a. weekend and holiday fee differentials for the Sacramento Zoo, Fairytale Town, park permits, and ball field rentals in Land Park, and Land Park amphitheatre rental; and
  - b. Land Park permits and reservations and amphitheatre and ball field rentals;are hereby amended as set forth in Attachment III, attached hereto and incorporated herein by reference, effective February 1, 1989.
4. That the City of Sacramento Fee and Charge Report is hereby amended to reflect the Parks and Community Services Zoo Division and Parks Division fees as set forth in Attachment III.

\_\_\_\_\_  
MAYOR

ATTEST:

\_\_\_\_\_  
CITY CLERK

A. Weekend and Holiday Fee Differential

<u>Facility</u>	<u>Recommended Fee</u>
Zoo	\$ .50
Fairytale Town	\$ .25
Picnic permits	\$ 5.00
Picnic reservations	
Improved areas	\$15.00
Larger improved areas	\$25.00
Ballfield rentals, sound permits and fund raising permits	\$15.00
Amphitheatre rental	\$10.00

B. Fee Increases

Improved picnic areas (reserved)	\$ 50.00*
Larger improved picnic areas with additional amenities (reserved)	\$100.00*
Refundable cleaning deposit required for groups over 200 and for others at the discretion of park reservation personnel	Varying from \$100.00* to \$500.00
Family picnic permits - groups under 100 (not reserved)	\$ 25.00
Ball field and soccer field permits (per two hour period)	\$ 25.00**
Amphitheatre rental (per hour)	\$ 25.00
Amplified sound permit	\$ 25.00

\* These fees will not be implemented until the picnic areas are improved. The remaining fees will be effective February 1, 1989.

\*\* Adult use only. The Department's policy of exempting youth groups from this fee will continue.

DEPARTMENT OF PARKS  
AND COMMUNITY SERVICES

ROBERT P. THOMAS  
DIRECTOR

G. ERLING LINGGI  
ASSISTANT DIRECTOR

WALTER S. UEDA  
DEPUTY DIRECTOR

CITY OF SACRAMENTO  
CALIFORNIA

December 5, 1988

1231 I STREET  
SUITE 400  
SACRAMENTO, CA  
95814-2977

916-449-5200

DIVISIONS:  
CROCKER ART MUSEUM  
GOLF  
METROPOLITAN ARTS  
MUSEUM AND HISTORY  
PARKS  
RECREATION  
ZOO

Transportation and Community Development/  
Budget and Finance Committee  
Sacramento, California

Honorable Members in Session:

SUBJECT: Sacramento Zoo Master Plan and Environmental Impact Report

SUMMARY

This report provides information on the Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area. Further, this report recommends: (1) certification of the Environmental Impact Report (EIR); (2) approval of alternative B-3 from the Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area EIR with modifications; (3) establishment of the Land Park Special Revenue Fund account; (4) establishment of weekend and holiday rate differentials for select William Land Park fee activities; and (5) that park use permit fees be increased for William Land Park.

BACKGROUND INFORMATION

Project History

Historically, the Sacramento Zoo has developed via a piecemeal approach without the benefit of an adequate master plan. Both the American Association of Museums in their assessment of the Sacramento Zoo, and the Federal Institute of Museum Services in their evaluations of the Zoo's annual application for IMS grant, consistently criticized the absence of a guiding master plan. Consequently, in June 1984, the City Council called for proposals for consultant services to undertake comprehensive study and master plan development of the Sacramento Zoo, Fairytale Town, and the surrounding area. In October 1984, the City of Sacramento entered into a consultant services agreement with zoo master planning experts Wildlife Associates, Inc., assisted by a staff task force comprised of Zoo, Parks, and Administrative Services employees to provide these services.

A Citizen's Advisory Committee, comprised of individuals representing various special interest groups and organizations interested in the master plan including the Zoological Society, Fairytale Town Board, Holy Spirit Elementary School, and Land Park residents was appointed by the Director. This group, which met on a regular basis over a 13-month period, provided extensive input into the master plan process. Two public meetings, designed to solicit community input, were held in March and May of 1985. The response was overwhelming with an estimated 200 citizens attending the first meeting and approximately 400 persons attending the second meeting. Following the first public meeting, the Citizen's Advisory Committee was expanded to include representation from the newly formed Association to Preserve Land Park. In addition to the continued efforts of the Citizen's Advisory Committee, a Director's Task Force comprised of members from the Zoological Society, Citizen's Advisory Committee, Association to Preserve Land Park, and Department of Parks and Community Services staff was formed. Task force members, who provided extensive input into the planning process, were charged with ensuring the adequate representation of these interest groups.

Insofar as Wildlife Associates failed to furnish the draft master plan document in accordance with the requirements of their consulting services contract, the City terminated this contract. Zoo and Administrative Services staff were assigned to complete this document and professional assistance was obtained via small consultant services contracts with a market research firm and an engineering firm, paid for by the savings realized due to the termination of Wildlife Associates' contract. The draft master plan, Zoo 2002: Master Plan for the Sacramento Zoo and Surrounding Area, was completed in December 1987, at which time the selection process for a consultant to prepare the EIR was begun.

On February 16, 1988, the City Council authorized the execution of a consultant services agreement with EIP Associates for preparation of the Environmental Impact Report for Zoo 2002: Master Plan for the Sacramento Zoo and Surrounding Area. In anticipation of selecting an EIR consultant, a Notice of Preparation (NOP) inviting public comment for the State mandated 30-day period was sent to all special interest organizations who had indicated an interest in the master plan as well as all neighbors residing within a five block radius of William Land Park. Following the selection of EIP Associates, responses to the NOP were turned over to the consultant in accordance with California Environmental Quality Act (CEQA) guidelines. In addition, prior to beginning preparation of the EIR, EIP Associates had individual scoping sessions with representatives of the Association to Preserve Land Park, the Sacramento Zoological Society, and the Fairytale Town Board of Directors to solicit their input on the scope of the Environmental Impact Report and key issues therein.

The EIR assesses four conceptual site plans. Following is a description of the four separate alternatives:

#### EIR Concepts

B-1: No-Project Alternative. Under this alternative, there would be no renovations or new developments within the Zoo Master Plan study area. This plan would, if approved, place a moratorium on zoo improvements.



B-2: Renovation of the Zoo Within Existing 14 Acre Boundaries. This alternative would involve renovation of many of the outdated exhibit areas in the Zoo, but would not include any expansion outside of the current fence line of the Zoo. This alternative would follow the plan detailed in the Zoo Master Plan including development of the following five thematic areas: Primate Area, African Savannah, the Sacramento Area, the Nile River, and the Cat Area; as well as an entrance/visitor service area and a service area, but would not include the African Rivers Aviary, the Tortoise Exhibit, the picnic area, and the Australian Section.

B-3: Expansion of the Zoo Boundaries North to Fifteenth Avenue. This approximately two acre expansion would result in a 16 acre zoo and would follow the plan minus the Australian Section. Accordingly, this plan includes the thematic areas described in Alternative B-2 above as well as the African Rivers Aviary, the tortoise exhibit, and the picnic area.

B-4: Expansion of the Zoo Boundaries North to Fifteenth Avenue and East Across Land Park Drive to Include Approximately Four Acres South of Fairytale Town. This plan, which would result in a zoo of approximately 20 acres, would include all of the elements contained in the master plan. In addition to all of the features of B-3 above, this plan would add an Australian Section on the 4+ acres south of Fairytale Town. The Australian Section would contain exhibits for koalas, crocodiles, tree kangaroos, a nocturnal exhibit and an "outback farm" geared to younger visitors.

Alternatives B-2, B-3, and B-4 also include the following three elements:

1. Construction of an education/administration building to be located either east of Fairytale Town and south of the existing parking lot or just inside (west of) the main zoo entrance.
2. Relocation of the amusement and/or pony rides concessions to the northern area behind Fairytale Town. Relocation of the amusement rides would be necessary for the implementation of Alternative B-4.
3. Construction of a pedestrian overcrossing between Fairytale Town and the main entrance of the Zoo.

The scope of this EIR entails full and equal assessment of three conceptual plans plus a no project plan. Issues which the EIR addresses for each of the alternatives include, but are not limited to, land use; visitor impact; recreational, educational, and cultural services; vehicular and pedestrian circulation; public services capacities; aesthetics; and air and noise quality.

The Draft EIR was issued on May 13, 1988. Notices of its availability were sent to 36 planning and governmental agencies; representatives of the various special interest groups; and all individuals who served on the Master Plan Citizen's Advisory Committee and the Director's Task Force for the Master Plan. In addition, notices were sent to the over 100 citizens who had requested information on this planning process. Finally, two display advertisements regarding the availability of the Draft EIR were placed in the Sacramento Bee.

Copies of the Draft-EIR were provided at no charge to all agencies normally involved in City planning projects as well as all special interest groups particular to this project. Copies were also available for public review at 10 branches of the Sacramento Public Library and were available for purchase for the cost of printing at this office.

Publication of the Draft EIR marked the beginning of the 45-day public review period of this document with the comment period closing on June 27, 1988. As part of, and during this review process, a widely advertised public hearing was held on June 9, 1988, at McClatchy High School. Nearly 300 citizens attended this hearing. These actions were taken to ensure that interested citizens received an opportunity to provide public input into the planning process. An independent moderator with expertise in environmental law was hired to facilitate this meeting, which was both recorded by a court recorder and taped. Results of the meeting were presented in an informational report to the Joint Budget and Finance/Transportation and Community Development Committee on June 14, 1988, and copies of the transcripts were provided to the special interest group.

All comments received both orally and in writing at the public meeting, as well as all written comments submitted to this department during the 45-day review period, were included in the Final EIR. The Draft EIR, plus an addendum consisting of comments and responses, constitutes the Final EIR. The Final EIR was published on November 18, 1988. Although CEQA requires public review only at the draft stage, the Final EIR was made available to interested agencies and individuals for a seven-day review period which closed on November 28, 1988. Notice of the availability of the Final was publicized via notices sent to 36 planning and governmental agencies; representatives of the various special interest groups; all individuals who served on both the Citizens Advisory Committee and the Director's Task Force; and over 200 citizens who had requested information on the EIR process.

#### Staff Recommendations

The Sacramento Zoo remains one of the finest and most popular forms of low cost family education and recreation in Sacramento with attendance surpassing that of any other year-round attraction in the greater Sacramento area. According to the American Association of Museums' "Assessment of the Sacramento Zoo," the Sacramento Zoo . . . "deserves all the support its city and community can give. Toward that end, a number of interim programs and exhibits are suggested, along with full support of the Zoo's new master plan. The Sacramento Zoo is one of those positive quality of life factors . . . It is also playing a vital role in conserving endangered species and educating our citizens. Given its history, its present achievements and its potential future, the City of Sacramento should be proud of its zoo." Accordingly, the citizens of the City of Sacramento should establish as a goal to have the "best medium-sized zoo in the country."

The following recommendations have been endorsed by the two major special interest groups involved in this planning process, the Sacramento Zoological Society, and the Association to Preserve Land Park. Although the

recommendations do not represent the total desire of either group, what the recommended plan does represent is the best plan for the community based upon input from these two groups as well as from park visitors, the Fairytale Town Board, the Daughters of the American Revolution, the Land Park Soccer Club, golfers, the Sacramento Tree Foundation and Holy Spirit School. It is only because of the level of cooperation by and dialogue amongst all these groups that we have developed a plan which is the best for the entire community.

Relocation: Given the goal referred to above, the Zoo should remain in Land Park and not be relocated. The relocation of the Zoo is neither cost effective or in the best interests of the community. It is estimated that relocation of the Zoo would cost between \$55 million and \$100 million depending on the facility's size (Final EIR, page 4-54). For approximately the same amount of money, the City could complete Belle Cooledge and South Natomas Libraries; Meadowview, Sim, Clunie, and South Natomas Community Centers; complete ten undeveloped park sites, and carry on the proposed master plan for the Zoo. Based upon limited funds and the cost/benefit ratio to the citizens of Sacramento, the relocation of the Zoo is not in the best public policy.

Furthermore, if relocation of the Zoo was to become a reality, all efforts to secure public and private funds to complete the existing zoo would be considerably less effective. There would be little reason or priority placed on funding basic necessary improvements for the Zoo, and the full benefits of the City, the County, and the community's investment in such recent exhibit renovations as the orangutan, chimpanzee, zebra, and gazelle exhibits would not be realized.

Ancillary Facility: In order that the Zoo may realize its full potential as an education and conservation center, while simultaneously remaining a medium-sized Land Park facility, one of the proposed mitigating measures is the identification of ancillary facilities (i.e., breeding centers, conservation, interpretation, etc.) that are necessary to support the existing zoo in terms of education and the propagation of endangered species. As part of the adopted master plan, staff should be directed to identify the specific requirements for an ancillary facility and secure land for that purpose. It is imperative that land is set aside now for this purpose due to the rapid pace of urban development in Sacramento County. Following Council approval of the Zoo Master Plan, staff will work with the Zoological Society in developing a program description for this project. Staff will report back to the City Council in six months requesting approval of the ancillary facility program description and authorization to identify potential sites.

Recommended Alternative: Given the goal of making the Sacramento Zoo "the best medium-sized zoo in the country," staff recommends that Alternative B-3 of the Zoo 2002: Master Plan for the Sacramento Zoo and Surrounding Area EIR, with modifications, be the ultimate plan for the Sacramento Zoo in the park. The proposed fence line near Land Park Drive and fifteen feet from the curb line along 15th Avenue should be considered the final expansion line for the Zoo with no future expansion of animal facilities allowed to be developed outside these proposed fence lines. (Refer to Attachment I.) Such expansion would only set the stage for future expansion issues. As a mitigating measure, staff recommends that the rock garden area be made available for public use and

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viewing. The fence will be constructed of vinyl coated chain link to minimize its visual impact. Further, the northwest side of the rock garden for zoo expansion will not contain animal exhibits, but rather will be left as open space and used for picnicking and other open space uses associated with the Zoo. Insofar as none of the four alternatives included plans for any zoo exhibits in the rock garden, removal of the rock garden from the zoo has minimal or no impact on available usable space for animal exhibits.

Education/Administration Building Element: It is recommended that an education building to be located east of Fairytale Town and south of the existing parking lot be approved as part of the Zoo Master Plan. The building is necessary to carry out the educational programs sponsored by the Zoo and provided to children and adults of our community. Based upon limited space within the proposed Zoo Master Plan, it is appropriate and necessary to locate this building in close proximity to the Zoo but outside the Zoo boundaries to avoid parking and traffic congestion on 15th Avenue. Rather than the 12,000-16,000 square foot facility assessed by the EIR, it is recommended that a two story facility of 4,000 to 6,000 square feet per story, for a total of 8,000-12,000 square footage, be constructed on this site. This building would exclusively house the Zoo's educational programs and associated staff, and would not displace any soccer fields. All other administration offices shall be constructed within the Zoo fence line. Further, the building will be available for public use. The Sacramento Zoological Society prefers the 6,000 square foot per story building while the Association to Preserve Land Park prefers the 4,000 square feet per story building. The final design and use should dictate the size of the education building. Insofar as this building is included in Phase II of the master plan, which is four to five years away, and since the higher priority in the near future is the exhibits in Phase I, the City Council should appoint a committee to work with the Director on the final design and use when the appropriate time comes. It is further recommended that the 4,000 to 8,000 square feet of space which is the difference between the size building originally assessed and the scaled-back version shall be provided in a building to be located in the Zoo near the entrance for the housing of the Zoo's administrative staff, which could include a two story structure.

Pedestrian Bridge: A pedestrian bridge is not considered an essential element of the Zoo Master Plan and should not be part of the adopted plan. The issue of pedestrian crossing and safety should be investigated by the City's Traffic Engineer.

Pony Rides Concession: Staff recommends that the pony rides concession remain at its current site. Further, no changes are recommended for the pony rides area.

Amusement Rides Concession: Staff recommends that the amusement rides concessions be maintained at its current site. It is further recommended that the amusement rides be scaled back so as to primarily be aimed towards young children, and the existing sound proofing improved. In addition, an advisory committee to the Director would be established prior to contract execution. The advisory committee would include a representative of the Association to Preserve Land Park, the Sacramento Zoological Society, and the Friends of Fairytale Town.

Northwest Slope: No animal exhibits or commercial or restroom facilities shall be constructed below the crest line of the slope on the northwest of the Zoo. The purpose of the northwest slope area of the Zoo is to provide a buffer between animal exhibits and the residential neighborhood and for zoo visitor use. Acceptable uses include picnicking and other open space park uses.

Outdoor Interpretive Center: The outdoor interpretive center should be located within the zoo boundaries as part of the adopted master plan. Based upon the educational needs of the zoo program, including proximity to the population to be served, operational requirements and security of the animals used in the program, the best location for this facility is within the zoo boundaries. However, based upon concerns expressed in public hearings, this facility has been relocated from the location originally proposed (north hill) to the northeast corner of the Zoo. No permanent lighting and amplified sound equipment shall be included in the design of the facility. Also, in response to concerns of the public, specific conditions should be placed on the facility. These conditions need to be more fully developed but should focus on the following limitations:

1. Hours of operation
2. Use of temporary lights
3. Use of temporary sound equipment
4. Types of use

An operational plan addressing the limitations described above shall be developed with public input prior to construction.

Landscaping: The northwest corner of Sutterville Road and Land Park Drive shall be landscaped.

Additional Recommended Mitigation Measures: In addition to the mitigation measures recommended in conjunction with the three elements discussed above, staff recommends the following mitigation measures be a condition of the approved master plan.

1. Education Building: According to the EIR consultants, the aesthetic impacts of construction of the education building adjacent to Fairytale Town are considered potentially significant. However, this impact could be reduced to a less than significant level by implementing the following mitigation measures:
  - A. Design structures so as to minimize removal of existing tree cover;
  - B. Design landscaping to soften and buffer both near- and long-range views; and
  - C. An advisory committee to the Director representing the Fairytale Town Board, Zoological Society, and Association to Preserve Land Park will work with the Department on the design of the building.
  - D. Require review of all project design elements by City Design Review Committee.

Staff recommends implementation of all mitigation measures listed above in addition to the standard review of building design plans by Police, Fire, and General Services to ensure all public safety considerations are met.

2. Pedestrian Safety: It is recommended that the Traffic Engineering Section be directed to conduct studies in the immediate area and recommend improvements which will provide safe pedestrian access between the Zoo and Fairytale Town. Specific mitigation measures will be recommended after such study has been completed.
3. Traffic. In addition to the traffic study recommended in lieu of the pedestrian bridge, the EIR recommends the following mitigation measure:
  - A. Individuals utilizing public transit for transport to the Zoo or Fairytale Town would be eligible for a twenty percent discounted admission to both facilities. Proof of ridership via a bus ticket or transfer for that date, or a monthly bus pass would be required for each discount obtained.
  - B. The City Engineer indicates that a left turn lane on Sutterville Road entering Land Park Drive appears to be feasible. This project would be submitted and prioritized as part of the normal CIP budget process.
4. Parking. According to the EIR, an additional 200 parking spaces are necessary to meet the needs of Master Plan Alternative B-3. Staff has explored several parking alternatives and recommends the following phased approach of mitigation:
  - A. New off-street parking facilities shall not be constructed in William Land Park.
  - B. Phase I - Immediately proceed to secure an agreement to utilize the 115 parking spaces located at the state office building on Sutterville Road on weekends and holidays.
  - C. Phase II - If necessary, secure an agreement with Sacramento City College for parking from which a shuttle system to the Zoo would be tested. The test would be for a nine month period, would be limited to weekends and holidays, and would involve discounted admissions to the Zoo and Fairytale Town as an incentive to users.
5. Visitor Population. The continued growth of the region's population, as well as the current lack of regional parks together with an improved zoo with better visitor amenities, is expected to result in increased visitation not only to the Zoo itself, but also to the other Land Park attractions. Consequently, staff recommends implementation of the following measures to minimize the impact of increased attendance:

(The Association to Preserve Land Park is neutral on items A. and B. below.)

- A. Weekend and-holiday differential rates, much like those currently in existence at the golf course, should be established for all fee facilities in Land Park to encourage the public to utilize the Zoo, Fairytale Town, amusement rides, amphitheatre, and other park facilities during non-prime times.
  - B. In an effort to spread out weekend visitation to other times and to accommodate working parents and families, the Zoo will have expanded hours in spring and summer during weekdays with specific days and times to be determined. Staff will provide Council with the specific revised hours when they have been finalized.
  - C. A master schedule for Land Park would be developed and maintained by the reservation section of the Department. Annually, it would be reviewed by Zoological Society, Association to Preserve Land Park, Fairytale Town Board, Golf Advisory Committee, the Land Park Soccer Club, and other interested parties. The master schedule would attempt to avoid conflicting uses of the park and reduce the number of large events scheduled at the same time.
6. Land Use. In addition to preserving the rock garden area for public use as discussed under the recommended alternative, staff recommends the following mitigating measure:
- A. Construction of a new regional park elsewhere in the City, possibly in the Natomas area, will provide additional recreational opportunities in response to increased community demand, thereby reducing demands on existing regional parks such as William Land Park.
7. Public Facilities and Services - Water. Presently, the Zoo consumes a disproportionate amount of the City's annual water usage. Accordingly, the following mitigation measures are recommended:
- A. Wherever feasible, recirculating water systems which would greatly reduce overall water consumption will be installed in all of the proposed exhibits. Recirculation of water wherever feasible will also reduce wastewater volumes. It is also recommended that a study be implemented to determine the feasibility of expanding the use of well water in existing and proposed exhibits.
8. Vegetation. In order to preserve as many of the existing trees as possible, all construction plans should be prepared in consultation with the City Arborist. Whenever possible, all construction should avoid areas within the dripline of the tree canopy. If this is unavoidable, added mitigation measures should be explored in an effort to save the trees. Absent this possibility, the removal of any large trees should be mitigated by the planting of trees of the same species or rarity elsewhere on the site. In addition to the preservation of the rock garden discussed elsewhere, the following mitigation measure is recommended:

- A. The heritage oaks located near the rock garden, the camellia garden, and the Daughters of the American Revolution (DAR) Grove shall all be preserved.

Reinvestment Program

The viability of Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area is largely contingent on financing. The master plan estimates the cost of development for Alternative B-3 modified at approximately \$28 million. Over a 15-year period, the cost averages out to approximately \$1.75 million per year. The Sacramento Zoological Society, the Zoo's nonprofit support group, raises funds for zoo improvements. As the Zoological Society grows in both membership and sophistication in the areas of marketing and fund development, their level of support for zoo improvements continues to increase. Additional possible sources of capital improvement funds include state grants, civic award grants from Sacramento County, a local bond issue, private sector funding, and the City's General Fund. Although General Fund appropriations have traditionally been one of the most frequently used methods of funding capital improvements, increasingly, there are limitations on the City General Fund. Given this fact, together with the need to commit funds for implementation of Alternative B-3 modified of the Sacramento Zoo Master Plan and to renovate Land Park, staff recommends the establishment of a reinvestment program. The Association to Preserve Land Park is neutral on the proposed reinvestment program.

Presently, annual attendance and participation in the multitude of available recreational opportunities in William Land Park exceeds that of any other park in the City system. As Sacramento experiences a continued population increase, use of William Land Park will likewise increase. Further contributing to this increased usage of the park is the fact that William Land Park is both one of only three regional parks in Sacramento that does not have an entrance fee, and is the site of unique family oriented amenities. The Zoo, Fairytale Town, the amusement and pony rides, and surrounding park lands have all provided entertainment to several generations of park visitors. Given the lack of General Fund monies to reinvest in the City's park system, now is the time to establish a mechanism by which the people who use the park will fund the necessary improvements to the site. Failure to implement a Land Park Special Revenue Account to provide for reinvestment into the park could result in an eventual irreversible deterioration of this area.

Preliminary efforts to reinvest in Land Park amenities first began with the establishment of the Fairytale Town Special Fund in FY 1982-83. The Fairytale Town Special Fund provides for the receipt of revenues and the expenditures of funds related to the operation of Fairytale Town and the surrounding area. The special fund approach has enabled Fairytale Town to become one hundred percent operationally self-supporting. Furthermore, as all revenue generated by this facility is utilized to support and improve the area, in the last three years, over \$70,000 from the Fairytale Town Fund has been reinvested in the facility.

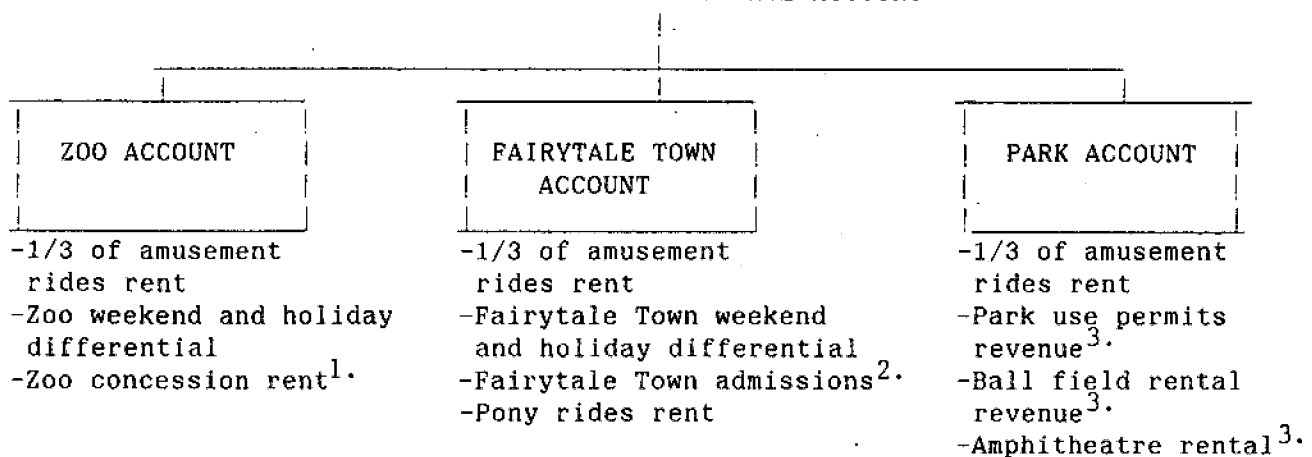
The policy of reinvestment in this area was further expanded with the adoption by City Council in February 1987 of a plan for reinvestment of the revenue from



concession operations in William Land Park in improvements to Fairytale Town, the Zoo, amphitheatre, and surrounding areas. This reinvestment plan has made possible such projects as renovation of the duck lake, demolition of the old chimp exhibit, painting of various Fairytale Town sets, and installation of new rubber mats to enhance safety in Fairytale Town. Creation of the recommended Land Park Special Revenue Account expands on this policy of reinvesting in Land Park.

The Land Park Special Revenue Account will be divided into three elements: Zoo, Fairytale Town, and Park. The primary source of revenue for these trust elements will be the weekend and holiday differential fees established for Zoo and Fairytale Town admissions and amusement rides tickets. An additional source of trust revenue is rent from the Zoo, Fairytale Town, amusement and pony rides concessions, as well as revenue from the rental of picnic areas, softball fields, and the amphitheatre. The revenue from these sources will be distributed amongst the three trust elements as follows:

LAND PARK SPECIAL REVENUE ACCOUNT



1. It is proposed that the rent from the zoo concessions, which is currently deposited in the General Fund, be deposited into the Special Revenue Account commencing with the first year.
2. Since the establishment of the Fairytale Town Special Fund in FY 1982-83, Fairytale Town revenue has been used to first support the total operations of Fairytale Town with any revenue above the cost of operation, reinvested in this facility. In addition, amusement rides rent was reinvested in Zoo, Fairytale Town, and park improvements. The Land Park Account does not impact the Fairytale Town Special Fund with the exception of more equally dispersing the amusement rides revenue between the areas it has traditionally been reinvested in.
3. Presently, very little revenue is produced by the park permit system (less than \$8,000 in FY 1987-88). Further, the current park permit fees are little more than a processing fee which allows staff to assess the level of group park use for a particular day. The current park permit system is not a reservation system. For the park user, the permits do not guarantee a picnic area.

In conjunction with the establishment of the Land Park reinvestment program with its park element, staff recommends a reserved picnic area system in William Land Park in which both the level of service and the corresponding fees would increase. Using McKinley Park's new picnic facility as a model, several group picnic sites in Land Park would be targeted for improvements. Amenities provided should ultimately include tables and benches, barbeques, sinks, electricity, and at select sites, picnic shelters. These areas, which would be available via a reservation system, would be funded by fees collected through the park trust element. The goal of this park reservation system is to improve and expand service and facilities at targeted family and group picnic sites. Included under expanded service would be the utilization of staff to assure reservations.

#### FINANCIAL DATA

It is estimated that Alternative B-3 (modified) of the Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area will cost approximately \$28 million total or an estimated \$1.75 million per year to develop. For the last five years, the Zoo has secured funding for an average of \$200,000 per year in improvements, large portions of which were generated by the Sacramento Zoological Society. In addition to funding the Zoo's educational programs, the Zoological Society's financial support for improvements has steadily increased in recent years. The Zoological Society has contributed nearly half a million dollars to such capital improvement projects as the orangutan, chimpanzee and flamingo exhibits over the last five years and is committed to raising an additional \$450,000 for the rare feline breeding exhibit. Further, it is estimated in the Master Plan that the Zoological Society can raise approximately \$6.75 million towards the cost of master plan development. Additional possible sources of capital improvement funds include other city-wide resources, Sacramento County funds, California State Park and Recreation grants, private sector funding, and a local bond issue.

In order to provide a dedicated source of revenue for the master plan development and surrounding park lands improvements, staff recommends the following weekend and holiday rate differentials to be effective February 1, 1989:

Zoo	\$ .50
Fairytale Town	\$ .25
Picnic permits	\$ 5.00
Picnic reservations	
Improved areas	\$15.00
Larger improved areas	\$25.00
Ballfield rentals, sound permits and fund raising permits	\$15.00
Amphitheatre rental	\$10.00

In addition, the Land Park amusement rides concessionaire is agreeable to implementing a weekend and holiday price increase of \$.15 per ticket and \$1.00 per book of tickets over current prices, with the difference to be paid to the City above and in addition to concession rent, for improvements to the surrounding area.

All weekend and holiday differential fees will be effective February 1, 1989.

In order to provide both improved picnic facilities and to implement an actual reservation system, the following base fees, revenue from all of which will be reinvested in Land Park, are recommended:

<u>Park Facility</u>	<u>Recommended Fee</u>
Improved picnic areas (reserved)	\$ 50.00*
Larger improved picnic areas with additional amenities (reserved)	\$100.00*
Refundable cleaning deposit required for groups over 200 and for others at the discretion of park reservation personnel	Varying from \$100.00* to \$500.00
Family picnic permits - groups under 100 (not reserved)	\$ 25.00
Ball field and soccer field permits (per two hour period)	\$ 25.00**
Amphitheatre rental (per hour)	\$ 25.00
Amplified sound permit	\$ 25.00
Fund raising permit	\$ 25.00***

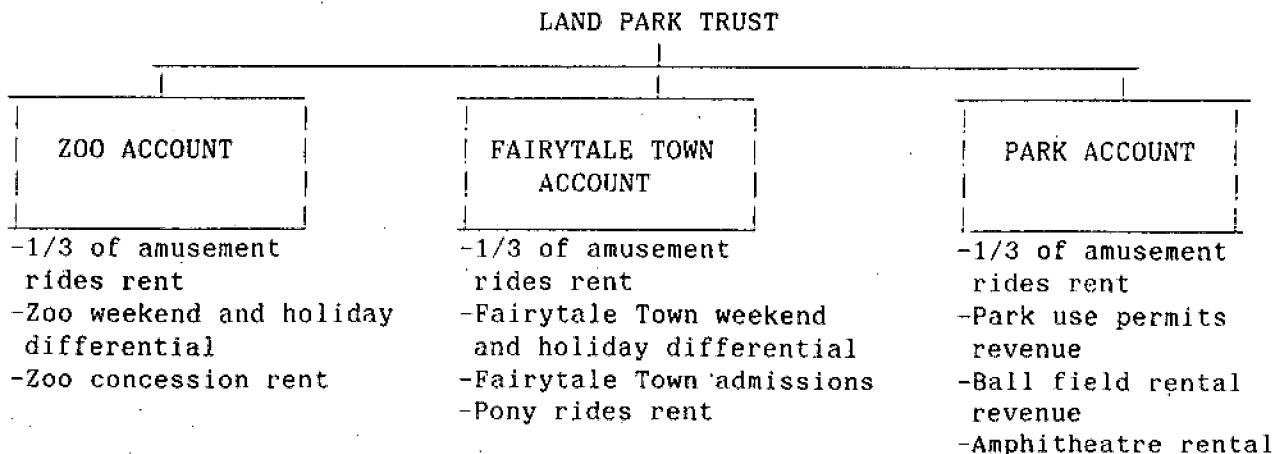
\* These fees will not be implemented until the picnic areas are improved. The remaining fees will be effective February 1, 1989.

\*\* Adult use only. The Department's policy of exempting youth groups from this fee will continue.

\*\*\*No change from current fee proposed.

The special procedural requirements for imposing new fees and increasing existing fees as required by state law will be followed as outlined in the City's Fee and Charge Report.

It is recommended that revenue from the weekend and holiday differential together with the revenue from park permits and amphitheatre and ballfield rentals be deposited in a Land Park Special Revenue Account as follows:



Estimated revenue from these sources is as follows:

<u>Zoo Account</u>	<u>Fairytale Town Account</u>	<u>Park Account</u>
1st year estimated revenue: \$314,000	Total: \$369,000 Operating Cost: \$337,050 Available for Improvements: \$ 31,950	\$ 86,993
5th year estimated revenue: \$382,000	Total: \$447,000 Operating Cost: \$409,686 Available for Improvements: \$ 37,314	\$122,587

This assumes the zoo concession rent is deposited in the special revenue account from the first year on. This depositing of zoo concession revenue into the Zoo Account is consistent with the 11 other department concession contracts whereby rent is deposited into special accounts where it is reinvested in the facilities where the concessions are located.

This further assumes that all Fairytale Town operations will continue to be offset by Fairytale Town revenues, including admissions, as they have been since the FY 1982-83 establishment of the Fairytale Town Account.

Finally, Park Account revenue estimates assume that improved picnic areas would not be available during the initial years while funding is accumulating to develop them and accordingly, the first year estimate is based on the lower family picnic permit fee.

Staff will submit an annual expenditure plan for the Land Park Account to Council as part of the budget process. Input from the various community groups in their respective areas of expertise will be incorporated into the expenditure plan. Specifically, the Sacramento Zoological Society will assist in the annual plan for the Zoo Fund, the Fairytale Town Account for the Fairytale Town Fund, and the Association to Preserve Land Park for the park fund.

Following is a sampling of necessary improvements for the Zoo, Fairytale Town, and surrounding park lands which reflect the type and magnitude of the capital improvement and maintenance projects for which Land Park Trust Funds are an appropriate, if not critical use:

Phase I: Zoo-2002

Gift Shop/Offices  
Snapping Turtle Exhibit  
Picnic Area  
Hippopotamus Exhibit  
Crocodile Exhibit  
Geoffrey's Cat Exhibit

Avian Propagation Center  
Elephant Exhibit  
Giraffe Exhibit  
Jaguar Exhibit  
Margay Exhibit  
Outdoor Interpretive Center

Total: \$7,966,000

Fairytale Town

Renovation of Theatre	\$82,000
Japanese garden and koi pond renovation	15,000
Goat yard renovation	20,000
Perimeter planting	6,000
Install park benches	4,500
Renovate barn and tree slides	5,000
Enhance concession picnic area	5,000
Renovate moat and mill stream	10,000
Purchase new tin soldier trash cans	5,000
Total:	\$ 275,087

Park

Improvements at 5 picnic sites	\$ 175,000
Improvements at 2 larger group picnic sites	76,500
Installation of automatic irrigation system	300,000
Improve park signage	25,000
Boat lake renovation	21,500
Second duck lake renovation	15,000
Improve street lighting and electrical service in park	207,000
Recondition two ball fields	5,000
Rehabilitate four backstops	12,500
Recondition six restrooms including handicap access	42,000
Rehabilitate asphalt perimeter of rock garden	15,000
Rehabilitate the amphitheatre garden	20,000
Upgrade amphitheatre	25,000
Upgrade soccer fields including bleachers and picnic tables	25,000
Rehabilitate the perimeter pathway around Fairytale Town	\$ 50,000
Resurface both parking lots	50,000
Total:	\$1,492,500

RECOMMENDATION

It is recommended that the Transportation and Community Development and Budget and Finance Committees approve this report and refer it to the full City Council for action. It is recommended that the City Council, by resolutions:

- A. Certify the EIR as complete.
- B. Approve the modified version of Alternative B-3 from the Zoo-2002: Master Plan for the Sacramento Zoo and Surrounding Area;
- C. Authorize the establishment of the Land Park Special Revenue Account;

December 5, 1988

- D. Approve the-recommended weekend and holiday fee differentials for the Sacramento Zoo, Fairytale Town, park permits, and ballfield and amphitheatre rentals; and
- E. Approve the recommended fee increases for Land Park park permits and reservations and amphitheatre and ballfield rentals.

Respectfully submitted



Robert P. Thomas, Director  
Parks and Community Services

Recommendation Approved:

Solon Wisham, Jr.  
Assistant City Manager

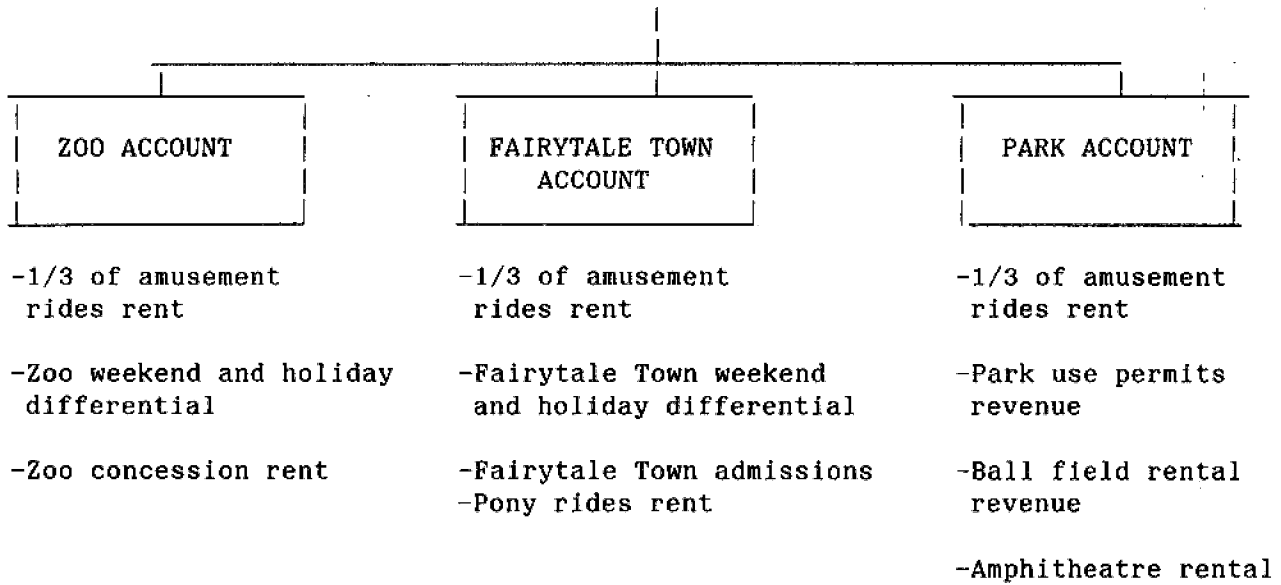
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December 13, 1988  
District No. 4



EXISTING TOPOGRAPHY

LAND PARK SPECIAL REVENUE ACCOUNT



Estimated revenue from these sources is as follows:

<u>Zoo Account</u>	<u>Fairytale Town Account</u>	<u>Park Account</u>
1st year estimated revenue: \$314,000	Total: \$369,000 Operating Cost: \$337,050  Available for Improvements: \$ 31,950	\$ 86,993
5th year estimated revenue: \$382,000	Total: \$447,000 Operating Cost: \$409,686  Available for Improvements: \$ 37,314	\$122,587



A. Weekend and Holiday Fee Differential

<u>Facility</u>	<u>Recommended Fee</u>
Zoo	\$ .50
Fairytale Town	\$ .25
Picnic permits	\$ 5.00
Picnic reservations	
Improved areas	\$15.00
Larger improved areas	\$25.00
Ballfield rentals, sound permits and fund raising permits	\$15.00
Amphitheatre rental	\$10.00

B. Fee Increases

Improved picnic areas (reserved)	\$ 50.00*
Larger improved picnic areas with additional amenities (reserved)	\$100.00*
Refundable cleaning deposit required for groups over 200 and for others at the discretion of park reservation personnel	Varying from \$100.00* to \$500.00
Family picnic permits - groups under 100 (not reserved)	\$ 25.00
Ball field and soccer field permits (per two hour period)	\$ 25.00**
Amphitheatre rental (per hour)	\$ 25.00
Amplified sound permit	\$ 25.00

\* These fees will not be implemented until the picnic areas are improved. The remaining fees will be effective February 1, 1989.

\*\* Adult use only. The Department's policy of exempting youth groups from this fee will continue.

SACRAMENTO ZOO MASTER PLAN  
FINDINGS OF FACT AND  
STATEMENT OF OVERRIDING CONSIDERATIONS

DEC 13 1988

The City Council hereby adopts the following Findings of Fact and Statement of Overriding Considerations for the Zoo-2002 Master Plan for the Sacramento Zoo and Surrounding Area Environmental Impact Report, Alternative B-3.

IMPACTS AND MITIGATION MEASURES

The Environmental Impact Report for the Zoo Master Plan identified significant environmental impacts associated with Alternative B-3 in the areas of land use, visitor population, traffic circulation and parking, air quality, noise, water, vegetation and aesthetics. These impacts and the mitigation measures which will reduce them to a less than significant level are as follows:

A. Land Use

1. Loss of the use of the formal gardens due to zoo expansion.
2. Increased demand for regional recreational facilities.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant land use effects to a less-than-significant level:

1. For the loss of the formal gardens, the following mitigation measures will be adopted:
  - a. The rock garden area will be retained for public use and will not be included within the zoo boundaries.
2. For increased demand for regional recreational facilities:
  - a. The construction of a new regional park approved in the North Natomas Community Plan for a site in the North Natomas area will provide increased demand.

B. Visitor Population

Increased visitation to the Zoo and to other Land Park attractions.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant visitor population impact to a less-than-significant level:

1. Weekend and holiday differential rates, much like those currently in existence at the golf course, will be established for all fees facilities in Land Park to encourage the public to utilize the Zoo, Fairytale Town, amusement rides, amphitheater, and other park facilities during non-prime times.
2. In an effort to spread out weekend visitation to other times and to accommodate working parents and families, the Zoo will have expanded

hours in spring and summer during weekdays with specific days and times to be determined.

3. A master schedule for Land Park will be developed and maintained by the reservation section of the Department. Annually, it will be reviewed by the Zoological Society, Association to Preserve Land Park, Fairytale Town Board, Golf Advisory Committee, the Land Park Soccer Club, and other interested parties. The master schedule will attempt to avoid conflicting uses of the park and reduce the number of large events scheduled at the same time.

C. Traffic and Circulation

1. Increased congestion resulting in decreased levels of service on Land Park Drive and Sutterville Road.
2. Thirty percent to forty-eight percent increase in traffic volumes.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant traffic effects to less-than-significant level:

1. Provide a left-turn lane on Sutterville Road entering Land Park Drive. This project will be submitted and prioritized as part of the normal Street Division CIP budget process.
2. To encourage use of public transit, all individuals utilizing public transit for transport to the Zoo or Fairytale Town will be eligible for a twenty percent discounted admission to both facilities. Proof of ridership via a bus ticket or transfer for that date, or a monthly bus pass, will be required for each discount obtained.

D. Parking

1. Increased parking demand on nearby on nearby streets, residential and/or commercial, with increase in spillover from 15 to 40 days per year.

The City Council finds, based upon substantial evidence in the record, that the following phased mitigation will reduce the above-described potentially significant parking impacts to a less-than-significant level:

- a. Phase 1: Immediately proceed to secure an agreement to utilize the approximately 115 parking spaces located at the state office building on Sutterville Road on weekends and holidays.
- b. Phase 2: If necessary, secure an agreement with Sacramento City College for parking from which a shuttle system to the Zoo will be tested. The test will be for a nine-month period, will be limited to weekends and holidays, and will involve discounted admissions to the Zoo and Fairytale Town as an incentive to users.

E. Air Quality

1. Temporary generation of dust due to construction affecting nearby uses.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant air quality impact to a less-than-significant level:

1. Water down construction sites;
2. Cover stockpiled soils;
3. Re-vegetate immediately;
4. Sweep streets in the vicinity daily.

F. Noise

1. Temporary increase in construction noise.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant noise impact to a less-than-significant level:

1. Limit construction to daylight hours;
2. Require maximum feasible noise control.

G. Public Services - Water

1. Increase in water consumption.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measure will reduce the above-described potentially significant water impact to a less-than-significant level:

1. Wherever feasible, install circulating water systems in all of the proposed exhibits.

Furthermore, a study will be implemented to determine the feasibility of expanding the use of well water in existing and proposed exhibits. If the use of well water is found to be a feasible mitigation measure, it will be implemented.

H. Vegetation

1. Some loss of mature trees due to facility placement may be required.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant vegetation impact to a less-than-significant level:

1. All construction plans will be prepared in consultation with the City Arborist.
2. Wherever possible, all construction will avoid areas within the dripline of the tree canopy.

3. Where the removal of any large trees is unavoidable, the City will plant trees of the same species or rarity elsewhere on the site.
4. The Heritage Oaks, which are located near the rock garden; the camellia garden; and the Daughters of the American Revolution grove shall all be preserved.

#### I. Aesthetics

1. Loss of open space and trees.
2. Alteration of views due to construction of facilities.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant aesthetic impacts to a less-than-significant level:

1. The zoo boundaries have been scaled back to minimize the loss of open space. The zoo expansion has been limited to one to one-and-a-half acres, and the rock garden has been retained for public use outside the zoo fence line.
2. Minimize tree removal.
3. Specifically with regard to the education building:
  - a. Design structure so as to minimize removal of the existing tree cover;
  - b. Design landscaping to soften and buffet both near and long-range views.
  - c. An advisory committee to the Director representing the Fairytale Town Board, the Geological Society and the Association to Preserve Land Park will work with the Department on the design of the building.
  - d. Require a view of all project design elements by City Design Review Committee.

#### ALTERNATIVES

The EIR described and analyzed four alternative plans for the Zoo, including the no-project alternative. The four project alternatives are summarized below:

##### B-1: No Project Alternative

Under this alternative, there would be no renovations or new developments within the Zoo Master Plan study area. This plan would, if approved, place a moratorium on zoo improvements.

##### B-2: Renovation of the Zoo Within Existing 14-Acre Boundaries

This alternative would involve renovation of many of the outdated exhibit areas in the Zoo, but would not include any expansion outside of the current fence

line of the Zoo. This alternative would follow the plan detailed in the Zoo Master Plan, including development of the following five thematic areas: the Primate Area; the African Savannah; the Sacramento Area; the Nile River; and the Cat Area; as well as an entrance/visitor service area and a service area, but would not include the African Rivers Aviary, the Tortoise Exhibit, the picnic area, and the Australian Section. It would include construction of an education/administration building and relocation of the amusement and/or pony rides concessions to the northern area behind Fairytale Town.

B-3: Expansion of the Zoo Boundaries North to 15th Avenue

This approximately two-acre expansion would result in a 16-acre Zoo. This plan includes the thematic areas described in Alternative B-2 above, as well as the African Rivers Aviary, the Tortoise Exhibit, and the picnic area. It also includes the education/administration building, the pedestrian overpass between Fairytale Town and the entrance to the Zoo, and relocation of the amusement and/or pony rides concessions.

B-4: Expansion of the Zoo Boundaries North to 15th Avenue and East Across Land Park Drive to Include Approximately Four Acres South of Fairytale Town

This plan, which would result in a Zoo of approximately 20 acres, would include all of the elements contained in the Master Plan. In addition to all of the features of B-3 above, this plan would add an Australian section on the 4+ acres south of Fairytale Town. The Australian section would contain exhibits for koalas, crocodiles, tree kangaroos, a nocturnal exhibit, and an "outback farm" geared to younger visitors. This plan would also include the education/administration building, the pedestrian overcrossing, and the relocation of the concessions.

The City Council carefully considered each alternative and selected Alternative B-3, with modifications, as the preferred alternative. The other alternatives were determined not to be feasible for the following areas:

1. Alternative B-1, the no-project alternative, permits no renovations or new developments within the Zoo. This plan would leave the animals in their present exhibits, many of which are small and confining. The Zoo would deteriorate over time, decreasing the value to both the community and to the preservation of wildlife.
2. Alternative B-2, renovation of the Zoo within the existing 14-acre boundaries, would permit renovation and redevelopment of the present exhibits, but would prevent the City from expanding the Zoo outside the current fence line. Some expansion of the existing acreage is necessary due to the space needs for improved exhibits and visitor services. In particular, the expansion would provide the only open space within the Zoo for picnicking and other zoo-related open space activities. Additional acreage is also needed to construct the small amphitheatre, which will feature wildlife lectures and related educational demonstrations, and which project has received partial funding from the California State Department of Parks and Recreation. Alternative B-2 would have prohibited inclusion of both picnic space and the amphitheatre in the Zoo.

3. Alternative B-4, expansion of zoo boundaries north of 15th Avenue and east across Land Park Drive, would have resulted in expansion of the Zoo by approximately six acres, but the community opposition to commitment of that amount of space in William Land Park has lead the City to approve a smaller expansion and a scaled-back master plan.

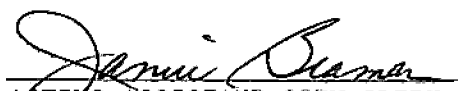
#### STATEMENT OF OVERRIDING CONSIDERATIONS

The Environmental Impact Report identified a significant adverse effect to pedestrian safety due to an increase in vehicle traffic. The suggested mitigation was construction of a pedestrian overpass. However, due to community opposition to the pedestrian overcrossing, this mitigation measure is not being adopted. Alternatively, the City Council hereby directs the City's Traffic Engineer to conduct a study to determine other ways in which adverse impacts to pedestrian safety are at this time overridden due to social considerations. The City Council hereby determines that the following benefits of the adoption of the Zoo 2002: Master Plan outweigh the unavoidable adverse effect.

1. Sacramento will have a zoo which is small enough to be operated effectively and efficiently, but large enough to accommodate the expected crowds and to exhibit an interesting and diverse collection of animals in first-class naturalistic habitats.
2. The Zoo's animal collection will have a broad base of appeal. For example, an African Savannah theme area will allow four popular species to remain : giraffe, elephant, zebra, and ostrich. A Sacramento American River Area will exhibit native animals, since survey information reveals that a large majority of the area's residents wanted more native California animals.
3. The plan permits the Zoo to increase its effectiveness in conservation education and saving endangered species from extinction. Animals in their modern exhibits, which will simulate natural environments, will serve as the Zoo's front line conservation educational effort.
4. Implementation of the Zoo-2002 will significantly enhance the recreational value of the Zoo, which is a significant community resource and which is the most heavily attended year-round visitor attraction in the Sacramento area.

  
MAYOR

ATTEST:

  
ACTING ASSISTANT CITY CLERK

MEG JOHNSON  
ERLING LINGGI

X 5568

X 5337

12/7/88

1. Zoo Masterplan EIR

OVER  
RIDING

2. F of F and statement of  
overriding considerations for  
the Zoo 2002: Masterplan for  
the Soc. Zoo and surrounding  
area EIR.

THIS IS AT ATTY'S OFF. (JACK CHAIRS)  
IT WILL BE LATE.

3. Zoo Soc. Report on Economic  
Impact of Zoo. (Council will rec  
Report)

THEY MUST BE IN THIS ORDER.

12-13-88

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# 12-13-88 agenda

Reports go in this order:

Reports Council Committee:

1. zoo master plan
2. zoological Society Economical Impact Report

Questions - call  
Meg Johnson  
Parks  
X 5568

48

SACRAMENTO ZOO MASTER PLAN  
FINDINGS OF FACT AND  
STATEMENT OF OVERRIDING CONSIDERATIONS

The City Council hereby adopts the following Findings of Fact and Statement of Overriding Considerations for the Zoo-2002 Master Plan for the Sacramento Zoo and Surrounding Area Environmental Impact Report, Alternative B-3.

IMPACTS AND MITIGATION MEASURES

The Environmental Impact Report for the Zoo Master Plan identified significant environmental impacts associated with Alternative B-3 in the areas of land use, visitor population, traffic circulation and parking, air quality, noise, water, vegetation and aesthetics. These impacts and the mitigation measures which will reduce them to a less than significant level are as follows:

A. Land Use

1. Loss of the use of the formal gardens due to zoo expansion.
2. Increased demand for regional recreational facilities.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant land use effects to a less-than-significant level:

1. For the loss of the formal gardens, the following mitigation measures will be adopted:
  - a. The rock garden area will be retained for public use and will not be included within the zoo boundaries.
2. For increased demand for regional recreational facilities:
  - a. The construction of a new regional park approved in the North Natomas Community Plan for a site in the North Natomas area will provide increased demand.

B. Visitor Population

Increased visitation to the Zoo and to other Land Park attractions.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant visitor population impact to a less-than-significant level:

City Council directs staff to explore establishing weekend and holiday differential rates, much like those currently in existence at the golf course, for all fee facilities in Land Park to encourage the public to utilize the Zoo, Fairytale Town, amusement rides, amphitheater, and other park facilities during non-prime times. If the use of weekend and holiday differential rates is found to be a feasible mitigation measure, it will be implemented.

1. In an effort to spread out weekend visitation to other times and to accommodate working parents and families, the Zoo will have expanded

hours in spring and summer during weekdays with specific days and times to be determined.

3. A master schedule for Land Park will be developed and maintained by the reservation section of the Department. Annually, it will be reviewed by the Zoological Society, Association to Preserve Land Park, Fairytale Town Board, Golf Advisory Committee, the Land Park Soccer Club, and other interested parties. The master schedule will attempt to avoid conflicting uses of the park and reduce the number of large events scheduled at the same time.

C. Traffic and Circulation

1. Increased congestion resulting in decreased levels of service on Land Park Drive and Sutterville Road.
2. Thirty percent to forty-eight percent increase in traffic volumes.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant traffic effects to less-than-significant level:

1. Provide a left-turn lane on Sutterville Road entering Land Park Drive. This project will be submitted and prioritized as part of the normal Street Division CIP budget process.
2. To encourage use of public transit, all individuals utilizing public transit for transport to the Zoo or Fairytale Town will be eligible for a twenty percent discounted admission to both facilities. Proof of ridership via a bus ticket or transfer for that date, or a monthly bus pass, will be required for each discount obtained.

D. Parking

1. Increased parking demand on nearby on nearby streets, residential and/or commercial, with increase in spillover from 15 to 40 days per year.

The City Council finds, based upon substantial evidence in the record, that the following phased mitigation will reduce the above-described potentially significant parking impacts to a less-than-significant level:

- a. Phase 1: Immediately proceed to secure an agreement to utilize the approximately 115 parking spaces located at the state office building on Sutterville Road on weekends and holidays.
- b. Phase 2: If necessary, secure an agreement with Sacramento City College for parking from which a shuttle system to the Zoo will be tested. The test will be for a nine-month period, will be limited to weekends and holidays, and will involve discounted admissions to the Zoo and Fairytale Town as an incentive to users.

E. Air Quality

1. Temporary generation of dust due to construction affecting nearby uses.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant air quality impact to a less-than-significant level:

1. Water down construction sites;
2. Cover stockpiled soils;
3. Re-vegetate immediately;
4. Sweep streets in the vicinity daily.

F. Noise

1. Temporary increase in construction noise.
2. Increase in noise due to use of outdoor interpretive center.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant noise impact to a less-than-significant level:

1. Limit construction to daylight hours;
2. Require maximum feasible noise control.
3. No permanent lighting and amplified sound equipment shall be included in the design of the outdoor interpretive center. An operational plan shall be developed with public input prior to construction. The plan shall address: (a) hours of operation; (2) use of temporary lights; (3) use of temporary sound equipment; and (4) types of use.

G. Public Services - Water

1. Increase in water consumption.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measure will reduce the above-described potentially significant water impact to a less-than-significant level:

1. Wherever feasible, install circulating water systems in all of the proposed exhibits.

Furthermore, a study will be implemented to determine the feasibility of expanding the use of well water in existing and proposed exhibits. If the use of well water is found to be a feasible mitigation measure, it will be implemented.

H. Vegetation

1. Some loss of mature trees due to facility placement may be required.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant vegetation impact to a less-than-significant level:

1. All construction plans will be prepared in consultation with the City Arborist.
2. Wherever possible, all construction will avoid areas within the dripline of the tree canopy.
3. Where the removal of any large trees is unavoidable, the City will plant trees of the same species or rarity elsewhere on the site.
4. The Heritage Oaks, which are located near the rock garden; the camellia garden; and the Daughters of the American Revolution grove shall all be preserved.

#### I. Aesthetics

1. Loss of open space and trees.
2. Alteration of views due to construction of facilities.

The City Council finds, based upon substantial evidence in the record, that the following mitigation measures will reduce the above-described potentially significant aesthetic impacts to a less-than-significant level:

1. The zoo boundaries have been scaled back to minimize the loss of open space. The zoo expansion has been limited to one to one-and-a-half acres, and the rock garden has been retained for public use outside the zoo fence line.
2. Minimize tree removal.
3. Specifically with regard to the education building:
  - a. Design structure so as to minimize removal of the existing tree cover;
  - b. Design landscaping to soften and buffet both near and long-range views.
  - c. An advisory committee to the Director representing the Fairytale Town Board, the Geological Society and the Association to Preserve Land Park will work with the Department on the design of the building.
  - d. Require a view of all project design elements by City Design Review Committee.

#### ALTERNATIVES

The EIR described and analyzed four alternative plans for the Zoo, including the no-project alternative. The four project alternatives are summarized below:

##### B-1: No Project Alternative

Under this alternative, there would be no renovations or new developments within the Zoo Master Plan study area. This plan would, if approved, place a moratorium on zoo improvements.

B-2: Renovation of the Zoo Within Existing 14-Acre Boundaries

This alternative would involve renovation of many of the outdated exhibit areas in the Zoo, but would not include any expansion outside of the current fence line of the Zoo. This alternative would follow the plan detailed in the Zoo Master Plan, including development of the following five thematic areas: the Primate Area; the African Savannah; the Sacramento Area; the Nile River; and the Cat Area; as well as an entrance/visitor service area and a service area, but would not include the African Rivers Aviary, the Tortoise Exhibit, the picnic area, and the Australian Section. It would include construction of an education/administration building and relocation of the amusement and/or pony rides concessions to the northern area behind Fairytale Town.

B-3: Expansion of the Zoo Boundaries North to 15th Avenue

This approximately two-acre expansion would result in a 16-acre Zoo. This plan includes the thematic areas described in Alternative B-2 above, as well as the African Rivers Aviary, the Tortoise Exhibit, and the picnic area. It also includes the education/administration building, the pedestrian overpass between Fairytale Town and the entrance to the Zoo, and relocation of the amusement and/or pony rides concessions.

B-4: Expansion of the Zoo Boundaries North to 15th Avenue and East Across Land Park Drive to Include Approximately Four Acres South of Fairytale Town

This plan, which would result in a Zoo of approximately 20 acres, would include all of the elements contained in the Master Plan. In addition to all of the features of B-3 above, this plan would add an Australian section on the 4+ acres south of Fairytale Town. The Australian section would contain exhibits for koalas, crocodiles, tree kangaroos, a nocturnal exhibit, and an "outback farm" geared to younger visitors. This plan would also include the education/administration building, the pedestrian overcrossing, and the relocation of the concessions.

The City Council carefully considered each alternative and selected Alternative B-3, with modifications, as the preferred alternative. The other alternatives were determined not to be feasible for the following areas:

1. Alternative B-1, the no-project alternative, permits no renovations or new developments within the Zoo. This plan would leave the animals in their present exhibits, many of which are small and confining. The Zoo would deteriorate over time, decreasing the value to both the community and to the preservation of wildlife.
2. Alternative B-2, renovation of the Zoo within the existing 14-acre boundaries, would permit renovation and redevelopment of the present exhibits, but would prevent the City from expanding the Zoo outside the current fence line. Some expansion of the existing acreage is necessary due to the space needs for improved exhibits and visitor services. In particular, the expansion would provide the only open space within the Zoo for picnicking and other zoo-related open space activities. Additional acreage is also needed to construct the small amphitheatre, which will feature wildlife lectures and related educational demonstrations, and which

project has received partial funding from the California State Department of Parks and Recreation. Alternative B-2 would have prohibited inclusion of both picnic space and the amphitheatre in the Zoo.

3. Alternative B-4, expansion of zoo boundaries north of 15th Avenue and east across Land Park Drive, would have resulted in expansion of the Zoo by approximately six acres, but the community opposition to commitment of that amount of space in William Land Park has lead the City to approve a smaller expansion and a scaled-back master plan.

#### STATEMENT OF OVERRIDING CONSIDERATIONS

The Environmental Impact Report identified a significant adverse effect to pedestrian safety due to an increase in vehicle traffic. The suggested mitigation was construction of a pedestrian overpass. However, due to community opposition to the pedestrian overcrossing, this mitigation measure is not being adopted. Alternatively, the City Council hereby directs the City's Traffic Engineer to conduct a study to determine other ways in which adverse impacts to pedestrian safety are at this time overridden due to social considerations. The City Council hereby determines that the following benefits of the adoption of the Zoo 2002: Master Plan outweigh the unavoidable adverse effect.

1. Sacramento will have a zoo which is small enough to be operated effectively and efficiently, but large enough to accommodate the expected crowds and to exhibit an interesting and diverse collection of animals in first-class naturalistic habitats.
2. The Zoo's animal collection will have a broad base of appeal. For example, an African Savannah theme area will allow four popular species to remain : giraffe, elephant, zebra, and ostrich. A Sacramento American River Area will exhibit native animals, since survey information reveals that a large majority of the area's residents wanted more native California animals.
3. The plan permits the Zoo to increase its effectiveness in conservation education and saving endangered species from extinction. Animals in their modern exhibits, which will simulate natural environments, will serve as the Zoo's front line conservation educational effort.
4. Implementation of the Zoo-2002 will significantly enhance the recreational value of the Zoo, which is a significant community resource and which is the most heavily attended year-round visitor attraction in the Sacramento area.

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MAYOR

ATTEST:

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ACTING ASSISTANT CITY CLERK





49

DEPARTMENT OF PARKS  
AND COMMUNITY SERVICES

CITY OF SACRAMENTO  
CALIFORNIA

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SUITE 400  
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95814-2977

ROBERT P. THOMAS  
DIRECTOR

December 7, 1988

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G. ERLING LINGGI  
ASSISTANT DIRECTOR

WALTER S. UEDA  
DEPUTY DIRECTOR

CITY MANAGER'S OFFICE  
**RECEIVED**  
DEC 7 1988

DIVISIONS:  
CROCKER ART MUSEUM  
GOLF  
METROPOLITAN ARTS  
MUSEUM AND HISTORY  
PARKS  
RECREATION  
ZOO

City Council  
Sacramento, California

Honorable Members in Session:

SUBJECT: Sacramento Zoological Society's Economic Impact Report

SUMMARY

This report presents the results of an Economic Impact Report produced by Samuel J. Cullers and Associates and commissioned by the Sacramento Zoological Society, and is for information only.

JOINT COMMITTEE ACTION

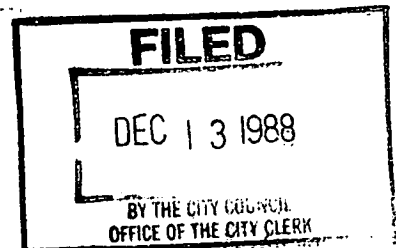
The attached report will be heard by the joint Budget and Finance/Transportation and Community Development Committee on December 13, 1988. Results of that meeting will be presented orally to the Council.

RECOMMENDATION

This report is for information only.

Respectfully submitted,

*B. Erling Linggi*  
for - Robert P. Thomas, Director  
Parks and Community Services



Approved for Information:

*Walter J. Sipe*  
Walter J. Sipe  
City Manager

RPT:ja

December 13, 1988  
District No.

RECEIVED  
CITY OF PARKS SERVICE  
CITY OF SACRAMENTO  
DEC 8 8 04 AM '88



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48

DEPARTMENT OF PARKS  
AND COMMUNITY SERVICES

CITY OF SACRAMENTO  
CALIFORNIA

ROBERT P. THOMAS  
DIRECTOR

December 5, 1988

G. ERLING LINGGI  
ASSISTANT DIRECTOR

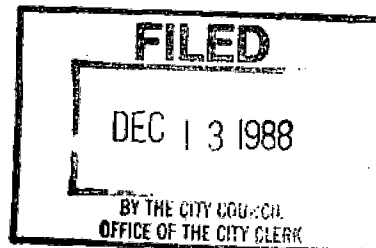
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DIVISIONS:  
CROCKER ART MUSEUM  
GOLF  
METROPOLITAN ARTS  
MUSEUM AND HISTORY  
PARKS  
RECREATION  
ZOO

Budget and Finance/Transportation  
and Community Development Committee  
Sacramento, California



Honorable Members in Session:

SUBJECT: Sacramento Zoological Society's Economic Impact Report

SUMMARY

This report presents the results of an Economic Impact Report produced by Samuel J. Cullers and Associates and commissioned by the Sacramento Zoological Society, and is for information only.

BACKGROUND INFORMATION

The results of the economic impact report indicate that the Sacramento Zoo has a positive and major economic impact in the Sacramento community by generating both jobs and revenue. Further, this report suggests that Zoo expansion and improvements outlined in the Zoo's master plan could double the economic benefits to this community.

The Sacramento Zoo is one of the most self-sufficient municipal zoos in the country. Revenues from admissions, concessions, trust transfers, animal sales, and grants have provided 76-82% of the Zoo's city operating expenses for the last three years. Therefore, direct cost to the General Fund for fiscal years 1985-86 through 1987-88 was only \$221,022, \$189,527, and \$272,195, respectively. Support from the Sacramento Zoological Society offsets costs of capital improvement and enables the Zoo to provide a quality education program.

The economic impact report suggests that the direct cost to the City General Fund is minimal, especially when compared to other municipal zoos in the United States which contribute much less to their supporting budgets. Further, this report suggests that the Zoo is a significant contributor to the economic vitality of the metropolitan area. Following are some of the pertinent data supporting this view:



1. The Zoo has an FY 1987-88 economic impact of \$9.5 million in terms of jobs, tourist dollars, household income, etc. (See Exhibit A.) By 2002, this impact could be as high as \$17.8 million (not including any inflation).
2. The Zoo currently has a direct and indirect job creation impact of 316. This could be increased to 594 jobs by 2002.
3. The Zoo's total tax impact for FY 1987-88 was \$824,000, of which about 39% came to the City and County in the form of sales and hotel taxes.
4. Economic impact from construction of Zoo-2002 could impact an additional \$52,250,000 to \$61,750,000. If this positive impact were distributed equally over the next 15 years, there would be an additional yearly impact of \$3.5 to \$4.1 million.

As one of the City's most important cultural and recreational facilities, the Sacramento Zoo contributes greatly to the quality of life in the area. The Zoo is the most heavily attended year-around public facility in the Sacramento area, which attracted 588,000 visitors in FY 1987-88. The primary mission of the Zoo is to have a positive effect on wildlife conservation and promote greater understanding and appreciation for the animal world. The Zoo is one of Sacramento's most economical family attractions. Last year, there were over 19,000 participants in the Zoo's education programs and 65,000 school children visited the Zoo free of charge. Conservation programs are paramount at the Sacramento Zoo, which has received numerous national awards for conservation programs and for successful breeding programs.

#### FINANCIAL DATA

This report suggests that the Sacramento Zoo is a financially sound organization and when the total economic impact is studied, the Zoo has little actual dependency on tax dollars.

#### RECOMMENDATION

This report is for information only.

Respectfully submitted,



Robert P. Thomas, Director  
Parks and Community Services

Approved for Information:

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Solon Wisham, Jr.  
Assistant City Manager

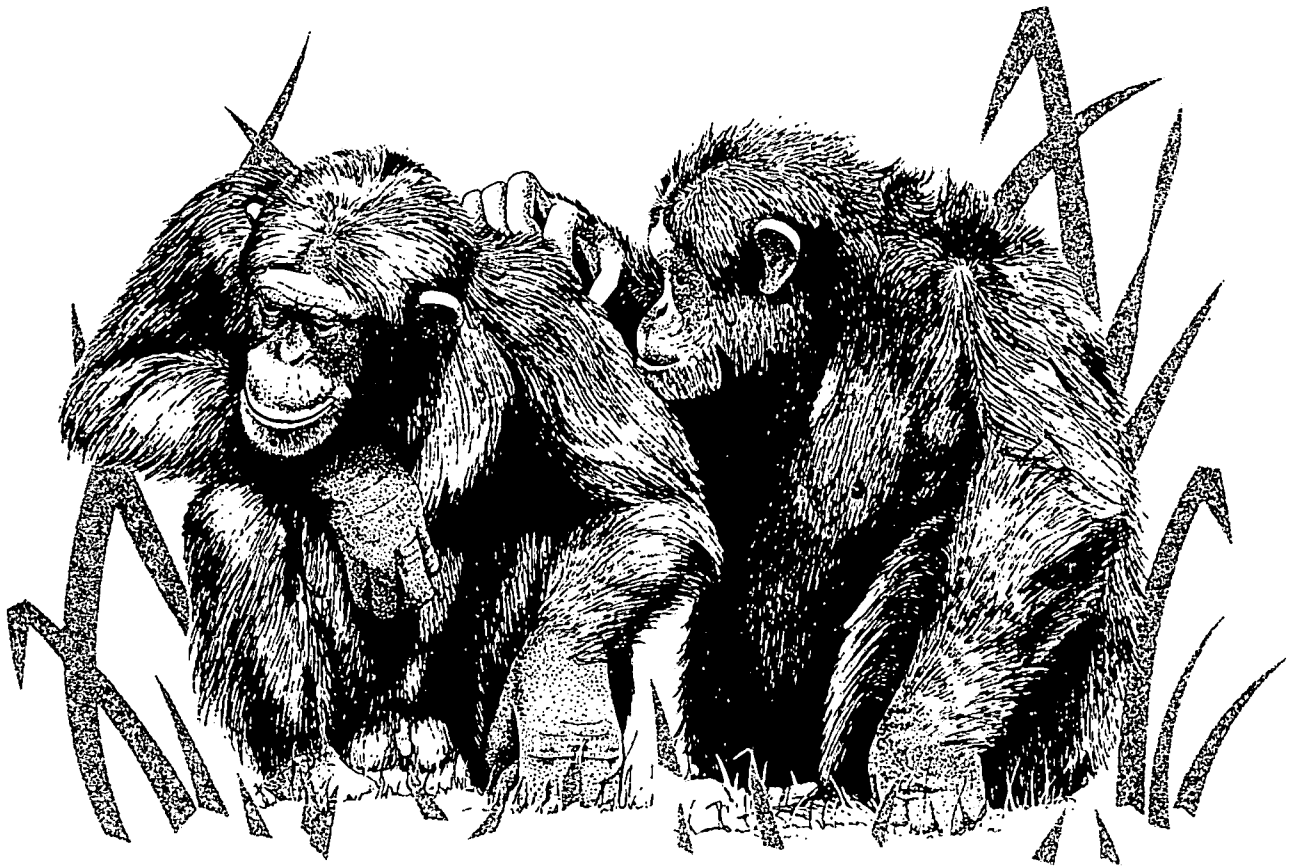
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December 13, 1988  
District No. 4



# ZOO-2002

12-13-88  
#47



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**The City of Sacramento Department  
of Parks & Community Services  
Master Plan for the Sacramento Zoo  
and Surrounding Area**

# ZOO-2002



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**The City of Sacramento Department  
of Parks & Community Services  
Master Plan for the Sacramento Zoo  
and Surrounding Area**



CITY OF SACRAMENTO

City Council

Anne Rudin, Mayor  
David M. Shore, District 1  
Lyla Ferris, District 2  
Douglas N. Pope, District 3  
Tom Chinn, District 4  
Joe Serna, Jr., District 5  
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Walter J. Slipe

Department of Parks and Community Services

Robert P. Thomas

Zoo Director

Steve H. Taylor

Special thanks is extended to these citizens who gave generously of their time and expertise during the master planning process:

#### CITIZENS' ADVISORY COMMITTEE

Dick Saldine, Chairperson - Sacramento Zoological Society, Past President  
Joe Holmberg, Vice Chairperson - Holy Spirit School  
Phil Angelides - Neighborhood Representative  
Don Babbitt - Association to Preserve Land Park, President  
Don Ball - Neighborhood Representative  
Steve Belzer - Association to Preserve Land Park, Past President  
Dr. Murray Fowler - U.C. Davis Professor of Veterinary Medicine  
Joanna Ito - Neighborhood Representative  
Tim Jang - Neighborhood Representative  
Joyce Koontz - Sacramento Zoological Society Docent President  
Shirley Plant - Fairytale Town Board  
William Revitt - Neighborhood Representative  
Bill Richards - Fairytale Town Board  
Marcia Stewart - Holy Spirit School  
Bill Waltermeyer - Neighborhood Representative  
Virgil Whiteley - Neighborhood Representative

#### DIRECTOR'S TASK FORCE

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Patty Gibson, Director of Docent Education

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##### Citizens' Advisory Committee:

Dick Saldine, Chair  
Joanna Ito  
Phil Agelides

##### Department of Parks and Community Services:

Robert P. Thomas, Director  
Steve H. Taylor, Zoo Director  
Debra Small-Maier, Resource Development and Management

THE MASTER PLAN WAS PREPARED BY:

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and  
Debra Small-Maier, Parks and Community Services Administration

With the Services of the Following Consultants:

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John Swanson, The Portico Group  
Jennifer Franz, JD Franz Research  
Rick Hansen and Michael Brenner, URS Corporation

Under the Direction of:

Robert P. Thomas, Director  
Department of Parks and Community Services  
City of Sacramento

With the Assistance of the Master Plan Citizens' Advisory Committee  
and the Director's Task Force

and  
Staff Members:

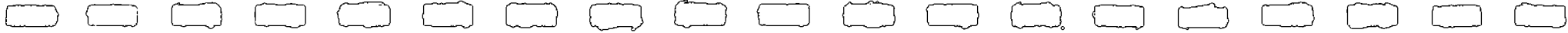
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# **I** --- **n t r o d u c t i o n**



## THE MASTER PLAN PROCESS

The Sacramento Zoo remains one of the finest and most popular forms of low cost family education and recreation in Sacramento. Located in William Land Regional Park, the zoo exhibits over seven hundred animals representing one hundred sixty species in a beautiful parklike atmosphere. Presently, no adequate master plan of the Sacramento Zoo exists. In fact, throughout much of its sixty-year history, the zoo has been developed via a piecemeal approach. The one exception to this incremental evolution was the adoption by the City Council in 1970 of an organized plan to guide future development at the then eleven-acre zoo. Proposed by the Sacramento Zoological Society and prepared by a local architectural firm, the impetus for the plan was to provide organized guidelines for utilizing the nearly \$70,000.00 in the zoo's construction fund at the time. Although termed a master plan, the 1970 plan was primarily limited to a site plan for capital improvements.

The lack of a more comprehensive or current master plan for the Sacramento Zoo has not gone unnoticed. The American Association of Museums' assessment of the Sacramento Zoo as well as evaluations by the Federal Institute of Museum Services in response to the zoo's annual applications for IMS Grant Funds consistently criticized the absence of a guiding master plan.

Perhaps more than any other time in the zoo's history, the development of a comprehensive master plan is critical. During the last decade, great changes have occurred in philosophy on zoo exhibits, in keeping with the growing commitment to wildlife conservation. According to the American Association of Museums' assessment of the Sacramento Zoo:

"The Sacramento Zoo contains a number of old, outdated exhibits. These are primarily rows, or clusters, of cages, specifically housing many bird species, small mammals and cats. And, unfortunately, the facilities housing the largest zoo animals (elephant, giraffe and hippo) were among the first built, and therefore, are now badly in need of replacement.

The zoo is aware that these exhibits do not match the expectations of modern visitors....The new Master Plan addresses them directly (and) acceptance of, and public display of, the new Master Plan concepts will demonstrate to the visitor that improvements in this most critical area are underway."

More importantly, if we wish to improve the quality of service to the community while simultaneously having a positive effect on wildlife conservation, then planning must begin now.

The Sacramento Zoo Master Plan, Zoo-2002, is comprehensive in that it systematically addresses not only the specifics of the animal collection and exhibit design but also the zoo's visitor population, mission, educational programs, implementation and operation plans, public and private support and revenue generation. Further, the plan encompasses the surrounding area including Fairytale Town and the amusement and pony rides areas.

Initial funding for the plan was equally derived from the City of Sacramento, the County of Sacramento and the Sacramento Zoological Society. The planning process has spanned three years and has involved extensive citizen, staff and consultant input.

Under the coordination of designated department staff persons, a staff task force comprised of zoo, parks and administrative services employees was created to advise and assist with the master planning process. Additional input was solicited from police, parking, engineering and planning staff regarding their various areas of expertise. Initially, staff was assisted in this master planning process by Zoo Master Planning Consultants Wildlife Associates, Inc.

A Citizens' Advisory Committee comprised of individuals representing various special interest groups and organizations interested in the Master Plan including the Zoological Society, Fairytale Town Board, Holy Spirit Elementary School and Land Park residents was appointed by the Director of the Department of Parks and Community Services. This group, which met on a regular basis over a thirteen month period, provided extensive input into the Master Plan process. Two public meetings, designed to solicit community input, were held in March and May of 1985. The response was overwhelming with an estimated 200 citizens attending the first meeting and approximately 400 people attending the second meeting. Following these public meetings, the Citizens' Advisory Committee was expanded to include representation from the newly formed neighborhood group, the Association to Preserve Land Park. In addition to the continued efforts of the Citizens' Advisory Committee, a Director's Task Force comprised of members from the Zoological Society, Citizens' Advisory Committee, Association to Preserve Land Park and Department of Parks and Community Services staff, was formed. Task Force members, who provided extensive input into the planning process, were charged with ensuring the adequate representation of these interest groups. Due to both the level of citizens' participation and the number of issues raised, the original project timeline was revised. Furthermore, the original consultant services agreement was terminated as the contractual requirements were not fully met. Accordingly, City Council authorized the execution of three small consultant services agreements for completion of additional components of the draft Master Plan and zoo and administrative services staff were assigned to coordinate completion of this document.

## INTRODUCTION

"Sacramento could become the capital of the state that becomes the capital of the world. Far fetched? Not really. California is often considered as a 'nation state' - with its (1986) population of 26 million and a gross annual product which ranks it seventh in the world. Many sources predict California will rank fourth by the year 2000. Sacramento will play a significant role as this economic development unfolds." This vision of California and its capital city, Sacramento was stated by the president of the California Economic Development Corporation a private, non-profit organization formed by Governor George Deukmejian.

Sacramento is one of the fastest growing metropolitan areas in the nation. The recent Chase Econometrics Report ranks the Sacramento area first in all three categories reported; employment growth, income growth and population growth. This phenomenal growth is expected to continue. Not only is Sacramento itself growing but the area's reputation as an exciting place to visit, as well as to live, is growing as well. Large and increasing numbers of people visit Sacramento each year. Between 1980 and 1985, tourism in Sacramento increased by 75% making tourism the area's third largest business. In 1986, over 12 million people visited Sacramento, generating nearly one-quarter billion dollars for the local economy. Many are tourists drawn by the same recreational and cultural attractions which contribute to Sacramento's rank as the nation's leader in quality of life.

One of the recreational facilities which helps Sacramento earn such high marks is the Sacramento Zoo. The Sacramento Zoo is one of the best small zoos in the country and with over one-half million visitors per year, it is the largest year-round visitor attraction in the county. This small, quality zoo located in a park setting has the potential to be one of the most beautiful zoos in the world. More importantly, the zoo is a significant community recreational resource which, through the provision of conservation education, simultaneously accomplishes its aim of service to the community and contribution to wildlife protection worldwide.

It is indeed ironic to consider, in light of today's concerns, that the William Land Park site was originally rejected by Sacramento voters because it was seen by some as being "a swamp land, too far from the city (one and one-half miles then), would never grow grass or trees and was not suited for park purposes."

William Land Park has evolved today into a priceless community resource of outstanding beauty, diversity and character; a park site that has served generations of visitors and has created its own leisure tradition and heritage. Its 236 acres (including a 75 acre golf course) contain an oasis of fine leisure attractions and open space in a rapidly expanding urban area. The Sacramento Zoo today serves as a resource for the region's attractions and interest in wildlife and wildlife conservation. As evidenced by annual



attendance of over one-half million people, the zoo's live animal exhibits, educational programs and leisure attractions are indeed serving a major community need.

There has been some opposition to any zoo redevelopment with the myriad of conflicting interests, community services goals and development priorities that this opposition suggests. It is felt that a thorough review of existing conditions and alternatives for Master Plan developments will prove to be a significant and helpful tool for the city and the Sacramento region in making objective, informed decisions about the zoo's future, for a zoo is one of the cultural and educational resources that a community has to shape its perception of itself.

William Land Park was developed on an incremental basis. Accordingly, the goal of the comprehensive study and Master Plan development is the creation of an interrelated recreation, wildlife education and conservation center within William Land Park with adequate support services facilities in order that these amenities may be developed to serve the region's needs throughout the years ahead. The zoo is the major element of the plan, with Fairytale Town, the amusement and pony rides and adjacent picnic areas also included in the study area. The plan includes an analysis of present facilities and programs with particular emphasis on the zoo including a review of its exhibits and support structures, its animal collections, operation systems and the zoo's goals for the future. Moreover, the plan looks at Sacramento and the surrounding region with respect to its interest in, and support for, the zoo. These reviews culminate in Zoo-2002, a recommended Master Plan for the Sacramento Zoo and surrounding area. It is often said that the key to success lies in pragmatic planning. To this end, the development of an exciting and viable small zoo which combines the best elements of an existing facility with state of the art exhibitry is an extreme challenge.

The Sacramento Zoo is proud of its contribution to the quality of life in Sacramento. Continued success in meeting this challenge is heavily dependent on the systematic yet prescient planning model that is Zoo-2002, however, in the final analysis, the community will determine the value and contribution that will be generated from the presence of a high quality, small zoo in Sacramento.

# **M**ission

## STATEMENT OF PURPOSE

The Sacramento Zoo is a public Zoological and Botanical Garden dedicated to wildlife education and the conservation of endangered species. As a recreational facility, the zoo is an important civic asset which annually attracts hundreds of thousands of visitors from throughout the central valley of California. Utilizing both private and public funds, the zoo continually improves its animal exhibits creating both optimal habitat for animal health and an interesting and quality experience for the visiting public. The animals in their modern exhibits, which simulate natural environments, serve as the zoo's front-line educational effort. These exhibits are enhanced by graphics, labels, formal educational programs and tours. It is paramount to this institution that visitors leave the zoo with a greater understanding and appreciation for the animal world.

In addition to instilling a positive conservation ethic in the community at large, the zoo participates directly in conservation programs. The Sacramento Zoo cooperates with other zoos, nationally and internationally, in forming self-sustaining captive populations of endangered species which could benefit from captive management. The Sacramento Zoo participates in breeding loans with other zoos and in species survival plans organized by the American Association of Zoological Parks and Aquariums (AAZPA). The zoo also utilizes its staff expertise and coordinates programs which directly affect the endangered species it maintains. The zoo's research projects serve to improve the understanding of captive management of exotic animals and their preservation for future generations.

The zoo must be an enjoyable family facility. Accordingly, the zoo will continue to promote itself by sponsoring high quality family events such as Zoo Zoom, the Ice Cream Safari and the Photo Day. No activity at the zoo will ever occur that is knowingly detrimental to the animal's health or psychological well being, or to the animal's own inherent dignity. Animals will be encouraged to behave only in the manner similar to that of their behavior in the wild.

To accomplish the above mission, the zoo will continue to increase both visitation and community support. These efforts will enable the zoo to further realize its revenue potential while remaining a low cost form of family recreation. The zoo will continue to enhance its reputation throughout the Sacramento community and will simultaneously strive for national representation for being a first class, small zoo.

### GOALS

The Sacramento Zoo is guided by the following goals:

1. Given the limitations of its size, the zoo will not attempt to display a large variety of animals. Instead the emphasis will be on state of the art exhibit design resulting in larger and more interesting naturalistic exhibits.

2. The zoo will be used as an educational tool to create respect for the natural world and to promote understanding of the environmental and ecological principles that govern the existence of all life. Tours, outreach programs, animals demonstrations, summer classes, lectures, exhibit graphics and labels will all be part of an integrated program of wildlife appreciation and education.
3. The zoo will provide live animal exhibits and special programs which foster public understanding and concern for our threatened environment. Furthermore, the zoo will act as a repository for animals that are endangered to the extent that captive propagation is an important component of a conservation strategy to protect them from extinction. As such, the zoo will actively work with other zoos in forming species survival plans for these endangered animals.
4. The zoo is committed to the very best in animal husbandry and veterinary care.
5. The zoo will cooperate with and encourage university and government wildlife research programs at the zoo. As such, the zoo will be open to all students with credible animal studies. However, no research will be allowed at the zoo which would in any way harm the animals being studied.
6. Zoo staff members shall develop state-wide, national, and in some cases, international reputations in their respective fields. The zoo shall provide opportunities for staff development through various training programs and opportunities to attend professional conferences and workshops. Research and publications by staff members will be encouraged.
7. The Sacramento Zoological Society will continue to grow into one of the community's largest and most influential non-profit support groups.
8. The City of Sacramento and the Sacramento Zoological Society will cooperate in all aspects of the zoo's operation, development and planning. The zoo shall have a cohesive staff structure whereby the zoo director is the manager of both city and Society employees.
9. The zoo shall maintain a 75% self-sufficiency level in regard to its city financed operation.
10. The zoo shall place an emphasis on improving visitor services and facilities to assure that program participants and visitors enjoy a quality experience.

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# **Site History & Evaluation**

## WILLIAM LAND PARK AND SACRAMENTO ZOO HISTORY

The history of William Land Park began on December 30, 1911, the date of William Land's death, when his will provided a gift of \$250,000 to the City of Sacramento, "to purchase a public park within suitable distance of said City of Sacramento, the title to which shall be vested in the City of Sacramento, and which public park shall be known as and called the 'William Land Park'...."

The Board of City Commissioners, then the governing body, selected this two hundred thirty-six acre site from a group of eleven proposals submitted for a price of \$146,836. Shortly after announcement of the purchase, a group of persons having large real estate holdings in other areas, initiated a referendum petition to nullify the action of the commissioners, stating among their many reasons that the area was swamp land, too far away from the city (one and one-half miles then), would never grow grass or trees and was not suited for park purposes.

This petition was approved by the voters 8,807 to 4,167 on May 4, 1918, thus nullifying the purchase action of the commissioners. Numerous court actions resulted during the next three years and all decisions upheld the voters' action. However, Sacramento became a Charter City in 1921, and in March 1922, the then City Council voted to complete the purchase and the transaction was completed. This action was not contested.

Planting of trees and construction of the water system were recommended as first steps in development. Four wells were developed, giving the area its own water supply and approximately 4,000 trees and 6,000 shrubs were planted. Today the park contains approximately 6,000 trees and 10,000 shrubs. Although the original wells still supply most of the irrigation water supply, city filtered water serves the zoo, Fairytale Town and the amusement rides areas as well as many of the drinking fountains.

The original plans called for a nine-hole golf course, picnic areas, children's playground, baseball fields, flower gardens and small lake areas. These lakes were designed in the drainage system, acting as ponding areas during winter months and supplied with water during the other periods of the year to maintain their level.

The construction of the nine-hole golf course was not unanimously agreed to by the City Council. In fact, several council members were opposed to devoting such a large area of the park to a sport which they felt would be indulged in by a relatively small proportion of the city's population. Nevertheless, an area of one hundred twenty-one acres was laid out for that purpose early in the development program. (NOTE: At the present time, approximately seventy-five acres are used for golf purposes leaving a balance of one hundred sixty-one acres for the remainder of the park activities and open space.)

The zoo was established in the park in 1927. At that time, a number of small animal exhibits which were scattered throughout the Sacramento area were moved to William Land Park and an area of 5.60 acres was designated for the zoo facilities. In 1956 a group of local citizens formed the Sacramento Zoological Society with their main purpose and aim to create a zoological garden. In 1958 the City Council accepted both their plan for expansion of the zoo area to approximately ten acres and their construction plans for bear, lion and tiger moats; flamingo and monkey islands; tropical bird cages and new cages for monkeys and other animals. These improvements were completed in June of 1961. Since that time, the Sacramento Zoo has gone through a steady upgrading and expansion of facilities to its present configuration. A list outlining significant milestones in this development is included below.

In 1946 the installation of both an amusement rides area and a pony rides area was approved in the park. All of these rides are designed for small children and have proven most popular throughout the years. The entire costs of these installations was assumed by concessionaires with the city receiving funds on a percentage basis. As of 1985, these funds are deposited in a special account to be reinvested within the park. In 1955 the Sacramento Junior League proposed the idea for a children's project resulting in the creation of Fairytale Town. With the permission of the City Council, Fairytale Town Incorporated was formed and a public fund raising campaign initiated. Following the fairytale theme, professional artists were employed to design sets exhibiting the specific themes that could be enjoyed not only from an aesthetic sense but also by actual hands-on play experience.

#### CHRONOLOGICAL HISTORY OF THE SACRAMENTO ZOO

Publicly supported animal exhibits in Sacramento began in September 1915, with the importation of alligators by the City Park Board for McKinley Park. This was continued in October 1925, when two elk were placed in the city-owned Del Paso Park.

Over the years, these collections were added to and by 1927, McKinley Park had a collection consisting of monkeys, raccoons and birds; Southside Park contained the above in addition to coyotes and wolves; and Del Paso Park had elk and deer. A private amusement park, "Joyland" (now McClatchy Park), had a tiger, lion, bear, ostrich, monkey and a variety of other small animals. The city acquired these animals along with McClatchy Park in the mid-twenties.

In March of 1927, in an effort to create a single city operated animal collection, all of the above animals were moved to the present location of the Sacramento Zoo in William Land Park. The first Superintendent (called a "Foreman") was 66 year-old Dr. D.B. Boyd at a salary of \$150 per month. When he retired four years later, his successor was Robert Patterson who served until 1942 when he was attacked and severely injured by a bull elk.

In 1942, Hank Spencer became superintendent and during his tenure, great changes took place at the zoo.

November 1948	First elephant to arrive at the zoo. SUE (Sacramento Union Elephant) was paid for by public subscription conducted by the Sacramento Union.
January 1951	First giraffe.
August 1956	Sacramento Zoological Society was incorporated to support and assist the zoo.
June 1961	Five large moat-type enclosures for three types of bears, the lions and the tigers; a tropical bird cage; monkey island; cat and canine exhibits; entrance complex with concession stand were constructed. The Zoological Society collected donations and paid for some of the exhibits.
1962	Penguin (otter) pool opened. Small primate exhibits constructed.
1963	Flightless bird enclosures were installed. Small mammal exhibits were opened.
April 1965	City Council adopts 25¢ adult/15¢ teenage admission charge to raise funds for capital improvements at zoo.
July 1965	Dedication of gorilla and orangutan grottos.
May 1967	Dedication of combination administration, hospital and kitchen facility.
July 1967	Zoo and University of California, Davis sign agreement to provide veterinary care for the zoo's animals. Dr. Murray Fowler becomes the zoo's veterinarian.
October 1969	Dedication of hippopotamus exhibit.
April 1970	Dedication of Reptile House with 60 exhibit windows.
July 1970	City Council adopts new master plan for continued improvement and expansion of zoo.
August 1970	Sacramento Zoological Society adopts "Docent" Program.
October 1970	"Sacramento Zoo" officially adopted as zoo's new name by Sacramento City Council.
September 1971	William Meeker appointed Zoo Superintendent after Hank Spencer retires.
March 1971	Zoological Society buys new "Sacramento Zoo" sign for zoo's front entrance.
1973	Fong & Fong Aviary completed in the new bird area.



May 1974	Dedication of eagle enclosure donated by Sacramento Active 20-30 Club.
1975	Fong & Fong Macaw Exhibit completed.
June 1976	Dedication of hoofed animal enclosures.
November 1977	Dedication of cheetah enclosure.
October 1979	The zoo was accredited by A.A.Z.P.A.
February 1981	Fong Children Hyacinthine Macaw Exhibit completed.
February 1981	Two macaw exhibits built with funds donated by Edwina Pfund. Dedicated to Juliana Pfund.
August 1981	Steve H. Taylor appointed Zoo Superintendent.
Fall 1982	Renovation of the lion and tiger grottos was completed. New cactus garden was donated by Sacramento Cactus and Succulent Society.
June 1983	The Zoological Society reaches a membership of 1,000.
July 1983	"Chris" the male gorilla was sent to the Los Angeles Zoo on breeding loan.
April 1984	The Zoological Society hired the zoo's first Education Director.
July 1984	The Zoological Society begins operation of Food and Gift Concessions. The zoo's first Visitor Services Manager was hired.
October 1984	Dedication of Orangutan Exhibit.
March 1985	The Zoological Society contributed a 24 x 60 foot temporary building to be used as an education center.
March 1986	The zoo appoints the facility's first General Curator.
June 1986	The Zoological Society membership reaches 3,000.
September 1986	Dedication of Chimpanzee Exhibit.
June 1987	The Zoological Society membership reaches 5,000.

## TRAFFIC AND PARKING

Land Park is both bounded by and interspersed with roadways. Some roadways are relatively low volume residential feeder roads (+ 100 vehicle trips per day) while others are major north/south transportation corridors (10,000 - 14,000 vehicle trips per day) serving daily commuting traffic and business activity. Traffic and congestion levels within the park itself vary significantly depending on time of day, week and season. For example, traffic levels both within and surrounding the park would appear to be at their lowest on a mid-week winter day with the surrounding area's largest traffic volumes occurring during typical commuting hours. Periods of greatest in-park traffic and congestion will typically occur on a sunny May weekend day when park visitation is at its highest. Congestion at these high use periods is a source of frustration and concern to nearby residents and visitors alike.

### IN-PARK ROADS

Land Park Drive is a four lane roadway passing through the full length of Land Park in a north/south orientation. It is a major arterial with daily traffic volumes approaching 10,000 cars. It serves as a primary commuter route to the downtown area for the Land Park and Meadowview communities as well as parts of South Sacramento.

Land Park Drive, with its heavy traffic volumes flowing through the park, essentially bisects the park thereby creating differing use zones and seriously impeding convenient east/west park flow in Land Park. The zoo is located on the west side of Land Park Drive while zoo parking is primarily located on the east side. Accordingly, the many zoo visitors who park east of Land Park Drive face a difficult pedestrian crossing. Presently a crosswalk serves as the sole means of alerting motorists to the potential pedestrian traffic at this locale. This condition presents a potential safety problem which may be mitigated somewhat by the fact that the primary pedestrian traffic crossing Land Park Drive is on an alternate schedule than the primary commuting traffic.

15th Avenue takes off from Land Park Drive and passes north and then east in a curvilinear manner past Fairytale Town, the amphitheatre, and the parking lot located behind Fairytale Town. Fifteenth Avenue continues east ending where it intersects with 18th street. Effective in the spring of 1986, a curb was installed across 15th Avenue and a modified cul-de-sac was developed thereby blocking through traffic to 18th Street. Fifteenth Avenue provides primary access to Fairytale Town and to the Fairytale Town and zoo parking lot.

16th Avenue also stems off from Land Park Drive and is essentially east/west in orientation. It provides access to the golf course parking lot and to the Amusement Zone. As 16th Avenue extends further to the east past the amusement rides, it automatically becomes 17th Avenue the latter of which exits onto Sutterville Road.

12th and 14th Avenues are low density in-park roads providing east/west circulation from the extreme west end of the Land Park panhandle, across Land Park Drive and eastward through to the intersection of 14th Avenue and Freeport Boulevard, the park's east boundary. Twelfth and 14th Avenues are wide pleasant curvilinear roads lined with mature deciduous trees. Very park-like in character, those avenues are conducive to casual driving and as such provide a marked contrast to the character of Land Park Drive.

14th Avenue runs into 18th Street midway through the eastern section of Land Park and into 19th Street immediately before it intersects Freeport Boulevard. In turn, both 18th and 19th Streets curve south from their respective 14th Street intersections until they run together in the southwest corner of Land Park near the intersection of Sutterville Road and Freeport Boulevard. This configuration forms a large loop comprised of 14th, 18th and 19th Streets with major exit points at the Sutterville Road/Freeport Boulevard intersection and at the 14th Avenue/Freeport Boulevard intersection directly across the street from Sacramento City College. This loop is heavily used for street-side parking by Sacramento City College students during the week. During the Spring of 1987, visitor patterns and usage of this loop by park patrons, particularly on weekends and holidays, resulted in traffic congestions and anti-social behavior to the level whereby golf course play was interrupted. Accordingly, 18th and 19th Streets and 14th Avenue were converted to one-way traffic only to form a two-lane loop, and gates were located at the main exit intersections to better control "cruising" and congestion.

West Land Park Drive forms part of the park's western boundary. Its southern end adjacent to Holy Spirit School provides access to the zoo's current Administration Office, staff headquarters and storage areas. The north end of West Land Park Drive is a low density traffic route serving limited residential traffic. By contrast, the south end of the drive is more congested due to drop-off traffic to Holy Spirit School and access for the zoo's educational programs.

#### PARKING

Parking facilities in Land Park consist of two parking lots, an area of angle parking and overflow street side parking.

##### Parking Lots

The primary parking lot in Land Park is located just east of Fairytale Town and is accessed by 16th Avenue off of Land Park Drive. This lot's capacity is 215 cars. It serves Fairytale Town, the zoo, the amphitheatre, three soccer fields and the open space areas to both the north and east.

A second parking lot is located off 17th Avenue, adjacent to the Land Park Golf Clubhouse. This lot has a capacity of 150 cars. It primarily serves golf course patrons and to a lesser degree, the Amusement Area, Fairytale Town and the zoo.

Approximately 75 angle parking stalls are located on both sides of 15th Avenue adjacent to Fairytale Town. This parking serves Fairytale Town, the zoo, amphitheatre and open space park areas to the north and east.

Approximately 130 additional on-street spaces have recently been provided on this street past Fairytale Town.

#### Side Street Parking

Side street parking is used as overflow parking during peak periods and weekends. In fact, given the location of parking lots to the zoo, for example, some street side parking is actually more convenient than parking in the lots. Within a one-third mile radius of the zoo entry, there exist approximately 380 in-park street side parking areas. Within this same radius exist approximately 200 street side stalls in adjacent residential areas. During peak periods of visitation to the park the lack of sufficient parking within close proximity to the major attractions frequently results in adjacent residential areas being flooded with park/zoo goers searching for that last available street side spot.

In summary, a total of 440 defined parking stalls exist between both lots and angle parking areas. Supplementing this is approximately 380 street side spaces within the park used for overflow purposes and 200 parking spaces located on streets adjacent to the park. Taken together, total parking currently available for all activities in and around the zoo is 1,020 spaces.

#### AVAILABLE PARKING - JUNE 1987

<u>Parking Lots/Angle Spaces</u>		<u>Park Streets</u>	<u>Adjacent to Park</u>
Lot-Fairytale Town	215	15th-Past Fairytale Town	130
Angle-15th Avenue	75	16th Avenue & 17th Avenue	150
Lot-Golf	150	North of zoo	100
			100
	440		380
			200

#### PARK VISITATION/TRAFFIC AND PARKING IMPACTS

William Land Park has become a highly popular leisure attraction for the residents of Sacramento and the surrounding region. While exact attendance data is available for only some of the park attractions, the data, coupled with visitor profiles previously developed by both consultants and the City of Sacramento staff, suggests that annual park visitation is well in excess of one and one-half million visitors. When looking at this overall park visitation in the context of parking and traffic impacts, the critical factor is not the total number of park visits but rather the pattern and distribution of that visitation. If total annual visitation were evenly distributed over the days and months of the year, then Land Park could easily accommodate its current visitors with no major parking or traffic impacts. However, there exist the occasional periods of peak visitation that combine to create the parking and traffic impacts in Land Park which have become objectionable and the focus of some community concern. To properly evaluate existing impacts and to suggest potential methods of dealing with the park's traffic problems, it is necessary to better understand the patterns and distribution of existing visitation. This can be best accomplished by first looking at each of the attendance generators in the park and evaluating how each of these attractions contribute to the parking demand and consequent traffic impacts. Further, peak period scenarios for

existing parking and traffic impacts should be developed, and these impacts should be evaluated.

#### Sacramento Zoo

Over the past five years the zoo has dramatically increased its annual visitation from 295,000 in fiscal year 1981/82 to 581,000 in 1986/87. Traditionally the heaviest attendance month has been May with May 1987 having 82,480 visitors. The four days with the heaviest attendance were May 3rd, 24th, 25th and 31st with 4,303, 4,530, 4,180 and 3,916 visitors respectively. Data gathered by visitor services indicated that the average duration of stay is approximately two hours. However, given the cross-over visitation between the zoo and other Land Park attractions, it seems reasonable to suggest that the average duration of stay should be established at two and one-half hours. Gate tapes reveal that approximately 40% of the visitation occurs between noon and 3:00 p.m.

Using a 2.7 person per car factor and a conservative daily turnover rate per parking stall of three times, with the middle two and one-half hours containing 40% of the cars, the worst case scenario for current parking demands of the zoo can be calculated.

Biggest single weekend day	4,530 visitors
Visitors divided by 2.7 people per car	1,678 cars per day
Peak period parking (40%)	671 cars

#### Fairytale Town

Fairytale Town was visited by 286,577 people during fiscal year 1986/87. As is the case with the zoo, its heaviest month of attendance is traditionally in May. May 3rd, 24th, 25th and 31st of 1987 had attendance of 2,026, 2,369, 2,069 and 1,918 visitors respectively. Surveys done by both city staff and consultants suggest that 40% of zoo visitors also visit Fairytale Town. With regards to parking and traffic impacts in Land Park, this cross-over phenomenon becomes important because it requires the discounting of the raw visitation total as it relates to parking demand. Based on a 40% cross-over factor and a one hour average duration of stay, the worst case scenarios for current parking demands for Fairytale Town can be calculated.

Largest single weekend day	2,369
Cross-over visitation discount (40%)	1,421
1,421 visitors divided by 2.7 people/car	= 526 cars
526 cars divided by 4.5 turnover/stall	= 117 cars

#### Land Park Golf Course

In fiscal year 1986/87, 82,104 rounds of golf were played at the nine-hole Land Park Golf Course. The Land Park course is a popular "executive" format, ideal for seniors and quick afternoon and early evening play. In discussion with clubhouse staff, it is apparent that the course receives its most play between 6:00 - 11:00 a.m. and 3:00 - 7:00 p.m., weekdays. Play drops off on weekends with the greatest weekend play occurring in morning and late afternoon hours. This pattern of early morning and late afternoon weekday play with "soft" weekends, runs almost directly counter to the peak periods of visitation established for the zoo and Fairytale Town.

Using rounds of play for May 1987, with an average duration of stay of two and one-half hours (nine holes of golf +) and assuming a 1.8 person per car factor, a single point parking demand with no offsetting factor is estimated at 37 cars. However no exact data exists and it is suspected this may be a high estimate considering that peak use of the course is during the morning and late afternoon.

1986-87 rounds of golf	82,104
May play (10.7% of annual)	8,814
Daily average play	284
284 players divided by 1.8 people per car	= 157 cars
157 cars divided by 4 turnovers/stall	= 39 cars

#### Amusement Area

The amusement area (Funderland) has had new management for the last two years and has generated a large increase in both useage and revenue to the city. During fiscal year 1986/87, 732,751 ride tickets were sold. Funderland staff estimate that this represents an annual attendance of 131,837 people. Although May is not their busiest month, the weekends in May are as busy as any other weekends. It is estimated that 1,000 people use the rides on a single May weekend day. Using a 2.7 people per car factor and a one hour duration of stay, coupled with a 40% discount factor for cross-over with the zoo, parking demand for the rides area can be calculated.

Yearly visitation	131,837
May weekend day	1,000
Crossover visitation discount (40%)	600
600 users divided by 2.7 people/car	= 222 cars
222 cars divided by 4.5 turnover/stall	= 49 cars

#### Land Park Ballfields

Land Park has three baseball fields, two softball fields and three soccer fields, all of which can be scheduled for league play or practice through the Recreation Division of Sacramento's Department of Parks and Community Services. A review of possible parking demand generated by scheduled activities on these fields will further help to clarify the overall impacts of peak period parking and related congestion.

The soccer fields located between Fairytale Town and the Land Park Golf Course Clubhouse are not large enough to handle adult regulation play and accordingly are viable only for practice or youngsters' play. Scheduled league play for soccer is in the autumn and as such is off season to the peak visitor season for the zoo and other major attendance generators. Consequently, this field can be essentially dismissed as a peak period parking generator. Observations of this area suggest that its primary peak period function is that of an informal playfield for families and picnicing.

The softball and baseball fields in Land Park are located north of the zoo between Land Park Drive and West Land Park Drive. One of the baseball fields and both softball fields are located within a third of a mile of the zoo entry and could therefore be seen as having a "domino" effect on peak period parking demand for the zoo and other major traffic generators in Land Park.

According to Recreation Division personnel, however, there is no one set schedule for these facilities. Use levels will vary substantially and the schedule is set weekly on a first come, first serve basis. As a general picture, it appears that the baseball fields are used by Little League for games or practices during weekday evenings and Saturdays, and that the softball fields are used for slow pitch games weekday evenings with occasional make-up games and practices on Saturdays. Sundays appear to be used only for practice or informal play. Regardless of the specific activity type, all parking for ballfield use occurs along the parkway boulevards such as 13th Street, 13th Avenue and West Land Park Drive or along residential streets in the immediate vicinity of the ballfields.

In an effort to suggest some concurrent peak period parking demand, a subjective "typical" use pattern has been developed. The pattern consists of one Little League pre-season afternoon game in May and a morning slow pitch practice. Since the morning slow pitch practice would be complete by the time the afternoon game begins, only the impact of the early afternoon game shall be considered. The total of players and spectators was estimated at 75 people with an estimated person per car ratio of 3.0. For the total estimated two hour duration of the game, the parking demand would be 25 cars.

#### General Park Use

Land Park with its pleasant shade trees, picnic areas, formal gardens, ponds and open space, creates a grand setting for informal park use. Consistent uses range from jogging and walking, picnicing and family free play to social gathering spots for the "low-riders" engaged in either "hanging-out" or engaged in recreational driving through the park. Much of this type of informal use of Land Park appears to be "car-related" occurring either in parking lots or, if necessary, at street-side parking stalls. Since 13th Avenue is now blocked at 18th Street, most of the "car-related" activities occur in the eastern portion of the park away from the zoo. Occasional scheduled events such as musical performances in the amphitheatre, formal garden tours or group picnics, create temporary impacts on parking and circulation but are apparently infrequent enough so as not to be considered a major factor for evaluating peak period parking demand. One major and consistent use of park roads for parking occurs in the northeast quadrant of the park when daily parking occurs for students attending Sacramento City College. However, since this latter use is primarily weekday in impact, it need not be considered in any calculations of peak period parking demand which has been established as a weekend occurrence.

Attempting to develop peak period parking demand for general informal park use is a difficult and subjective thing at best. No recent detailed traffic counts have been made to evaluate the frequency, duration and distribution of general park use. In many respects informal park use is self-limiting with parking availability becoming the determining factor. On peak period weekend days, for example, the car-related activity that would normally occur in the lot behind Fairytale Town might simply move further east, parking at street-side locations and spreading parking impacts further in the park. Other visitors seeing no readily available parking in proximity to their destination may simply go elsewhere. For purposes of this evaluation, the assumption has been made that parking more than one-third mile from a desired location is a probable maximum distance beyond which the majority of visitors would not go.

In an effort to develop a level of peak period parking demand that would be usable for evaluation and comparison purposes, it is suggested that no more than 400 visitors would be using the park for general purposes at any one time within an area of one-third mile of the zoo entry. This area would take in the large pond area, the amphitheatre, the formal gardens, open space, picnic areas east of the golf clubhouse and open space areas in the vicinity of the Amusement Area. Assuming a 2 to 3 person per car factor, total peak period parking demand would amount to 170 cars.

#### PARKING DEMAND SUMMARY

The following summarizes the estimated peak period parking demand developed by each of the activity generators in Land Park. Based on analysis of visitation data and staff and consultant input, "peak period" can be defined as a month of May weekend day between 1:00 - 3:00 p.m. Estimates of parking demand are in some cases admittedly subjective while others are supported by fairly well established data.

As can be seen from the following table, total peak period parking demand is 1,071 cars. The zoo is by far the largest generator within Land Park. Total parking available within one-third mile of the zoo, Fairytale Town and the Amusement Area is 1,020 cars. As discussed, Land Park has a total of 440 defined parking stalls between its two parking lots and the angle parking area adjacent to Fairytale Town. This is supplemented by 380 in park street-side parking spaces and 200 adjacent street spaces located within one-third mile of the zoo entry. Thus, in peak period conditions, parking demands exceeds in-park supply by 51 spaces.

#### PEAK PERIOD PARKING DEMAND SUMMARY

<u>Activity Generator</u>	<u>Peak Period Demand</u>
Zoo	671
Fairytale Town	117
Golf	39
Amusement Area	49
Ballfields	25
General Park Use	170
TOTAL PEAK PERIOD PARKING DEMAND	<u>1,071</u>

This peak period parking demand is consistent with staff observations. During May, parking demand often causes visitors to park in surrounding neighborhoods, in the Lucky Supermarket parking lot or down Del Rio Boulevard. The need for additional parking is paramount to the long range plan as both the zoo attendance and the length of visitor stay will in all likelihood increase.



## CLIMATE

The climate of Sacramento is characterized by warm, dry summers and mild, moist winters (see chart below). Average annual rainfall is approximately 17 inches and snowfall is almost non-existent even on the coolest winter days.

### Sacramento Climate

Period	Average Temperature			Rain Inches
	Min.	Mean	Max.	
January	37.4	45.2	52.9	3.76
April	45.2	58.2	71.1	1.36
July	57.5	75.3	92.3	.04
October	49.8	63.6	77.3	.99
Year*	47.6	60.5	73.3	17.30

\*Average figures for the years 1940 to 1981.

Source: U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

Elevation: 17 Feet  
Prevailing Winds: Direction; SW  
Mean Hourly Speed: 8.3

The Sacramento climate allows the zoo to be open year-round. During periods of extreme heat which usually occur in the months of July, August and September, mid-day visitation decreases. Correspondingly, periods of rain and cooler weather tend to reduce zoo visitation in the months of November, December, and January. As an example, in May 1987, the zoo had 82,480 visitors while in December 1986, visitation was but 12,830.

Large, mature shade trees, together with comfortable seating in the shade, are important contributing factors in the comfort of summertime visitors. Newer exhibits, such as the lions, tigers and chimpanzee exhibits, provide shade structures for the zoo visitor. A newly constructed small picnic area near the entrance of the zoo also affords visitors a place to rest in cool comfort. With the exception of this spot, and the aforementioned newer exhibits, the zoo lacks adequate shade areas where the zoo visitor can comfortably eat, relax, and observe the animals. Consequently, in light of the need to enhance the comfort of visitors, particularly elderly persons or persons with small children, the development of this plan must include additional shade areas.

The relatively mild climate makes Sacramento an ideal area for the keeping of animals. While weather is not a major obstacle in the design of animal enclosures, it remains an important consideration. Many animals such as

flamingos, zebras, eleands and wallaroos can be kept year round without any supplemental heat. Other animals such as the great apes, certain birds, and small cats need some heat in the coldest months. Delicate primates such as tamarins, squirrel monkeys, and marmosets generally can not be kept outdoors all winter and instead require heated indoor facilities.

Animal enclosures must be designed with the hot summers in mind to insure both the health and comfort of the animals. For instance, the existing polar bear exhibit has the worst possible southern exposure which allows for very little shade for these bears. Although shade structures were erected, this action served to merely lesson not alleviate the animals' discomfort due to heat and sunlight exposure. In the future, waterfalls, streams, ponds, and mist systems should be incorporated in the initial design and construction of new exhibits at the Sacramento Zoo.

## **ZOO UTILITIES: Existing Facilities and Future Needs**

### **INTRODUCTION**

Utilities service to the zoo includes water, sewer, electrical and natural gas. Although some minor problems with utilities service currently exist such as infrequent localized flooding due to clogged storm drains and minor electrical problems due to inadequate facilities at some exhibits, utilities service is adequate to support existing facilities on the current zoo site (Figure 1). Major improvements and expansion of facilities, however, will require additions to, and modification of, existing utilities systems.

The purpose of this section of the Master Plan is to describe existing facilities which service the water, sewer, electrical and gas needs of the zoo. This was accomplished by compiling existing information from reports, memoranda, drafted plans, and interviews with knowledgeable zoo and city staff and representatives from the various utility companies. Existing facilities were delineated, charted and superimposed onto the preliminary site plan for the proposed expansion of the zoo (Figure 2). The impacts of Zoo-2002 on the utility systems were evaluated and plans were developed to accommodate all proposed redevelopment and expansion.

### **WATER SUPPLY**

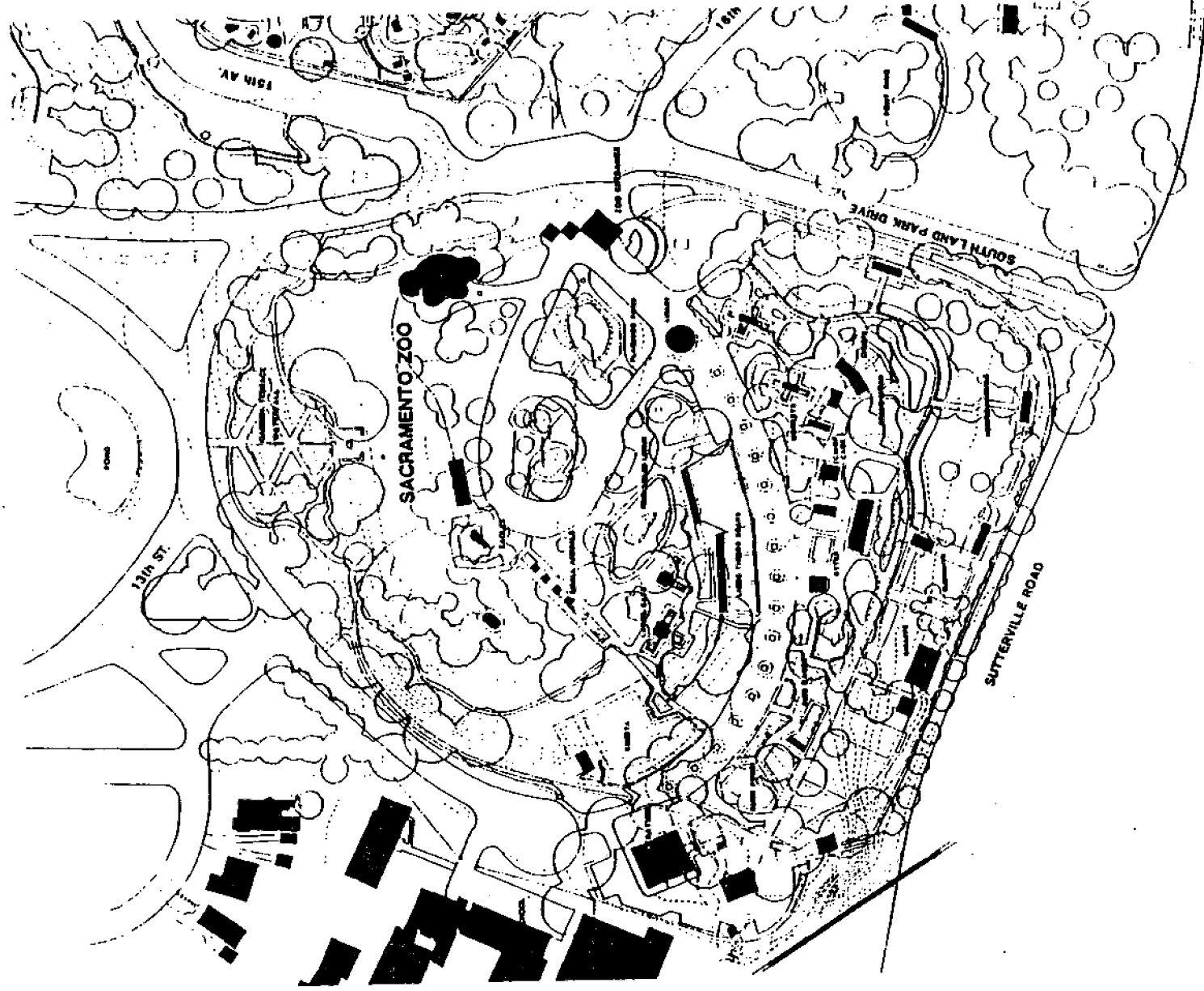
Sacramento Zoo water supplies currently are delivered from two sources: 1) City of Sacramento water mains; and 2) a well water system which is operated and maintained by the Department of Parks and Community Services.

City of Sacramento water is of high quality and is used for drinking purposes and to supply most exhibits and support facilities at the zoo. Well water at one time was used for drinking throughout William Land park but was discontinued due to high iron content and taste complaints. Well water in the zoo is currently used for some irrigation and to supply the macaw and eagle aviaries.

City of Sacramento water service is connected to the zoo water system at the intersection of Sutterville Road and South Land Park Drive and is metered at that point. A six-inch service line is located just downstream of the meter and serves to connect the zoo's water distribution system with city mains. This distribution system consists of two, four and six-inch lines arranged to form two major loops through the zoo which connect to a series of deadend branches. A schematic of this system was developed from the best records gleaned from the Parks and Community Service Department, and is presented in Figure 3.

An overlay of the current water system on the site plan for future zoo development is shown in Figure 4. As is evident from Figure 4, the current system which distributes city water throughout the zoo is not adequate to supply planned additions of exhibits and support facilities. Figure 5 shows

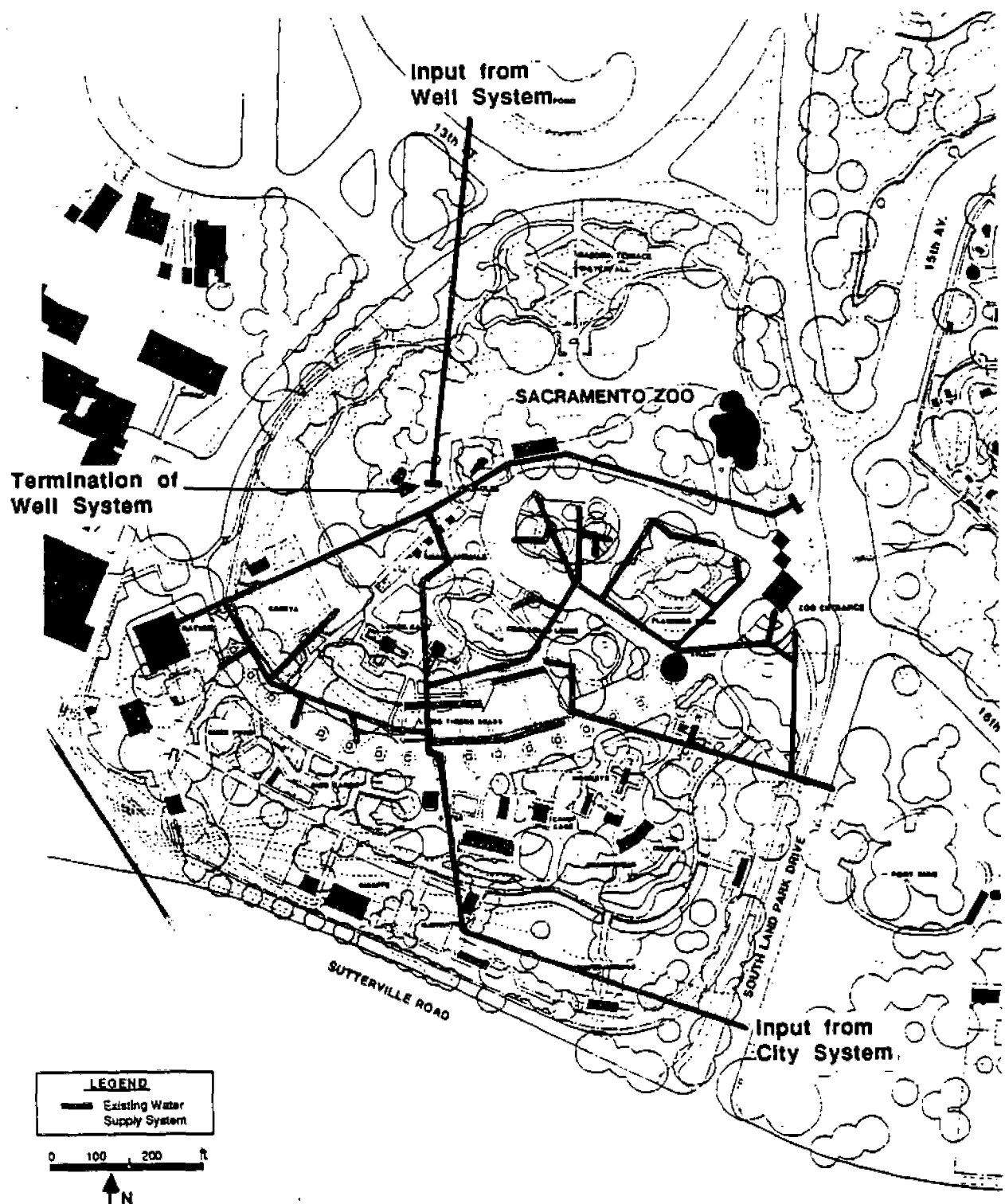
**Figure 1**



Site Plan of Existing Facilities at the Sacramento Zoo,  
Sacramento, California.

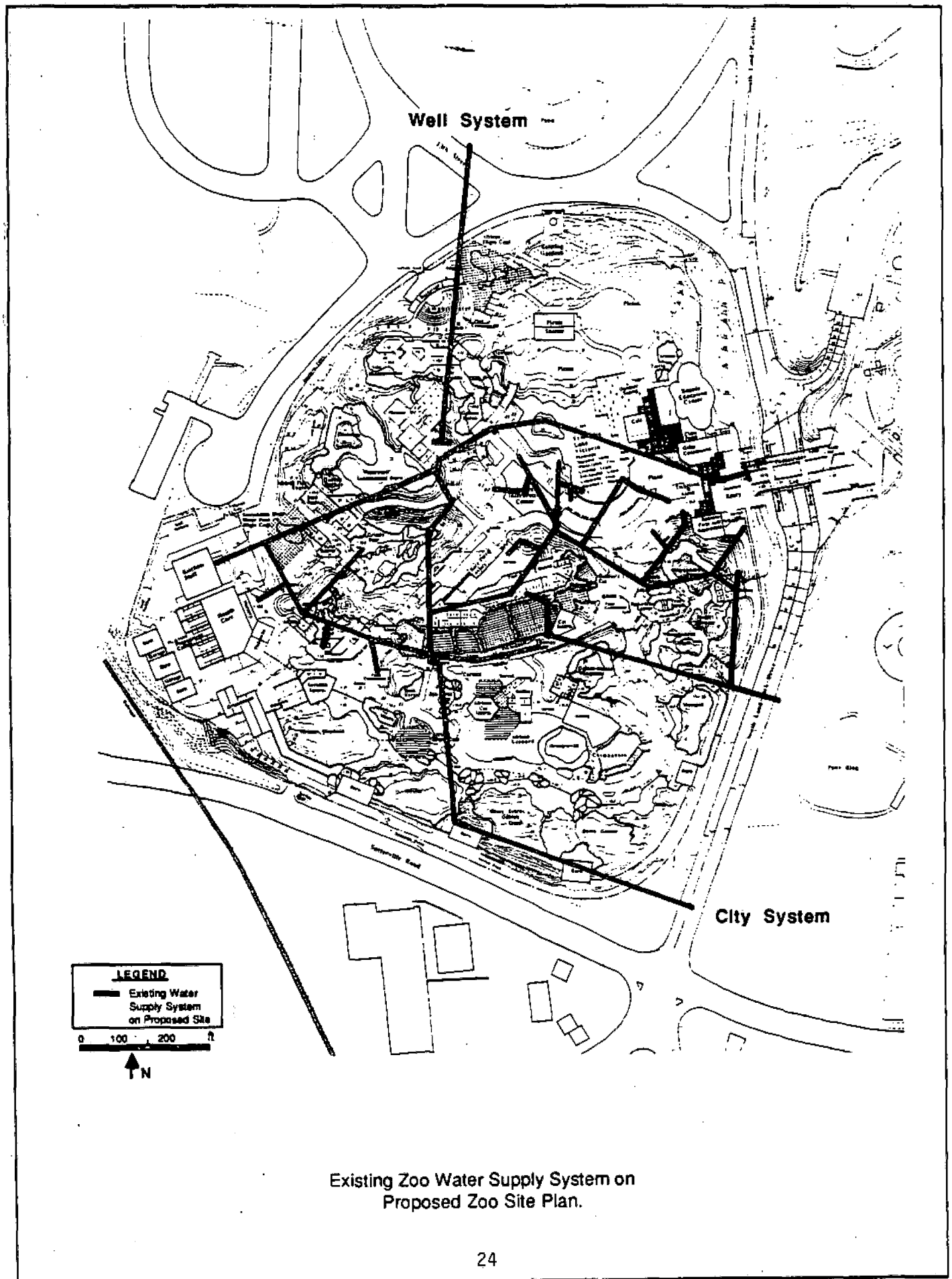


**Figure 3**

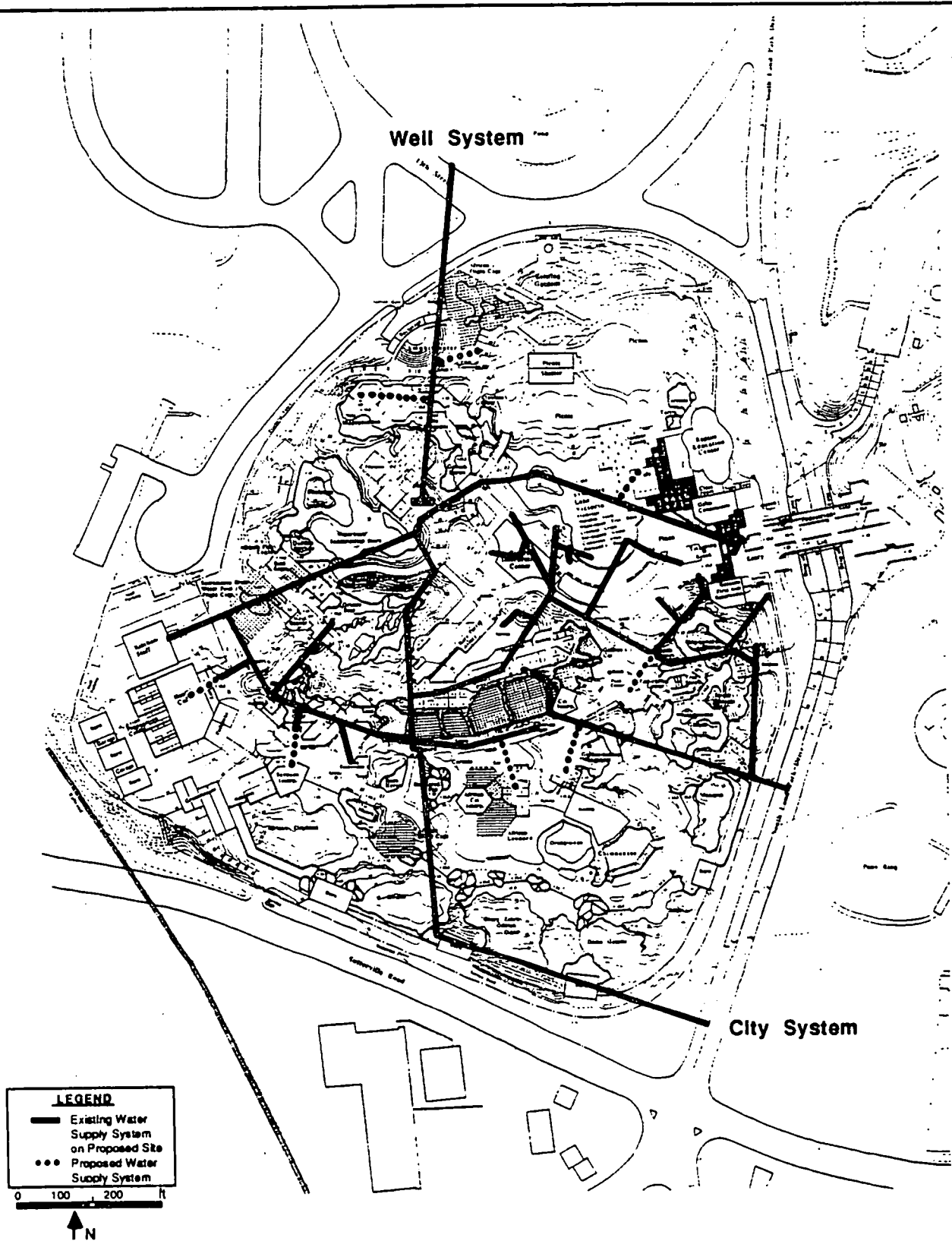


Sacramento Zoo Water Supply System Served by Sacramento City Water Mains.

**Figure 4**



**Figure 5**



Existing Water Supply System on Proposed Zoo Site Plan with System Additions Required to Accomodate Future Facilities.



how the existing system may be expanded to accommodate those additions. Approximately four hundred feet of two-inch line will be necessary to extend the current water system to the new configuration.<sup>1</sup> New facilities requiring connection will include: health care; savanna interpretation; African cat holding; cafe; mangabey holding; hippo holding; and a new food concession adjacent to the amphitheater.

Information regarding the zoo's well water distribution system was extremely limited. Only the location of the system's primary delivery line to the zoo was available and is shown in Figure 3. Due to the low cost of well water, relative to City water, the possibility of expanding the use of well water for existing and proposed zoo facilities deserves consideration.

Annual costs to the zoo for city water is approximately \$35,000. The same quantity of water provided by William Land Park's four "deep wells" would cost approximately one-sixth that amount.<sup>2</sup>

Use of well water in some, if not most exhibits, may be prohibited due to potential problems with the quality of well water and the tolerances of some of the animal species involved. A thorough study of well water quality and the specific requirements of potentially affected species should be undertaken before well water is used in an exhibit for drinking or other animal contact. In the interim, the use of well water could be expanded for irrigation, wash down and other water uses which do not involve animal contact.

Future total water use at the zoo cannot be estimated at present with precision. It is anticipated, however, that water use actually will decline as new facilities are developed. This decline will result from the inclusion of recirculating systems which will filter and recycle a significant amount of water used in several of the proposed exhibits.

#### SEWER SYSTEM

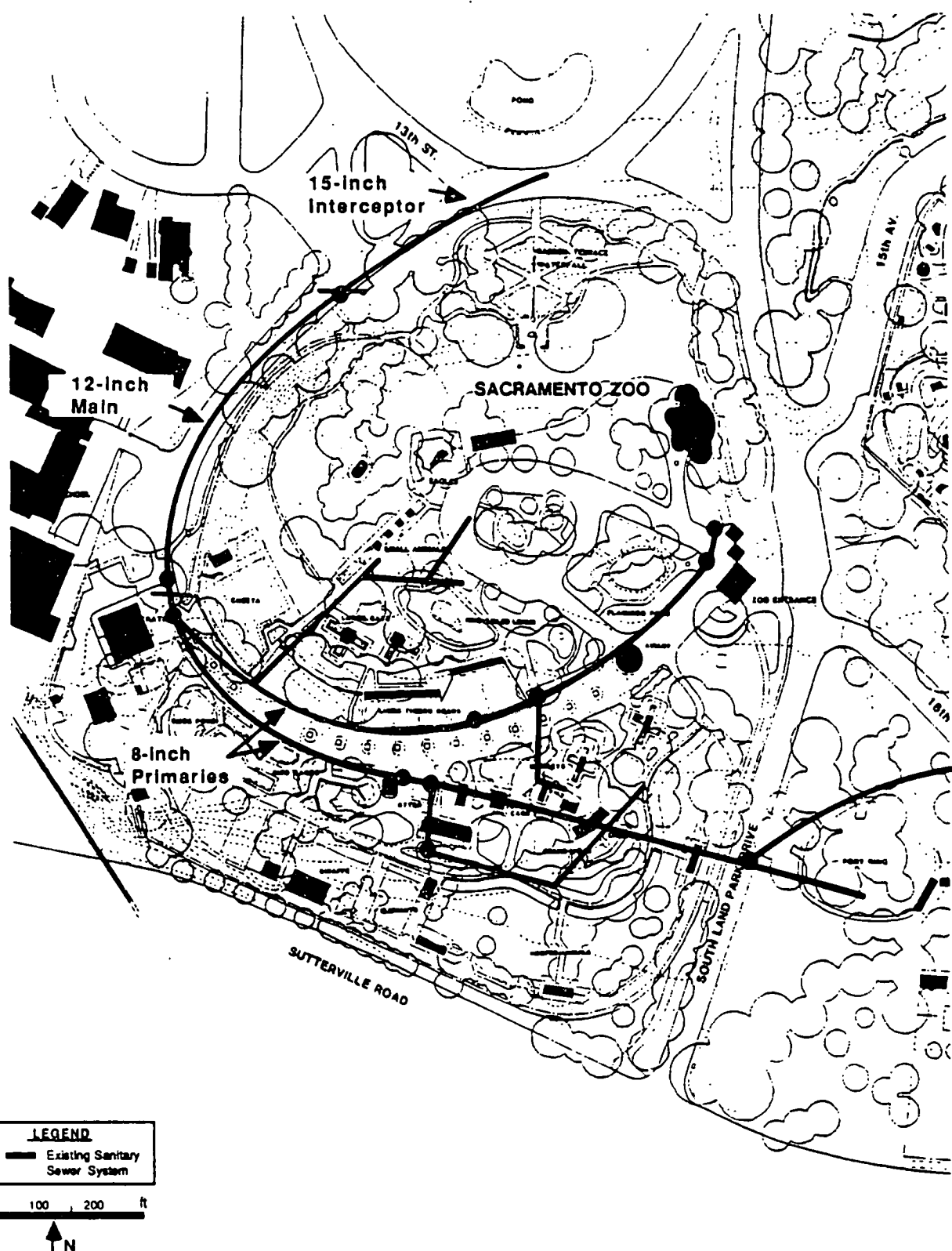
Figure 6 presents the existing zoo sanitary sewer system. The system includes two-eight inch sewer lines which connect into a twelve-inch "main" which in turn connects into a fifteen-inch "interceptor" at 13th Street. One of the two eight-inch lines runs parallel to Sutterville Road about 200 feet from the zoo's south boundary. The second eight-inch line is located beneath the zoo's main walkway from the zoo entrance to its terminus near the zoo administration building (Figure 6). Side sewer lines (ranging in size from three to eight inches) connect into both eight-inch lines and serve exhibit holding areas, pool drains, concession and restroom facilities.

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1 Although not essential, zoo personnel should consider an alternative layout whereby new line extensions would be "looped" to equalize pressure and avoid stagnating water in closed-end branches.

2 Cost estimates for well water were taken from a January 21, 1986, memorandum from Harry Behrens, Division of Water and Sewers, City of Sacramento to Steve Taylor, Sacramento Zoo Director.

**Figure 6**



Existing Sanitary Sewer System.

The flow capacities of both eight-inch lines combined, the main sewer line and the interceptor were calculated at .878 million gallons per day (MGD), 1.015 MGD and 1.586 MGD, respectively, assuming minimum slope.

U.S. Department of Agriculture regulations stipulate that all drain water generated from exhibit enclosures must be introduced into a sanitary sewer system. These regulations were developed to prevent the introduction of untreated animal waste into storm drain systems. Currently all drainage from animal areas at the Sacramento Zoo is introduced into the sanitary sewer system. In fact, most storm drain water generated from all zoo areas is currently drained into the sanitary sewer. Based on hourly rainfall generated from a ten-year storm event, sanitary sewer flow generated from all current zoo property would be approximately 6.7 cubic feet per second (cfs) or .090 MGD.<sup>3</sup> Sanitary sewer flow generated from all zoo property after the completion of proposed expansion would be approximately 8.6 cfs or .116 MGD. Both flow rates are well within the capacity of the existing sanitary sewer system's eight inch, main and interceptor lines.

Our investigation of the current sanitary sewer system determined that it is adequate to handle flows generated from all existing zoo facilities and projected storm drainage. As is apparent from Figure 7, however, the current system will require modification to accommodate the proposed expansion of the zoo. The addition of new facilities, and the relocation of old facilities, will require the construction of new branch lines from the existing system as is shown in Figure 87. Approximately 720 feet of eight inch pipe will be needed to convey the flow from new facilities to the existing sewer system. Some of the new facilities that will require connection to the system include: health care, savanna interpretation, grizzly bear and hippo/crocodile holding areas, a restroom, cafe, drinking fountain and the mandrill/gibbon holding areas.

#### ELECTRICAL SYSTEM

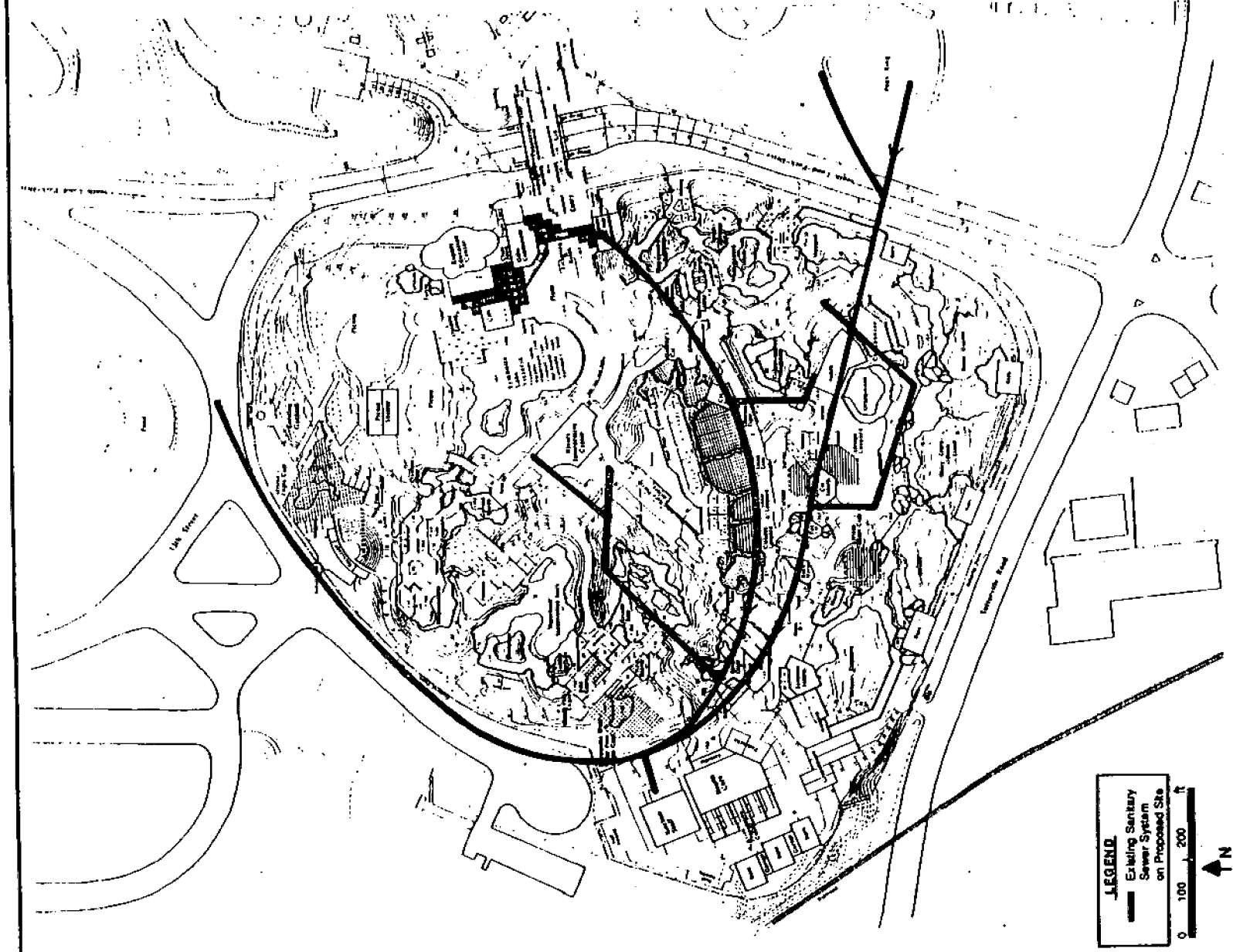
Electrical power is provided to the zoo by the Sacramento Municipal Utilities District (SMUD) via two primary 21 kilovolt (kv) lines (Figure 9). Power from these lines is "stepped down" to usable voltages of 120 and 240 volts (3 phase) via five transformers located on the zoo site. The capacity of these transformers averages 75 kv.

SMUD billing records show that zoo power usage for the fiscal year 1985-1986 total 473,535 kilowatt hours. The highest average daily usage for any one month from October 1983 to December 1986 was determined to be 1,824 kilowatt hours which occurred in January 1986. Information regarding the expected power demands of proposed future zoo facilities is extremely limited at this time. However, an estimate of the range of total zoo annual

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3 Storm drainage estimates were calculated using the "Rational Method" which takes into account rainfall rate, percentage of rainfall which will "runoff" and time needed for runoff to reach drains.

**Figure 7**



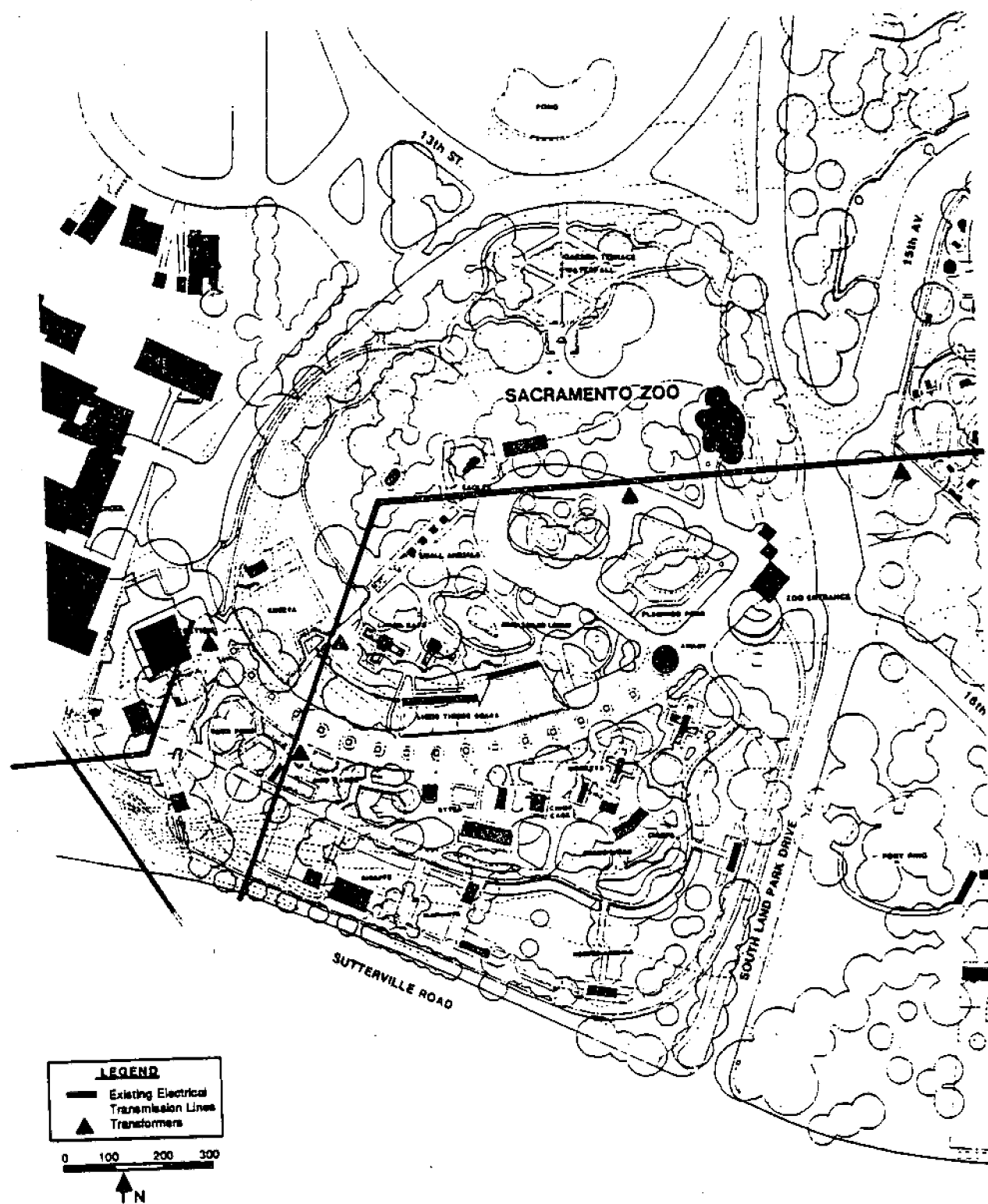
Existing Sanitary Sewer System on Proposed  
Zoo Site Plan.

**Figure 8**



Existing Sanitary Sewer System on Proposed Zoo  
Site Plan with System Additions Required to  
Accomodate Future Facilities.

**Figure 9**



Two Primary 21 Kilovolt Electrical Transmission Lines Which Currently Supply the Zoo.

power use; 2) the number, size, and type of proposed buildings and exhibits; and 3) estimates of power use by proposed support facilities. This range of future power use is illustrated in Figure 10 and represents an increase in annual power usage of approximately 440,000 kilowatt hours to almost 700,000 kilowatt hours over 1985-1986 power use. Also shown in Figure 10 is a plot of average daily zoo power usage from 1984 through 1986.

Redevelopment of the zoo complex will require expansion of the existing electrical distribution system within the zoo to accommodate new exhibits and support facilities. In addition, any inadequacies in the distribution system serving existing facilities will need to be identified and corrected. Internal distribution problems will need to be identified in a study to be conducted once all power requirements have been finalized.

According to SMUD, existing power facilities external to the zoo (i.e., the two 21 kv lines) are more than adequate to supply future zoo power demands. It may be necessary, however, to replace one or more of the transformers within the zoo in order to accommodate future demand. This would be a relatively simple procedure and would be accomplished by SMUD as dictated by future changes in zoo power usage and at no cost to the city.

Figure 11 shows the existing 21 kv lines superimposed on the site plan for proposed zoo development.

#### NATURAL GAS SYSTEM

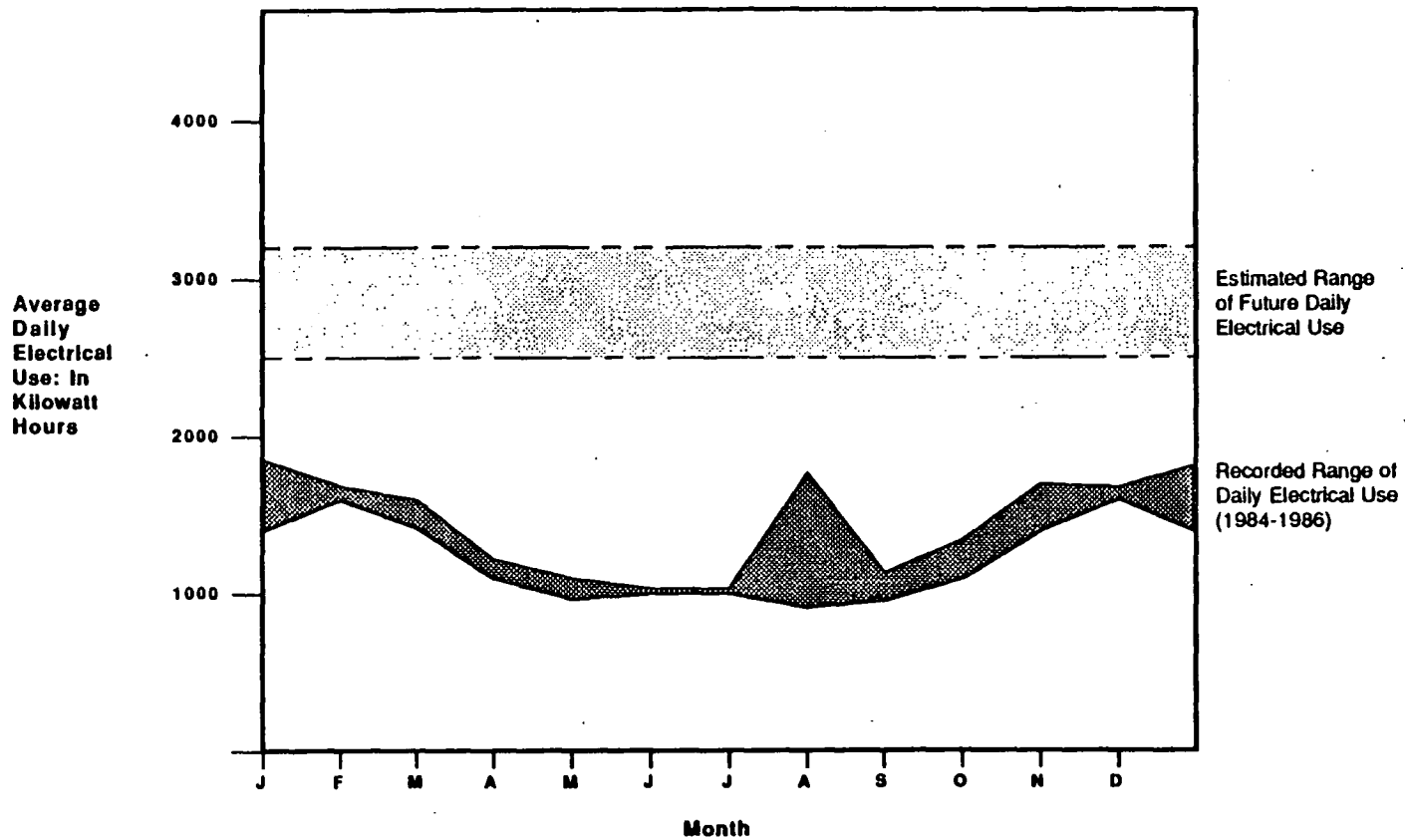
The zoo is provided with natural gas for heating purposes by Pacific Gas and Electric, via a two inch feeder from the main gas line located under Sutterville Road. Three three-quarter-inch lines convey gas from the feeder to the gorilla area, the reptile house and the zoo's administration building which are the only facilities using this utility (Figure 12). Zoo expansion would necessitate the extension of these three-quarter-inch lines to any other exhibits requiring heating. It is not known at present which exhibits or other facilities will be using gas for heating. It is anticipated, however, that the following proposed exhibits will require natural gas; the primate area, Nile River area, "River" Interpretive Center, and the Sacramento River aquariums.

Figure 13 shows existing gas line locations superimposed on the site plan for proposed future zoo facilities.

#### CONCLUSIONS AND RECOMMENDATIONS

Based on information available during the course of this study, URS concludes that all primary collector/distribution systems will be adequate to supply the proposed zoo expansion project with utilities services. As described above, some modification to the internal distribution systems for water, electricity and natural gas will be required for some existing facilities. In addition, new utilities connections will be needed for proposed exhibits and support facilities in order to tie these new additions into existing utilities systems.

Eight-inch main and interceptor sanitary sewer lines will be adequate to drain storm runoff and waste generated by the expanded zoo. Zoo expansion



Average Daily Zoo Electrical Use From 1984 Through 1986 and the Estimated Range of Future Daily Electrical Usage at Full Zoo Development.

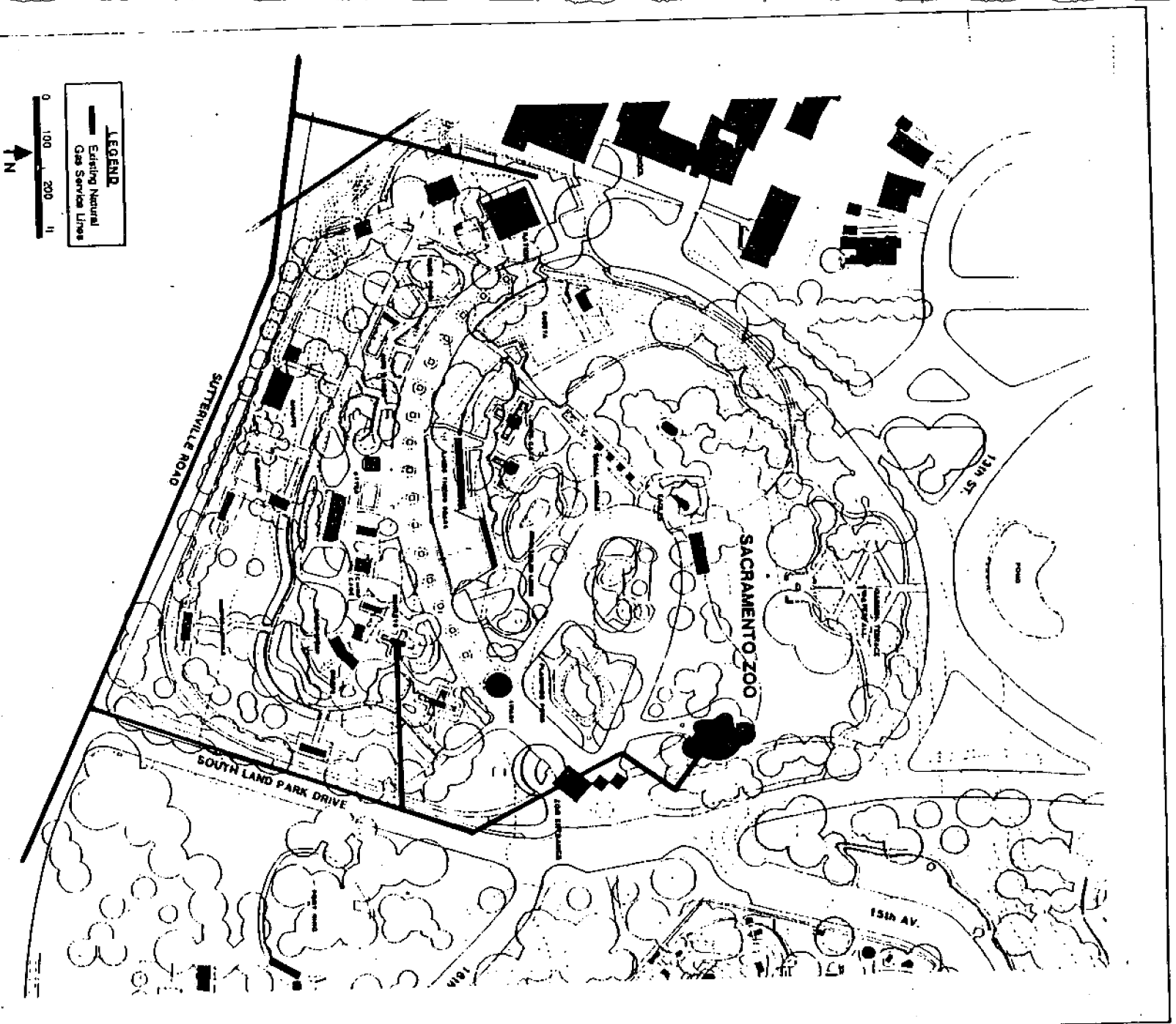


**Figure 11**



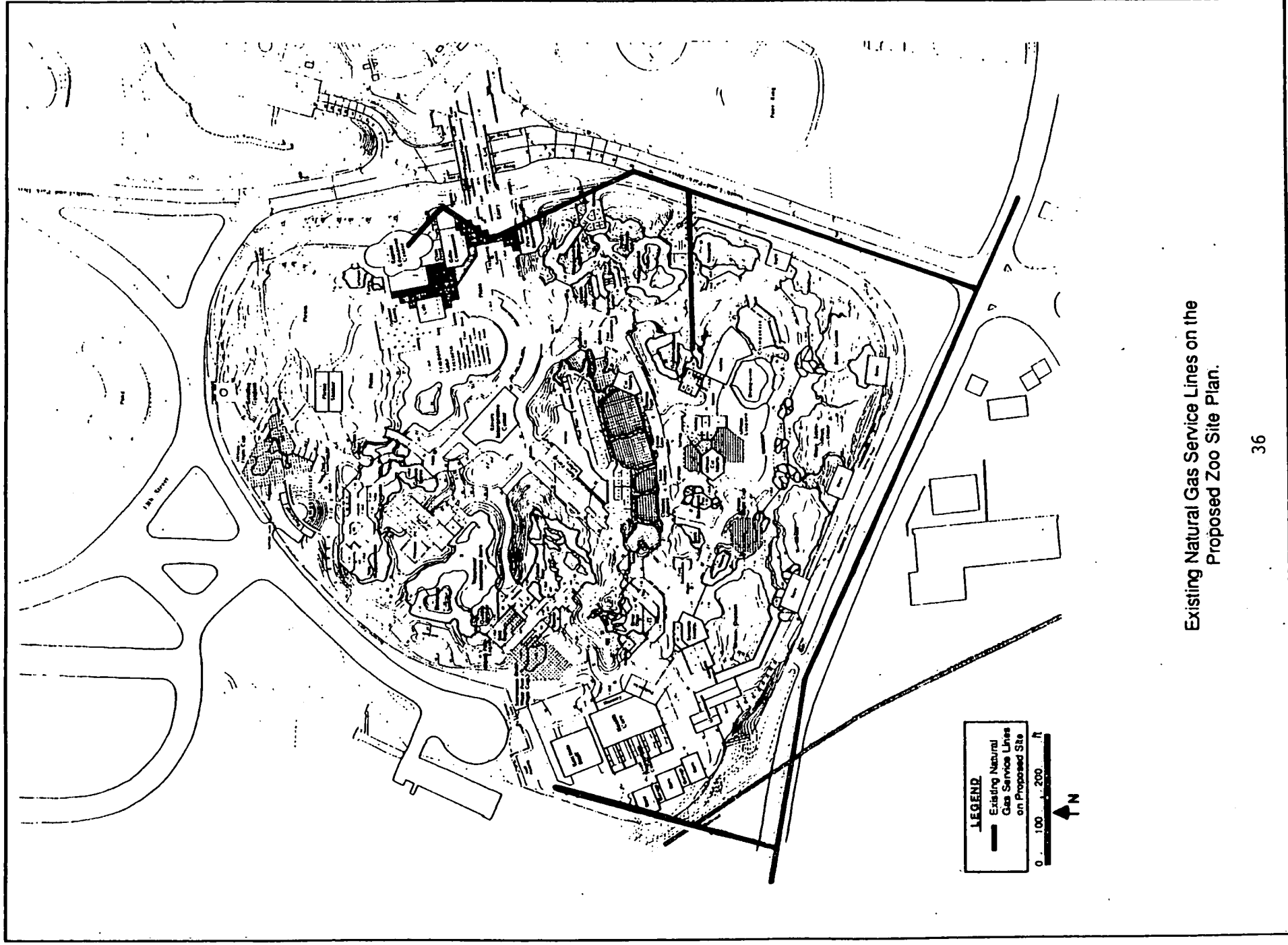
Both Primary 21 Kilovolt Electrical Transmission Lines  
on Proposed Zoo Site Plan.

**Figure 12**



Existing Natural Gas Service Lines.

**Figure 13**



Existing Natural Gas Service Lines on the  
Proposed Zoo Site Plan.

will require connection of new facilities to the existing sanitary sewer system. Changes to this system (external to the zoo) may occur as a result of an area-wide sewer system study now being conducted by R.E. Young and Associates. These changes are not expected to alter the basic conclusions stated above. Localized flooding in some areas of the zoo which now occurs during some large storms can be avoided through proper maintenance of drains.

Estimates of costs associated with the modification of zoo utilities services were not attempted in this report. These estimates can be made more precisely as part of the construction planning process for specific exhibits and facilities.

It is recommended that a study be implemented regarding the feasibility of expanding the use of well water in existing and proposed exhibits. This study should specifically address the constituent quality of available well water, possible adverse effects on animal species which could come in contact with that water, and the economic benefits of using well water, as opposed to city water, for selected zoo uses.

It is also recommended that a comprehensive study of the zoo's internal electrical distribution system be undertaken once construction plans and power requirements for all new exhibits and facilities have been finalized. Finally, the construction of an education administration facility is being considered as part of the zoo improvement program. This facility would be built east of Land Park Drive near Fairy Tale Town. Although, initially it does not appear that utilities access will be an obstacle to construction, since recent work by SMUD at Fairy Tale Town has doubled that area's electrical capacity, a comprehensive examination of available utility facilities in the immediate area should be accomplished prior to facility plan finalization. Additional analysis would also be necessary if any other development is considered east of Land Park.

## EXISTING ZOO EXHIBITS AND SERVICE FACILITIES

The design, physical condition, location and service aspects of an exhibit will determine, more than any of the other factors mentioned above, whether or not an exhibit will be retained, upgraded or eliminated as part of any zoo redevelopment plan. Are service and holding areas adequate? Does the exhibit have potential to create in the mind of the visitor a natural habitat replication? Can the exhibit, with fairly minor changes, be made suitable for a new display? These are the kinds of questions that planners will be asking themselves as they look at the existing exhibitry.

The existing exhibits, buildings and support facilities at the Sacramento Zoo, in many respects represent a cross section of the exhibit design philosophies that have been in force over the past 30 years; from the sterile, small but easily maintained, enclosures common in the 1950s to the contemporary natural habitat replication exhibits such as the new orangutan exhibit. Most of the existing zoo exhibits appear to be in reasonably good condition regardless of the limitations of some of the older exhibits.

In today's modern zoo, holding areas are especially important if the zoo is to contribute to the conservation of the world's endangered species. Often times breeding is necessary although the immediate transfer to another facility of "extra" offspring is not possible. It can take up to one year to get an endangered species permit to allow an endangered animal to be moved to another zoo. Off-exhibit holding areas are also very important at times when males need to be isolated away from newborns or when there is an illness. Currently, holding areas are inadequate throughout most of the zoo. The following is an assessment of existing exhibits by species and their potential for inclusion in the new exhibit development plan:

### PRIMATES

The zoo has recently completed new exhibits for both ORANGUTANS (Plate 1) and CHIMPANZEES. Both exhibits have adequate holding and service facilities, and will be retained. The orangutan section has the capacity to hold two small families of three to five orangutans each and should meet the zoo's needs in the future. The chimpanzee exhibit including holding areas are recent renovations of the old orangutans and gorilla quarters. Currently, four chimpanzees are housed in the new naturalistic glass chimpanzee exhibit. Outdoor facilities are naturalistic and will require replanting and new logs on a regular basis. The exhibit for RING-TAILED LEMURS (Plate 2), given its design, is very hard to maintain as drains are inadequate. Further, the exhibit does not present the animals in their best light. Its water system is inadequate and is a major expense given its huge water requirement. This exhibit should be removed as soon as possible. The large square chain link GIBBON EXHIBIT (Plate 3) lacks aesthetic value and should be removed in a later development phase. The two four-sided MONKEY HOUSES are chain link enclosures which lack good holding and support facilities. This, combined with their marginal aesthetic value, would suggest their removal in the near future. One-half of the SMALL MAMMAL HOUSE

displays primates. Given the location and marginal aesthetic value of this complex, this structure should be removed. It will be removed in the first phase as it is in the way of the planned elephant exhibit expansion.

### CARNIVORES

The CHEETAH exhibit is well planted and provides good space for the animals. However, the holding area is small and not adequate to best breed cheetahs. In order to properly engage in a breeding program for the species, a substantial new allocation of space would be required for additional enclosures. Males need to be completely separated for a good part of the year from females and then brought back together in order to maximize breeding potential. This exhibit will likely be phased out in a later phase. The BEAR EXHIBITS are small open cement grottos. Holding facilities are marginal and have no separate denning facilities. With addition of holding and service facilities, these existing grottos could become fine leopard exhibits to compliment the existing exhibits for lions and tigers. Once the Master Plan is completed, the only bears the zoo will exhibit will be Grizzly Bears. The LION/TIGER exhibits, with the addition of improved holding and service facilities, will be retained. This is a top priority project and has already begun. The eight SMALL CAT EXHIBITS, the five LEOPARD EXHIBITS and the four CAT EXHIBITS in the small mammal house are all small chain link enclosures that have inadequate holding and off-exhibit breeding areas. All these exhibits will be deleted entirely as new cat exhibits are built. The chain link RIVER OTTER exhibit does not present this animal in its best light and should be removed in one of the early phases. Otters will be moved to the planned Sacramento River section.

### THE BIRD COLLECTION

The FLAMINGOS are a popular and enjoyable attraction and will eventually be relocated to the proposed lake exhibit in one of the early phases of redevelopment. The four MACAW EXHIBITS shall be relocated to the proposed parrot area of the new zoo. The GOLDEN EAGLES are housed in a large, simply constructed welded wire exhibit. It is an inexpensive but aesthetic display. Given its location, it will be relocated as part of one of the first phases. The large ROUND BIRDHOUSE is a chain link structure that does not present the thick-billed parrots and touracos to their best advantage. The facility should be taken out when new parrot breeding facilities are completed. The LOWER BIRDHOUSE (Plate 4) houses over a dozen small aviaries and a larger exhibit for greater hornbills. This complex should be phased out as soon as possible. It is in the path of expansion of the planned African Savannah section. SEABIRDS are housed in the old seal exhibit. Given the proposed collection for the new development plan, the existing seabirds should be sent to other facilities and the exhibit demolished in the near future. The lower DUCK PONDS are in an area proposed for other new exhibitory. The animals will be relocated to other waterfowl areas in the zoo.

### UNGULATES

The zoo currently has three open, moated exhibits for ZEBRA, GAZELLES AND ORYX (Plate 5). With enlargement of holding and service areas and drainage improvements, it would appear that two of these exhibits can fit nicely

into the proposed exhibit scenario. The third (oryx) will become an area for mandrill during the last phase of this plan and the oryx will be phased out.

The ELEPHANT EXHIBIT (Plate 6) is small (5,400 square feet), lacks adequate holding and is of marginal aesthetic value. A major problem exists as there is no way that the elephants can even be separated from one another in their very small (15 x 15 feet) barn stall. The lack of any kind of swimming pool is another major flaw in this exhibit. A new elephant exhibit should be one of the first to be built under the Master Plan.

The GIRAFFE EXHIBIT (Plate 7) lacks proper holding and is of marginal aesthetic value. The wooden giraffe barn is an old and unsound structure and does not provide heat for the animals. A new giraffe exhibit should be built in one of the first phases of the Master Plan.

The HIPPO EXHIBIT was built in the mid-sixties and while it has all the necessary holding and pool facilities, the exhibit has some serious design problems. The square edge of the pool and its rough surface caused injury to a young hippo which eventually resulted in death. This exhibit should be removed in one of the first phases to make room for the new giraffe and elephant exhibits. The new hippo exhibit will be located in the planned Nile River section.

#### REPTILES

The zoo's REPTILE HOUSE contains 55 displays and five large diaramas in a 4,650 square foot building. It is an excellent facility and will definitely be kept as part of the new zoo.

The existing Koi Pond should be phased out with the Koi Carp moved to the Japanese Garden in Fairytale Town.

#### ADMINISTRATION/SERVICE FACILITIES

ADMINISTRATION BUILDING. The existing zoo administration building, built in the late sixties, is a 4,700 square foot concrete block structure located in the southwest corner of the zoo grounds, just off West Land Park Drive. The building houses administration, food preparation and commissary facilities, veterinary care, isolation and quarantine rooms, staff lockers and a lunch room. The building is in good condition.

The office space allocated to the zoo director, his administrative and curatorial staff and Society office manager is marginal indeed. There are currently three office areas in the administration building. The director's office, the only office space designed as an office, is 120 square feet. One office, originally designed as a conference room, is 400 square feet and provides space for the Zoological Society's administration manager and her assistant, the zoo's administrative assistant, the volunteer coordinator, Xerox machine, computer and word processor. Also the zoo's contract book-keeper and volunteers share that space. A converted grain storage room (300 square feet) provides an office for the general curator and his staff including the zoo supervisor, park supervisor, the zoo attendant II and support staff person. Substantially more administrative office space needs to

be allocated in future planning for effective operation and continued level of public service.

The keeper staff facilities are inadequate and should be upgraded as a part of redevelopment planning. At a minimum, locker and shower facilities should be provided for both men and women. Currently, there is only a men's locker room adjacent to a men's shower and restroom.

Food preparation space (600 square feet) is adequate but should be modernized with new equipment. New sinks, stove, refrigerators and freezers are needed as the present equipment is approximately 20 years old. Commissary and food storage spaces are woefully inadequate for efficient operations as grain storage is now outside in a cargo container.

Veterinary facilities include a small clinic (120 square feet), two small isolation rooms and one indoor/outdoor isolation room. An additional small room stores drugs and equipment. Necropsies are currently done at the U.C. Davis School of Veterinary Medicine, as is much of the veterinary work.

The service yard contains a small barn for hay storage, shop facilities and some equipment storage. Twenty parking stalls for zoo vehicles and employees are located at the west end of the service yard.

Current planning for the zoo is suggesting the creation of a new education/administration complex to be located near Fairytale Town. Also suggested is the construction of a new animal health care facility in proximity to the existing administration building. Such a move would free up the existing administration building so that adequate indoor temperature controlled commissary, food preparation and keeper staff facilities can be developed in this existing space.

#### EDUCATION

The zoo's education department is currently housed in a 24 x 60 foot trailer located across the primary pedestrian walk from the administration building (Plate 8). The trailer contains one classroom (24 x 30 feet), a reception/library area, office, restroom and storage area. The one meeting room is the only one in the entire zoo and is used for Zoological Society Board meetings, education classes, docent meetings, staff meetings and any and all other gatherings. It is in constant use. With many school groups coming to the zoo, especially in the spring, the availability of one classroom is a serious drawback to the expansion of the zoo's educational programs. Although the zoo's education department conducts 60 paid classes a year, that number could easily be tripled if there was more space. Classes are almost always filled shortly after they are announced with many people turned away. The proposed new education/administration building will provide additional facilities to make this fine education program that much better.

#### VISITOR SERVICES

Visitor services are an extremely important function in any zoo, aquarium or museum facility. How an institution treats its visitors is a major contributing factor in both repeat visitation and the visitor's overall impression



of the facility. It is also an extremely important revenue source to the zoo operations. In fiscal year 1986/87, the concessions operation at the zoo and Fairytale Town contributed \$131,000 to the city's general fund, \$27,000 to the Fairytale Town Trust, \$65,000 to the Zoological Society and \$12,400 to the Fairytale Town Board of Directors. All these funds went directly or indirectly to benefit the zoo or Fairytale Town.

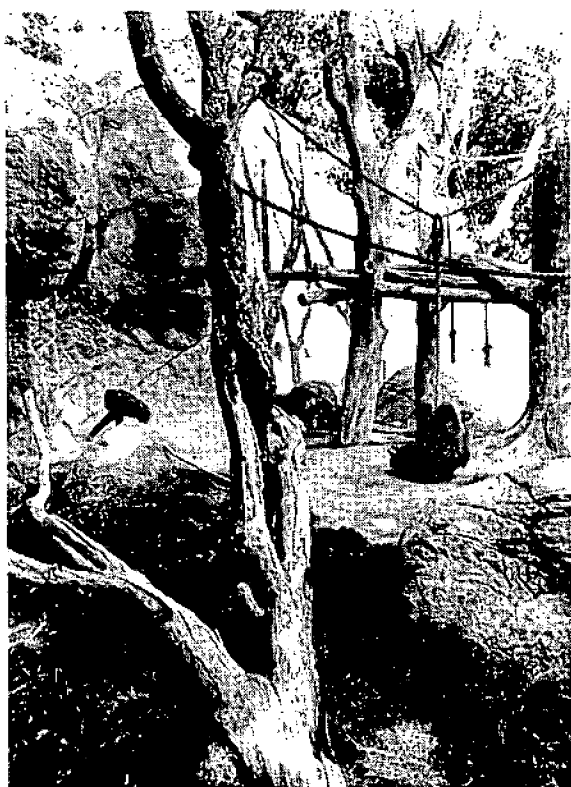
The Sacramento Zoo currently has two food concession facilities; one located as a part of the zoo's entry building (Plate 9) and the second located on the south side of the primary pedestrian walk from the bear grotto. Both facilities are of older design and construction and have major handicaps with regard to food storage, service access and visitor service capacities.

In 1984 the city awarded the concessions contract to the Joint Concessions Board which manages concessions for both the zoo and Fairytale Town. With installation of new electronic cash registers, staff uniforms and training, the concessions appear to be well managed and operated despite the handicap of marginal facilities. Gross concession sales for both the zoo and Fairytale Town, for fiscal year 1986/87 was \$702,480. The zoo's portion of gross sales was \$595,413 which represents a per capita expenditure of \$1.02. The proposed addition of a gift shop in the immediate future and new concession facilities developed in later phases of the Master Plan, suggest that the future is indeed bright for concessions revenue at the zoo. Currently, the zoo sells gifts from a small trailer at the front of the zoo. • Per capita spending is about \$.20.

The zoo currently has two sets of public restroom facilities; one located on the south side of the primary pedestrian path across from the grottoes and the second located near the Golden Eagle exhibit. Both have been recently renovated to provide accessibility for handicapped visitors. The location of both restrooms may present a problem for full implementation of later development phases. In all probability, both facilities will have served a reasonable life expectancy by the time later developments are initiated.

Stroller rentals are now available at the zoo's entry and are a Zoological Society concession. This service will continue as a part of any redevelopment under the auspices of the proposed new gift facility.

Visitor orientation is provided by free hand-out maps funded through the 7-Up distributor. Public information is provided at the ticket booths, concessions and through staff on site. No formal public information or visitor orientation booth currently exists.

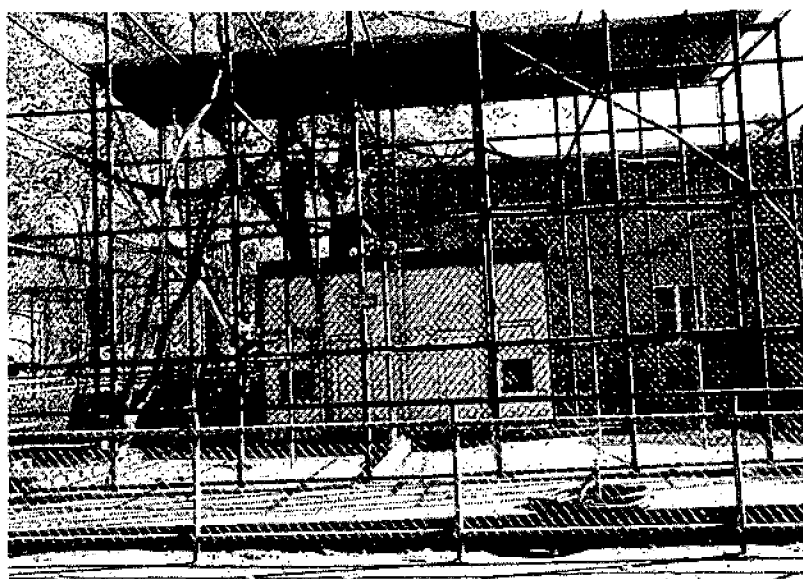
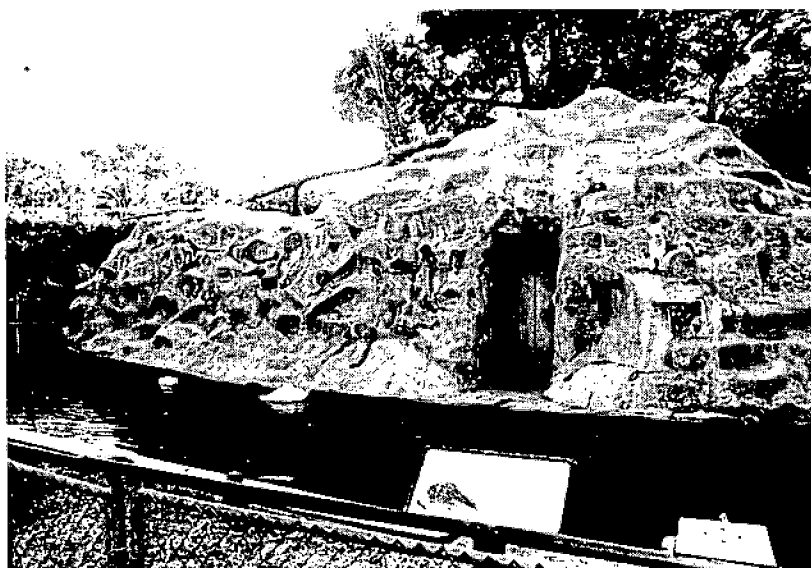


## PLATE 1

The new naturalistic orangutan exhibit can hold two small families of this endangered species.

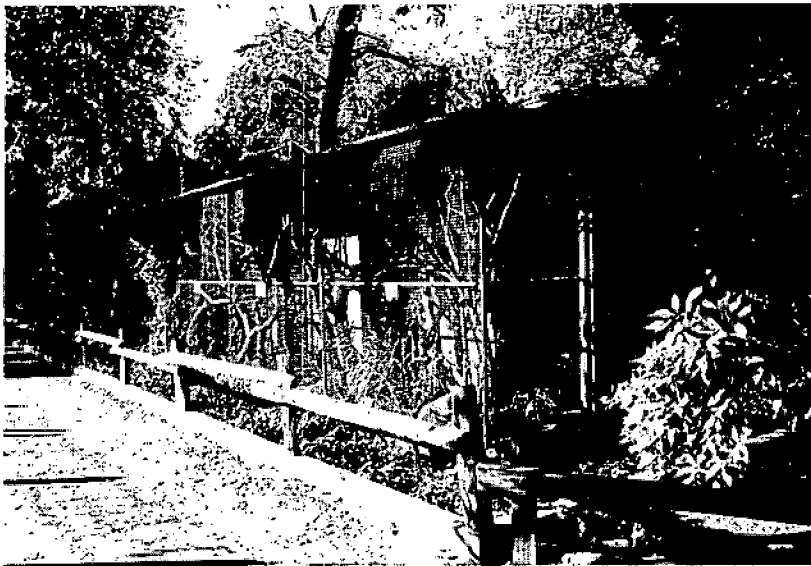
## PLATE 2

The monkey island currently holds ring-tailed lemurs. Neither the indoor den with its poor drainage, nor the surrounding 8-foot deep moat can be cleaned properly.



## PLATE 3

The chain link Gibbon Exhibit typifies the traditional, unaesthetic type of zoo exhibit.

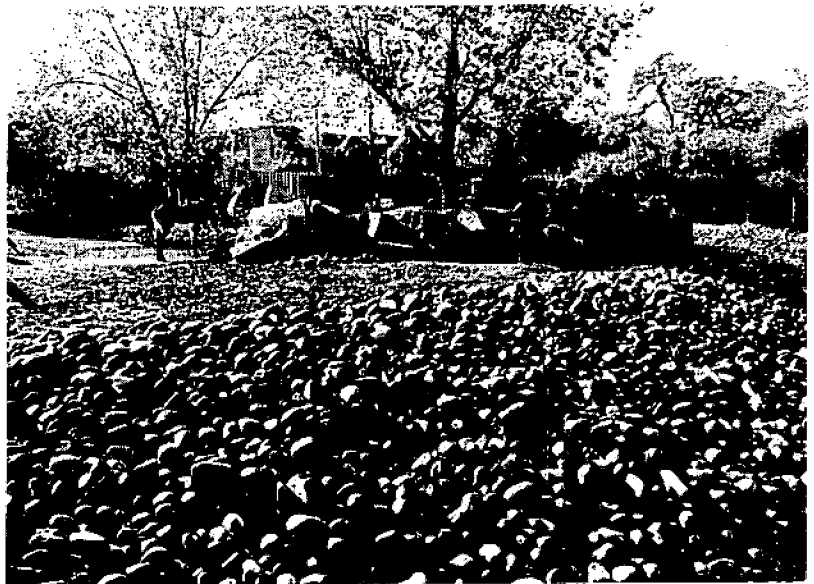


## **PLATE 4**

**The lower bird house consolidates 1 large and 15 small exhibits. This crowded complex will be phased out.**

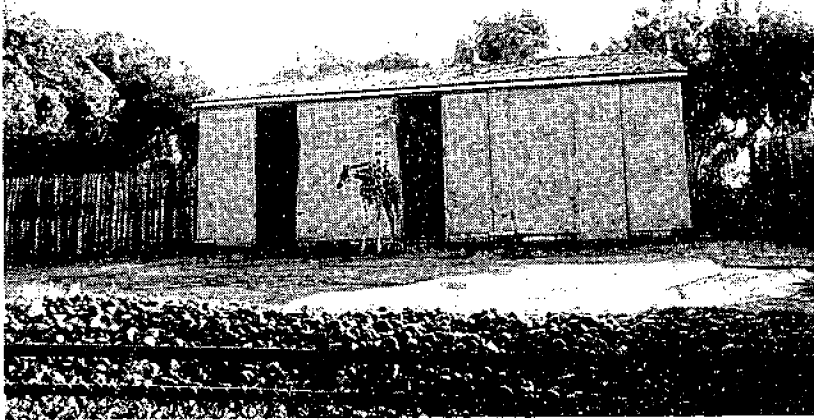
## **PLATE 5**

**These hooved animal exhibits replaced 15 old-styled chain link exhibits in 1976. They require only minor improvements.**



## **PLATE 6**

**The elephant exhibit has inadequate holding and shelter. It also lacks both water and aesthetical value. A new naturalistic exhibit will replace it.**

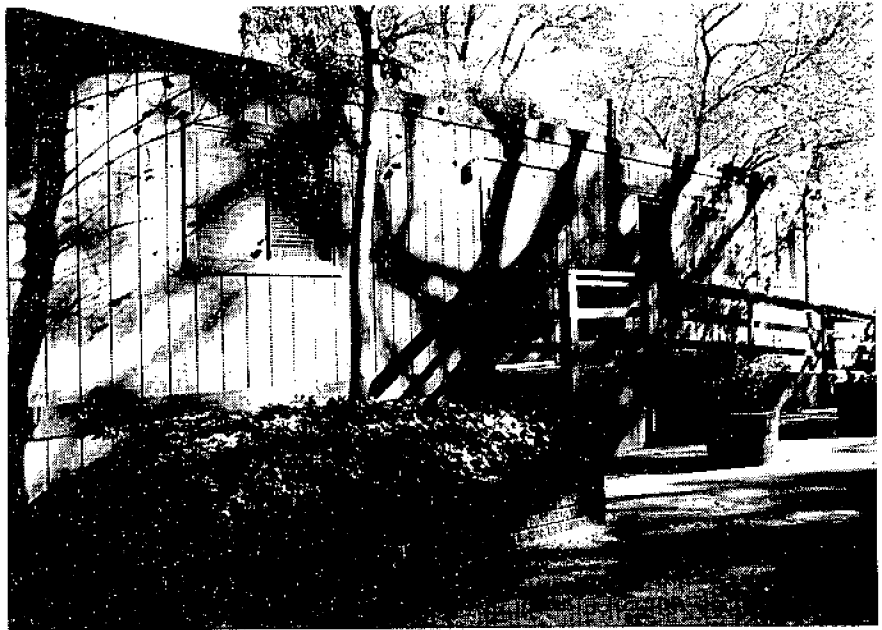


## PLATE 7

The giraffe exhibit is too small and it contains an old, unsound barn. A new naturalistic exhibit will replace it.

## PLATE 8

This trailer has served as the zoo's temporary education building. The program has outgrown this small space.



## PLATE 9

The 1950's style zoo entrance will be replaced with a new naturalistic entrance in keeping with the zoo's park-like setting. Food concession services will be relocated within the zoo.

# **EXISTING ANIMAL COLLECTION** **MAMMALS**

(Key: 2.3.4 = 2 males, 3 females and 4 undetermined sex)

## MARSUPIALS

2.7 Wallaroo

## ELEPHANTS

0.2 Asian Elephant

## PRIMATES

10.5 Ring-tailed Lemur  
1.1 Mongoose Lemur  
1.1 Ruffed Lemur  
0.5 Squirrel Monkey  
5.4 Golden-bellied Mangabey  
0.2 DeBrazza's Guenon  
1.2 Schmidt's Spot-nosed Guenon  
1.0 Black & White Colobus  
1.1 Francois Monkey  
1.2 Lar Gibbon  
2.1 Chimpanzee  
2.2 Sumatran Orangutan

## UNGULATES

1.4 Grevy's Zebra  
0.1 Nile Hippopotamus  
2.2 Llama  
1.2 Reticulated Giraffe  
1.3 Eland  
1.2 Arabian Oryx  
2.2 Dorcas Gazelle  
3.10 Addra Gazelle  
0.2 Persian Goitered Gazelle

## RODENTS

0.0.7 Egyptian Spiny Mouse

## CARNIVORES

1.1 Grizzly Bear  
1.1 Polar Bear  
1.1 Sloth Bear  
1.1 River Otter  
1.0 Ferret  
2.3 Geoffroy's Cat  
1.0 Canada Lynx  
1.1 Western Bobcat  
1.0 Serval  
1.1 Jungle Cat  
1.2 Margay  
2.2 Caracal  
0.1 Puma  
1.0 Clouded Leopard  
1.1 Leopard (North Chinese)  
1.0 Asian Leopard  
1.1 Jaguar  
1.2 Cheetah  
2.2 Asian Lion  
1.1 Siberian Tiger

## BIRDS

### DUCKS AND GEESE

- 1.1.2 Black-necked Swan
- 2.2 Aleutian Canada Goose
- 1.1 Barnacle Goose
- 2.2 Red-breasted Goose
- 1.1 Nene Goose
- 3.2 Plumed Whistling Duck
- 3.3 White-faced Whistling Duck
- 1.1 Black-bellied Whistling Duck
- 1.3 Redhead
- 5.12.1 Wood Duck
- 5.3 Mandarin Duck
- 1.2.3 Laysan Teal

### PARROTS

- 4.2 Eclectus Parrot
- 2.2 Meyers Parrot
- 1.1 African Grey Parrot
- 5.5 Thick-billed Parrot
- 1.1 Hawk-headed Parrot
- 0.4 Black Parrot
- 1.2 White-bellied Caique
- 1.1 Hyacinthine Macaw
- 2.2.2 Scarlet Macaw
- 1.1 Blue and Yellow Macaw

### OTHER BIRDS

- 2.2 Red-crested Touraco
- 1.1 Roadrunner
- 1.1 Western Screech Owl
- 2.0 Tawny Frogmouth
- 1.1 Great Hornbill
- 1.1 Jackson's Hornbill
- 1.0 Bali Mynah
- 1.1 Ostrich
- 2.2 Emu
- 1.1 Elegant-crested Tinamou
- 0.0.2 Double-crested Cormorant
- 0.1 American Bittern
- 5.5.11 American Flamingo
- 1.1 Golden Eagle
- 1.1 Razor-billed Curassow

### OTHER BIRDS (Cont'd)

- 0.1 Green Peafowl
- 0.0.20 Common Guinea Fowl
- 0.0.6 Laughing Gull
- 0.0.2 Ring-billed Gull
- 0.0.1 California Gull
- 0.0.1 Royal Tern
- 1.2 Crowned Plover

## REPTILES

### TURTLES

- 1.1 Aldabra Tortoise
- 0.0.9 Desert Tortoise
- 2.0 Alligator Snapping Turtle
- 0.0.2 Box Turtle

### LIZARDS AND SNAKES

- 0.0.3 Tokay Gecko
- 2.2 Blue-tongue Skink
- 0.0.1 Green Iguana
- 1.0 Cordylidae Sungazer
- 0.0.1 Armadillo Lizard
- 0.0.3 Gila Monster
- 0.1 Rosy Boa
- 0.1 Cooks Tree Boa
- 1.1 Argentine Boa
- 0.3.1 Boa Constrictor
- 0.1 Columbia Rainbow Boa
- 1.2 Puerto Rican Boa
- 0.1 Haitian Boa
- 1.0 Bimini Boa
- 1.0 Haitian Ground Dwarf Boa
- 0.2 Green Anaconda
- 1.1 Yellow Anaconda
- 0.1 Kenya Sand Boa
- 1.1 Turk's Isle Dwarf Boa
- 1.1 Solomon Island Ground Boa
- 1.2 Green Tree Python
- 2.1 Burmese Python
- 0.1 Reticulated Python
- 3.2 African Ball Python
- 1.1 Mangrove Snake
- 1.1 False Water Cobra
- 0.1 Red-tailed Ratsnake
- 0.1 Corn Snake
- 2.0 Florida Indigo Snake
- 0.0.1 Yellow Ratsnake
- 2.2.6 African House Snake
- 2.2.15 Pacific Gopher Snake
- 1.0.1 Florida Pine Snake
- 0.1 Bull Snake
- 0.1 Mountain King Snake
- 1.2 Mexican Milk Snake
- 0.0.3 California King Snake

### LIZARDS AND SNAKES (Cont'd)

- 0.0.3 California King Snake
- 1.0 North Pacific Rattlesnake
- 1.0 Mojave Green Rattlesnake
- 1.0 Sidewinder
- 1.1 Broad-banded Copperhead
- 0.1 Puff Adder
- 0.0.2 Red-spitting Cobra
- 0.2 Egyptian Cobra
- 0.1 Black Mamba

## AMPHIBIANS

### SALAMANDERS

- 0.0.2 Brown Newt

### FROGS AND TOADS

- 0.0.4 Fire-bellied Toad
- 0.0.1 Cuban Tree Frog
- 0.0.6 White's Tree Frog
- 0.0.2 Argentine Horned Frog

## FISH

- 35 Japanese Koi
- 400 Goldfish

## INVERTEBRATES

- 0.0.70 Madagascar Hissing Cockroach
- 0.0.3 African Millipede
- 0.0.1 Mexican Tarantula

The following chart summarizes the current size and distribution of the animal collection. Included in the figures below are 12 primate species, 51 specimens, 15 cat species and 35 specimens. Of the 148 species, 23 are endangered as listed by the Convention for International Trade for Endangered Species (C.I.T.E.S., an international treaty prohibiting the trade of endangered species).

	<u>Orders</u>	<u>Families</u>	<u>Forms</u>	<u>Specimens</u>
Mammals	7	15	44	151
Birds	16	20	44	189
Reptiles	2	15	50	115
Amphibians	2	4	5	15
Fish	1	1	2	435
Invertebrates	3	3	3	64
TOTAL	31	58	148	969



## TREE SURVEY

The outstanding feature of the zoo's site in William Land Park is its large and diverse inventory of trees. Several very old native live oaks can be found at the zoo and these trees are over 200 years old. Since the beginning of the park, new trees have been planted resulting in a current inventory of over 300 trees of 59 varieties. In preparation of this Master Plan, each major tree was sized and its exact location plotted. While designing new exhibits for Zoo-2002, tree location was an important determining factor in eventual location of each exhibit.

The following chart lists all the trees in the current zoo plus the two acres to the north. Several species (i.e., Acacia, Eucalyptus and citrus) are only mentioned as groups. Many smaller trees (at least small in August 1986) are not mentioned in this survey.

BOTANICAL NAME	COMMON NAME	DIAMETER				TOTAL
		1-11"	12-22"	24-35"	> 35"	
Acer campestre	English Field Maple	1				2
Acer saccharinum	Silver Maple		2			2
Alnus rhombifolia	White Alder					1
Arbutus unedo	Pacific Madrone	1				1
Betula verrucosa	European White Birch	1				1
Calocedrus decurrens	California Incense Cedar	1				1
Carya illinoensis	Pecan					2
Casuarina cunninghamiana	River She-oak	(Row)				
Catalpa speciosa	Northern Catalpa		8			8
Cedrus deodora	Deodar Cedar	1		1		2
Celtis australis	European Hackberry		1	3		4
Ceratonia siliqua	Carob Tree	1				1
Cinnamomum camphora	Camphor Tree	4		1	1	6
Citrus spp.	Citrus		( Missing )			
Crataegus oxycantha	English Hawthorn	1	1			2
Cryptomeria japonica	Japanese Cryptomeria	3				3
Cupressocyparis leylandii	Cupressocyparis	3				3
Eucalyptus sideroxylon	Red Ironbark Eucalyptus	3				5
Eucalyptus spp.	Eucalyptus	(Row)			1	1
Firmiana platanifolia	Chinese Parasol Tree					2
Fraxinus spp.	Ash			2		6
Fraxinus velutina	Arizona Ash	6	17			28
Ginkgo biloba	Ginkgo	5				5
Juglans hindsii	California Black Walnut			1		1
Lauris nobilis	Grecian Laurel	1				1
Liquidambar formosana	Chinese Sweetgum		1			1
Liquidambar styraciflua	American Sweetgum	3				3
Liriodendron tulipifera	Tulip Tree	18				18
Magnolia grandiflora	Southern Magnolia		1			1
Magnolia spp.	Magnolia		3			3
Metasequoia glyptostroboides	Dawn Redwood	2				2
Morus alba 'Fruitless'	White Mulberry	2				2
Phoenix canariensis	Canary Island Date Palm		2	9		11
Picea pungens 'Glauca'	Blue Spruce	1				1
Pinus halepensis	Aleppo Pine	1				1
Pinus patula	Jelescote Pine	1				1
Pistacia chinensis	Chinese Pistache	2	4			6
Platanus acerifolia	London Plane Tree	6	2	1		9
Platanus spp.	Plane Tree	15	3	8		30
Prunus cerasifera	Cherry Plum	6				6
Pseudotsuga menziesii	Douglas Fir	1				1
Quercus acerifolia	Coast Live Oak	1	7	7		15
Quercus lobata	Valley Oak		8	8	4	20
Quercus rubra	Red Oak			1		1
Quercus spp.	Oak		3	4		8
Quercus suber	Cork Oak					2
Salix babylonica	Weeping Willow	2				2
Sequoiadendron giganteum	Giant Sequoia	1				1
Sequoia sempervirens	Coast Redwood	11	4	20	1	36
Trachycarpus fortunei	Windmill Palm	6				6
Ulmus americana	American Elm		4			4
Ulmus parvifolia	Chinese Elm		8	1		10
Ulmus procera	English Elm			4		4
Ulmus pumila	Siberian Elm		5	1		6
Ulmus spp.	Elm		2			4
Washingtonia filifera	California Fan Palm			2		2
Washingtonia robusta	Mexican Fan Palm		4			4
Zelkova serrata	Zelkova	1	6			7
TOTAL						318

## **SURROUNDING PARK**

### **FAIRYTALE TOWN**

Fairytale Town is a nursery rhyme theme park "dedicated to the dreams, fantasies and laughter of happy children." The child sized facility, which provides 26 entertaining and educational play sets on three acres, is located directly across Land Park Drive from the zoo's main gate.

Fairytale Town was initiated by the Junior League of Sacramento and was based on ideas gathered from other children's villages nationwide. The league's proposal to the City Council, to accept Fairytale Town as a gift and to assume the responsibility of operating and maintaining the project after its completion, was accepted in September 1955.

The Junior League did not propose a location for Fairytale Town but rather left the selection of the site up to the city. This process proved to be a lengthy and somewhat controversial one. Initially, East Portal Community Park at 51st and "M" Streets was tentatively selected, however, neighborhood opposition to this locale resulted in consideration of other sites. Specifically, Land Park and McClatchy Park were the options presented to the City Council by the Parks and Recreation Committee charged with recommending a location for Fairytale Town. The committee favored William Land Park while a group of over 2,500 citizens and merchants, led by the Oak Park Merchants Association, lobbied for Fairytale Town to be located in McClatchy Park. A diverse group of civic organizations supported the Land Park site however, insofar as the original recommendation called for a reduction of William Land Golf Course from nine holes to six holes, there was opposition from the golfers.

Ultimately the City Council approved the location of Fairytale Town in William Land Park. Proximity to the zoo and the feeling that the zoo and Fairytale Town would compliment each other and enhance the area was a deciding factor in the decision to locate Fairytale Town in William Land Park. This decision was made as a part of a larger "Land Park Plan" adopted in 1957. The Land Park Plan called for redesigning three holes on the golf course in order to maintain a nine-hole course as well as constructing an eighteen-hole course at Haggin Oaks; relocating the Land Park golf clubhouse from the site designated for Fairytale Town to its current location adjacent to the golf course parking lot; realigning select roads through the park and dead ending William Land Park Drive at Holy Spirit Parish School; increasing the size of the zoo grounds and adding new picnic, parking and softball areas in the park.

During an 18 month long process of determining the location for Fairytale Town, planning for the facility continued. The council appointed the Director of the Department of Recreation and Parks to serve on the fifteen person community Board of Directors which was formed in May 1956. In October of that year, this group incorporated as the non-profit Fairytale Town Board with a primary purpose of fundraising.

Miniature scale models of the original 17 sets were constructed and, with accompanying brochures, were placed in strategic locations throughout the county as a means of promoting the project and generating funds. Through the efforts of the Fairytale Town Board of Directors, approximately \$82,000 in donations were received from civic organizations, business firms and individuals in the form of sponsorship of a set. Total cost of the initial project, not including the land, amounted to \$107,000. The balance of start-up capital was obtained via a city loan to the Fairytale Town Board and was paid back from Fairytale Town revenues during the first four years of operation.

Construction was completed using the scale models as guides. Fairytale Town officially opened in August 1959 with the following 17 sets:

1. Billy Goats Gruff Troll Bridge
2. Farmer Brown's Barn
3. Cinderella's Pumpkin Coach
4. The Crooked Mile
5. The Owl House (from Winnie the Pooh)
6. Hiawatha
7. The Cheese (from Farmer in the Dell)
8. Tortoise and the Hare
9. Hickory Dickory Dock
10. Three Little Pigs
11. Hansel and Gretel
12. Mary Had a Little Lamb
13. The Jolly Rodger Pirate Ship
14. Mill House
15. Jack Horner's Corner
16. Children's Puppet Theatre
17. King Arthur's Castle

A few of the sets serve functional purposes such as the Troll Bridge which houses the ticket booth, Hansel and Gretel's house which contains restrooms and the Mill House which contains a refreshment concession.

Several of the fables and fairytales depicted by the playsets involve animals. Accordingly, Fairytale Town has always had a resident group of domestic animals including a pony, pigs, cows and sheep. In addition to enhancing the authenticity of the sets, these animals provide urban children with the opportunity to see and learn about the care of farm animals.

In addition to the free play activities afforded by the play sets themselves, Fairytale Town offers diverse organized children's activities. Entertainment including plays, magic acts, puppets and storytelling is presented year round in the children's theatre. In addition, there is an ongoing program of children's activities and workshops conducted by Fairytale Town's art specialists as well as at least one major special event per month which frequently coincides with major holidays.

Fairytale Town proved immensely popular from the start. Attendance during its first month of operations alone exceeded 83,000 persons. Attendance remained fairly stable at approximately one-quarter of one million people

per year with slight increases in recent years resulting in a fiscal year 1986/87 attendance estimated at 286,577 people.

Gradually the facility has grown with the addition of new playsets. Each of Fairytale Town's first four anniversaries saw the dedication of a new set. These additions, which were Jack and Jill (1960); The Japanese Garden (1961); Humpty Dumpty who graces the front entrance (1962); and Alice in Wonderland's Down the Rabbit Hole (1963) were all donated by individuals or organizations. Donation of the Little Engine That Could and the Old Woman's Shoe in later years continued the tradition of the facility being built through community contributions.

Birthday parties at Fairytale Town have long been a custom. Refreshments, party favors and the assistance of a staff recreation leader are provided. These celebrations, held in King Arthur's Castle, became so popular that the castle was used to capacity.

In recognition of the need for additional birthday party space which could also serve as a group activity area, the board undertook the development of the Sherwood Forest set. This 7,500 square foot addition was a milestone in Fairytale Town's development. Built entirely with donated funds and labor, Sherwood Forest contributors included 34 companies and 78 private individuals. In particular, the Junior League, the 20-30 Club and The Four Robinhoods, the latter two of whom are specifically geared to helping youth, were major benefactors. Completed in 1982, Sherwood Forest with its gathering place, active area and quiet alcove, effectively doubled Fairytale Town's ability to offer children's group activities and events.

Fairytale Town has long been operationally self-sufficient. Commencing in fiscal year 1982/1983, revenue from admissions is deposited in a special trust account where it is utilized to offset the cost of operations. Revenue from the Fairytale Town concession, which provides food, beverages and limited gift services in addition to catering the birthday parties, is likewise deposited in the Fairytale Town Trust account where it is first utilized to offset indirect costs associated with Fairytale Town operations thereby making Fairytale Town fully self-sufficient. Secondly, revenue is earmarked for capital improvements for Fairytale Town and the surrounding parklands.

The concession was originally operated by a private concessionaire. In July 1984, a joint venture of the Sacramento Zoological Society and the Fairytale Town Board began operating the concessions at the zoo and Fairytale Town. Separate records are kept for these two sites and, in addition to the rent paid to the city and earmarked for Fairytale Town improvements, all profits are also reinvested in Fairytale Town.

Fairytale Town was originally operated by the Recreation Division of the Department of Parks and Community Services. Insofar as Fairytale Town and the zoo form a cohesive family attraction in William Land Park, effective July 1985, administrative responsibility for Fairytale Town was transferred to the Zoo Division. A recent visitor survey revealed that approximately 40% of zoo visitors also visit Fairytale Town. Since assuming responsibility for Fairytale Town, the zoo has attempted to develop promotions and activities involving both facilities, thereby providing a fuller experience

for the public. Initially, a major obstacle to these efforts was the fact that visitors wishing to participate in a cooperative zoo/Fairytale Town activity had to pay one entry fee at the zoo and a second entry fee at Fairytale Town. Commencing in July 1986, a discounted zoo and Fairytale Town combination ticket has been available. This service allows the public to experience a full range of family recreational activities at a more affordable cost. In addition to the joint zoo/Fairytale Town ticket, discount rates for school groups were established at Fairytale Town.

Fairytale Town is an outstanding example of a tradition that has long been established in Sacramento - that of individuals', businesses' and organizations' efforts to enhance the area's quality of life. Fairytale Town, built by community contributions and efforts with donations of time, talent, money, materials and labor, has become a permanent asset and source of family entertainment to the growing community of Sacramento. While this Master Plan proposes no major physical changes to the Fairytale Town site, the quality and quantity of programming will continue to be developed in accordance with visitor demand. As funds become available, new sets will be added within the facility much like the Mother Goose set which was dedicated in the Spring of 1987. The reinvestment of concession rent into the facility will enable completion of such small, but vital capital improvement and maintenance projects as the redesign and landscaping of the pool in the Japanese Gardens, renovation of the slides in various sets and handicapped access to the concession. Finally, a Fairytale Town membership group, similar in structure to the Sacramento Zoological Society, is currently being developed. It is envisioned that the membership, to be primarily comprised of families, will receive free admission to Fairytale Town as well as the opportunity to participate in special activities and events at the facility. In turn, this organization will strengthen and expand the non-profit support of Fairytale Town. Such partnerships with non-profit support organizations provide the Department of Parks and Community Services with new resources to maintain and expand the level of services to the community.

#### PONY RIDES

The Land Park pony rides have been a Sacramento tradition for nearly one-half of a century. Three generations have ridden the ponies located south of Fairytale Town across 16th Avenue. The pony rides area, which dates back to the late 1930's or early 1940's, is one of the few open trail sites remaining in the northern valley. Such circular trails, whereby the ponies are led by attendants, though popular in the past have been largely replaced by the less labor intensive sweep rides in recent years.

The Land Park pony rides area was initially developed by a private citizen for the entertainment of Sacramento children. Operated on city land via an informal agreement, the original pony rides provider paid the city a small fee for the privilege of conducting business on public lands. The ponies were sold to another individual operator in 1948, the latter of whose family operated the pony rides area under the same type arrangement through 1980.

Faced with finding a new pony rides concession operator in 1980, the city instituted the bid process which has been utilized in the ensuing years. The current concessionaire, Cache Creek Ponies, has continued the tradition of providing pony rides for small children daily during the summer months

and on weekends during the remainder of the year. Furthermore, the concessionaire has enhanced the services provided the public through the addition of pony parties and photographs of the young riders in addition to making small site beautifications to improve the appearance of the area.

On-site monitoring of this venture is provided by Fairytale Town staff. Rent to the city, in the form of a percentage of gross receipts, is deposited in the Fairytale Town Trust Account and designated for reinvestment in William Land Park. Revenue from the pony rides concession for the fiscal year 1986/87 was \$4,820. This represents an estimated 47,000 rides. In scenario four the pony rides would be moved to another area of the park to make room for the proposed Australian Section.

#### AMUSEMENT RIDES

The amusement rides area is one of the oldest family entertainment elements in William Land Park. Originally known as Land Park Kiddie Land, the amusement rides area was privately financed and developed by a local citizen, Raymond Silva, in the early 1940's. This amenity, which encompasses approximately two acres, is located on Sutterville Road south of 16th Avenue in close proximity to the pony rides concession.

Commencing in 1946, the amusement rides area was operated under a concession agreement with the city in which a percentage of the gross receipts was paid to the city as rent. The original operator, together with the city, undertook several minor capital improvements which enabled the rides to operate year round in the early 1950's. The popularity of this children's ride area has been a constant in the history of William Land Park. For example, when Silva added a merry-go-round to the site in 1947, over 6,000 children initiated the ride during the weekend long dedication.

The current concessionaire, Midway of Fun, has operated the amusement rides area under the name Funderland since January 1985. Upon being awarded this concession contract, Midway of Fun purchased all of the original rides in existence at the site. Of the 11 amusement rides currently at the site, six have been in operation for over 40 years including the merry-go-round. Changes to the site primarily involved support structure equipage and maintenance of a "face lift" type nature.

For the most part, the amusement rides concession continues to operate in accordance with the traditional schedule of being open weekends only during the school year and daily during school and summer vacations. The concession operates during daylight hours only and is not open past 6 p.m. The current concessionaire has instituted some programmatic improvements including limited refreshment services, all day passes and conducted group events such as birthday parties as well as some community services type activities including the policy of permitting the residents of children's homes free group visits.

While attendance statistics are not kept on concession operations, the amusement rides area appears to be growing in popularity with the recent increase in revenue to the city from this particular site supporting this viewpoint. Still, the focus has remained on families with young children, an orientation which is verified through attendance analysis. According to

a visitor survey conducted by staff, families overwhelmingly continue to constitute the largest visitor population. Approximately 150 people, representing over 600 visitors, were surveyed. Ninety-five percent of the groups were comprised of at least one adult accompanying a child or children. Families represented over 85% of the groups with clubs, organizations and youth groups comprising the balance. Unaccompanied teens represented a mere 2% of the visitors. Approximately 70% of the visitors resided within Sacramento County and 55% of them had also visited or planned to visit the zoo, Fairytale Town and/or the pony rides on the day surveyed. A similar visitor survey conducted by the concessionaire revealed that of the nearly 1,800 visitors profiled, 99% represented adults accompanying children aged 12 and under.

Previously, revenue to the city in the form of rent from the amusement rides concession was deposited in the General Fund. Commencing with the January 1985 awarding of this concession contract to the current operator, rent to the city is deposited in the Fairytale Town Trust Account where it is earmarked for reinvestment in William Land Park. The implementation of this practice set the precedent for the subsequent reinvestment of the pony rides concession rent in the same manner. More importantly, the level of funds generated in rent from this amusement rides concession under the current operator (over \$108,000 in fiscal year 1986/87) has enabled the city to pursue previously unfunded upkeep and maintenance projects designed to preserve and enhance William Land Park.

The amusement area is a rich recreational tradition. This facility has historically served, and continues to serve families with young children. Furthermore, under the current operator this two acre area has not only continued to provide family recreation but also has proved to be a significant source of revenue for the city. Nonetheless, throughout the Master Plan process, the amusement rides concession has been a focal point of neighborhood concerns.

One perception was that the amusement rides were frequented by non-local citizens and teenagers, and that these visitors were a result of the operators advertising efforts. This is not supported by the various visitor surveys conducted at the amusement rides concession which uniformly revealed the vast majority of visitors to be adults accompanying children under six years who resided in the greater Sacramento area. Nevertheless, as an immediate response to these concerns, the concessionaire agreed to substantially curtail advertising efforts to focus on announcing the days and hours of operation.

A new contract for the operation of the amusement rides concession was awarded by the City Council to the current concessionaire, who was the sole bidder, in January 1987. As part of this proposal process, neighborhood representation was incorporated into the contract negotiations and review. Various concerns were addressed at this time and agreement was reached between the city, neighborhood representative and the concessionaire to recommend continuation of this family tradition via a scaled-down amusement operation geared to young children with the number and nature of rides to remain status quo. Any changes in the rides require the Director of Parks and Community Services' approval at which time a representative of the neighborhood association will have the opportunity to review any such



proposed changes. Given that it was not possible to speculate on the eventual recommended use of this area by the Master Plan at the time the amusement ride contract was awarded, the contract was limited to a two year term with the city having the right to renew on a year to year basis for up to, but not exceeding, two additional years.

All options for both amusement rides' operations and land use of the area currently utilized by this concession must be explored in conjunction with the Master Plan. During the planning process, a range of alternatives were suggested as follows:

1. Maintaining the amusement rides concession operation at its present site and scope. This option could include rearranging the rides within the existing site so that a combination of sound absorption materials and sound retaining walls could be constructed to blend into existing foliage and more importantly, to reduce the noise problem for the neighborhood.
2. Relocating the amusements rides to an area behind Fairytale Town. Such a relocation is estimated to cost \$80,000 which could be born by the city, the concessionaire or some combination thereof. In the event this option is the preferred one, consideration should be given to creating a more themed rides area which is compatible with both Fairytale Town and the surrounding area.
3. Relocating the amusement rides to another park site when there exists a regional park site which is developed to the point that such a move is both feasible and fitting.
4. Given that both options 2 and 3 remove the amusement rides from their current site within Land Park, the site could conceivably be utilized for other uses. In particular, it has been suggested that were the rides to relocate, this area could be used for a parking lot.

The environmental impact study of this Master Plan will include a more in-depth exploration of the future of the amusement rides area.

#### USE OF LAND PARK CONCESSIONS REVENUE

As previously stated, Fairytale Town has operated as a special fund since fiscal year 1982/83. The Fairytale Town Special Fund provides for the receipt of revenues and the expenditure of funds related to the operation of Fairytale Town and the surrounding area. The special fund approach has enabled Fairytale Town to become 100% operationally self-supporting. Included in the revenue deposited in the special fund is the revenue received from the Fairytale Town food and gifts operation.

In recognition of the need to reinvest in William Land Park, the City Council approved in January 1985 the depositing of revenue from the amusement rides concession into the Fairytale Town Special Fund for this purpose. In April 1986, the depositing of revenue from the pony rides concession into this fund likewise received council approval. Following these council actions, Parks and Community Services staff, together with Finance

Department staff, developed a plan on the use of this additional revenue to the Fairytale Town fund, including a hierarchy of uses, fund projections over a five year period, and a five year plan for reinvestment of revenue into William Land Park.

The basic premise of the hierarchy of uses was that revenue deposited to the Fairytale Town fund should first be used to support the operations of Fairytale Town (both direct and indirect costs). Previously, revenue deposited in the Fairytale Town fund was sufficient to cover only the direct costs associated with Fairytale Town. With the addition of the amusement and pony rides concessions revenue to the Fairytale Town fund, it is now possible to recover all costs associated with Fairytale Town, a practice which is consistent with the accounting principles associated with establishing a special revenue fund. Secondly, the funds will be used for upkeep and enhancement of Fairytale Town, the zoo and surrounding parklands including the concessions area. This plan proposes improvements to Fairytale Town, the zoo and surrounding area at a funding level consistent with the revenue projections and includes such projects as handicapped access to the concessions, renovation of the duck and boat lakes and planting at the corner of Land Park Drive and Sutterville Road. Additional projects include landscaping and design of the Japanese Gardens in Fairytale Town, additional safety precautions on several Fairytale Town sets, upgrading of the picnic areas, amphitheater and soccer field and demolition of the old Chimpanzee cage. This plan has been implemented with fiscal year 1985/86 concession revenue totaling \$132,574 enabling the completion of five projects. Proposed future projects within this plan will be adjusted annually to reflect actual available funds.

#### WILLIAM CARROLL MEMORIAL AMPHITHEATER

The Land Park Amphitheater, one of only two outdoor amphitheaters in the city, was built as a memorial to former Parks Superintendent, William Carroll. Carroll, whose career in the Parks Department spanned 36 years including eight as superintendent, was best known for developing William Land Park. He hired on with the city as the foreman in charge of Land Park development and construction in 1922 on the day the project began and thereafter took an active role in the continued improvement of this site until his retirement in 1954.

The amphitheater consists of an approximately 50' x 25' raised circular stage with a backdrop constructed of flagstone, rock wall and a small backstage area. Ascending rows of wooden benches, arranged in a semi-circle, provide seating for an estimated 300 persons. The amphitheater, which is located adjacent to the duck lake across 15th Avenue from Fairytale Town, was constructed by the city with assistance from the Southside Improvement Club in 1960, at a cost of \$20,500. Carroll was one of the founders of the Southside Improvement Club in 1913 and was made an honorary life member shortly before his death.

The amphitheater has always been available for use by citizens and community groups via a first come, first serve reservation system which includes a nominal permit fee. Community usage of the William Carroll Memorial Amphitheater is primarily for small musical and cultural events; ceremonies, including weddings; and religious activities. An estimated 6,000 persons

per year participate in these activities. From the mid-sixties through the early 1970's, the city actively programmed this facility with a diversity of cultural events including the Shakespeare in the Park series offered in conjunction with Sacramento City College. In the early 1970's, such active programming efforts were discontinued following some incidents which were reflective of the political and social turbulence of the 1960's.

Commencing with the 1986 summer season, the Shakespeare in the Park series was resurrected in response to public demand. These evening performances which are again co-sponsored by the city and Sacramento City College provide a valuable cultural event, returning theatre productions to the community and enhancing William Land Park. The 1986 summer season also marked the start of weekly jazz concerts by the traditional Jazz Society in the amphitheatre. In keeping with the suggestion often made during the Master Planning process, the scheduling of both Shakespeare in the Park and jazz concerts is coordinated with major zoo and Fairytale Town events so as to minimize the likelihood of multiple special events in William Land Park occurring at the same time.

The amphitheater has been maintained as originally built with the sole improvement to this amenity being the renovation of the electrical system in 1986. This project was required to accomodate the resurrection of the Shakespeare in the Park summer series. The eventual upgrading of the amphitheater which will primarily involve replacement of the benches is included as a future project in the five year plan for reinvestment of concession revenue into William Land Park. Under current concession revenue estimates, this project will not be funded before fiscal year 1991/92, however, should actual revenue exceed the estimates, there is the possibility that this project could be completed sooner.

#### D.A.R. MEMORIAL GROVE

William Land Park contains several historical memorials, the oldest of which is the Daughters of American Revolution (D.A.R.) Memorial Grove established by the City Council in 1924. Shortly thereafter, the local chapter of the D.A.R. launched a fundraising campaign for the purpose of bringing trees from each of the 13 original states to plant as a living historical monument in Land Park. This Memorial Grove, the highlight of which is a tree propagated from the Washington Elm under which George Washington took command of the Continental Army at Cambridge, Massachusetts, is located south of Fairytale Town near 16th Avenue. The D.A.R. Memorial Grove will be preserved regardless of the scope of any zoo improvements.

#### THE CAMELLIA GARDEN

Sacramento's oldest Camellia is located amidst an informal Camellia garden adjacent to the pony rides in William Land Park. Transplanted from a downtown property to the park in the late 1960's, the tree has been deemed at least 100, and possibly 130, years old. Over the past 20 years, the city has planted additional Camellias at this site thus creating the present informal garden. Effective in 1985, primary maintenance for the William Land Park Camellia Garden has been the responsibility of the Camellia Society of Sacramento. As is the case with the D.A.R. Memorial Grove, the Camellia Garden is within the scope of this Master Plan and will be preserved regardless of the final adopted plan.

## THE ROCK GARDEN

One of the most colorful and unique gardens in the city park system is the Rock Garden in Land Park. Located immediately southeast of the amphitheater and facing Fairytale Town across 15th Avenue, the Rock Garden was originally constructed under the WPA program in the 1930s. For many years it received minimal maintenance and in fact was approaching obsolescence. In recent years this process has been reversed through a combination of increased maintenance and ongoing improvements. As a result, the Rock Garden is presently the most exotic example of plants in the city park system. The area is enhanced by a meandering path as well as small rivulets of water which flow through the garden. New plantings are constantly being added, thereby further beautifying this popular garden.

## CHARLES SWANSTON STATUE

Located on a knoll north of the zoo next to the old Oak Tree in William Land Park, is a statue of a man sitting and gazing. Dedicated by George Swanston to his father Charles, founder of the C. Swanston and Sons meatpacking firm, the statue is inscribed simply "To The Pioneers." George Swanston was the man who coordinated the purchase of Land Park by the City Commission in the 1900s, when the land that is Land Park had more than one owner. George Swanston bought up all the land that is now the park and once the legal questions were settled, he sold the land to the city for the price he'd paid for it. It is conceivable that a northward expansion of the zoo boundaries could incorporate the statue site, however, regardless of the outcome, the statue will be preserved.

Additional memorials in Land Park including a restored French 73 artillery piece and a World War I Memorial are located outside the portion of the park included in the plan.

## LAKES

William Land Park originally consisted of large swamp areas. When the park was developed in the 1920s, the construction of the water system, including four wells and an irrigation system, was incorporated into the early phases of development. Two small lake areas were designed in the drainage system, acting as ponding areas during winter months and supplied with water during the other periods of the year to maintain their level. These two lakes are: the duck lake which is located adjacent to the amphitheater and is within the scope of this plan; and the boat lake located south of 14th Avenue in an area of the park not included in this plan.

The duck lake is approximately one-half acre in size making it the second largest lake in the city park system, surpassed only by Southside Lake. The lake is stocked annually via a grant from the County of Sacramento's Department of Parks and Recreation with funds which are derived from fines levied on violators of fish and game regulations. The varied stock includes bass, bluegill and catfish, thereby making the lake a popular and unique urban fishing spot.

As is the case throughout those city parks which contain lakes, the duck lake contains a fairly large duck population. In addition to several

varieties of wild, natural ducks, domestic ducks are frequently abandoned here despite the city's effort to discourage this practice given that the domestic ducks do not survive well.

The duck lake and surrounding support structures had remained unchanged since the original construction nearly 60 years ago with the result that the lake was in need of a major renovation. It was necessary for the renovation work to be performed during the hottest summer months when the lake evaporates below the drain line. Therefore the Parks Division of the Department of Parks and Community Services began renovation with the draining of the duck lake in mid-July.

After the lake was dry, excavation removed and cleaned all debris from the lake bottom. The old asphalt path was removed and replaced. The new reinforced concrete pathway is designated to eliminate the problem of asphalt breaking off and slipping into the lake. Finally, the water's edge was be finished with cobbles. The work was be a cooperative effort between the Parks Division staff, Sheriff's Alternative Sentencing Program participants and private contractors with funds partially derived from William Land Park concessions revenue. This project preserves a park amenity which is popular for picnicing and other forms of passive recreation. The Master Plan proposes no other changes for the duck lake area.

The smaller boat lake, which is likewise stocked with fish and is a home to ducks, provides a similar, though somewhat less popular, site for passive recreational activities. Insofar as this lake which derived its name from its original use as a site for recreational boating, is outside the boundaries of the Master Plan area, no changes in either its use or development are proposed as part of this plan. However, insofar as this lake needs renovation similar to those recently planned for the duck lake, the boat lake renovation is presently included as a capital improvement project in the city's 1987/1992 Capital Improvement Program and is included in the Land Park Reinvestment plan for fiscal year 1988/89 contingent on available concession revenue.

#### SOCCER FIELDS

William Land Park contains three soccer fields, one regulation size field and two bantam fields which are sized for children age ten and under. All three fields are programmed by the city with the primary users being youth. In particular, the Sacramento Youth Soccer League utilizes the bantam fields located near the golf course clubhouse on a regular basis. Typically, youth games are held Monday through Saturday throughout the season which runs from late July into December. The regulation field located southeast of Fairytale Town is also used for youth play. In addition, this field is used by an adult soccer league, generally for women's play, on Sundays during the July through November season.

All team games, both youth and adult, are scheduled through the Recreation Divisions' Sports Reservation System. While the regulation field is located within the scope of this Master Plan, no changes in its use are planned regardless of the outcome of the plan.

## PARCOURSE

The William Land Park Parcourse consists of a two mile walking and jogging path with 18 outdoor exercise stations, at which the participant stops to climb, jump and high step, located at intervals along the path. The parcourse idea was imported from Europe in the late 1970s. The course is designed to begin with warm-up and limbering exercises leading into a series of more strenuous exercises, followed by a cool down series leading to the finish. The self-guided course of exercise circles the golf course and loops along 15th Avenue through the park past the duck lake and back on 14th Avenue. Constructed in 1979, the parcourse idea initially met neighborhood opposition borne not from objections to the path itself but out of general dissatisfaction with undesirable elements using the park. It is one of two parcourses in the entire city parks system and the only such system where the exercise stations are integrated into a course, as opposed to a cluster concept. Land Park, with its grassy running surface, shady trees and accessibility, is well suited for joggers. This traditional use is further fostered given that Land Park incorporates an exact mile loop, an exact two mile loop and a perimeter run extended to Riverside Boulevard which is three miles. In addition, the parcourse has proven to be a further recreational and fitness enhancement.

## BALLFIELDS

There are five baseball diamonds located in William Land Park west of Land Park Drive and north of the zoo. These three hardball and two softball fields are used to capacity by both adult league teams and little league play. The southern most field falls under the scope of this Master Plan, however, no changes are planned for this field and the surrounding open space which includes the lily pond and which is bounded on the south by 13th Street.

## PICNIC AREAS

William Land Park contains 85 picnic tables and 43 barbecue braziers located at diverse points throughout the 236-acre site. Within the scope of the Master Plan are a number of picnic amenities grouped in that area just south of Fairytale Town. On weekends, these facilities are heavily used by families including zoo, Fairytale Town and concession visitors. Visitor surveys reveal that a significant percentage of people remain in the park to picnic after visiting one of these facilities. During the spring these picnic tables are used to capacity by school groups. Year-round ball players and other organized groups including churches, day care centers and private businesses contribute to the high demand for the picnic sites. Presently, there are no group picnic areas in Land Park, however, the reinvestment plan for concession revenue includes the upgrading of the picnic area by Fairytale Town to better accommodate group use. This project is scheduled for funding in fiscal year 1989/90. The Master Plan does not intend for the removal of any picnic amenities. At most, depending on the outcome of the plan, particularly as it pertains to some of the park's larger attractions, some tables may need to be relocated within the park.

## NEIGHBORHOOD PORTION OF THE PARK

The 10.6-acre neighborhood portion of William Land Park is commonly known as "the panhandle" is located northwest of the zoo and the ball diamonds and is bound by Riverside Boulevard, Eleventh and Thirteenth Avenues and Thirteenth Street. This segment of the park was first developed in 1936 to insure that area residents, while enjoying the benefits of the regional facility with its multitude of fee activities, would not be without the free and equally valuable recreational opportunities afforded by the existence of a neighborhood park. The panhandle contains those elements commonly found in a neighborhood park including children's play structures, a games table, picnic tables, barbecue braziers, a basketball court and wading pool. This area is landscaped and contains an abundance of mature trees which provide several well shaded areas. These recreational elements enable a multitude of activities including children's play, picnicing, jogging, open field sports such as flag football or frisbee, checkers and relaxation. In addition to the unscheduled usage by the surrounding community, the William Land Park panhandle is one of five parks in the entire city to host a Tiny Tot program. This special program is an organized recreation activity for children three to five years of age. The Land Park Tiny Tot program is the city's oldest and most popular Tiny Tot program.

The playground equipment, which was installed in the early 1960s, had long since outlived its usefulness and sorely needed to be replaced. Consequently the city applied for and received, a competitive grant from the State of California to redevelop the neighborhood park portion of William Land Park. The project includes replacement of the antiquated playground equipment and improvements to the picnic area, wading pool and game area as well as landscaping and irrigation modifications, and is expected to be completed in early 1988. The initial impetus for this project proposal was the comments from area residents during the public meetings held in conjunction with this Master Plan. Although the neighborhood portion of the park is not included in the Master Plan study site area, residents repeatedly chose that opportunity to address the need for redevelopment of the panhandle area. No further changes to the panhandle are planned in conjunction with the Master Plan process.

## GOLF COURSE

The William Land Golf Course is the oldest city operated golf course. First opened for play in 1924, this nine-hole, par 34 course encompasses 70 acres and is fully treed. Golf course facilities include a pro shop, a food concession and parking in the form of a lot located off Sutterville Road adjacent to the clubhouse. The course contains neither locker rooms nor a driving range, and motorized carts are prohibited.

Over 82,000 rounds are played per year and an average of 190 tournaments are held. Traditionally, the William Land Golf Course has had a high concentration of senior players. The course boasts three affiliate groups with a combined membership of approximately 500 persons.

The William Land Golf Course is one of five municipal golf courses operated by the Department of Parks and Community Services Golf Division. The municipal golf facilities are successfully operated and maintained as an

enterprise function with revenue realized from the various golf course services used exclusively for the operation and maintenance of the municipal golf courses. No tax monies or General Funds are used by the golf division. The golf course is not within the scope of this Master Plan and accordingly no changes are planned in conjunction with this process.



# Market Analysis

## ATTENDANCE HISTORY AND COMPARISON

Recent attendance history for the zoo reveals a gradual decline in the last half of the 1970's followed by a steady increase in the early to mid-eighties. (Figure 14)

Attendance for fiscal year 1986/87 exceeded one-half a million visitors. Past city annual reports suggest that over one million people actually visited the zoo prior to the charging of an admission fee beginning in 1965. It is not possible to confirm these figures, however, as there was no gate or turnstile and attendance was merely estimated by staff prior to the implementation of fees. The first full year after the start of the admission fee (fiscal year 1965/66), the zoo reported 516,329 visitors. This is significant given that at the time the county population was a mere 612,000+ persons.

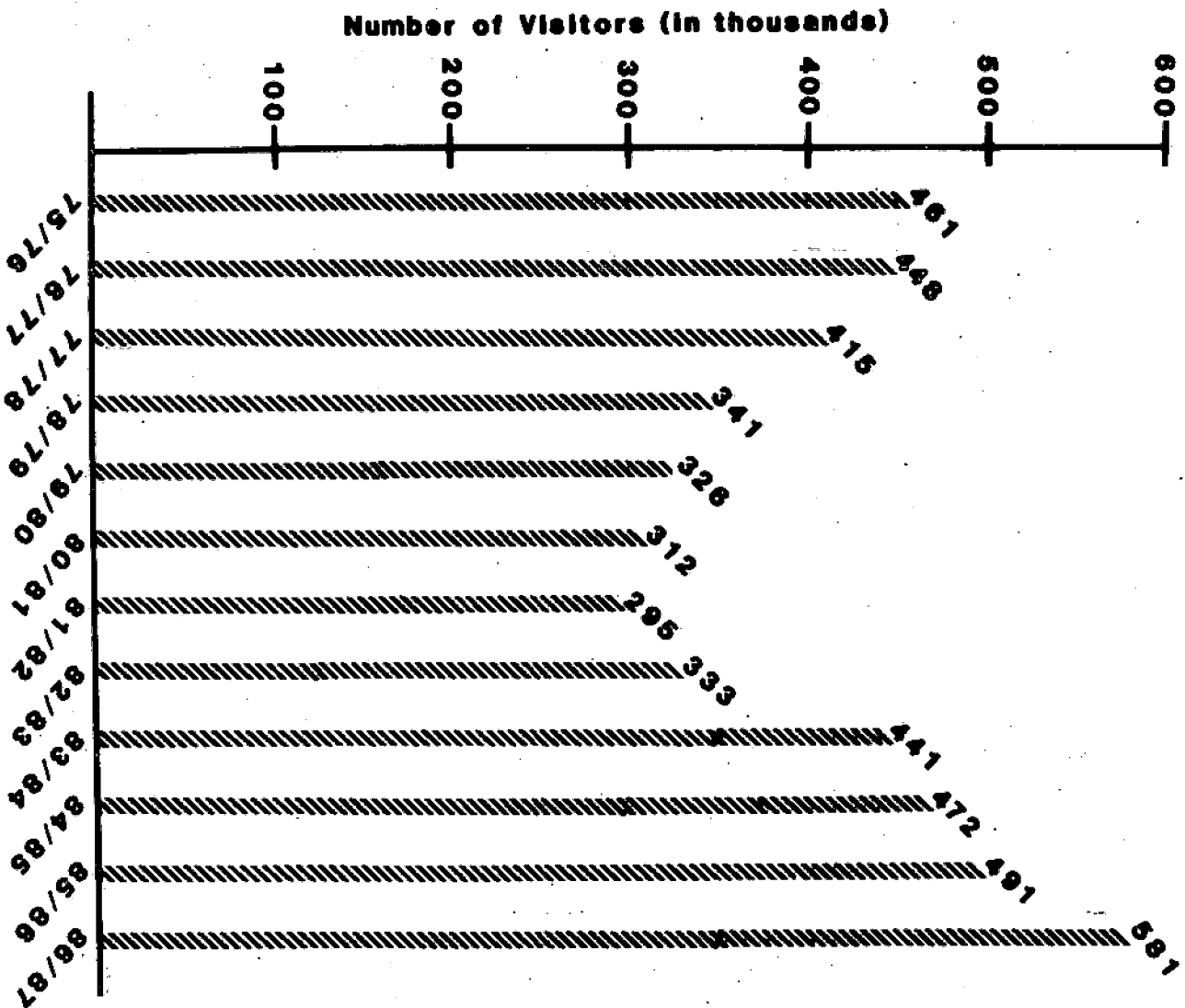
During the 1960's, the zoo developed many new exhibits including those for the orangutans, gorillas, polar bears and the penguins. Historically, it is evident that new exhibits at the zoo are a major factor in increasing attendance. Accordingly, it is highly probable that these new exhibits, coupled with the small admission fee at the time, continued to a level of attendance in the mid-sixties which was not matched for the next 20 years.

In fact, the zoo experienced a consistent decline in annual attendance between the fiscal years 1972/73 and 1981/82. This trend can be attributed in part to three successive price increases implemented immediately after the passage of Proposition 13. Adult entrance fees were raised from the pre-1977 level of \$.35 to \$.75 in 1977 up to \$2.00 in 1981. An apparent additional factor in declining enrollment was the absence of any major zoo improvements during the years after construction of the hoofed animals exhibit in 1976 up until the new lions and tigers grotto was constructed in 1982.

In 1981, new administrators in both the Zoo Division and the Department of Parks and Community Services brought about changes which resulted in increased public awareness of the Sacramento Zoo. First, an ongoing program of zoo improvements was initiated with the result that in the last five years new exhibits have been developed for the lions, tigers, orangutans and chimpanzees. Completion of these major improvements has consistently created new interest in the zoo. Secondly, the role of the Zoological Society was expanded and the zoo staff reorganized. Together, these changes enabled the zoo to greatly expand its promotional and membership efforts as well as the nature and scope of services offered to the public. Effective July 1984, the Zoological Society began operation of the zoo's food and gifts concessions under a contractual arrangement with the city. Operation of the zoo concessions by the facility's non-profit support group has resulted in improved visitor services at, as well as increased revenue to, the zoo.

Figure 14

**SACRAMENTO ZOO ATTENDANCE**



Collectively, these changes are credited with reversing the trend of decreasing annual attendance. Commencing in fiscal year 1982/83, the level of visitation began to increase dramatically from year to year. The fact that, as previously mentioned, fiscal year 1986/87 visitation exceeds one-half million persons is indicative of the zoo's resurgence. It is unrealistic to expect this growing popularity will level off in the near future in light of the increased awareness of and interest in the zoo, coupled with the fact that Sacramento area with its current population of 1.3 million, is one of the nations fastest growing population centers.

The relationship of attendance at the Sacramento Zoo to attendance of similar size zoos in comparable communities is further indicative of the comparative role the Sacramento Zoo plays in this area. Many factors contribute to a zoo's annual attendance. For example, depending on their geographical location, many zoos in the United States operate on a seasonal basis unlike the Sacramento Zoo which has the advantage of a climate conducive to being open year-round. Secondly, some zoos are located in areas which afford little else in the way of family recreational and cultural facilities. Families in Sacramento however, have a myriad of renowned cultural and educational opportunities including the Railroad Museum, Sacramento History Center, Crocker Art Museum, the State Capital, Sutter's Fort, and in September, the State Fair. The zoo is one leisure landmark in an area, which given its abundance of such attractions, has been ranked first in the nation in the area of quality of life. In considering both the factors that affect zoo attendance and the information available from the attendance comparison (Figure 15) between zoos, together with the fact that the Sacramento Zoo is an increasingly popular place within a fast growing community with a reputation as an exciting place to live and visit, it is reasonable to expect that attendance will continue to improve at the Sacramento Zoo.

FIGURE 15  
PROFILE OF SIMILAR ZOOS\*

<u>LOCATION</u>	<u>ACRES</u>	<u>METRO POP</u>	<u>RATIO ATT TO POP</u>
Tuscan, AZ	15	600,000	.48:1
Fresno, CA	20	275,000	1.34:1
Sacramento, CA	14	1,200,000	.39:1
Indianapolis, IN	25	1,200,000	.23:1
Topeka, KS	30	159,000	1.72:1
New Orleans, LA	58	1,100,000	.91:1
Jackson, MS	110	385,000	.55:1
Kansas City, MO	88	1,200,000	.44:1
Omaha, NE	130	450,000	1.40:1
Albuquerque, NM	60	460,000	.96:1
Oklahoma City, OK	120	561,000	.56:1
Portland, OR	62	815,000	.63:1
Knoxville, TN	130	300,000	.50:1
Memphis, TN	36	575,991	.63:1
San Antonio, TX	50	1,000,000	.93:1
Salt Lake City, UT	52	600,000	.92:1
Tacoma, WA	27	372,500	.73:1
Louisville, KY	75	417,000	.43:1

\*Source: AAZPA Directory 1986/87

## SACRAMENTO ZOO VISITOR PROFILE

The Sacramento Zoo is the most heavily attended year-round public facility in the Sacramento area and is second only to the annual California State Fair in public facility attendance. In fiscal year 1986/87, zoo visitation was 581,000 visitors. This represents both an increase of 286,000 visitors (97%) from five years ago and a return to the level of visitation experienced during the mid-sixties. Historically, monthly attendance has been the highest during May and June due to the combination of good weather and school group visitation, while December and January are the periods of lowest attendance. However, regardless of the seasonal fluctuations and the weather conditions the zoo has visitors on the 364 days a year which it is open (closed on Christmas day only).

### ATTENDANCE IN RELATION TO AGE

Gate receipts reveal that the largest group of visitors (44%) are paying adults between the ages of 13 and 64. A series of gate surveys conducted over the last two years indicate nearly one-third of the paying adults are between the ages of 19 and 30 years with another 23% being between 31 and 64 years of age. Young adults comprise less than 5% of paying adults and senior citizens account for a mere 2.5%. Gate receipts further reveal that children not in a school group and aged under 13 comprise 35% of the zoo's attendance. Visitor surveys estimate visitors in this age group at 39% of the zoo's paying visitors. Collectively, this data strongly suggests that the zoo's major market is young families. This hypothesis is further indicated by the results of an independent consultants survey in which it was revealed that 44% of adult visitors surveyed were between the ages of 25 and 34 and that over one-half of all respondents had children with a full 89% of the children being age 12 or under.

The utilization of the zoo for family recreation is consistent with the findings of a nationwide Public Opinion Survey commissioned by the American Association of Zoological Parks and Aquariums (AAZPA) in which it was revealed that "while most people placed importance on having zoos or aquariums near them, it is more important to those with children at home." The study, which revealed that nearly one-half of those respondents who had visited a zoo in the last year were between the ages of 18 and 34, and six in ten had children at home, further states that:

"Going to the zoo is a tradition in our culture, and our research shows that zoos and aquariums continue to enjoy great popularity as places to occupy oneself and one's children.

Four in ten adults and teenagers feel that zoos and aquariums are doing an excellent job of providing an enjoyable place for children and young people. Another 54% say they are doing a good job, for a total of 95% rating them positively on this question. This with children at home are the most enthusiastic about the entertainment it provides for the young."

### USE BY SCHOOL GROUPS

The City of Sacramento currently allows all school groups fee exempt entrance to the zoo. This includes both public and private schools from nursery schools on up through universities. During fiscal year 1986/87, nearly 70,000 students, teachers and chaperones visited the zoo on fee exempt field trips.

The following chart breaks down school group attendance by area:

Within the city: 16,299 - 27%

Within the county: 17,825 - 29%  
(outside the city)

Outside the county: 27,042 - 44%

Collectively, these school groups represent seventeen Northern California counties. Clearly then the zoo is a major field trip destination for schools throughout the greater Sacramento area. The value of a zoo as an educational experience is not unique to the Sacramento Zoo. In fact the AAZPA study concluded that zoos are regarded: "First and foremost as educational in nature and purpose. When the respondents to our survey were asked to tell in their own words what they regard as the most important purpose of zoos and aquariums, providing education for children was volunteered by a full 35% and education in general was mentioned by an additional 27%."

### RESIDENCE

Gate surveys of nearly 1,500 visitors over an eighteen month period revealed that approximately 44% of the zoo visitors reside within the City of Sacramento limits while an additional 13% live outside the city but within Sacramento County. The remaining 43% are comprised of the balance of California residents (33%) and out of state visitors (10%). When responses are categorized by the seasons in which they were completed, there are indications that out the county visitation may be as high as 50% during the summer months. Consequently, it is apparent that the Sacramento Zoo draws large numbers of tourists to Sacramento each year.

The suggestion that the zoo is a major community attraction is consistent with the results of the AAZPA Public Opinion Study which revealed that:

"Virtually all Americans have visited a zoological park sometime in their lifetime and fully one-third of the public report visiting a zoo within the last twelve months. Furthermore, 11% of adults say they have visited a zoo or aquarium while on a business trip. Such an excursion is most common among the higher income adults; 23% of those with household incomes of \$50,000 or above report such visits on business trips.

The case is quite different regarding zoo excursions on vacation. Fully three-quarters (76% of those who have ever been to a zoo) of the United States adult population report going to a zoo or aquarium while on vacation to another town."

Even if one assumes the conservative estimate that 43% of zoo visitation is from outside Sacramento County then approximately 250,000 of the zoo's 581,000 visitors during fiscal year 1986/87 were tourists. If a mere one-quarter of the visitors coming from outside the county also visited an area restaurant then the zoo is "responsible" for nearly 62,500 restaurant customers. According to the United States Travel Data Center the average amount spent on meals by two people on a day trip is \$57.00. If one assumes that tourists who visit the zoo are not unlike the general tourist population, then the 250,000 tourists who visited the zoo during fiscal year 1986/87 generated millions of dollars for the area's restaurant industry. This restaurant patronage in combination with gasoline purchases, hotel/motel bookings and other tourist expenses makes it evident that the Sacramento Zoo has a significant economic impact on the community.

#### SUMMARY

In summary, the typical zoo visitor is a family with young children a significant number of which are local citizens while an equally significant number are tourists whose zoo visit creates a positive economic impact on the community. School children whose visits do not generate revenue, nonetheless constitute a valued visitor group who provide the zoo with an excellent audience for its conservation education efforts.



## COMMUNITY SUPPORT

The Sacramento Zoo has always been the recipient of generous community support. In fact, the zoo was founded as a result of a bequest from William Land's will for the purchase of a park whereafter many exhibits were constructed with funds and materials donated by community minded citizens or groups. For example, public subscriptions to the Sacramento Union paid for the zoo's first elephant in 1948 and many of the exhibits built during the 1960's and 1970's were a direct result of community support. The large aviary located in the front of the zoo which was funded by the Sacramento Chinese Sportsman Association and the old penguin pool which was donated by the California-Western States Life Insurance Company are two such examples from the sixties. Donations in the seventies included funds from Edwina Pfund and Fong and Fong Printing for four aviaries and a donation of time and materials from the 20-30 Club for an Eagle Aviary.

This tradition whereby individuals, businesses and community groups donate time, talent and resources in order to improve public recreation and the quality of life has been most evident through the work of the Sacramento Zoological Society. Founded in 1956, with the original purpose and aim to create a zoological garden, the Sacramento Zoological Society has evolved as one of the most prominent non-profit organizations in the regional Sacramento area and a major source of zoo support. Early Zoological Society contributors included the collection of donations for, and partial funding of, the bear, lion, tiger and monkey exhibits constructed in the early 1960's.

Despite the fact that Society membership numbered less than 400 persons during the 1970's, the zoo's non-profit support group made some substantial contributions ranging from the ongoing public education benefits resulting from the implementation of the Docent Program in 1970 to a substantial contribution to the cheetah exhibit completed in 1974.

The Sacramento Zoological Society has experienced a sharp increase in membership during the 1980's from less than 450 members in 1980 to the current membership of over 5,000. With this rise in membership has come a parallel expansion in the society's role to include promotion and marketing activities and educational services. In particular, the Zoological Society has become extensively involved in coordinating and staffing year-round educational programs. The Society also manages the Adopt-An-Animal Program and sponsors zoo staff education.

In FY 1983/84, the Zoological Society became a partner in a joint concessions board which successfully implemented transfer of the food and gifts concessions in the zoo to this board. The Society, through the Joint Concession's Board, now operates the concessions thereby allowing all profits to be directly invested in zoo operations and improvements. Between the concession related staff and the educational positions, it is anticipated that in Zoo-2002, the Zoological Society will employ almost as many full time staff people as will the city (see Staffing Section).

The Zoological Society's rapid growth in income resulting from a combination of increased membership and involvement in concessions operation, strengthened the partnership between this non-profit support group and the city in the operation and development of the Sacramento Zoo. Both the new chimpanzee and orangutan exhibits were heavily supported by the Zoological Society. In particular, the \$300,000 chimpanzee exhibit only included \$75,000 in city funds with the remaining funds coming from the Zoological Society.

The Zoological Society annually sponsors several special fundraising events and it is through involvement in these special events where the level of community support for the zoo is most evident. In particular, Crystal Creamery's Ice Cream Social and Cap Fed Savings and Loan's Zoo Zoom are excellent examples of corporate, community and society involvement. In an effort to further promote such involvement in and contributions to the zoo, the Zoological Society began a fundraising campaign called "Zoo Builders" in 1987. Zoo Builders is comprised of prominent local business people who have undertaken the task of raising funds for the first phase of the Rare Feline breeding area.

The tradition of corporate, business and individual support for the Sacramento Zoo should flourish in future years as membership continues to grow in the Sacramento Zoological Society and the organization becomes increasingly sophisticated in its fundraising efforts.

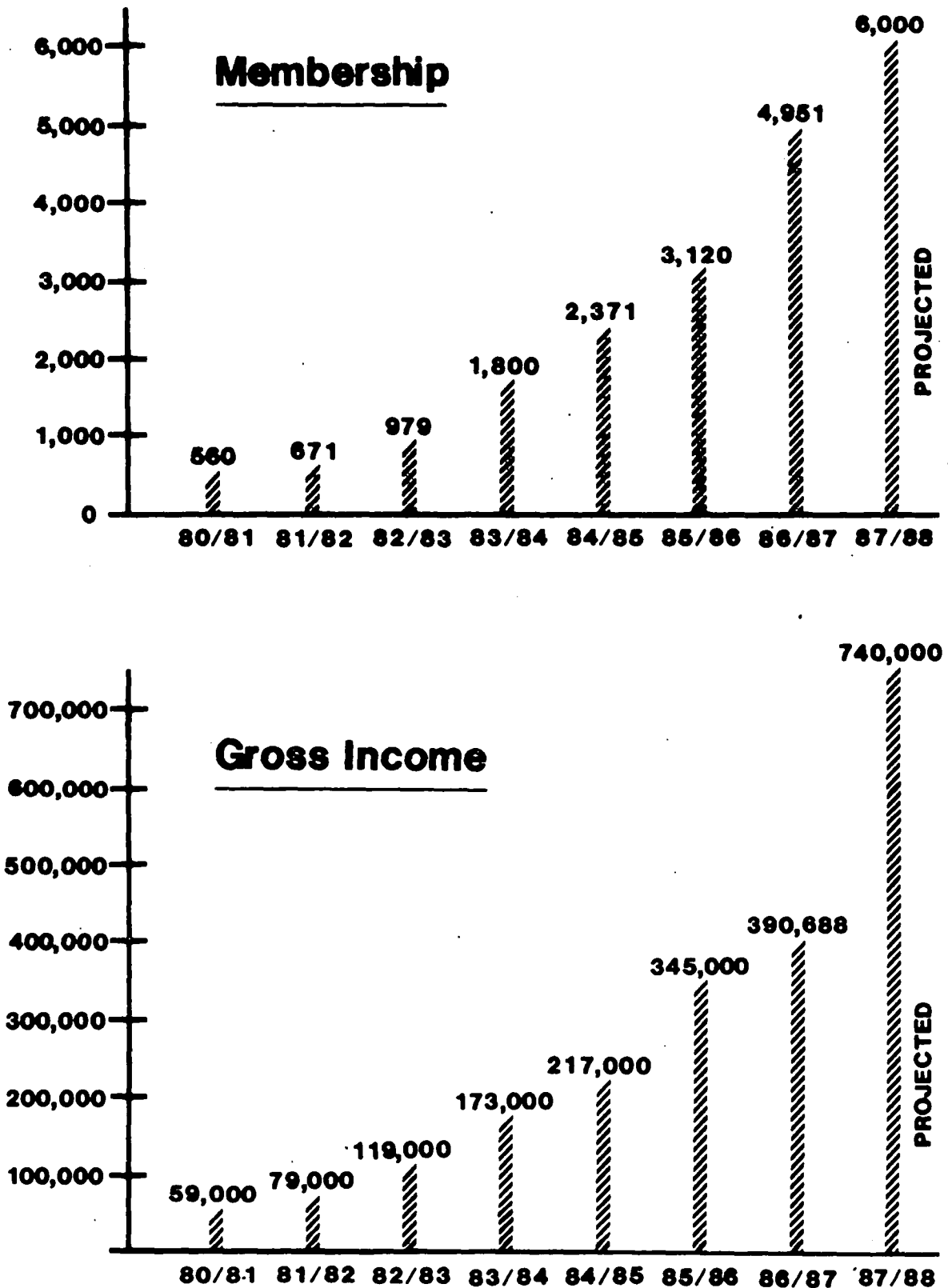
## SACRAMENTO ZOOLOGICAL SOCIETY MEMBERSHIP &amp; INCOME HISTORY

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	<u>80/81</u>	<u>81/82</u>	<u>82/83</u>	<u>83/84</u>	<u>84/85</u>	<u>85/86</u>	<u>86/87</u>	Projected <u>87/88</u>
Memberships	560	671	979	1,800	2,371	3,120	4,952	6,000
Gross Income	\$59,000	\$79,000	\$119,000	\$173,000	\$217,000	\$345,000	\$390,688	\$740,000
Expenses:								
Admin, Events, Fund-Raising	\$19,000	\$25,000	\$47,000	\$77,000	\$73,000	\$132,000	\$207,240	\$241,400
Net Income	\$40,000	\$54,000	\$72,000	\$96,000	\$144,000	\$213,000	\$183,448	\$499,000
Operation/ Income Percentage	32.0%	32.0%	39.5%	44.5%	34.6%	38.0%	53.0%	32.5%
Funds Spent on Zoo:								
Operation	\$1,700	\$3,500	\$7,500	\$6,500	\$6,330	\$8,101	\$24,641	\$39,400
Education	0	0	N/A	N/A	\$28,812	\$39,304	\$69,635	\$99,500
Capital Improvements	\$4,500	0	\$26,000	\$65,000	\$130,317	\$42,714	\$192,397	\$228,000
Research/Contribtns Conservation	0	0	N/A	N/A	N/A	N/A	\$2,000	\$7,000
TOTAL	<u>\$6,200</u>	<u>\$3,500</u>	<u>\$33,500</u>	<u>\$71,500</u>	<u>\$165,459</u>	<u>\$90,119</u>	<u>\$288,673</u>	<u>\$373,900</u>

**Figure 17**

**Sacramento Zoological Society**



## COMMUNITY MARKET ANALYSIS SURVEY

In the final analysis, support for the enhancement and expansion of the Sacramento Zoo must come from the community in which it is located and which it is primarily intended to serve. Assessing the level of public support for the zoo was therefore deemed a critical component of Master Plan development. To this end, two community-wide market analysis surveys were conducted: one in December 1984, by Wildlife Associates, Inc.; and one in December 1986, by J.D. Franz Research. The latter, which was modeled on the former, was intended to ensure that no substantial changes in sentiment had occurred during the intervening two years.

### SURVEY METHODS

Both surveys were conducted among random probability samples of residents of the Sacramento, Davis, Roseville and Elk Grove areas. All interviews for both surveys were completed by telephone. State-of-the-art techniques were used in developing each of the samples, and to the extent possible given available information, the second sample was designed to parallel the first. The methodology for the first survey is not entirely clear from published documents, but the second used central location calling under ongoing supervision, evening interviewing to maximize the probability of including working people, and rigorous inter-rater reliability checks on the coding of open-ended questions. The first survey yielded 302 completed interviews and the second yielded 100.

Responses to the second survey do not differ significantly from those to the first, except on issues that can be presumed to reflect actual changes in perceptions over time. Consequently, all findings presented in this section are derived from the second and most recent survey which was conducted on December 18th, 22nd and 23rd of 1986. The response rate for this survey (completions divided by adult contacts) was an unusually high 75%, which in combination with congruence of responses between 1984 and 1986, provides strong evidence that the findings represent current attitudes.

### OBJECTIVE AND INQUIRIES

The objectives of the two surveys, which were virtually identical save for minor changes in question structure, were to measure residents' perceptions of the zoo and Fairytale Town to assess their receptiveness to zoo expansion and enhancement proposals, and to determine their reactions to various funding options. Specific inquiries included evaluations of the zoo and Fairytale Town relative to other public recreation facilities in the state, the extent of support for or opposition to proposed changes in William Land Park and the zoo in particular, the extent of support for or opposition to suggestions for the future financial support of the zoo and the overall importance of upgrading the zoo.

## RATING OF THE SACRAMENTO ZOO AND FAIRYTALE TOWN

Ratings of both the Sacramento Zoo and Fairytale Town relative to other public recreation facilities in California were predominantly positive as Figure 18 illustrates. Combined "excellent" and "good" ratings for the zoo represented 70% of respondents while the same ratings for Fairytale Town represented 50% of respondents. The lesser percentage of favorable ratings of Fairytale Town is offset not by negative ratings, but rather by "don't know" responses which is far from surprising given that the facility has limited attraction to those without small children. Mean ratings for the two facilities on a scale of 1 ("poor") to 4 ("excellent") excluding "don't know" responses were 3.07 for the zoo and 2.98 for Fairytale Town.

## REACTIONS TO SUGGESTED CHANGES IN WILLIAM LAND PARK AND THE ZOO

Suggested changes in William Land Park and the zoo elicited somewhat more mixed reactions as Figure 19 demonstrates. In particular, the proposal to have a full service restaurant in the park almost evenly divided respondents with 51% in favor and 40% opposed. Expansion of the zoo to an adjacent area in the park, on the otherhand (and perhaps surprisingly given the recent publicity on the opposition) was overwhelmingly supported, with 34% strongly in favor and 47% in favor for a total support level of 81%. Slightly lower but nonetheless strong support was expressed for having the zoo put more emphasis on aquatic exhibits and river environments (67%) and for having the zoo put more emphasis on animals that are native of California (71%). Using a scale from 1 ("strong favor") to 4 ("strong oppose") and excluding "don't know" responses these data can be summarized in Table 1 below:

TABLE 1	
MEAN SUPPORT FOR SUGGESTED CHANGES (1 = STRONGLY FAVOR)	
Item	Mean Support
Full Service Restaurant	2.42
More Native Animals	1.96
More Aquatic/River Exhibits	1.94
Zoo Expansion	1.75

## REACTIONS TO SUGGESTIONS CONCERNING FUTURE FINANCIAL SUPPORT

Sentiments were even more mixed and also more pronounced relative to various suggestions concerning the future financial support of the zoo as Figure 20 indicates. Passing a bond issue specifically for the zoo was favored by 60% and opposed by 27%. Broadening the zoo's tax base to beyond the city limits elicited a similar reaction with 55% in favor and 32% opposed. Obtaining support from private corporations and contributions from private citizens were substantially more strongly favored with 92% in support of the former and 82% in support of the latter. Increasing the price of admission to the

zoo on the otherhand, was viewed with considerable disfavor with only 2% strongly in favor and a total of 30% in favor at all, while 55% were opposed to an increase in admission prices. Again using a scale of 1 ("strongly favor") to 4 ("strongly oppose"), and eliminating "don't know" responses, these data can be summarized as in Table 2 below:

TABLE 2 MEAN SUPPORT FOR SUGGESTED APPROACHES TO FUTURE FINANCIAL SUPPORT (1 = STRONGLY FAVOR)	
Item	Mean Support
Increase Zoo Admissions	2.87
Broaden Zoo Tax Base	2.24
Zoo Bond Issue	2.15
Private Citizen Contributions	1.90
Private Corporate Support	1.56

#### IMPORTANCE OF UPGRADING THE ZOO

Overall support for upgrading the Sacramento Zoo was strong as Table 3 demonstrates. Over two-fifths of respondents felt that upgrading the zoo was very important and an equal percentage felt that it was somewhat important. Only 7% felt that it was not very important and no one felt that it was not at all important.

TABLE 3 IMPORTANCE OF UPGRADING THE SACRAMENTO ZOO	
Response	Percentage
Very Important	44%
Somewhat Important	44%
Not Very Important	7%
Not At All Important	0%
Don't Know/No Opinion	5%
Total	100%

#### CONCLUSIONS

Responses to the community market analysis survey indicate clear and multi-dimensional support for the Sacramento Zoo. A strong majority of residents find the zoo to be a good or better facility relative to other public recreation facilities in California, and an even stronger majority find its

upgrading to be an important undertaking. Further, almost as strong a majority support the expansion of the zoo.

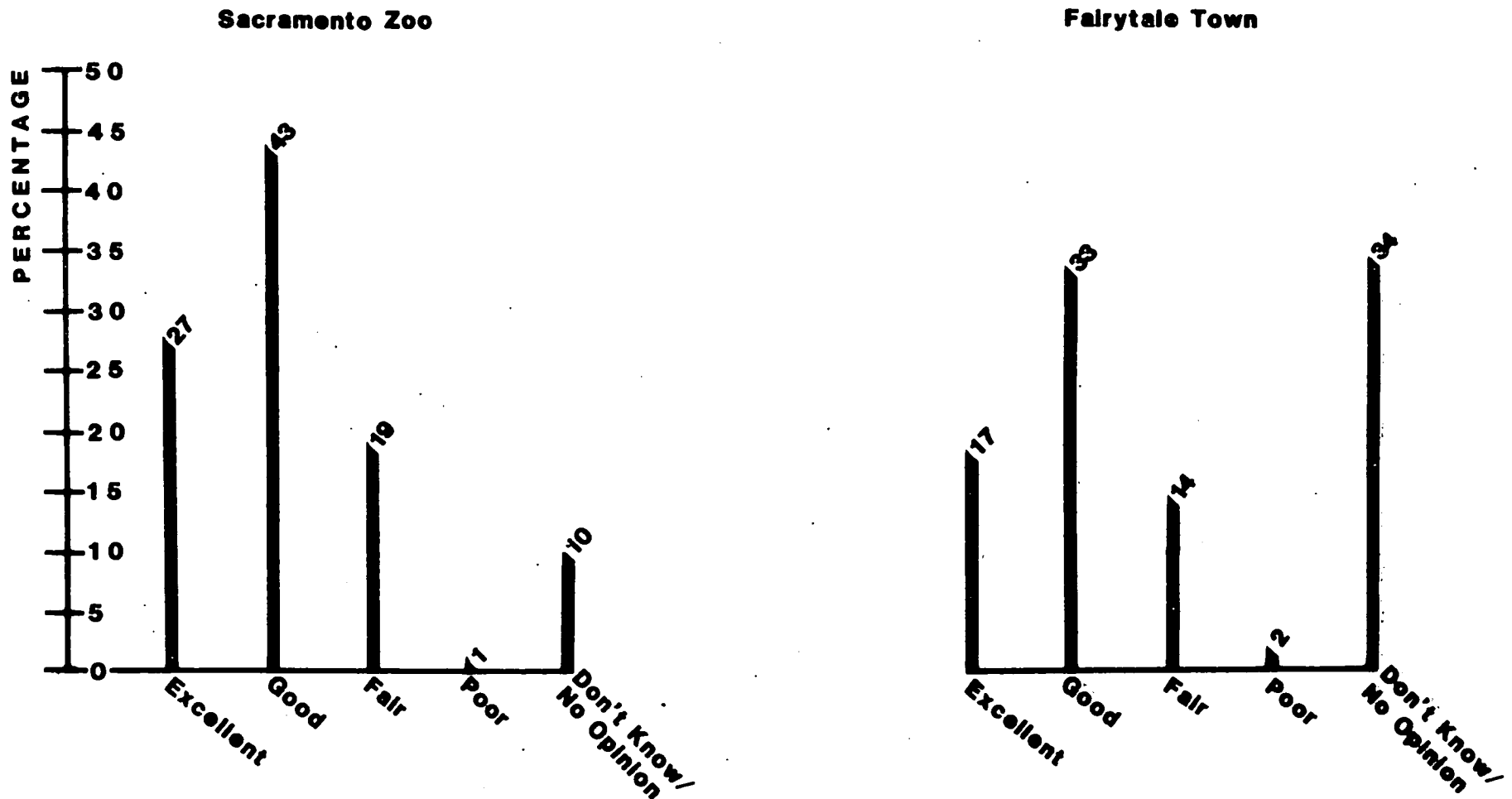
Specific proposals elicit somewhat more mixed reactions, but the directions in which the community would like to see the city proceed are strongly in favor of a bigger and better zoo. Insofar as changes are concerned, support focuses on zoo expansion and on zoo - specific upgrades (aquatic exhibits, river environments and native animals) rather than on the more general park -related upgrade and a full service restaurant. Reactions to proposals concerning the future financial support of the zoo tend to support volunteerism rather than governmental or tax related funding, yet even the two public financing proposals (a bond issue and a broadening tax base) receive majority approval, a quite surprising finding when one considers the state's general anti-tax posture.

It is not necessary to go beyond the data in order to state that the market analysis reveals a clear and compelling public mandate for zoo expansion and enhancement. Residents of the Sacramento area like their zoo and their preference would be to make it bigger and better.



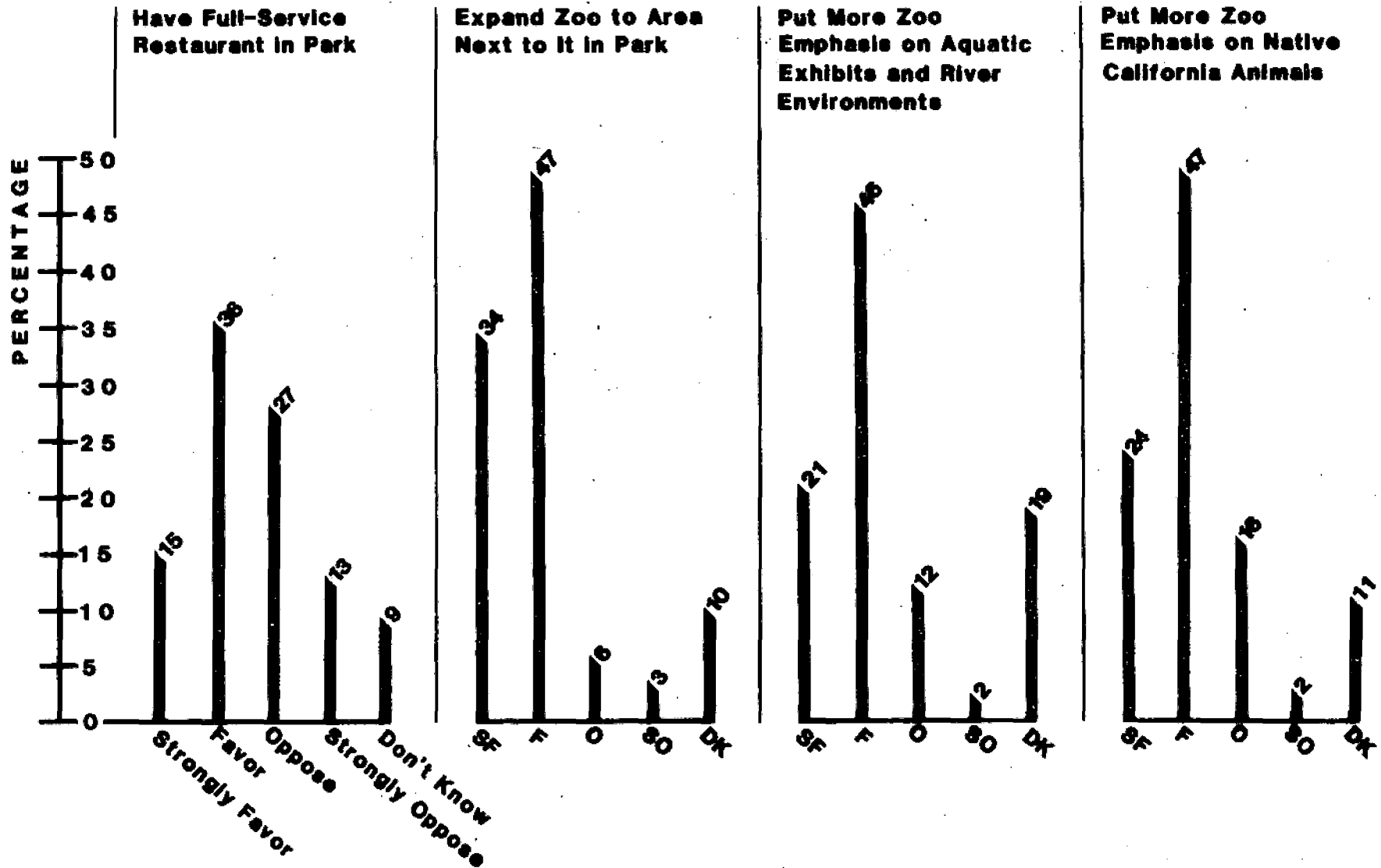
# Figure 18

RATINGS OF THE SACRAMENTO ZOO AND FAIRYTALE TOWN IN COMPARISON  
TO OTHER PUBLIC RECREATION FACILITIES IN CALIFORNIA



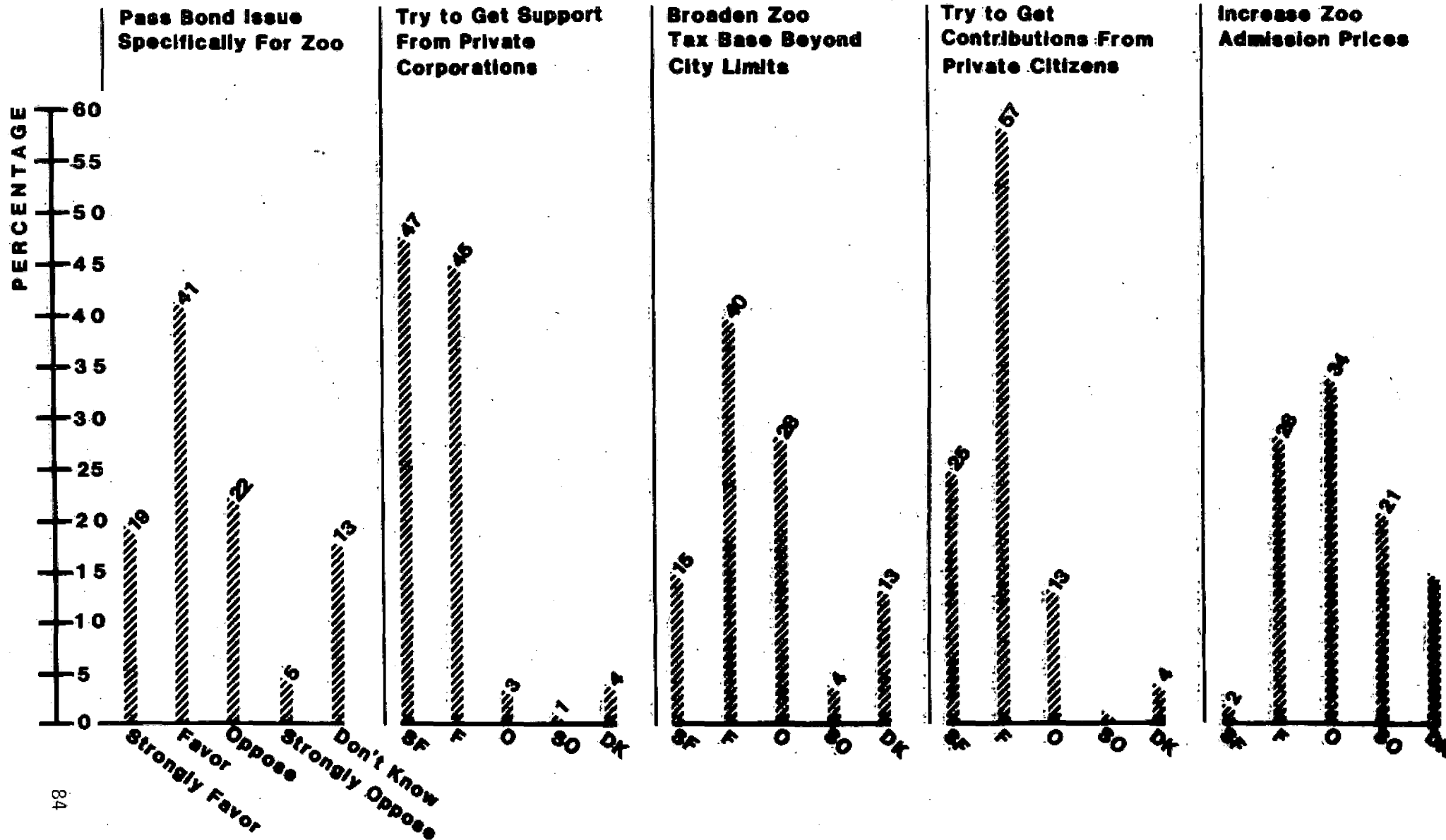
# Figure 19

EXTENT TO WHICH THE COMMUNITY FAVORS OR OPPOSES SUGGESTED CHANGES  
IN WILLIAM LAND PARK AND THE SACRAMENTO ZOO



# Figure 20

## EXTENT TO WHICH THE COMMUNITY FAVORS OR OPPOSES SUGGESTIONS CONCERNING THE FUTURE FINANCIAL SUPPORT OF THE ZOO



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# Site Design & Collection

## ZOO EXHIBIT DESIGN CRITERIA

Inherent in the master planning process is the inclusion of zoo design criteria. This design criteria must be developed with consideration for the two entirely distinct user groups a zoo must accommodate; the resident animals and the visiting public. The needs of both sets of users must be met with foremost consideration for the animals. In turn, a healthy and lively animal population will attract, educate and entertain the visitors. Accordingly, the design criteria was developed in keeping with: 1) the zoo's commitment to the conservation and propagation of endangered species; and 2) the zoo's efforts to increase public awareness through the provisions of an educational and enjoyable zoo experience.

1. In keeping with wildlife conservation efforts, the exhibits will be designed to strengthen the zoo's role in the propagation of selected endangered species.
2. Each exhibit must realize the needs of the individual species or grouping of species on display. Consequently, the following exhibit criteria shall be incorporated into construction or renovation of exhibits:
  - a. The appropriate type of terrain and landscaping.
  - b. The need to provide refuge areas for weaker, less dominant animals.
  - c. The provisions of opportunities for animals to mark their territory.
  - d. Substratum shall be provided that allows for natural behavior. For example, burrowers should be able to burrow and hoofed animals exhibits should contain enough hard surfaces to allow the normal wearing down of hooves. All exhibits should contain surfaces which provide good footing.
  - e. Either on or off-exhibit conditions shall be provided which enable the young to be parent raised.
3. All exhibit features will be designed to create visitor appreciation of wild animals, and encourage efforts towards conservation of habitats and presentation of endangered species. Every effort will be made to enlighten and excite visitors about the animals' native environments, and their unique behaviors and characteristics. This will be accomplished through the use of naturalistic habitat displays, inclusion of plant materials and utilization of moats and barriers which appear part of the natural landscape.

4. Exhibits will be sized to accommodate the behavioral and social needs of animals displayed. Frequently, this criteria will result in fewer but larger exhibits.
5. Current zoo exhibits deemed good by modern zoo standards are those for chimpanzees, orangutans, hoofed animals, reptiles, cheetahs and flamingos. The recently completed spacious and naturalistic chimpanzee and orangutan exhibits will remain as they are. The remaining four good exhibits will eventually be enhanced, however, their renovation will be the lowest priority of all zoo exhibits. All the other exhibits in the zoo, the majority of which are concrete cages or similarly inadequate and antiquated habitats, will be completely demolished and new exhibits constructed under Zoo-2002.
6. In order to economize on space, operational efficiency, cost and interpretive potential, many exhibits will be grouped with common viewing areas and common service areas. Furthermore, displays will be built as economically as possible while still using modern zoo technology.
7. Rest areas and observation points will be designed to maximize visitor comfort and viewing. Convenient plaza and guest seating spaces, including benches with backs, will be situated at frequent points along the walkways and adjacent to exhibits to accommodate visitor needs. Viewing stations will either be multi-nodal or multi-linear in nature, and wherever possible, will be designed so as to enable the visitors to view the animals at close range within their natural habitat.
8. Interpretive material at each exhibit, as well as in thematic interpretive centers, will enhance the educational experience of visitors by providing information and insight on the animals' habitats, history, adaptations, social structure and behavior. These interpretive materials will be provided in the form of signage, labels, graphics, videos and artifacts.
9. A main design objective is the elimination of chain-link barriers to be replaced by naturalistic barriers. Zoo-2002 will utilize both water-filled and dry moats, islands, fences and enclosed glass exhibits such as the new Chimpanzee Exhibit. Landforms, rock work and vegetation will be used to hide barriers and create an illusion of freedom. Garden barriers will be consistent throughout the zoo except where changes are necessary to enhance theme development. Finally, small children and wheelchair-bound persons currently experience limited or even obstructed viewing of some exhibits due to the height and nature of the surrounding barriers. Zoo-2002 will take into account these special viewing problems shared by young children and people in wheelchairs by utilizing modern barriers designed to enhance, not encumber, viewing.
10. Because the zoo is a public facility, the final design will be free of barriers to the handicapped. In order to accommodate the needs of persons requiring wheelchairs for their mobility, walkways, openings and viewing areas will be of adequate size for ease of

wheelchair movement. Exhibits will be arranged to gradually absorb any challenging grades in topography, and where necessary ramps designed to State and Federal handicapped standards, will be sensitively integrated within the exhibits. Additional design considerations necessary to insure handicapped accessibility include rest-rooms, drinking fountains, railings and picnic amenities.

11. Planting surrounding exhibits, although not necessarily from the animals' own geographic range, will suggest the animals' own natural habitat.
12. Every effort will be made to design exhibits which are as maintenance and operationally efficient as possible. In addition, the off-exhibit animal quarters will be designed to insure both the comfort and safety of the animals as well as the responsibilities and safety of the keepers. Off-exhibit animal quarters are the site of most feeding, care and observation. Accordingly, these areas are the center of keeper activity, and as such, their safety is paramount. The keepers must have extremely safe areas for the care and moving of the animals. These areas will be designed in accordance to the United States Department of Agriculture's Animal Welfare Act, and will be as hygienic as possible with adequately sloping floors, rounded corners, elimination of all possible vermin access points and impermeable surfaces. There will be safe and sanitary storage and food preparation areas, and heating and cooling systems for the comfort of the animals who may be isolated in holding for long periods of time. These structures will have double doors to prevent any escapes as well as areas to separate animals for treatment if need be.
13. All exhibits will include holding facilities with the capacity to adequately house off-exhibit animals including offspring awaiting shipment and non-compatible animals which frequently include additional males. The inclusion of holding facilities is imperative if the zoo is to continue to accomplish the goal of propagation of endangered species without crowding the animals. Furthermore, the existence of holding facilities will insure that there is always room for a newborn or a "loser" in a fight for dominance.

## THEMATIC PLAN

No one zoo can be all things to all people, regardless of how large it is. Even the largest zoos are able to display but a limited number of animal species, and the Sacramento Zoo does not endeavor to become a large zoo. Quite the contrary, Zoo-2002 shall be guided by the goal of providing a modern, first class zoo while simultaneously remaining cognizant of size constraints and of the importance of maintaining the character and use densities of the surrounding community.

The Sacramento Zoo currently occupies 14 acres. Pending public input and the City Council's adoption of this plan, and the subsequent environmental impact report, the zoo will either remain at its current size or will be expanded to encompass either 16 or 20 acres. Regardless of the final outcome, the Sacramento Zoo will be a small, quality zoo and will be restricted in both the number and diversity of animals displayed. A small, 20 acre zoo, the Sacramento Zoo-2002 is described here with further detail provided in the accompanying drawings and site plans.

The new zoo will be a better zoo. The exhibits will be easier to view and will have less obstructive barriers. They will be convenient to clean, airy and designed to be as hygienic as possible to insure optimum animal health. The new exhibits will provide shelter and privacy for the animals, and most importantly, every effort will be made to replicate the animals' native environments as closely as possible so as to afford the animals the opportunity to engage in natural behavior. In keeping with these standards most, if not all, of the exhibits will be larger than the present exhibits which for the most part are both antiquated and inadequate.

In order to adhere to these zoological concepts and criteria while simultaneously remaining within the space limitations, there is inherent in Zoo-2002, a structured thematic approach encompassing eight conceptually cohesive areas. These theme environments, which will be organized around main exhibits, are dedicated to providing insights into specific ecological areas or animal groups. Development of the thematic plan incorporated two major ideas which were continually expressed throughout the past three years of Master Plan discussions. First, it is apparent that the overwhelming opinion is that the zoo should continue to display elephants and giraffes. These two species are extremely popular with visitors and are consistently considered by visitors, volunteers and staff alike, as requisite exhibits for a zoo. Secondly, a public opinion survey conducted within the Sacramento metropolitan area revealed that community favors the idea of utilizing a "rivers" theme for the zoo as Sacramento is itself located at the confluence of California's two greatest rivers, the American and Sacramento Rivers. An additional and fundamental planning consideration was the zoo's present animal collection. Finally, selection of the main animal areas and subsequent choice of exhibits was a process which incorporated the input of professional zoo consultants, citizen and staff advisory committees and volunteers as well as the most up to date zoological concepts and technology available. The following is an overview of the major animal areas:

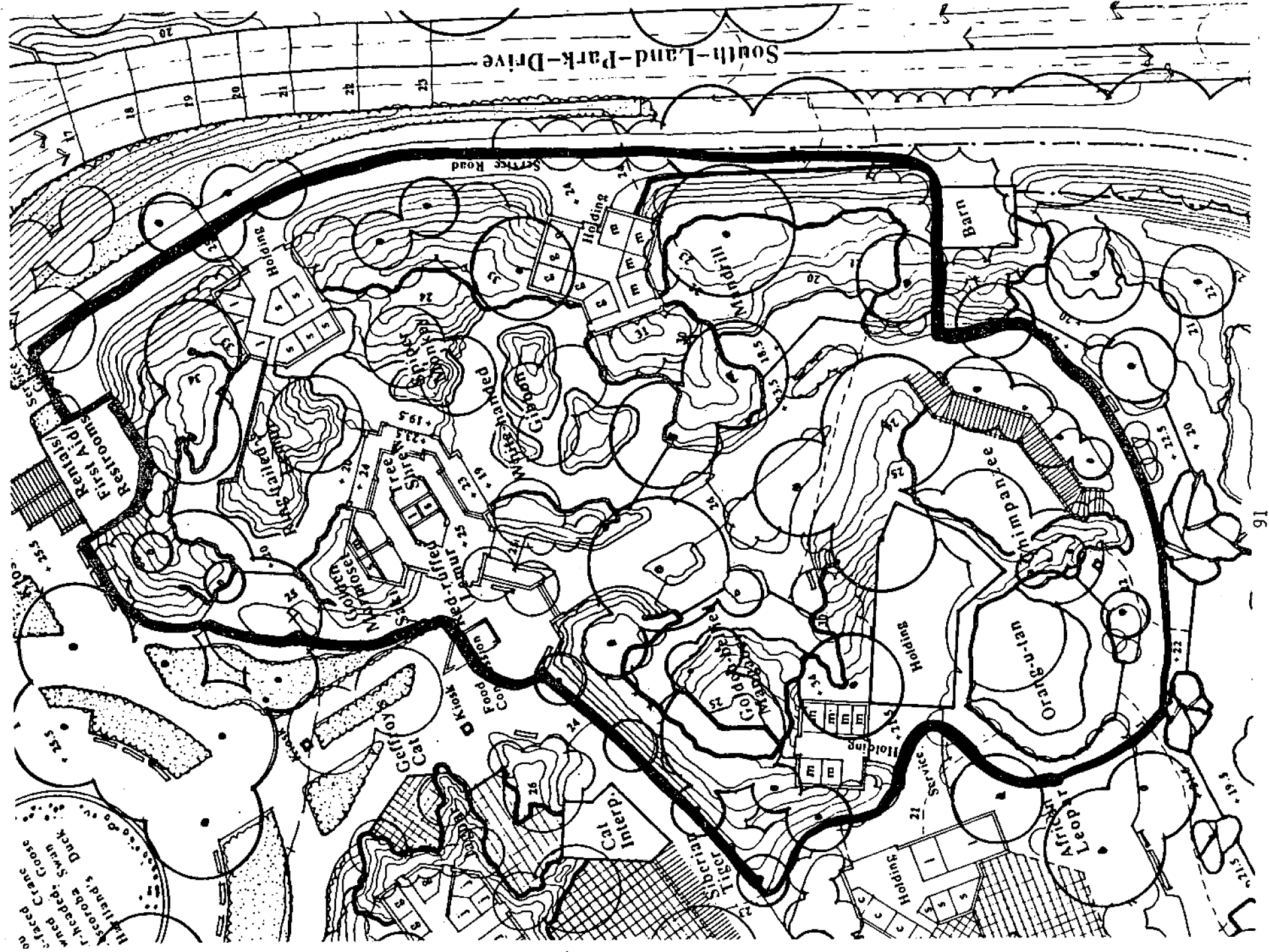


1. Primate Area - The zoo's spacious new exhibits for chimpanzees and orangutans exemplify the type of innovative, naturalistic displays this area will contain. The new exhibits will be adjacent to these new ape displays and will include large moated exhibits for five primate species. Most of the zoo's current primate species will be included with the focal point of this area being a large Golden-bellied Mangabey exhibit. Spider Monkeys will be added to improve the diversity of the collection and help save a species which is facing severe habitat destruction. An interpretive area will include graphics and educational videos as well as new indoor exhibits for smaller, more delicate primates such as Marmosets and Saki Monkeys. (Figure 21)
2. African Savannah - New elephant and giraffe exhibits, which will be outstanding in every detail, will be the highlight of this area. Other primate exhibits will include the current Addra (Damma) Gazelle and the zebra/eland exhibit. Adjacent to the new elephants and giraffes exhibits will be an African Savannah Aviary with Weavers, Supreb Starlings, Red-billed Hornbills, Go-away Birds, Crowned Plovers and other birds of the African plains. This area will also contain several small mammal exhibits such as Bat-eared Foxes, Rock Hyrax, Caracal, Servals and Meek Rats. (Figure 22)
3. The Sacramento River - The State animal, the Grizzly Bear, will be featured in this area developed to showcase Sacramento's own wildlife heritage. Other local mammals and birds to be displayed in this area include North American Otters, beavers, Bald and Golden Eagles, Sandhill Cranes and Wood Ducks. Aleutian Canada Geese and Snow Geese will also be exhibited and a trout stream will be located adjacent to the Grizzly Bear project. Insofar as the Grizzly Bear no longer exists in the State of California and both the Bald Eagle and Aleutian Canada Geese are endangered, these exhibits should be of particular interest to local visitors. (Figure 23)
4. The Nile River - The Nile River area, displaying the wildlife of one of the world's greatest river systems will provide an interesting comparison to the environment of the Sacramento River. Hippopotamus will be the foremost attraction in this area. Other exhibits will include crocodiles, Sitatunga, Saddle-billed Stork and Black-fronted Duikers. Also displayed will be Hammercop, Sacred Ibis and Spot-necked Otter. An aquarium building will showcase Nile fish, Nile monitors, March Mongoose and other small African River animals. Educational displays and a small satellite shack facility will compliment this section. Finally, the Nile River area incorporates the State Parklands Bond Act grant funded outdoor amphitheatre, a structure which will serve as the focal point for the zoo's myriad of educational activities. (Figure 24)
5. The Cat Area - Of the 37 species of cats, over one-third are in danger of extinction. The Sacramento Zoo has historically kept rare and endangered cats from all over the world. Situated in an area around the present Asian Lion and Siberian Tiger displays, modern naturalistic exhibits will be created for most of the zoo's

present cat collection. Included in this collection are Clouded, Snow and African Leopards, Jaguars and Geoffreys Cats. The animals will range in size from the grand Siberian Tiger to the house cat size South American Margay. (Figure 25)

6. Entrance Area - The entrance area will provide an orientation to diverse amenities for visitors. A more efficient and attractive new entrance located under a large wooden trellis, appropriate to the zoo's park setting, will replace the zoo's current 1950s art deco style entrance. Several visitor services including a food concession/gift shop, information kiosk and restrooms/first aid and rental stations will surround an attractive entrance plaza. These amenities which are further detailed in a subsequent section of this plan are but one component of this area. The entrance area will also incorporate the zoo's existing reptile education center. A highlight of the area will be a simulated Lake Victoria complete with Flamingos and Maragou Storks. Overlooking the lake will be a Lake Victoria Cafe affording both indoor and outdoor eating amidst an unique and educational environment. The entrance area will also include tortoise and turtle exhibits, the existing gardens and a group picnic area. (Figure 26)
7. Service Area - Occupying that area which currently contains the zoo's office, kitchen, education trailer and maintenance shed will be the full range of support services which are vital for exemplary management of the zoo collection and maintenance of the facility itself. This area will include the Avian Propagation Center. This off-exhibit facility is a key component in the zoo's ability to continue its important bird conservation efforts. This area will also contain the kitchen, animal health care facilities, the greenhouse and hay and storage barns. Centralization of these support facilities will enable more efficient and effective operations. (Figure 27)
8. Australian Section - Located across Land Park Drive from the existing zoo, the approximately four-acre Australian section would be connected to the rest of the zoo by a tunnel under the street. This area would be developed south of Fairytale Town on the land currently occupied by the pony rides. The "Outback Farm" and a camel ride area would afford the zoo visitor a chance to touch domesticated animals, a feature which is very popular in any zoo. The unique nocturnal building with its reverse light cycle would display a variety of Australia's many nighttime animals. A small lake and several aviaries would display some of the most beautiful birds on earth, including Black Swans, Cockatoos, Kookaburras and Lorikeets. Large marsupials such as Wallaroos, Tree Kangaroos and Wallabys would be exhibited in naturalistic displays. Given that one of the most popular Australian exhibits is typically the Koala, a highlight of this area would be the small Koala House. (Figure 28)

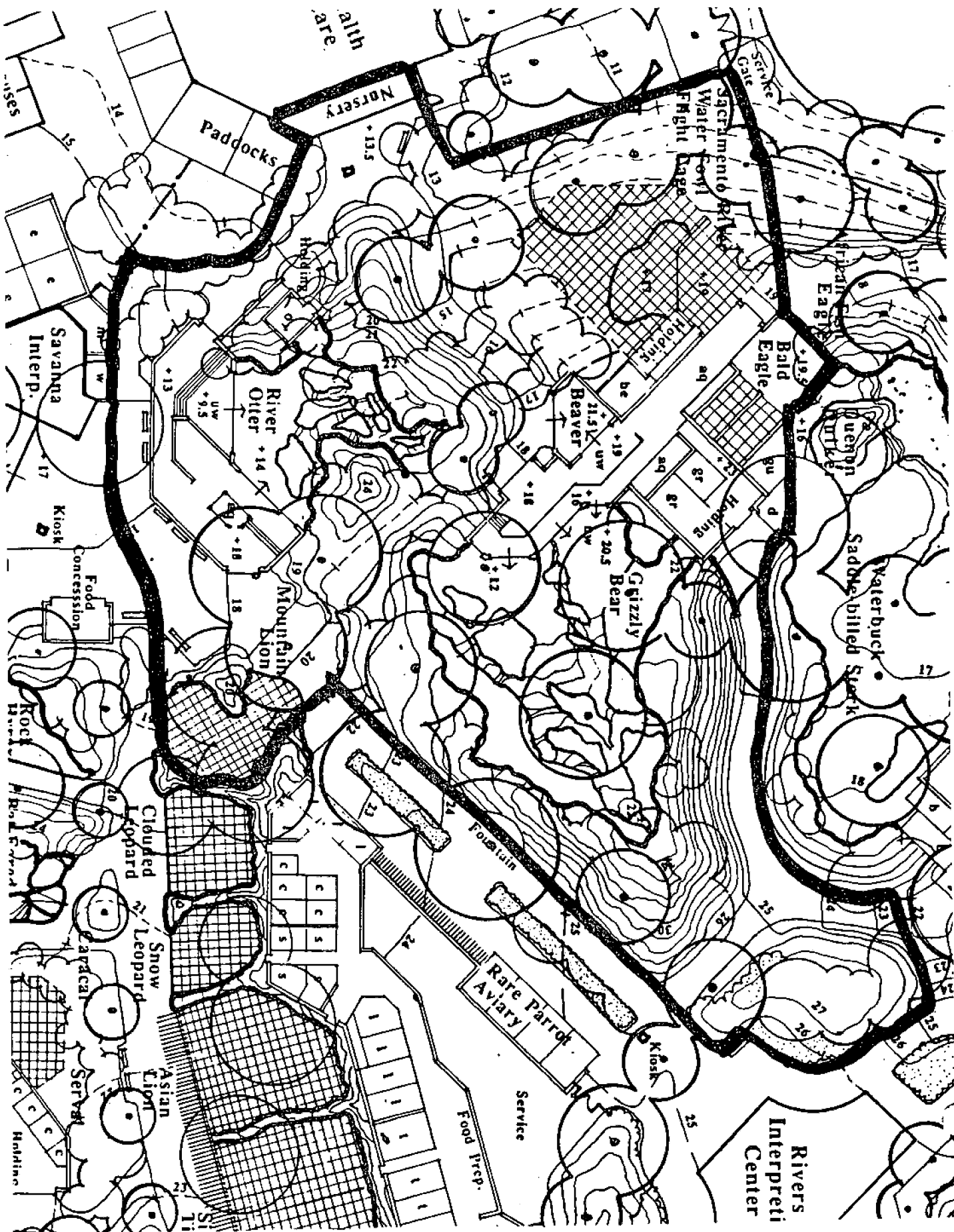
## Figure 21



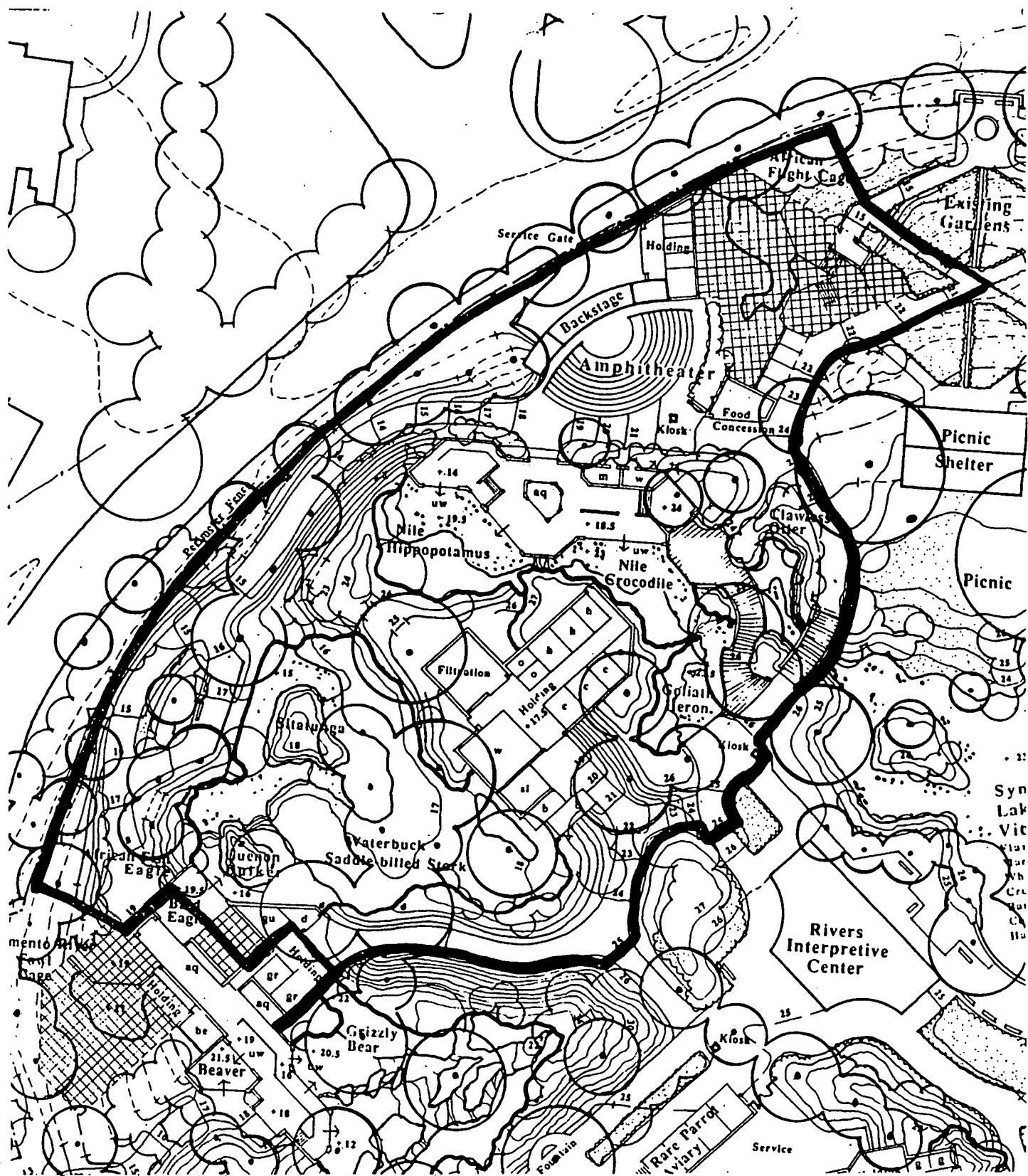
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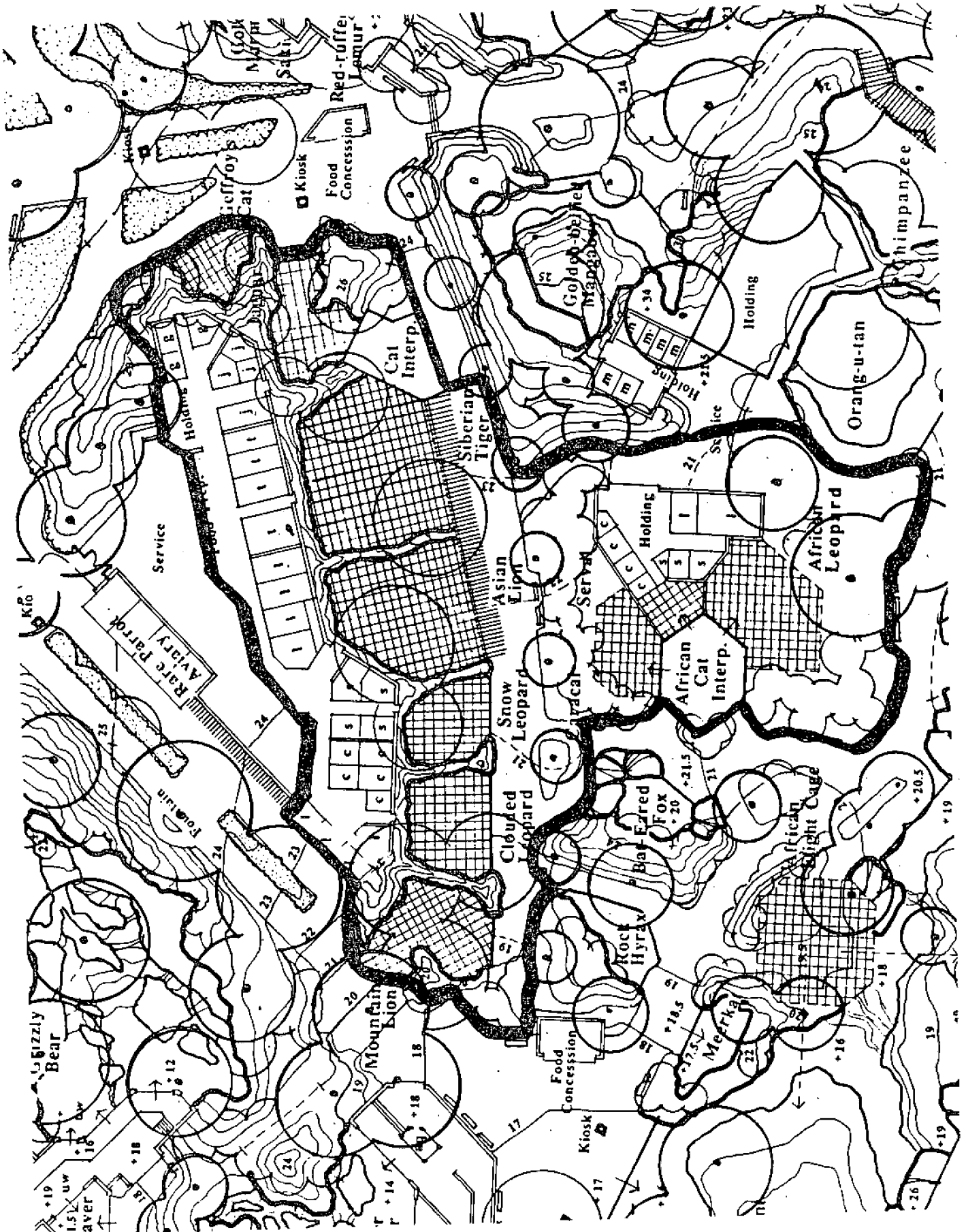
## **AFRICAN SAVANNAH**





## THE NILE RIVER







**Figure 26**

**ENTRANCE AREA**

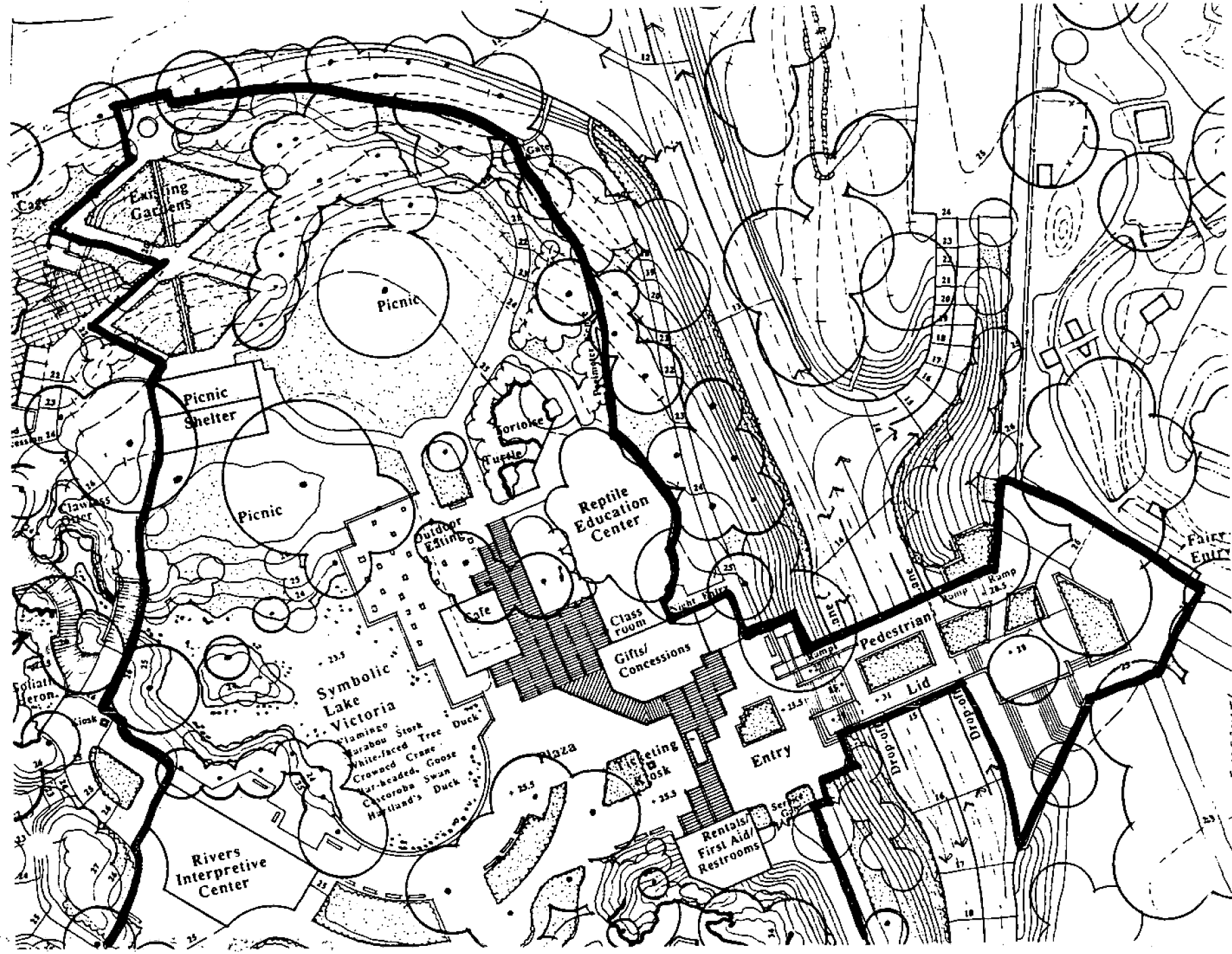




Figure 27

SERVICE AREA

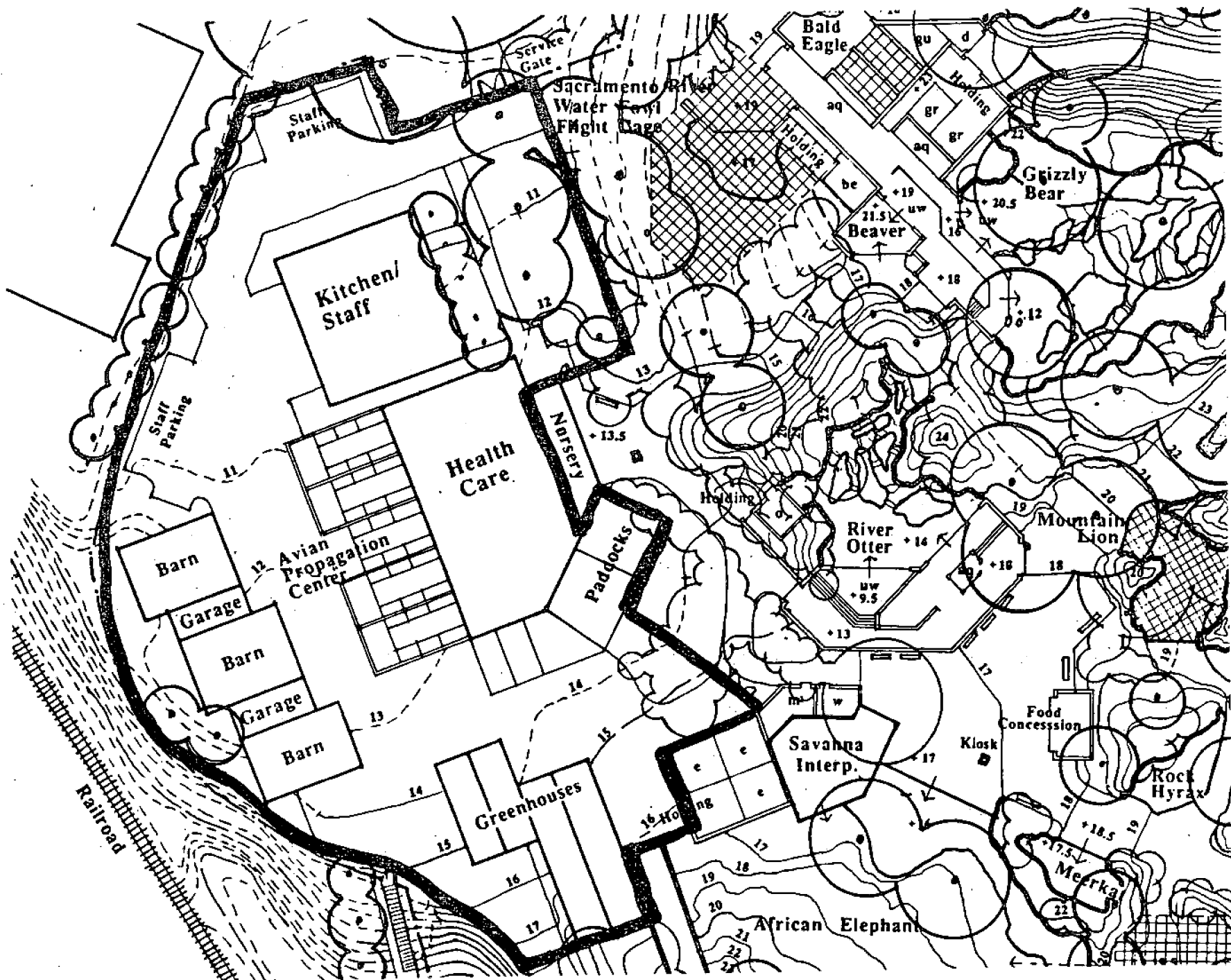
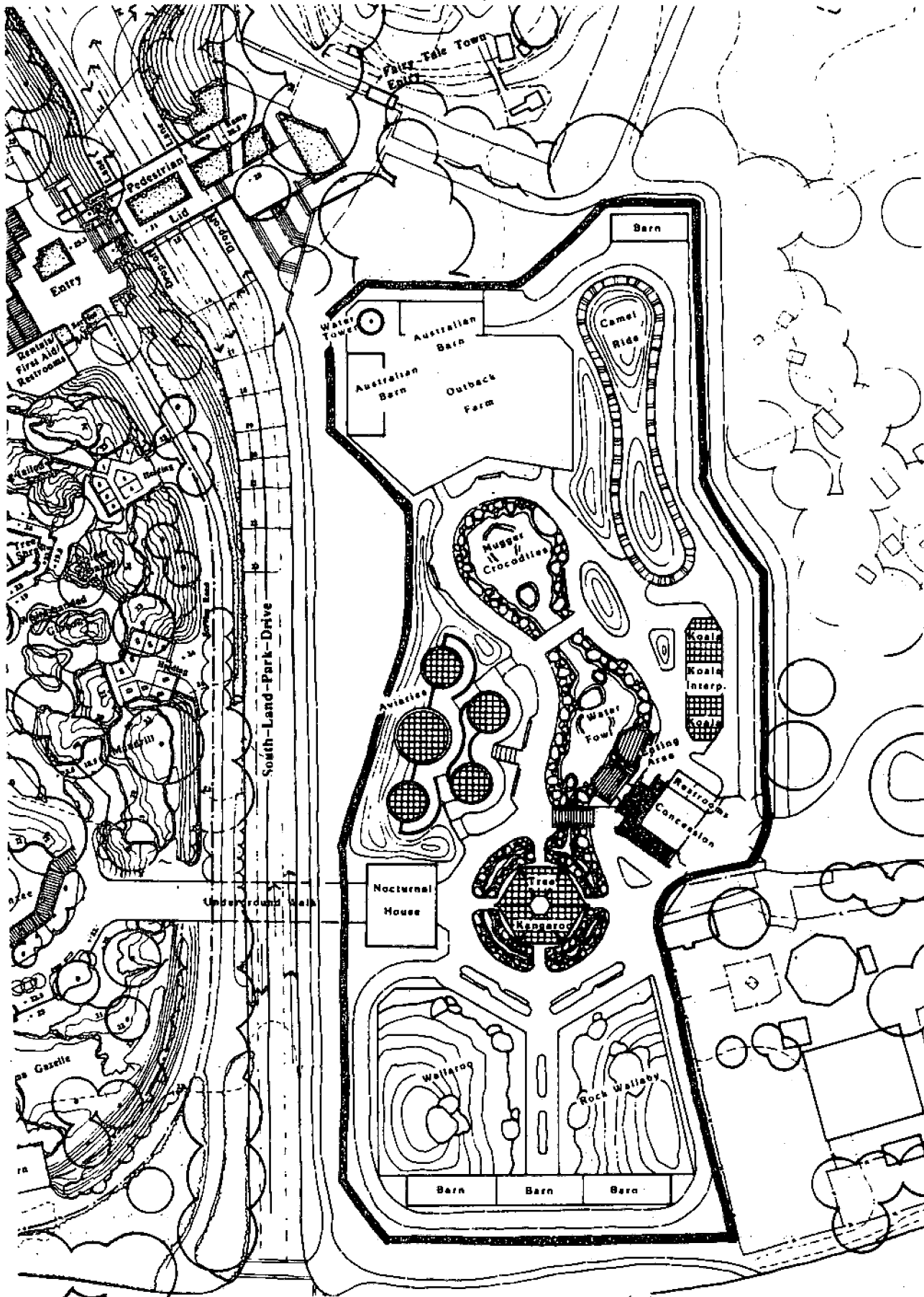


Figure 28

AUSTRALIA



## EXHIBIT DEVELOPMENT PLAN COMPONENTS

### ENTRY

The existing entrance is both antiquated and inadequate. The new entrance, designed in keeping with the zoo's park-like setting, will be characterized by a large wooden trellis and other naturalistic features, and will increase the sense of entry to the zoo. The entry will encompass diverse functions intended to stimulate the zoo visitors interest and provide information on, and orientation to, the zoo experience. A total of four ticket windows will allow zoo visitors quick and organized entrance into the zoo. When appropriate, one entrance will be designated for use solely by school groups to allow for a more orderly admittance. A second entrance may be utilized solely by Zoological Society members and other fee exempt individuals.

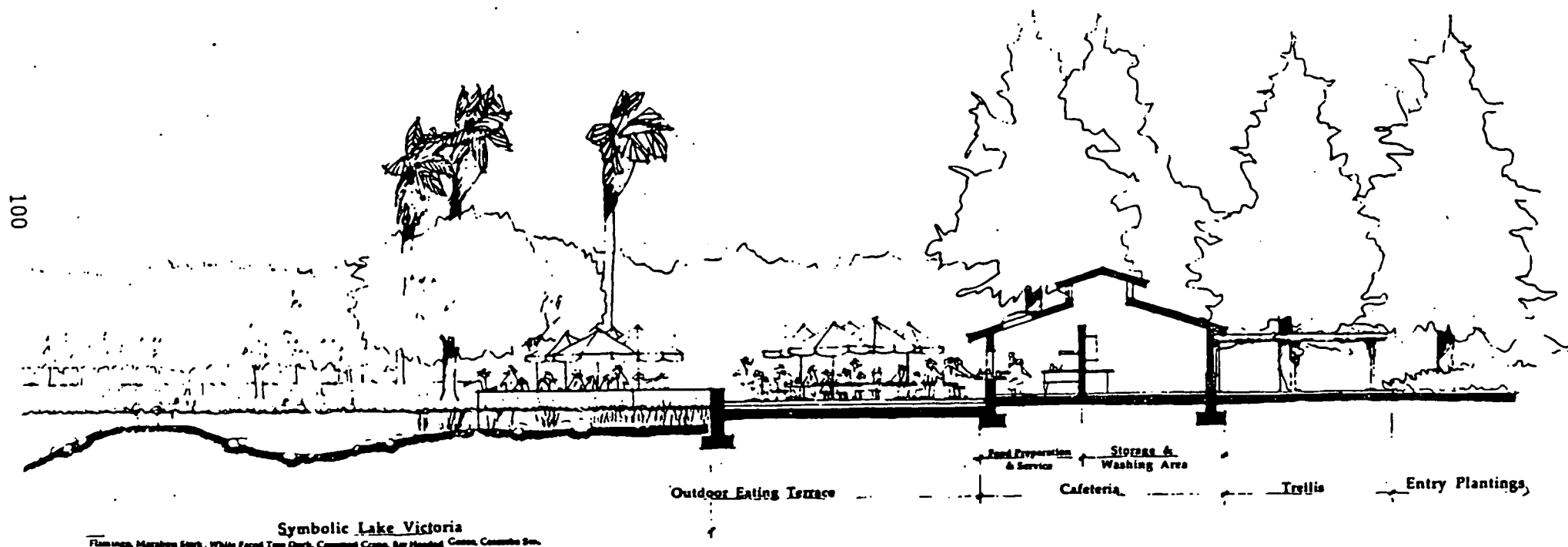
The new gift shop of approximately 2,500-4,000 square feet is directly to the right of the visitor entrance. This location enables the high visibility of this revenue generating operation to both entering and exiting guests. Initially, the gift shop may incorporate storage space and three offices for such related functions as Visitor Services management and cash control operations. These administrative activities may be moved pending completion of the administration/education building. To the left of the entrance will be a Visitor Services building containing facilities for stroller and wheelchair rental, first aid, restrooms and an information booth.

### LAKE VICTORIA

Primarily an exhibit of African water birds, this 20,000 square foot lake will be visible as the visitor enters the zoo. This exhibit may also be viewed from both the cafe and the picnic area. White-faced Tree Ducks, Maribou Storks, Hartlaub's Ducks, Spur-wing Geese and other African species will be added to the present collection of flamingos. The Lake Victoria Cafe will have an indoor seating capacity of 75 seats with an outdoor capacity of 100 seats. The cafe will afford visitors the opportunity to rest, and to enjoy food and beverage services in a pleasant and unique environment. The cafe will expand the present concession menu to include hamburgers and sandwiches. The area encompassing Lake Victoria, the cafe and adjacent plaza will provide important space for waiting, meeting, orientations, and relaxation. (Figure 29)

### REPTILES

The beautifully designed and world renowned Kenneth Johnson Reptile House is one of the zoo's best exhibits. Accordingly, changes will primarily be limited to upgrading the present captive breeding programs and the interpretive graphics. Further enhancements will include an orientation room to be utilized as a small classroom for special presentations and educational video programs. New outdoor exhibits for the alligator, Snapping Turtles and Aldabra Tortoises will be adjacent to the present reptile house.



Symbolic Lake Victoria

Outdoor Eating & Cafeteria

## PICNIC AREA

A one-acre area adjacent to the three 200-year-old Valley Oaks on the northeast corner of the zoo will be developed for picnics. Zoo visitors will have access to tables, benches and a picnic shelter. The area will also be designed for group uses with a food preparation area and group barbecue.

## ADMINISTRATIVE/EDUCATION CENTER

Prior to 1985, the zoo had no indoor classroom or meeting facilities, thereby requiring all on-site educational programs to be conducted outdoors during the summer months despite the public demand for year-round programs. In January 1985, the city authorized the Sacramento Zoological Society to install a temporary education building of approximately 20' x 60' on the zoo grounds to meet the public demand on an interim basis. Within two years' time, the zoo has outgrown this small trailer-like structure.

Response to the zoo's implementation of a year-round educational program has been excellent. Classes, particularly those for children, fill immediately with many children turned away due to a lack of space. This building has a capacity of a mere sixty people, and furthermore, given its structural and size limitations, is not conducive to holding more than one activity at a time. Most importantly, the building cannot accommodate the large school groups who frequently express an interest in an on-site children's program. Nor can the facility host any but the smallest of committee meetings. The Zoological Society sponsors a variety of educational lectures at a minimum of once a month. These programs are offered as a public service free of charge and are an integral part of the zoo. Unfortunately, lack of space dictates these programs be held elsewhere. Public response to these programs has been favorable, however, continuous comments have been received expressing the opinion that some programs would be both more appropriate and more accessible were they held at the zoo.

Accordingly, Zoo-2002 includes an Administrative/Education Center to be located behind Fairytale Town on approximately one-third acre of land. This locale will enable the center to be open to both inside and outside visitors at any given time permitting use for interpretive and supplementary programs forming part of the zoo visit, as well as after hour educational activities. The facility will include classrooms, offices for the education director and staff, a library, work space including an area designated for zoo docents and related storage space. There will be a common reception area for education and administration. The administrative space will house the zoo director, administrative assistant, Zoological Society administrative manager and development director. Office space will also be allocated for the membership secretary, Adopt-An-Animal coordinator and clerical support staff. While this site is located across Land Park Drive from the body of the zoo, the locale is advantageous given its close proximity to parking. Furthermore, this location will lessen traffic congestion on West Land Park Drive and in front of the Holy Spirit School. Once the center is operational, the number and scope of educational classes and programs concerning wildlife conservation can be easily increased to better meet the public's demand.

## PRIMATE COMPLEX

To the left of the entrance will be the primate area. A Primate Interpretive Center will provide indoor facilities for the Golden-lion Tamarin, White-faced Saki, Tree Shrew and the Red-ruffed Lemurs. Educational graphics and interpretive materials such as simulated sample diets and video will be a major part of the Primate Interpretive Center. There will be exhibits for Spider Monkeys, Golden-bellied Mangabeys, Ring-tailed Lemurs, White-handed Gibbons and Mandrills. It is possible that one or more of these five exhibits will be of an island-type, whereby the animals are viewed across a water barrier. This type of design, when possible, provides a pleasant visual experience insofar as the need for bars is eliminated. Each primate exhibit will contain an off-exhibit holding capacity with three to five small separate units for incompatible animals which typically includes males of the same species. A large open moated exhibit for Mandrills will eventually replace the present Arabian Oryx Exhibit. (Figure 30 and 31)

## RARE FELINE BREEDING CENTER

This series of exhibits encompasses the entire cat area and will be completed in three separate phases. Phase I will include an upgrading of the present lion and tiger holding areas, and the addition of new displays for Geoffrey Cats, Margays and Jaguars. An Interpretive Center will allow for close-up viewing through glass of Tigers, Jaguars and Geoffrey Cats as well as a series of displays concerning the destruction of the tropical forest. Plans for Phase I of the Rare Feline Breeding Center currently are being completed.

Phase II will convert the existing bear grottos to exhibits for Clouded Leopard, Snow Leopard and Mountain Lion. Each of these new exhibits will be approximately 3,000 square feet and have four 150 to 200 square foot off-exhibit holding units. These holding spaces will allow for separation of the animals during feeding, birthing and separation of genetically related animals not suitable for breeding.

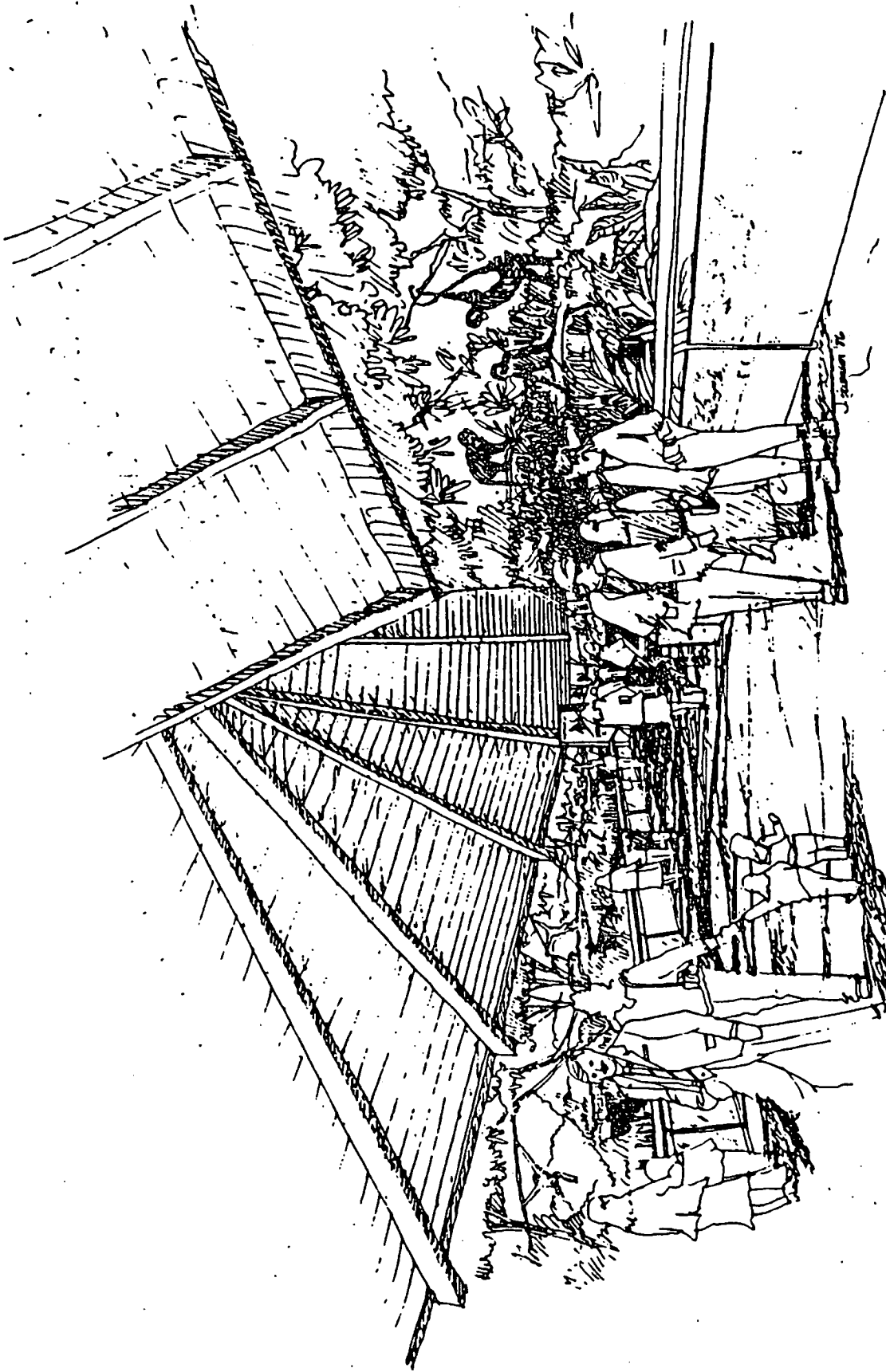
Phase III of the Rare Feline Breeding Center will be the development of three new exhibits devoted to the cats of the African Savannah, these being Serval, Caracal and African Leopards. These displays will be an integral part of both the African Savannah and the Rare Feline Breeding Center. (Figure 32)

## THE AFRICAN SAVANNAH

Two very important and popular species at the Sacramento Zoo are the Giraffes and the Elephants. Accordingly, these exhibits will be the focal point of the new African Savannah. Each of these displays will be approximately one-half acre in size and be viewed from several vantage points including from the inside of the African Savannah Aviary. The exhibits will incorporate barns for at least three female elephants and four giraffes.

The present Addra Gazelle Exhibit and the adjacent Grevy Zebra Exhibit will be upgraded with an addition of a water barrier and rocks. Holding barns will be disguised with rockwork and the present stalls will be expanded to better accommodate the animals.

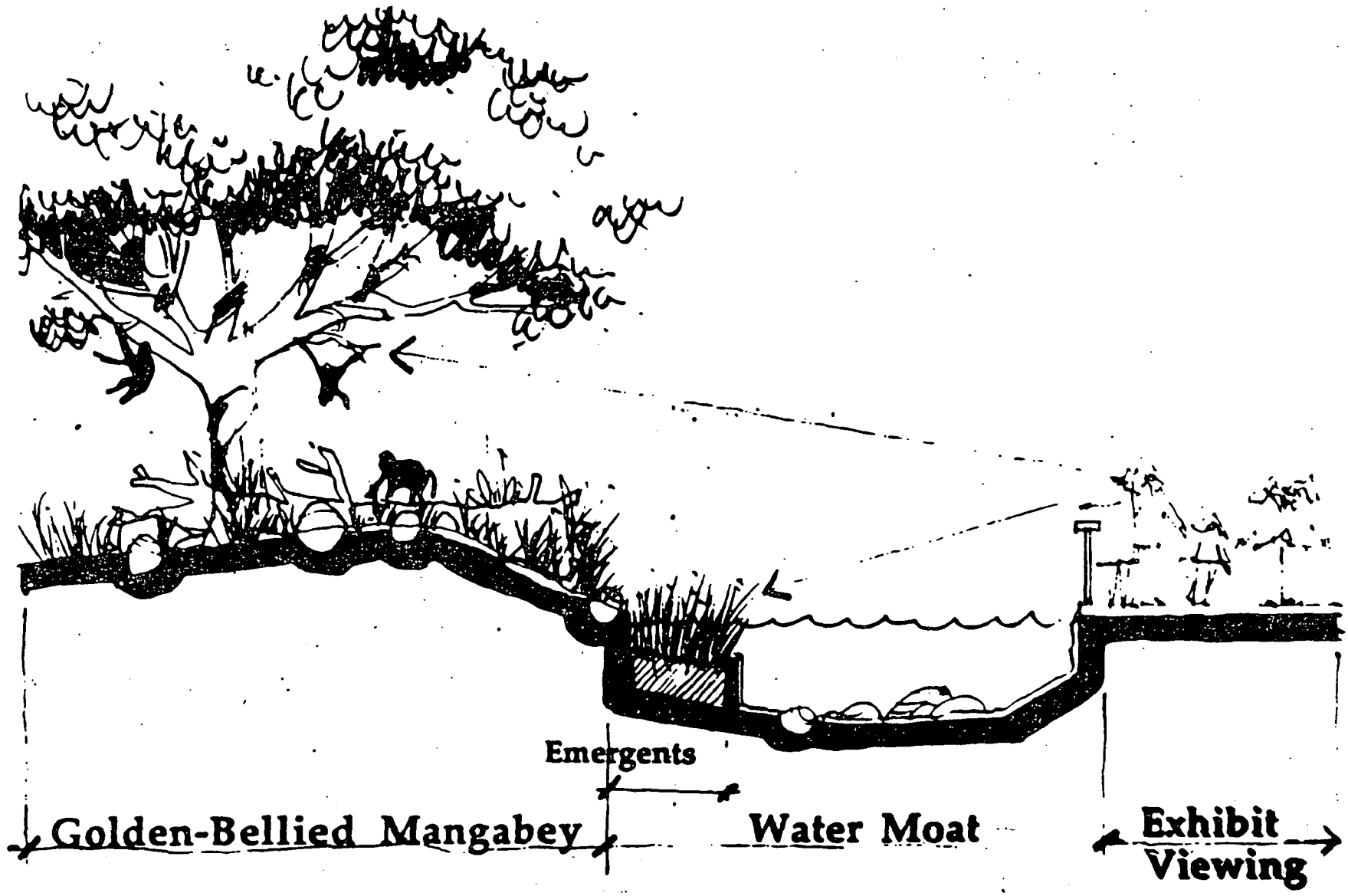
**Figure 30**



SACRAMENTO ZOO  
**PRIMATE INTERPRETIVE CENTER**  
The Primate Group • Exhibits • Landscaping • Architecture • Research • Education

Figure 31

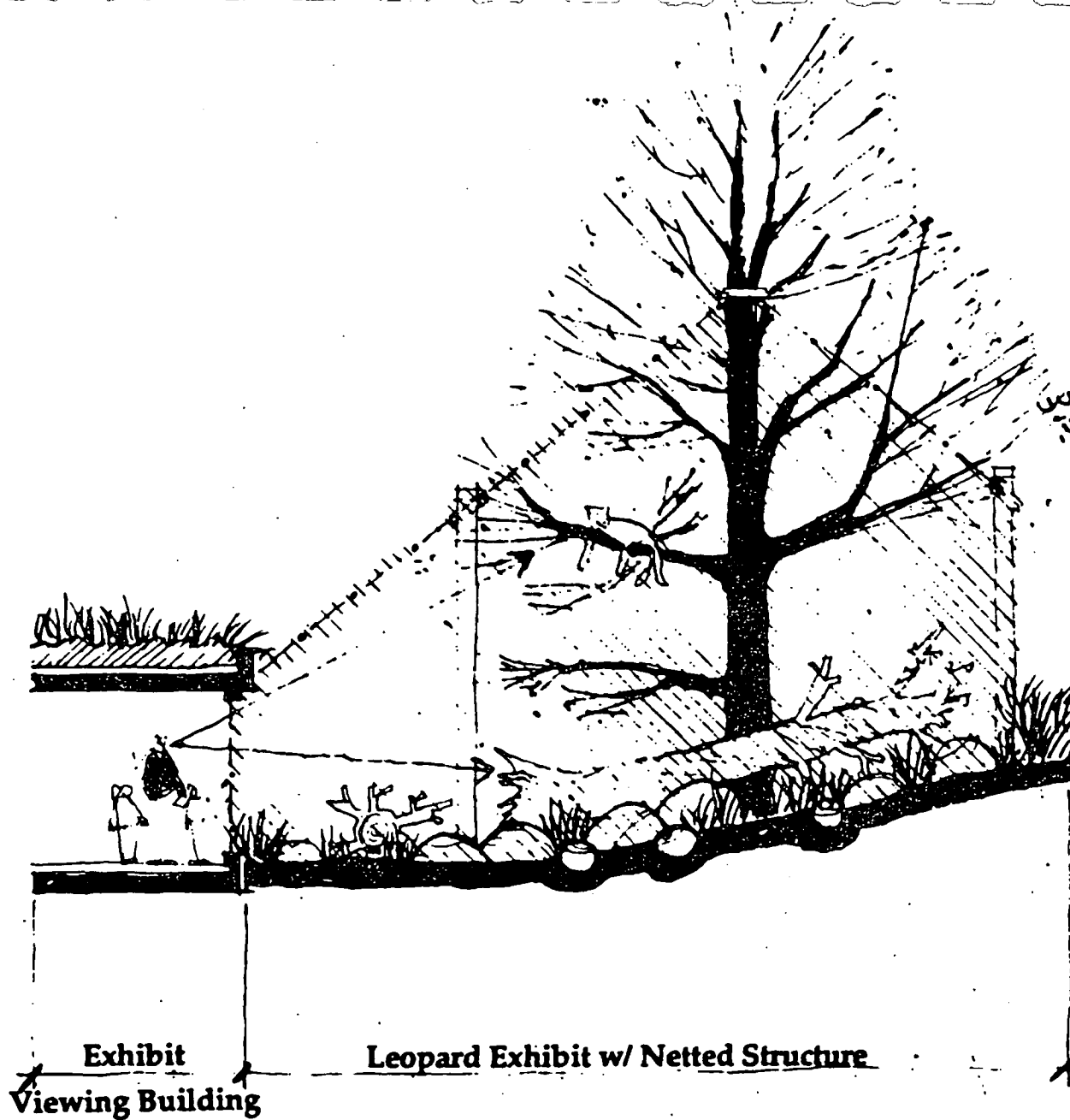
104



# Golden-Bellied Mangabey







# African Leopard Exhibit

The African Savannah walk-through Flight Cage will be developed to approximately 4,000 square feet, and will feature Jackson's Hornbill, Lilac-breasted Rollers, Superb Starlings, Weavers and other typical savannah birds. From within the aviary, the visitor will have a unique viewing opportunity into the elephant and giraffe exhibits. (Figure 33)

At least three new small mammal exhibits will be part of the African Savannah, one each for Rock Hyrax, Meerkats and Bat-eared Fox. An African Savannah Interpretive Center will permit viewing of the elephants, and will contain educational graphics explaining life on the savannah. As mentioned previously, cats from the African Savannah, Serval, Caracal and Leopard will be displayed so as to provide a transition between the African Savannah area and the cat area. (Figure 34)

### THE SACRAMENTO RIVER

This theme area will be one of the most important new sections of the zoo as it will display animals native to the Sacramento Valley. The approximately one-half acre Grizzly Bear Exhibit, one of the zoo's largest exhibits, will be the highlight of this area. This exhibit will depict the Sacramento River prior to the extinction of the Grizzly Bear in California, and will include a large area of water as well as a small waterfall. The pond will be stocked with live fish, thereby providing a source of food for the bears. (Figure 35)

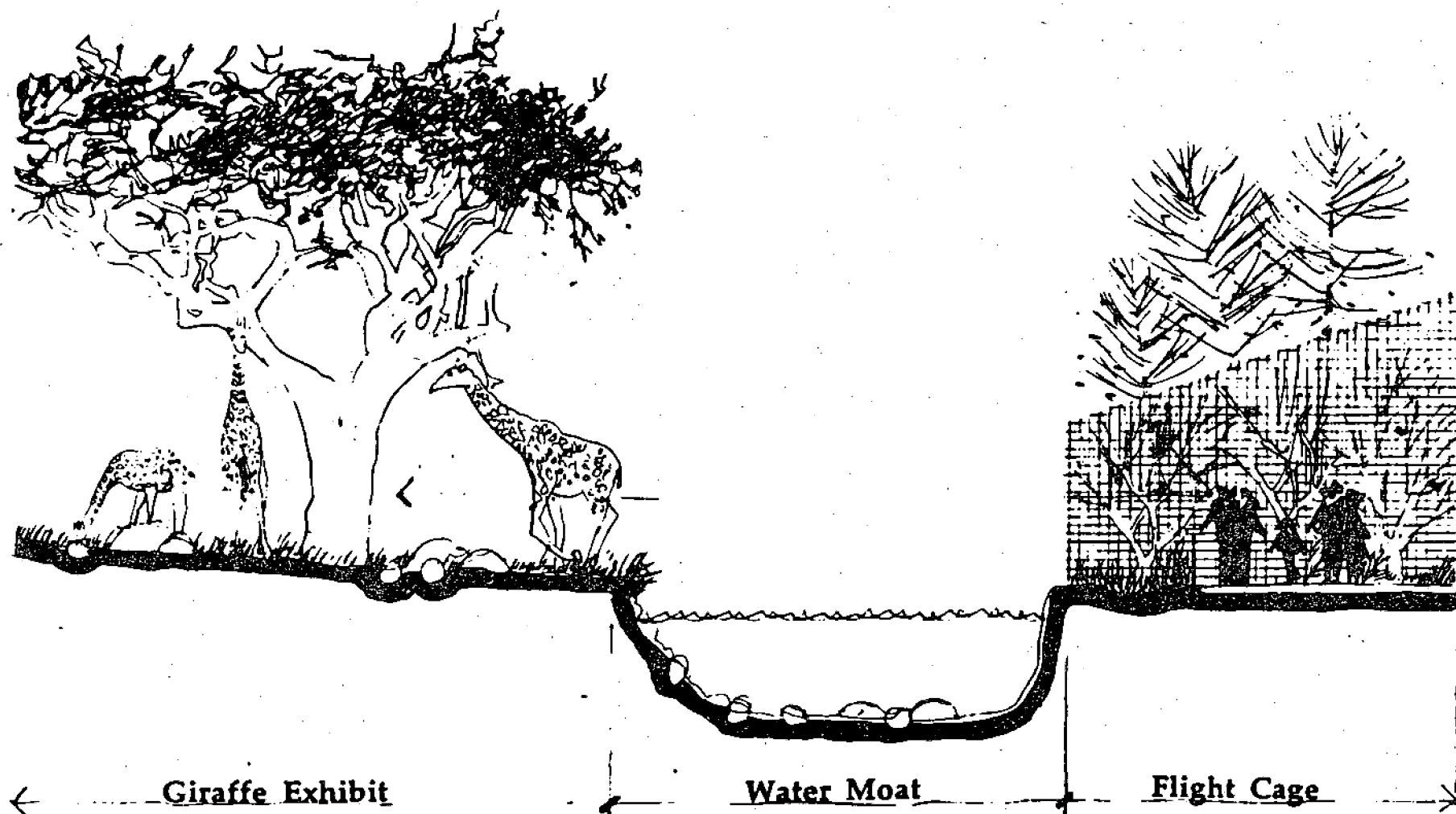
There will be exhibits with underwater viewing of the North American Otter (Figure 36) and the beaver. The Beaver Exhibit may also contain certain native species of waterfowl and the Pacific Pond Turtle. The indoor Interpretive Center for this area will allow viewing into Grizzly Bears and Beavers as well as several small aquariums of approximately 3,000 gallons each displaying both native and introduced fish of the Sacramento River. (Figure 37)

As visitors leave the Interpretive Center, they will enter a large 10,000 square foot walk-through aviary. Much of the aviary will be comprised of a pond containing Wood Ducks, Hooded Mergansers, Aleutian Canadian Geese and other Sacramento area waterfowl. This display will also feature Egrets, Blue Herons, Bitterns and other birds from along the river.

The last Sacramento River display will be one for the Bald Eagles and the first Nile River display will be one for the African Fish Eagle. These birds are a striking example of convergent evolution as they are very similar in behavior and appearance, and therefore makes an interesting transition between the two river sections of the new zoo.

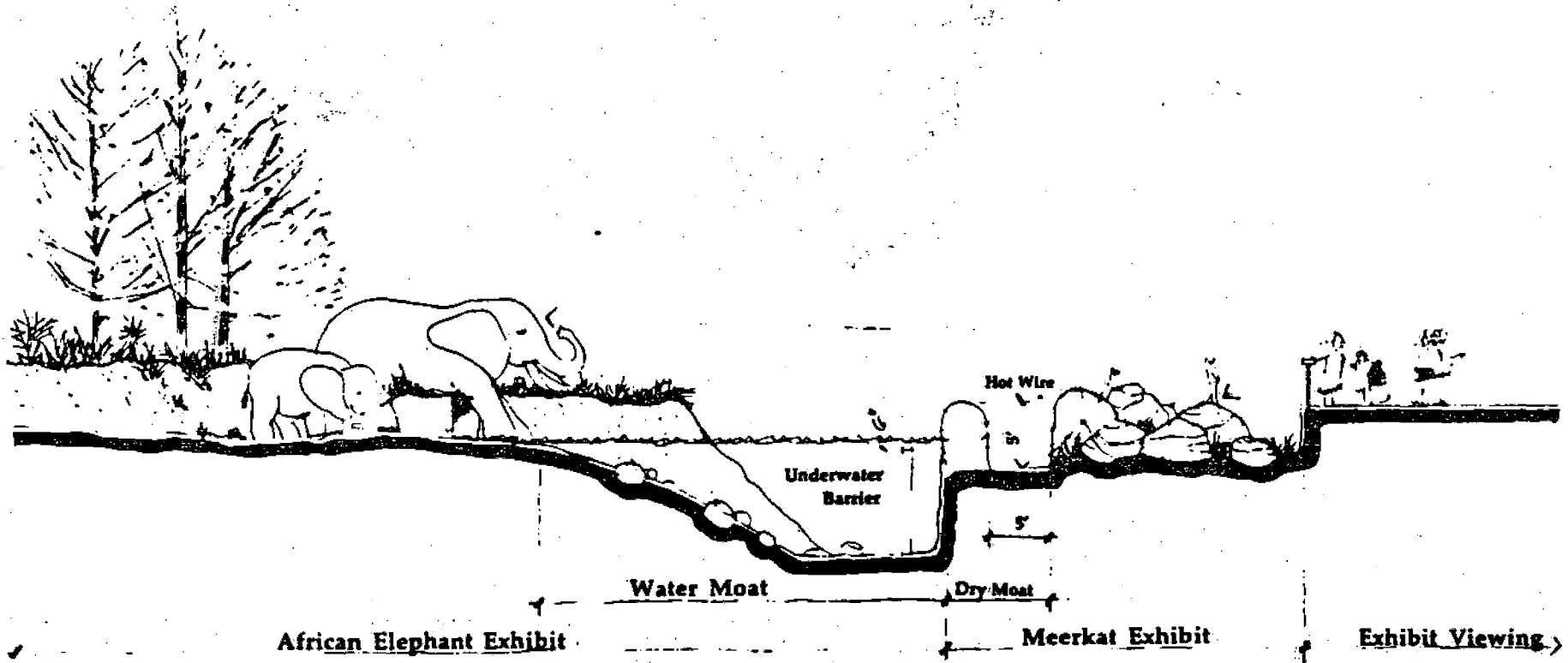
### THE NILE RIVER

Past the display of the African Fish Eagle, the visitor will find exhibits for Spot-nosed Guenon, Red-fronted Duiker, Waterbuck, Stiatunga and Saddle-billed Stork. (Figure 38) Walking further, the visitor will enter the Nile River Interpretive Center which will include underwater viewing into both the Hippopotamus and Nile Crocodile Exhibits. (Figures 39 and 40) As with the Sacramento River Interpretive Center, this interpretive center will also



**African Flight Cage & Giraffe Exhibit**

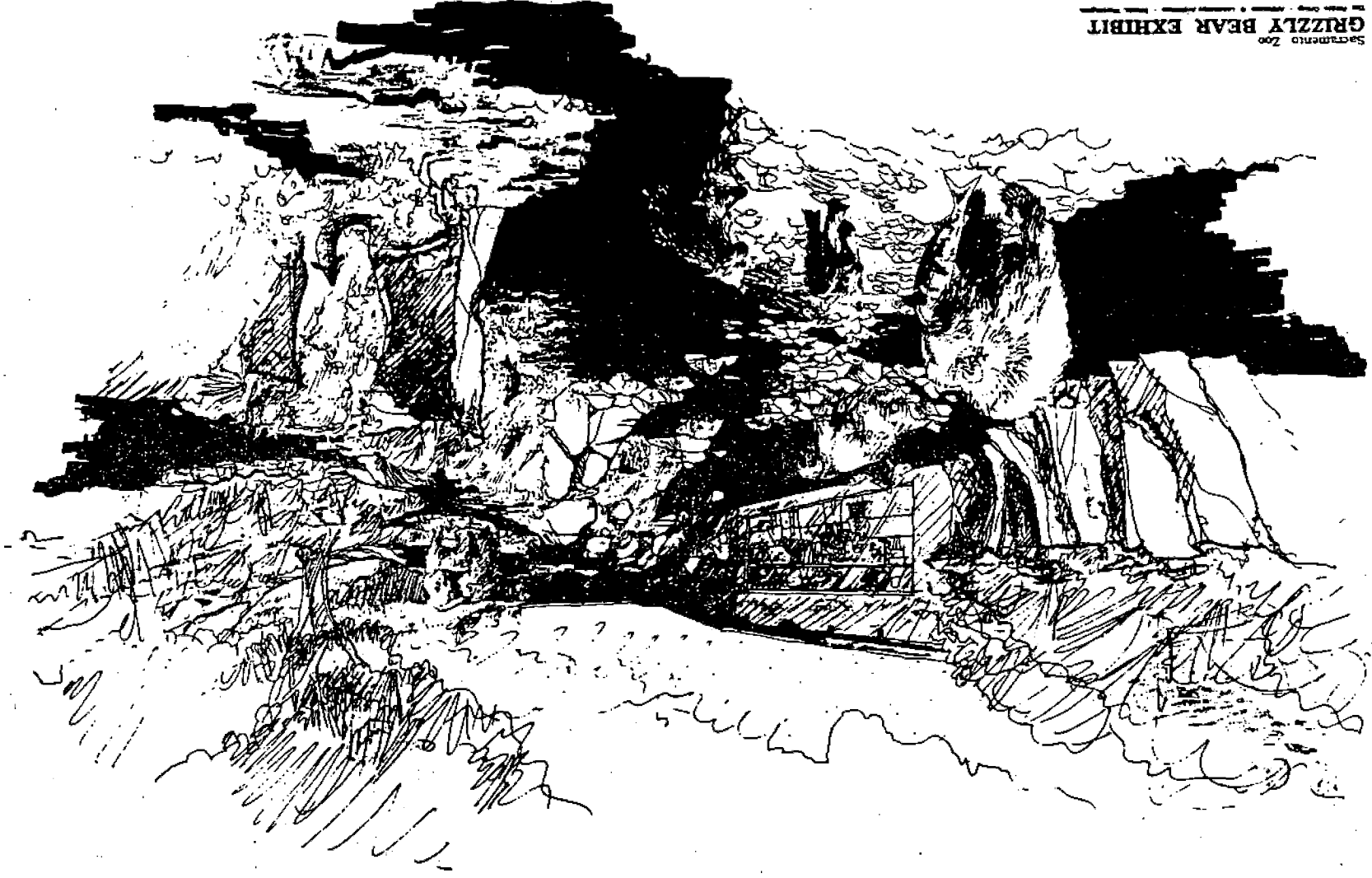
Figure 34



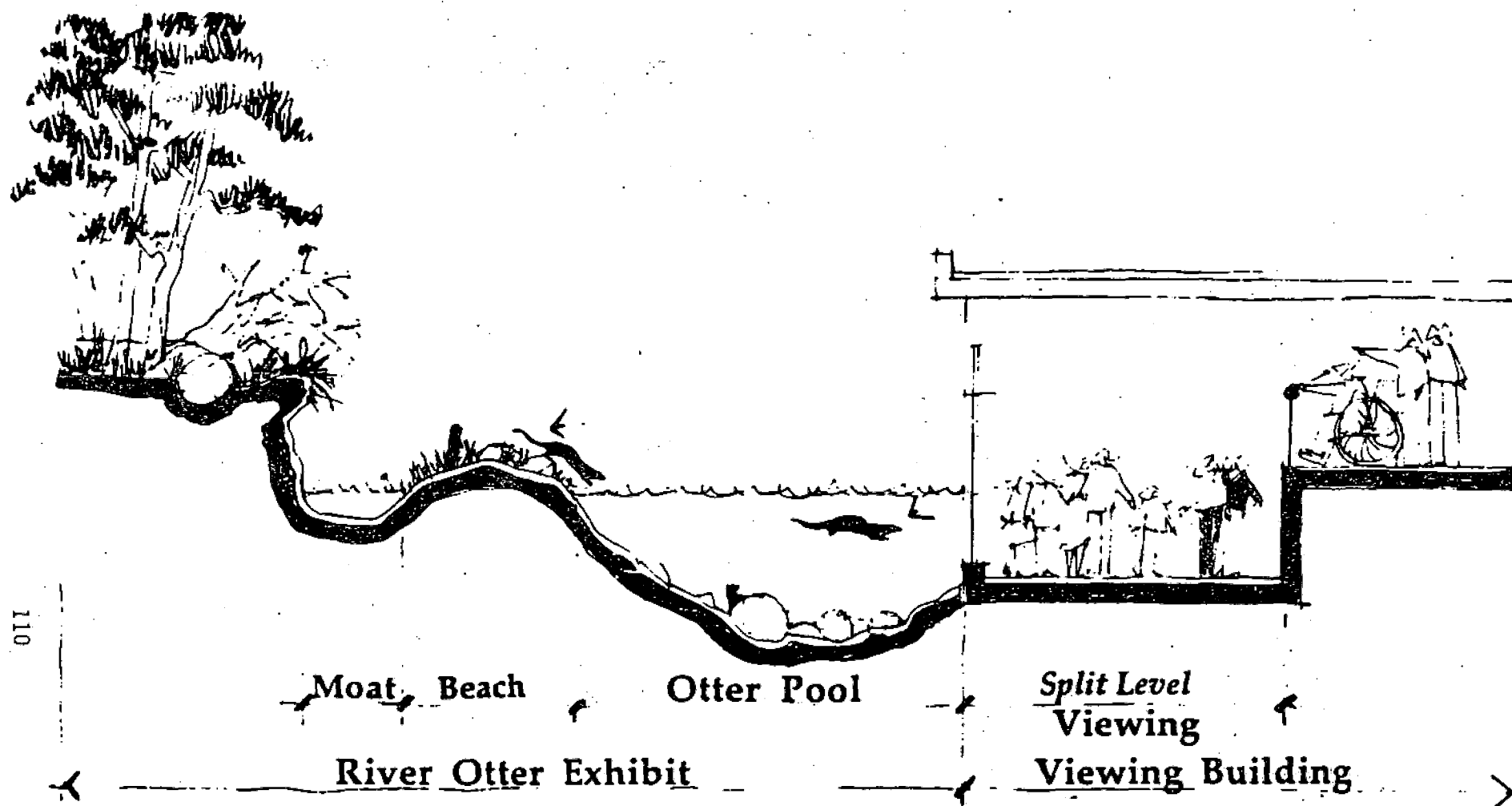
# Meerkat & African Elephant Exhibit



Figure 35

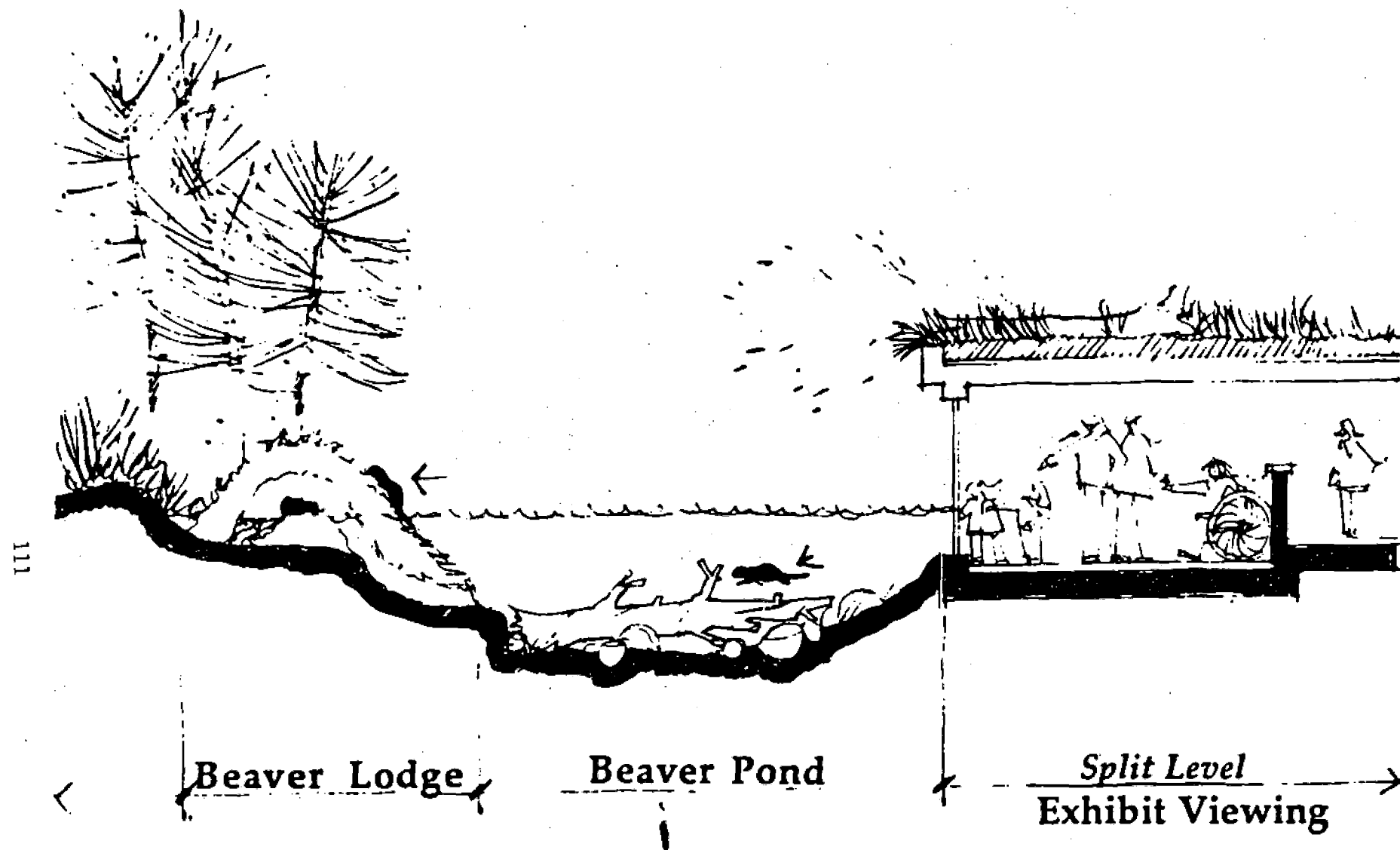


Sacramento Zoo  
GRIZZLY BEAR EXHIBIT



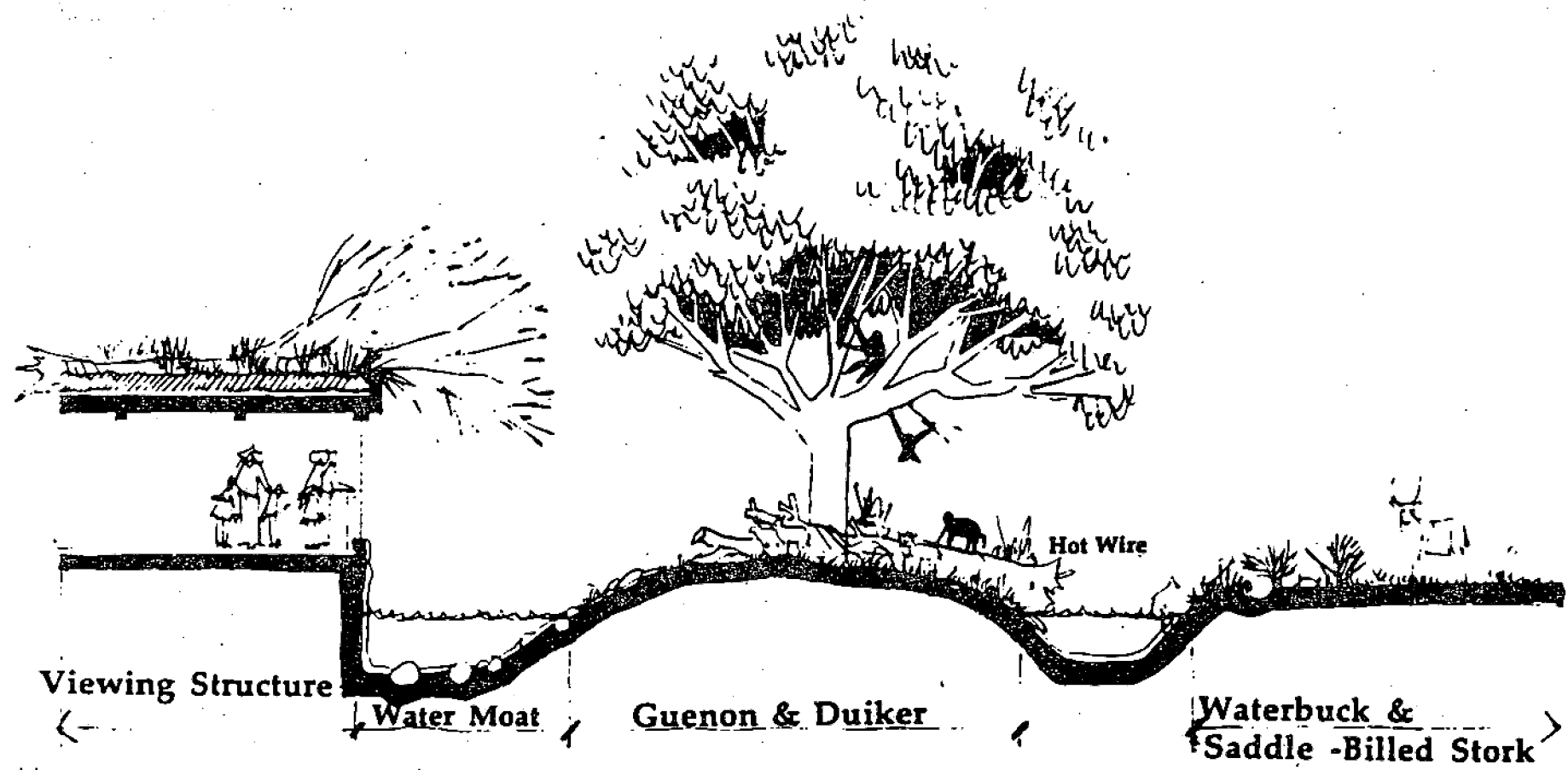
# River Otter Exhibit





# Beaver Exhibit

Figure 37



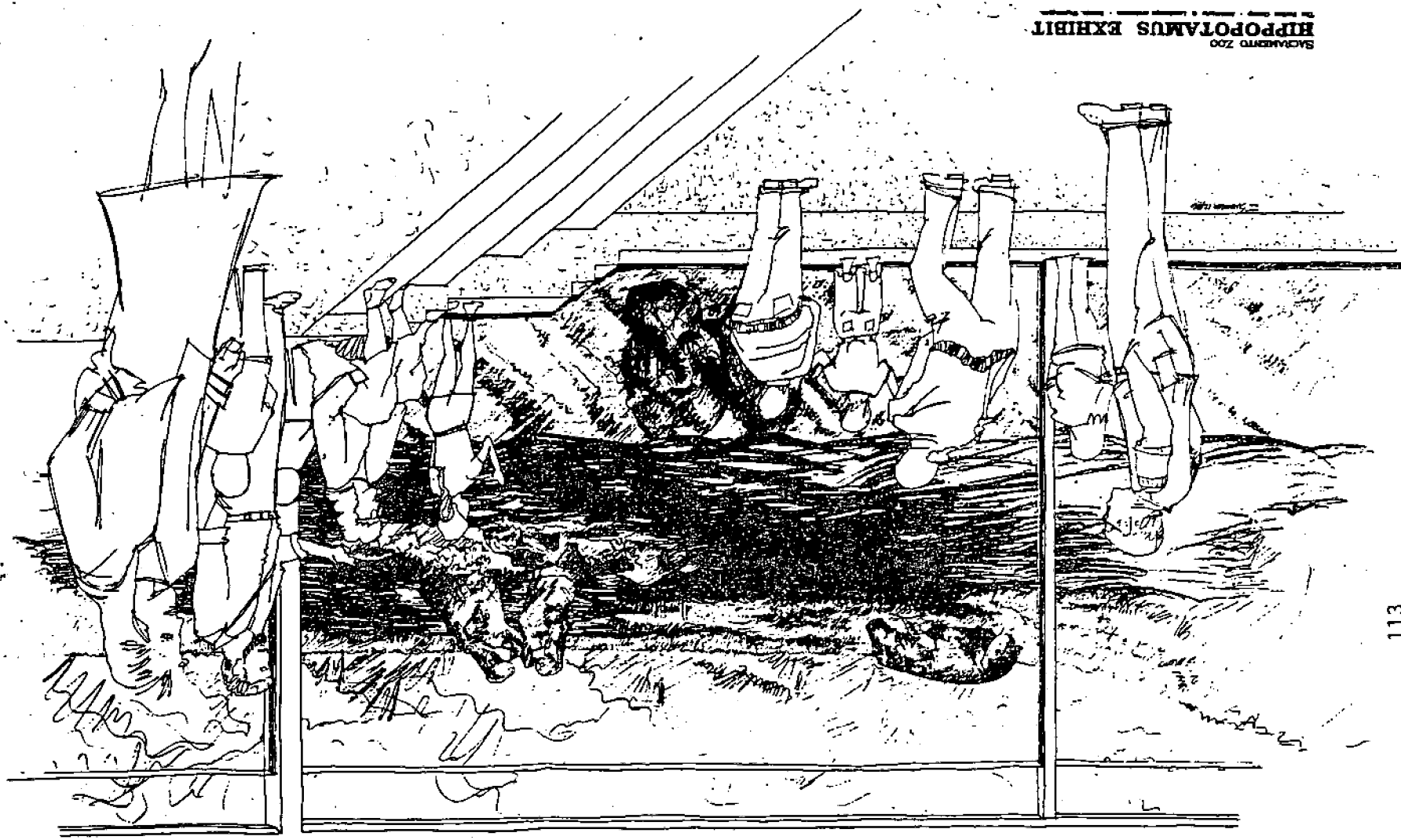
112

# Guenon , Duiker & Waterbuck Exhibits

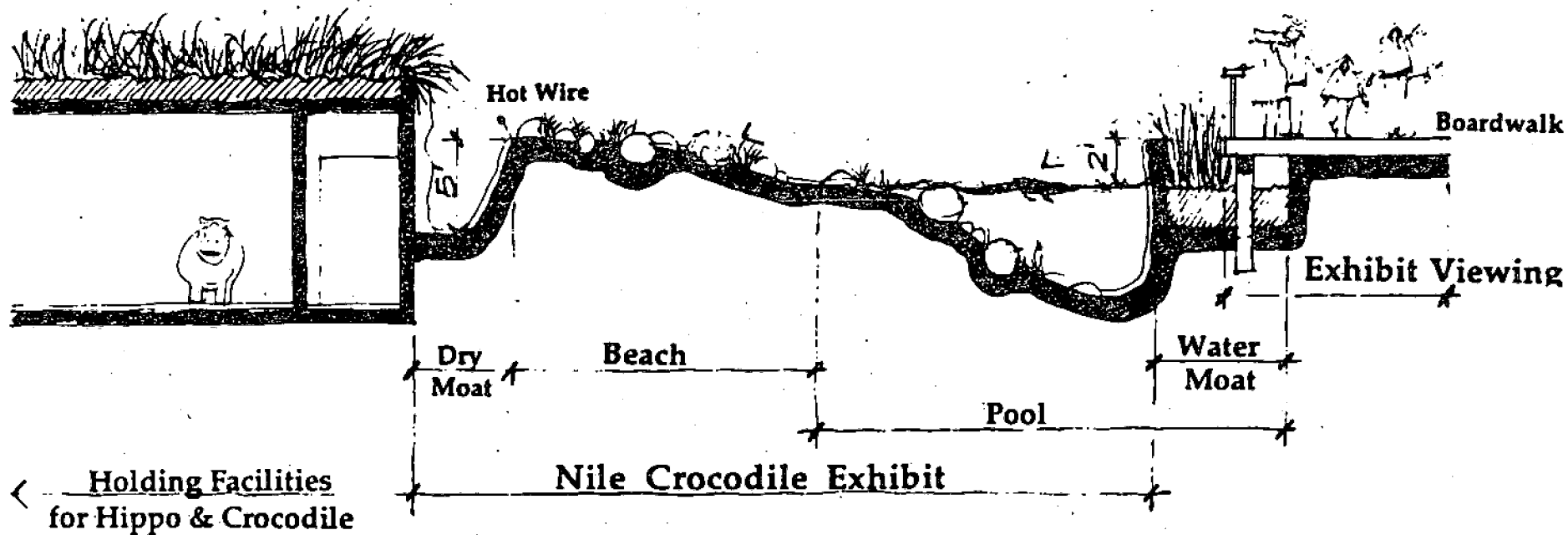




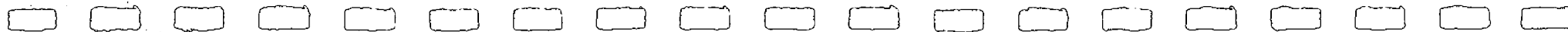
Figure 39



SACRAMENTO ZOO  
HIPPOPOTAMUS EXHIBIT



# Nile Crocodile Exhibit



include various species of native fish, frogs and turtles. There will be displays for Goliath Heron and Spot-necked Otter. A Nile River Aviary encompassing 10,000 square feet will feature Hammerkop, Sacred Ibis, Giant Kingfishers and other birds native to the Nile River. Adjacent to the walk-through aviary will be four or five separate exhibits measuring 5' x 10' each. These exhibits will display Meyers Parrots, African Grey Parrots and other birds which, because of their penchant for destroying plants, cannot be displayed in a large walk-through aviary.

A small amphitheatre with seating for 200 will be located in the Nile River area between the African Aviary and the Nile River Interpretive Center. The amphitheatre will feature wildlife lectures and animal care demonstrations. This project has received partial funding from the California State Department of Parks and Recreation 1984 Bond Act. The grant for this amphitheatre, which was awarded to the Zoological Society, was the largest grant awarded to a non-profit organization statewide. Housed in a building behind the amphitheatre will be 15 to 25 outreach animals such as Non-releaseable Hawks and Owls, Iguana, Boa Constrictor and a Ferret. These animals will be used not only for educational programs at the facility but will also be taken to schools and hospitals to further the zoo's educational programs, and to simulate interest in both the zoo itself and in wildlife conservation in general.

#### RARE PARROT AVIARY AND RIVERS MALL

The main walkway through the zoo will divide the two river themes from the rest of the zoo and accordingly will be called the Rivers Mall. The zoo has historically been active in efforts to breed rare and endangered parrots. In keeping with this aim, several parrot exhibits will be located along the Rivers Mall. Species on display may include Thick-billed Parrots, Hyacinthine Macaws, Hawk-headed Parrots, Palm Cockatoos and Eclectus Parrots. These displays will contain little off-exhibit space as the extensive holding space for breeding parrots will be available in the Avian Propagation Center to be located in the service area. (Figure 41)

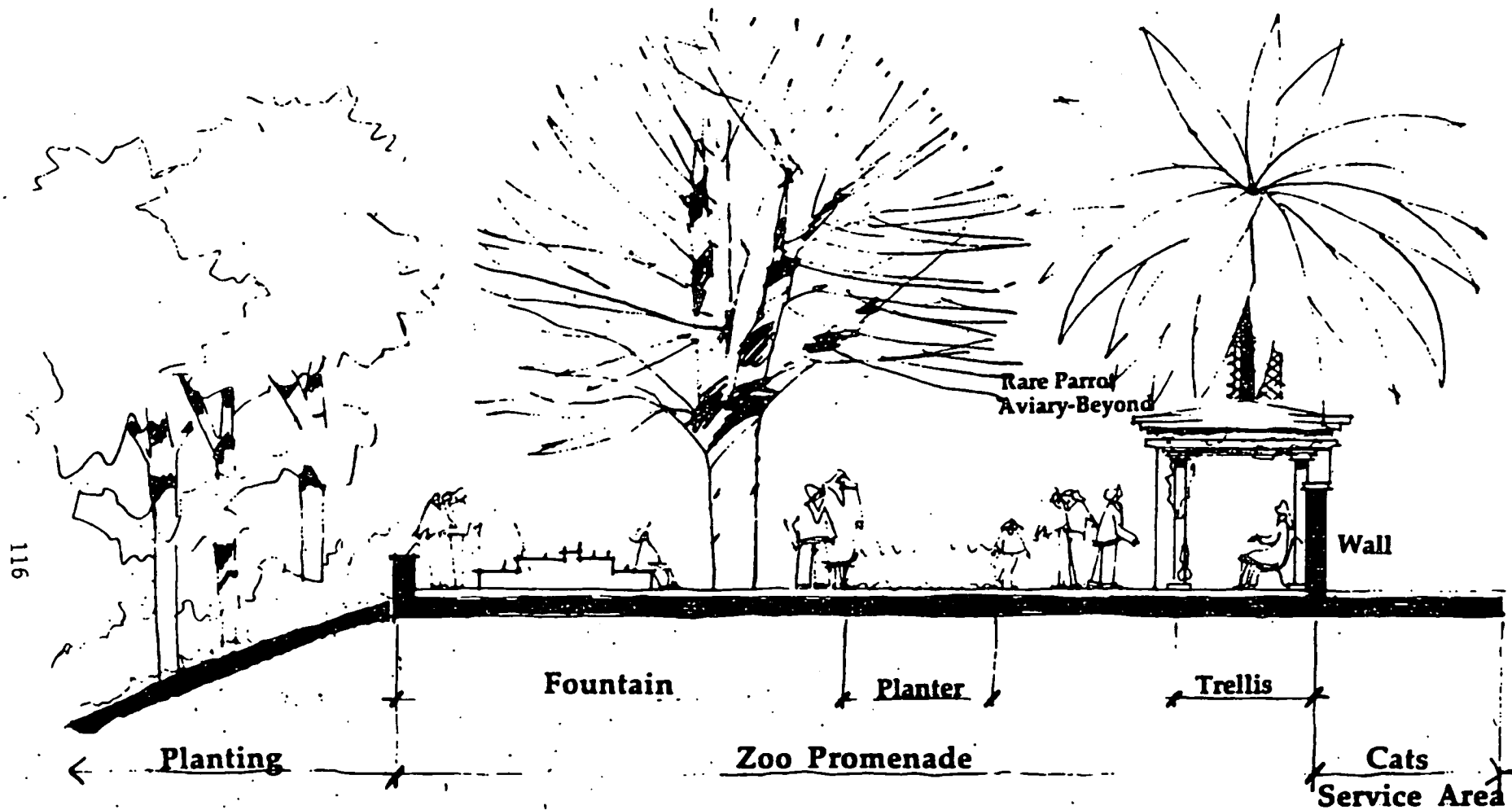
#### "RIVERS" INTERPRETIVE CENTER

This 5,000 square foot indoor/outdoor structure will be the "activity center" of the zoo and explain worldwide wildlife conservation, in particular, conservation of the world's river systems. There will be facilities for informal lectures and presentations. The structure will contain exhibits of aquatic animals that, because of theme constraints, are not suitable for display elsewhere such as animals from the Amazon River. The building will serve as a meeting place for zoo visitors and will have comfortable seating facing the Lake Victoria Exhibit.

#### AUSTRALIA SECTION

This interesting theme area will provide the zoo with several very special exhibits that are unique to Zoo-2002. An "Outback Farmyard" will contain domestic sheep and goats in what will be the zoo's only animal contact area. Children and adults will be able to mingle with these docile domestic animals in a supervised farm setting. Two Australian barns and a water tower will help create the Australian atmosphere, and a camel ride will be located

Figure 41



# Zoo Promenade

adjacent to the farmyard. Camels were first released in Australia in the 1800s where they can still be found roaming the Australian deserts in a semi-wild state.

A nocturnal building of approximately 3,000 square feet will feature the night-time animals of Australia including Wombats, Echidnas (Spiny Ant-eaters), Bats and Tawny Frogmouths. This will be the only reverse light cycle building in Zoo-2002. Visitors will enter a dimly lit building during the day and observe active nocturnal animals. Lights will come on at night whereupon the animals will sleep until the next day. The building will have ten to twelve units depicting the range of natural Australian habitats from the arid desert to the coastal mountains.

The zoo's present herd of Wallaroos will be moved to a one-third acre exhibit in the Australian Section. Two additional varieties of Kangaroos, Yellow-footed Rock Wallabies and Matschie's Tree Kangaroos, both of which are endangered, will also be displayed. The zoo's existing collection of ostrich-like Emus will share the wallaroo's naturalistic exhibit space.

Additionally, the Australian area will feature the Koala which is one of the most popular zoo animals. Two small Koala yards will contain these fascinating Australian mammals while an adjacent interpretive center will display the Koalas in a variety of their native extremes. Educational graphics will further highlight the interpretive area.

Several aviaries varying in size from 150 to 1,000 square feet will contain a selection of Australian and New Guinea birds. The Brush Turkey with its 30' round x 5' high nest and the Kookaburra will be two such unique birds included in these exhibits.

A small lake of approximately 10,000 square feet will contain waterfowl native to Australia. Adjacent to this lake will be a pond containing Mugger Crocodiles. This will complete the Australian Section with a good cross-section of the unique animals from Australia. Further, this area will contain certain visitor services, most notably, the Australian "watering hole," a theme food concession booth with an eating area overlooking the waterfowl lake. There will also be a set of restrooms adjacent to this food concession. The Australian Section will be connected to the rest of the zoo via an underground tunnel which will connect at the primate area.

#### HEALTH CARE AND SERVICE YARD

The physical facilities which support a zoo operation are critical to animal well-being and conservation, to education and research, and to the zoo's operational efficiency and excellence. For the most part, these facilities are separated from the public experience of the zoo, and are located instead for best use in the feeding, handling and care of the animals, and for best service in maintaining the zoo facility and grounds. The service area is comprised of several facilities, principal of which is a new health care facility to provide veterinary care for the zoo's existing and expanding collection. This building of approximately 5,300 square feet will contain rooms for surgery, x-rays, isolation and quarantine, and storage and office space for the zoo's on-site staff veterinarian.

In addition to its primary use by the veterinary staff for the care of the zoo's collection, the health care facility will be used continually by U.C. Davis veterinarians and their students. As the University of California, Davis is the only veterinary school in California, the Sacramento Zoo realizes benefits in terms of resources and research opportunities not available to any other zoo statewide. In turn, the zoo affords students and area professionals valuable research opportunities. Although not primarily a research facility, the zoo seeks to maximize this unique arrangement and to add to the existing pool of knowledge about the management of captive exotic animals. Accordingly, the facility will provide a small conference room for joint use by and consultations between staff veterinarians, the university veterinarians and their students in keeping with the goal of long-range species survival.

Space for isolation of those animals too large to be accommodated inside the health center will be provided via five or six outside pens ranging in size from 8' x 10' to 10' x 25'.

Adjacent to the hospital and facing the zoo's public area will be an 800 square foot baby animal nursery. This nursery will provide an isolated area for hand-raising young mammals and birds, and will be available for public viewing through a glass barrier. Graphic presentations on egg hatching, mammalian reproduction, and rearing of young will further enhance the educational experience afforded to the public by the nursery.

Preparation and quality of foods is an important aspect of animal care. Presently this function is carried out from a small and somewhat sparsely equipped area within the zoo's administration building. This building will be remodeled to include a modern food preparation room. In addition, quarters for the keepers and other staff persons whose jobs involve manual work will be upgraded. In particular, the facility currently has no showers and locker room for the female staff. Finally, the zoo curator, animal care staff and supervisory level grounds maintenance staff, all of whom currently lack adequate work space, will operate out of offices in this building.

The service area will also contain an off-exhibit Avian Propagation Center of approximately 5,000 square feet. The propagation center will include easy-to-clean hanging wire cages for an estimated 20-30 pair of parrots, as well as an incubator, breeder rooms, and a staff area for record keeping. The zoo has historically enjoyed success in its exotic birds conservation efforts with the potential to expand in this area. Development of an Avian Propagation Center is in keeping with this commitment insofar as off-exhibit units have proven to be the most successful way of breeding many species of rare parrots.

A plant nursery/greenhouse unit is a key element in both initial construction and subsequent maintenance of exhibit habitats throughout the zoo. Research and on-site plant production are essential given the fact that many plant materials required to develop naturalistic exhibits are not available commercially, and therefore must be propagated at the zoo. Furthermore, an on-site nursery/greenhouse will enable on-going rotation, and where necessary, replacement of the plants utilized in indoor exhibits. In particular, the new zoo will require more indoor plants for the reptile house, small primate exhibits, Sacramento River display, and Nile River display, to name

a few. Consequently, the service area will contain a small nursery/greenhouse.

There will also be a maintenance area to include a small maintenance shop in which simple repairs can be performed on diverse things such as strollers, signs, and sprinklers. All maintenance functions, including storage of related equipment and supplies will be centralized and subsequently allow for a more efficient operation. Storage facilities will be available for concessions supplies, office supplies, feed and hay, and vehicles. Some staff parking will be available on the zoo grounds.

#### VISITOR CONSIDERATIONS AND GENERAL SITE IMPROVEMENTS

Restrooms are an essential visitor service to be located at convenient intervals throughout the zoo. Four separate locations will make restrooms readily accessible from any area of the facility. The first set of restrooms will be located adjacent to the front entrance serving Lake Victoria Cafe. A second set will be located near the African Savannah Interpretive Center in the southwest corner of the zoo. The third set of restrooms will be located near the Nile River Interpretive Center where it will also service the picnic area and the outdoor amphitheatre. The fourth set of restrooms will be located in the Australia Section. These new restrooms, which will in effect double the zoo's current restroom capacity, will all be handicapped accessible, and should affectively alleviate the constant public complaints regarding both the condition and the inadequacy of existing restrooms.

Food service is both an important visitor amenity and a significant source of revenue. Accordingly, the refreshment services provided by the Lake Victoria Cafe and the main concession will be augmented by four satellite concessions during periods of peak visitation. These small food concession booths, which will be approximately 450 square feet each, will operate primarily on weekends and holidays, and during special events. They will offer a very limited menu averaging less than ten items each. One such booth will be located in the Nile River area adjacent to the outdoor amphitheatre. A second satellite concession will be placed in the African Savannah near the Savannah Interpretive Center and the third will be located at a transitional point between the cat area and the primate area. Finally, a satellite concession booth will be located in the Australian Section overlooking the waterfowl lake. These satellite food concession booths will be designed appropriately in accordance with the zoo's themed approach. For example, the Nile River booth may have the appearance of a "safari tent."

Circulation within the zoo is an extremely important element in the Zoo-2002 plan. A pleasant and well organized network of walkways will contribute to a positive zoo experience. A wide and spacious Rivers Mall will bisect the zoo providing a central promenade from Lake Victoria southwest to the Mountain Lion Exhibit. This well shaded mall will be further enhanced by landscaped islands, benches, and a drinking fountain. Narrower, but equally pleasant paths will branch out from the mall and loop through the various themed areas affording visitors organized circulation through the zoo. Although paved, all pathways will be natural in appearance winding picturesquely through landscaped areas which include mature trees and past exhibits. Conveniently located benches will afford comfortable resting

places. The entire circulation system will be barrier-free for the handicapped. Wherever possible, intersection of pathways with service roads will be avoided.

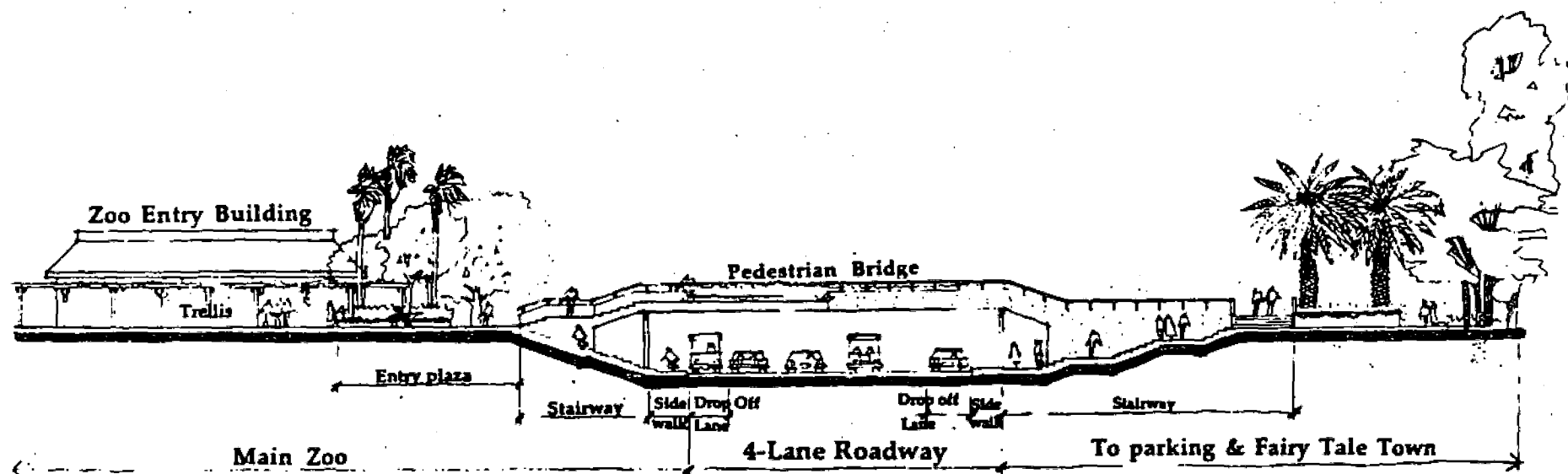
Circulation will further be improved as a result of exhibits being developed in areas of the zoo which are presently under-utilized. Currently, the majority of zoo visitors cluster in that five to seven acre area of the zoo which contains the popular elephant, giraffe and primate exhibits. While these exhibits are expected to retain their popularity, the themed rivers areas to be located in the other half of the zoo are expected to be equally popular thereby resulting in better crowd distribution during peak visitation. Pedestrian circulation between the Australian Section and the balance of the zoo will be possible via an underground tunnel connecting the two areas.

#### PEDESTRIAN BRIDGE

Over one-half million people visit the zoo annually. Visitor surveys reveal that a large portion of these visitors also visit Fairytale Town and the amusement and pony concessions, and nearly all zoo visitors must park on the Fairytale Town side of Land Park Drive. Consequently, pedestrian traffic at that crosswalk which connects the zoo to the rest of Land Park exceeds one-half million people per year. Children comprise a large percentage of these pedestrians. Although the posted speed limit on Land Park Drive is 25 miles per hour, actual speed along this heavily used commuter thoroughfare frequently exceeds the limit. City Police, traffic engineers and Parks and Community Services administration are unanimous in deeming the current situation a potential safety hazard.

In order to reduce this safety concern, while simultaneously not impeding the flow of traffic, a pedestrian bridge between the zoo entrance and Fairytale Town is proposed over a lowered Land Park Drive. In addition to providing safe traverse of Land Park Drive, the bridge must be compatible with the natural surroundings of the park and not resemble in any way a traditional highway overcrossing. While no preliminary design exists at present, it is proposed the bridge be landscaped to resemble an aesthetic plaza. Further, it is important that the lowering of Land Park Drive should not create an unattractive tunnel effect but rather should be accomplished in a way so as to preserve the pleasant view of the park currently afforded vehicular traffic. In conclusion, while the pedestrian bridge is a component of this plan, a complete feasibility study must be conducted before this project could commence. (Figure 42 and 43)

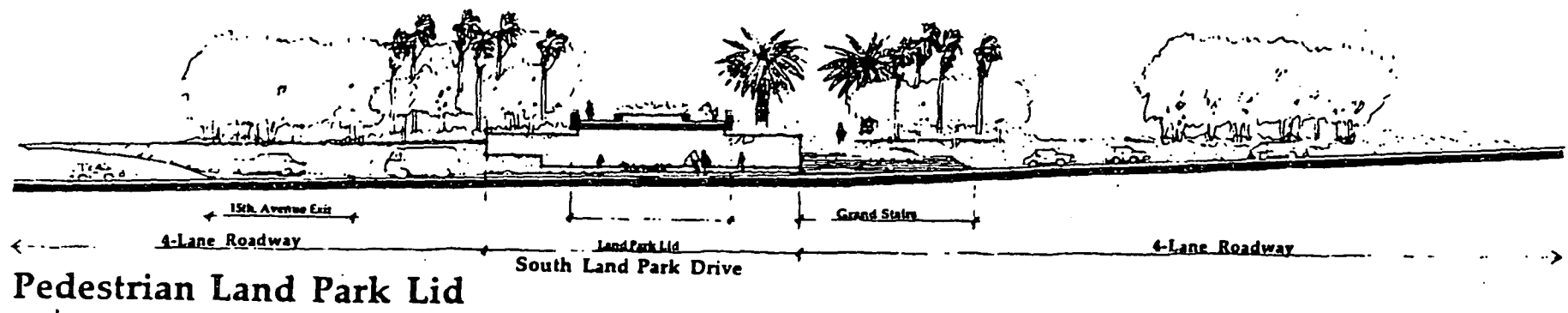




## Pedestrian Land Park Lid

Figure 42

Figure 43



Pedestrian Land Park Lid

## ANIMAL COLLECTION

The following section summarizes the size and distribution of Zoo-2002's animal collection. This projection should act only as a guideline. In-depth analysis of species and specimens will be done prior to the construction of each exhibit or set of exhibits. For example, in the development of the Sacramento Interpretive Area, the zoo may decide to show many small amphibians, lizards and insects. In the African Savannah area it may be decided to include some reptiles.

There are several factors that influence the species selection for Zoo-2002. First, there is a slight increase in the number of mammals although most of the new mammals are small species. There is also an increase in the number of birds. This is due to the fact that four larger theme-type aviaries are proposed. These are the Nile River Aviary, the Sacramento River Aviary, the African Savannah Aviary and the Australian Aviary. Also shown is a large off-exhibit breeding area specializing in endangered species of parrots.

Reptiles will be shown in several new areas of the zoo as well as in the reptile house. The addition of the Nile Crocodile and the Mugger Crocodile are of particular significance as no Crocodilian species have been displayed for many years. Although the Koi Carp and Goldfish will be relocated across the street to the Japanese Garden in Fairytale Town, several aquariums will be added to complement the two river areas.

Another factor that may determine the actual acquisition of animals is the endangered status. For example, if it is apparent that Asian Elephants require captive propagation to help ensure their survival, the zoo may have to consider displaying them in the African Savannah. An education graphic display would be necessary to explain why this was being done. As stated in the goals and objectives, the zoo will attempt to exhibit as many rare and endangered species as possible.

The distribution of the existing animal collection has been shown previously in the site evaluation section of this Master Plan. The following distribution of animals is the maximum collection proposed under Zoo-2002 and includes the two acres to the north and the Australian Section (Scenario Four):

	Orders	Families	Forms	Specimens
Mammals	11	22	58	275
Birds	14	24	72	373
Reptiles	3	20	51	191
Amphibians	2	4	4	20
Fish	6	12	23	160
Invertebrates	2	2	2	24
	38	84	210	1,043

The distribution of the animal collection in scenario three which includes the two acres to the north but not the Australian Section is shown below:

	Orders	Families	Forms	Specimens
Mammals	9	17	44	193
Birds	13	21	58	307
Reptiles	3	20	50	187
Amphibians	2	4	4	20
Fish	6	12	23	160
Invertebrates	2	2	2	24
	35	76	181	891

The distribution of the animal collection in Master Plan scenario two which redevelops the zoo within its present 14 acres is shown below:

	Orders	Families	Forms	Specimens
Mammals	9	17	44	193
Birds	13	19	48	259
Reptiles	3	20	49	181
Amphibians	2	4	4	20
Fish	6	12	23	160
Invertebrates	2	2	2	24
	35	74	170	837

## Animal List - Zoo 2002

(Key: 2.3.4 = 2 males, 3 females and 4 undetermined sex)

### PRIMATE AREA

2.3 Chimpanzee  
2.3 Orangutan  
6.6 Golden-bellied Mangabey  
6.4 Ring-tailed Lemur  
3.3 Golden Lion Tamarin  
1.2 White-handed Gibbon  
1.2 White-faced Saki  
2.2 Tree Shrew  
2.4 Mandrill  
4.6 Spider Monkey  
2.2 Red-ruffed Lemur

### FELINE AREA

1.1.2 Siberian Tiger  
1.1.2 Asian Lion  
1.1 Mountain Lion  
1.1.2 Jaguar  
1.1 African Leopard  
1.1.2 Geoffroy's Cat  
1.1.2 Serval  
1.1.2 Caracal  
2.2 Margay

### AFRICAN SAVANNAH

3.3 Rock Hyrax  
0.3 Elephant  
1.3 Giraffe  
1.3 Grevy Zebra  
1.2 Ostrich  
1.3 Eland  
1.6 Addra Gazelle  
1.6 Meerkat  
1.2 Bat-eared Fox  
10.10 Guinea Fowl  
10.10 White-faced Tree Ducks  
3.3 Spur-winged Geese

### AFRICA SAVANNAH AVIARY

0.0.10 Superb Starling  
3.3 Crowned Plover  
1.1 Jackson's Hornbill  
1.1 Lilac-breasted Roller  
0.0.10 Golden Weaver  
2.2 Pygmy Geese

### AFRICA SAVANNAH AVIARY (Cont'd)

2.2 Red-crested Touraco  
2.2 African Hoopoe  
3.3 Meyers Parrot  
2.2 Yellow-necked Spur Fowl

### SACRAMENTO RIVER

#### Major Exhibits

1.2 Grizzly Bear  
1.1 North American Otter  
1.1 Beaver  
1.1 Bald Eagle

#### Waterfowl (flight cage)

2.2 Aleutian Canada Geese  
5.5 Wood Duck  
3.3 Redhead Duck  
2.2 Blue Heron  
1.1 American Bittern  
2.2 Ross' Goose  
2.2 American Egret  
1.1 Trumpeter Swan  
3.3 Bufflehead

#### North American Interpretive Center

#### Native Fish

2 White Sturgeon (native)  
2 Sacramento Sucker (native)  
6 Sacramento Perch (native)  
6 Golden Trout (native)  
6 Rainbow Trout (native)

#### Introduced Fish

2 American Shad  
2 White Catfish  
6 Striped Bass  
6 Bluegill  
6 Black Crappie

#### Other Animals

2 Dipper  
6 Pacific Pond Turtle

Animal List - Zoo-2002 (Cont'd)

NILE RIVER EXHIBIT

- 0.2 Nile Hippo
- 1.2 Sitatunga
- 1.2 Nile Crocodile
- 1.2 Waterbuck
- 1.1 Africa Fish Eagle
- 1.1 Saddle-billed Stork
- 1.2 Red Duiker
- 2.2 African Spot-necked Otter
- 2.4 Spot-nosed Guenon

Interpretive/Aquarium/Amphibians

- 0.0.6 Fishing Bats
- 2.2 Otter Shrew
- 2.2 Cane Rats
- 0.0.4 African Clawed Frogs
- 1.1 Nile Monitor
- 1.1 African Lungfish
- 0.0.20 Hornet Tilapia
- 0.0.6 African Knifefish
- 0.0.2 African Arawana
- 0.0.6 African Snakeheads
- 0.0.6 Regan's Cichlid
- 0.0.8 Convict Cichlid
- 0.0.20 Flag Cichlid
- 0.0.2 Spotted African Catfish
- 0.0.6 African Killfish
- 0.0.12 Butterflyfish
- 0.0.20 Congo Tetra

AFRICAN RIVER AVIARY

- 1.1 Hamerkop
- 2.6 African Spoonbill
- 2.2 African Jacana
- 2.2 Malchite Kingfisher
- 2.6 Sacred Ibis
- 3.3 Hottentot Teal
- 2.2 Ross' Touraco
- 1.1 Giant Kingfisher
- 1.1 African Darter
- 5.5 Masked Weave

ENTRANCE LAKE (LAKE VICTORIA)

- 10.10 Caribbean Flamingo
- 0.0.4 Marabou Stork
- 0.0.20 White-faced Tree Duck
- 2.2 Crowned Crane
- 3.3 Hartland's Duck
- 3.3 Maccoa Duck
- 3.3 White Pelicans

RARE PARROT AVIARY

- 1.1 Thick-billed Parrot
- 1.1 Hawk-headed Parrot
- 1.1 Palm Cockatoo
- 1.1 Hyacinthine Macaw
- 1.1 Eclectus Parrot

AVIAN PROPAGATION CENTER

- 1.1.2 Scarlet Macaw
- 1.1.2 Eclectus Parrot
- 1.1.2 Palm Cockatoo
- 1.1 Great Hornbill
- 1.1 Hyancinthine Macaw
- 1.1.2 Red-fronted Macaw
- 3.3 Bali Mynah
- 1.1 Hawk-headed Parrot
- 4.4 Thick-billed Parrot
- 2.2 Black Parrot

EDUCATION ANIMALS

- 0.0.2 Amazon Parrot
- 0.0.2 Cockatoo
- 0.0.2 European Hedgehog
- 0.0.2 Ferret
- 0.0.4 Box Turtle
- 0.0.2 Red-tailed Hawk
- 0.0.2 Iguana
- 0.0.6 Spiny Mice
- 0.0.2 Barn Owl
- 0.0.2 Boa Constrictor

REPTILE AREA

Outside

- 2.2 Aligator Snapping Turtle
- 2.4 Aldabra Tottoise

North America

- 2.2 Gila Monster
- 2.2 Rosy Boa
- 2.2 Indigo Snake
- 2.2 San Francisco Garter Snake
- 0.4 Ratsnake
- 2.2 Mountain Kingsnake
- 2.2 California Kingsnake
- 1.1 North Pacific Rattlesnake
- 1.0 Sidewinder
- 1.1 Broadbanded Copperhead
- 2.2 Bullsnake

## Animal List - Zoo-2002 (Cont'd)

### REPTILE AREA (Cont'd)

#### South America

- 2.2 Argentine Boa
- 0.4 Boa Constrictor
- 2.2 Puerto Rican Boa
- 1.2 Green Anaconda
- 2.2 Bimini Boa
- 0.0.4 Argentine Horned Frog
- 2.2 Plumed Basilisk
- 2.2 Rainbow Boa
- 2.2 Mexican Milk Snake
- 0.0.4 Red-legged Tarantula

#### Austro/Asia

- 1.1 Tokay Gecko
- 2.2 Prehensile-tailed Skink
- 2.2 Fiji Island Iguana
- 2.2 Solomon Island Ground Boa
- 2.2 Green Tree Python
- 2.2 Indian Python
- 2.2 Red-tailed Ratsnake
- 2.2 Blue-tongue Skink
- 0.0.6 Whites Tree Frog
- 0.0.6 Oriental Fire-bellied Newts
- 1.1 Reticulated Python
- 3.3 Phillipine Sailfin Lizards

#### Africa

- 2.2 Sungazer
- 2.2 Armadilla Lizard
- 1.1 Kenyan Sand Boa
- 1.1 African Bull Python
- 2.2 African House Snake
- 1.1 Gaboon Viper
- 1.1 Red-spitting Cobra
- 1.1 Egyptian Cobra
- 2.2 Madagascar Day Gecko
- 2.2 Dumeril's Ground Boa
- 0.0.20 Madagascar Hissing Cockroaches
- 2.2 Egg-eating Snake
- 0.0.6 Egyptian Spiny Mice

### AUSTRALIAN AREA

#### Nocturnal House

- 1.1 Wombat
- 2.2 Echidna
- 1.1 Tiger Quoll
- 2.2 Spotted Cuscus
- 10.0 Flying Foxes (bats)
- 2.2 Kowari
- 2.2 Sugar Gliders
- 2.2 Tawny Frogmouth
- 1.1 Barn Owls

#### Farm Yard

- 1.1 Dromadary Camel
- 6.6 Domestic Sheep
- 6.6 Domestic Goats

#### Marsupials

- 4.4 Wallaroo
- 4.4 Yellow-footed Rock Wallaby
- 2.2 Matschie's Tree Kangaroo
- 2.2 Koala

#### Avairy

- 2.2 Gang-gang Cockatoo
- 1.1 Brush Turkey
- 1.1 Crested Pigeon
- 1.1 Palm Cockatoo
- 3.3 Australian Rainbow Lorikeet
- 2.2 King Parrot
- 2.2 Kookaburra
- 2.2 Red-winged Parrot

#### Lakes

- 2.2 Magpie Geese
- 10.10 Eyton's Whistling Duck
- 1.1 Black Swan
- 1.1 Australian Shelduck
- 2.2 Cape Barren Geese
- 2.2 Mugger Crocodile

Major Acquisitions (1987-2002)

PRIMATE SECTION

Golden Lion Tamarin  
White-faced Saki  
Tree Shrew  
Mandrill  
Spider Monkey

FELINE SECTION

Snow Leopard  
African Leopard

AFRICAN SAVANNAH

Hyrax  
Meerkat  
Bat-eared Fox  
Spur-winged Geese

Superb Startling  
Lilac-breasted Roller  
Golden Weaver

SACRAMENTO RIVER

Beaver  
Bald Eagle  
Blue Heron  
Ross' Geese  
Bufflehead

American Egret  
Trumpeter Swan  
All North American and African Fish  
Dipper

NILE RIVER

Sitatunga  
Nile Crocodile  
Waterbuck  
African Fish Eagle  
Saddle-billed Stork  
Red Duiker  
Marsh Mongoose  
Clawless Otter  
Hammerkop  
African Spoonbill

African Jacana  
Malachite Kingfish  
Sacred Ibis  
Hottentot Teal  
Ross' Touraco  
Fishing Bats  
Otter Shrew  
Cane Rat  
African Clawed Frog  
Nile Monitor

BIRD PROPAGATION CENTER

Palm Cockatoo  
Red-fronted Macaw

REPTILE HOUSE

Plumed Basilisk  
Prehensile-tailed Skink  
Fiji Island Iguana

Phillipin Sailfin Lizard  
Egg-eating Snake



## Major Acquisitions (Cont'd)

### AUSTRALIAN SECTION

Wombat	Gang-gang Cockatoo
Echidna	Brush Turkey
Tiger Quoll	Created Diger
Spotted Cuscus	Palm Cockatoo
Flying Foxes	Australian Rainbow Lorikeet
Kowari	King Parrot
Sugar Glider	Kookaburra
Yellow-footed Rock Wallaby	Red-winged Pargot
Matschie's Tree Kangaroo	Magpie Geese
Koala	Black Swan
Tawny Frogmouth	Australian Shelduck
Barn Owl	Magger Crocodile
Domestic Goats	Domestic Sheep

### Major Species Deletions (1987-2002)

Mongoose Lemur  
Squirrel Monkeys  
DeBrazza's Guenon  
Black and White Colobus  
Polar Bear  
Sloth Bear  
Canada Lynx  
Jungle Cat  
Cheetah  
Llama  
Persian Gazelle  
Arabian Oryx  
Red-breasted Geese  
Black-necked Swan  
Razor-billed Currasow  
Gulls and Terns  
Koi and Goldfish

## LANDSCAPING PROGRAM

Attractive landscaping is an intrinsic element in creating the zoo's unique environment, and is critical in providing both a natural environment for the animals and a simulated wilderness for the zoo visitors. While the use of lawns and formal gardens as found elsewhere in the park, will be minimal in the zoo itself, basic components of Zoo-2002 are the trees and landscape plantings. Plant materials will be used to establish or reinforce exhibit themes and to provide appropriate animal habitats. Wherever feasible, plants indigenous to the specific geographic areas and consistent with the habitat of the animals being exhibited will be incorporated into the landscaping. Further, every effort will be made to utilize plants which can be used as a source of fresh food for the animals and care will be taken to avoid planting any plant that could be toxic to the animal collection. When those plants which are native to a particular area are not suitable to Sacramento's weather conditions, other species of plants will be utilized which replicate the desired effect. In particular, the use of tropical plants, given the climatic limitations, will be extremely minimal. At most, future experimentation may reveal certain protected sun-pockets or warm micro-environments where tropical plants can be grown.

In addition to enriching both the exhibits' aesthetics and environmental authenticity, plant materials act as buffers, blending the zoo facility with surrounding land use as well as visually screening the zoo from adjacent park uses, residential neighborhoods and bordering roads. Further, trees and vegetation moderate Sacramento's temperature extremes, clean the air, provide oxygen, create windbreaks and reduce noise. Finally, the proper use of plants will create visual interest to further heighten the visitors' zoo experience.

### TREE MANAGEMENT

There are in excess of 60 species and 300 individual specimens of large trees in the zoo at present. It is imperative that measures be taken to safeguard the future of existing trees, particularly the large native oaks some of which are over 250 years old and nearly all of which are at least 50 years old. To protect, preserve and maintain these valuable trees the following steps are recommended:

1. Reduce irrigation near the oak trees so as to avoid or minimize the resultant root and crown rot that irrigation causes. In the event planting is necessary in those areas around the oaks, drought resistant plants will be utilized to reduce the level of root and crown rot to the oak trees.
2. All new walkways and exhibits will be located a minimum of fifteen feet from the oak trees in an effort to prevent damage to the roots due to soil compaction from extensive use. There are no plans for any exhibits in that area on the north side of the zoo which

contains the three large heritage oak trees. Instead this area will be utilized for picnicing and all tables will be seated away from the trees.

3. All the trees in the zoo will benefit from a program of on-going maintenance to include spraying, feeding, pruning and other routine tree maintenance.

#### GROUNDS MAINTENANCE

An antiquated, manually operated sprinkler system which has been in operation since 1950 presently serves as the sole source of irrigation for approximately two-thirds of the zoo. The remaining one-third of the zoo is serviced by automatic sprinklers. The landscaping element of Zoo-2002 includes conversion of the entire balance of the zoo to automatic irrigation. This capital improvement is necessary not only because of the inadequacy of the manually operated sprinkler system but also automatic irrigation is advantageous, both because it reduces labor and because such a system permits watering of the grounds at night when the facility is closed.

Presently, there exists no adequate storage for maintenance material. Consequently, Zoo-2002 includes the addition of a small maintenance shop, storage sheds and a greenhouse. These service areas will enable the service staff to provide more efficient and effective maintenance given the planned proximity and centralization of necessary tools and equipment. In particular, the greenhouse will grow plants to be rotated throughout the indoor exhibits such as the marmosets, reptiles and the Sacramento River terrarium exhibits. The inclusion of one or two small tool storage areas, such as lockers or similar type space to be located at strategic points on the zoo grounds will further improve the delivery of maintenance services by providing ready access to tools.

#### GARDENS

Although the zoo will not resemble a formal garden per se, the establishment of several small gardens may be incorporated into the zooscape. The zoo currently hosts a fine cactus garden which was created as a result of the Sacramento Cactus and Succulent Society's donating the plants to begin this unique collection. Community interest in and support for additional undertakings of this nature will be encouraged. Contingent upon such endeavors, it is feasible that the zoo of the future may support ten to twenty small theme gardens such as a camellia garden, fern garden or a rhododendren garden. As is the case with the cactus garden, the plants within these theme gardens would be labeled thereby contributing to the zoo's educational goals in addition to enhancing the beauty of the zoo. The unique environment of the zoo affords an excellent opportunity to display a vast number of plant types, the existence of which would contribute visual continuity and beauty to the zoo while simultaneously enhancing the conservation education experience of the visitors.

## FUTURE PARKING

Parking remains a primary concern in this Master Plan for the zoo. Parking data in the Site Evaluation section of this report suggests that in fiscal year 1986/87 there were days when parking demand exceeded the amount of spaces available within one-third mile of the zoo. As attendance has increased at the zoo, more days occurred during which parking was unavailable to potential zoo goers. As stated in the Site Evaluation section, peak period parking demand for the zoo in fiscal year 1986/87 was 671 spaces. If zoo attendance is projected to increase during the period covered by this plan to 800,000 (an increase of 38% over fiscal year 1986/87 attendance of 581,000), then correspondingly, peak period parking may be expected to increase by 38% or 255 additional parking stalls.

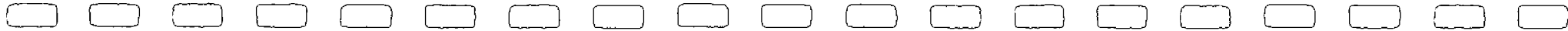
All parking options and mitigating measures must be explored in conjunction with the Master Plan. During the planning process, a variety of measures were suggested as follows:

1. As a mitigating measure, city staff must coordinate events so as to minimize parking conflicts in William Land Park. For example, a large golf tournament or park activity should not be scheduled at the same time the zoo is having a major promotional event and vice versa.
2. Weekend use of Sacramento City College's parking lot should be explored. If this measure were implemented, it would require using a tram to transport visitors from the college to the zoo.
3. The zoo could extend visiting hours into the early evening hours, perhaps closing the facility at 7:00 or 8:00 p.m. This would stretch the day by a few hours in an attempt to lessen the impact of the busiest time which is usually from 1:00 to 3:00 p.m.
4. Given that there are two regional transit bus lines which stop directly in front of the zoo, the zoo could actively promote the use of public transportation. One method of encouraging visitors to ride the bus to the zoo could include offering a discounted admission fee to those who arrived via public transportation.
5. The feasibility of parking along Riverside Boulevard to the west end of the park could be examined. This measure may necessitate reallocation of space on Riverside Boulevard.
6. Any exploration of expanded parking opportunities should include consideration of additional parking lots. During the course of this plan, several areas were suggested. They include:
  - a. Increasing the capacity of the existing Fairytale Town parking lot by expanding it to the east.

- b. Increasing the size of the golf course parking lot.
- c. Relocating Funderland and utilizing that area for parking.
- d. Adding a parking lot between the existing Fairytale Town and golf course parking lots in the open space now occupied by a soccer field.
- e. Adding a parking lot in the open field adjacent to Sutterville Road. This option would involve a tram to transport visitors to the zoo.
- f. Adding a parking structure in one of the areas suggested for a parking lot. While this measure would require less open space than a parking lot and therefore should be explored, it is probably not a cost effective option.
- g. Charging a fee for weekend use of parking lots has been suggested. While this option would generate revenue which could in turn be utilized to finance new parking lots and increase park security, it could result in an undesirable increase in neighborhood parking.

The above suggestions represent but a partial list of mitigating measures. The environmental impact study of this Master Plan will include a much more indepth exploration of the issue of future parking.

# **P**rograms



## EDUCATION

Education is a prime function of the modern zoo. Even though recreation may have provided the initial impetus for a visit to the zoo, it is impossible for a person, whether child or adult, to visit a modern facility such as the proposed Zoo-2002 without assimilating or improving their knowledge of the world in which they live. It is also true that people are not apt to protect that which they do not understand, appreciate or respect.

Accordingly, the purpose of public education, which refers to the exhibits, programs and services available to visitors, is to increase interest, knowledge and a concern for wildlife.

During a century which has witnessed the extinction of more than 100 animal species, it is imperative that people balance the desire to meet the needs of a growing world population with a greater concern for a protection of our environment. By educating visitors about the need for conservation, zoos and aquariums can foster a positive attitude toward wildlife and help to prevent the extermination of species.

The fundamental role of education in the zoo experience is evident in the following quote from the American Association of Zoological Parks and Aquariums (AAZPA) Educator's Directory:

"It is estimated that half the population on this continent annually visits zoological parks and aquariums. If that estimate is correct, then it holds that our member institutions have an unmatched opportunity to provide such visitors with information on the plight of wildlife throughout the world. Thus, educational programs are becoming increasingly important with each passing year. It is interesting to note the corresponding increase in our members' educational programs with the apparent increasing knowledge of the general public regarding the animal life with which they share this planet."

A general increase in environmental awareness and a concern for conservation has increased the public's desire for information about many species of wildlife. Many zoos have responded to this need with an increased emphasis on public education.

All too often teaching about the environment is confined to the artificial classroom space, where ideas become collections of words, and concepts remain imaginary and remote. All community resources should be looked upon as extensions of the classroom where valuable learning experiences can bring textbooks to life. The zoo's education program should augment the in-school curricula, provide an awareness of the relationships of the various ecosystems, and excite continued interest and further investigation. An effective education program enriches the student's learning experiences and has the potential of contributing to the development of an environmental ethic and a more informed public.

But zoo education includes more than just school programs; it encompasses the entire interface between the educational facility and its visitors, and includes graphics, lecture services, tour programs, exhibits and publications. The hoped-for "end result" of all types of educational programs and services at zoos is the increased awareness of the institution as a resource in the community and an appreciation for the facility's goals.

Living animals generate an unparalleled enthusiasm and environment for learning. Zoos provide a unique learning experience; seeing the real thing. The most significant feature of the zoo experience is the opportunity to see animals alive. Often these are species endangered in the wild, living and reproducing in the zoo. Even the finest nature films are unable to compete with the impact of the living animal. Animals on display in naturalistic environments, graphics and labels which identify and describe them and tours and other zoo programs available to visitors all contribute to the education of the general public.

This education is the only means by which true conservation of wildlife can be achieved. Accordingly, the Sacramento Zoo is committed to its responsibility to provide conservation education to the public. Historically, the zoo relied entirely on volunteers for the provision of educational services. However, the increased commitment to and need for public education, together with the community's increased demand for an educational zoo experience, resulted in the Sacramento Zoo's need for a more formalized and expanded educational program. Thus, while volunteers continue to play a critical role in the education process, a full-time education coordinator was added during fiscal year 1983/84. This position, which is funded by the Zoological Society, is charged with instituting a year-round Education Program at the zoo.

The goals of the Education Program are as follows:

1. To increase public awareness of the plight of our natural resources.
2. To increase public awareness about the role of zoos in the conservation of animal species.
3. To serve as a community education resource on exotic animals.
4. To develop positive public attitudes toward the zoo and its animals which, in turn, will serve to motivate people to actively support conservation.
5. To design an education program that fully meets the needs of the community.
6. To structure a program that is entertaining and educational.
7. To make conservation education a prime focus of the zoo's education classes and to involve every employee and volunteer in the education potential of the Sacramento Zoo.



The existing Education Program is coordinated by the education coordinator with the assistance of part-time seasonal public service aides and contract teachers. In addition to these paid staff, the zoo relies heavily on the Docent Council which is the educational branch of the Sacramento Zoological Society. The Docent Council, with approximately 100 active volunteers, is the heart of the zoo's Education Program. The docents complete an intensive training course, pass a written examination and give supervised tours before touring on their own.

Presently, the zoo offers a variety of educational opportunities to the community, but a great deal more remains to be done. Implementation of the physical Master Plan (the exhibits and collection) will greatly improve the educational potential of the zoo, for visitors will be able to view exotic animals at close range and in replicas of their natural habitats. Consequently, visitors will gain both understanding of how animals live in the wild and insight into the intricate balance among all living things.

#### EDUCATIONAL OFFERINGS FOR ZOO VISITORS

Wildlife Wagon: The Wildlife Wagon is a push cart which contains a variety of biofacts such as feathers, bones, pelts, eggs and horns. The wagon, which was initiated during fiscal year 1984/85, circulates through the zoo during peak visitation periods promoting conservation awareness and zoo philosophy.

Animal Demonstrations are informative and entertaining talks emphasizing animal care, habitat and behavior. The talks are presented daily through the summer months by trained personnel who work with the curator. Animal keepers and education staff structure these demonstrations to include elephants, chimpanzees, bears and reptiles each of which is offered once per day. Zoo-2002 will contain interpretive areas in close proximity to the animal exhibits thereby providing visitor access areas which are more conducive for viewing demonstrations. Given the public's interest in the existing demonstrations together with the potential for additional topics inherent in Zoo-2002, the outdoor Interpretive Center next to the African River Aviary will be a critical focal point for the provision of animal demonstrations and similar educational services.

Written Material: Presently visitors may obtain a zoo guide, printed through the generosity of a private corporation, at the front gate free of charge. These guides, which are periodically reprinted to insure inclusion of new exhibits and programs, will continue to be provided under Zoo-2002. In addition, a diversity of educational materials geared to the many interests of visitors will be available at the gift shop. It is anticipated that included in this inventory will be printed materials on the identification, preservation and protection of various animal and plant species threatened with extinction; more indepth information on self-guided tours and a wide range of learning aids for children such as coloring books and educational games and activities.

Graphic and Interpretive Displays will be located throughout the zoo to provide varying degrees of wildlife conservation education to visitors ranging from simple labeling to more detailed graphics in such a way as to capture the interest and stimulate the curiosity of viewers.

Puppet Shows and other innovative programs in the arts related to animals will be geared to family visitors and school groups. These presentations will convey a variety of concepts such as conservation, animal habitat, behavior and communication, survival requirements and the role of zoos.

#### PROGRAMS FOR ORGANIZED GROUPS

Zoo Tours have long been a mainstay of the zoo's educational efforts. Instituted in 1970, docent conducted tours are given to school groups from third grade through college. The high standards set by the docents serve to insure a quality educational and entertaining tour. In fiscal year 1986/87, the docents led tours for an estimated total of nearly 18,000 children and their chaperones. Programs for each grade level and area of interest are developed in accordance with the California State Science Framework Addendum. Developed by the State Department of Education, the Addendum provides guidelines of appropriate science topics and concepts for each grade level.

In fiscal year 1986/87, of the approximate 60,000 school children visiting the zoo, nearly 18,000 of them participated in a docent tour. In keeping with the zoo's commitment to education, it is intended that Zoo-2002 will, given the proposed redistribution and expansion of both exhibit and group space, be better able to accommodate the demand for tour services. It is critical that the zoo constantly strive to meet this public service need insofar as the Sacramento Zoo is the only such learning environment of its size and quality which serves the school districts throughout a surrounding seventeen county radius.

Zoo tours are not limited to school groups although it is school groups who comprise well over 90% of the tours led annually. Any group of five persons or more may take a docent led tour provided they make prior arrangements with the zoo. An estimated 1,000 to 1,500 persons per year who are not affiliated with a school participate in docent led tours. Primarily these are church groups or scouts or other organized youth groups although families or groups of friends may also receive tour guide services.

Zoo Preview is a fairly new curriculum for kindergarten through second grade students and teachers. Developed and implemented in fiscal year 1985/86, Zoo Preview was prepared within the guidelines of the State of California Science Addendum. This program, which is held at the zoo, has two components. First, Zoo Preview workshops designed both to help teachers implement science education in the classroom and to prepare them to fully utilize the educational resources of the zoo, are held for the teachers. During fiscal year 1986/87, 60 teachers participated in the Zoo Preview training. In turn, these teachers return with their classes at which time the group receives a Zoo Preview presentation aimed at preparing the children for their zoo experience. The teachers then lead their classes on a tour utilizing their Zoo Preview training. Over 5,000 students participated in these Zoo Preview programs during fiscal year 1986/87.

Workshops: One means of furthering the zoo's commitment to providing an educational experience for every visitor is, given both the number and the nature of school groups' visits, by offering zoological educational training for teachers. Accordingly during the 1985/86 school year, the zoo began

offering teacher workshops. Workshops are held in the zoo's education building and range from one-time seminars held in conjunction with local science teachers' workshops and conventions to series of workshops presented via a contractual arrangement with a local school district.

Handicapped Programs: A variety of programs are offered to organize groups serving visually handicapped, hearing impaired and learning disabled people. Primarily in the form of structured activities and tours, these handicapped programs are developed in close cooperation with special education teachers and community specialists. Special programs for the visually handicapped utilize a hands-on approach to the zoo. Small groups of children are taken behind the scenes to visit the animals where they are provided with an opportunity to feel the rough hide of the elephant and the whiskers of the giraffe. The Zoo Preview Program has been adapted for the hearing impaired through the use of interpreters and local resource teachers provided expert advice in the development of special zoological educational experiences including tours and activities for the multi-handicapped. An experiential approach to learning is used with all handicapped programs. In addition to the programs offered at the zoo, teaching materials in the form of resource boxes to be used in special education classes are being developed. These learning tools will include hands-on materials as well as reading materials in braille.

#### ZOO CLASSES

A Summer Education Program of children and adult classes at the zoo was implemented during the summer of 1983. Classes were held during the morning which is typically an off-peak visitation period. The classes, which were taught by the education assistants, volunteers, docents and staff were extremely popular. In response, the number and variety of classes offered has increased each year since. In fiscal year 1986/87, approximately 1,350 children participated in 60 classes. Examples of some of the classes offered are Zoo Photography, Junior Zookeeper, Good Morning Zoo, Animal Medicine, Careers Working with Animals and Zoo Club. Despite the continual expansion of offerings, classes fill up rapidly resulting in the zoo turning away interested children. A main reason that the zoo cannot currently meet the demand for children's programs is the lack of space. Presently the only suitable indoor space for children's activities is the small education trailer in which a partition is used to create a small classroom separate from the education office space. This makeshift classroom can only accommodate a group of thirty children. Consequently, regardless of public demand, the zoo is unable to offer additional classes pending completion of the Interpretive Center and the education building.

In addition to the morning classes, the zoo offers a series of overnight safaris. Once a week during July and August, children between the ages of five and 12 have the opportunity to spend the night at the zoo where they participate in a guided exploration of the zoo at night. Children eight and under must be accompanied by an adult at these weeknight sessions. As is the case with the daytime classes, the overnight safari is an extremely popular form of recreational zoo education.

The classes, both daytime and overnight, are all sponsored by the Sacramento Zoological Society and generally involve a fee which is used to offset the cost of the service.

## OFF-SITE PROGRAMS

Outreach Programs: As a unique and valuable community resource with a fundamental goal of conservation, the zoo has a responsibility for public education. A major means for such conservation educational efforts is through Outreach programs. The Outreach Program instituted in 1983, schedules specially trained docents to present live animals and artifacts at schools and other facilities off the zoo grounds. Docents also present illustrated lectures, including slide shows, as an integral part of the Outreach Program.

Accordingly by taking part of the zoo, including live animals, to these audiences, the zoo provides a unique and exciting stimulant for learning that would otherwise be lacking. Outreach programs also afford an opportunity for interested persons to enhance or supplement a pending or previous zoo visitation experience by providing more indepth material or focusing on more, specialized topics. During the last two years the zoo's education section has limited the live animal Outreach Program, (i.e., Zoo Mobile) as they lack space to house these handable animals. Space for these animals will be included in the outdoor Interpretive Center due for completion in Phase I of this plan. Once this program is fully established, it is likely that fees generated from this program will offset all related costs.

Career Talks: Zoo staff people and docents are available to speak to interested groups on career opportunities in related fields. Typically the audience for these talks is a high school or college class in such fields as biology, zoology, pre-veterinary, environment design or education.

Off-Site Travel Programs, including day treks as well as extensive safaris, afford participants both a unique vacation and an educational excursion. Sponsored by the Zoological Society, the travel program is currently in its fourth year. They provide a unique travel opportunity for members as well as a substantial income source for the zoo's education section.

Lecture Series: Wildlife and conservation lectures have been a part of the Zoological Society's commitment to education for many years. They are growing in popularity as in 1987 the Society brought noted primatologist, Jane Goodall to Sacramento and filled the 2,300 seats at the convention center.

## FUTURE EDUCATION PROGRAMS AND FACILITIES

The existing Education Program is sharply curtailed and limited by the lack of programmable space at the zoo. The existing education building, which is a mere 20 x 60 feet, is used to capacity for multiple education related uses including a classroom, office space for the education coordinator and volunteers and minimal storage space for educational program materials. The temporary education building is operated by the Zoological Society under an agreement with the city authorized by the City Council in 1985. This agreement will expire in 1990 by which time it is intended that the zoo would have a permanent educational facility which would be both more suitable and more sizable, and which would therefore enable the zoo to meet the public requests for education programs. As detailed in previous sections of this

plan, a fundamental component of Zoo-2002 is an education/administration building. The facility will have classrooms for the Education Program, storage, office space, docent area, reception area and Discovery Room, and will be located in an area which is readily accessible to both zoo visitors and members of the public who may wish to participate in an education program without actually attending the zoo.

Likewise the outdoor "Rivers" Interpretive Center, as described in the Exhibit Development section of this plan will provide a much needed area for group presentations within the zoo. At the present time, the zoo has no means of seating the public when the zoo staff and volunteers present programs. Because seating is not available, the time spent with the public and, therefore, the amount of information disseminated during demonstrations and other education activities is limited. Also restricted is the variety of programs that can be offered. A centralized location where people know programs will be given is not available on the zoo grounds.

The Sacramento Zoo is one of four area facilities dedicated to conservation and the sciences. The Sacramento Science Center, the Effie Yew Interpretive Center and the Norman Marsh Nature Center all contain Interpretive Centers. While each of the above facilities provide a valuable educational service, the Sacramento Zoo is unique in that only the zoo has as its primary goal increasing public awareness of the conservation of exotic animals. Furthermore, as the most heavily attended year-round facility in Sacramento, the zoo's potential education audience far exceeds that of any other community facility. Ironically, the zoo is the only one of the four facilities lacking an Interpretive Center. Consequently, the Sacramento Zoological Society has successfully secured a state grant for the construction of the Interpretive Center. Competing with non-profit recreational organizations throughout California for a total of \$1.5 million in grant funds, the Society was awarded \$75,000, the largest grant awarded statewide. Construction of this rustic outdoor theatre together with the programmable space afforded by the education building included in Zoo-2002, will enable the zoo to realize its potential as a unique community resource capable of and committed to wildlife conservation education. Accordingly, efforts are already underway for the preliminary planning and development of an expanded Educational Program. While additional educational programs, classes and services will be developed in accordance with public demand, changes in conservation needs and new developments in zoological education, following is a sampling of new or enhanced education programs to be provided under Zoo-2002:

1. An Animal Outreach (Zoo Mobile) will be developed in accordance with the following guidelines:
  - a. This program should not be used as a substitute for a trip to the zoo, but will augment a zoo visit.
  - b. Outreach interpreters will be carefully selected on the basis of their communication skills and their familiarity with the zoo's commitment to conservation. These interpreters will be familiar with, and sensitive to, the animals used in the program.

- c. Animals used will be carefully selected for their value to emphasize a particular educational program.
- d. All attempts will be made to use animals that have either been sensitized to people or animals that because of physical or behavioral handicaps would not function in a regular zoo setting or could not be released into the wild.
- e. Animals used in this program will receive professional care. The keeper responsible for these animals should report to the supervisory staff but will work closely with the education staff.
- f. Animal care volunteers in the Outreach Program will work under the direction of a professional animal keeper.
- g. Animals will be kept in a specially designed animal room adjacent to the Interpretive Center.

This program will in essence create a mobile zoological experience enabling the zoo to expand its conservation educational efforts beyond the physical boundaries of the zoo and into the community. The Zoo Mobile will be modeled in part after the Crocker Art Museum's popular Art Ark, a 50 foot mobile trailer which takes a museum quality exhibition to area schools and other community access points.

## 2. Additional On-Site Programs

- a. Animal presentations.
- b. Story Hour/puppet shows about animals and their habits for pre-school, school age children and family audiences.
- c. Slide shows on animals and related subjects during the evening hours. Open to general public and/or private groups.
- d. Education/recreational programs could be presented to large groups reserving the facility.
- e. Speakers from outside conservation and education groups could present programs to the Sacramento Zoological Society members and zoo visitors. For example, the California Department of Fish and Game, University of California, Davis Raptor Center, and the Audubon Society. By utilizing these types of organizations, the Interpretive Center could be a major Sacramento Regional Conservation Resource facility.
- f. Additional workshops for teachers, zoo staff and volunteers. At this time, there are no adequate workshop facilities for any but the smallest workshops for training teachers on the conservation and preservation of exotic animals.

- g. Children and adults could be seated and receive an orientation to the zoo before actually taking a tour. At this time there is no facility on the Sacramento Zoo grounds to seat any visitors for any type of educational or recreational programs.
- h. Regularly scheduled docent tours open to the general public to be held once a month initially with additional tours added as the need arose.
- i. Tours targeted to senior audiences to include relaxing and entertaining seated presentations, possibly with refreshments of a tea-type nature, and a leisurely tour of select exhibitry.
- j. Expanded programming for handicapped audiences.
- k. Expansion and adaptation of the Zoo Preview Program for pre-schoolers. Currently, there is a constant demand for programs for this age group.
- l. A "Patch Program" enabling Boy and Girl Scouts, Campfire Girls and Boys and similar youth groups to earn merit badges or patches in wildlife conservation at the zoo.
- m. Programs targeting economically disadvantaged children who are significantly under represented in the zoo's education programs at present. Speculated reasons for this lack of participation include the barriers of cost and lack of transportation. Accordingly, Zoo-2002 plans to work in cooperation with relevant community organizations to develop the means to bring zoo experiences to groups of children who currently are not being served.

## GRAPHIC GUIDELINES

Graphics, among the most visible elements of any zoological facility, are used for a variety of purposes, from traffic signs to letterhead. Unlike other elements of a concept plan, graphics serve several different functions. These functions can be divided into two categories: Practical applications (such as directional and traffic signage) and Interpretive applications (such as a descriptive/informational panels at exhibits). In either category the purpose of the graphic is to communicate a message effectively. The manner in which the message is presented says a great deal about the zoo.

Accordingly, concurrent with the Master Plan process is the zoo's creation of a Graphics Development Plan which will provide current and future direction for the development of an effective graphics program. The successful application for a 1987 Federal Institute of Museum Services will enable the zoo to incorporate into the educational programs the graphics necessary to interest and educate visitors. These funds will be used in part to develop educational graphics which are suggested by the Master Plan and which will be utilized throughout the zoo to increase the public's awareness of their role in wildlife conservation. Development of the most effective graphics approach is substantially contingent on the elements of the Master Plan insofar as in most applications, graphics will represent a significant manifestation of the theme and should serve to reinforce the theme visually (and potentially through other senses as well). Recognizing this connection between the graphics theme and the form they will take, the zoo has developed a set of standardized guidelines which will provide the framework for a consistent graphics program. These guidelines will be based on the following four major graphic elements:

### IMAGE

People visiting the zoo and its amenities will come away with a mental picture of their experience. The pride and positive self-image the zoo currently possesses are among its most outstanding features; yet this pride is not as evident to the zoo visitor as it could be. The manner in which the zoo and its amenities present themselves to the Sacramento region -- its image -- will figure significantly in the success of its future growth. This image will be particularly important with respect to any fundraising activities.

### CONSISTENCY

One of the major stumbling blocks to the formation of a clearly identifiable image is a disregard for creating a consistent graphics program. Zoo graphic guidelines should be adopted and passed on from one administration to the next. Without these guidelines, visual entropy takes over. The result is a potpourri of type-faces, sign sizes and material -- all of which only confuse the viewer and preclude any attempt to present a clean, positive, visual image of the park. This is very apparent in the present zoo.



## CONTENT

The most important aspect of the content of any graphic element is its accuracy. A sign should clearly point the visitor in the right direction. Interpretive species identifications should correctly identify the plant or animal. Content is one consideration in the Graphics Development Plan which can not be compromised. Given that visitors assume all signage to be accurate, the zoo has an obligation to assure their expectations of accuracy are met. While errors in directional signage are usually discovered, errors in content material often go unnoticed unless the reader has some prior knowledge of the subject. Presumably, the majority do not. If this is the case, then the inaccurate graphic does more harm than good for it is better to provide no information than to disseminate inaccurate material. Implementation of an accuracy checking system for graphics can take several forms. One of the most common is the creation of the Graphic's Committee, consisting of other knowledgeable individuals who can screen copy for everything from typographical errors to biologically unsound information.

## MATERIALS

Deciding what physical form graphics will take depends on their application and location. Exterior signs must be able to withstand the elements while interior signage can be less hardy in this respect. The selection of materials is also tied to the adopted style and should be integrated as part of the design process. Different materials create or enhance different moods as well. For example, the warmth of wood creates quite a different feeling than the hardness of finished metal. Tile, plastic, metal, wood and glass all have their own intrinsic qualities which are used by graphic designers to achieve a particular effect. Their appropriate selection can add significantly to the effectiveness of a graphic element. Additional graphics development considerations include, but are not limited to, selection of type-face, colors and sign shape.

In a sense, the zoo initiated the development of the graphics plan with the installation of the interpretive panels in the new chimpanzee exhibit. The effectiveness of, and public interest generated by, these panels will be analyzed carefully before proceeding with similar graphics. In addition, the following criteria will be utilized in further developing the graphics plan:

1. The design component should incorporate flexibility to allow for the turnover in designers using the plan.
2. The plan should be comprehensive in its treatment of major zoo components and thematic areas.
3. Materials developed should allow for ease of fabrication and be durable.
4. Materials developed should require a minimum amount of maintenance.
5. Materials developed should be "vandal proof."

6. The Graphics Development Plan should outline organization guidelines for graphics production and the development of graphics content material.
7. All exhibits should be labeled at all times even if a temporary sign (of high quality) must be used.

The uses of graphics material at the zoo are diverse. Everything from exhibit labels to donor recognition to restroom identification must be considered. The following is a list of graphic uses for Zoo-2002:

1. Directional
  - a. pedestrian
  - b. vehicular
  - c. spatial orientation
  - d. building and exhibit identification
2. Interpretive
  - a. species identification
  - b. panels
  - c. printed material (paper)
  - d. audiovisual materials
  - e. interactive materials
3. Administrative
  - a. printed materials (letterhead, etc.)
  - b. other media
  - c. promotional materials (flyers, brochures, etc.)
  - d. publications (bulletins, newsletters, etc.)
4. Affiliate and/or Directed Contributors
  - a. donor recognition
  - b. affiliated organizations
    - 1) Zoological Society materials
    - 2) volunteer/docent program materials
    - 3) other
  - c. special events
5. Temporary Signage

If the zoo accepts its responsibility of going beyond simply entertaining its visitors, then it must accept the challenge of producing clean, readable and educational graphics. The graphics must serve to stimulate the intellectual curiosity of visitors by combining fascinating living animals with an effective graphics system.

## VISITOR SERVICES

Disney calls them "guests," the private sector routinely refers to them as "customers," other cultural institutes call them "patrons," and public service providers have "clients" while most zoos refer to them as "visitors". Regardless of the terminology used, visitors are an essential part of Zoo-2002. The zoo must cater to the visitor if it is to grow, prosper and successfully achieve its stated goal of educating the public about wildlife conservation. Thus, visitor orientation is critical both from a public service obligation, and because a large portion of the zoo's operating income will come from zoo visitors. Accordingly, every aspect of the visitor's experience at the zoo will be improved through implementation of Zoo-2002.

### FOOD SERVICE

A large cafeteria-style food stand will be located near the front entrance of the zoo, replacing the existing and overwhelmingly inadequate main concession stand. The new stand will afford visitors both indoor and outdoor seating opportunities, and will accommodate an estimated 175 persons, the majority of whom will be seated outdoors. This visitor services eatery will overlook the "Lake Victoria" exhibit. In addition to the main stand, four small stands of approximately 400 square feet each will be located throughout the zoo grounds. Each of these small stands will have a theme. Such as "Miner's Shack" or "African Safari Tent," and will primarily be used during periods of peak visitation.

### GIFTS

The sale of zoo related gifts is an activity whose importance is twofold. First, this activity provides an additional source of revenue, thereby potentially decreasing the zoo's reliance on city tax support. A survey of zoos by a nationally recognized zoo consultant found that gift sales average 14 percent of a zoo's revenue. Secondly, gifts such as postcards, pennants and T-shirts are an effective means of promoting the zoo. Presently, the zoo's gift sales are limited to and by a small, temporary and extremely inadequate gift stand. This will be replaced by a large gift shop of approximately 2,500 to 4,000 square feet to be located near the zoo exit. This expanded service will not only enable the zoo to better achieve both its revenue generating and promotional goals, but will also allow a focus on educational gifts which is commensurate with the role of the zoo in wildlife education and conservation efforts. It is intended that this gift shop achieve a community-wide reputation as a place to acquire wildlife and animal related gifts.

### RESTROOMS

Four public restrooms containing a total of at least 36 stalls will double the restroom capacity of the present zoo with its 18 current restroom stalls. These restrooms, equally divided amongst men's and women's facilities, will all be handicapped accessible. The locations for the sets of

restrooms will be near the entrance, near the Nile hippos and near the elephant exhibit. An additional restroom will be located in the Australian Section.

#### PICNIC AREAS

Given the zoo's park-like setting and its orientation to family recreation, it is imperative that the zoo include ample area suitable for picnicing purposes. Accordingly, both family and group picnics will be accommodated within the zoo as well as outside in the park. The main picnic area within the zoo, and the facility's sole expanse of lawn, will be located on the north side of the zoo near the large oaks. In addition to serving as the zoo's primary picnic space servicing both families and groups, particularly the many school groups who annually visit the zoo, this area will also be utilized for educational programs and Zoological Society activities.

#### STROLLERS

In conjunction with food and gift concession services, is a rental service for strollers and wheelchairs. Wheelchairs and strollers will be available for rent near the front gate, a service that will in no way preclude use of private strollers and wheelchairs but rather will afford one more visitor convenience. An exit gate for private strollers and wheelchairs will be provided.

#### SECURITY

Presently night time security at the zoo is provided via a contractual arrangement with a private security firm. There currently exists no similar day time security services. This situation will be changed for daytime security personnel provide more than the traditional nighttime watchguard services. They also provide valuable services by assisting visitors in a variety of ways including locating lost children and handling visitor emergencies. Day time security guards will also be available at the front gate for cash security purposes, and will be utilized to enforce such regulations as the "do not feed" policy. The security office will be located near the zoo entrance.

#### INFORMATION SERVICES

In order to better orient the visitors and to enhance their zoo experience, there will be an informational kiosk located at the front gate. This kiosk will enable visitors to receive zoo maps immediately upon entrance to the zoo. Additionally, the kiosk will be an important source of educational and introductory information about the zoo, including recent newspaper articles, photographs of new animals and plans of proposed exhibits.

#### THE FRONT ENTRANCE

The zoo currently has but two front gates, a situation which is inadequate during peak visitation periods, thereby resulting in long lines for the public and potential crowd-caused chaos for the zoo. The plan includes four entrance gates with the actual number to be utilized at any given time contingent on the level of visitation. This flexibility, together with the

provision of ample gate keepers, will enable the zoo to better serve the public by keeping admission lines short. Further, one of the gates will be provided for informational purposes, and for entrance by Zoological Society members whose membership includes free admissions, and for holders of joint Zoo/Fairytale Town tickets which were purchased at Fairytale Town.

## CONSERVATION AND RESEARCH

Wildlife zoos are wildlife sanctuaries, and have taken on a new philosophy and role as conservation centers. If the zoo was limited to just one reason for its existence, that reason would be to slow down the rapid rate of disappearance of wild animals. Thus, the main goal of the zoo must be to have a positive effect on wildlife conservation.

One means by which to accomplish this goal is to serve as a breeding center for endangered species. Captive breeding programs can help in saving severely endangered species from extinction by creating stable, self-sustaining captive populations. If necessary, this captive population can be used to supplement a declining wild population. Recent zoological history contains several examples whereby the plight of an endangered species was positively affected by the conservation commitment and resultant breeding programs of modern zoos. In particular, the American Bison, the Arabian Oryx, the Nene Goose, the Golden-lion Marmoset and others have all benefited from captive breeding programs. So successful were the efforts to conserve and replenish these species through the captive breeding programs of zoos that zoo-born animals were ultimately used to repopulate the wild.

The Sacramento Zoo has an excellent record in the care of wild animals. The zoo's concentration on the breeding of endangered or threatened species within its collection has met with considerable success. Species bred at the zoo include the Grevy's Zebra, Thick-billed Parrot, Arabian Oryx, Golden-bellied Mangabey, Addra Gazelle and the Sumatran Orangutan. In fact, the zoo's propagation of the Golden-bellied Mangabey earned the Significant Achievement award from the American Association of Zoological Parks and Aquariums (A.A.Z.P.A.). Further, as one of the most successful breeders of captive Thick-billed Parrots worldwide, the Sacramento Zoo has been designated as the record keepers for the stud book on this species.

Zoological conservation efforts are further enhanced through the Species Survival Plan (SSP), a program of A.A.Z.P.A. The Species Survival Plan is a coordinated zoo breeding effort designed to meet the goals of establishing self-maintaining populations of endangered species. The plan concentrates on individual species determining which zoo will attempt to propagate which species and attempts to provide a sound basis for the allocation of zoo space among vanishing animals, and to minimize the problems of inbreeding. Of the approximately 140 accredited zoos in the United States, nearly all participate in SSP. The Sacramento Zoo participates in the following eleven national species survival plans: Bali Mynah, Ruffed Lemur, Gorilla, Orangutan, Siberian Tiger, Asian Lion, Cheetah, Grevy's Zebra, Asian Elephant, Madagascan Ground Boa and the Arabian Oryx. As the need arises and as Zoo-2002 is implemented, the zoo intends to increase its participation in organized conservation programs. These cooperative breeding efforts on behalf of zoos, constitute a small but vital part in the conservation of animals. To quote Michael H. Robinson, Director of the National Zoo in Washington, D.C.:

"The zoos of the world are working to save species in a way that transcends boundaries and rivalries. The Species Survival Plan of A.A.Z.P.A. are very inspiring examples of cooperation in altruism. These efforts cannot save species on the scale that will be needed if the forest destruction continues, but there are positive signs. We can save an occasional Rembrandt or Botticelli among the threatened animals; but it is physically impossible to save the majority of masterworks."

A commitment of conservation of species goes beyond the responsible care of captive wild animals for zoos are valuable extensions of the wilderness which serve an important role in the education of the public. Through the use of naturalistic exhibits, arranged thematically and zoogeographically, and accompanied by diverse interpretive materials, it is possible to integrate an element of education in zoo visitors' experiences. The magnitude of this possibility is evident in the fact that zoo attendance in the United States exceeds 100 million people a year, surpassing the combined attendance at all major league baseball and football games. As such, zoos have a tremendous potential for increasing public commitment towards wildlife conservation and saving endangered species.

To further this potential, a coordinated research program working in conjunction with the conservation efforts, is required. Quite simply, the more we understand about these animals we hope to save, the greater the chance for success. Furthermore, it is the obligation of wild animal care facilities to seek new and better approaches to management and health care, and strive to add to the existing pool of knowledge about these animals with the ultimate goal of long range species survival both in captivity and in the wild.

Recognizing this obligation, the Sacramento Zoo is committed to developing research programs along these lines. All research will be conducted under the direction of qualified individuals, will be absolutely pertinent to the management, care or reproduction of wild animals in captivity, and will under no circumstances be in any way contrary to the well-being of the individual animals involved. All research efforts will require the approval of zoo management to insure adherence to this mandate. Research will be approved only when it increases the knowledge of animal management and propagation.

The zoo is in essence a living laboratory, and as such, can provide insights into both animal behavior and humankind. Naturalistic exhibits provide a situation in which behavioral research can be carried out to allow better understanding of the same animals in the wild, which may be of great potential importance in managing and preserving these animals. Consequently, a major emphasis will be placed on behavioral studies.

Behavioral research helps establish behavioral norms for each species, improves the breeding possibilities of most species, which is particularly important for endangered species, and contributes to the advancement of scientific knowledge. The information gained from behavioral observation can lead to improvement in the exhibit of animals in captivity. Additionally, when such information is pooled with information researched in the

wild, it may be possible to obtain a complete picture of an animal species thereby enhancing conservation efforts.

Animal research at the Sacramento Zoo will not be limited to behavioral research but rather will take on many forms. For example, nutrition and veterinary studies will comprise an important component of the research program. The zoo's veterinary programs are operated in conjunction with the University of California Davis School of Veterinary Medicine. Insofar as U.C.D. has the only veterinary school in California, the Sacramento Zoo realizes benefits in terms of resources and research opportunities not available to any other zoo statewide. Davis is home to a world renowned veterinarian who is a recognized authority on exotic animal medicine and who serves in a consultant capacity to the zoo. This cooperative arrangement affords the zoo a wonderful opportunity to contribute valuable findings in exotic animal medicine.

There is a diverse group of people who study the animals at the zoo ranging from professional scientists and veterinarians in training to zoo staff and docents, to the animal enthusiast visitor and local students. The zoo will encourage the full spectrum of inquiry from professional research to curious observation. People are more apt to protect that which they understand, appreciate and respect.

Zoos cannot have a more important goal than saving endangered species. As the late William Beebe, Curator of Birds for the Bronx Zoo, so aptly said:

"The beauty and the genius of a work of art may be reconceived, though its first material expression be destroyed; a vanished harmony may yet again inspire the composer; but when the last individual of a race of living things breathes no more, another heaven and another earth must pass before such a one can be again."



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# **C**ost Analysis & Implementation

## ATTENDANCE PROJECTION

The Sacramento Zoo has evidenced dramatic increases in visitation in the last few years. From a low figure of 295,000 visitors in the 1981/82 fiscal year, attendance rose to 581,000 in fiscal year 1986/87; a full 97% increase in attendance (see Attendance History). Contributing factors include the general resurgence in the popularity of zoos which is occurring nationwide together with the fact that several new exhibits were added in the last five years. In addition, this achievement is reflective of the power of good promotions and good special event programming combined with renewed energy on the part of the Zoological Society and City, creating a pride and enthusiasm that translates into broader community curiosity and interest.

What can be expected in the way of zoo attendance in the years ahead? In the immediate future, there is apt to be a leveling off in attendance due to the fact that of the 97% attendance increase, nearly a full 20% increase occurred during the last year and can be directly attributed to the Sacramento Zoo's 60th birthday celebration which was held in March 1987. Absent such a major special event in the near future, it is predicted that attendance will decrease slightly in fiscal year 1987/88 and thereafter will resume its annual increase. The metropolitan Sacramento area has grown substantially in the last decade, and projections for growth in the Sacramento region in the years ahead are among the highest in the nation. The National Planning Data Corporation's annually updated demographic forecast for the Sacramento area predicts that the area's population which has increased by nearly 20% since 1980, will increase by another 11.5% in the next five years. The City of Sacramento's own planning department forecasts a comparable rate of growth for the city itself projecting a 32% increase in the 1985 base population by the year 2000. It is predicted that the majority of this growth will be comprised of young, well educated families due to the combination of births and an influx resulting from the area's rapid economic development and increased employment opportunities.

What does all this mean for Land Park and the zoo? As discussed previously in this Master Plan, the Sacramento Zoo is truly a regional attraction, and its major market segment is primarily young and family oriented. There is no reason to suspect that the demographic profile of new population growth in the region is any less interested in zoos and wildlife conservation than the current population. In fact, the primarily family-oriented makeup of new growth would suggest that interest in the zoo will increase ever further in the years ahead.

A recent community survey conducted by a consultant in conjunction with this plan showed that approximately 40% of the area's adult population made no visits to the zoo in the two year period prior to the survey. Given that visits to the zoo are in large part child oriented together with the projection that the area's population will be increasingly comprised of young families, it is reasonable to assume that the percentage of the population which does not visit the zoo will decline in the coming years. Thus, regardless of whether or not any exhibit improvements occur at the zoo, it

appears that substantial attendance growth will occur. The combination of a growing population together with the projected decrease in that segment of the population which are non zoo goers suggests that attendance may reasonably be expected to increase by as much as 23 to 27% by the year 1995. Thus, the fiscal year 1985/86 attendance of 491,000 may be expected to increase to approximately 600,000 to 625,000 visitors by the year 1995/96 simply as a function of the region's population dynamics. In addition, the proposed exhibit improvements at the Sacramento Zoo can be expected to impact zoo attendance in the years ahead. Even though only modest expansion of the zoo is proposed, the type of quality new exhibitry envisioned for the zoo can be expected to generate new interest and excitement. The experience of similarly sized zoological facilities who recently completed major exhibit upgrading suggests that the necessary promotion and marketing which must accompany any development effort, and the resultant interest, pride and enthusiasm generated in the community traditionally generates attendance increases in the 10 to 20% range in the first few years following substantial completion of renovation and development.

Thus, assuming the successful completion of Phase I exhibit development of Zoo-2002 by 1991 coupled with the marketing, promotions and fundraising efforts which accompany such a new development, an additional 15% increase in attendance could reasonably be expected by 1995 as a result of new exhibit improvement. This, together with the projected attendance increase resulting from the area's growth means that a new attendance of 718,000 can reasonably be expected for the 1995/96 fiscal year. If the same trend continues into the twenty-first century, then the zoo could attract up to 800,000 visitors by the completion of Sacramento Zoo-2002.

## EXHIBIT COSTS AND PHASING

The estimated cost of Zoo-2002 is approximately \$32.5 million. The following charts provide a cost breakdown, in 1986 dollars, by individual exhibits as well as by themed areas which encompass several exhibits plus amenities. Where applicable, square footage (s.f.) costs are given. In each case, Maximum Allowable Construction Costs (MACC) are given as well as design and inspection costs. The latter includes architectural fees, city inspection and supervisor fees, tests and inspection, and a 10 percent contingency.

The estimated phasing of Zoo-2002 is also detailed in the following pages. Ideally, the zoo would be completed in sixteen years or in four four-year phases. Realistically, both the estimated costs and proposed phasing are but projections. As more details are developed and engineering studies completed, costs may change. Furthermore, animal acquisition is not always predictable as some desired animals may be unavailable. New animals will undoubtedly be added to the endangered species list and then desperately need a captive breeding and research program. This plan is a flexible plan and some changes will undoubtedly occur during its 16 years. However, the basic themes that have been developed during the planning process and the general location of individual exhibits will remain constant. In such a small zoo, any major change would create a "domino effect" and have an undesirable effect on the entire zoo.

Assigning priorities to exhibit construction is as difficult as developing a site plan because many conflicting factors are involved. First, the condition of the existing exhibits must be considered. Older, outdated and inadequate exhibits must be replaced first. As an example, the giraffe barn is a dilapidated structure and the elephant barn is the oldest facility in the zoo and is hopelessly small for the two elephants. These factors make these two exhibits prime candidates for Phase I construction. A second factor that must be considered is proposed location. For example, the proposed new elephant exhibit is in the location of the current hippopotamus, wallaroo and small bird exhibits. In order to build the new elephant exhibit, the birds and hippopotamus will be moved and the wallaroos will be deleted temporarily from the zoo's collection. Therefore, Phase I of the Master Plan includes the first phase of the Nile River area with new exhibits for Hippopotamus, Nile Crocodiles, Spot-necked Otters and Goliath Herons. An advantage of completing the Nile River facility in Phase I is that it improves the present zoo by placing a major set of exhibits in an area that currently has little visitor activity (near the present macaw cages) and improves visitor circulation during peak visitor days. Phase I also includes a large off-exhibit Avian Propagation Center that will allow the zoo to continue its important work in bird conservation while new exhibits are being constructed.

The Sacramento Zoo must increase its revenue and self-sufficiency level if it is to successfully complete the construction of Zoo-2002. Therefore, activities which produce needed income will have a high priority. For this reason, the gift shop will be one of the first improvements. Profits from

this shop will be used to finance construction of new exhibits. Office space in this building will provide for the Zoological Society's membership office to help serve the zoo's growing membership. Membership is another major source of funding, both for operation and construction.

As a result of carefully considering such development priorities, the phasing of the plan is proposed as follows:

PHASE I: 1987-1990

Gift Shop	Elephant Exhibit
Ticketing Entry	Giraffe Exhibit
Outdoor Reptile Exhibit	Jaguar Exhibit
Picnic Area	Margay Exhibit
Hippopotamus Exhibit	Geoffrey's Cat Exhibit
Crocodile Exhibit	Avian Propagation Center
Spot-necked Otter Exhibit	Outdoor Interpretive Center
Goliath Heron Exhibit	

PHASE II: 1991-1994

- Visitor Services Building
- Lake Victoria Cafe and Exhibit
- Nile River Flight Cage
- Clouded Leopard Exhibit
- Snow Leopard Exhibit
- Puma Exhibit
- Golden-bellied Mangabey Exhibit
- Education/Administration Complex
- Remodeling of Existing Staff Building
- Land Park Drive Bridge
- Entry Plaza

PHASE III: 1995-1998

Sacramento River Complex including:

- Grizzly Bear Exhibit
- Beaver Exhibit
- Otter Exhibit
- Native Fish Exhibit
- Waterfowl Exhibit
- Bald Eagle Exhibit
- African Savannah Flight Cage
- Serval Exhibit
- Caracal Exhibit
- African Leopard Exhibit
- Rare Parrot Aviary
- Health Center
- Restrooms
- Food Service Satellites

PHASE IV: 1999-2002

Waterbuck Exhibit  
 Sitatunga Exhibit  
 Saddle-billed Stork Exhibit  
 "Rivers" Interpretive Center  
 Zebra and Gazelle Exhibit Upgrading  
 Spider Monkey Exhibit  
 Gibbon Exhibit  
 Ring-tailed Lemur Exhibit  
 Directional Signs

AUSTRALIAN SECTION: 2003 on

Entire Area

EXHIBIT DEVELOPMENT PLAN COMPONENTS - SUMMARY

	<u>M.A.C.C.</u>	<u>DESIGN AND INSPECTION</u>	<u>TOTAL COSTS</u>
A. Entry Complex	\$ 1,427,000	\$ 428,500	\$ 1,855,500
B. Lake Victoria	\$ 600,000	\$ 180,000	\$ 780,000
C. Picnic Area	\$ 170,000	\$ 51,000	\$ 221,000
D. Nile River Complex	\$ 3,685,000	\$1,105,500	\$ 4,790,500
E. "Rivers" Interpretive Center	\$ 714,000	\$ 214,000	\$ 928,000
F. Sacramento Valley	\$ 1,940,000	\$ 582,000	\$ 2,522,000
G. African Complex	\$ 3,996,000	\$1,199,000	\$ 5,195,000
H. Cat Complex	\$ 2,490,000	\$ 747,000	\$ 3,237,000
I. Primate Complex	\$ 2,797,500	\$ 839,500	\$ 3,637,000
J. Health Care/Service Yard	\$ 1,697,000	\$ 309,500	\$ 2,206,500
K. Education/Administration	\$ 687,500	\$ 206,250	\$ 839,750
L. General Site Improvement	\$ 1,497,500	\$ 394,500	\$ 1,874,000
M. Australia	\$ 3,500,000	\$1,050,000	\$ 4,550,000
PROJECT TOTALS: (in 1986 dollars)	<u>\$25,183,500</u>	<u>\$7,506,750</u>	<u>\$32,690,250</u>

	<u>M.A.C.C.</u>	<u>TOTAL ANTICIPATED PROJECT COSTS</u>
Total Phase I	\$ 6,141,166	\$ 7,966,000
Total Phase II	\$ 5,040,167	\$ 6,536,750
Total Phase III	\$ 4,635,667	\$ 6,011,000
Total Phase IV	<u>\$ 5,866,500</u>	<u>\$ 7,626,500</u>
TOTAL PROJECT (Scenario 3)	\$21,683,500	\$28,140,250
Australia Phase	<u>\$ 3,500,000</u>	<u>\$ 4,550,000</u>
TOTAL PROJECT (Scenario 4)	<u>\$25,183,306</u>	<u>\$32,640,250</u>

# EXHIBIT DEVELOPMENT PLAN COMPONENTS - SUMMARY

	<u>S.F. COSTS</u>	<u>M.A.C.C.</u>	<u>TOTAL ANTICIPATED PROJECT COSTS</u>	<u>PHASE</u>			
				<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
<b>A. <u>Entry Complex</u></b>							
- Gift Shop/ticketing includes all fixtures, equipment and furnishings. (does <u>not</u> include inventory)	\$ 75.00	\$ 204,000	\$ 265,000	*	-	-	-
- Visitor Services Rentals/ First Aid/Restroom (includes trellis)	L.S.	\$ 186,000	\$ 242,000	-	*	-	-
- Lake Victoria Cafe Food service with 75 person indoor seating.	L.S.	\$ 265,000	\$ 345,000	-	*	-	-
- Plaza outdoor covered and open seating (100 person)	\$ 20.00	\$ 640,000	\$ 832,000	-	*	-	-
- Tortoise and Turtle	\$ 20.00	\$ 87,000	\$ 113,000	*	-	-	-
- Classroom	\$ 50.00	\$ 45,000	\$ 58,500	-	*	-	-
<b><u>SECTION TOTAL:</u></b>		<u>\$1,427,000</u>	<u>\$1,855,500</u>				
<b>B. <u>Lake Victoria</u></b>							
- Pond, retaining walls, plant materials, water system. (flamingo, stork, ducks, geese)	\$ 30.00	\$ 600,000	\$ 780,000	-	*	-	-
<b><u>SECTION TOTAL:</u></b>		<u>\$ 600,000</u>	<u>\$ 780,000</u>				
<b>C. <u>Picnic Area With Shelter</u></b>							
- Shelter - wood frame with utilities	\$ 35.00	\$ 84,000	\$ 109,000	*	-	-	-
- Paths/walks/landscaping	L.S.	\$ 86,000	\$ 112,000	*	-	-	-
<b><u>SECTION TOTAL:</u></b>		<u>\$ 170,000</u>	<u>\$ 221,000</u>				
<b>D. <u>Nile River Complex</u></b>							
- African Flight Cage with holding, paths, landscape, graphics and water system. (no concession)	\$ 50.00	\$ 335,000	\$ 461,500	-	*	-	-

	S.F. COSTS	M.A.C.C.	TOTAL ANTICIPATED PROJECT COSTS	PHASE			
				1	2	3	4
- Hippo/Crocodile Complex with underwater viewing, holding, lanscaping, interpretation. (includes heron and otter)	\$ 57.00	\$1,600,000	\$2,080,000	*	-	-	-
- Filtration Plant	L.S.	\$ 350,000	\$ 455,000	*	-	-	-
- Waterbuck/Sitatunga/Stork/ Duiker/Guenon/Eagle Complex	\$ 30.00	\$1,380,000	\$1,794,000	-	-	-	*
<u>SECTION TOTAL:</u>		<u>\$3,685,000</u>	<u>\$4,790,500</u>				
4. <u>"Rivers" Interpretive Center</u> - including all mechanical/water systems, interpretive graphics.	\$170.00	\$ 714,000	\$ 928,000	-	-	-	*
<u>SECTION TOTAL:</u>		<u>\$ 714,000</u>	<u>\$ 928,000</u>				
5. <u>Sacramento Valley Complex</u> - Grizzly Bear with underwater viewing and aquarium components with closed system.	\$ 65.00	\$1,040,000	\$1,352,000	-	-	*	-
- Eagle Exhibits	\$ 75.00	\$ 67,500	\$ 87,750	-	-	*	-
- Waterfowl/Beaver Exhibit	\$ 45.00	\$ 382,500	\$ 497,250	-	-	*	-
- Otter/Muskrat Exhibit	\$ 30.00	\$ 450,000	\$ 585,000	-	-	*	-
<u>SECTION TOTAL:</u>		<u>\$1,940,000</u>	<u>\$2,522,000</u>				
6. <u>African Complex</u> - African Elephant including hyrax, muskrat interpretive graphics and interpretive center (restrooms not included)	\$ 60.00	\$1,800,000	\$2,340,000	*	-	-	-
- African Flight Cage	\$ 30.00	\$ 126,000	\$ 164,000	-	-	*	-
- Griaaffe Exhibit	\$ 35.00	\$ 700,000	\$ 910,000	*	-	-	-
- Zebra (existing) upgrade	\$ 30.00	\$ 660,000	\$ 858,000	-	-	-	*
- Addra Gazelle (existing) upgrade drainage/holding/ interpretive	\$ 25.00	\$ 500,000	\$ 650,000	-	-	-	*
- Savannah Plaza (concession not included)	\$ 25.00	\$ 210,000	\$ 273,000	-	-	*	-
<u>SECTION TOTAL:</u>		<u>\$3,996,000</u>	<u>\$5,195,000</u>				



	<u>S.F. COSTS</u>	<u>M.A.C.C.</u>	<u>TOTAL ANTICIPATED PROJECT COSTS</u>	<u>PHASE</u>		
				<u>1</u>	<u>2</u>	<u>3</u>
H. Cat Complex						
- African Leopard, Serval, Caracal and Bat-eared Fox.	\$ 35.00	\$ 750,000	\$ 975,000	*	*	*
- Mountain Lion, Clouded Leopard, Snow Leopard, Asian Lion, Siberian Tiger, Jaguar, Geoffrey's Cat, interpretive, holding/food preparation/ office. (assume 1/3 expenditure per phase)	\$ 65.00	\$1,740,000	\$2,262,000	*	*	*
<u>SECTION TOTAL:</u>		<u>\$2,490,000</u>	<u>\$3,237,000</u>			
I. Primate Complex						
- Orangutan Exhibit (existing)	\$ -0-	\$ -0-	\$ -0-			
- Chimpanzee Exhibit (existing)	\$ -0-	\$ -0-	\$ -0-			
- Golden-bellied Mangabey	\$ 55.00	\$ 550,000	\$ 715,000	-	*	-
- Mandrill	\$ 35.00	\$ 560,000	\$ 728,000	-	-	*
- Spider Monkey/White-handed Gibbon/Ring-tailed Lemur/Red- ruffed Lemur/Marmoset/Tree- shrew/ Saki Complex. (includes interpretive structure)	\$ 40.00	\$1,500,000	\$1,950,000	-	-	-
- Plaza (concession not included)	\$ 25.00	\$ 187,500	\$ 244,000	-	-	-
<u>SECTION TOTAL:</u>		<u>\$2,797,500</u>	<u>\$3,637,000</u>			
J. Health Care and Service Yard						
- Parrot Exhibit & "Rivers" Mall	\$ 29.00	\$ 260,000	\$ 338,000	-	-	*
- Health care/nursery including L.S. holding and isolation paddock.		\$ 782,000	\$1,017,000	-	-	*
- Food preparation/staff quarters (remodel)	L.S.	\$ 215,000	\$ 279,500	-	*	-
- Avian Propagation Center	L.S.	\$ 215,000	\$ 279,500	*	-	-
- Greenhouse/service barns and yard improvements.	L.S.	\$ 225,000	\$ 292,500	-	-	-
<u>SECTION TOTAL:</u>		<u>\$1,697,000</u>	<u>\$2,206,500</u>			

	S.F. COSTS	M.A.C.C.	TOTAL ANTICIPATED PROJECT COSTS	PHASE			
				1	2	3	4
K. Education/Administration	\$ 55.00	\$ 687,500	\$ 893,750	-	*	-	-
<u>SECTION TOTAL:</u>		<u>\$ 687,500</u>	<u>\$ 893,750</u>				
L. General Site Improvements							
- Bridge and Entry Plaza (does not include road, utilities and excavation)	L.S.	\$ 500,000	\$ 650,000	-	*	-	-
- Satellite restroom facilities (2 sets)	\$ 80.00	\$ 96,000	\$ 125,000	-	-	*	-
- Satellite food concessions 3 stations each with equipment and fixtures.	L.S.	\$ 225,000	\$ 293,000	-	-	*	-
- Non-exhibit signage	L.S.	\$ 140,000	\$ 182,000	-	-	-	*
- Perimeter fencing (allow)	L.S.	\$ 18,500	\$ 24,000	*	-	-	-
- Improve utilities		\$ 500,000	\$ 600,000	*	*	*	-
<u>SECTION TOTAL:</u>		<u>\$ 1,479,500</u>	<u>\$ 1,874,000</u>				
<u>TOTAL PROJECT (Scenario Three):</u>		<u>\$21,683,500</u>	<u>\$28,140,250</u>				
M. Australian Section							
- Tunnel and fencing	L.S.	\$ 350,000	\$ 455,000	-	-	-	*
- Wallaroo, Wallaby and Tree Kangaroo	\$ 30.00	\$ 1,100,000	\$ 1,430,000	-	-	-	*
- Nocturnal Building	\$200.00	\$ 600,000	\$ 780,000	-	-	-	*
- Aviaries		\$ 300,000	\$ 390,000	-	-	-	*
- Waterfowl, restroom and concessions	L.S.	\$ 350,000	\$ 455,000	-	-	-	*
- Koala Exhibit	\$150.00	\$ 250,000	\$ 325,000	-	-	-	*
- "Outback Farm"	\$ 10.00	\$ 400,000	\$ 520,000	-	-	-	*
- Crocodile	\$ 30.00	\$ 150,000	\$ 195,000	-	-	-	*
<u>SECTION TOTAL:</u>		<u>\$ 3,500,000</u>	<u>\$ 4,550,000</u>				
<u>TOTAL PROJECT (Scenario Four):</u>		<u>\$25,183,500</u>	<u>\$32,690,250</u>				

## STAFFING

As of fiscal year 1986/87, the Sacramento Zoo employs 47.5 F.T.E.'s (full-time equivalents). This total does not include the 11 employees at the Fairytale Town facility which is under the administrative auspices of the zoo director. Of the zoo's 47.5 F.T.E. staff persons, 18.5 F.T.E.s are on the Joint Concessions Board's payroll and an additional 3.0 positions are funded by the Zoological Society. This leaves a total of 26 F.T.E.s which are actual city employees. Contract employees including providers of veterinary services, janitorial services, night security, and instructors for some educational classes are not included in this figure.

It is projected that Zoo-2002 will require an additional 46.5 F.T.E.s. Increases in staffing levels will primarily occur in the areas of animal care, research and revenue generation. Funding for these additional positions will be distributed amongst the city, the Zoological Society and the Joint Concessions Board as follows:

	<u>Current</u>	<u>Increase</u>	<u>Zoo-2002</u>
City Payroll	26.0	24.5	50.5
Concessions	18.5	8.0	26.5
Society	3.0	14.0	17.0
	<u>47.5</u>	<u>46.5</u>	<u>94.0</u>

### VISITOR SERVICES

With the addition of the more suitable and sizable gift shop and the expanded food concession services and stands, the visitor services staffing level will, out of necessity, increase. Insofar as the gift shop will be partially staffed by volunteers, thereby keeping the need for additional paid employees to a minimum, it is estimated that the staffing increase in this area will be limited to eight additional F.T.E.s.

### ANIMAL SERVICES

Perhaps the greatest staffing increase of all will be in this area of zoo operations insofar as Zoo-2002 is characterized by the existence of many small animal exhibits and aquariums which are labor intensive. Maintenance of aquariums, on-going exhibit development and decoration, and caring for both the inhabitants and their environments will be primary concerns of zoo attendants. Small increases in the animal collection, especially in relation to the Australia area will require additional zoo attendants. If the zoo is to care for its animal collection in accordance with current scientific theory and standards, then the addition of certain technical staff such as a herpetologist and an ornithologist are crucial. In addition, given both the size and diversity of the animal collection, the reliance on voluntary veterinary services, as is the current practice, will no longer be possible. Instead, in order to insure on-going, ever available veterinary care, the

zoo will need to have its own veterinary staff in addition to working with the UC Davis Veterinary School. Finally, the zoo participates in the International Species Inventory System. Continued quality participation in this valuable informational network will require a registrar to maintain the computerized records in a manner which is both accurate and up to date.

#### PARK MAINTENANCE

Recent changes in park maintenance personnel and practices within the zoo have resulted in vast and highly visible improvements to the zoo grounds, a fact that is frequently reflected in visitor comments. In order to continue providing the quality maintenance which results in the outstanding appearance of the zoo grounds, particularly in the face of increased visitation, there will be a slight increase in park maintenance staff. In addition, new exhibits will have increased enclosed areas which will require maintenance. Finally, implementation of the Sacramento Zoo Master Plan will require the involvement of the Parks Maintenance Supervisor particularly during the planning stages, to insure that the correct plants are utilized in the new exhibits.

#### EDUCATION

A primary purpose of zoos is wildlife conservation education. A zoo enables educational experiences not afforded by the classroom environment. The Sacramento Zoo is cognizant of this unique opportunity and obligation. Accordingly, increased emphasis has been placed on developing and diversifying the zoo's education department. Presently the zoo hosts nearly 70,000 school children per year in addition to offering a wide variety of classes, workshops and demonstrations to children and adults alike. The majority of these educational activities have been implemented within the last three to four years, and it is anticipated that the zoo's educational programming will increase significantly. Accordingly, the education department staff will increase proportionate to the increased number and improved nature of both fee-classes and daily programs for zoo visitors. A graphics coordinator will be charged with the challenge of designing and implementing a complete education signage program. A volunteer coordinator will coordinate recruitment and training of docents, and educational program and keeper aides.

#### MARKETING AND DEVELOPMENT

The marketing feasibility study conducted by the consulting firm of Wildlife Associates, Inc. concluded that the zoo needs a development officer and in fact, this position should be the first priority for the next administrative post. Further, both this study and subsequent follow up inquiries indicated that there is extremely strong community and potential corporate support for the zoo as well as enormous potential for Zoological Society membership support. Accordingly, it is imperative the zoo establish a coordinated and concentrated marketing and development effort if the revenue goals are to be met. These revenue goals are crucial to the future of the zoo's operations and planned improvements. Visitation, membership and fundraising are all dependent on the promotion of the zoo and its activities. Consequently, 7.5 F.T.E marketing and development positions will be added, nearly all of which will be funded by the Zoological Society.

## RESEARCH AND CONSERVATION

A small research and conservation unit is proposed for Zoo-2002 to coordinate the large number of research programs at the zoo. The zoo is used extensively by wildlife researchers and their students. The coordination of these projects will insure that the results are published and disseminated to zoo professionals and other interested individuals and institutions for the benefit not just of the Sacramento Zoo, but the zoo profession as a whole.

## ZOO STAFFING

### Fiscal Year 1986/87

#### Administration

1.0 Zoo Director  
1.0 Administrative Assistant  
1.0 Clerk Typist  
2.0 Cashiers  
5.0

#### Concessions

1.0 Visitor Services Manager\*  
1.0 Asst. Visitor Services Manager\*  
0.5 Gift Shop Manager\*  
16.0 Concessions Workers\*  
18.5

#### Animal Services

1.0 General Curator  
1.0 Zoo Supervisor  
1.0 Zoo Attendant II  
12.0 Zoo Attendants  
15.0

#### Park Maintenance

1.0 Park Supervisor  
3.0 Park Maintenance Workers  
1.5 Public Service Aides  
5.5

### Future Zoo-2002

#### Administration

1.0 Zoo Director  
1.0 Administrative Service Officer  
2.0 Clerk Typist  
4.0

#### Visitor Services

1.0 Visitor Services Manager\*  
1.0 Food and Beverage Manager\*  
.5 Seasonal Food and Beverage Manager\*  
1.0 Senior Cashier  
3.5 Cashiers  
1.0 Bookkeeper\*  
1.0 Gift Shop Manager\*  
2.0 Gift Shop Employees\*  
1.0 Clerk Typist\*  
20.0 Concessions Employees\*  
31.0

#### Animal Services

1.0 General Curator  
1.0 Veterinarian  
1.0 Veterinarian Assistant  
1.0 Registrar  
1.0 Clerk Typist  
1.0 Herpetologist/Aquarist  
1.0 Ornithologist  
1.0 Zoo Supervisor  
1.0 Zoo Attendant II  
21.0 Zoo Attendants  
31.0

#### Park Maintenance

1.0 Park Supervisor  
1.0 Park Maintenance Worker II  
5.0 Park Maintenance Workers  
1.5 Utility Workers  
1.5 Public Service Aides  
10.0

## Education

1.0 Education Director\*  
.5 Public Services Aides  
1.5

## Zoological Society Operation

1.0 Administrative Manager\*  
1.0 Program Assistant\*  
2.0

## Education

1.0 Education Director\*  
1.0 Education Assistant\*  
1.0 Graphic Designer\*  
2.0 Instructors\*  
1.0 Clerk Typist\*  
1.0 Volunteer Coordinator\*  
7.0

## Marketing and Development

1.0 Director of Marketing & Development\*  
1.0 Fundraising Manager\*  
1.0 Public Relations Manager\*  
1.0 Membership Director\*  
1.0 Events Coordinator\*  
0.5 Director of Group Sales\*  
1.0 Public Service Aides  
0.5 Adopt-An-Animal Coordinator\*  
0.5 Editor\*  
2.0 Clerk Typist\*  
9.5

## Research and Conservation

1.0 Director of Research\*  
0.5 Clerk Typist\*  
1.5

\* These positions will be funded by the Zoological Society or the Joint Concessions Board.

## OPERATIONAL FUNDING

Funding for the Sacramento Zoo is derived from three separate funding sources, two of which originate from the Sacramento Zoological Society and the third of which is under the auspices of the City of Sacramento.

The City annually allocates general fund monies to the zoo through the Department of Parks and Community Services as part of the budget process. These city funds provide base funding for maintenance and operations including such functions as animal care, administration, maintenance and cashiering. The Zoological Society provides program support including all costs associated with membership, fundraising, education, research and conservation. Finally, the Zoological Society together with the Fairytale Town Board formed the Joint Concessions Board for the purpose of operating the concessions at the zoo and Fairytale Town. Records for, and proceeds from, the two facilities are kept separately, and the Zoological Society is responsible for all revenue received from the zoo concession with profits being reinvested in zoo operations and improvements. The Zoological Society uses a separate accounting system for its concession operation in order to keep these funds separate from other Zoological Society funds.

This arrangement whereby the non-profit support organization provides support for the municipal zoo which in turn receives its operational funding from the city has proved extremely successful to the point of serving as a model for other cultural facilities in the city. Consequently, it is proposed that this partnership in management be continued at the Sacramento Zoo in substantially the same format. One minor change is to place the gate cashiers, who currently report to the zoo's administrative assistant, under the direct supervision of the visitor services manager. This change will result in the centralization of all cash operations under the immediate supervision of one person.

Operational funding for Zoo-2002 is projected in the accompanying chart. Consistent with the rest of the Master Plan, the following assumptions are made:

1. Zoo attendance, currently in excess of one-half million per year, will reach 800,000 annually.
2. The Sacramento Zoological Society with its present membership in excess of 5,000 persons will have 15,000 members.
3. Admission to the zoo will be increased to \$4.00 per adult and \$1.50 per child. Present admission fees are \$2.50 per adult and \$1.00 per child.
4. Food and gifts per capita spending will average \$1.30 for food and beverages and \$.75 for gifts. This estimate is consistent with the per capita spending levels at similar-size zoos possessing quality food and gift concessions. Since assuming responsibility for



concession operations over three years ago, the Joint Concessions Board has nearly doubled the per capita food spending at the zoo (currently \$1.02) and has added gifts which currently have a per capita spending level of \$.20. Given the quality of concession services, it is reasonable to expect this trend will continue.

5. Rent to the city from the zoo concessions will be deposited in a special account to be reinvested into the zoo. This practice, whereby concession rent is reinvested in the area from which the revenue was derived, is consistent with the majority of the Department of Parks and Community Services concession operations including all the concessions in William Land Park (Fairytale Town concession, amusement and pony ride concessions, and Bing Maloney Golf Course Restaurant concession). Currently, revenue from the zoo concession is deposited in the city's general fund.

The Department of Parks and Community Services, with its seven operating divisions including the Sacramento Zoo, was directed by the City Council to strive towards increased financial self-sufficiency. Consistent with this goal, Zoo-2002 will be an estimated 75% self-sufficient. This is relatively high compared to the self-sufficiency level of other United States municipal zoos. At this projected level of self-sufficiency, funding in the amount of \$600,000 will be required from the city's general fund (over and above gate receipts). The projected financial statement of the Zoological Society for Zoo-2002 indicates a net income of \$404,500 and the concession operations project a \$276,480 net income. These two figures combined with the estimated \$380,000 in rent revenue from the zoo concessions would allow for \$1,060,980 annually in zoo improvements by fiscal year 2001/2002. The same calculations for fiscal year 1986/87, yield about \$325,000 in annual improvements. Accordingly, as the operations improve and expand over the next 16 years, the amount of funds annually available for zoo improvements will range from a low of \$310,000 towards a high of \$1,060,980 million. Given the consistent revenue growth anticipated, funding available for improvements will average \$685,490 a year with the exact amount being less than average during the first eight years and in excess of the \$685,490 average figure for the last eight years. Using these projections, a total of slightly under \$11 million will be available from zoo operational accounts for capital improvements during the span of this Master Plan.

**OPERATIONAL FUNDING**  
Financial Summary - FY 1985/86 vs Zoo-2002

	<u>Actual 1986/87</u>	<u>Projected 2001/2002</u>
1. City of Sacramento		
Revenue		
Gate	\$ 758,500	\$1,575,000
Concessions Contract	\$ 131,000	\$ -0-
TOTAL REVENUE	<u>\$ 889,500</u>	<u>\$1,575,000</u>
Expenses		
Employee Services	\$ 820,000	\$1,500,000
Services and Supply	\$ 260,000	\$ 600,000
TOTAL EXPENSES	<u>\$1,080,000</u>	<u>\$2,100,000</u>
Self-sufficiency	82%	75%
General Fund Support	\$ 190,500	\$ 600,000
2. Sacramento Zoological Society		
Revenue		
Membership	\$ 142,000	\$ 444,500
Donations	\$ 17,000	\$ 250,000
Grants	\$ -0-	\$ 200,000
Programs and Activities	\$ 158,000	\$ 250,000
Other	\$ 74,000	\$ 150,000
TOTAL REVENUE	<u>\$ 391,000</u>	<u>\$1,294,500</u>
Expenses		
Research and Conservation	\$ -0-	\$ 50,000
Education	\$ 70,000	\$ 250,000
Membership Activities	\$ 86,100	\$ 240,000
Bulletin	\$ 16,000	\$ 50,000
Administration	\$ 105,000	\$ 300,000
TOTAL EXPENSES	<u>\$ 277,000</u>	<u>\$ 890,000</u>
Net Income (for zoo improvements)	\$ 114,000	\$ 404,500
3. Sacramento Zoo Concessions		
Revenue		
Zoo Concessions	\$ 594,000	\$1,800,000
Fairytale Town	\$ 107,000	\$ 360,000
TOTAL REVENUE	<u>\$ 701,000</u>	<u>\$2,160,000</u>
Expenses		
Cost of Sales	\$ 210,000	\$ 648,000
Employees	\$ 143,000	\$ 475,200
City Rent	\$ 158,000	\$ 475,200*
Other	\$ 47,000	\$ 216,000
TOTAL EXPENSES	<u>\$ 558,000</u>	<u>\$1,814,400</u>
Net Income	\$ 143,100	\$ 345,600
Transferred to Zoo	\$ 65,000	\$ 276,480

\* \$380,000 of which is zoo's rent to be deposited in a special zoo account.

## CAPITAL IMPROVEMENT FUNDING

The viability of Zoo-2002 is largely contingent on financing. As shown in the Exhibit Costs and Phasing section, the entire plan of zoo improvements will just exceed \$32.5 million. Over a sixteen-year period, the cost averages out to approximately \$2 million per year. For the last ten years, the zoo has secured funding for an average of \$200,000 per year in improvements. Consequently, it is no exaggeration to state that financing Zoo-2002 will be a monumental task.

Possible sources of capital improvement funds include:

1. City General Funds: Traditionally one of the most frequently used methods of funding capital improvements has been by an appropriation from the City's General Fund. The General Fund is the city's principal operating account and is primarily supported by taxes, fees and permits which have no restrictions on their use. Accordingly, the growth of the General Fund is heavily tied to the local economy and its rate of growth.
2. Zoological Society: In addition to providing program support, the zoo's non-profit support organization raises funds for zoo improvements. As the Zoological Society grows in both membership and sophistication in the areas of marketing and revenue development, their level of support for the zoo continues to increase.
3. Zoo Concession Rent: The Department of Parks and Community Services contracts various concession services at a number of its facilities including the zoo. The concessionaires all pay rent in the form of a percentage of gross receipts in exchange for the privilege of operating on city land. Of the thirteen concession agreements administered by the department, rent from eleven contracts is deposited into special accounts where it is reinvested in the facilities where the concessions are located (e.g., Fairytale Town and the golf course). Under this arrangement, rent from the zoo concessions would be reinvested in the zoo. Instead the zoo is one of two concession sites where rent revenue is not reinvested in the site.
4. Sacramento County: The county has given the zoo civic award grants in the past ranging from \$20,000 to \$100,000. This type of funds, as well as additional county funding, may be available in the future insofar as county residents comprise a large segment of zoo visitors.
5. California State Park and Recreation Grants (and other State Grants): The State of California, through Park and Recreation Bond Acts, Federal Grant-In-Aid Funds and other funding sources, has grant funds available for improvements to, and restoration of, park and recreational facilities. Funds from environmental license

plate fees are also awarded and may be available for certain projects involving native endangered species.

6. Local Bond Issue: Local bond issues specifically for zoos have been very successful throughout the United States despite the fact that other bond issues have routinely failed. The City of New Orleans recently passed a \$40 million bond issue for an aquarium shortly after bond issues for increasing police and fire protection and schools were defeated. El Paso, Detroit and Seattle have all recently passed bond issues to improve their zoos. Public surveys (see Community Survey and Market Analysis) taken in the Sacramento community reveal the majority of the respondents expressed support for a bond issue specifically for the zoo. This support was indicated despite the fact that there has been no clarification of, or prior campaigning for, such a bond.
7. Private Sector Funding: Sacramento economy is growing and at the same time changing from one dependent on government to one supported by a diverse range of business and industry. Traditionally considered a "government town" with a large number of state and military employees, the Sacramento area is currently a thriving regional center of business, high technology industry, transportation and distribution. Presently, Sacramento ranks eighth among the fastest growing metro markets in the United States and sixth nationally in terms of economic growth with the retail and service sectors seen as the driving force behind the growth as more service operations move into the area. To date, efforts to secure private sector funding for public facilities have been minimal, however this source of financing must be utilized more effectively to improve the zoo.

Several options are available to finance Zoo-2002. Once the plan is accepted by the City Council, a final funding plan can be developed. Below are three possible funding plans:

1. Major Local Bond Issue Funding

a. Zoological Society	\$ 4,250,000.00
b. Zoo concessions rent	\$ 4,250,000.00
c. Concession profit	<u>\$ 2,500,000.00</u>
SUBTOTAL	\$11,000,000.00
d. Local bond issues	<u>\$21,500,000.00</u>
TOTAL	<u>\$32,500,000.00</u>

2. Funding Divided Between City, County, State and Corporate Donations

a. Zoological Society	\$ 4,250,000.00
b. Zoo concessions rent	\$ 4,250,000.00
c. Concession profit.	<u>\$ 2,500,000.00</u>
SUBTOTAL	\$11,000,000.00

d. City General Fund	\$ 6,500,000.00
e. County Funds	\$ 6,000,000.00
f. State Grants	\$ 3,000,000.00
g. Large corporate donations	<u>\$ 6,000,000.00</u>

TOTAL	<u>\$32,500,000.00</u>
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3. Funding Divided Between City, County, State and Corporate Donations and a Local Bond Issue

a. Zoological Society	\$ 4,250,000.00
b. Zoo concession rent	\$ 4,250,000.00
c. Concessions profit	<u>\$ 2,500,000.00</u>

SUBTOTAL	\$11,000,000.00
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d. Local bond issue	\$11,000,000.00
e. City General Fund	\$ 3,000,000.00
f. County Funds	\$ 3,000,000.00
g. State Grants	\$ 2,000,000.00
h. Large corporate donations	<u>\$ 2,500,000.00</u>

TOTAL	<u>\$32,500,000.00</u>
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## PLAN SCENARIOS

The preparation of an Environmental Impact Report (EIR) is required after which the Master Plan will be finalized. The EIR, which will be prepared by a consultant with the Department of Parks and Community Services serving as the lead agency, will assess four conceptual site plans. Each site plan is a variation of the twenty-acre plan detailed in this text with the difference between the individual plans being the size zoo proposed. Accordingly, each site plan incorporates the same thematic concepts and design criteria with deletions or additions in individual exhibits and species determined by the variance in size.

The following is a brief description of the four separate scenarios:

1. No project. Under this plan there will be no renovations or new developments within the Master Plan study area. This plan would, in effect, place a moratorium on zoo improvements.
2. Renovation of the zoo within a fourteen acre area. This scenario would follow the plan detailed in the text but would not include the African Rivers Aviary, the tortoise exhibit, the picnic area and the Australian Section.
3. Expansion of the zoo boundaries north to Fifteenth Avenue (2+ acres) resulting in a sixteen-acre zoo. The design, concept, cost analysis and implementation sections of this Master Plan minus that which specifically pertains to the Australian Section, are based on this scenario. This plan enables the retention of the African Rivers Aviary, the tortoise exhibit and most significantly, the picnic area which will be the only open grassy area in Zoo-2002. It does not include the Australian Section.
4. Expansion of the zoo boundaries north to Fifteenth Avenue (2+ acres) and east across Land Park Drive to include four acres south of Fairytale Town. This plan would allow all the elements included in the Master Plan. The addition of an Australian themed area in the additional four acres is what differentiates this scenario from scenario three. The Australian Area would be the last section of the zoo developed and would allow the zoo to retain its existing herd of wallaroos as well as add several fascinating new exhibits depicting zoo-geographical area which will otherwise be unrepresented in Zoo-2002. In addition to the wallaroos, exhibits for Koala, Mugger Crocidiles, Magpie Geese and Tree Kangaroos could be included. Possibly the most unique Australian area exhibit would be a small nocturnal exhibit housing small mammals, birds and reptiles on a reverse light cycle enabling visitors to observe them during the daytime. An "outback farm" would feature camel rides and Australian farm animals providing a contact area in the zoo which would be geared to, and popular with, young visitors.

Plan scenarios 2, 3 and 4 shall all include the following three elements:

1. Construction of a two-story education/administration building behind Fairytale Town in close proximity to the existing parking lot; and
2. Construction of a pedestrian overcrossing between Fairytale Town and the zoo; and
3. Relocation of the amusement and/or pony rides concessions to the northern area behind Fairytale Town. Relocation of the pony rides would be necessary under plan scenario four.

# **The Future**





### **CLOSING REMARKS: THE FUTURE**

William Land Park is a priceless community resource of outstanding diversity and character. The park, with its integrated recreational facilities and amenities has served the region well with generations of visitors creating the park's heritage and leisure traditions. Central to this network of recreational resources and serving as both a key contributor to the community's quality of life and a major area attraction is the Sacramento Zoo. According to the American Association of Museums' "Assessment of the Sacramento Zoo":

"It is always a great pleasure to do an assessment at an institution where areas of strength greatly outweigh weaknesses; even more important, where it is obvious that the staff and management are aware of the shortcomings and are trying diligently to overcome them. The Sacramento Zoo is such a zoo. It deserves all the support its city and community can give. Toward that end, a number of interim programs and exhibits are suggested, along with full support of the zoo's new Master Plan. The Sacramento Zoo is one of those positive quality of life factors for ourselves and our children. It is also playing a vital role in conserving endangered species and educating our citizens about them. Given its history, its present achievements and its potential future, the City of Sacramento should be proud of its zoo."

To this end, the Master Plan for the Sacramento Zoo and surrounding area, "Zoo-2002" shall serve to guide the zoo's future while simultaneously protecting its heritage. Contrary to concerns which have periodically been raised in response to the planning process, the plan has not been spurred by any intention for the Sacramento Zoo to rival the world's largest and most renowned San Diego Zoo. The San Diego Zoo, which hosts over three million visitors annually and which occupies approximately 125 acres requiring an annual operating budget in excess of \$50 million, by comparison, dwarfs the fourteen-acre Sacramento Zoo with its annual operating budget of less than \$1.5 million and its annual visitation just recently surpassing 500,000 people. Indeed, Sacramento's fourteen-acre zoo ranks among the smallest zoos for metropolitan areas of similar size. However, intercity rivalry is not, and has never been, a guiding principle behind this plan.

Rather Zoo-2002 offers a very achievable plan for a small but quality zoo in Sacramento. The plan is ambitious but its ambition rests not in its size. Its emphasis is on enhancing the zoo's conservation commitment while simultaneously improving the visitor experience through the planned development of a modern zoo as benefits the capitol community. The realization of Zoo-2002 will require increased community support. Recent successes, including the public private partnership which made the new chimpanzee and orangutan exhibits possible and the continuous support of the zoo by such corporations as Cap Federal Savings and Loan and 7-Up Bottling Company, indicate that this is possible.

Zoo-2002 contains a limited number of animals in first-rate animal facilities. Although the proposed animal list has some major exclusions including marine mammals, polar bears, South American animals, wolves and llamas, it utilizes a thematic approach to organize the 1,000 species that eventually will be displayed. Most importantly, it allows the zoo to increase its obligation to wildlife education and the propagation of rare and endangered species. Some may feel that this draft plan does not create a very complete zoo and that a city the size of Sacramento should have a much larger zoo. While most will agree that there is at least some validity to this statement, nonetheless, there are many factors which suggest that at least for the next 15 to 20 years the zoo should remain at its present site.

The present location of the zoo with its mature trees and beautiful park setting is very conducive to a modern zoo atmosphere. A 1987 evaluation of the Sacramento Zoo by the American Association of Museums found the grounds to be exceptional. The evaluator's report stated:

"As a first time visitor, I was more impressed by the trees and plantings of the Sacramento Zoo than any other single factor. One does not expect to find redwoods, palms and cactus in a single setting. Sacramento has a botanical collection (and the obvious ability to grow it!) that many institutions would envy."

It is unlikely that any other location in the Sacramento area could provide such a wonderful variety of large trees and established shrubbery. Also important in the decision to redevelop the zoo in Land Park is the fact that this modernization process has in effect already begun with the most recent exhibit renovations. The orangutan, chimpanzee, zebra and gazelle exhibits are modern and far-reaching. The reptile house is one of the finest in the United States and will need little renovation over the next 20 years.

The proximity of the zoo, Fairytale Town, the children's rides area and other park facilities combine to afford a favorite family outing place for people throughout the Sacramento area. If it were possible to duplicate this interrelated family recreational resource elsewhere--and such duplication is doubtful given that Fairytale Town represents a unique community effort not easily recreated, it would involve tremendous public expense. Furthermore, it is not apparent that Sacramento could build a large and completely new zoo in a different location at this time. Construction of a new central library, an expanded convention center, an improved transportation system, renovation of both the Memorial Auditorium and the Crocker Art Museum and restoration of the waterfront area are all projects that will require substantial public resources, and it is unlikely that a large new zoo could compete with these community needs. Using 1987 dollars, a new one hundred-acre zoo could easily cost between \$50-80 million not including the cost of the land.

Several communities, including Milwaukee, Minneapolis, Toronto, Wichita, Miami and Indianapolis have built entirely new zoos within the last twenty years. Each of these zoos may now be the pride of their respective communities, but each has created a new commitment for increased operational support. Further, it is unlikely that any large new zoo in Sacramento could be as operationally efficient as the one proposed in this Master Plan

far as this site is already developed and, given its small size and the proximity of the various elements, makes maximum use of space. Given the area's growth rate, it may become apparent in time that the small zoo described in this Master Plan cannot meet the needs of this community. Accordingly, the leadership of this community may consider setting aside land now for a possible future zoo expansion. It should be noted that a new zoo would not necessarily make the zoo described in this report obsolete. Given the fact that animals "destroy" exhibits over time together with the fact that technology changes rapidly, many zoo exhibits have a life expectancy of approximately 20 years. Consequently, exhibits built in Phase I of Zoo-2002 will require renovation shortly after the exhibits in the final phase are completed. If eventually it is decided to build a large new zoo for the community in twenty to thirty years, the zoo in Land Park could be transformed into a zoo for local animals, a "bird garden," a nature trail or some other type of small, specialty zoo. If done correctly, it may be possible for this community to support two very different zoos, a small specialized zoo in Land Park and another, larger zoo located outside the central city. However, it is very difficult to predict the future of the zoo so far ahead into the twenty-first century.

This Master Plan describes a quality zoo and every indication suggests that it will be well attended and supported. Zoo-2002 will indeed be a zoo that Sacramentans can be proud of for many years to come.

*12-13-88*

*Zoo - 2002: #47  
Master Plan for the Sacramento Zoo  
and Surrounding Area*

---

*City of Sacramento  
Department of Parks & Community Services  
SCH #86051906*



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1311 I Street, Suite 200  
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*May 1988*

*Draft*  
*Environmental Impact Report*

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*Zoo - 2002:*  
*Master Plan for the Sacramento Zoo*  
*and Surrounding Area*

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*City of Sacramento*  
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*May 1988*



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for the  
ZOO-2002: MASTER PLAN FOR THE SACRAMENTO ZOO

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## 1. INTRODUCTION AND PROJECT DESCRIPTION

### 1.1 Introduction

This Environmental Impact Report (EIR) has been prepared to describe the existing conditions and land uses in the southwesterly corner of William Land Park which comprises the Zoo-2002 Master Plan Area, and assess the potential environmental impacts associated with four different alternatives regarding renovation and possible expansion of Zoo facilities in that area. The EIR is prepared pursuant to the California Environmental Quality Act (CEQA) (Public Resources Code Section 21000 et sequitur) and the State CEQA Guidelines (14 California Administrative Code Section 15000 et sequitur), as well as City EIR Guidelines. The EIR is an informational document intended to aid in the local planning and decisionmaking processes.

#### Scope of EIR

A Notice of Preparation (NOP) of a Draft EIR was originally circulated for comment by the Sacramento Department of Parks and Community Services in June 1986. The NOP and comments received on the NOP are contained in Appendix A of this document. The Draft EIR was originally scheduled to be completed in September 1986, but was delayed due to delays in the completion of the Zoo-2002 Master Plan. As provided for in the State CEQA Guidelines, the focus of the Draft EIR is limited to specific issues and concerns identified as possibly significant by the scoping and Notice of Preparation process. The Zoo-2002 Master Plan EIR defines the existing land use conditions within the Zoo Master Plan area and analyzes and compares the potential impacts of each of the renovation and expansion alternatives discussed in the Zoo-2002 Master Plan. The Zoo-2002 Master Plan is now complete, and is the focus of this EIR.

## Organization of the EIR

The following section of the EIR (2. Summary and Conclusions) presents a summary of the impacts and mitigation measures for each of the alternatives evaluated in the document, as well as summaries of specific statutory discussions required by CEQA including effects found not to be significant, significant irreversible environmental impacts, and growth inducing impacts. In addition, there is a discussion of the areas of controversy and issues for resolution in regards to the Zoo-2002 Master Plan. Section 3 (Environmental Setting, Impacts, and Mitigation Measures) contains the bulk of the analysis of impacts and identification of mitigation measures organized according to topic areas, e.g., land use, traffic, et al. Each topic section is organized into the following subsections: setting, which describes the existing conditions in the study area relevant to that topic; impacts, which analyzes the potential impacts associated with each of the four alternatives being analyzed; and mitigation measures, which identifies mitigation measures for reducing the significance of potential impacts associated with each alternative. In addition, each section contains a discussion of those impacts which are associated with construction of facilities associated with each of the alternatives, as these construction impacts are generally of a short-term nature. Section 4 (Statutory Sections) contains discussions related to topics specifically required by CEQA for inclusion in an EIR such as growth inducing impacts, cumulative impacts, and unavoidable significant adverse impacts. Section 5 (Report Preparation) identifies the personnel who were primarily responsible for preparation of this EIR.

### 1.2 Project Description

The Sacramento Zoo Master Plan area is located on approximately 14 acres of land within William Land Park, a 236.5 acre regional park located in South Sacramento near the intersection of State

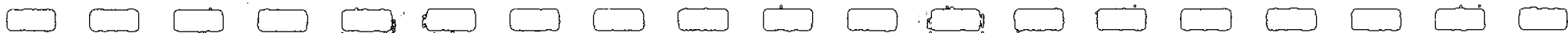
Route 99 and Sutterville Road (See Figure 1, Regional Location Map). Within the park boundaries, the Zoo Master Plan area is located in the southwest corner of the Park and includes the existing Sacramento Zoo (14 acres); Fairytale Town, a children's fantasyland (3.5 acres); children's amusement rides (+/-2 acres); pony rides; an outdoor amphitheater; picnic areas; and parking (23.7 acres) (See Figure 2, Project Location and Zoo Master Plan Boundaries). The focus of this EIR is to analyze the impacts associated with several alternative Zoo renovation and expansion alternatives. These alternatives are described below. During the development of the Master Plan for the Zoo, alphanumeric identifiers were used to distinguish each of the development alternatives. These same alphanumeric identifiers will be used throughout the EIR for consistency.

(B-1) No-Project Alternative: Under this alternative, there would be no renovations or new developments within the Zoo Master Plan study area. This plan would, if approved, place a moratorium on Zoo improvements. See Figure 3, Alternative B-1 Schematic Plan, which depicts the Zoo Master Plan as it exists today.

(B-2) Renovation of the Zoo within the existing 14 acre boundaries: This alternative would involve renovation of many of the outdated exhibit areas in the Zoo but would not include any expansion outside of the current fence line of the Zoo. This alternative would follow the plan detailed in the Zoo Master Plan but would not include the African Rivers Aviary, the tortoise exhibit, the picnic area, and the Australian Section. This alternative also includes elements A (education/administration building), B (Land Park Drive pedestrian overcrossing), and C (relocation of amusement and pony rides) which are described in more detail below. See Figure 4, Alternative B-2 Schematic Plan, which depicts

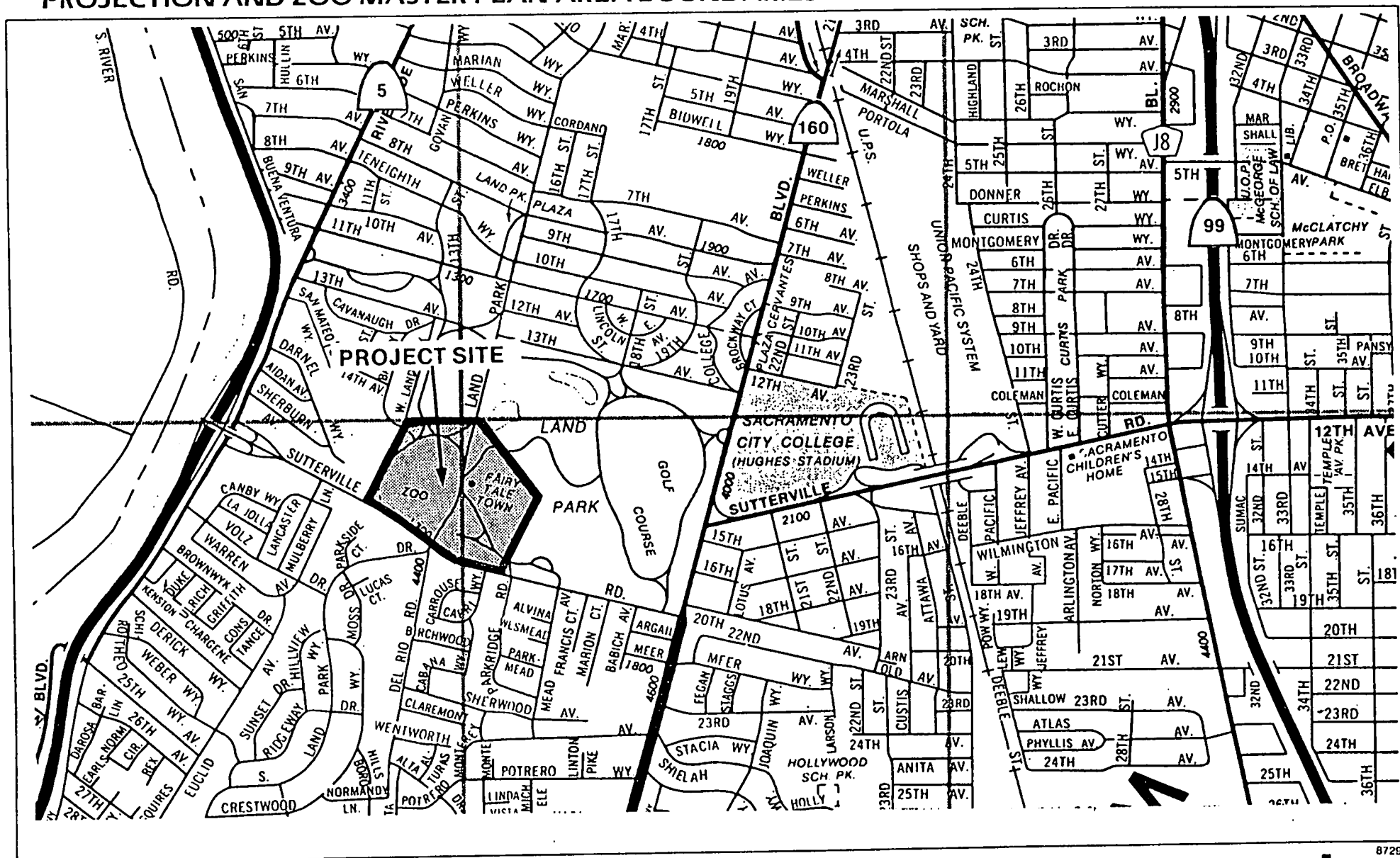
# FIGURE 1





# PROJECTION AND ZOO MASTER PLAN AREA BOUNDARIES

FIGURE 2

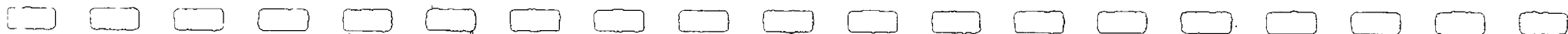


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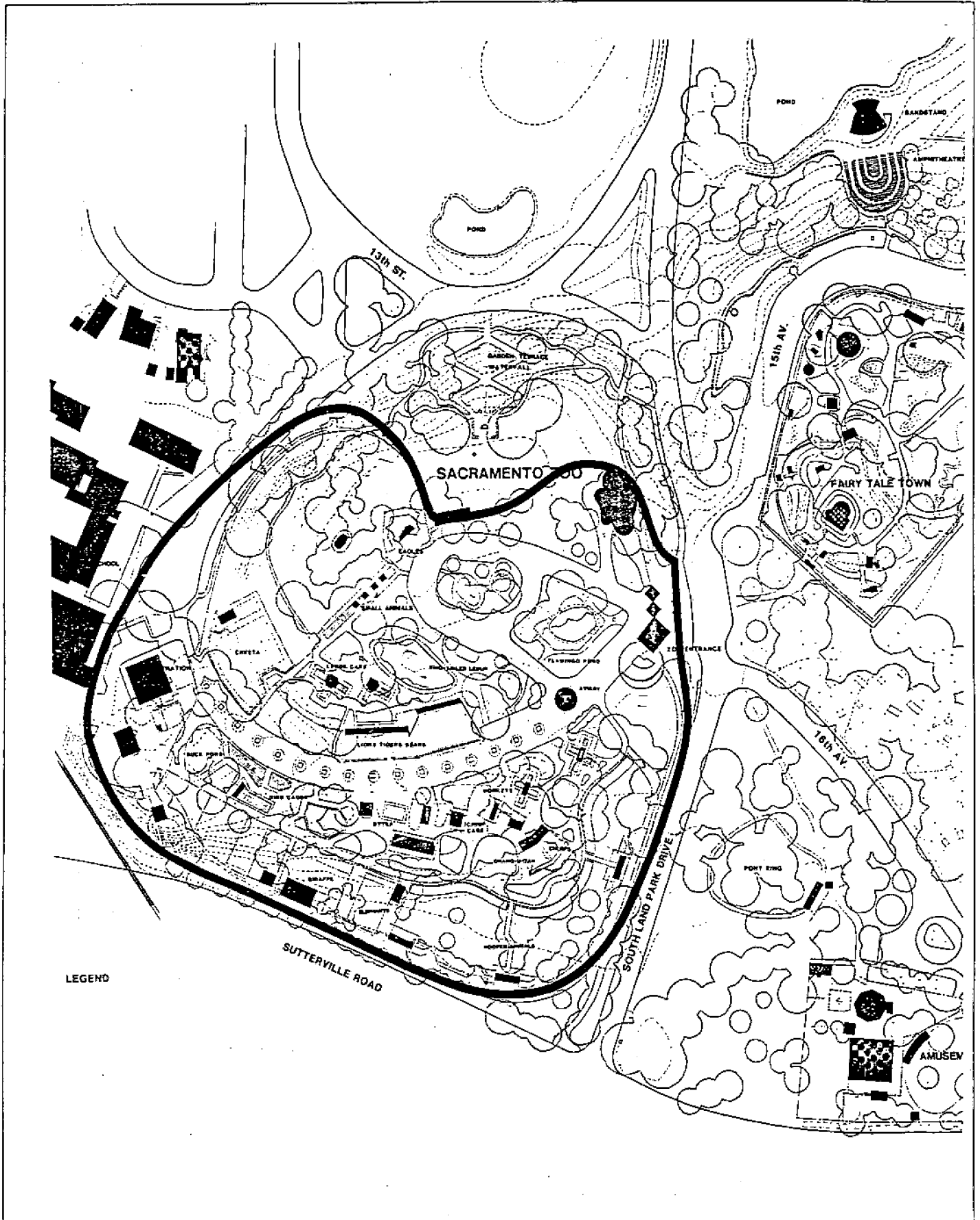




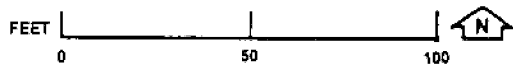


ALTERNATIVE B-1 SCHEMATIC PLAN  
(EXISTING CONDITIONS/NO PROJECT)

FIGURE 3

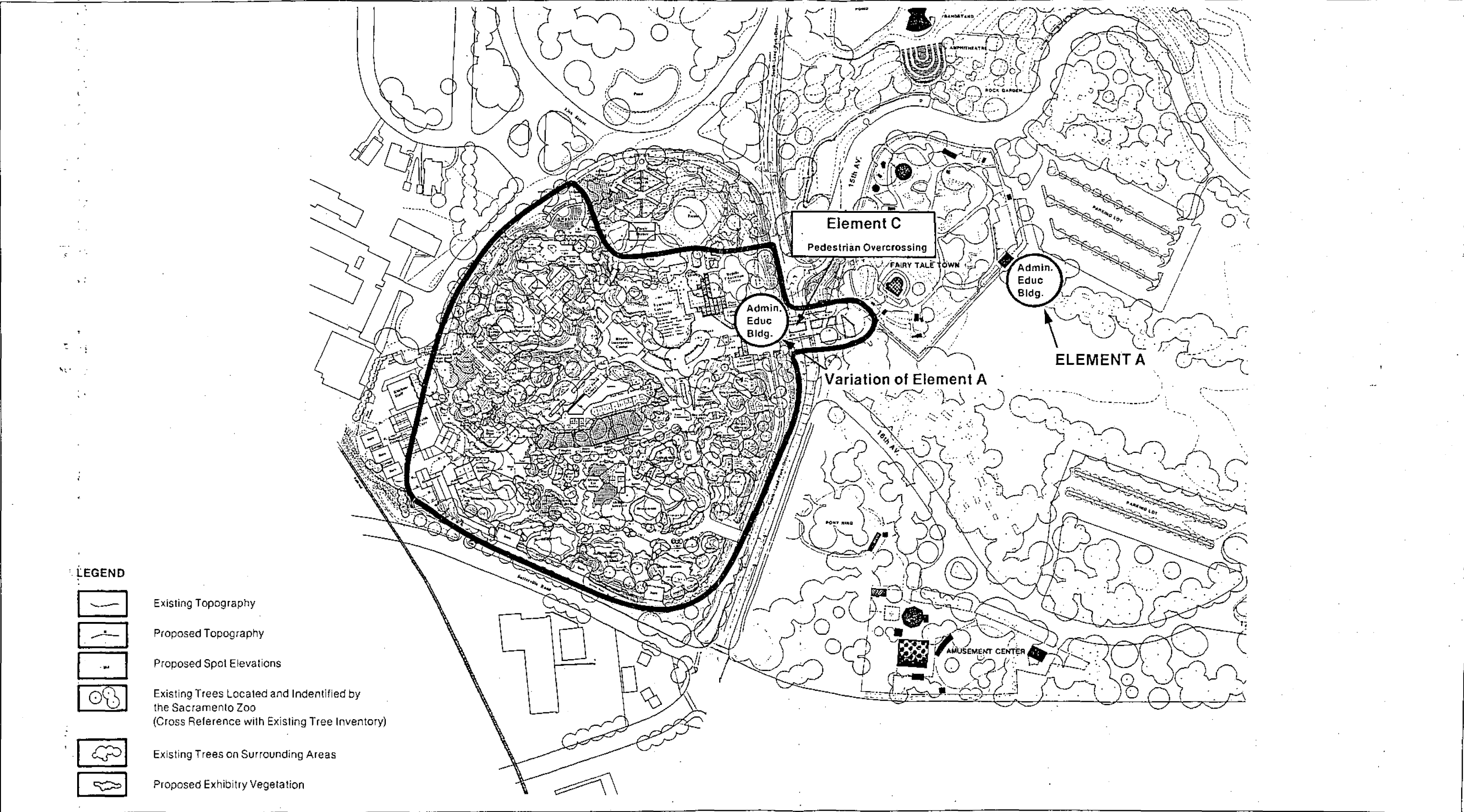


SOURCE: SACRAMENTO ZOO

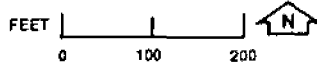


ALTERNATIVE B-2 SCHEMATIC PLAN  
(RENOVATION WITHIN EXISTING ZOO BOUNDARIES)

FIGURE 4



SOURCE: STEVE TAYLOR AT SACRAMENTO ZOO



the preliminary plans for the renovation of the Zoo within its current fence line.

(B-3) Expansion of the Zoo boundaries north to Fifteenth Avenue (approximately 2 acres): This alternative follows the Zoo Master Plan and includes an African Rivers Aviary, tortoise exhibit, and picnic area in the 2 acre expansion area. See Figure 5, Alternative B-3 Schematic Plan.

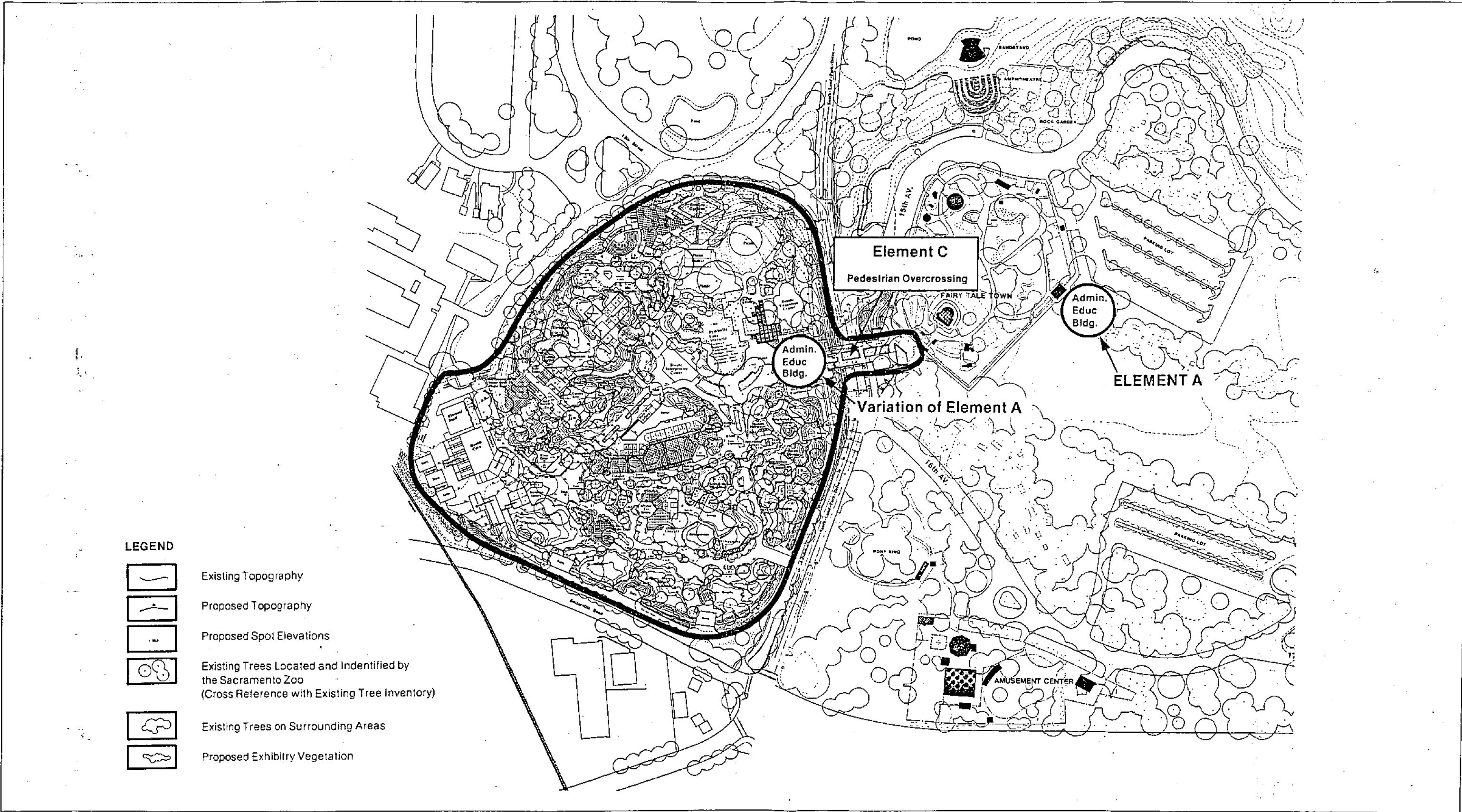
(B-4) Expansion of the Zoo boundaries north to Fifteenth Avenue and east across Land Park Drive to include approximately 4 acres south of Fairytale Town: This alternative includes all of the features of B-3, above, plus the addition of an Australian theme area on the 4 acre parcel south of Fairytale Town and east of Land Park Drive where the pony rides concession is now located. This Australian area would be the last section of the Zoo developed and would allow the Zoo to retain its existing herd of wallaroos as well as adding new exhibits for Koalas, Mugger Crocodiles, Magpie Geese, and Tree Kangaroos. In addition, the area includes a small nocturnal exhibit housing small mammals, birds, and reptiles maintained on an indoor reverse light cycle enabling Zoo visitors to observe the animals' nocturnal activities, such as hunting behavior, during the daytime Zoo visiting hours. Finally, an "outback farm" would feature camel rides and Australian farm animals providing a contact area or petting Zoo environment geared to the younger Zoo visitors. See Figure 6, Alternative B-4 Schematic Plan, which depicts the preliminary plans for all elements of the Zoo described in the Zoo-2002 Master Plan document.

Alternatives B-2, B-3 and B-4 include the following two elements:

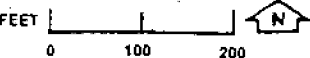
- A. Construction of an education/administration building. Preliminary plans indicate two possible locations for

ALTERNATIVE B-3 SCHEMATIC PLAN  
[EXPANSION NORTH OF EXISTING ZOO]

FIGURE 5

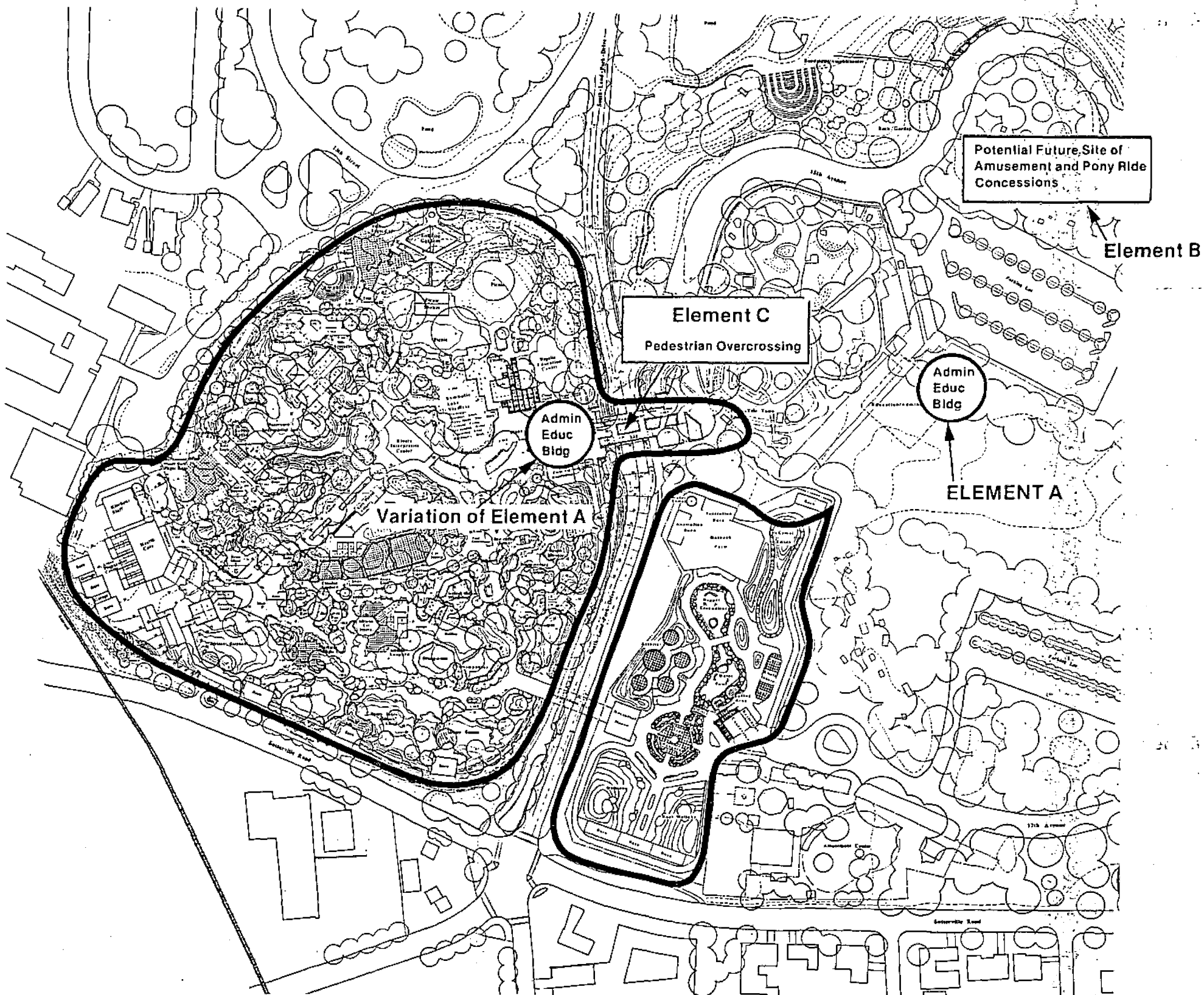


SOURCE: STEVE TAYLOR AT SACRAMENTO ZOO



ALTERNATIVE B-4 SCHEMATIC PLAN  
(EXPANSION NORTH AND EAST OF EXISTING ZOO)

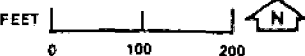
FIGURE 6



LEGEND

- Existing Topography
- Proposed Topography
- Proposed Spot Elevations
- Existing Trees Located and Identified by the Sacramento Zoo (Cross Reference with Existing Tree Inventory)
- Existing Trees on Surrounding Areas
- Proposed Exhibitry Vegetation

SOURCE: STEVE TAYLOR AT SACRAMENTO ZOO

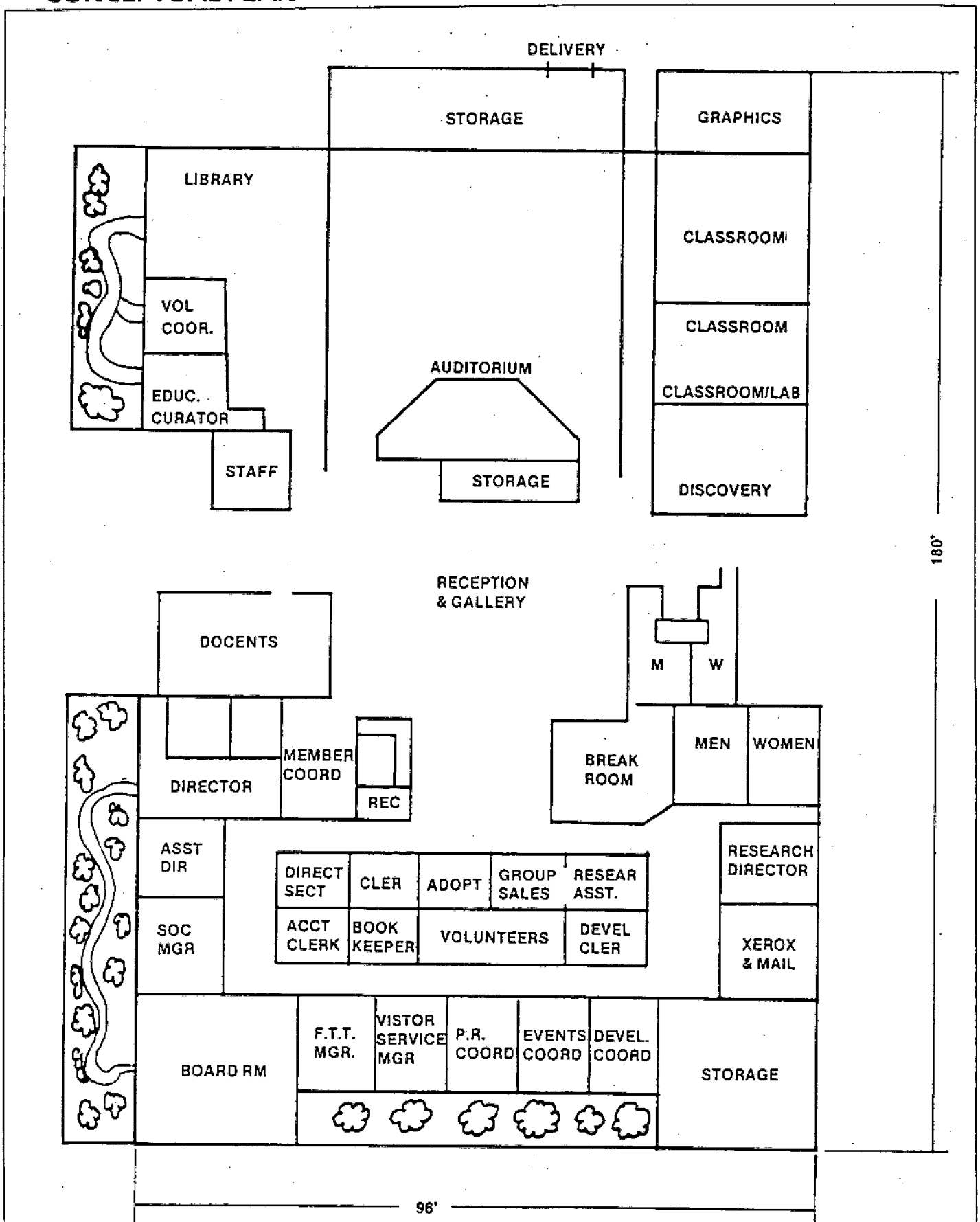


this facility, either east of Fairytale Town and south of the existing parking lot, or just inside (west of) the main Zoo entrance. See Figure 7, Education/Administration Building Conceptual Plan. It should be noted that the plan depicted in Figure 7 is conceptual only at this time, as details of such design parameters as architectural style and building materials are, to some extent, dependent on the final site selected for the facility. It is anticipated that this facility will be approximately 12,000 - 16,000 square feet. See figure 9 for possible sites for the Administration/Education Building.

- B. Relocation of the amusement and/or pony ride concessions to the northern area behind Fairytale Town. Relocation of the pony rides would be necessary for the implementation of Alternative B-4.
- C. Construction of a pedestrian overcrossing between Fairytale Town and the main Zoo entrance. See Figure 8, Pedestrian Overcrossing Plans and Elevations.

# ADMINISTRATION/EDUCATION BUILDING CONCEPTUAL PLAN

FIGURE 7



SOURCE: STEVE TAYLOR AT SACRAMENTO ZOO

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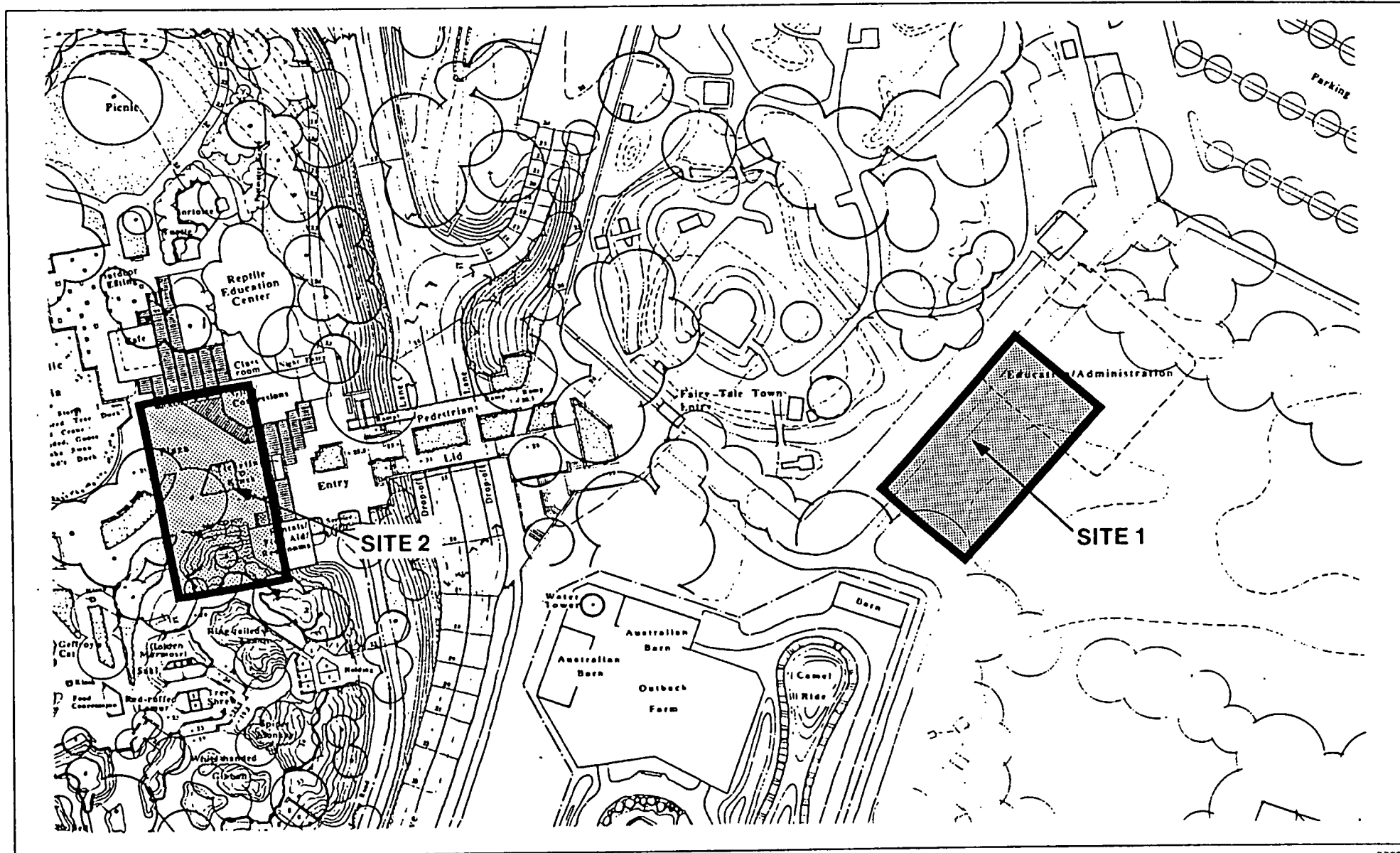


### FIGURE 8

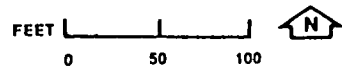


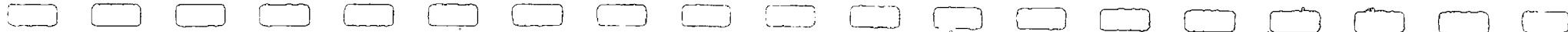
# POSSIBLE SITES FOR ADMINISTRATION/EDUCATION BUILDING

FIGURE 9



SOURCE: STEVE TAYLOR AT SACRAMENTO ZOO





## 2. Summary and Conclusions

This section presents a summary of the impacts associated with each of the Zoo Master Plan development scenarios described in this document, mitigation measures recommended to reduce each impact to a less than significant level, and a number of impact conclusions required by the California Environmental Quality Act (CEQA). This section is intended as a summary of the Environmental Impact Report (EIR). It does not serve as a substitute for discussion of exact impacts and mitigation measures contained in the topical sections of the document.

### 2.1 Project Overview

A complete description of the four alternative development scenarios being evaluated in this report is contained in Section 1 of this document. A brief summary of each of the alternative development scenarios follows:

B-1 No-Project Alternative: No renovations or new developments in the Sacramento Zoo.

B-2 Renovation of the Zoo within the existing 14 acre boundaries: Includes renovation of many of the outdated exhibits within the Zoo. This alternative also includes construction of an educational/administration building and a pedestrian overcrossing of Land Park Drive between Fairytale Town and the Zoo entrance.

B-3 Expansion of the Zoo boundaries north to Fifteenth Avenue (approximately 2 acres): Includes renovation of existing Zoo exhibits plus addition of an African Rivers Aviary, tortoise exhibit, and picnic area on the 2 acre expansion area. This alternative also includes a new administration/

education building and the pedestrian overcrossing of Land Park Drive between Fairytale Town and the Zoo entrance.

B-4 Expansion of the Zoo boundaries north to Fifteenth Avenue (+/- 2 acres) and east across Land Park Drive south of Fairytale Town (+/- 4 acres): This alternative is the same as alternative B-3, above, with the addition of an Australian Theme area and exhibits on the +/- 4 acre site east of Land Park Drive and south of Fairytale Town. This alternative includes a new administration/education building, the Land Park Drive pedestrian overcrossing, a tunnel under Land Park Drive south of the Zoo entrance connecting the existing Zoo with the Australian Theme area, and relocation of the existing pony rides concession to a site north of Fairytale Town.

## 2.2 Summary of Impacts and Mitigation Measures

The summary table of environmental impacts and mitigation measures presents a summary of the environmental impacts of the four alternative development scenarios being evaluated in this document, and lists available possible mitigation measures for those impacts. The table identifies the potential impact and the level of significance of that impact without mitigation. Mitigation measures to minimize the identified impact are then listed, followed by the level of significance of the impact with implementation of the recommended mitigations. Unless otherwise noted, it is assumed that all of the identified mitigation measures must be implemented to achieve a reduced level of significance.

## 2.3 Effects Found To Be Less Than Significant

Impacts that are less than significant prior to mitigation are identified in the summary table as "Less than significant." Impacts that are potentially significant prior to mitigation, but

which can be reduced to a less than significant level by the identified mitigation measures are identified as potentially significant without implementation of mitigation measures and less than significant with implementation of mitigation measures.

#### 2.4 Significant Irreversible Environmental Changes

Significant irreversible environmental changes are impacts identified as significant even after implementation of mitigation measures. There are no environmental impacts associated with any of the four Zoo development alternatives which cannot be mitigated to a less than significant level by implementation of the recommended mitigation measures.

#### 2.5 Growth Inducing Impacts

Section 15126 (g) of the Guidelines for the Implementation of the California Environmental Quality Act requires a discussion of the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. The fiscal analysis contained in this document (Section 3.10) indicates that there will not be a significant increase in employment at the Zoo for any of the proposed development alternatives which might result in a significant increase in demand for housing. Likewise, no significant increases in population or economic growth are anticipated to occur as a result of implementing any of the Zoo development alternatives. Therefore, there would be no growth inducing impacts as a result of implementing any of the Zoo development alternatives.

#### 2.6 Areas of Controversy and Issues for Resolution

The Master Plan for the Sacramento Zoo, Zoo-2002, has been the subject of considerable discussion and controversy since it was

brought to the attention of the public in 1985. Significant efforts have been made to solicit public input from a wide variety of sources. A Citizens' Advisory Committee comprised of individuals representing various special interest groups and organizations interested in the Master Plan including the Zoological Society, Fairytale Town Board, Holy Spirit Elementary School and Land Park residents was appointed by the Director of the Department of Parks and Community Services. This group, which met on a regular basis over a thirteen month period, provided extensive input into the Master Plan process.

Two public meetings, designed to solicit community input, were held in March and May of 1985. During these meetings, a total of six alternative Master Plans for the Zoo and immediately adjacent areas were presented and discussed. Partially as a result of the significant attendance at these meetings (approximately 200 in March, 400 in May) and the concerns expressed regarding the magnitude of possible Zoo expansion indicated in the more ambitious plan alternatives presented at those meetings, the two alternatives which called for the most extensive Zoo expansions were dropped from further consideration. These two alternatives included either a rerouting or complete elimination of South Land Park Drive, as well as up to a 16 acre expansion of the existing Zoo, primarily to the east across Land Park Drive. The four remaining master plan alternatives eventually evolved into the four alternatives (B-1 through B-4) included in Zoo-2002 which are the basis of the analyses in this document.

Following these public meetings, the Citizens' Advisory Committee was expanded to include representation from the newly formed neighborhood group, the Association to Preserve Land Park. In addition to the continued efforts of the Citizens' Advisory Committee, a Director's Task Force comprised of members from the Zoological Society, Citizens' Advisory Committee, Association to Preserve Land Park and Department of Parks and Community Services

staff, was formed. Task Force members, who provided extensive input into the planning process, were charged with ensuring the adequate representation of these interest groups. Due to both the level of citizens' participation and the number of issues raised, the original project timeline was revised. Furthermore, the original consultant services agreement was terminated as the contractual requirements were not fully met. Accordingly, City Council authorized the execution of three small consultant services agreements for completion of additional components of the draft Master Plan and Zoo and Administrative Services staff were assigned to coordinate completion of the Master Plan.

In spite of the extensive public involvement process associated with the development of Zoo-2002, significant controversy exists regarding the future of the Sacramento Zoo. Some of these issues are discussed below.

Sacramento is a City experiencing a growth phase unprecedented since the founding of the City following the discovery of gold in 1848. As a result of that growth, issues of increased traffic congestion, noise, air quality, and the other "down side" aspects of growth have been, and continue to be, at the forefront of any growth discussions. William Land Park is the only regional park in the City of Sacramento which has the diversity of uses typically associated with a regional park. Miller Park and Del Paso Park are also considered regional parks, but neither of these parks currently have the diversity of uses typical of a regional park. Consequently, as the population of the region has increased, the demand for the recreational uses found in the park has grown in proportion, and the congestion problems associated with increased park use have also grown. In addition, when the County of Sacramento recently began to charge admission fees to their parks, the result was to instantly increase demand in City parks in which no fees are charged. While it is undoubtedly true that improvements and expansion at the Sacramento Zoo will



increase demand and attendance, it is also true that cumulative demand for all of the other uses in William Land Park has increased, and will continue to increase, with population growth. Regardless of whether the City Council decides to allow expansion of the Zoo outside of the existing Zoo boundaries, the demand for, and use of, William Land Park will continue to increase proportional to regional population growth.

One recommendation which has been discussed as a means of mitigating existing problem conditions within the park, such as parking and night-time security, is to add a surcharge of \$0.25 to the price of all activities within the park which currently have a fee of some kind (Zoo, golf, Fairytale Town). Monies received from this surcharge could be allocated to a special fund to be used only for improving park conditions. Some possible uses for such a fund would include increased night-time police patrols, implementation of residential permit parking programs, or improvement of park facilities such as soccer or baseball fields or picnic areas. Implementation of such a surcharge program would provide a means of ensuring that increased park use would result in increased funds available to mitigate impacts associated with the increased use levels.

Another issue which has been raised with regard to the Zoo EIR is the question of what constitutes the No-Project Alternative as required by CEQA. The No-Project Alternative exists in CEQA because of the policy that decision makers and the public should be fully informed as to how a proposed project will affect the environment. One way to assess the impacts is to look at the status quo, i.e., what are the conditions on the site at present, before implementation of the project and compare those conditions with the projected site conditions after the project has been completed. Thus, the No-Project Alternative must "describe what condition or program preceeded the project." (County of Inyo v. City of Los Angeles, 1977, 71 Cal. App. 3d 185, 201.) It must

"describe maintenance of the existing environment as a basis for comparison of the suggested alternatives to the status quo." (Dusek v. Anaheim Redevelopment Agency, 1986, 173 Cal. App. 3d 1029, 1043.) Hence, the Zoo EIR No-Project Alternative should be based on conditions as they exist today, not on conditions that existed before certain previous projects were undertaken. The fact that previous projects were approved on a negative declaration, e.g., the outdoor interpretive center, merely means that they had no significant effect on the environment at the time.

Another point of controversy has been the scope of the Master Plan itself. The Association to Preserve Land Park has contended that a Master Plan for all of William Land Park, not just the Sacramento Zoo and its immediate surroundings, is what was originally proposed by City staff during the public meetings in 1985. Regardless of what was planned or proposed three years ago, Zoo-2002 is the basis for this EIR. Whether or not the City intends to develop an overall master plan for William Land Park is irrelevant to the analyses contained in this EIR.

The possibility of relocating the Sacramento Zoo to a larger site in a relatively undeveloped area outside of the central City, e.g., North Natomas, was discussed on a political level during the last mayoral elections. In addition, Zoo-2002 includes a brief discussion of possible future demand for Zoo facilities in light of current and projected regional growth trends. Comments from the Association to Preserve Land Park, as well as other members of the public, have raised the issue of considering relocation of the Zoo as an alternative to Zoo expansion and renovation in the EIR.

Currently there are tentative plans to construct a new regional park in the North Natomas area. While such a park would relieve some of the demand pressure on William Land Park for uses such as athletic fields and picnic areas, there are no plans to include

any kind of Zoo or animal facility at this park. Further, there are no known plans of any kind to relocate the Sacramento Zoo to another site, nor any plans being pursued by the City to acquire such a site for future use. While it may be prudent for the present City Council to study the possibilities for obtaining and setting aside a parcel of land for a future Zoo site, no such study has yet been initiated. Any discussions regarding relocation of the Sacramento Zoo are, therefore, speculative at the present time. As to including relocation of the Zoo to a new site as one of the project alternatives, the following discussion from the CEQA Guidelines should be noted:

"The range of alternatives required in an EIR is governed by "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The key issue is whether the selection and discussion of alternatives fosters informed decision making and informed public participation. An EIR need not consider an alternative whose effect cannot be reasonably ascertained and whose implementation is remote and speculative. (Residents Ad Hoc Stadium Committee v. Board of Trustees, 1979, 89 Cal. App. 3d 274.)"

[CEQA Guidelines Section 15126(d)(5)]

It will be up to the City Council to determine whether the selection of alternatives, analyses of impacts, and recommended mitigation measures contained in this EIR are adequate and sufficient to enable the Council to make an informed decision regarding implementation of a Zoo-2002 alternative. The council may decide that the best alternative for implementation consists of parts of several of the alternatives presented and analyzed in this document. In addition, the City Council may wish to consider further study of the possibility of relocating the Zoo to a different location at some time in the future to determine what steps, if any, the City should initiate now (e.g., land acquisition) to ensure that such an option remains open for future consideration.

Summary Table of Environmental Impacts and Mitigation Measures  
Sacramento Zoo Master Plan EIR (Continued)

		Alternative B-1			Alternative B-2			Alternative B-3			Alternative B-4					
Topic/Impact	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M
<b>Visitor Populations (3.1)</b>																
- Increased Visitor Populations	Moratorium on Zoo improvements, no remedy to existing deficiencies, no increase in educational values, diminished recreational values over time, no change in visitor capacity.	S	Implement various project components of Alternatives B-2, B-3, & B-4. These Alternatives would increase impacts resulting from more visitor days.	See below	Improving and modernizing would ameliorate most of deficiencies and constraints, exhibits would increase in educational and aesthetic value; Zoo would offer increased user amenities resulting in increased use.	See Topics discussed below.	Implement measures to minimize impact of increased use.	See below	Improving and modernizing would ameliorate most of deficiencies and constraints, exhibits would increase in educational and aesthetic value; Zoo would offer increased user amenities resulting in increased use.	See topics discussed below	Implement measures to minimize impact of increased use.	See below	Improving and modernizing would ameliorate most of deficiencies and constraints, exhibits would increase educational and aesthetic value; Zoo would offer increased user amenities resulting in increased use.	See topics discussed below	Implement measures to minimize impact of increased use.	See below
<b>Land Use (3.2)</b>																
- Effects on local setting.	No effect, as facilities will not be changed.	LS	None required.	LS	Increasing population in the Sacramento area will result in proportional increase in demand for regional recreational facilities.	PS	Construction of new regional park, possibly in Natomas area, will provide additional recreational opportunities in response to increased demand, thereby reducing demands on existing regional parks (William Land, Miller, Del Paso).	LS	Increasing population in the Sacramento area will result in proportional increase in demand for regional recreational facilities.	PS	Construction of new regional park, possibly in Natomas area, will provide additional recreational opportunities in response to increased demand, thereby reducing demands on existing regional parks (William Land, Miller, Del Paso).	LS	Increasing population in the Sacramento area will result in proportional increase in demand for regional recreational facilities.	PS	Construction of new regional park, possibly in Natomas area, will provide additional recreational opportunities in response to increased demand, thereby reducing demands on existing regional parks (William Land, Miller, Del Paso).	LS
									Loss of formal gardens, statue to remain but much of landscaping lost.	PS	Allow use of garden by Zoo & general public by retaining area and fencing to regulate use, loss of exhibit area would require redesign.	LS	Loss of formal gardens, statue to remain but much of landscaping lost.	PS	Allow use of garden by Zoo & general public by retaining area and fencing to regulate use, loss of exhibit area would require redesign.	LS
													Relocation of rides to area ne of Fairytale Town resulting in loss of open space.	LS	None required.	LS
- Comparison to other similar parks.	No effect, as facility will not be changed.	LS	None required.	LS	Consistent with role held by other zoos in surveyed parks.	B	None required.	B	Consistent with role held by other zoos in surveyed parks.	B	None required.	B	Consistent with role held by other zoos in surveyed parks.	B	None required.	B

S = Significant; LS = Less Than Significant; PS = Potentially Significant; B = Beneficial Impacts.

Summary Table of Environmental Impacts and Mitigation Measures  
Sacramento Zoo Master Plan EIR (Continued)

Alternative II-1				Alternative II-2				Alternative II-3				Alternative II-4				
Topic/Impact	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M
<u>Land Use (3.2) - (Continued)</u>																
- Comparison to Recreation Element of General Plan.	No effect, as facility will not be changed.	IS	None required.	IS	William Land Park and the Zoo are third priority units for facility development according to the Recreation Element of the General Plan. However, facility development strictly refers to neighborhood parks and does not include the Zoo.	IS	None required; priority units will not be deprived of needed improvements by Zoo facility improvements.	IS	William Land Park and the Zoo are third priority units for facility development according to the Recreation Element of the General Plan. However, facility development strictly refers to neighborhood parks and does not include the Zoo.	IS	None required; priority units will not be deprived of needed improvements by Zoo facility improvements.	IS	William Land Park and the Zoo are third priority units for facility development according to the Recreation Element of the General Plan. However, facility development strictly refers to neighborhood parks and does not include the Zoo.	IS	None required; priority units will not be deprived of needed improvements by Zoo facility improvements.	IS
<u>Traffic, Circulation, and Parking (3.3)</u>																
- Increased congestion resulting in decreased Levels of Service.	None.	IS	None required.	IS	Land Park Drive and 14th Avenue.	IS	None required.	IS	Land Park Drive and 14th Avenue.	IS	None required.	IS	Land Park Drive and 14th Avenue.	IS	None required.	IS
					Land Park Drive and Sutterville Road LOS "C" to "D."	PS	Provide left turn lane, change signal phasing, change Del Rio Road to one way.	IS	Land Park Drive and Sutterville Road LOS "C" to "D."	PS	Provide left turn lane, change signal phasing, change Del Rio Road to one way.	IS	Land Park Drive and Sutterville Road LOS "C" to "D."	PS	Provide left turn lane, change signal phasing, change Del Rio Road to one way.	IS
					30% (1996) to 48% (2006) increase in traffic volumes.	IS	None required on roadways.	IS	30% (1996) to 48% (2006) increase in traffic volumes.	IS	None required on roadways.	IS	30% (1996) to 48% (2006) increase in traffic volumes.	IS	None required on roadways.	IS
- Increase parking demand on nearby streets (residential and/or commercial).	None.	IS	None required.	IS	Increase in spill-over from 15 to 40 days per year.	PS	Create shuttle parking areas, construct new parking areas in park, provide multi-level parking structure, consider Sunday parking restrictions on Bartley Drive.	IS	Increase in spill-over from 15 to 40 days per year.	PS	Create shuttle parking areas, construct new parking areas in park, provide multi-level parking structure, consider Sunday parking restrictions on Bartley Drive.	IS	Increase in spill-over from 15 to 40 days per year.	PS	Create shuttle parking areas, construct new parking areas in park, provide multi-level parking structure, consider Sunday parking restrictions on Bartley Drive.	IS
- Decreased pedestrian safety.	None.	IS	None required.	IS	Decreased safety due to increased traffic.	PS	Construct pedestrian overpass.	IS	Decreased safety due to increased traffic.	PS	Construct pedestrian overpass.	IS	Decreased safety due to increased traffic.	PS	Construct pedestrian overpass.	IS
<u>Air Quality (3.4)</u>																
- Temporary increase in construction related dust.	None.	IS	None required.	IS	Generation of dust affecting nearby uses.	PS	Water down construction sites, cover stockpiled soils, revegetate immediately, sweep street in vicinity daily.	IS	Generation of dust affecting nearby uses.	PS	Water down construction sites, cover stockpiled soils, revegetate immediately, sweep streets in vicinity daily.	IS	Generation of dust affecting nearby uses.	PS	Water down construction sites, cover stockpiled soils, revegetate immediately, sweep streets in vicinity daily.	IS

S = Significant; IS = Less Than Significant; PS = Potentially Significant; B = Beneficial Impacts.

Summary Table of Environmental Impacts and Mitigation Measures  
Sacramento Zoo Master Plan EIR (Continued)

		Alternative B-1				Alternative B-2				Alternative B-3				Alternative B-4			
Impact/Issue	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	
Air Quality (3.4) - (Continued)																	
Decreased air quality as result of increased vehicle emissions.	None.	LS	None required.	LS	Overall decline of emissions as vehicle emissions decline, no local violations expected.	LS	Improve local transit access.	LS	Overall decline of emissions as vehicle emissions decline, no local violations expected.	LS	Improve local transit access.	LS	Overall decline of emissions as vehicle emissions decline, no local violations expected.	LS	Improve local transit access.	LS	
Noise (3.5)																	
Temporary increase in construction noise.	None.	LS	None required.	LS	Noise levels within 500 feet of construction would exceed standards for recreational/public park areas.	PS	Limit construction to daylight hours, require maximum feasible noise control.	LS	Noise levels within 500 feet of construction would exceed standards for recreational/public park areas.	PS	Limit construction to daylight hours, require maximum feasible noise control.	LS	Noise levels within 500 feet of construction would exceed standards for recreational/public park areas.	PS	Limit construction to daylight hours, require maximum feasible noise control.	LS	
Increased vehicle related noise levels.	None.	LS	None required.	LS	Noise level changes would not exceed 1 dBA.	LS	None required.	LS	Noise level changes would not exceed 1 dBA.	LS	None required.	LS	Noise level changes would not exceed 1 dBA.	LS	None required.	LS	
Public Services (3.6)																	
Increase in water consumption.	None.	LS	None required.	LS	Increase in water use due to creation of new exhibits.	PS	Recycle or recirculate water wherever feasible, implement water conservation measures, evaluate feasibility of using well water.	LS	Increase in water use due to creation of new exhibits.	PS	Recycle or recirculate water wherever feasible, implement water conservation measures, evaluate feasibility of using well water.	LS	Increase in water use due to creation of new exhibits.	PS	Recycle or recirculate water wherever feasible, implement water conservation measures, evaluate feasibility of using well water.	LS	
Increased generation of wastewater.	None.	LS	None required.	LS	Increase in wastewater and stormwater runoff resulting in cumulative impact.	S	Recirculate water wherever feasible to reduce wastewater volumes.	LS	Increase in wastewater and stormwater runoff resulting in cumulative impact.	S	Recirculate water wherever feasible to reduce wastewater volumes.	LS	Increase in wastewater and stormwater runoff resulting in cumulative impact.	S	Recirculate water wherever feasible to reduce wastewater volumes.	LS	
Increased demand for law enforcement services.	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	
Increased demand for fire protection services.	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	
Increased energy demands.	None.	LS	None required.	LS	Internal distribution systems will need to be modified, no significant increase in demand.	LS	None required beyond those recommended by SMUD to reduce peak demand.	LS	Internal distribution systems will need to be modified, no significant increase in demand.	LS	None required beyond those recommended by SMUD to reduce peak demand.	LS	Internal distribution systems will need to be modified, no significant increase in demand.	LS	None required beyond those recommended by SMUD to reduce peak demand.	LS	

S = Significant; LS = Less Than Significant; PS = Potentially Significant; B = Beneficial Impacts.

Summary Table of Environmental Impacts and Mitigation Measures  
Sacramento Zoo Master Plan EIR (Continued)

		Alternative B-1				Alternative B-2				Alternative B-3				Alternative B-4			
Topic/Impact	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	
Public Services (3.6) - (Continued)																	
Generation of increased solid waste.	None.	LS	None required.	LS	Minor increase.	LS	Utilize vegetative mulching system to reduce overall waste volumes.	LS	Minor increase.	LS	Utilize vegetative mulching system to reduce overall waste volumes.	LS	Minor increase.	LS	Utilize vegetative mulching system to reduce overall waste volumes.	LS	
Increased requirements for street maintenance.	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	
Provision of increased educational opportunities for area school children.	None.	LS	None required.	LS	Increased classroom, office and storage space.	B	None required.	B	Increased classroom, office and storage space.	B	None required.	B	Increased classroom, office and storage space.	B	None required.	B	
Vegetation (3.7)																	
Loss of mature trees due to facility placement.	None.	LS	None required.	LS	Specific plans are not available, however, some tree removal may be required.	PS	Prepare final construction plans in association with qualified arborist on staff of Sac. City Tree Services Dept., avoid construction in tree dripline, replant removed trees with similar species.	LS	Specific plans are not available, however, some tree removal may be required.	PS	Prepare final construction plans in association with qualified arborist on staff of Sac. City Tree Services Dept., avoid construction in tree dripline, replant removed trees with similar species.	LS	Specific plans are not available, however, some tree removal may be required.	PS	Prepare final construction plans in association with qualified arborist on staff of Sac. City Tree Services Dept., avoid construction in tree dripline, replant removed trees with similar species, preserve the camellia gardens and DAR grove.	LS	
Cultural Resources (3.8)																	
Disruption of prehistoric and/or historic resources.	None.	LS	None required.	LS	Likelihood of uncovering resources during construction is high, however, no known resources have been identified.	S	Require monitoring of excavation by qualified archaeologist.	LS	Likelihood of uncovering resources during construction is high, however, no known resources have been identified.	S	Require monitoring of excavation by qualified archaeologist.	LS	Likelihood of uncovering resources during construction is high, however, no known resources have been identified.	S	Require monitoring of excavation by qualified archaeologist.	LS	

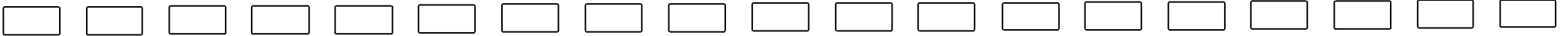
S = Significant; LS = Less Than Significant; PS = Potentially Significant; B = Beneficial Impacts.

Summary Table of Environmental Impacts and Mitigation Measures  
Sacramento Zoo Master Plan EIR (Continued)

Alternative B-1																	Alternative B-2																	Alternative B-3																	Alternative B-4																
Topic/Impact		Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M	Impact	LOS W/O M-M	Mitigation Measure	LOS With M-M																																						
Aesthetics, Light & Glare (3.9)																																																																			
- Alteration of views to and from the park.		None.	LS	None required.	LS	Loss of open space and trees, alteration of views due to construction of facilities.	PS	Limit building height to one story, minimize tree removal, landscape, review by City Design Review Committee.	LS	Loss of open space and trees, alteration of views due to construction of facilities.	PS	Limit building height to one story, minimize tree removal, landscape, review by City Design Review Committee.	LS	Loss of open space and trees, alteration of views due to construction of facilities.	PS	Limit building height to one story, minimize tree removal, landscape, review by City Design Review Committee.	LS	Loss of open space and trees, alteration of views due to construction of facilities.	PS	Limit building height to one story, minimize tree removal, landscape, review by City Design Review Committee, preserve the camellia gardens and Oak grove.	LS	Loss of open space and trees, alteration of views due to construction of facilities.	PS	Limit building height to one story, minimize tree removal, landscape, review by City Design Review Committee.	LS	Loss of open space and trees, alteration of views due to construction of facilities.	PS	Limit building height to one story, minimize tree removal, landscape, review by City Design Review Committee.	LS																																						
Fiscal Analysis (3.10)																																																																			
- Generation of direct fiscal impacts (costs exceeding revenues).		Net cost, after revenues, of \$469,000.	PS	Allocate funds from General Fund.	LS	Net cost, after revenues, of \$348,000.	PS	Allocate funds from General Fund.	LS	Net cost, after revenues, of \$329,000.	PS	Allocate funds from General Fund.	LS	Net cost, after revenues, of \$411,000.	PS	Allocate funds from General Fund.	LS	Net cost, after revenues, of \$411,000.	PS	Allocate funds from General Fund.	LS	Net cost, after revenues, of \$411,000.	PS	Allocate funds from General Fund.	LS	Net cost, after revenues, of \$411,000.	PS	Allocate funds from General Fund.	LS	Net cost, after revenues, of \$411,000.	PS	Allocate funds from General Fund.	LS																																		
- Increase in indirect costs.		None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS	None.	LS	None required.	LS																																		

S = Significant; LS = Less Than Significant; PS = Potentially Significant; B = Beneficial Impacts.





### 3. Environmental Setting, Impacts, and Mitigation Measures

#### 3.1 Visitor Populations

##### Existing Visitors Services

The Sacramento Zoo provides educational and recreational services to visitors from Sacramento County, other parts of California, and out of state.

According to a survey commissioned by the American Association of Zoological Parks and Aquariums, education is currently regarded as the most important function of zoos.<sup>1</sup> Recreation, which may have provided the original impetus for creating zoos, is still a significant, but no longer the primary factor. During the last decade, there has been an increased awareness of the importance of wildlife conservation and the roles that zoos play in educating the public, and changes in the philosophy of zoo exhibits. Recent zoo developments and/or redevelopments have emphasized naturalistic exhibits which more closely reflect the native habitat of the animals exhibited, provide a more physically and psychologically healthful environment for the animals, and provide a more educational and aesthetically pleasing experience for zoo visitors.

It is estimated that half of the population visits zoological parks and aquariums each year, according to the American Association of Zoological Parks and Aquariums. Accordingly, zoos such as the Sacramento Zoo provide a unique opportunity to educate a large segment of the public on the current status of wildlife throughout the world. Because zoos provide views and experiences with the actual animals, they provide education that cannot be duplicated by films or other methods.

According to the American Association of Zoological Parks and Aquariums survey mentioned above, while nearby zoos are important to most people, they are most important to families with children.<sup>1</sup> This is borne out by the Sacramento Zoo's popularity with young families. Children under 13 years of age comprise 39 percent of the Zoo's paying visitors, and almost half of the adult visitors (44 percent) are between the ages of 25 and 34, while senior citizens constitute only 2.5 percent of paying adult visitors.<sup>1</sup>

The City of Sacramento currently allows all school groups free admission to the Zoo, including public and private schools and universities. During 1986/1987, almost 70,000 students, teachers, and chaperones visited the Zoo on fee-exempt field trips.<sup>1</sup>

The Zoo provides tours for any group making appropriate arrangements. Although school groups comprise over 90 percent of the annual tours, groups participating in tours also include church groups, scouts, and other organized youth groups.

Special groups visiting the Zoo include the visually handicapped, hearing impaired, and learning disabled, for which the Zoo has special programs.

The currently perceived function of zoos as primarily educational facilities and the data on attendance indicate that children, especially young children, constitute a very significant group of zoo visitors. Thus, the educational needs and expectations of children and their escorts--parents, teachers, or youth group leaders--are a significant factor in the fulfillment of the zoo's functions. Other needs and expectations, such as for recreational and aesthetic experiences, while also important, are currently considered to be secondary to zoos' educational functions.

In addition to the Zoo's provision of education and recreation to the public, the Zoo assists in the protection of wildlife throughout the world. The Zoo's direct participation in conservation programs includes activities such as cooperating with other zoos in forming self-sustaining captive populations of endangered species, making breeding loans to other zoos, cooperating in species survival plans organized by the American Association of Zoological Parks and Aquariums, maintenance of endangered species at the Zoo, and research on captive management of exotic animals.

### Setting

#### Historic Attendance

Attendance at the Sacramento Zoo in the last decade is shown in Table 3.1-1. Annual attendance fell from a level of 461,000 in 1975/1976 to a low of 295,000 in 1981/1982. Since then, it rose to a level of 581,000 in 1986/1987. The decline in the late 1970s coincided with two admission fee increases and a lack of major exhibit improvements. Since the early 1980s, the exhibits for lions, tigers, orangutans and chimpanzees were improved, and the promotional campaign for the Zoo has been expanded. The increase in attendance is attributed to these factors, as well as the Zoo's 60th birthday celebration in 1987.<sup>1</sup>

Table 3.1-1 also shows annual Zoo attendance for the years 1975-1987. Approximately 57 percent of Zoo visitors are residents of Sacramento County, with 33 percent residing elsewhere in the state and 10 percent from out of state.<sup>1</sup> Because Sacramento County represents a majority of Zoo visitors, the level of County population relative to attendance provides a useful measure of the Zoo's attractiveness to visitors. As shown in Table 3.1-1, the percentage of population visiting the Zoo has varied from a low of approximately 36 percent of population to a high of over 65 percent. Although part of this variation is attributable to the rise in admission fees from \$.35 to \$2.00 during the period,

Table 3.1-1: Attendance at Sacramento Zoo, 1978-1987

Year	Zoo Attendance	Sacramento County Population	Attendance as a Percent of Population*
1975/1976	461,000	705,032	65.4%
1976/1977	448,000	723,852	61.9%
1977/1978	415,000	743,175	55.8%
1978/1979	341,000	763,013	44.7%
1979/1980	326,000	783,381	41.6%
1980/1981	312,000	803,463	38.8%
1981/1982	295,000	823,545	35.8%
1982/1983	333,000	843,627	39.5%
1983/1984	441,000	863,709	51.1%
1984/1985	472,000	883,791	53.4%
1985/1986	491,000	904,118	54.3%
1986/1987	581,000	924,913	62.8%

\* These percentages utilized in developing future attendance projections; see text.

Source: City of Sacramento Department of Parks and Community Services, Zoo-2002, Master Plan for the Sacramento Zoo and Surrounding Area, undated; Sacramento Area Council of Governments, Growth Projections by Community Area, Final Draft for Sacramento. August 25, 1987.

it is likely that a major part is due to the presence or absence of new or improved exhibits. This is corroborated by the experience of the San Francisco Zoo, discussed below. Although the rise in admission fees was large in percentage terms, it remains relatively low in absolute terms compared to many forms of family entertainment, suggesting that admission fees would not be a substantial barrier to attendance if the Zoo offers attractive exhibits and facilities.

For comparison, Table 3.1-2, page 6, shows attendance for the last decade at the San Francisco Zoological Gardens (Zoo). The San Francisco Zoo is located in the major metropolitan area closest to Sacramento, and, like the Sacramento Zoo, is in an area with a variety of other attractions that tend to compete with the Zoo for visitors. Also, like the Sacramento Zoo, the San Francisco Zoo has been in existence for many years, and, during the late 1970s, lacked renovation and new exhibits. As a consequence, San Francisco Zoo attendance declined to a low of 589,263 annual visitors in 1979. Between 1980 and 1985, a number of new and renovated exhibits opened, and attendance rose to a level of 1,208,431 in 1985. This doubling of attendance is attributable to the opening of significant new permanent and temporary exhibits including a six month visitation of two giant pandas from China, and is similar to the pattern experienced by the Sacramento Zoo.

#### Projected Attendance

Alternative B-1 (No-Project Alternative): The No-Project Alternative would involve a moratorium on Zoo improvements. As such, it would not only preclude new exhibits, but could be expected to result in the aging of existing exhibits over time, and a decline in the relative attractiveness of the Zoo compared to its previous condition and to alternative visitor attractions.

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Table 3.1-2: Attendance at San Francisco Zoo, 1976-1985

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Year	Attendance
1976	760,041 <sup>1</sup>
1977	817,303
1978	656,135
1979	589,263
1980	709,643
1981	766,429
1982	733,334
1983	752,973
1984	1,076,576
1985	1,208,431

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<sup>1</sup> The San Francisco Zoo was closed for approximately 35 days in 1976 due to a strike.

Source: San Francisco Zoological Gardens.

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Thus, it would be expected that Zoo attendance would decline over time, because the number of visitors depends, to a certain extent, on the attractiveness and extensiveness of facilities.

As discussed above, the San Francisco Zoo also experienced substantial attendance declines during periods which lacked major renovations or new exhibits.

Therefore, it is projected that the No-project Alternative would, by the projection years of 1995/1996 and 2002/2003, result in a decline in attendance to the historic low of 36 percent of population. Sacramento County's population is projected to increase by 32 percent between 1985 and 2000, a 2.2 percent annual rate of increase.<sup>2</sup> Zoo attendance at 36 percent of projected future population would result in 391,000 annual visitors in 1995/1996 and 444,000 in 2002/2003, as shown in Table 3.1-3 (page 3-8).

Alternative B-2 (Renovation Within Existing Boundaries): Under Alternative B-2, Zoo facilities within the existing 14-acre site would be renovated, but there would be no expansion in size of the Zoo. Improvements would include renovation of many of the outdated exhibit areas, as well as a new education/administration building and a new pedestrian overcrossing of Land Park Drive.

Thus, Alternative B-2 would enhance the attractiveness of existing exhibits, but would not involve additional area with new exhibits as in Alternatives B-3 and B-4.

As discussed above, renovations can substantially enhance attendance which would otherwise fall over time if exhibits are not maintained or renovated. Due to the improvements that have occurred at the Sacramento Zoo since 1980, attendance has increased significantly, to a level of approximately 54 percent of



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Table 3.1-3: Projected Zoo Attendance  
for Project Alternatives

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Year	Alternatives			
	B-1	B-2	B-3	B-4
1995/1996	391,000	593,000	718,000	898,000
2002/2003	444,000	673,000	800,000	1,000,000

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Source: City of Sacramento Department of Parks and Community Services. Zoo-2002 Master Plan for the Sacramento Zoo and Surrounding Area, updated; EIP Associates.

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County population in 1985/1986 and 63 percent of County population in 1986/1987, as shown in Table 3.1-1. The 1986/1987 attendance was unusually high due to the Zoo's 60th birthday celebration, but it is anticipated that the renovation and new facilities in Alternative B-2 can maintain the 1985/1986 attendance rate through the projection years of 1995/1996 and 2002/2003. Attendance of 54 percent of projected future County population would result in attendance of 593,000 in 1995/1996 and 673,000 in 2002/2003. This is substantially higher than the attendance projected for B-1, the No-Project Alternative, in which a decline in attendance is projected due to lack of renovation and new exhibits.

Alternative B-3 (Master Plan: Renovation and 2-Acre Expansion):  
This Alternative would involve renovation of many of the outdated exhibits at the existing Zoo site, as well as an expansion of the Zoo onto a 2 acre site to the north. The expansion area would have a new African Rivers Aviary, tortoise exhibit, and picnic area. The 2-acre expansion would increase the existing 14-acre Zoo area by approximately 15 percent.

According to the Master Plan for the Zoo, annual attendance is projected to be 718,000 in 1995/1996 and 800,000 in (presumably) 2002/2003.<sup>1</sup> This increased attendance is predicated upon two factors: increased population in the Sacramento area; and attraction of a higher proportion of residents due to improved and new exhibits and increased marketing and promotion.

As discussed above, the experience of the Sacramento and San Francisco Zoos indicates that substantial increases in attendance can be generated by new and/or renovated exhibits.

As discussed above in Alternative B-2, if Zoo attendance remains at the same proportion of population that was experienced during 1985/1986, and population grows at the projected 2.2 percent

rate, Zoo attendance would be approximately 593,000 in 1995/1996 and 673,000 in 2002/2003. The Master Plan projects that, with the proposed improvements, attendance would be 718,000 in 1995/1996 and 800,000 by the completion of Zoo-2002 (presumably the year 2002/2003).<sup>1</sup> These are increases in attendance of 21 and 19 percent, respectively, over the attendance that would occur if attendance remained a constant proportion of population. Although such increases are substantial, past experience indicates that such levels of increase are plausible.

Although there is no assurance that Alternative B-3 will generate or sustain this level of attendance, these projections in the Master Plan represent an appropriate estimate, for purposes of this EIR, of the magnitude of impacts that could occur.

Alternative B-4 (Renovation Plus 6-Acre Expansion): This Alternative would involve renovation of many of the outdated exhibit areas at the existing Zoo site, plus a new education/administration building, a new pedestrian overcrossing of Land Park Drive, and relocation of amusement and pony rides. It would also include an expansion of the Zoo to a 2-acre site to the north (with an African Rivers Aviary, tortoise exhibit, and picnic area) and to a 4-acre site to the east across Land Park Drive in the area of the existing pony ride concession (with a new Australian section containing several exhibits).

This Alternative would both enhance the attractiveness of existing Zoo exhibits and add an additional 6 acres of exhibits to the existing Zoo, or 4 acres more than Alternative B-3 (the Zoo Master Plan). This would be an expansion of approximately 25 percent over the 16-acre Zoo area in Alternative B-3. Renovation of the existing Zoo facilities would be expected to maintain the current high levels of attendance, and the new exhibit areas would be expected to draw additional visitors, both because of

the interest in new exhibits and the expanded area, which could accommodate more visitors without crowding.

It is projected that Alternative B-4 would attract the number of visitors projected for Alternative B-3, as well as increase this attendance by an additional 25 percent, due to the additional attraction and exhibit space of the Australian exhibit in the 4-acre expansion site to the east. This is a substantial increase, and is based on the 25 percent expansion in Zoo area and the variety of potentially attractive new exhibits: koalas, mugger crocodiles, magpie geese, tree kangaroos, a nocturnal exhibit with reverse light cycle, and an "outback farm" with camel rides and a petting zoo.

As shown in Table 3.1-3, 1995/1996 attendance is projected at 898,000 and 2002/2003 attendance at 1,000,000.

#### Impacts

Alternative B-1: Alternative B-1 would consist of a moratorium on Zoo improvements, which would perpetuate the type and design of existing exhibits and facilities.

Some of the Zoo's existing exhibits are old and of outdated design, consisting of small, unnatural cages or structures. In some cases, service or holding areas are inadequate, or the exhibits constitute potential dangers for the animals. For example, the hippopotamus pool has a square edge and a rough surface, which caused a fatal injury to one hippopotamus. Under Alternative B-1, existing exhibits could not be improved to remedy existing deficiencies or to incorporate future new methods of displaying animals and their habitats.

Alternative B-1 would also have an adverse impact on the potential educational value of the Zoo. At a time when the value of

and threats to wildlife are increasingly being recognized, appropriate education through presentation of wildlife in realistic, natural settings, with useful and informative interpretive displays, is gaining in importance.

In addition to the education provided by the exhibits and their interpretive materials, the Zoo's education department conducts a variety of classes. The education department is currently housed in a 20 by 60 foot trailer, which is not considered adequate to provide space for the classes for which a demand exists.<sup>1</sup> This trailer is also used for staff, board, and volunteer meetings, as well as Boy Scout meetings. Thus, Alternative B-1 would limit the availability of classes conducted by the Zoo's education department. Because the only suitable indoor space for children's educational activities is this trailer, Alternative B-1 would limit educational activities for school groups.

The No-Project Alternative would also tend to diminish the recreational value of the Zoo over time, as the exhibits and facilities age and become outmoded, making the Zoo less attractive for recreational uses relative to other, more modern alternatives.

Alternative B-1 would preclude the improvement of existing exhibits, some of which are currently considered to have aesthetic values inferior to the potential of modern exhibits. Some of the older Zoo exhibits are rectilinear and sterile in nature, with chain link barriers and little landscaping. Alternative B-1 would preclude their replacement with modern Zoo exhibits, which have more natural settings, less visually obtrusive barriers, and more landscaping, and are generally considered more aesthetically pleasing.

Existing health and safety conditions at the Zoo would not be changed by Alternative B-1. (The future availability of funding

for operations could affect the Zoo's ability to maintain or improve existing health and safety conditions.)

Alternative B-1 would not change the existing visitor capacity of the Zoo, in terms of the number that could be served, circulation patterns, and general convenience of facilities to Zoo visitors. If attendance increases due to increasing population or other reasons, the increased crowding would occur during periods of peak use at the Zoo.

The height and nature of some of the Zoo's existing barriers limit and sometimes obstruct viewing of some exhibits for small children and wheelchair-bound persons. Alternative B-1 would preclude amelioration of these conditions.

Alternative B-2: Alternative B-2 would involve improving and modernizing the Zoo within its existing boundaries. As such, it would ameliorate most of the deficiencies or constraints of the existing Zoo that are discussed above under Alternative B-1.

Modernization and improvement of the Zoo's existing old and out-dated exhibits would be allowed by Alternative B-2, providing displays that are of higher educational and aesthetic value, and safer and more natural environments for the animals. Under Alternative B-2, incorporation of current methods of displaying animals and their habitats would include: terrain and/or landscaping appropriate to the species; refuge areas for weaker, less dominant animals; opportunities for animals to mark their territory; suitable on- or off-exhibit conditions to allow young to be parent raised; and suitable substratum for natural behavior (e.g., soil for burrowing animals, and hard surfaces for normal wearing of hooves of hoofed animals). Improvements would also include utilization of moats and barriers which appear to be part of the natural landscape, and sizing of exhibits to accommodate behavioral and social needs of the animals.

Alternative B-2 would provide improved educational values. Presentation of animals in realistic, natural settings, with useful and modern interpretive displays would more adequately convey information about the animals and fulfill the public's expectations of the educational functions of the Zoo.

Alternative B-2 would include an Education/Administration building, with classroom and administrative space for educational functions. This would allow improvement and expansion of the Zoo's formal educational functions, and greater special assembly space for school groups.

The recreational value of the Zoo would be enhanced by Alternative B-2, with new and improved exhibits and facilities and enhanced landscaping providing a more attractive recreational experience.

Alternative B-2 would improve the aesthetic values of the Zoo, by providing modern Zoo exhibits with more natural settings, less visually obtrusive barriers, and more landscaping, which are generally considered more aesthetically pleasing. Design plans include use of landforms, rock work and vegetation to hide barriers, create an illusion of freedom, and enhance aesthetic qualities.

New exhibits would be designed to insure the comfort and safety of animals, as well as the safety of keepers. Off-exhibit animal quarters, the site of most feeding, care and observation, would be designed to be as hygienic as possible, with adequately sloping floors, rounded corners, elimination of all possible vermin access points, and impermeable surfaces. These structures would have double doors to prevent escapes and separate animals for treatment, if necessary. Thus, Alternative B-2 could enhance health and safety conditions at the Zoo.

Alternative B-2 would include rest areas and observation points designed to maximize visitor comfort and viewing. Benches with backs would be placed along walkways and adjacent to exhibits, and, where possible, viewing stations would be multi-nodal or multi-linear. A main design objective would be to eliminate chain-link barriers and replace them with natural barriers, such as water-filled or dry moats, islands, fences, and enclosed glass exhibits. These improvements would eliminate or reduce existing barriers to views of small children and wheelchair-bound persons caused by the nature and height of some of the Zoo's existing barriers.

Proposed Zoo improvements are intended to improve circulation within the Zoo. Design elements that would improve circulation include the layout of paths, conveniently located benches along the walkways, avoidance of intersections of pathways with service roads where possible, and development of exhibits in currently underutilized areas of the Zoo. The entire circulation system will be barrier-free for the handicapped.

In addition to the above improvements to internal circulation, a pedestrian overcrossing over Land Park Drive would improve access to the Zoo.

Provision of additional restrooms and food service concessions would enhance the convenience of visitors.

Although Alternative B-2 would not increase the acreage of the existing Zoo, reduction of crowding at the site is anticipated, due to development of exhibits in currently underutilized areas of the Zoo and improved circulation. Thus, Alternative B-2 could accommodate a larger number of visitors without crowding.

Alternative B-3: The impacts of Alternative B-3 would generally be similar to those of Alternative B-2, with respect to improving



the Zoo's educational and aesthetic value, providing safer and better environments for the animals, expanding classroom space for educational functions, expanding special assembly space for school groups, enhancing the recreational and aesthetic values of the Zoo, insuring the comfort and safety of animals and keepers, improving visitor comfort and viewing, reduction of barriers to views of small children and wheelchair-bound persons, improvement of circulation within the Zoo, and improved visitor convenience.

The main differences between Alternative B-3 and Alternative B-2 would be the creation of an additional 2 acres of exhibits and the only open space in the Zoo for picnics and fundraising activities. This alternative would increase visitor capacity as well as enhance the educational value of the Zoo by providing a greater number and variety of exhibits.

Alternative B-4: The impacts of Alternative B-4 would also be generally similar to those of Alternatives B-2 and B-3, with the main differences being 4 acres of exhibits more than Alternative B-3, and 6 acres of exhibits more than Alternative B-2. This would increase visitor capacity and enhance the Zoo's educational value accordingly.

#### Mitigation Measures

Alternative B-1: The deficiencies associated with Alternative B-1 discussed above could be mitigated through the various project components of Alternatives B-2, B-3, and B-4. As discussed below under Alternative B-2, these project alternatives and their associated increases in visitor populations would create impacts, whose mitigations are discussed elsewhere in this report.

Alternative B-2: The projected increase in visitor populations would create impacts in the areas of Land Use, Traffic, Circulation, Parking, Air Quality, Noise, Public Facilities and Services, Vegetation, Cultural Resources, Aesthetics/Light and

Glare, and Fiscal Balance. Mitigation measures for these impacts are discussed in the appropriate sections of this report.

Alternative B-3: Same as Alternative B-2.

Alternative B-4: Same as Alternative B-2.

### 3.2 Land Use

#### Setting

Local Setting: William Land Park, one of the City's regional parks, occupies roughly 236.6 acres in South Sacramento near the intersection of Highway 99 and Sutterville Road (see Figure 1.2-1 in the Project Description). The park is set among the quiet, established Land Park neighborhood to the north and south, the Southern Pacific railroad on the west, and Freeport Boulevard on the east. Sacramento City College faces the park across Freeport Boulevard.

Drawing visitors locally and regionally, the park is an important element in the City's park system. Within the park boundaries are the following attractions: the Sacramento Zoo (14 acres); Fairytale Town, a children's fantasyland (3.5 acres); Funderland, children's amusement rides (+/-2 acres); a nine-hole golf course; pony rides; an outdoor amphitheater; picnic areas; ponds; baseball diamonds and soccer fields.

The park is home to a great variety of uses. In addition to the considerable passive recreation supported by the park, a golf club and soccer organizations use William Land Park's facilities extensively. The outstanding number, variety, and size of trees in the park are an attraction to the parks thousands of picnickers. Local residents enjoy William Land Park daily, using it as they would a local park. City-wide special events are frequently booked for the park.

Comparison to Other Parks: Several regional parks, encompassing the western United States, were surveyed with the intent to place William Land Park and its uses in context. The specific parks and park systems to be surveyed were identified by the Department of Parks and Community Services. Please refer to Table 3.2-1 for a list of parks and park systems surveyed.

Table 3.2-1  
Parks and Municipalities Surveyed

Park Name	Municipality	Park Size	Zoo
Bidwell	City of Chico	2,258	No
East Bay Regional Park System (46 park units)	City of Oakland	62,300	No
Fairmont	City of Riverside	24	No
Golden Gate	City of San Francisco	1,017	No
Micke Grove	San Joaquin County	63	Yes
Reid	City of Tucson, Arizona	125	Yes
Roedding	City of Fresno	140	Yes
Secum	City of San Bernardino	52	No
Washington	City of Portland, Oregon	450	Yes

Of all units surveyed, five were found to be similar to the size, use, and demographics of William Land Park. The first two listed below were particularly comparable:

- Micke Grove Park, San Joaquin County
- Roedding Park, City of Fresno
- Reid Park, City of Tucson, Arizona
- Washington Park, City of Portland, Oregon
- Bidwell Park, City of Chico

All but Bidwell Park in Chico contain a zoo.

Micke Grove Park is operated by the County of San Joaquin and is located in a large rural area between Lodi and Stockton and serves a county population of roughly 435,000. Developed park acreage, including the zoo, totals roughly 63 acres. The zoo, built in 1957, occupies about 3.5 acres and is situated next to the park grounds. Roughly 500,000 people visit the park annually; 330,000 also visit the zoo.

Park features include: picnic areas designed for both large and small groups; a formal Japanese garden; a "tot lot" children's play area; an amusement ride area (similar to Funderland and operated by the same concessionaire); food concessions; baseball diamonds; a swimming pool; a memorial building; and considerable open space under an oak canopy. The memorial building is home to dozens of wedding receptions and other special functions.

The 3.5 acre zoo is heavily used. Preliminary talks are underway to set aside 40 acres for a possible zoo expansion to serve the swelling county population.

Roedding Park occupies roughly 150 acres and is operated by the City of Fresno, serving the greater Central Valley. This 50-year old park supports a variety of uses, including:

picnic pavilions; a bandstand; 18 tennis courts; and several ponds for fishing. Special features include: a .75 acre Storyland theme park for children (similar to Fairytale Town); a 1.5 acre children's amusement ride concession named "Playland" (similar to Funderland); a large pond for boating; and food concessions and restaurant.

The 30-year old, 15 acre Fresno Zoo (in Roedding Park) has recently completed its master plan. Many of its older "chain link" era exhibits have been upgraded to more aesthetic and sensitive natural barrier themes. The Zoo's most recent addition is a "rain forest." New Zoo features proposed in the master plan, in addition to new exhibits, include an improved Zoo entrance, an educational facility, and a docent program. The Zoo receives financial and directional support and assistance from the local Rotary Club and the Fresno Zoological Society.

Excluding the Zoo, all of the previous park features mentioned are commonly found in most regional parks. Other common features in regional parks include: archery and pistol ranges; equestrian and foot trails; interpretive services and facilities; shuffleboard courts; and other active sport courts/arenas. While this is not an exhaustive list, it is a broad representation of features found in other parks surveyed during the course of this EIR. Many other features could be found in regional parks, but are unique to the parks' physical and/or cultural environment.

Comparison to the Recreational Element: In 1984, the Sacramento City Council adopted the Master Plan for Parks Facilities and Recreational Services. In preparing the Master Plan, the Department of Parks and Community Services described the current condition of the City's parks and recreational services, assessed their adequacy, and recommended improvements and renovation. The

Master Plan has been incorporated into the City's General Plan by reference as the Recreation Element.

The Master Plan has prioritized future improvements in the following manner: Priority 1 - totally undeveloped park sites; Priority 2 - undeveloped portions of existing parks; and Priority 3 - developed parks. William Land Park and the Zoo are Priority 3 units for improvement. The Master Plan was written for the Parks and Recreation division of the Department of Parks and Community Services. The Zoo is a separate division within the Department, therefore, the 1984 Master Plan contains no specific direction for Zoo improvements. Unit-specific planning is provided by unit master plans (e.g., Zoo-2002 Master Plan).

#### Impacts

##### Alternative B-1:

Local Setting: No impacts will be generated by this alternative.

Comparison to Other Parks: No impacts will be generated by this alternative.

Comparison to Recreation Element: No impacts will be generated by this alternative.

Alternative B-2: This scenario proposes new and renovated exhibits inside the Zoo's current boundaries, and the following three elements: an administration/education building (proposed either immediately east of Fairytale Town, or just inside the Zoo's entrance); a pedestrian overcrossing between the Zoo and Fairytale Town; and possible relocation of the pony rides and Funderland north of Fairytale Town.

Local Setting: Improvements within the Zoo's current fence line will have no physical land-related impact; however, the

proposed administration/education building could create a minor impact.

Comparison to Other Parks: This scenario, as are all following scenarios, is consistent with the role held by other zoos in the surveyed parks. All surveys of parks with zoos indicate that the existing zoo is either developing, or has developed, modern exhibits and enclosures that emphasize natural and aesthetic barriers.

Comparison to Recreation Element: As stated above, William Land Park and the Zoo are third priority units for facilities development. Actual development would be consistent with the Recreation Element if higher priority units have been adequately developed.

Alternative B-3:

Local Setting: In addition to the impact described above, this scenario, which involves the expansion of the Zoo north to Fifteenth Street, would generate one additional impact. Use of the existing formal garden (which contains the Swanton statue) for Zoo exhibits would result in the loss of free use of this part of the park.

Comparison to Other Parks: Micke Grove Zoo is considerably smaller than the Sacramento Zoo; however, it is possible that 40 acres of park land will be set aside for future zoo use. The Fresno Zoo, located in Roedding Park, is of comparable size to the Sacramento Zoo, and will soon undergo considerable capital improvements and expansion. The 62-acre Washington Park Zoo in Portland, Oregon, has recently completed additional exhibits. It appears that several zoos have expanded in the past few years. The expansion proposed with scenario B-3 is consistent with this trend.



Comparison to Recreation Element: The same issue of consistency with the General Plan discussed regarding Alternative B-1 applies to this scenario as well.

Alternative B-4:

Local Setting: This scenario proposed, in addition to those actions noted above, a 4-acre expansion east to the land now occupied by the pony rides. This expansion would be necessary to accommodate the proposed Australia theme area. Also proposed is the relocation of the pony rides to an area northeast of Fairytale Town currently undeveloped. The loss of open space to accommodate the relocated pony rides is considered a less than significant impact.

Comparison to Other Parks: As stated in the discussion for Alternative B-3, other zoos have recently expanded or will expand in the near future. The expansion proposed under this scenario is consistent with current trends.

Comparison to Recreation Element: Same as for Alternative B-3.

Mitigation Measures

Alternative B-1:

Local Setting: No mitigation is required.

Comparison to Other Parks: No mitigation is required.

Comparison to Recreation Element: No mitigation is required.

Alternative B-2:

Local Setting: No mitigation is required.

Comparison to Other Parks: As the scenario is consistent with current trends among other zoos, no mitigation is necessary.

Comparison to Recreation Element: To avoid the possibility of actions inconsistent with the General Plan, a determination must be made by the Department of Parks and Community Services that such proposed facility development is justified, and that higher priority units will not be deprived of needed improvements.

Alternative B-3:

Local Setting: The formal garden could be saved and used by both the Zoo and the general public by use of fencing. Fences and gates could allow the garden to be used by the Zoo as an overflow area during peak visitor days to accommodate Zoo picnickers, and allow use of the same area by the public during non-peak times. Of course, the Zoo could not expand its exhibits into this area, but it could gain valuable open space. The net effect of this mitigation measure on the Zoo and its program is dependent on the Zoo's ability to accommodate the displaced exhibits elsewhere.

Comparison to Other Parks: No mitigation is required.

Comparison to Recreation Element: See the discussion for Alternative B-2.

Alternative B-4:

Local Setting: The displacement of the pony rides is adequately mitigated. As proposed, the pony rides will be moved to the other side of Fairytale Town. The loss of open space used for the new pony rides cannot be mitigated, except for in-kind replacement of open space at another park close by.

Comparison to Other Parks: No mitigation is required.

Comparison to Recreation Element: See the discussion for  
Alternative B-2.

### 3.3 Traffic, Circulation, and Parking

#### Setting

Introduction: The purpose of this section of the EIR is to analyze the traffic and parking impacts associated with several alternative Zoo renovation and expansion alternatives. These potential impacts will be directly related to the increase in the number of visitors attracted to the Zoo in each alternative, and can be inferred from the following Table 3.3-1 (identical to Table 3.1-3, shown here again for convenience).

The characteristics of each alternative as it relates to transportation are as follows:

No-Project Alternative (B-1): This alternative assumes a decline in Zoo attendance from the current 1987 level of 581,000 visitors to an attendance of 381,000 visitors in 1995/1996. This would result in a corresponding reduction in traffic and parking impacts.

Renovation within the Existing Boundaries (B-2): This alternative would enhance Zoo attendance, but not significantly. Attendance is projected to be 673,000 visitors in 2002/2003 with this alternative, which is about a 16 percent change over existing levels. This and the following two alternatives include a new pedestrian overcrossing of Land Park Drive.

Expansion to the North (B-3): With this alternative, the number of visitors is estimated to grow to 800,000 by the year 2002/2003, a total growth of 38 percent in the planning period.

Expansion to the East across Land Park Drive (B-4): This alternative would be the most extensive change, and could result in attendance of 1,000,000 visitors per year by 2002/2003, a 72 percent increase over current conditions.

Table 3.3-1: Attendance at Sacramento Zoo, 1978-1987

Year	Zoo Attendance	Sacramento County Population	Attendance as a Percent of Population*
1975/1976	461,000	705,032	65.4%
1976/1977	448,000	723,852	61.9%
1977/1978	415,000	743,175	55.8%
1978/1979	341,000	763,013	44.7%
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1983/1984	441,000	863,709	51.1%
1984/1985	472,000	883,791	53.4%
1985/1986	491,000	904,118	54.3%
1986/1987	581,000	924,913	62.8%

\* These percentages utilized in developing future attendance projections; see text, Section 3.1.

Note: Identical to Table 3.1-3.

Source: City of Sacramento Department of Parks and Community Services, Zoo-2002, Master Plan for the Sacramento Zoo and Surrounding Area, undated: Sacramento Area Council of Governments, Growth Projections by Community Area, Final Draft for Sacramento. August 25, 1987. Calculations by EIP Associates.

For this traffic and parking study, therefore, the existing conditions are assumed to represent a condition with 581,000 annual visitors. These existing impacts will be compared to the maximum predicted level of 1,000,000 annual visitors. The impacts at the intermediate levels can generally be interpolated from these results.

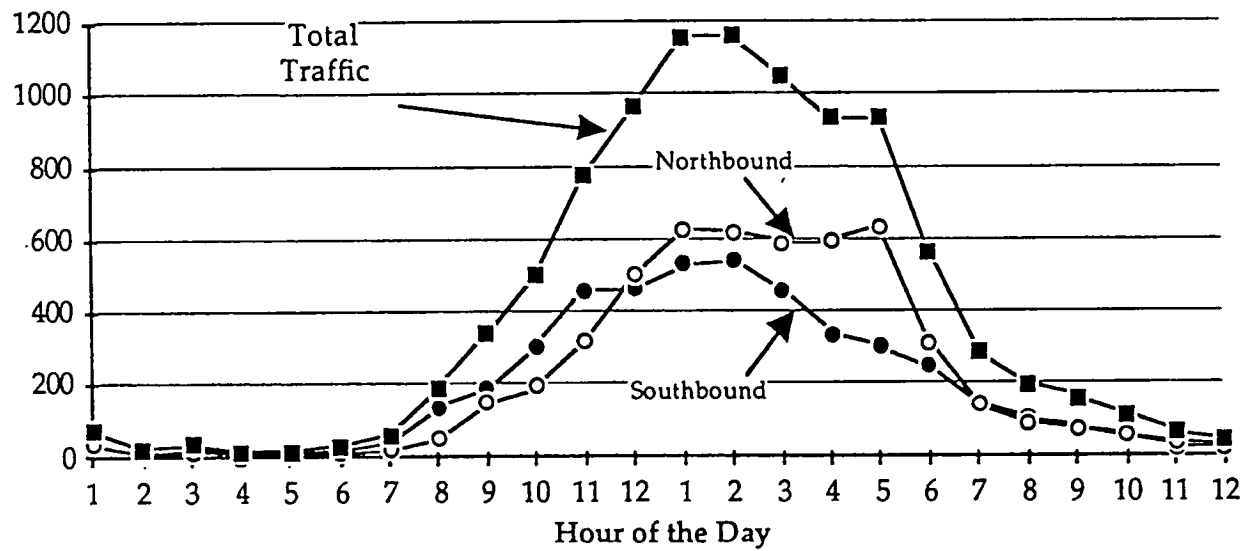
Existing Traffic Conditions: The base traffic conditions in the park vary significantly during each season of the year, and especially by day of the week. Clearly, weekends are the most critical traffic periods, with Sundays and holidays being the heaviest. The non-Zoo park activities are heaviest during the spring and summer months, especially May, June and July. Therefore, when the Zoo has a peak day during June and July, the overall traffic and parking impact can be quite a bit more severe than it would be with the same Zoo attendance in February and March.

In general, the traffic conditions in the vicinity of the park are well within the existing capacity of the streets. Figure 3.3-1 shows the 24-hour traffic on Land Park Drive for a Sunday in March. The total traffic is 9,700 vehicles per day, while Land Park Drive could be capable of carrying over 20,000 vehicles per day without further widening. Sutterville Road, Freeport Boulevard, Riverside Boulevard, and Land Park Drive are all important arterial streets in this area of Sacramento, and carry their heaviest traffic during weekday commute hours. The principal roads within the park are as follows:

Land Park Drive is a four lane roadway passing through the full length of Land Park in a north/south orientation. Land Park Drive narrows to 2 lanes on both ends of the park. It serves as a primary commuter route to the downtown area for the Land Park community as well as parts of South Sacramento. Land Park Drive bisects the park thereby creating

Figure 3.3-1

Traffic Volumes on Land Park Drive  
(North of Sutterville)  
Sunday, March 6, 1988



differing use zones and impeding convenient east/west park flow in Land Park. The Zoo is located on the west side of Land Park Drive while Zoo parking is primarily located on the east side. Accordingly, the many visitors who park east of Land Park Drive face the obstacle of crossing Land Park Drive to gain access to the Zoo. Presently, a crosswalk serves to alert motorists to the potential pedestrian traffic at this location. This crosswalk is augmented by a traffic officer during peak periods on weekends.

15th Avenue connects to Land Park Drive and passes north and then east in a curvilinear manner past Fairytale Town, the amphitheater, and the parking lot located behind Fairytale Town. It continues east ending where it intersects with 18th Street. In the spring of 1986, a curb was installed across 15th Avenue and a modified cul-de-sac was developed thereby blocking through traffic to 18th Street. Fifteenth Avenue provides primary access to Fairytale Town and to the Fairytale Town and Zoo parking lot.

16th Avenue also connects to Land Park Drive and is essentially east/west in orientation. It provides access to the golf course parking lot and to the amusement area. As 16th Avenue extends further to the east it becomes 17th Avenue which connects to Sutterville Road.

12th and 14th Avenues are low density roads providing east/west circulation across the park. They are wide curvilinear roads lined with mature trees. These avenues are conducive to slower traffic and have much lower traffic volumes than Land Park Drive.

West Land Park Drive forms part of the park's western boundary. Its southern end is adjacent to Holy Spirit School and provides access to the Zoo's current Administration Office,

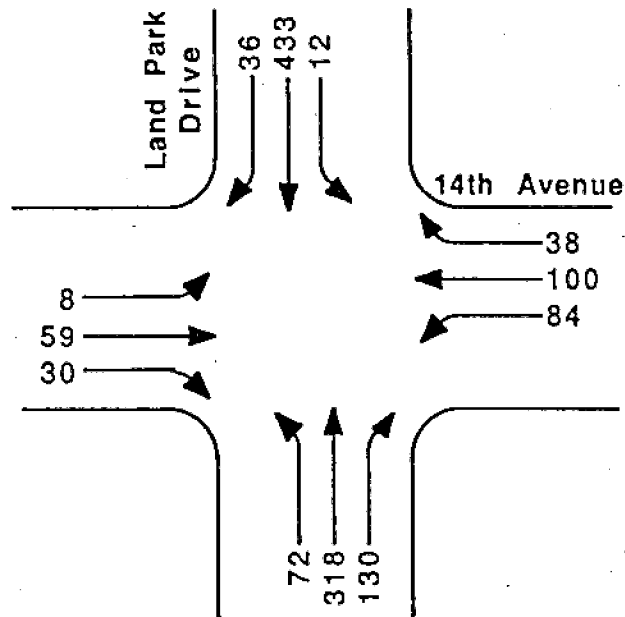


staff headquarters and storage areas. The north end of West Land Park Drive is a low density traffic route serving limited residential traffic. By contrast, the south end of the drive has higher traffic due to Holy Spirit School and access for the Zoo's educational programs.

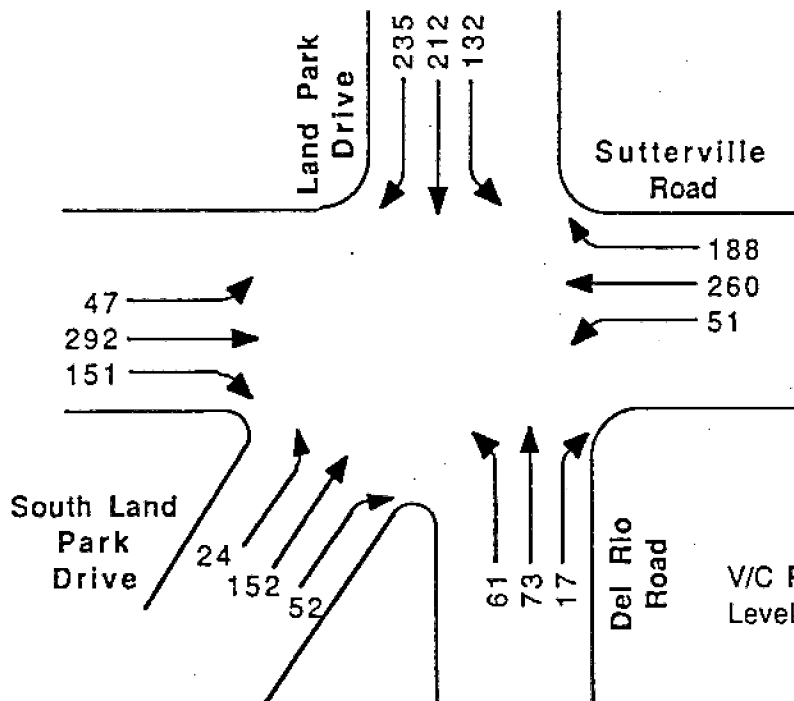
The park roads are the principal access roads for many of the residential areas to the west of the park. As such, the weekend traffic on these streets causes delay and congestion that affects local access. As summarized in Figure 3.3-2, however, existing conditions are acceptable.

Vehicle Trip Generation: Based on daily attendance figures, the peak traffic generation periods for the Zoo are Sundays and holidays. Rarely does the Zoo attendance exceed 2,000 visitors on a weekday, while typical Sunday visitation can be over 4,000. The Zoo surveys indicate an average auto occupancy rate of 3.0 persons per vehicle. This is consistent with other park traffic studies which report 2.8 persons per vehicle. Given this rate, a daily visitor population of 4,000 can be expected to generate approximately 3,500 vehicle trips to and from the Zoo. This traffic also includes staff working at the Zoo. On this typical day, it is expected that about 15 percent, or 525 trips will occur during the peak hour. The traffic counts on Land Park Drive show this peak hour is generally between 1:00 and 2:00 p.m. Traffic on other days should be in proportion to the number of visitors.

Existing Parking Situation: Parking facilities in Land Park consist of two off-street parking lots, and extensive use of on-street parking. The primary parking lot in Land Park is located just east of Fairytale Town and is accessed by 16th Avenue off of Land Park Drive. This lot's capacity is 223 cars. It serves Fairytale Town, the Zoo, the amphitheater, three soccer fields and the open space areas to both the north and east.



V/C Ratio = 0.54  
Level of Service - "A"



V/C Ratio = 0.71  
Level of Service - "C"

Sacramento Zoo

Master Plan  
Traffic Analysis

Figure 3.3-2

Existing Conditions  
Peak Hour Traffic  
(Sunday 1:00 - 2:00 PM)

Abrams Associates

A second parking lot is located off 17th Avenue, adjacent to the Land Park Golf Clubhouse. This lot has a capacity of about 188 cars. It primarily serves golf course patrons and to a lesser degree, the Amusement Area, Fairytale Town and the Zoo. Approximately 87 angle parking stalls are located on both sides of 15th Avenue adjacent to Fairytale Town. This parking serves Fairytale Town, the Zoo, the amphitheater and open space park areas to the north and east.

These lots are generally adequate with the exception of peak weekends when they are fully occupied for most of the day. These characteristics are discussed in the parking impact section of the report.

Current Parking Supply: In the preparation of this study, an inventory was made of the number of parking spaces available to Land Park uses on a typical weekend. Table 3.3-2 below shows the results of this inventory. The location of these spaces with respect to the Zoo entrance is shown of Figure 3.3-3. In addition to these spaces there is also a parking area for Zoo employees and volunteers located off of 13th Avenue. This area contains approximately 20 spaces.

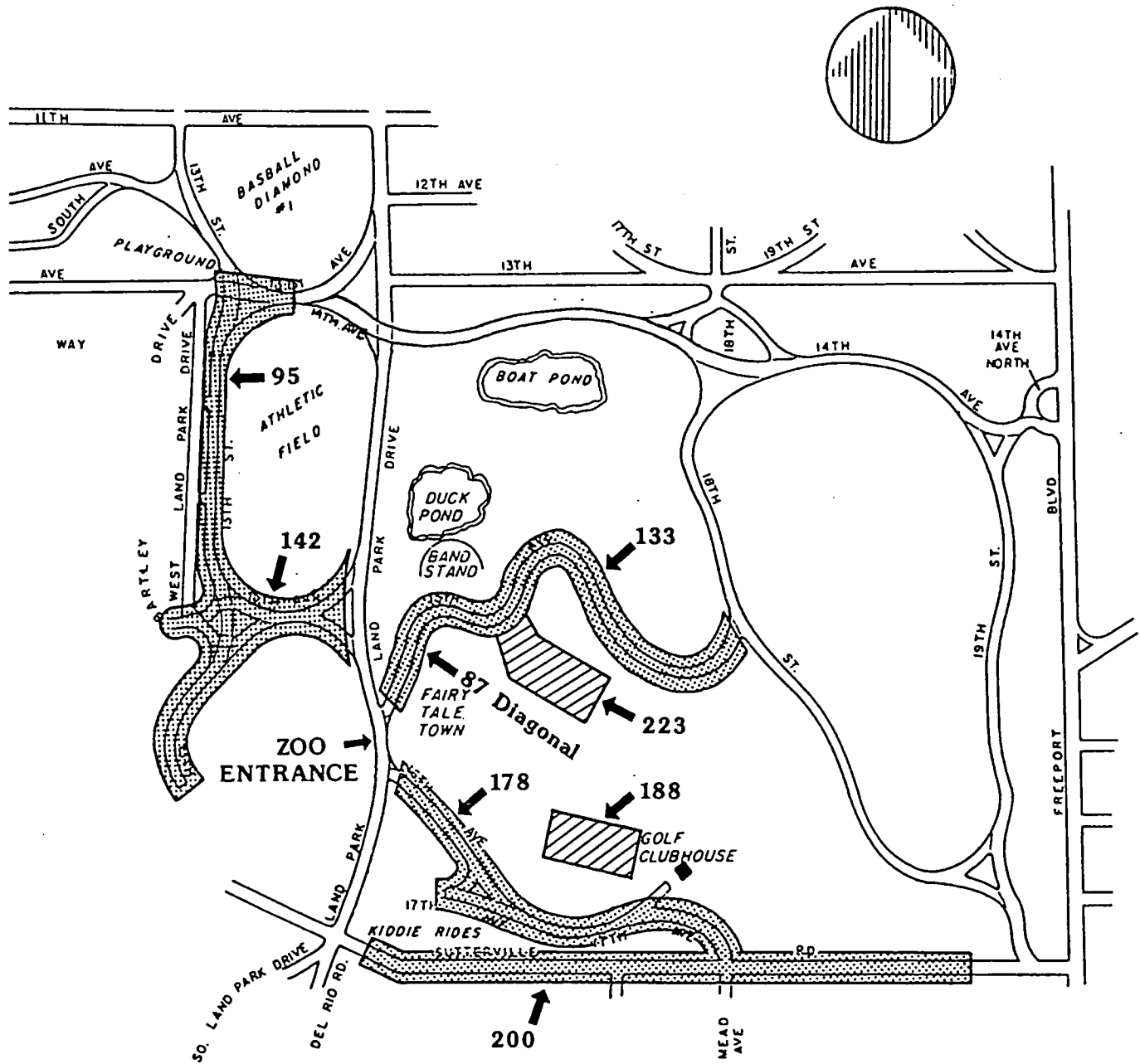
The inventory shows that there are 411 spaces in the parking lots around the Zoo, and an additional 715 on-street parking spaces that are used by Zoo patrons, and other visitors to the park. There are other on-street parking areas such as 14th Avenue, and the 18th/19th Avenue loop to the north and east that are available, but these spaces are beyond a reasonable walking distance to the Zoo entrance. Even on the busiest days, these spaces are infrequently used by Zoo visitors. They will, however, be heavily used for other park activities.

A reasonable walking distance for parking at the Zoo is judged to be about 2,000 feet or about 0.4 miles. While this is a very

Table 3.3-2

Existing Parking Supply  
in the Vicinity of the Zoo

Parking Area	Number of Spaces
<u>Off-Street Lots</u>	
Golf Clubhouse	188
Fairytale Town	223
<u>On-Street</u>	
15th Avenue (Diagonal)	87
15th Avenue (To the East)	133
16th/17th Avenues	178
13th/15th Avenues (West)	142
13th Street	95
Sutterville Road	200
Total Spaces	1,246



Source: Abrams Associates; Feb. '88

Sacramento Zoo Master Plan

Traffic & Parking Study

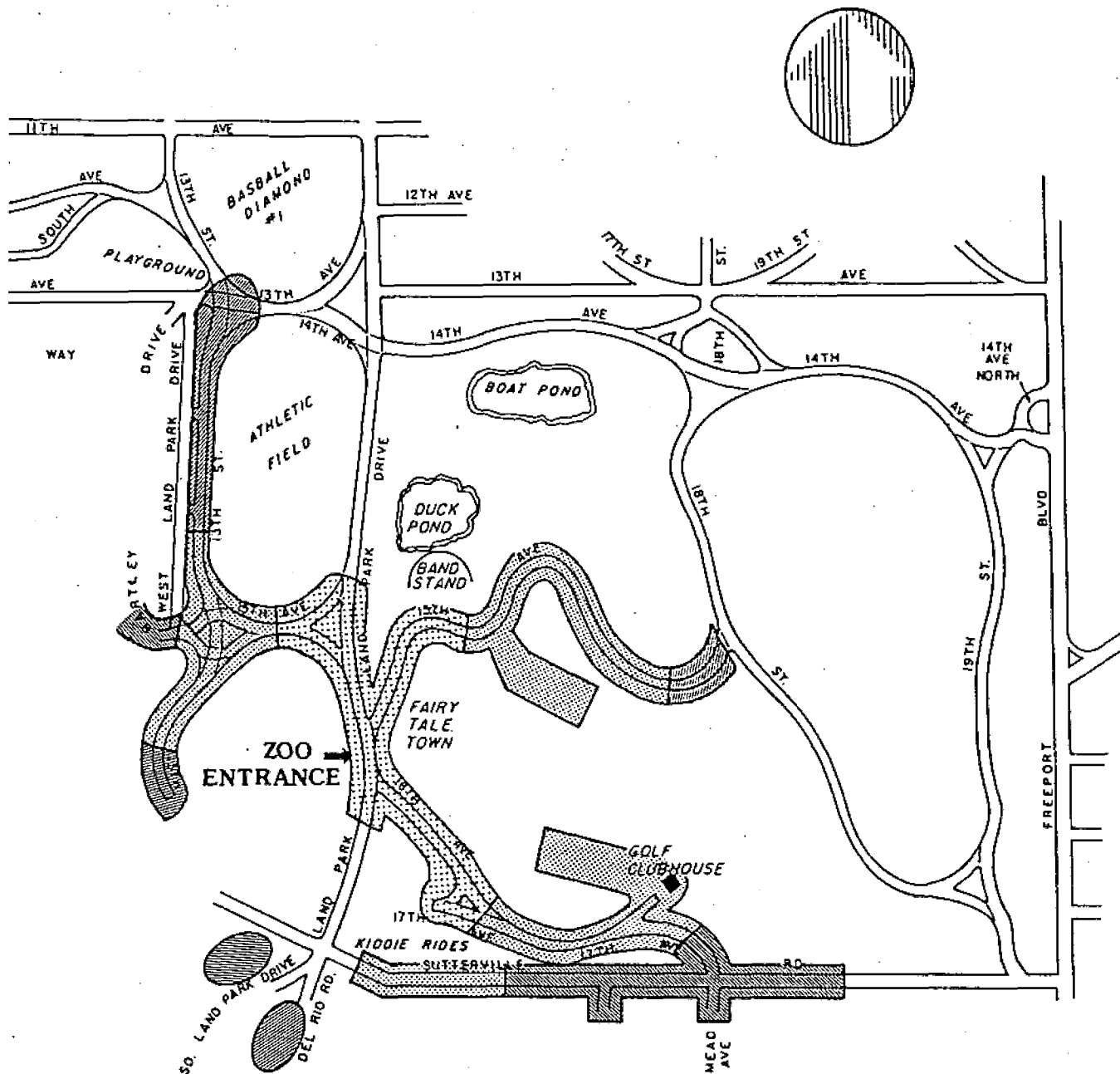
Figure 3.3-3

EXISTING PARKING SUPPLY

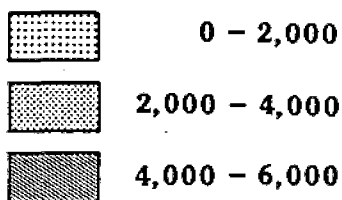
subjective assessment, it is unlikely that many people will be willing to walk much greater distances. Many visitors will have a limit that is much less than this, especially families with small children. When the parking at this distance from the Zoo entrance is at capacity, visitors will continue to circulate to await the availability of closer-in parking. Therefore, while there may be available parking on streets within the park, the residential streets and the shopping center parking lot are much closer and more convenient to the Zoo entrance.

The parking space usage is directly related to the walking distances to the Zoo entrance. The first spaces to be filled are the on-street diagonal spaces on 15th Avenue, and the on-street spaces on 16th/17th Avenues. For days on which the Zoo attendance is less than 1,000 visitors, these are the only spaces to be filled. The next spaces that are used to capacity are the Golf Clubhouse and Fairytale Town Lots, and on-street parking on 13th, 15th, and 17th Avenues. Once these spaces become filled, the next areas to be used are Sutterville Road, 13th Street, and the residential streets to the west. It can also be seen that Zoo parking is occurring in the commercial area parking lots south of Sutterville Road.

Based on the parking occupancy surveys that were conducted, it is estimated that Zoo parking starts to overflow into the residential areas to the west of the park (especially Bartley Drive) on days when Zoo attendance exceeds 4,200 visitors (see Figure 3.3-3a). This figure is, of course, approximate because it will vary depending on other activities that are occurring in the park. During June and July, the same Zoo attendance will have a much greater impact because the park is more active with other events. During this period, it is estimated that a Zoo attendance of 3,800 visitors will cause an overflow parking into these residential areas.



Parking Demand When  
Zoo Attendance is:



Source: Abrams Associates; Feb. '88

Sacramento Zoo Master Plan

Traffic & Parking Study

RELATIONSHIP BETWEEN  
ZOO ATTENDANCE &  
PARKING DEMAND

Figure 3.3-3a

Planned Transportation Improvements: There are no currently planned changes to the roadway system in the vicinity of the Park that will affect traffic flow. The City of Sacramento does not have any capital improvement projects planned for this area.

Existing & Projected Zoo Visitation: Over the past five years, the Zoo has had sharply increasing visitation, with the annual attendance increasing from 295,000 visitors in the 1981/1982 season to 581,000 during 1986/1987. During the 1986/1987 season, the highest single day had almost 5,000 visitors. There have been several days already during the 1987/1988 season where the daily attendance has exceeded this level. Traditionally, the heaviest attendance month has been May, with Sundays and holidays (Memorial Day) in May being the peak days of the year. Figure 3.3-4 shows the monthly attendance. The 1986/1987 season can be considered to be somewhat unusual since the Zoo had a number of special events celebrating the Zoo's 60th anniversary.

The Zoo Master Plan suggest that visitation will increase at a rate that is slightly higher than the growth in the Sacramento area population, and that an annual attendance of 718,000 can be expected by 1995/1996 for Alternative B-3. If the same trend continues, the Zoo could attract 800,000 visitors annually by the year 2002.

The daily attendance at the Zoo has been summarized on Figure 3.3-5 and Table 3.3-3. This graph shows the number of days during the year for each level of visitation. The initial forecasts of when traffic and parking problems develop is on days when Zoo attendance exceeds 4,000. During 1986/1987, there were 22 days when this occurred, all being Sundays and holidays. The heaviest day of the year was November 26, Thanksgiving, a free admission day.



Figure 3.3-4

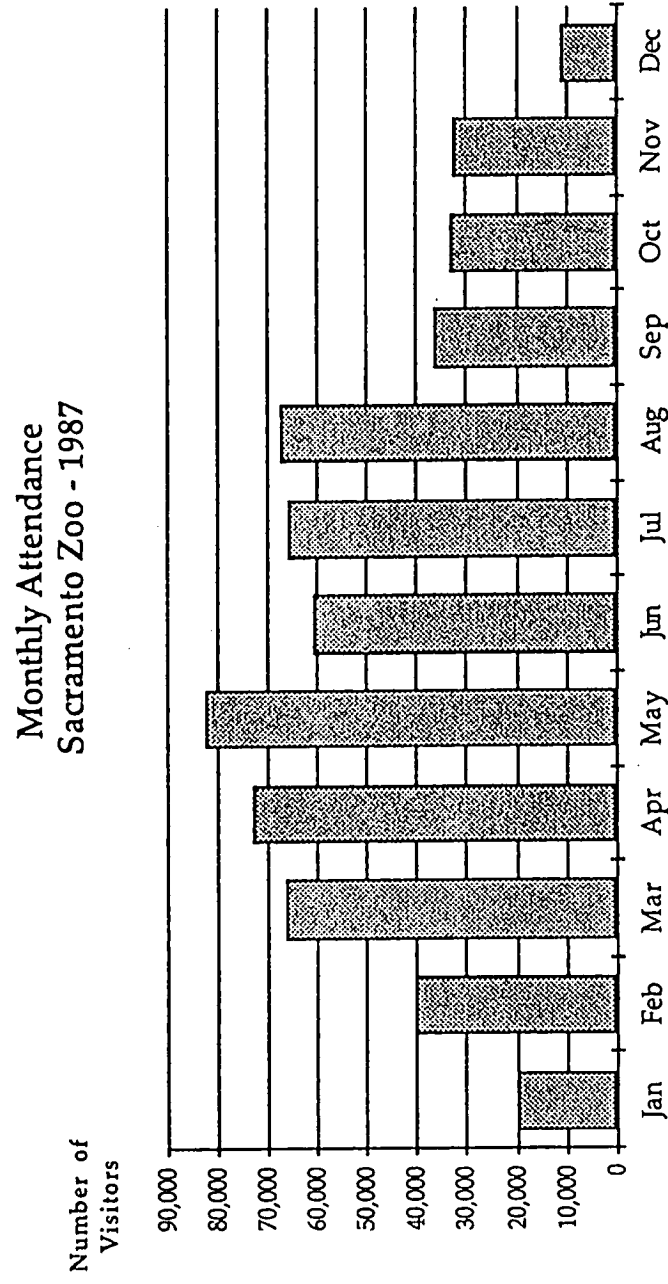


Figure 3.3-5

Attendance Data  
Sacramento Zoo - 1987

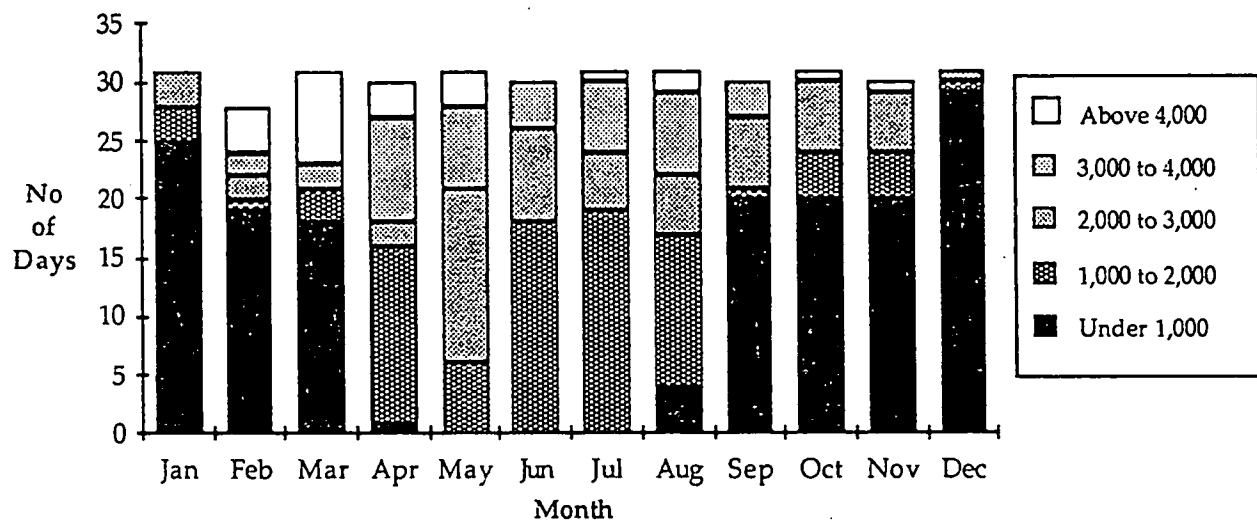


Table 3.3-3  
Sacramento Zoo  
Range of Daily Attendance

Month	Number of Days					Total Days
	<1,000	1,000 to 2,000	2,000 to 3,000	3,000 to 4,000	>4,000	
January	25	3	3			31
February	15	1	2	2	4	29
March	18	3		2	8	30
April	1	15	2	9	3	30
May		6	15	7	3	31
June		18	8	4		30
July		19	5	6	1	31
August	4	13	5	7	2	31
September	20	1	6	3		30
October	20	4	6	1		31
November	20	4	5		1	30
December	29	1	1			31
	156	88	58	41	22	365

Future Traffic and Parking Demands: Given these visitation forecasts, the future capacity calculations show the intersections will operate as shown in Table 3.3-4.

### Impacts

The transportation related impacts of the proposed Zoo expansion have been evaluated under several categories. These include roadway capacity and congestion, transit, parking, pedestrian safety, and construction impacts. The following sections describe the major findings of this study.

Roadway Capacity Impacts: The future Zoo expansion, in combination with increases in other park activities, will result in the traffic volumes as shown in Table 3.3-4. This shows a 30 percent increase in traffic by 1995/1996, and a 48 percent increase by the year 2005/2006. This level of increase will also occur on other park roads.

This level of traffic is well within the physical capacity of the park roads, and further roadway widening is not necessary. However, this future level of traffic will change the relative perception of traffic congestion in the park. Between 12:00 noon and 3:00 p.m., Land Park Drive, in the vicinity of the Zoo entrance, is currently at about its peak capacity. In the future, this level of congestion will not change significantly, but rather it is likely that the period of peak traffic congestion will start earlier and last longer on each weekend peak day. There will also be more frequent days on which this congestion occurs. This traffic congestion would be reduced somewhat by the construction of the pedestrian overcrossing.

The roadway intersection that will be most directly affected by the Zoo expansion is at Land Park Drive and Sutterville Road. To a lesser extent, there will also be impacts at the Land Park Drive/14th Avenue intersection. The projected future traffic

Table 3.3-4

24-Hour Sunday Traffic Volumes on Land Park Drive

Location	Existing Conditions 1988	Future Projections	
		1 1996/1997	2 2005/2006
North of Sutterville Road	9,800	12,600	14,200
At 14th Avenue	9,400	12,300	13,900

Source: Abrams Associates Estimates

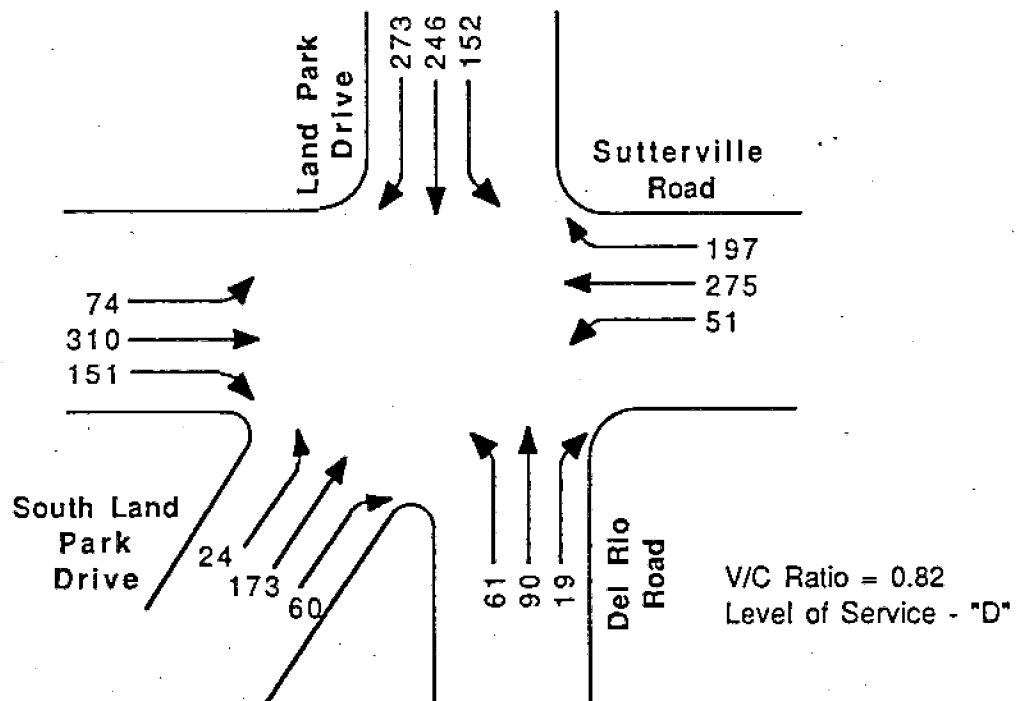
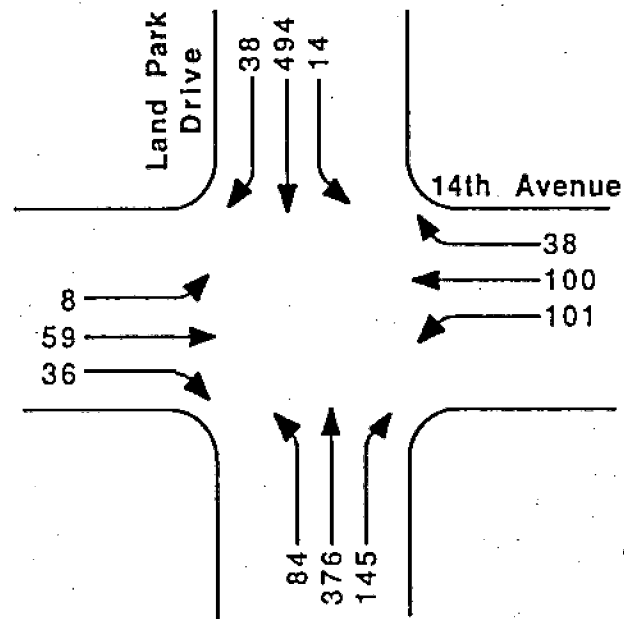
volumes at these two locations are shown on Figure 3.3-6. The results of the intersection capacity calculations are shown in Table 3.3-5 below.

These calculations indicate that at Land Park Drive and 14th Avenue there will not be a traffic capacity problem even with the most extensive expansion alternative. This conclusion applies to all other roads within the park. While there will be some additional delay and congestion, these problems are not considered to require any special mitigation measures. None of the intersections will require traffic signals or special traffic control devices.

At Land Park and Sutterville, however, the Zoo expansion can be expected to adversely affect intersection capacity. The current conditions will change from "Level C" to "Level D," which indicates increasing delay and congestion that are approaching intolerable levels. The City of Sacramento policy is to avoid exceeding Level-of-Service "C," or a Volume/Capacity Ratio of 0.80. This intersection should require a mitigation to improve its capacity and safety.

At other intersections on the perimeter of Land Park, the Zoo expansion will not affect intersection capacity or adversely affect roadway safety. An analysis of other Sutterville Road intersections such as at the I-5 ramps, and at Freeport Boulevard shows that they will continue to operate at acceptable levels on weekends and holidays when the park activities are highest. During the weekday peak hours, there are several intersections that are approaching capacity, but the Zoo expansion will not have an effect.

Public Transit Impacts: As discussed earlier, Zoo visitors do not at the present time make use of RT Transit service to any great extent. RT routes 5 and 6 follow Land Park Drive between



Sacramento Zoo

Master Plan  
Traffic Analysis

Figure 3.3-6

Future Traffic Conditions  
With Trips Generated by the Project.  
(Sunday, 1996/97)

Abrams Associates

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Table 3.3-5  
Capacity Calculations  
on Land Park Drive

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Location	Existing Conditions Sunday Peak Hour	Future Projections	
		1 1996/1997	2 2005/2006
Land Park Drive/ 14th Avenue	0.54/A	0.61/B	0.69/B
Land Park Drive/ Sutterville Road	0.71/C	0.82/D	0.88/D

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the Downtown and the Meadowview areas, and operate on 30-minute headways on weekdays. On Saturdays, Sundays, and holidays, there is hourly bus service on Land Park Drive. The bus stops are located in the vicinity of 14th Avenue.

This bus service has the capacity to handle significantly more patronage than it currently does. It is generally agreed that more frequent service would be required in order to attract Zoo visitors. The Zoo expansion will not affect the capacity of these transit routes. A mitigation measure may be to expand this transit service, or to offer discounted admission for users of Regional Transit.

Parking Impacts: As discussed in the previous section, it is estimated that the average vehicle occupancy for visitors to the Zoo is 2.8 persons per vehicle. This was verified by sample surveys of vehicles in the park on March 6, 1988. On a day with 4,000 visitors, there will be 1,450 cars arriving at the Zoo. At the peak parking period, it is estimated that 40 percent of the vehicles will be parked, or a total of 580 vehicles.

The Zoo expansion program is estimated to change the overall parking demand in proportion to the increase in the number of visitors. As with traffic, the peak level of parking demand will not change significantly. However, the number of days of peak demand will continue to grow, and the hours of peak demand will be extended earlier in the day, and later in the evening.

Parking Impacts on Residential Areas: When the Zoo attendance exceeds 4,200 visitors per day (generally on Sundays), vehicles using the Zoo will start to look for parking spaces on residential streets to the west of the park. Bartley Drive is the street most affected by this parking, and will be impacted by this parking demand starting about 11:00 a.m. and lasting until 3:30 p.m. This impact is also accompanied by an increase in

traffic volume on Bartley Drive due to circulating traffic looking for parking. The Zoo expansion will increase this problem if additional parking is not provided.

Residential streets to the west of the park other than Bartley Drive were not observed to be affected, and, given the walking distances involved, would not likely be affected unless the daily Zoo attendance were to exceed 6,000 visitors. This is not expected to occur more than once or twice per year.

The residential areas south of Sutterville Road such as Mead Avenue were not impacted by Zoo parking on the days of the survey. Based on walking distances, it is estimated that these streets would not be affected unless the daily Zoo attendance exceeded 5,000 visitors. The number of times per year attendance reaches this level will increase in the future, and any Zoo expansion will exacerbate this problem if additional parking is not provided.

There are short-term methods to mitigate this impact. On West Land Park Drive, parking has been totally restricted on Sundays. This signing is very effective. On the days of the survey, West Land Park Drive was completely clear of parked vehicles. These types of restrictions could be applied to other affected streets.

Parking Impacts on Commercial Properties: The commercial and shopping areas south of Sutterville Road are also impacted by Zoo parking on days when the daily Zoo attendance exceeds 4,000 visitors. Parking has also been seen to extend along Del Rio Road. It is clear that Zoo expansion will also increase the magnitude of this impact if additional parking is not provided.

Parking Impacts on Park Roadways: The proposed project will also result in additional parking problems within the area of Land Park itself. In combination with the increasing use of other

facilities in the park, the result will be that each year there will be more frequent occurrences on which all convenient parking within the park will be fully occupied from 11:00 a.m. until 3:00 p.m.

Summary of Parking Impacts: The impacts of the proposed project (Alternatives B-2, B-3, or B-4) are twofold. First of all, the parking impacts on the neighboring residential areas will increase. The number of days when the available parking is exceeded will continue to increase each year. In 1987, it was estimated that the parking pressure from the park caused a significant spillover into the residential neighborhoods on approximately 15 days of the year. By 1996/1997, it is projected that this situation will occur on 40 days each year if there is no further parking provided. Beyond this time period, it is not expected that the extent of the peak will continue to grow, but rather that the number of peak days will increase, and the peak will extend earlier in the morning, and later in the afternoon.

The second impact of this parking situation is that it will serve as a constraint to the number of visitors to the park on peak days at the peak times. Many visitors will choose to arrive at the park either earlier or later in the day, will choose a different day for a visit to the park, or will choose not to make the trip. The lack of convenient parking will continue to limit the number of visitors to the Zoo, the golf course, and other park activities.

Mitigation of the problem will take a number of decisions. First of all, there must be a decision on whether or not to increase the amount of parking. This decision must weigh the competing objectives of 1) reducing the parking problem in the park, reducing the impact on the residential neighborhoods, and serving the increasing demand for the use of the park, in comparison to 2) inducing additional growth to the park by removing the parking

constraints and the environmental concerns related to paving additional land area within the park for vehicle parking. If the decision is to increase the amount of parking, there are many ways of mitigating the parking problem. These include new or expanded parking lots, fringe parking and shuttle bus service, and other options. These options are discussed in the section on mitigation measures.

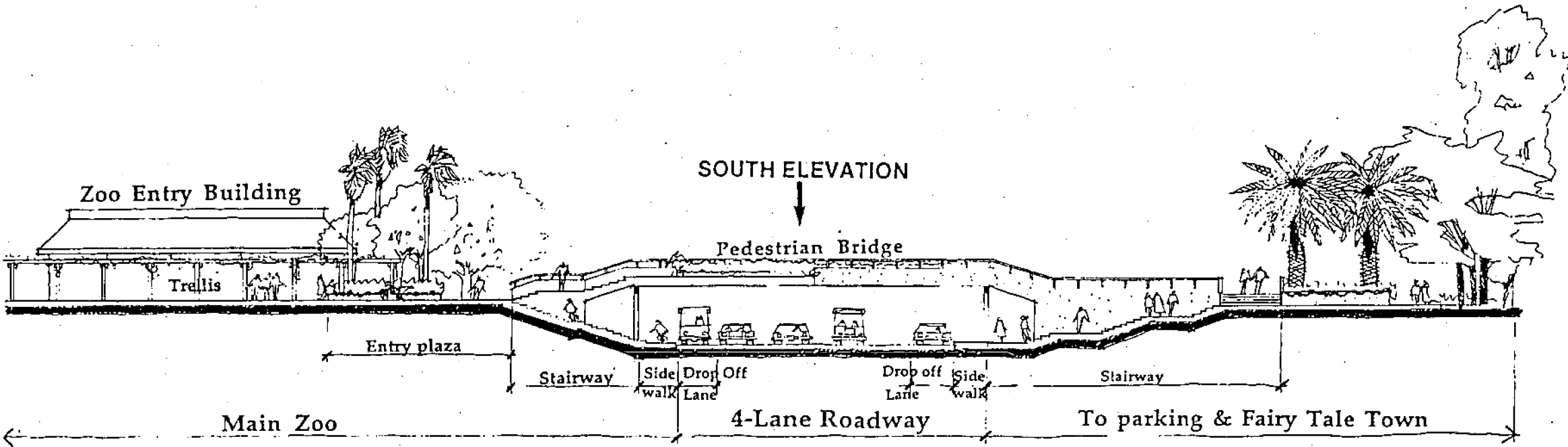
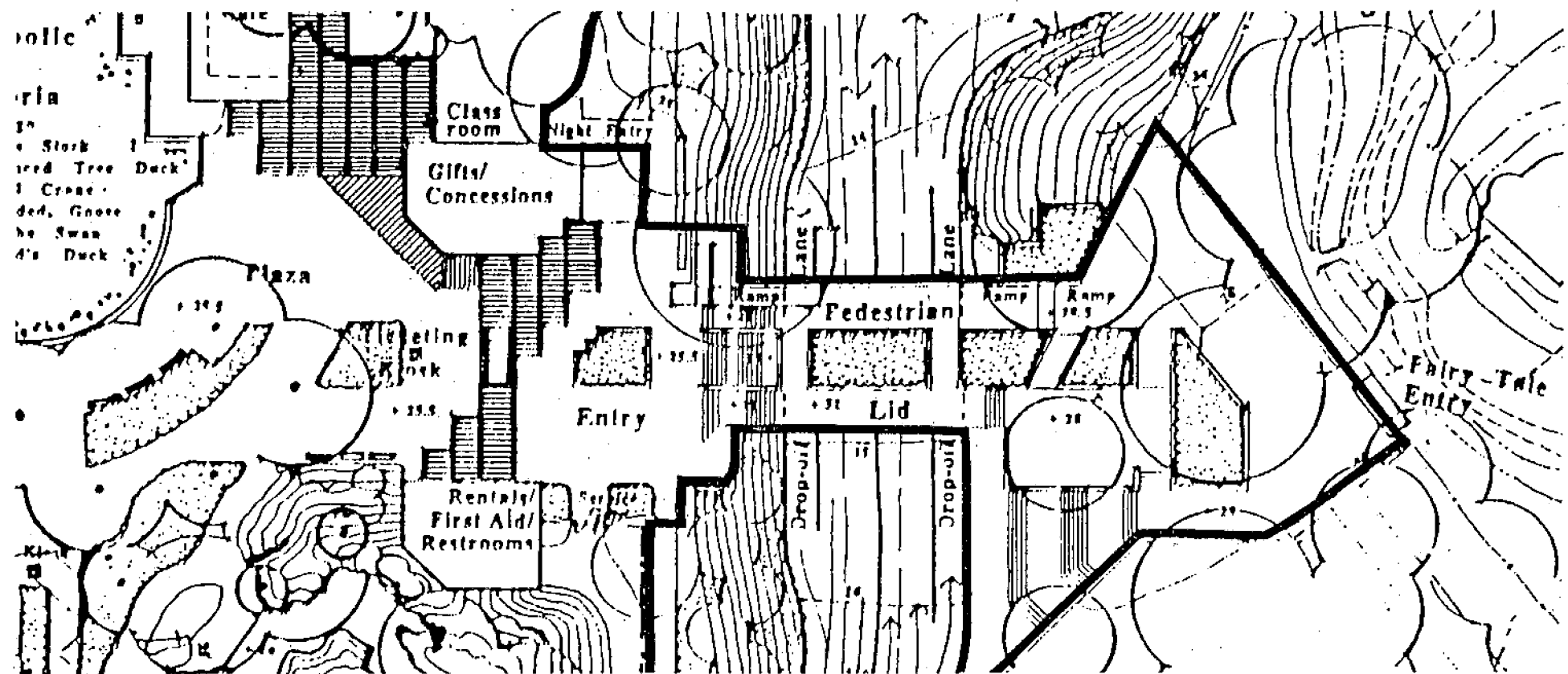
Pedestrian Safety: As discussed earlier, the current park layout and circulation results in an extremely heavy concentration of pedestrians crossing Land Park drive in the vicinity of the Zoo entrance. Since nearly all Zoo visitors park on the east side of Land Park Drive, there is a constant flow of pedestrian traffic across Land Park Drive between the Zoo, Fairytale Town, the amusement rides and pony concessions, and the parking areas. The future expansion will not change this characteristic.

During heavy weekend activity periods, the pedestrian crosswalk at the Zoo is controlled by police officers. The magnitude of the pedestrian flow results in very slow traffic speeds, and significant delay to vehicles turning into 15th and 16th Avenues. Discussions with the City Police, the traffic engineering department, and the Parks Administration point out the concern over this pedestrian flow, and the resulting traffic congestion.

In response to this concern, the Master Plan proposes that a pedestrian bridge be constructed across Land Park Drive in the vicinity of the Zoo entry. The plan calls for lowering the grade of Land Park Drive by about 12 feet, so that pedestrians can utilize the crossing at a moderate incline. A possible plan for this structure is shown on the sketch in Figure 3.3-7.

Impacts of Pedestrian Overcrossing: As with any of the issues involving Zoo expansion, this proposed overcrossing also has its tradeoffs. On the positive side, there is a definite need to

PLAN



improve pedestrian safety, and the construction of a grade separation is the only satisfactory answer. The volume of pedestrian traffic clearly warrants this overcrossing. On the other hand, there is also concern that speeds on Land Park Drive will increase, and that a grade separation will encourage more through traffic.

At present, only conceptual drawings have been developed for the pedestrian overcrossing. Engineering studies of alternative designs would have to be developed to determine rough order of magnitude costs for the overcrossing as well as for the lowering and reconstruction of Land Park Drive and the relocation of any underground utilities. In addition, questions of storm water drainage from the lowered roadway section and the attractive nuisance potential (rocks dropped from above, graffiti) of such a structure would have to be addressed in the selection of a final design.

One alternative is to simply install a traffic signal for pedestrian movements across Land Park Drive instead of constructing the overcrossing. It has also been suggested to move the crosswalk to the north or south to a location where the road width is narrower. Both of these alternatives have been reviewed, but they do not compare with the benefits of the overcrossing. On a Sunday afternoon, a traffic signal would not be as efficient as the current traffic direction provided by a police officer. At other times, the traffic signal would not be warranted.

The issue of increasing speeds and through traffic on Land Park Drive as a result of the overcrossing is not considered to be significant. On weekends during heavy use periods in the park, traffic speeds will not change in the areas north and south of the overcrossing. In off-peak periods, and during the peak commuter hours, the travel time on Land Park Drive will not change

appreciably as a result of the overcrossing, and it is not considered that this action will change the amount of through traffic in Land Park Drive. The safety to pedestrian traffic is the most important consideration.

Construction Impacts: The primary impacts will involve the overcrossing construction. This work is expected to be done during off-peak hours, and it is not anticipated that Land Park Drive will be closed during construction, although lane reductions would probably be necessary. The construction activities in the Zoo itself will generate truck trips and trips by construction workers. These will occur primarily during off-peak hours. It is not anticipated that the construction will have a significant impact on traffic or transportation.

Review of Project Alternatives: The discussion of transportation impacts in this section of the EIR has generally been based on the most intense development alternative (B-4). The transportation impacts of the other alternatives will be proportional to the level of visitation that will occur. For example, the impacts of Alternative B-2 will be essentially the same as the impacts that exist today. The impacts of Alternative B-3 will be approximately 60 percent of the impacts of the maximum development scenario.

One important distinction between the alternatives is that with Alternative B-4, 16th Street/17th Street will be closed where it connects to Land Park Drive (see Figure 3.3-7). The impacts of this action will be to further affect the capacity of the Land Park/Sutterville Road intersection to an adverse level.

#### Mitigation Measures

The Zoo Master Plan will change the transportation impacts in the area to the extent that it will generate additional visitation and, therefore, additional traffic volumes. The specific impacts

of this growth is very difficult to quantify precisely. However, it can be estimated that the number of days when the available parking is exceeded will continue to increase each year. In 1987, it is estimated that the parking pressure caused a significant spillover into the residential neighborhoods on approximately 15 days of the year. By 1996/1997, it is projected that this situation will occur on 40 days each year if there is no further parking provided.

The principal impacts identified in this study are a parking shortage, and pedestrian safety at the Zoo entrance. The Zoo traffic will also result in a deterioration in traffic service at the intersection of Land Park Drive and Sutterville Road. These impacts should require mitigation as a part of the plan for the Zoo expansion. These and other issues are discussed below.

Parking Measures: The Zoo Master Plan will change the transportation impacts in the area to the extent that it will generate additional visitation and, therefore, additional traffic volumes. The exact amount of this growth is very difficult to estimate precisely. However, it can be estimated that the number of days when the available parking is exceeded will continue to increase each year. By 1996/1997, it is projected that this situation will occur on 40 days each year if there is no further parking provided.

In order to retain the parking balance to the current (1987) conditions, it will be necessary to provide 250 additional parking spaces by 1996/1997, and 450 spaces by the year 2005/2006. It is recommended that these parking conditions be mitigated by providing this amount of new parking.

It should be recognized that the parking for any land use is generally not designed to accommodate the absolute peak condition. It is not economically feasible to design for the absolute



peak because of the unused parking areas that would result during the vast majority of the time. The above recommendations will accommodate most of the peak days, but will not fully satisfy all parking demands.

The Zoo Master Plan identifies several potential mitigation measures to meet this parking demand. These include new surface parking, possibly with a tram or shuttle connection to the Zoo, or the construction of a multi-level structure. Each of these alternatives has its own particular benefits and impacts.

Shuttle Parking: One proposal has been the use of City College parking areas on Sunday, which would be accompanied by a transfer service using a shuttle bus or tram (such as a Zoo train). To operate successfully, the transfer service would have to operate for about six to eight hours on each weekend day. It is likely that two vehicles would be required to provide the service, at a fifteen minute headway.

The cost of such an operation would be approximately \$10,000 per month, assuming weekend service only. It would also have to be accompanied by an information program, proper signing, and perhaps an entry credit to users to attract patronage to the remote lot. We would recommend that a pilot program to test this concept would be appropriate.

Construct New Parking Areas Within the Park: These alternatives would include the following:

1. Construct an expanded parking lot at the existing Fairytale Town lot by extending it to the east. Although there is no plan developed, this could conceivably add approximately 200 parking spaces.

2. Increase the size of the golf course parking lot. It is estimated that 50 to 100 spaces could be developed in this area.
3. Build a multi-level parking structure with within the park. This would most likely use one of the existing lots.

Parking Recommendations: The experience from other cities would suggest that the use of a tram system/remote parking lot is not likely to solve the problem. However, it may be practical to have a pilot test. The recommended mitigation is: 1) expansion of the existing surface parking lots for the intermediate term (through 1996/1997); and 2) planning for a multi-level structure on the site of one of the existing lots in a second phase through the year 2005/2006. The final prevailing plan needs to include a more detailed program.

Parking in Residential Areas: It is recommended that Sunday parking restrictions be considered for Bartley Drive that would prohibit parking at all times. Since this would result in some inconvenience to those residents with insufficient off-street parking, a parking permit system should also be considered. This would allow residents with a valid permit to park on the street in front of their homes on Sundays.

Parking in Commercial Areas: This will continue to be a problem. Given the location of the parking to the Zoo entrance, this may be an unavoidable impact. It may be possible to utilize approximately 100 parking spaces allocated to the leased state office space across Sutterville Road from the Zoo on weekends only.

Pedestrian Safety: An extremely important traffic mitigation to the pedestrian safety/traffic flow problem for any of the alternative plans is the construction of the proposed pedestrian

overpass at the Zoo entrance. This element is considered critical to the success of the Zoo expansion, and the development of an appropriate plan for this bridge structure should be made a condition of approval. This project will greatly enhance safety, and will decrease vehicle delay in this area. Such a project is not expected to attract new through traffic in the park.

Construction Mitigation: This would include scheduling construction activities to occur at off-peak periods away from times of peak park activity. It is recommended to maintain Land Park Drive open to through traffic at all times. The City of Sacramento has a standard conditions relative to construction noise, street blockage, and other impacts. These should be made a condition of approval.

Traffic Circulation Mitigations: The traffic capacity problems at the Land Park Drive/Sutterville Road intersection need to be mitigated, and this project should share in the responsibility for this improvement. Alternative improvement schemes that have been considered include the provision of left turn lanes on Sutterville Road, along with changes to the signal phasing. This project would likely involve the acquisition of additional right-of-way on Sutterville Road to complete this widening.

A second alternative would be to change Del Rio Road to one-way away from the intersection. This would remove one phase from the signal operation, and would significantly improve the overall intersection operation. This option needs to be studied in more detail. As a condition of this approval, an acceptable plan should be developed to achieve a Level-of-Service "C" at this intersection. However, it should be noted that preliminary indications from the City's Traffic Engineer (Jim Bloodgood, pers. comm.)<sup>35</sup> are that this mitigation would not be feasible.

### 3.4 Air Quality

#### Climate

Sacramento is located in the southern portion of the Sacramento Valley just north of the Sacramento-San Joaquin River Delta. The Delta area is a climatic transition zone between the Pacific coast regions which experience warm winters, cool summers, small daily and seasonal temperature ranges, and high relative humidity, and California's interior regions which experience more extreme variations of daily and seasonal temperatures and generally lower relative humidity.

Temperatures in Sacramento vary from an average January minimum of about 38 degrees F to an average July maximum of about 93 degrees F. The variation in humidity is opposite to that of temperature, reaching an average minimum of about 28% on late July afternoons and an average maximum of about 90% on early January mornings. High nighttime winter humidities frequently lead to the formation of a shallow layer of ground fog (known locally as "tule fog") when moist air is cooled by contact with the ground. Episodes of tule fog limit visibility to less than a quarter of a mile on an average of 10 days during each winter month and have been known to persist for as long as two or three weeks at a time.

A dominant factor in the weather of California is the semi-permanent high pressure area of the north Pacific Ocean. This pressure center moves northward in the summer, diverting storms to the north. As a result, California receives little or no precipitation during the summer. In winter, the Pacific high retreats southward permitting storm centers to swing into and across California. These storms bring widespread, moderate precipitation to the State. A typical winter storm brings intermittent rain over a period of from two to five days, followed by

from 7 to 14 days of dry weather. However, when changes in the circulation pattern permit storm centers to approach the California coast from a southwesterly direction, copious amounts of moisture are carried by the northeastward streaming air. The northern part of the State may then experience heavy, persistent rains over a period of from 7 to 10 days. Sacramento and its environs are shielded from these storms by the surrounding mountain ranges; as a result, excessive rainfall and damaging wind storms are rare. However, heavy rain and snow falling in the mountains occasionally cause flooding in the Sacramento Valley. Yearly precipitation at Sacramento averages 17.1 inches. Snowfall is very infrequent in the Sacramento Valley.

Records of wind speed and direction kept at the Sacramento weather station show that southerly winds are the strongest and most prevalent, while southeast winds are the next most prevalent. This behavior is due to the channeling of the prevailing winds through the Carquinez Straits, a narrow gap in the coastal mountains to the southwest, and to the north-south direction of the Sacramento Valley and the mountain ranges surrounding it. Occasionally, a northerly barometric pressure gradient can develop which results in a strong northerly flow of warm, dry air. These winds, known as "northers," produce heat waves in the summer. They occur infrequently, however, and are followed within two or three days by cooler westerly breezes, especially at night.

### Setting

#### Regulatory Background

The 1970 Clean Air Act gave the U.S. Environmental Protection Agency (EPA) the authority to set Federal ambient air quality standards. The Act indicated the need for primary standards to protect public health and secondary standards to protect public welfare from effects such as visibility reduction, soiling, nuisance, and other forms of damage. It also required that the Federal standards be designed to protect those people most

susceptible to respiratory distress, such as asthmatics, the elderly, very young children, people already weakened by illness, and persons engaged in strenuous work or exercise (all termed "sensitive receptors"). In 1971, the EPA established Federal standards for five major "criteria" air pollutants:<sup>3</sup> photochemical oxidants (ozone), carbon monoxide (CO), suspended particulates (TSP), nitrogen dioxide (NO<sub>2</sub>), and sulfur dioxide (SO<sub>2</sub>). State standards were established in California starting in 1969, pursuant to the Mulford-Carrell Act. The State and Federal standards given in Table 3.4-1 provide acceptable durations for specific contaminant levels in order to protect sensitive receptors from adverse effects as indicated in Table 3.4-2.

The 1977 Clean Air Act Amendments required that each state identify areas within its borders (i.e., non-attainment areas) that do not meet Federal primary standard and devise a State Implementation Plan (SIP), subject to EPA approval to attain Federal primary standards no later than 1987. The California standards do not have specific attainment dates.

The California Air Resources Board (CARB) coordinates and oversees both State and Federal air pollution control programs in California. As part of this responsibility, the CARB monitors existing air quality, establishes State standards (which in many cases are more stringent than Federal Standards, as shown in Table 3.4-1), limits allowable emissions from vehicular sources, and is responsible for putting together the SIP. The CARB has divided the State into many single and multi-county air basins. Authority for air quality management within them has been given to local Air Pollution Control Districts (APCD) which develop local non-attainment plans within their jurisdiction. The Sacramento Valley has been designated as an air basin by the CARB but no single APCD has jurisdiction over the whole Valley.

Table 3.4-1

## Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Primary Standard	Federal Secondary Standard	California Standard
Ozone	1-hour	0.12 ppm	0.12 ppm	0.10 ppm
Carbon Monoxide	1-hour	35.0 ppm	35.0 ppm	20.0 ppm
	8-hour	9.0 ppm	9.0 ppm	9.0 ppm
Nitrogen Dioxide	1-hour	---	---	0.25 ppm
	annual	0.05 ppm	0.05 ppm	---
Sulfur Dioxide	1-hour	---	---	0.5 ppm
	24-hour	0.14 ppm	---	0.05 ppm
	annual	0.03 ppm	---	---
Suspended Particulates <sup>1</sup>	24-hour	250 ug/m <sup>3</sup>	150 ug/m <sup>3</sup>	50 ug/m <sup>3</sup>
	annual	75 ug/m <sup>3</sup>	60 ug/m <sup>3</sup>	30 ug/m <sup>3</sup>

ppm = parts per million

ug/m<sup>3</sup> = micrograms per cubic meter

<sup>1</sup> The California Standards are for particulate material less than 10 microns in diameter.

Table 3.4-2

Health Effects Summary of the Criteria Air Pollutants

Air Pollutant	Adverse Effects
Ozone	<ul style="list-style-type: none"> <li>- eye irritation</li> <li>- respiratory function impairment</li> </ul>
Carbon Monoxide	<ul style="list-style-type: none"> <li>- impairment of oxygen transport in the bloodstream, increase of carboxyhemoglobin</li> <li>- aggravation of cardiovascular disease</li> <li>- impairment of central nervous system function</li> <li>- fatigue, headache, confusion, dizziness</li> <li>- can be fatal in the case of very high concentrations in enclosed places</li> </ul>
Sulfur Dioxide	<ul style="list-style-type: none"> <li>- aggravation of chronic obstruction lung disease</li> <li>- increased risk of acute and chronic respiratory illness</li> </ul>
Nitrogen Dioxide	<ul style="list-style-type: none"> <li>- risk of acute and chronic respiratory disease</li> </ul>
Total Suspended Particulates	<ul style="list-style-type: none"> <li>- increased risk of chronic respiratory disease with long exposure</li> <li>- altered lung functions in children</li> <li>- with SO<sub>2</sub>, may produce acute illness</li> <li>- particulate matter 10 microns or less in size (PM<sub>10</sub>) may lodge in and/or irritate the lungs</li> </ul>

Source: Bay Area Air Quality Management District.



The CARB and the Sacramento County APCD operate several monitoring stations in the Sacramento area in order to gauge progress toward attainment of Federal and State ambient air quality standards. At the Del Paso Manor station, located about 15 miles northeast of the Zoo, readings are taken regularly of the five major air pollutants. A five-year summary of the data collected at this monitoring station and the corresponding Federal or State air quality standards are shown in Table 3.4-3.

#### Air Quality Problems and Trends in the Sacramento Area

The most severe and complex air quality problem in the Sacramento area is the relatively high level of ambient ozone experienced during warm, meteorologically stable periods in the summer and autumn. Ozone is not emitted directly from pollutant sources but forms in the atmosphere through a complex series of photochemical reactions involving reactive organic compounds (ROG) and nitrogen oxides ( $\text{NO}_x$ ). The Sacramento Valley's intense heat and sunlight during the summer months are ideal for the formation of ozone. About one-tenth of all the days of the year experience a violation of the State standard, while a smaller fraction experience a violation of the less restrictive Federal standard. Over the last five years, there has been little evidence of any year-to-year improvement in ozone levels.

In contrast to ozone, CO is a sub-regional problem in the Sacramento area, because CO is a non-reactive pollutant with one major source, motor vehicles. Ambient CO distributions closely follow the spatial and temporal distributions of vehicular traffic, and are strongly influenced by meteorological factors such as wind speed and atmospheric stability. The one-hour and eight-hour CO standards are occasionally exceeded in those parts of the Sacramento area subject to a combination of high traffic density and susceptibility to the occurrence of surface-based radiation inversions during the winter months.<sup>4</sup> The highest CO levels in the Sacramento area are usually measured in the northeast suburbs of

Table 3.4-3

## Sacramento Area Air Pollutant Summary 1982 - 1986

Pollutant	Standard	1982	1983	1984	1985	1986
<u>Ozone (ppm<sup>a</sup>)</u>						
Highest 1-hour average	0.12/0.10	0.16	0.17	0.21	0.20	0.15
Days > Fed. std. (0.12)		8	4	10	10	4
Days ≥ State std. (0.10)		28	28	43	27	31
<u>Carbon Monoxide (ppm<sup>a</sup>)</u>						
Highest 1-hour average	35.0/20.0	17.0	19.0	18.0	12.0	20.0
Days > Fed. std. (35.0)		0	0	0	0	0
Days ≥ State std. (20.0)		0	0	0	0	0
Highest 8-hour average	9.0	15.0	14.1	12.4	13.3	12.5
Days ≥ Fed./State std.		6	4	6	11	11
<u>Nitrogen Dioxide (ppm<sup>a</sup>)</u>						
Highest 1-hour average	0.25	0.12	0.11	0.10	0.13	0.12
Days ≥ State standard		0	0	0	0	0
<u>Sulfur Dioxide (ppm<sup>a</sup>)</u>						
Highest 24-hour average	0.05	0.0008	0.010	0.012	0.008	0.007
Days ≥ State standard		0	0	0	0	0
<u>Suspended Particulates (ug/m<sup>3</sup><sub>b</sub>)</u>						
Highest 24-hour average	150	154	262	137	193	208
Days > Fed. standard		0	1	0	1	3

<sup>a</sup> ppm = parts per million

<sup>b</sup> ug/m<sup>3</sup> = micrograms per cubic meter

Source: California Air Resources Board, Air Quality Data Summary, 1982-1986.

the City, where CO standards are exceeded a few times per year. There has been a slight but measurable CO level improvement in recent years.

The major sources of TSP in the Sacramento Valley are agricultural operations and burning, although demolition/construction activity and the entrainment of dust by motor vehicles can be important sources in urban areas. Ambient concentrations of TSP can reach levels which reduce visibility through much of the year. As with CO, there has been a slight but measurable TSP level improvement in recent years.

The major sources of  $\text{NO}_x$ , compounds which have an important role in the formation of ozone, are vehicular, residential, and commercial fuel combustion.  $\text{NO}_2$  is the most abundant form of ambient  $\text{NO}_x$ . The burning of high sulfur fuels for activities such as electricity generation, petroleum refining, and industrial processes are the major sources of ambient  $\text{SO}_2$ . The  $\text{NO}_2$  and  $\text{SO}_2$  standards have not been exceeded anywhere in the Sacramento Valley over the last five years.

#### Air Quality Planning and Control in the Sacramento Area

Air quality problems in the southeastern portions of the Sacramento Valley air basin are much more severe than in the west and north. However, emissions of ROG to the north and west contribute to the formation of ozone in the southern reaches of the basin. In recognition of this linkage, Yolo, northern Solano, Sacramento, Sutter, Yuba, and western Placer Counties were all made part of the Sacramento Air Quality Maintenance Area (SAQMA). Planning for the attainment and maintenance of Federal and State air quality standards in the SAQMA is the joint responsibility of the local APCDs and the Sacramento Area Council of Governments (SACOG). Together they authored the 1982 Sacramento Air Quality Plan (AQP). The AQP was adopted in August, 1982 and was forwarded to the CARB for incorporation into the SIP.

As part of this planning process, detailed inventories of ROG, NO<sub>x</sub>, and CO emissions in SAQMA for the years 1979 and 1987 were prepared. The inventories for the future years reflected anticipated regional trends in population, employment, and energy use. Summaries of the inventories are shown in Table 3.4-4. In order to evaluate the impact of ROG emission controls on regional ozone levels, ozone formation was modeled by the CARB. This analysis showed that the Federal standard for ozone could be attained by a 50% or 112.2 tons/day ROG emission reduction between 1979 and 1987. Since the 1987 baseline emission inventory projected ROG emission reductions of 28% (31.6 tons/day) relative to the 1979 emission baseline, attainment could not be projected even with the imposition of all reasonable available emission control measures. Projected CO emissions reductions of 12% (76.2 tons/day) would also not be sufficient to guarantee CO standard attainment.

1986 monitor readings show continuing violations of the Federal ozone and CO standards. While the official 1987 Air Quality Data Summary has yet to be released by the CARB, it seems very likely that AQP projections of ozone and CO non-attainment for SAQMA will be borne out.

The AQP made no recommendations of measures to reduce emissions of particulate matter so that the Federal secondary standard for TSP could be attained.

#### Impacts

Air quality analyses were carried out for four alternative development schemes: no-project (Alternative B-1), renovation within existing Zoo boundaries (Alternative B-2), a 2-acre expansion to the north (Alternative B-3), and a 6-acre expansion to the north and east (Alternative B-4). In all cases, new vehicle trips would be the major source of additional air pollutants, but emissions from equipment used during project construction and from building energy use after completion would also contribute to the

Table 3.4-4

## Baseline Air Pollution Emission Inventory for SACMA (tons/day)

Emission Category	Base Year (1979)			Target Year (1987)		
	ROG	CO	NO <sub>x</sub>	ROG	CO	NO <sub>x</sub>
<u>Stationary Sources:</u>						
Petroleum Storage/Transport	8.88	0.00	0.00	4.10	0.00	0.00
Organic Compound Evaporation	14.45	0.00	0.00	11.98	0.00	0.00
Combustion of Fuels	0.08	0.94	4.95	0.25	1.39	6.36
Agricultural Burning	3.46	23.30	0.00	3.53	24.66	0.00
Domestic Utility Engines	1.21	11.18	0.01	1.42	13.11	0.01
Chemical Industry	0.86	0.18	0.43	0.93	0.22	0.54
Other	4.95	1.47	0.02	6.60	3.05	0.02
<u>Mobile Sources:</u>						
On-Road Motor Vehicles	66.08	534.02	84.80	37.80	438.58	64.21
Off-Road Vehicles	10.19	47.66	20.92	11.54	53.85	22.99
Aircraft	2.06	16.06	1.60	2.46	20.65	1.94
<u>SACMA Total</u>	112.22	634.81	112.73	80.61	555.51	96.07

Source: Sacramento Area Council of Governments

total. At present, the Zoo generates about 1,600 vehicle trips on the day of maximum use, typically Sundays during the summer. Sunday trips are expected to decline by 22% under Alternative B-1, to remain at present levels under Alternative B-2, and to increase by 38% and 72% under Alternatives B-3 and B-4, respectively.

Project air quality impacts comprise two categories: temporary impacts due to project construction and long-term impacts due to project operation. Impacts in each category can be classed as having effects on regional or local scales.

#### Construction Impacts

Regional and Local Effects: Under Alternatives B-2, B-3, and B-4 construction activities would create a temporary increase in dust generation, and therefore, an increase in TSP concentrations, near the project site. Equipment and vehicles generate dust during clearing, excavation and grading. Construction vehicle traffic on unpaved surfaces would also generate dust, as would wind blowing over exposed earth surfaces.

The Federal 24-hour average particulate standard could be violated in the vicinity of construction. It is not possible to estimate accurately the particulate concentrations that would occur at or adjacent to the construction sites because of the complexity of local meteorology and topography and variations in soil silt and moisture content. However, measurements taken during apartment and shopping center construction in the southwestern United States provide a rough indication of construction impacts on local particulate emissions; these figures indicate that approximately 1.2 tons of dust are emitted per acre per month of construction activity.<sup>5</sup> Much of this dust is comprised of large particles which settle-out rapidly on nearby horizontal surfaces. Most of the remaining fraction of unsettled large particles are easily filtered by human breathing passages. To

reflect this understanding, the State of California has recently changed its standard for particulate matter to include only respirable particles less than 10 microns in diameter. Dust generated by construction is, therefore, of concern more as a soiling nuisance rather than for its unhealthful impacts. However, the nuisance may be considerable to residents of the surrounding area and to users of Land Park.

Construction vehicles and equipment and worker commute vehicles would emit exhaust at the construction sites, contributing to the local and regional pollutant burden, but the amount of the increase would be relatively small and would not cause additional violations of air quality standards on the regional scale. Local violations of CO standards and odor emissions may occur in the vicinity of intensive equipment use, however.

Under Alternative B-1, no construction emissions would occur.

#### Operational Impacts

Regional Effects: Once the Zoo expansion is complete, emissions from additional motor vehicles associated with its operation would contribute to the total regional emissions in the air basin. Emissions under the various project Alternatives would be as shown in Table 3.4-5. Under all Alternatives, the Zoo emissions would decline because the average motor vehicle would emit less pollutants per mile traveled in 2005 than in 1988. A ranking of the Alternatives according to the size of the expected decline would run: B-1, B-2, B-3, and B-4.

Local Effects: By attracting additional traffic to the vicinity of the site, Zoo expansion would affect local traffic patterns and, thereby, change the local spatial and temporal distributions of ambient CO. The project is atypical of most other developments in that it would have its largest effect on CO concentrations on Sunday afternoons in the summer rather than during

Table 3.4-5

Air Pollutant Emissions from Vehicular Sources (lbs./day)<sup>1</sup>

	CO	ROG	NO <sub>x</sub>
Existing - 1988	762	90	152
Alternative B-1 - 2005	468	48	116
Net Change from 1988	- 39%	- 47%	- 24%
Alternative B-2 - 2005	484	50	120
Net Change from 1988	- 36%	- 44%	- 21%
Alternative B-3 - 2005	510	54	126
Net Change from 1988	- 33%	- 40%	- 17%
Alternative B-4 - 2005	534	56	132
Net Change from 1988	- 30%	- 38%	- 13%

<sup>1</sup> Emissions due to mobile (vehicular) sources were estimated by using the California Air Resources Board (CARB) URBEMIS2 model. An average vehicle speed of 35 mph and an ambient temperature of 75 degrees F were assumed.



winter evening commute periods. Local air quality effects were estimated by using the CALINE4 air quality model. Appendix A lists the input parameters used with CALINE4 and the methodology underlying the choice of present and future CO background levels.

Table 3.4-6 shows existing and future worst-case curbside CO concentrations expected at the two intersections where Zoo traffic is expected to have the greatest impact. Future CO levels are expected to decline from existing levels because the average vehicle will emit 50% less CO per mile traveled in 2005 than they do in 1988. No existing or future violations of the CO standards are projected at any of the intersections under any of the alternatives. A ranking of the Alternatives according to the size of the expected decline in CO levels would run: B-1, B-2, B-3, and B-4.

#### Mitigations

During construction phases, unpaved construction sites should be sprinkled with water at least twice per day to reduce particulate emissions. In addition, stockpiles of soil, sand, and other such materials should be covered, trucks hauling debris, soil, sand, or other such materials should be covered, and streets surrounding construction sites should be swept at least once per day. Repaving and replanting should be done as quickly as possible.

The adoption of the least ambitious of the Alternatives, namely Alternative B-1, would be the most beneficial to air quality, followed by Alternatives B-2, B-3, and B-4. However, none of the Alternatives would increase air pollutant emissions over present levels or lead to violations of CO standards.

Another way of reducing air pollutant emission if the adoption of a less intensive Alternative is unacceptable would be to increase the proportion of Zoo visitors reaching the Zoo by mass transit. At present, 44% of Zoo visitors come to the Zoo by car

Table 3.4-6

Worst-Case Curbside Carbon Monoxide Concentrations  
at Selected Intersections Near the Sacramento Zoo (in ppm)<sup>1</sup>

Intersection	Averaging Time	Existing 1987	Alt. B-1 2000	Alt. B-2 2000	Alt. B-3 2000	Alt. B-4 2000
Land Park Drive/ 14th Street	1-hour	8.8	5.9	6.1	6.5	6.8
	8-hour	5.4	3.4	3.5	3.8	4.0
Land Park Drive/ Sutterville Rd.	1-hour	9.9	6.3	6.7	7.2	7.7
	8-hour	6.2	3.7	3.9	4.3	4.7
Background	1-hour	5.2	5.2	5.2	5.2	5.2
	8-hour	2.9	2.9	2.9	2.9	2.9

- <sup>1</sup> Local components were obtained by using the CALINE4 air quality model. Vehicular emission rates provided by the CARB and traffic data provided by Abrams Associates. See Appendix A for a listing of the meteorological and emission parameters used as input to the CALINE4 model and for a discussion of the methodology used for choosing a characteristic CO background.

even though they are Sacramento residents. Local visitors, therefore, account for about 22% of present air pollutant emissions (assuming an average round trip length of 10 miles). Improved local transit access and active promotion of public transportation by Zoo authorities has the potential for a further reduction of air pollutant emission by about 20% if they were implemented with 100% effectiveness.

### 3.5 Noise

#### Setting

Sound is a mechanical form of radiant energy which is transmitted by pressure waves in the air. It is characterized by two parameters: amplitude and frequency.

Amplitude is the difference between ambient air pressure and the peak pressure of the sound wave. Amplitude is measured in decibels (dB) on a logarithmic rather than a linear scale. As a consequence, the pressure difference in a 10 dB sound is 10 times that of a 0 dB sound, a 20 dB sound is 100 times the pressure difference, a 30 dB sound 1,000 times, and so on. Another feature of the decibel scale is the way in which sound amplitudes from multiple sources add. A 65 dB point source of sound, say a truck, when joined by another similar source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Amplitude is interpreted by the ear as corresponding to different degrees of loudness. Laboratory measurements correlate a 10 dB increase in amplitude with a perceived doubling of loudness and establish 2 dB change in amplitude as the minimum audible difference for the average person.

Frequency is the number of fluctuations of the pressure wave per second. The unit of frequency is the Hertz (abbreviated Hz; one Hz equals one cycle per second). The human ear is not equally sensitive to sound of different frequencies. Sound waves below 16 Hz or above 20,000 Hz cannot be heard at all and the ear is more sensitive to sound in the higher portion of this range than in the lower. To approximate this sensitivity, environmental sound is usually measured in A-weighted decibels (dBA). On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA.

Noise is unwanted and disturbing sound. The human response to environmental noise is subjective and varies considerably from individual to individual. The effects of noise can range from interference with sleep, concentration, and communication, to the causation of physiological and psychological stress, and, at the highest intensity levels, to hearing loss. Sleep disturbance occurs when interior noise levels exceed 40 to 50 dBA. The passage of a heavy truck can generate sound in excess of 90 dBA. Jet takeoffs at 200 feet amount to about 120 dBA.

Environmental noise fluctuates in intensity over time and several descriptors of time-averaged noise levels are in use. Three most commonly used are  $L_{eq}$ ,  $L_{dn}$ , and CNEL.  $L_{eq}$ , the energy equivalent noise level, is a measure of the average energy content (intensity) of noise over any given period of time.  $L_{dn}$ , the day-night average noise level, is the 24-hour average of the noise intensity, with a 10 dBA "penalty" added for nighttime noise (10:00 p.m. to 7:00 a.m.) to account for the greater sensitivity to noise during this period. CNEL, the community equivalent noise level, is similar to  $L_{dn}$ , but adds a 5 dBA penalty to evening noise (7:00 p.m. to 10:00 p.m.). In situations where vehicles are the dominant source of noise,  $L_{eq}$  for the peak commute hour,  $L_{dn}$  and CNEL of the same noise source usually differ by less than 2 dBA.

There are four major noise sources in the City of Sacramento:

1. Surface traffic noise consisting of noise emanating from major freeways in the City and from primary arterials and major streets;
2. The fixed rail rapid transit system;
3. The Union Pacific and Southern Pacific Railroads; and

4. Aircraft noise generated by activity at Sacramento Metro Airport, McClellan Air Force Base, and Mather Air Force Base.

In the vicinity of the Zoo, the major sources of noise are vehicles using Land Park Drive and Sutterville Road, which border the site to the east and south, respectively. Noise from people using the Zoo, children playing in Land Park, and from the operation of a small amusement park east of Land Park Drive also contribute to the total. Measurements made on Sunday afternoon, March 20, 1988, at curbside on the east side of Land Park Drive and Sutterville Road indicate  $L_{eq}$ 's of 68 dBA and 69 dBA, respectively, as characteristic of periods of peak use. No influences from rail and aircraft sources were noted during the measurement.

The purpose of the Noise Element of the City of Sacramento's General Plan is to provide guidelines for controlling the noise emanating from transportation facilities rather than from individual vehicles, and to develop guidelines for planning new developments in areas affected by these sources. Table 3.5-1 shows the Land Use Compatibility Standards contained in the Plan. According to Table 3.5-1, residential uses are normally acceptable in areas where  $L_{dn}$  is less than 60 dBA. When a project would cause noise levels in a residential area to exceed 60 dBA, acoustic studies are required prior to construction to evaluate the need for noise abatement measures. New residential uses are discouraged in areas where noise levels exceed 70 dBA. In public parks, noise levels up to 70 dBA are acceptable, noise levels from 70 dBA up to 75 dBA are normally unacceptable, and noise levels at or over 75 dBA are clearly unacceptable.

Impacts

Acoustic analyses were carried out for four alternative development schemes: no-project (Alternative B-1), renovation within existing Zoo boundaries (Alternative B-2), a 2-acre expansion to

Table 3.5-1

City of Sacramento Land Use Compatibility  
for Community Noise Environments

Land Use Category	Community Noise Exposure $L_{dn}$ or CNEL, dBA						
	50	55	60	65	70	75	80
Residential	a	a	b	b	c	d	d
Transient Lodging - Motels, Hotels	a	a	b	b	b	c	d
Schools, Libraries, Churches, Hospitals, Nursing Homes	a	a	b	b	c	c	d
Auditoriums, Concert Halls, Amphitheaters	b	b	b	b	d	d	d
Sports Areas, Outdoor Spectator Sports	b	b	b	b	b	d	d
Playgrounds, Neighborhood Parks	a	a	a	a	c	d	d
Golf Courses, Riding Stables, Water Recreation, Cemeteries	a	a	a	a	c	c	d
Office Buildings, Business Commercial and Professional	a	a	a	b	b	b	c
Industrial, Manufacturing, Utilities, Agriculture	a	a	a	a	b	b	c

**KEY:**

- a = Normally Acceptable - land use is satisfactory, buildings need no special noise insulation.
- b = Conditionally Acceptable - new construction should be undertaken only after acoustic analysis and installation of noise insulation.
- c = Normally Unacceptable - new construction should be discouraged. If construction does proceed, acoustic analysis and insulation required.
- d = Clearly Unacceptable - new construction should not be undertaken.

the north (Alternative B-3), and a 6-acre expansion to the north and east (Alternative B-4). In all cases, additional vehicles drawn to the area would be the major source of additional noise. At present, the Zoo generates about 1,600 vehicle trips on the day of maximum use, typically Sundays during the summer. Sunday trips are expected to decline by 22% under Alternative B-1, to remain at present levels under Alternative B-2, and to increase by 38% and 72% under Alternatives B-3 and B-4, respectively. Noise from equipment used during project construction would be a major factor during construction phases.

Project acoustic impacts comprise two categories: temporary impacts due to project construction and long-term impacts due to project operation.

Construction Noise: Under Alternatives B-2, B-3, and B-4, construction activities would temporarily generate high noise levels on and adjacent to the site over the entire period of project construction. Table 3.5-2 shows outdoor noise levels likely to be experienced during construction phases. Since noise from localized sources typically falls off by about 6 dBA with each doubling of distance from source to receptor, portions of Land Park within about 500 feet of construction would experience noise greater than 65 dBA (the maximum level considered normally acceptable for public parks under Sacramento's Land Use Compatibility Standards) during some phases of construction. Construction noise effects would include disturbance of sleep, concentration, and communication.

Under Alternative B-1, no construction would be produced.

Operational Noise: Future noise levels on and around the project site would be influenced by changes in traffic volume on local roadways. Table 3.5-3 shows how the curbside  $L_{dn}$  along three



Table 3.5-2

Typical Construction Noise Levels at 50 Feet<sup>1</sup>

Construction Phase	Commercial/Industrial Construction Average Noise Level	Housing Construction Average Noise Level
Groundclearing	84	84
Excavation	89	88
Foundations	78	81
Erection	85	82
Finishing	89	88

- <sup>1</sup> Taken from Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, prepared by Bolt, Beranek, and Newman for the U.S. Environmental Protection Agency, December 31, 1971, p.20.

major roadways would be affected by these changes. Under Alternative B-4, noise levels would increase by about 1 dBA from their present values, while under Alternatives B-1, B-2, and B-3 they would differ by less than 1 dBA from their present values. Changes of 1 dBA are inaudible to most people.

#### Mitigations

Construction activities should be limited to daylight hours during weekdays and construction equipment should be muffled or controlled to the degree shown in Table 3.5-4.

Table 3.5-3

Estimated Vehicular Traffic  $L_{dn}$  Along Selected Roadways  
in the Project Area (dBA)

	Alternatives				
	Existing 1988	B-1 2005	B-2 2005	B-3 2005	B-4 2005
14th Street (Curbside near Land Park Drive)	67	67	67	67	68
Land Park Drive (Curbside near Zoo entrance)	65	65	65	65	66
Sutterville Road (Curbside near Land Park Drive)	68	68	68	68	69

<sup>1</sup> Estimates based on FHWA Highway Traffic Noise Prediction Model, U.S. Department of Transportation, December 1978.

Table 3.5-4

Typical Construction Equipment Noise (dBA)<sup>1</sup>

Equipment Type	Noise Level at 50 Feet	
	Without Noise Control	With Feasible Noise Control <sup>2</sup>
<u>Earthmoving:</u>		
Front Loaders	79	75
Backhoes	85	75
Dozers	80	75
Tractors	80	75
Scrapers	88	80
Graders	85	75
Trucks	91	75
Pavers	89	80
<u>Materials Handling:</u>		
Concrete Mixers	85	75
Concrete Pumps	82	75
Cranes	83	75
Derricks	88	75
<u>Stationary:</u>		
Pumps	76	75
Generators	78	75
Compressors	81	75
<u>Impact:</u>		
Pile Drivers	101	95
Jack Hammers	88	75
Rock Drills	98	80
Pneumatic Tools	86	80
<u>Other:</u>		
Saws	78	75
Vibrators	76	75

<sup>1</sup> Taken from Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, prepared by Bolt, Beranek, and Newman for the U.S. Environmental Protection Agency, December 31, 1971.

<sup>2</sup> Estimated levels obtainable by selecting quieter procedures or machines and implementing noise control features requiring no major redesign or extreme cost.

### 3.6 Public Facilities and Services

#### Water Supply<sup>6</sup>

##### Setting

Sacramento Zoo water supplies currently are delivered from two sources: 1) City of Sacramento water mains; and 2) a well water system which is operated and maintained by the Department of Parks and Community Services.

City of Sacramento water is of high quality and is used for drinking purposes and to supply most exhibits and support facilities at the Zoo. Well water at one time was used for drinking throughout William Land Park but was discontinued due to high iron content and taste complaints. Well water in the Zoo is currently used for some irrigation and to supply the macaw and eagle aviaries.

City of Sacramento water service is connected to the Zoo water system at the intersection of Sutterville Road and South Land Park Drive and is metered at that point. A six-inch service line is located just downstream of the meter and serves to connect the Zoo's water distribution system with City mains. This distribution system consists of two-, four- and six-inch lines arranged to form two major loops through the Zoo which connect to a series of deadend branches.

Due to the low cost of well water, relative to City water, the possibility of expanding the use of well water for existing and proposed Zoo facilities deserves consideration. Use of well water in some, if not most exhibits, may be prohibited due to potential problems with the quality of well water and the tolerances of some of the animal species involved. A thorough study of well water quality and the specific requirements of potentially affected species should be undertaken before well water is

used in an exhibit for drinking or other animal contact. In the interim, the use of well water could be expanded for irrigation, wash down and other water uses which do not involve animal contact.

The City currently holds surface water rights and entitlements with the State of California and the U.S. Bureau of Reclamation. These contracts allow an annual diversion of surface water, by right and purchase, from the American and Sacramento Rivers totaling 326,800 acre-feet/year (AF/yr). The actual diversion and use of water under these contracts during the 1985-86 water year (a typical year) totaled 87,100 AF. Roughly 239,790 AF was unused. In addition to surface water, the City delivered 19,072 AF of groundwater to its customers during the same water year. The City's water budget for the 1985-86 water year is summarized in Table 3.6-1.

The maximum pumping capacity of City water facilities is about 200 million gallons per day (MGD). The average volume of water pumped during the 1985-86 water year was about 95 MGD. The peak pumping occurs during the summer months when there is a high demand for landscape irrigation.

According to City water records, average annual water consumption for the Zoo over the past two years amounted to 7,867 AF (roughly 343 million cubic feet). It should be noted that these water consumption figures are relatively new information for the Zoo, as meters were only installed two years ago. An acre-foot, a standard unit for water measurement, is the volume of water needed to fill the surface area, one acre, one foot deep (43,560 cubic feet). For reference, roughly one AF could supply five families with water for a year. The Zoo comprises roughly 7.5% of the total annual water use within the City of Sacramento.

Table 3.6-1

City of Sacramento 1985-86 Water Budget<sup>1</sup>

Water Source	Rights and Entitlements	Actual Use (acre-feet)	Available
Surface	326,800	87,010	239,790
Groundwater	<u>none needed</u>	<u>19,072</u>	<u>N/A</u>
Total	326,800	106,082	239,790

<sup>1</sup> Department of Public Works - Water Division Annual Report, City of Sacramento, 1986, p. 1.

The Zoo consumes an inordinately large portion of the City's annual total. Much of the Zoo's water is used to replace water in its water exhibits. For sanitary reasons, this water must be replaced often. Additional demand comes from landscape irrigation, washing of animal pens, and domestic uses.

### Impacts

Alternative B-1: This Alternative will generate no impacts. Likewise, no reduction of current use levels will occur.

Alternative B-2: Renovation and improvement of the Zoo within its existing boundaries would include the Sacramento and Nile River exhibits, and Lake Victoria. All three of these water-intensive exhibits would require a great deal of water. Estimates for water consumption are not available; however, the water consumed for these exhibits alone could greatly increase the Zoo's water demand. However, it is anticipated that recirculating and filtering systems would be included in the design of these exhibits, which would greatly reduce water use.

Alternative B-3: In addition to the above exhibits, the 2-acre expansion of the Zoo to Fifteenth Street will include the tortoise exhibit, African Rivers Aviary, and the large grassy picnic area. Again, estimates for water consumption are not available, and assessment of the increased water demand is not possible.

Alternative B-4: This alternative includes all proposed exhibits, including the 2-acre Australia area. In order to estimate the order of magnitude of additional water demand of this scenario, a straight line projection is not a mathematically valid means for estimating potential water demand; it is the only method available at this time. By determining the amount of water now used on a gross acre basis, the additional four acres of Zoo area would create a demand for roughly 2,200 AF/yr, raising the Zoo's water consumption to roughly 10,100 AF/yr (about 9.5% of the City's annual consumption).<sup>7</sup>



The additional demand may seem insignificant compared to the total annual consumption and unused reserve; however, when viewed from a City-wide context over time, it would constitute a significant cumulative impact. Current and projected development within the City will generate a considerable demand for the unused water entitlements, and the additional water consumed by the Zoo would greatly add to that demand. As stated below, however, Zoo management is considering a means to recycle much of the water now disposed of from water exhibits, thereby reducing water use.

#### Mitigation Measures

Alternative B-1: None needed.

Alternative B-2: Zoo management is considering the installation of recirculating water systems in all of the proposed exhibits that would greatly reduce overall water consumption. Through a process of treatment and filtration, fouled water from exhibits can be recycled. Recycling water in the exhibits could markedly decrease the additional water demand. It is anticipated that recycling would reduce impacts to a less than significant level.

In addition to the filtration system, the Zoo could employ a number of other water conservation measures, including: use of drought-resistant plant species for landscaping, careful monitoring and management of the irrigation water, and the installation of low-flow fixtures (toilets and showers) in buildings. While not reducing water demand by a great amount, these measures are a responsible means to minimize waste.

Another possibility to reduce consumption of City-treated water is to expand the use of the Zoo's wells. It is recommended that a study be implemented to determine the feasibility of expanding the use of well water in existing and proposed exhibits. This study should specifically address the constituent quality of

available well water, possible adverse effects on animal species which could come in contact with the water, and the economic benefits of using well water, as opposed to City water, for selected Zoo uses.

Alternative B-3: Mitigation measures are the same as for Alternative B-2.

Alternative B-4: Mitigation measures are the same as for Alternative B-2.

### Sewer and Drainage Systems

#### Setting<sup>8</sup>

Treatment of sewage from the City of Sacramento is presently provided by the Sacramento Regional County Sanitation District (SRCSD). The SRCSD is responsible for the operation of all regional interceptors and wastewater treatment plants except for the combined storm and sanitary sewer treatment facility operated by the City. The District's Regional Wastewater Treatment Plant is located south of the City just east of Freeport.

The plant has an existing treatment capacity of 150 million gallons per day (MGD) average dry weather flow (ADWF) and 300 MGD peak wet weather flow (PWWF). Average daily ADWF demand in 1985 was 130 MGD, or roughly 87 percent of current capacity. The SRCSD system exceeded 400 MGD PWWF in February 1986. The plant's capacity is expected to be reached in 1990, at which time the SRCSD will have expanded capacity to roughly 180 MGD ADWF and 400 MGD PWWF. Wastewater received secondary treatment before its release into the Sacramento River.

The City's Main Treatment Plant, located at 35th Avenue and Land Park Drive, handles peak wet weather flows exceeding 108.5 MGD in

the City Interceptor (operated by the SRCSD). Wet weather flow to the City plant exceeding its 130 MGD capacity is discharged into Pioneer Reservoir and held until treatment capacity is available.

The local wastewater collection is performed by two entities within the Sacramento Metropolitan area: County Sanitation District 1 and the City of Sacramento. The County Sanitation District 1 serves both North and South Natomas and Arden-Arcade Community Plan areas, portions of East Broadway, South Sacramento, and the unincorporated areas. The City provides sewage collection to approximately two-thirds of the City and has 46 sewage pumping stations in operations.

Drainage:

The City of Sacramento currently has a combined stormwater and sewer system in the older area of the city including William Land Park. The older area is bounded by the Sacramento River on the west, 65th Street on the east, American River on the north, and Sutterville Road on the south. Areas served by a combined sewer and drainage system generally experience street flooding during wet months; however, street flooding in the Zoo vicinity is not a major concern.

The City owns and operates 90 storm drainage pumping stations (one station is partially subsidized by the SRCSD). During exceptional storms, the City treats stormwater flow at its wastewater treatment plant.

The City has commissioned Robert E. Young Engineers to prepare a study of the drainage infrastructure in the area generally described as the Central City and the East Sacramento Specific Plan areas. The study's purpose is to examine the existing combined system and formulate recommendations for physical improvements

and funding mechanisms. The final report is due in April or May of 1988.<sup>9</sup>

SRCSO has plans for increasing its treatment plant's capacity in the early 1990s to 180 MGD ADWF and 300 MGD PWWF. By 2020, it is anticipated that the plant will be upgraded to a 242 MGD ADWF and a 600 MGD PWWF.

Zoo Sanitary System:<sup>10</sup> The Zoo's combined sewer system includes two-eight inch sewer lines which connect into a twelve-inch "main" which in turn connects into a fifteen-inch "interceptor" at 13th Street. One of the two eight-inch lines runs parallel to Sutterville Road about 200 feet from the Zoo's south boundary. The second eight-inch line is located beneath the Zoo's main walkway from the Zoo entrance to its terminus near the Zoo administration building. Side sewer lines (ranging in size from three- to eight-inch) connect into both eight-inch lines and serve exhibit holding areas, pool drains, concession and restroom facilities.

The flow capacities of both eight-inch lines combined, the main sewer line and the interceptor were calculated at .878 million gallons per day (MGD), 1.015 MGD and 1.586 MGD, respectively, assuming minimum slope.

U.S. Department of Agriculture regulations stipulate that all drain water generated from exhibit enclosures must be introduced into a sanitary sewer system. These regulations were developed to prevent the introduction of untreated animal waste into storm drain systems. Currently, all drainage from animal areas at the Sacramento Zoo is introduced into the sanitary sewer system. In fact, most storm drain water generated from all Zoo areas is currently drained into the sanitary sewer. Based on hourly rainfall generated from a ten-year storm event, sanitary sewer flow generated from all current Zoo property would be approximately 6.7

cubic feet per second (cfs) or .090 MGD. Sanitary sewer flow generated from all Zoo property after the completion of proposed expansion would be approximately 8.6 cfs or .116 MGD. Both flow rates are well within the capacity of the existing sanitary sewer system's eight-inch, main and interceptor lines.

Investigation of the current sanitary sewer system during development of Zoo-2002 determined that it is adequate to handle flows generated from all existing Zoo facilities and projected storm drainage. The current system will require modification to accommodate the proposed expansion of the Zoo. The addition of new facilities, and the relocation of old facilities, will require the construction of new branch lines from the existing system. Approximately 720 feet of eight-inch pipe will be needed to convey the flow from new facilities to the existing sewer system. Some of the new facilities that will require connection to the system include: health care, savanna interpretation, grizzly bear and hippo/crocodile holding areas, a restroom, cafe, drinking fountain and the mandrill/gibbon holding areas.

#### Impacts

Alternative B-1: The No-Project Alternative will have no impact.

Alternative B-2: As stated in the Setting section, the existing sewer/drainage infrastructure was evaluated and determined to be adequate for existing and projected facilities and storm drainage.

It is possible that the Zoo's additional sewerage demand on the SRCSD treatment plant could create a significant cumulative impact. While the SRCSD plant is currently operating under its design capacity, local and county growth will rapidly consume the reserve capacity. The Sacramento General Plan Update projects a demand of 129 MGD ADWF above the current service demand. Addi-

tional county demand is not included in this projection. This demand alone would virtually exceed currently planned expansions.

Additional sewer demand could be significant for another reason. Additional flow in the City's combined sewer/drainage system would exacerbate current flooding problems in other parts of the City.

If the Zoo was not to employ water recycling systems, its sewerage demand would increase, adding to the cumulative demand. However, not knowing the additional amount of sewerage generated by this scenario, it is not possible to accurately assess its impacts.

Alternative B-3: Impacts are the same as those described for Alternative 2.

Alternative B-4: If the Zoo was to consume, and dispose of, water as described in the Water Section (an additional 2,200 acre-feet/year), the cumulative sewer demand would constitute a significant impact. This additional demand translates to roughly 2 MGD of sewer demand. (Note: As mentioned in the Water Section, this projection was not based on sound mathematical premises; its only intention was to assess the general magnitude of demand.)

#### Mitigation Measures

Alternative B-1: No mitigation measures are necessary.

Alternative B-2: Reducing the amount of water used in the Zoo exhibits would reduce potential impacts to the existing sanitary system. As discussed in the Water Section, Zoo management is considering the installation of a water treatment system that would allow a great deal of the water now disposed of to be recycled, thus reducing sewer demand.

For a detailed discussion of mitigation measures on a regional scale, please refer to the Sacramento General Plan Update Draft EIR, Section I.

Alternative B-3: Mitigation measures are the same as for Alternative B-2.

Alternative B-4: Mitigation measures are the same as for Alternative B-2.

### Police Services<sup>11, 12, 13</sup>

#### Setting

Police protection in the City of Sacramento is provided by the Department of Police. The City's only police station is located at 6th and H Streets. The Department of Police consists of approximately 550 sworn officers with a total of 236 pieces of equipment.

The City is divided into 4 patrol sectors. Each sector is further divided into several patrol districts with each district usually staffed by one patrol unit. The number of sectors in the City and their boundaries change throughout the day to meet varying demands of service. During periods of low service demand, the park is served as part of two different sectors. During time of peak demand, typically evenings, the park becomes its own sector, receiving more attention.

During weekends, the Police Department assigns between 2 to 10 reserve officers to support regular service officers in the park. Additional reserve officers are assigned during weekends with special events or holidays. Enforcement priorities are crowd control and parking. The crosswalk between the Zoo and Fairytale Town receives special attention. Alcohol and other drug-related

activities, while they exist in the park on occasion, are not related to Zoo activities.

The average response time to a first priority call, one involving an immediate life threat or a serious crime, is 7.5-8 minutes. Response times to priority two calls (involving less serious crimes in progress) and priority three calls (service calls), crimes after the fact average 12 minutes and up to 35 minutes, respectively.

The target level of service for the Department is 2 officers per 1,000 population. The existing level of service is about 1.7 officers per 1,000 population.

Annual costs for police services are as follows (1987-88 dollars):<sup>14</sup>

Officer (salary and benefits)	-	\$49,992
Equipment and vehicle costs	-	21,981
Support personnel (0.7 full-time equivalent [FTE] staff per officer)	-	20,189

The marginal cost for an additional officer totals \$92,162 annually.

#### Impacts

Alternative B-1: The No-Project Alternative will have no impact on providing police services to William Land Park.

Alternative B-2: Improvement and renovation of the Zoo within its existing boundaries will have no impact on police services.

Alternative B-3: Expansion of the Zoo north to Fifteenth Street will have little, if any, impact on police services. An impact



resulting from the implementation of this scenario would stem from additional Zoo patronage. It is the opinion of the police department, because of the family nature of most Zoo visitors, that additional Zoo patronage would bring little crime to the park.

Alternative B-4: Impacts for expansion of the Zoo east to the current location of the pony rides and north to Fifteenth Street are the same as for the previous alternative. No police-related impacts are anticipated from relocation of the pony rides.

#### Mitigation Measures

Alternative B-1: No mitigation measures are necessary.

Alternative B-2: No mitigation measures are necessary.

Alternative B-3: The Police Department currently provides site design review for residential subdivisions and projects requiring special permits. Review and recommendation of building design, lighting, signage, alarm systems, and pedestrian access could minimize criminal activities. Initial reaction of one Department representative to the proposed pedestrian overcrossing is very favorable, stating that the current crosswalk can be a hazard during heavy traffic.

Alternative B-4: Mitigation measures are the same as for Alternative B-3.

#### Fire Services

##### Setting<sup>15</sup>

The Sacramento Department of Fire provides fire protection service to the city. The Fire Department consists of 470 sworn

firefighters and approximately 76 pieces of major equipment. The City maintains 21 fire stations in its 142 square mile service district.

The Department operates at its target service level of 1.4 firefighters per 1,000 population (476 firefighters for a population of 327,000). There are no plans to increase the level of service at this time. The Department has an Insurance Services Office (ISO) rating of 2. The ISO rating is used by insurance companies to determine fire insurance rates. The rating range from 1-10; 1 indicating excellent fire protection and 10 indicating minimum or no protection. Response time from all stations within their service area is 4 minutes.<sup>16</sup>

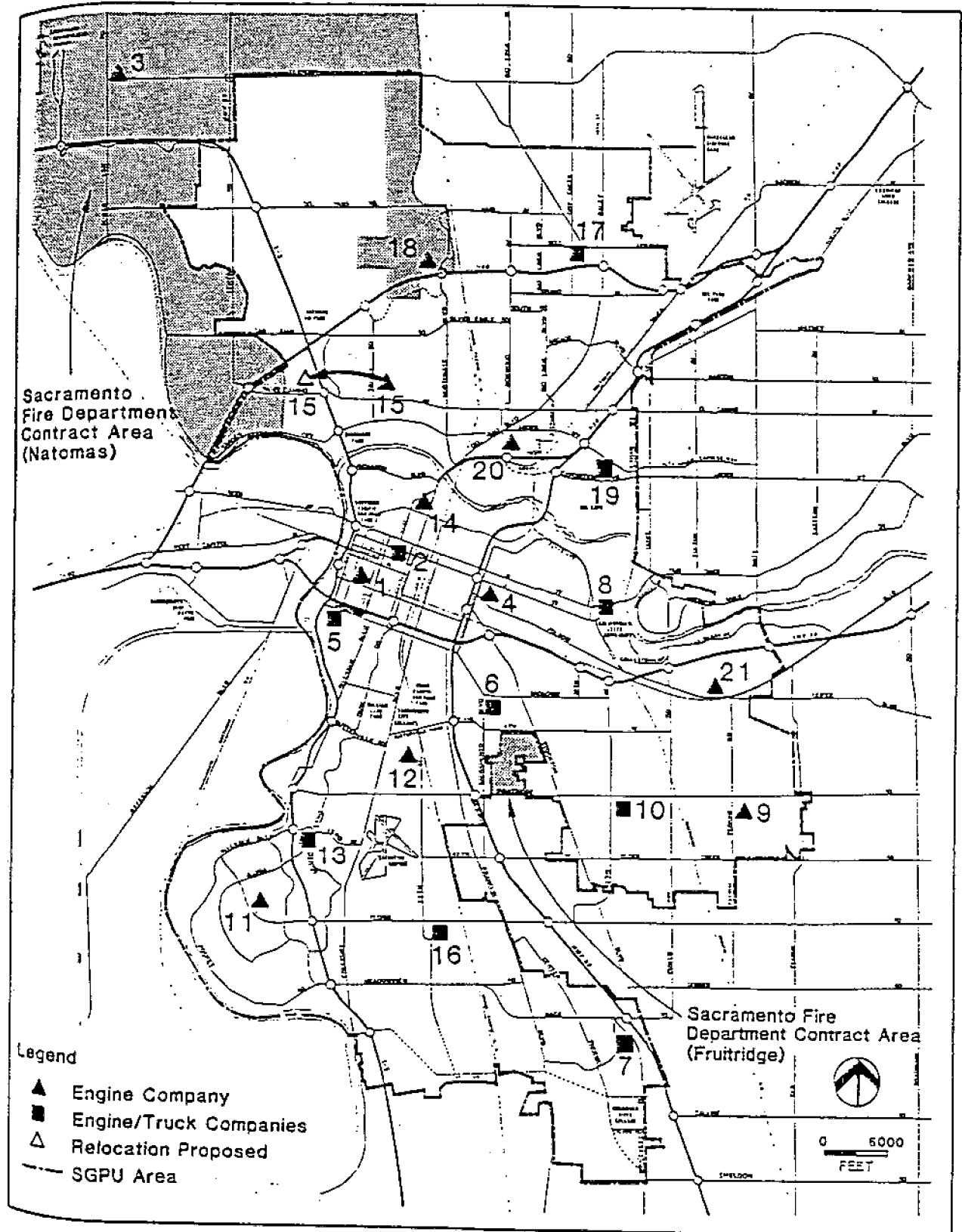
William Land Park is in the vicinity of three fire stations, Station 12 (24th Street) with one engine company, Station 5 (Broadway Blvd.) with one truck and one engine company, and Station 13 (43rd Ave.) with one truck and one engine company. Station 12 is closest to the park. Please refer to Figure 3.6-1 for the location of all City fire stations.

The Department is capable of fighting fires in multi-story structures and maintains mutual aid and automatic aid agreements with surrounding fire agencies to supplement its capabilities.

In addition to standard fire services (fire suppression, prevention, inspection, and construction plan review), the Department of Fire also provides hazardous materials (hazmat) response. Three hazmat units respond to threatened and actual chemical and other spills and releases.

Operating costs are summarized as follows: annual salary and benefits per fire company (1 Captain, 1 Engineer, and 2 Firefighters) totals \$201,468. Station maintenance and operations costs approximately \$50,000 annually. Annual costs for apparatus

## LOCATIONS OF CITY OF SACRAMENTO FIRE STATIONS



maintenance and yearly replacement costs vary widely, but average about \$16,000.17

There are plans to eventually open stations in North and South Natomas, and add an additional station in South Sacramento.

#### Impacts

Alternative B-1: No fire service related impacts would generated with the No-Project Alternative.

Alternative B-2: Because the extent of all proposed construction and renovation is limited and is located in an established fire service area, the addition of new exhibits, pedestrian overcrossing, and the administration/education building will not increase the service demand for the area's fire companies.

Alternative B-3: No impact.

Alternative B-4: No impact.

#### Mitigation Measures

Alternative B-1: None needed.

Alternative B-2: In order to minimize health and safety hazards in renovated exhibits and in all new construction, review of all plans should be required by the fire department. The fire department should review new buildings for fire safety design, set the required fireflow for fire sprinkler systems, specify hydrant locations and flows, and recommend design standards for emergency apparatus access to new areas.

Alternative B-3: Mitigation measures are the same as for Alternative B-2.

Alternative B-4: Mitigation measures are the same as for Alternative B-2.

## Energy

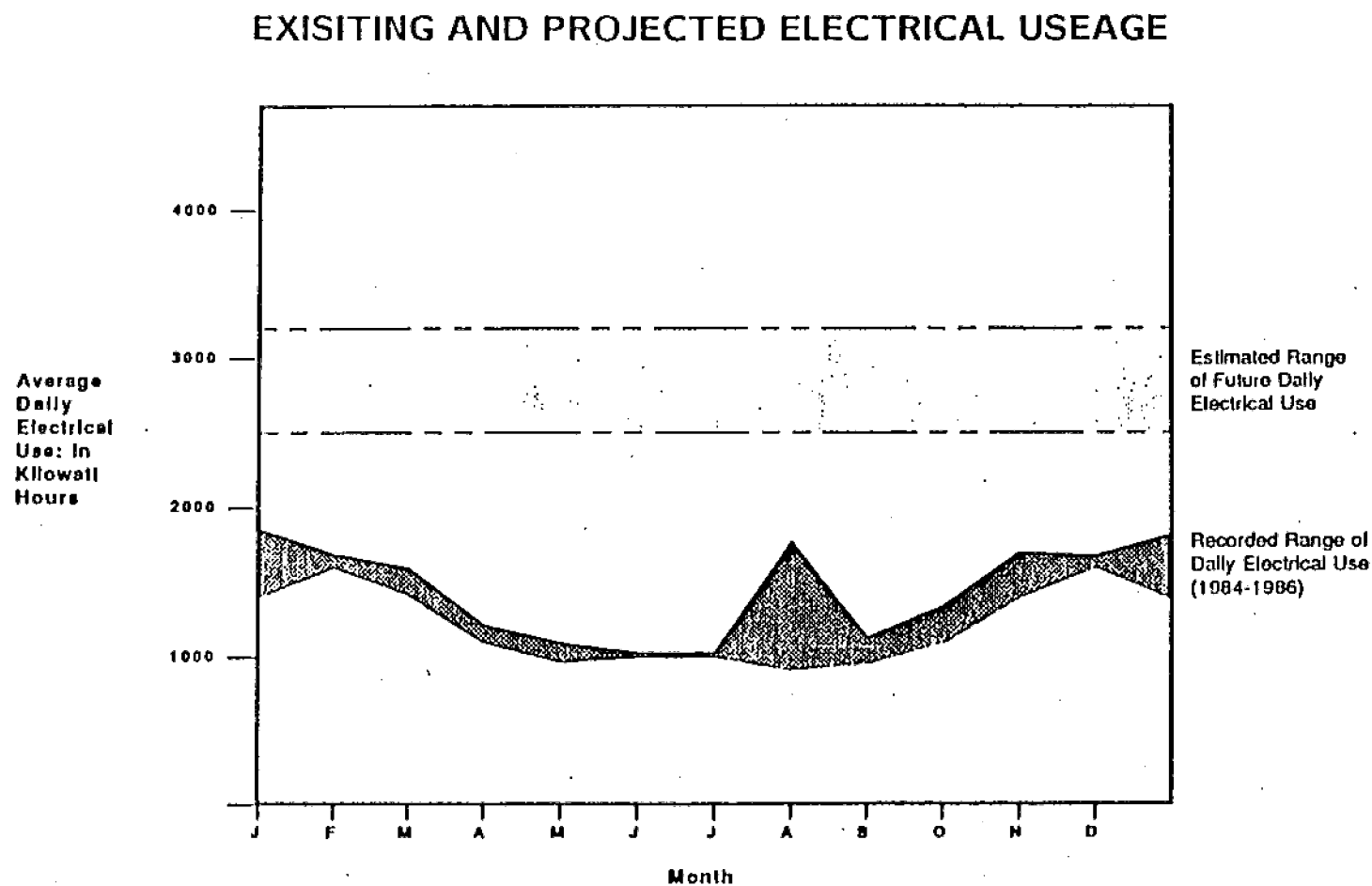
### Setting<sup>18</sup>

Electrical: Electrical power is provided to the Zoo by the Sacramento Municipal Utilities District (SMUD) via one primary 21 kilovolt (kv) line. Power from these lines is "stepped down" to usable voltages of 120 and 240 volts (3 phase) via five transformers located on the Zoo site. The capacity of these transformers averages 75 kv.

SMUD billing records show that Zoo power usage for the fiscal year 1985-1986 totaled 473,535 kilowatt hours. The highest average daily usage for any one month from October 1983 to December 1986 was determined to be 1,824 kilowatt hours which occurred in January 1986. Information regarding the expected power demands of proposed future Zoo facilities is extremely limited at this time. However, an estimate of the range of total Zoo annual power usage after full development has been made based on: 1) recent Zoo power use; 2) the number, size, and type of proposed buildings and exhibits; and 3) estimates of power use by proposed support facilities. This range of future power use is illustrated in Figure 3.6-2 is a plot of average daily Zoo power usage from 1984 through 1986.

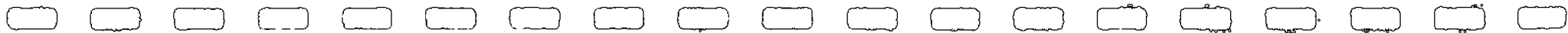
Redevelopment of the Zoo complex will require expansion of the existing electrical distribution system within the Zoo to accommodate new exhibits and support facilities. In addition, any inadequacies in the distribution system serving existing facilities will need to be identified in a study to be conducted once all power requirements have been finalized.

FIGURE 3.6-2



Average Daily Zoo Electrical Use From 1984 Through 1986 and the Estimated Range of Future Daily Electrical Usage at Full Zoo Development.





Natural Gas System: The Zoo is provided with natural gas for heating purposes by Pacific Gas and Electric, via a two-inch feeder from the main gas line located under Sutterville Road. Three three-quarter-inch lines convey gas from the feeder to the gorilla area, the reptile house and the Zoo's administration building which are the only facilities using this utility. Zoo expansion would necessitate the extension of these three-quarter-inch lines to any other exhibits requiring heating. It is not known at present which exhibits or other facilities will be using gas for heating. It is anticipated, however, that the following proposed exhibits will require natural gas: the primate area, Nile River area, "River" Interpretive Center, and the Sacramento River aquariums.

#### Impacts

Alternative B-1: No impacts will be created by this scenario.

Alternative B-2: None of the scenarios will generate significant impacts. As stated above, the existing SMUD and PG&E distribution systems are capable of handling the projected energy needs for all Zoo expansion; however, internal distribution will have to be modified to accommodate the new demands.

Alternative B-3: See the discussion for Alternative B-2.

Alternative B-4: See the discussion for Alternative B-2.

#### Mitigation Measures

Alternative B-1: No mitigation measures are required for this scenario.

Alternative B-2: It is recommended that a comprehensive study of the Zoo's internal power distribution systems be undertaken once construction plans and energy requirements for all new exhibits and facilities are finalized. Additionally, SMUD and PG&E should



be contacted early and consulted throughout the planning development and completion of any construction. The City should coordinate necessary easements and dedication with the utility companies to facilitate coordination.

The SMUD Conservation Department recommends that the attached list of conservation and load management measures for commercial developments be implemented and be a required mitigating measure for this project. These measures would be appropriate for consideration during design of the administration/education building.

SMUD RECOMMENDED CONSERVATION/LOAD MANAGEMENT  
MEASURES FOR COMMERCIAL DEVELOPMENT

The kw load per acre for commercial and industrial developments can be 15 times that of residential. A significant portion of the load can be reduced by the following techniques.

1. Incorporating load management devices to:
  - Control the use of electricity during peak periods. (The building occupants will benefit by taking advantage of appropriate "Curtable" or "Time-of-Use" rates.)
  - Shed noncritical loads during generation shortfall. (Large users will be asked to participate in SMUD's "Capacity Shortage Contingency" program.)
2. Preparing auxiliary generators for use at SMUD's request. (Participants will contract with SMUD and be compensated accordingly.)

3. Incorporating electrical equipment that is more efficient than that required by code. An efficiency improvement of 20% is readily achievable. The following equipment is most important for achieving electrical load reductions:

- high-efficiency air conditioning equipment
- high-efficiency motors
- high-efficiency lighting systems
- high-efficiency water heating systems

4. Providing space cooling by use of a "Thermal Energy Storage" system. (Air conditioning compressors are used during "off" peak periods to cool a medium such as water. The medium is then stored and used during peak periods, allowing the compressors to be kept off. Building occupants will benefit by means of time-of-use rates.)

5. Illuminating by natural light in lieu of artificial light. Daylighting is especially applicable for:

- Commercial space where noncritical tasks are performed
- Warehouses
- Industrial complexes
- Perimeter of multi-level parking garages

Alternative B-3: Mitigation measures are the same as for Alternative B-2.

Alternative B-4: Mitigation measures are the same as for Alternative B-2.

## Solid Waste

### Setting<sup>19</sup>

The Sacramento Zoo generates two different solid waste streams, and therefore, is serviced two different ways. Solid waste generated from concessionaires (food containers, paper trash, waste food, etc.) is collected directly by the City's solid Waste Division personnel.

Wastes generated by the Zoo itself; waste vegetation, soil, and paper waste collected inside the Zoo with trash receptacles, is collected by Parks and Community Services personnel in six cubic yard containers and delivered to the William Land Park corporation yard. The Solid Waste Division empties these containers into their own trucks for eventual disposal at the landfill.

For a thorough discussion of solid waste services and issues in the City of Sacramento, please refer to Section K of the Sacramento General Plan Update Draft EIR.

### Impacts

Alternative B-1: This scenario will not create solid waste related impacts.

Alternative B-2: It is the opinion of the Solid Waste Division that additional waste generated by either concessionaires or the Zoo can be easily accommodated.<sup>13</sup> At present, the Zoo does not generate a large quantity of waste. It is not expected that any of the proposed scenarios will generate amounts of solid waste to significantly affect the life expectancy of surrounding landfills.

Alternative B-3: See the discussion for Alternative B-2.

Alternative B-4: See the discussion for Alternative B-2.

#### Mitigation Measures

Alternative B-1: No mitigation measures needed.

Alternative B-2: The only mitigation measures to the Zoo to reduce the amount of waste to be picked-up is to implement a vegetative mulching system. By shredding and composting vegetative waste, the Zoo could reduce the amount of waste picked-up and gain a source of soil amendment for the Zoo's landscaping.

Alternative B-3: Mitigation measures are the same as for Alternative B-2.

Alternative B-4: Mitigation measures are the same as for Alternative B-2.

#### Street Maintenance

##### Setting<sup>20</sup>

Roads in William Land Park were constructed many years ago and are not of the best quality; however, they have provided good service through the years and are expected to remain in place. Elements that make street maintenance in William Land Park difficult are: 1) non-standard curbs made of masonry rock, 2) extensive irrigation, 3) numerous tree roots, and 4) heavy traffic.

The park's curbs are made of masonry rock; therefore, under-street maintenance is discouraged for fear of destroying the integrity of original construction. Because of extensive irrigation, water seeps under the roadbed and can "pump" through the street and create a pothole. Normal street maintenance and repair involves digging; unfortunately, many trees line the streets and would be damaged from such digging. In order to preserve the

aesthetic nature of the park, minor street and drainage repairs are left undone. Because of heavy daily vehicle traffic in the park, interruption of traffic, especially in front of the Zoo, requires advanced notice and coordination with the Zoo.

Aside from the repair of minor potholes and other street hazards, the only street maintenance provided in the park has been the resurfacing of streets west of Land Park Drive. Such "slurry sealing" lasts for roughly three years. The streets east of Land Park Drive will be slurry sealed this year. No other maintenance or repair work is scheduled for the park.

The park's two parking lots, one east of Fairytale Town, and one in the "panhandle" in the extreme northwest portion of the park, receive attention on an as needed basis.

#### Impacts

Alternative B-1: No impacts will occur.

Alternative B-2: The only activities proposed in any of the scenarios to affect the streets are the proposed tunnel between the Zoo and the proposed Australian area, and trenching of streets to lay utility lines. None of these actions will create a significant impact.

Alternative B-3: See the discussion for Alternative B-2.

Alternative B-4: See the discussion for Alternative B-2.

#### Mitigation Measures

Alternative B-1: No mitigation is necessary.

Alternative B-2: Once construction plans and schedules are developed, Zoo personnel should notify the Traffic Division of the

Public Works Department for suggestions and to arrange for street closures.

If constructed, it is recommended that all utilities be routed through the tunnel to avoid street trenching and to improve the serviceability of the lines.

Alternative B-3: Mitigation measures are the same as for Alternative B-2.

Alternative B-4: Mitigation measures are the same as for Alternative B-2.

### Schools

#### Setting<sup>21</sup>

Twelve schools, ranging from elementary schools to a junior college, are located in the vicinity of William Land Park in the area bounded by: Fruitridge Road on the south; Broadway Boulevard on the north; the Sacramento River on the west; and Highway 99 on the east. Ten of the schools are operated by the Sacramento Unified School District, one is a private school operated by the Holy Spirit Catholic Church adjacent to the Zoo, and the Sacramento City College is located adjacent to William Land Park. Please see Table 3.6-2 for a list of the schools.

Schools throughout the region are frequent visitors to the Zoo and benefit from the exciting, hands-on interpretive and educational services offered by the Zoo staff. A variety of opportunities enrich students' experiences at the Zoo and aid in their understanding of wildlife conservation and environmental ethics. Some of the programs offered to students include: animal demonstrations; an integrated school/Zoo learning experience for

Table 3.6-2

School Name	Level	Operator
<u>Public K-12</u>		
Sutterville	Elementary	Sacramento Unified SD
Hollywood Park	Elementary	
Ethel Phillips	Elementary	
Jedediah Smith	Elementary	
Bret Harte	Elementary	
Sam Brannan	Middle	
California	Middle	
John Cabrillo	Middle	
Crocker/Riverside	Middle	
C. K. McClatchy	High School	

Private

Holy Spirit <sup>a</sup>	Elementary	Holy Spirit Catholic Church
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Public Postsecondary

Sacramento City College <sup>b</sup>	Junior College	Los Rios Community College District
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<sup>a</sup> Holy Spirit is located adjacent to the Zoo's north boundary.

<sup>b</sup> Sacramento City College is located at William Land Park's eastern edge, across Freeport Blvd.

grades K-2; and programs for visually, hearing, and learning disabled students and others.

A special and very popular educational program is offered by the Zoological Society during the summer, allowing school-age children to attend focused classes at the Zoo, during the day and overnight.

All activities are coordinated through and/or held at the Zoo's current educational/docent office, a 20 foot by 60 foot trailer located at the back of the Zoo. The trailer is used to capacity.

#### Impacts

Alternative B-1: No impact will occur to the surrounding schools. The education programs will continue.

Alternative B-2: One element of scenarios B-2, B-3, and B-4 is an administrative/educational facility, providing classrooms, office, and storage space for the Educational Program. Additionally, the Rivers Interpretive area will provide a needed outdoor arena. To complement the new facilities, many existing programs will be enhanced and many new programs will be offered. The development of any of the above-mentioned scenarios will provide a significant positive impact on the educational environment, not only for local schools, but for the Sacramento metropolitan area.

A potential adverse impact is possible; increased use of the park, especially during weekdays, may increase local traffic levels and make transportation to and from schools adjacent to the park more difficult. This impact, if it were to occur, would not be considered significant unless it threatened the safety of children walking to school.

Alternative B-3: Same impacts as Alternative B-2.



Alternative B-4: Same impacts as Alternative B-2.

Mitigation Measures

Alternative B-1: No mitigation is required.

Alternative B-2: No mitigation is required.

Alternative B-3: No mitigation is required.

Alternative B-4: No mitigation is required.

### 3.7 Vegetation

#### Setting

The Sacramento Zoo is located in the southwesterly corner of William Land Park. The Zoo and the surrounding parklands currently support a number of tree and brush species; nearly all of which were planted on the site. Prior to the development of the park, the site was described as a "swampland" that "would never grow grass or trees."<sup>22</sup> The entire Sacramento City limits was at one time dominated by a tule-marsh community in the floodplain of the Sacramento River.<sup>23</sup> These marsh areas were dominated by cattails (Typhus sp.) and tule sedge (Scirpus sp.). Within these flooded lowlands there were uplands supporting native grasses and oaks. Many of the large oaks located around the Zoo may be remnants of the native vegetation that once dominated this site. The three large Valley oaks (Quercus lobata) located just north of the Zoo boundary are believed to have existed on this site for over 200 years.<sup>24</sup>

In addition to Valley oaks, this portion of the park and Zoo supports approximately 72 tree species, of which two-thirds are not native to California. Approximately 500 trees occur within the proposed Zoo expansion areas and immediate environs.<sup>25</sup>

The City of Sacramento has a Heritage tree ordinance which recognizes those trees within the City which promote scenic beauty and enhance property values. The code provides for an Official Heritage Tree Register which is to identify the location, size and species of heritage trees in the City. At this time there is no "official" register ruled upon by the City Council, but there is an unofficial list which includes the three large Valley oaks noted above. In general, the ordinance was designed to preserve the largest and healthiest native tree species, and not necessarily elms or eucalyptus which have been planted as landscaping.<sup>26</sup>

However, should any large tree, regardless of species, be judged to have significant historic or aesthetic qualities, it may be designated as a Heritage tree. One of the criteria required for Heritage status is that the tree must have a trunk diameter of 32 inches or more (or circumference of 100 inches or more) at 4.5 feet above ground level and be in good health. There are at least 25 trees in the project area which have trunk diameters greater than 32 inches (see Figure 3.7-1).

There is a stand of trees dedicated by the Daughters of the American Revolution (DAR) located just east of 16th Avenue (Figure 3.7-1). These trees were originally planted in 1924 and subsequent plantings have been made to replace original trees that have died. At the present time, this stand of trees is composed of approximately 16 dedicated trees within a larger grove of trees.

In addition to the trees, there is a camellia garden located at the north end of the pony ride area (see Figure 3.7-1). This garden is maintained by the Camellia Society of Sacramento and has been dedicated to the hostages in Iran. One of the camellia plants is about 12 feet tall with a ten inch trunk diameter at about two feet above the ground. This individual plant is believed to be the oldest living camellia in Sacramento.<sup>27</sup>







### Impacts

The preservation of as many of the existing trees as possible is in the best interest of the Zoo. It would reduce landscaping costs and provide visual amenities, as well as shading to any new area of expansion. It is the current policy of the Zoo administration to preserve and use as many trees as is possible in the Zoo grounds and replace trees that have to be removed with additional plantings. The preservation of as many trees as

# TREE INVENTORY MAP

FIGURE 3.7-1

## LEGEND

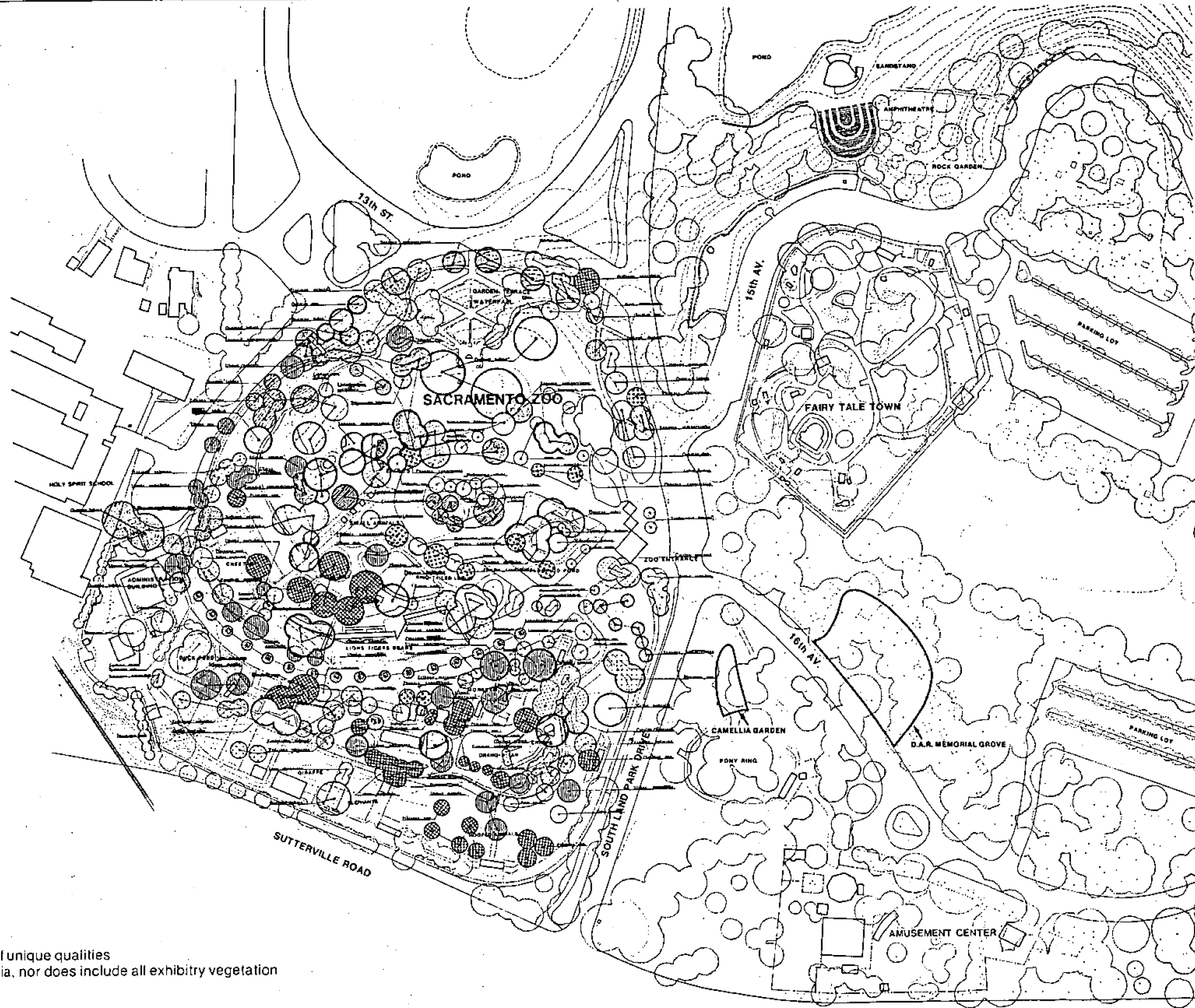
-  Eraxinus velutina
-  Liriodendron tulipifera
-  Platanus spp
-  Quercus spp
-  Ulmus spp
-  Zelkova Serrata

## NOTES:

- Trunk locations are approximate
- Heavier outline indicates trees of unique qualities
- Inventory does not include Acacia, nor does include all exhibitry vegetation

SOURCE: SACRAMENTO ZOO

FEET 0 100 200



possible was a major criteria in the design of the proposed expansion areas.<sup>28</sup> None-the-less, removal of some trees may not be avoidable for some facilities. At this time, the available preliminary plans are not detailed enough to allow for a precise evaluation of which trees are to be removed and which trees can be saved. Such an evaluation would require detailed construction drawings indicating the extent of earth removal and disturbance. The following is an initial analysis of potential tree removal based upon the preliminary development plans.

Alternative B-1: Under this alternative the existing trees and shrubs are expected to persist on the site. There would be no change in the vegetation on site.

Alternative B-2: This alternative may result in the necessity to remove some of the larger trees between the entry to Fairy Tale Town and the Zoo due to the proposed lowering of Land Park Drive. At this time, the plans have not been developed in enough detail to determine if any trees would need to be removed. It appears that 5 or 6 large trees along Land Park Drive may be in jeopardy. The proposed relocation of the education/administration building near the Zoo entrance may require the removal of one Deodar cedar, one magnolia, two Canary Island date palms, one white mulberry, and one Coast redwood.

Alternative B-3: This alternative may require the removal of one elm, three ash, one Coast redwood, and one Japanese cryptomeria tree, as well as a number of orange trees for the African River Aviary. The tortoise exhibit may require the removal of one Japanese cryptomeria tree. The picnic area would not require the removal of any trees, especially the three large Valley oak in this area.

The potential need to remove trees for the relocated education/administration building and the pedestrian overcrossing would be equivalent to Alternative B-2.

Alternative B-4: This alternative would have the same impacts as those identified in Alternative B-3, plus additional impacts in the proposed Australian theme area. The proposed relocation of the pony rides may require the removal of trees depending upon where these facilities are to be relocated.

Landscape details of the Australian theme area have not been developed to date. The preliminary plans were designed to try and avoid both the camellia garden and the DAR grove of trees.<sup>28</sup> Without more detailed drawings and plans, it is not possible to determine if the proposed expansion would successfully avoid these vegetation elements and adequately determine which existing trees may have to be removed.

#### Mitigation Measures

Alternative B-1: Since this alternative would not result in any changes to the existing vegetation on the site, no mitigation measures are needed.

Alternative B-2: Prior to construction, the final construction plans should be prepared in consultation with the qualified arborist on the staff of the Tree Services Department of the City of Sacramento. Whenever possible, all construction should avoid areas within the dripline of the tree canopy. If this is unavoidable, a qualified arborist should be consulted to determine if the tree may be saved through specific mitigation measures. Any such measures should be developed for each specific tree, especially the larger more healthy trees.

The removal of any large trees should be mitigated by the planting of trees of the same species or rarity elsewhere on the site. This is especially true of the native oak trees.

Alternative B-3: Same as Alternative B-2.

Alternative B-4: Same as Alternative B-2. In addition, every effort should be made to preserve the camellia gardens and the DAR grove.

### 3.8 Cultural Resources

The primary objectives of the archaeological research described herein were: 1) to locate and identify any cultural resources of demonstrated or potential significance within the confines of William Land Park; and 2) to formulate and submit to the project sponsor appropriate recommendations for the further investigation of, and/or mitigation of adverse impacts to, any identified resources.

#### Setting

In March 1988, an archaeological records search was conducted by the Department of Anthropology, California State University, Sacramento, to identify prehistoric sites lying within or adjacent to William Land Park. The following discussion is based on the findings of that search.

No prehistoric or historic sites have been recorded within the boundaries of William Land Park, however, three prehistoric sites and one historic site are recorded within a one mile radius of the park. The prehistoric sites range from a scatter of stone artifacts to an occupation mound and a village site. The latter two sites have since been destroyed through construction activities. The one recorded historic site is a trash scatter.

Several features of historic interest lie within one mile of William Land Park, including the site of the old Suttersville settlement, established by John Sutter in 1849, immediately southwest of the present day Zoo. It is also recorded that Camp Union was located at Suttersville. During the Civil War, California volunteers were trained at this location.

Previous archaeological investigations include an area immediately north of the Zoo surveyed in 1976 for reconnaissance of



possible sewer lines. A portion of the original area was resurveyed in 1987 in conjunction with the Excursion Train Extension Project.

#### Impacts

Alternative B-1: The No-Project Alternative will have no impact on the existing cultural resources.

Alternative B-2: Based upon the information presented in the Setting section and the fact that the entire area has been previously developed, an archaeological survey would not yield additional information. It is likely, however, that trenches for utility lines and foundations and pits for new watering holes could uncover buried cultural deposits. The sensitivity of William Land Park, based on the the likelihood of buried cultural deposits, is fairly high for prehistoric and historic resources, especially in the south and northwest portions of the park.

Alternative B-3: Same as Alternative B-2.

Alternative B-4: Same as Alternative B-2.

#### Mitigation Measures

Alternative B-1: None required.

Alternative B-2: It is recommended that a qualified archaeologist monitor subsurface earth-moving activities, such as trenching and excavation. In the event that previously unknown cultural resources are discovered, it is recommended that all further activity in the area be halted until the archaeologist can examine the find, assess its significance, and develop further exploratory procedures or data recovery plans deemed appropriate for mitigation.

A copy of any further archaeological reports produced in conjunction with this report should be forwarded to: North Central Information Center, Department of Anthropology, California State University, Sacramento, 6000 J Street, Sacramento, CA 95819 for inclusion in their archives.

Alternative B-3: Mitigation measures are the same as for Alternative B-2.

Alternative B-4: Mitigation measures are the same as for Alternative B-2.

### 3.9 Aesthetics/Light and Glare

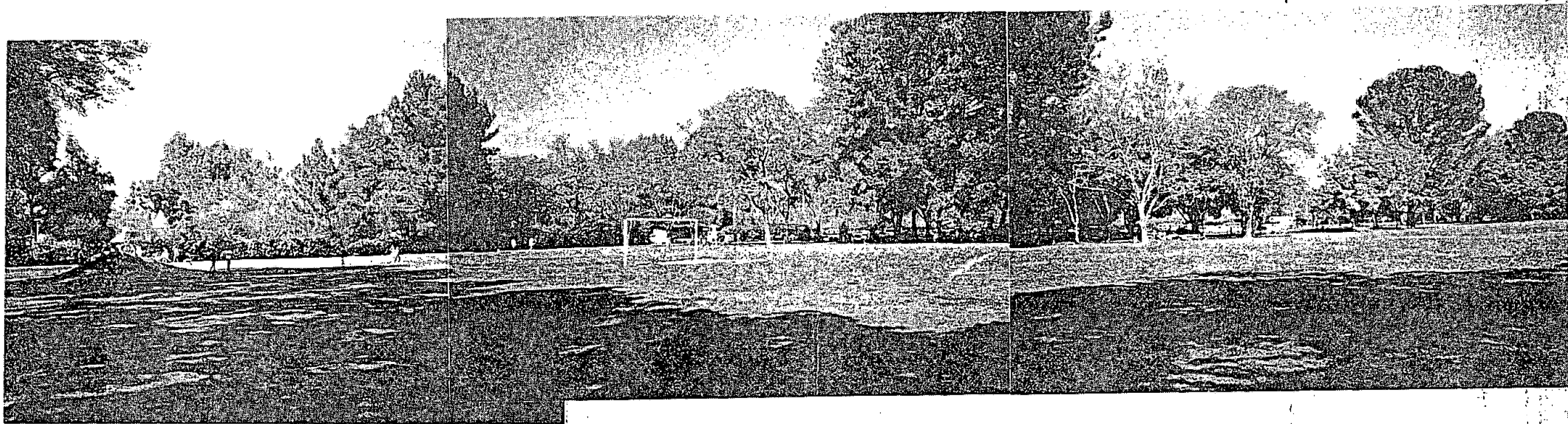
#### Setting

The Zoo facility is located in William Land Park, an extensively planted and landscaped setting, originally designed and planted in 1923. The trees which dominate the visual character of the park area are primarily deciduous, offering a variety of visual impressions depending on the season. Views to the park from surrounding neighborhoods and roadways are primarily of trees and sweeping lawn areas. The only buildings currently located in the park are associated with the Zoo and Fairytale Town. These structures are visible from Sutterville Road, Land Park Drive, and 15th/16th Avenues, however, the relatively small scale of the buildings and extensive landscaping results in a low profile, nonintrusive impression. The specific views to and from the proposed facility's locations are discussed below.

No-Project Alternative B-1: The existing Zoo facilities are visible from a limited area bounded by Sutterville Road, South Land Park Drive, West Land Park Drive, and the 15th/16th/17th Avenue intersection area (see Figure 3.9-1). The Zoo facility is visible from Sutterville Road moving east and appears, at this location, as a landscaped and fenced area whose use is not readily apparent. The main entrance area with its ticket area and boundary wall is visible from South Land Park Drive between Sutterville Road and its intersection with 15th Avenue. The overall impression is of a low profile, but clearly institutional use. Fairytale Town and the partially screened pony ride area are less dominant components of this view. The northern portion of the Zoo site is also visible from West Land Park Drive. The dominant feature of this view, which is intermittent and screened by several groves of eucalyptus and redwood trees, is the landscaped area containing the miners statue. This area includes extensive landscaping which includes perennial shrubs and vines (wisteria

EXISTING SITE CONDITIONS

Figure 3.9-1



and roses), annual flower beds, and various architectural elements (rock walls, wooden fences, arbors, and terraced pathways). The miners statue, depicting a 49'er-style prospector, is the visual centerpiece of this portion of the Zoo environs and the landscaping elements, both vegetative and structural, frame the statue. From the statue north, heavy vegetation obscures the view of a lawn area dominated by the adjacent trees. The Zoo wall is visible as a backdrop and does not dominate these views as the eye is drawn to the arbors, rock walls and plantings of the landscaped area.

Alternative B-2: The area which would be impacted by this alternative includes the Zoo entrance (described above) and an area located south of Fairytale Town. The area adjacent to Fairytale Town is currently planted in grass lawn (used as a soccer field) and trees, and forms a part of the overall open space atmosphere of the larger park. The site has no dominant visual characteristics and serves as an open space foreground element of views towards Fairytale Town.

This area is visible from South Land Park Drive from Sutterville Road to the Zoo entrance, from Sutterville Road in the Mead Avenue area, and from locations along 16th and 17th Avenues moving south from the Zoo entrance. This area is visible from locations inside the park between 16th and 17th Avenue and the soccer field/parking area and, to a much lesser extent, from the 18th Street portion of the park.

Alternative B-3: The view shed area of this alternative includes Sutterville Road, West Land Park Drive, 16th and 17th Avenues, West Land Park Drive and the 13th/15th Street intersection. The visual characteristics of these areas are dominated by heritage oaks and terraced gardens. The gardens here contain numerous structural elements (arbors, pathways, stone walls, open-work wood fences, benches, and terraced planting areas), as well as

perrenial and annual plantings. The overall character is of a well groomed, "estate-style" garden with areas which encourage passive uses.

Alternative B-4: The view shed area of this alternative includes Sutterville Road, West Land Park Drive, 16th and 17th Avenues, West Land Park Drive and the 13th/15th Street intersection. The visual characteristics of these areas are described above.

Summary of Existing Conditions: Although all of the proposed areas are visible from several locations, most views are screened and broken by intervening vegetation (trees and shrubs). Those areas dominated by deciduous vegetation are more easily seen during the winter months as the softening and buffering element of the tree's leaves are lost. The area which is most widely visible and frequently viewed is the Zoo entrance which is the dominant visual element in the western portion of the park. As currently constructed, this facility is an obvious, but relatively unobtrusive and inoffensive visual component.

#### Impacts

Generally, the impacts of the proposed improvements are of two types: effects on views within the park; and effects on views of the park from surrounding neighborhoods and surface streets. The effect on both viewsheds is to reduce the open space nature and aesthetics of the area. The severity of impact relates directly to location and design.

No-Project Alternative B-1: The net effect of the Alternative would be maintenance of existing aesthetic qualities and views both to and from the Zoo and environs.

Alternative B-2: The impacts of this Alternative would result from construction of the administration building (see Figure 9) and the pedestrian overcrossing (see Figure 8). Relocation of

the pony ride facility will result in impacts associated with fencing and new landscaping and possible loss of existing trees and landscaping in the new location near Fairytale Town (see Figure 6).

Administration Building at Fairytale Town: Construction of the administration building at this site could result in the removal of several mature trees. The loss of trees would, however, be secondary to the building mass of the structure itself. Visible from an area bounded roughly by the Zoo entrance and the soccer field, the building would be visible against the backdrop of the trees inside and around Fairytale Town. Therefore, the views of the structure would be most predominant during the winter months when the bulk of the structure and its roofline would be most obvious. Views of the site during the summer and fall would be blocked by the fully leafed trees. The long-range views from South Land Park Drive at the Zoo entrance would be most directly affected with the areas along 16th and 17th Avenues being affected to a lesser extent. Views from within the park would be affected depending on the distance and intervening vegetation. The aesthetic impacts of construction of the administration building at this location is considered potentially significant. However, there are no design plans currently available. The ultimate design (height, mass, exterior treatment, etc.) of the facility will dictate the significance of the structure's impact. The impact could be reduced to a less than significant level by implementing the design, landscaping and siting recommendations included in the mitigation measures section below.

Administration Building at Zoo Entrance: Construction of the facility within the Zoo boundaries would result in the effective redesign of the Zoo entrance area. As this location is already dominated by existing Zoo buildings, the net

effect would depend entirely on the ultimate design of the structure. As no specific design plans have been advanced, it is not possible to determine the impact of this alternative. However, it is possible that the new building would generate potentially significant impacts on views of the entrance area from locations along South Land Park Drive and 16th/17th Avenue intersections in the vicinity of the Zoo entrance. Deliveries to the Administration Building at this site could interfere with the function of the building unless a separate loading/unloading area and access were provided. Such an area could obviously cause aesthetic impacts to the view of the Zoo entrance unless effectively designed and screened. Also, this location would not provide adequate parking for staff and visitors in the rear vicinity of the building. No other viewshed would be directly affected. This impact could be reduced to a less than significant level by implementation of the mitigation measures described below. It is also possible, depending on the design of the building and its materials, as well as on the streetscape design along Land Park Drive, that the entrance could be aesthetically improved.

Pedestrian Overcrossing: The pedestrian overcrossing will result in a complete alteration of the existing Zoo entrance. Whether this alteration is perceived as a positive visual treatment will largely depend on its final design features. The construction of such a facility will be a departure from the current low profile entrance aesthetic. However, the potential exists for the creation of a visually interesting and pleasing design element. The major area of impact would be experienced at South Land Park Drive and the Fairytale Town-16th/17th Avenue intersection. The deep cuts necessary for reconstructing Land Park Drive below grade could create a "tunnel-effect" both for motorists and pedestrians. The drop in elevation, combined with the need for



retaining walls, could create a visual impression quite different from that currently experienced. Construction of the pedestrian overcrossing is considered a potentially significant impact which could be reduced to a less than significant level by implementing the mitigation measures identified below.

Alternative B-3: The impacts of the administration building and the pedestrian overcrossing have been described above. This Alternative also includes the expansion of the Zoo facility into the landscaped area to the north of the existing operation. The effects of this facility would be experienced by residents along West Land Park Drive, park users in the field area between 13th Street and South Land Park Drive and vehicle passengers moving south towards Sutterville Road along South Land Park Drive. The primary impact which would result from this alternative is the loss of a portion of the existing landscaped area. This area currently presents a pleasing and well tended aesthetic. Although this location is screened from surrounding areas by several stands of trees, the change in appearance would be significant. The design treatment for this location has not been determined. Removal of the landscaped area and construction of Zoo facilities is considered a potentially significant impact which could be reduced to a less than significant level by implementation of the recommended mitigation measures.

Alternative B-4: The previous discussions (Alternatives B-2 and B-3) present the impacts of the administration building, the pedestrian overcrossing, and the northside expansion. Therefore, this discussion focuses on the easterly expansion of the Zoo into the park at Fairytale Town.

The creation of the easterly facility will result in a complete change of visual character to this area. Views from South Land Park Drive, the 16th/17th Avenue corridor and 18th Street looking

west will all be substantially altered. Retention of the trees within the facility will serve to soften the "top" or "roofline" views; however, the sweep of lawn and trees will be replaced with walls and fencing. A change in character from open lawn to landscaped fencing and walls is not necessarily negative, but would result in a change in character that is considered potentially significant. As with the rest of the design elements, the actual height, mass, exterior treatments and scale of the facilities will dictate the final visual aesthetic. This potentially significant impact can be reduced to less than significant levels by implementing the mitigation measures identified below.

#### Mitigation Measures

Because there are no final designs for any of the proposed facilities, mitigation measures must be conceptual in nature in some cases. However, it is clear from the evaluation that the impact of each project element will be largely a function of design, as well as streetscape and landscape treatments. Therefore, the following apply to all of the proposed elements.

- Limit building height to one story;
- Design structures so as to minimize removal of existing tree cover;
- Design landscaping to soften and buffer both near- and long-range views;
- Utilize external treatments (colors, textures, etc.) which blend with the existing design elements in the park environs. As a specific example, the fencing around both the northerly Zoo expansion and the easterly expansion could be fenced with a wrought iron and stone pillar fence similar in design to the fence which is located north of Fairytale Town and south of the amphitheater;
- Require review of all project design elements by City Design Review Committee; and

- Provide landscape buffer along entire length of the re-worked portion of Land Park Drive which would be lower than grade. Consider painting murals with a Zoo theme along the walls of the roadway cuts.

### 3.10 Fiscal Analysis

The fiscal impact to the City of the proposed Sacramento Zoo improvements consists of both direct impacts due to Zoo operations and indirect impacts created by public service requirements and government revenue such as sales tax. These direct and indirect components are discussed separately below. All costs and revenues are expressed in constant 1988 dollars.

#### Direct Fiscal Impacts

##### Setting

The Zoo generates direct revenues to the City in the form of admissions revenue and a portion of the gross concessions revenue. Zoo costs result from ongoing Zoo operations. In 1986-1987, estimated Zoo admissions revenue was \$759,000 and estimated revenue to the City from concessions was \$131,165, for a total of \$863,000 in revenue. The 1986-1987 Zoo expenditures were \$1,089,000 (1986-1987 Zoo Annual Report). Thus, Zoo-generated revenues offset approximately 82 percent of costs. In the past decade, the percentage of costs offset by revenues has varied from approximately 50 percent to slightly over 80 percent.<sup>29</sup> The cost of Zoo operation not offset by direct revenues is funded by a transfer from the City's General Fund.

Presently, rent from the concessions, which are operated by the Sacramento Zoological Society, is deposited in the City's General Fund to offset the Zoo's operating costs. The Zoological Society has suggested that under 200-2002, the Department of Parks and Community Services request City Council authorization to instead deposit Zoo concession rent directly into a special account to be used for capital improvements. Consequently, Table 3.10-1 projects direct Zoo revenues and costs including concession rent as it is presently deposited; while Table 3.10-2 assumes concession rent is deposited in a separate capital improvement fund and,

Table 3.10-1  
City Zoo Division - Not Including Zoological Society Operations  
Projected Direct Zoo Revenues and Costs

Year	Alternatives			
	B-1	B-2	B-3	B-4
<u>Projected Attendance</u>				
1995/1996	391,000	593,000	718,000	898,000
2002/2003	444,000	673,000	800,000	1,000,000
<u>Gate Revenue</u>				
1995/1996	\$488,000	\$1,167,000	\$1,414,000	\$1,768,000
2002/2003	\$555,000	\$1,325,000	\$1,575,000	\$1,969,000
<u>Concession Revenue</u>				
1995/1996	\$108,000	\$ 145,000	\$ 176,000	\$ 220,000
2002/2003	\$108,802	\$ 165,000	\$ 196,000	\$ 245,000
<u>Total Revenue</u>				
1995/1996	\$596,000	\$1,312,000	\$1,590,000	\$1,988,000
2002/2003	\$663,802	\$1,490,000	\$1,771,000	\$2,214,000
<u>Operating Costs</u>				
2002/2003	\$1,133,000	\$1,838,000	\$2,100,000	\$2,625,000
<u>Operating Revenue Minus Operating Costs</u>				
2002/2003	(\$469,000)	(\$348,000)	(\$329,000)	(\$411,000)
<u>Percent Self Sufficient</u>				
2002/2003	59%	81%	84%	84%
<u>General Fund Support Per Visitor</u>				
2002/2003	\$1.06	\$0.52	\$0.41	\$0.41

Source: EIP Associates; City of Sacramento Department of Parks and Community Services, Master Plan for the Sacramento Zoo and Surrounding Area, undated; City of Sacramento Department of Finance Budget Division, 1987-1988 Approved Budget, November 30, 1987; Joint Concessions Board - March 1988 Report.

Table 3.10-2  
City Zoo Division - Not Including Zoological Society Operations  
Projected Direct Zoo Revenues and Costs

Year	Alternatives			
	B-1	B-2	B-3	B-4
<u>Projected Attendance</u>				
1995/1996	391,000	593,000	718,000	898,000
2002/2003	444,000	673,000	800,000	1,000,000
<u>Gate Revenue</u>				
1995/1996	\$488,000	\$1,167,000	\$1,414,000	\$1,768,000
2002/2003	\$555,000	\$1,325,000	\$1,575,000	\$1,969,000
<u>Concession Revenue*</u>				
1995/1996	\$108,000	\$ 0	\$ 0	\$ 0
2002/2003	\$108,802	\$ 0	\$ 0	\$ 0
<u>Total Revenue</u>				
1995/1996	\$596,000	\$1,167,000	\$1,414,000	\$1,768,000
2002/2003	\$663,802	\$1,325,000	\$1,575,000	\$1,969,000
<u>Operating Costs</u>				
2002/2003	\$1,133,000	\$1,838,000	\$2,100,000	\$2,625,000
<u>Operating Revenue Minus Operating Costs</u>				
2002/2003	(\$469,000)	(\$513,000)	(\$525,000)	(\$656,000)
<u>Percent Self Sufficient</u>				
2002/2003	59%	72%	75%	75%
<u>General Fund Support Per Visitor</u>				
2002/2003	\$1.06	\$0.76	\$0.66	\$0.66

\* Concessions revenue used for Zoo capital improvements in Alternatives B-2, B-3, and B-4.

Source: EIP Associates; City of Sacramento Department of Parks and Community Services, Master Plan for the Sacramento Zoo and Surrounding Area, undated; City of Sacramento Department of Finance Budget Division, 1987-1988 Approved Budget, November 30, 1987; Joint Concessions Board - March 1988 Report.

therefore, does not include any concessions rent for Alternatives B-2, B-3, and B-4.

### Impacts

#### Projected Revenues:

Alternative B-1: Alternative B-1 is projected to generate 391,000 visitors in 1995/1996 and 444,000 in 2002/2003 (see section 3.1, Visitor Projections). Because this alternative would involve no improvements to the Zoo, it is assumed that the current adult admission fees of \$2.50 and children's admission fees of \$1.50 would not be increased.

Projected gate revenue would be \$488,000 in 1995/1996 and \$555,000 in 2002/2003 if the proportion of adults, children, and non-paying visitors currently visiting the Zoo remains unchanged, as shown in Tables 3.10-1 and 3.10-2. (The City of Sacramento allows all school groups free admission, and large numbers of students, teachers, and escorts visit the Zoo.) The projected gate revenue for Alternative B-1 is lower than current gate revenue due to the lower attendance.

If current per-visitor spending levels for food and beverages (\$.89) and gifts (\$.23) remain unchanged, then Alternative B-1 would produce an estimated \$88,562 in 1995/1996 and \$108,802 in 2002/2003 (concessions rent is 26.5% of food gross and 4% of gifts gross). However, since the concessions contract stipulates an annual minimum guarantee of \$108,000, the concession rent to the City under Alternative B-1 for 1995/1996 would be \$108,000.

Total projected revenue for Alternative B-1 is \$596,000 in 1995/1996 and \$664,000 in 2002/2003.

Alternative B-2: Alternative B-2 is projected to draw attendance of 593,000 in 1995/1996 and 673,000 in 2002/2003 (see section 3.1, Visitor Projections). The Zoo-2002 Master Plan projects

that under Alternative B-3, adult admission fees would be increased to \$4.00 (from \$2.50 currently) and children's admission fees would be increased to \$1.50 (from \$1.00 currently), in response to the enhanced quality and quantity of Zoo exhibits. Because Alternative B-2 would also involve improvement of Zoo exhibits, and the fee structure proposed in Alternative B-3 does not appear unreasonable in comparison to alternative forms of recreation, it is assumed that these fee increases would also occur in Alternative B-2.

The Zoo Master Plan also suggests depositing concession revenue in a fund for Zoo improvements, rather than in the general fund. Accordingly, no concession revenue is projected under Alternative B-2. Under these conditions, Alternative B-2 would produce annual gate revenue of \$1,167,000 in 1995/1996, and \$1,325,000 in 2002/2003.

If However, concession revenue was to be continued to be deposited in the General Fund, then Alternative B-2 would produce an estimated \$145,000 in 1995/1996 and \$165,000 in 2002/2003 (this assumes current per-visitor spending levels remain unchanged with concession revenue calculated as detailed under Alternative B-1). Under these conditions, total projected revenue for Alternative B-2 is \$1,312,000 in 1995/1996 and \$1,490,000 in 2002/2003.

Alternative B-3: Alternative B-3 is projected in the Zoo-2002 Master Plan to draw attendance of 718,000 in 1995/1996 and 800,000 in 2002/2003. Under the assumption of increases in adult admission fees to \$4.00 and children's admission fees to \$1.50, and use of concession revenue to fund Zoo improvements, rather than for operating expenses. Alternative B-3 is projected in the Master Plan to produce an estimated \$1,575,000 in gate revenue in 2002/2003. Under similar assumptions, Alternative B-3 would produce annual gate revenue projected at \$1,414,000 in 1995/1996.



If however, concession revenue was to be continued to be deposited in the General Fund, then Alternative B-3 would produce an estimated \$176,000 in 1995/1996 and \$196,000 in 2002/2003 (this assumes current per-visitor spending levels remain unchanged with concession revenue calculated as detailed under Alternative B-1). Under these conditions, total projected revenue for Alternative B-3 is \$1,590 in 1995/1996 and \$1,771,000 in 2002/2003.

Alternative B-4: Alternative B-4 is projected to draw attendance of 898,000 in 1995/1996 and 1,000,000 in 2002/2003 (see section 3.1, Visitor Projections). As with Alternatives B-2 and B-3, it is assumed that the enhanced Zoo under Alternative B-4 would allow increases in adult admission fees to \$4.00 and children's admission fees to \$1.50. If it is also assumed that concession revenue in Alternative B-4 would be used to fund Zoo improvements, rather than for operating expenses, then under these assumptions, and similar proportions of adult, child, and free-exempt visitors, Alternative B-4 would produce annual gate revenue of \$1,768,000 in 1995/1996 and \$1,969,000 in 2002/ 2003.

If however, concession revenue was to be continued to be deposited in the General Fund, then Alternative B-4 would produce an estimated \$220,000 in 1995/1996 and \$245,000 in 2002/2003 (this assumes current per-visitor spending levels remain unchanged with concession revenue calculated as detailed under Alternative B-1). Under these conditions, total projected revenue for Alternative B-4 is \$1,988,000 in 1995/1996 and \$2,214,000 in 2002/2003.

Projected Operating Costs:

Alternative B-1: As discussed above, the City of Sacramento 1986-1987 amended budget lists expenditures of \$1,089,000 for Zoo operations. These operating costs include both personnel costs (animal services, administration, maintenance, etc.) and supplies and services. It is projected that operating expenditures for Alternative B-1 (which consists of continuation of the present

operations of the Zoo) would be at a similar level in the year 2002/2003, as shown in Table 3.10-1.

Alternative B-2: The level of operating costs in 2002/2003 for Alternative B-2 (renovation of the existing Zoo within existing boundaries) would depend on the level of services and supplies required to operate the Zoo. The largest component of these costs consists of employee costs. Along with the renovation of existing exhibits and expansion of the Zoo, improvements envisioned in the Master Plan for Alternative B-3 would have a proportionate increase in employees and services provided to the existing 14-acre Zoo, operating costs in 2002/2003 would be approximately \$1,838,000.

Alternative B-3: Total operating expenses projected for Alternative B-3 (the Zoo Master Plan) are \$2,100,000 in the year 2002/2003.<sup>30</sup>

Alternative B-4: Alternative B-4 would involve renovation of the existing 14-acre Zoo area, addition of a 2-acre site (as in Alternative B-3), plus an additional 4-acre site. Assuming that Alternative B-4 would have an increase in employees and services corresponding to that of Alternative B-3, plus an additional increment of employees and services to provide for the additional 4 acres added in Alternative B-4, the operating costs in 2002/2003 would be approximately \$2,625,000.

Net Direct Fiscal Impacts:

Alternative B-1: The excess of costs over revenues for the year 2002/2003 would be approximately \$470,000 for Alternative B-1, as shown in Table 3.10-1.

Alternative B-2: The excess of costs over revenues for the year 2002/2003 would be approximately \$513,000 for Alternative B-2 if

concession revenues are used for capital improvements and approximately \$348,000 if concession revenues are used to offset operating costs.

Alternative B-3: The excess of costs over revenues for the year 2002/2003 would be approximately \$525,000 for Alternative B-3 if concession revenues are used for capital improvements and approximately \$329,000 if concession revenues are used to offset operating costs.

Alternative B-4: The excess of costs over revenues for the year 2002/2003 would be approximately \$656,000 for Alternative B-4 if concession revenues are used for capital improvements and approximately \$411,000 if concession revenues are used to offset operating costs.

Funding of Construction of Zoo Improvements: The source of funding for construction of proposed Zoo improvements in Alternatives B-2, B-3, and B-4 has not yet been determined. The Zoo Master Plan proposed several funding scenarios for funding Alternative B-3. These scenarios include the following possible funding sources: the Zoological Society, rent from the Zoo concessions, City of Sacramento, County of Sacramento, State grants, donations from private corporations, and a local bond issue. Before funding from any of these sources would be available, approval of the appropriate governing body would be required, e.g., approval by the Sacramento City Council for General Fund expenditures, approval by the electorate of a bond issue, or approval by management and stockholders of a donating corporation.

The City of Sacramento's 1988-1993 Capital Improvement Program identifies proposed capital improvement expenditures for each of the next five years. The Capital Improvement Program does not authorize capital expenditures; such decisions to authorize expenditures are made (one year at a time) in the City's Approved

Budget. Thus, the Capital Improvement Program represents proposals for capital expenditure priorities, rather than commitments of funds.

Zoo projects included in the 1988-1989 Approved Budget are for the Rare Feline Breeding Center and Exhibit (\$231,000), Educational Interpretive Center (\$77,000), Zoo Snapping Turtle Exhibit (\$44,000), and Gift Shop and Offices (\$97,000), and Lemur Island and Koi Pond demolition (\$25,000), a total of \$474,000. Except for Fairytale Town trust funds of \$45,000 toward the cost of the Snapping Turtle Exhibit and pond demolition, the source of all of these funds is private donations.

For the remaining four fiscal years from 1989-1993, proposed capital spending for Zoo projects in the Capital Improvement Program includes \$2,250,000 for the Hippo/Crocodile Exhibit, \$12,000 for Hay Barn Lofts, \$308,000 for the Avian Propagation Center, \$2,709,000 for the Elephant Exhibit, \$524,000 to resurface walkways, and \$1,106,000 for the Giraffe Exhibit.

This is a proposed total of \$6,909,000 over a four-year period. Of this total, almost all is proposed to be from private funding sources.

#### Mitigation Measures

Alternative B-1: To offset the difference between operating revenues and costs, the current practice of allocating funds from the General Fund could be continued.

Alternative B-2: Same as Alternative B-1.

Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

## Indirect Fiscal Impacts

### Setting

The Zoo currently provides the City with a small amount of indirect revenue through sales taxes on concessions, estimated at \$6,000 annually.

The Zoo requires police and fire protection, which are funded by the City through the General Fund. The annual cost of operating a typical Sacramento fire company are estimated at \$267,000 per year.<sup>31</sup> The portion of a fire company's responsibilities and costs attributable to the Zoo, while difficult to estimate, are a small portion of the total.

Zoo requirement for police protection vary during the day and by season, as do other parts of the City. Accordingly, the beats assigned to individual police officers also vary. During the times when Zoo demand for police services is at its peak, the Zoo is designated as an individual beat. At other times, the Zoo is patrolled by officers who are also able to patrol other areas. The annual cost of providing the services of one police officer, including salary, benefits, equipment, and support personnel, is estimated at approximately \$92,000.<sup>32</sup>

Other services required by the Zoo, including solid waste collection and disposal, water, wastewater treatment, and energy are paid for directly by the Zoo through user charges that recoup the cost of service from the Zoo's operating budget.

### Impacts

This section discusses the indirect revenues and costs associated with the proposed project. For clarity and to avoid repetition, revenues and costs that are similar or the same are discussed only once for the revenue or cost category in question.

Indirect Revenues: In addition to the admission and concessions revenue directly generated by the Zoo, the City would also receive indirect revenues generated by sales tax on concessions sales.

The City of Sacramento receives one cent of the six cent sales tax levied on taxable retail sales. Although a major portion of these sales would be food and beverages--which are sometimes tax exempt--all food and beverage sales within the Zoo are taxable under current law.<sup>33</sup> Based on projected spending for gifts and food and beverage for the four alternatives, the change in the City's annual share of sales tax revenue in 2002/2003 would consist of a negligible decrease for Alternative B-1, approximately \$8,000 for Alternative B-2, approximately \$10,000 for Alternative B-3, and approximately \$15,000 for Alternative B-4, as shown in Tables 3.10-1 and 3.10-2. Changes in 1995/1996 would be of a similar magnitude, and are also shown in Tables 3.10-1 and 3.10-2.

Because the Zoo is owned by the City, it is exempt from property tax and the utility users tax, both of which are major revenue sources for the City. However, the concessionaire (the Joint Concessions Board) pays possessory interest tax to the County of Sacramento, a portion of which is returned to the City.

There are no other significant indirect revenue sources that would be generated by the Zoo.<sup>34</sup> Thus, total additional revenues to the City would range from approximately zero to \$15,000 for the four alternatives.

Indirect Costs to the City of Sacramento:

The fiscal impact to the City of increased service requirements of the proposed project depends on both the level of additional service costs and the mechanism of funding those costs. Some services, such as water and wastewater treatment, are funded by

user fees designed to recoup the cost of service. In these cases, additional service costs are offset by additional revenue to the agency providing the service, and do not result in a net fiscal impact to the City.

Other services, such as police and fire protection, are funded, along with many other services, through the General Fund. The General Fund receives revenue from a variety of sources, and there is no assurance that the revenues generated by a given project, or the allocation from the Fund to the entity providing the affected service, will equal the additional service costs. Impacts on these types of services have the potential to create net fiscal impacts to the City.

Fiscal impacts resulting from impacts on the individual public services discussed in section 3.6, Public Services, are discussed below.

- Police Protection: As discussed in section 3.6, Public Services, no significant increases in police protection requirements would result from any of the four alternatives.

Alternative B-1: There would be no increases in police service costs to the City under Alternative B-1.

Alternative B-2: Same as Alternative B-1.

Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

- Solid Waste Collection and Disposal: As discussed in section 3.6, Public Services, it is anticipated that there would be increases in the amount of solid waste

services required under Alternative B-4. Alternatives B-1, B-2, and B-3 would not involve increases in required solid waste services.

These services are provided by the City's Solid Waste Division, which is a financially self-supporting enterprise funded by Refuse Collection Fees and the Lawn and Garden Excise Tax.<sup>1</sup> Fees charged for any additional service required would offset additional service costs.

Alternative B-1: There would be no increases in net service costs to the City under Alternative B-1.

Alternative B-2: Same as Alternative B-1.

Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

- Water Services: As discussed in section 3.6, Public Services, it is anticipated that Alternatives B-2, B-3, and B-4 would require substantial additional amounts of water.

Water is provided by the Water Division of the City's Public Works Department. The fees charged for water service are set at a level that covers the cost of service and capital improvements.<sup>1</sup> Thus, fees charged for additional water service would offset additional costs.

Alternative B-1: There would be no increases in net service costs to the City under Alternative B-1.

Alternative B-2: Same as Alternative B-1.



Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

- Wastewater Treatment: As discussed in section 3.6, Public Services, it is anticipated that Alternatives B-2, B-3 and B-4 would generate additional wastewater requiring treatment.

Wastewater collection and treatment is provided by the Flood Control and Wastewater Division of the City's Public Works Department. The City's wastewater service is self-supporting, with the fees charged designed to offset the cost of service provided.<sup>1</sup> Thus, costs for additional wastewater service would be offset by user fees.

Alternative B-1: There would be no increases in net service costs to the City under Alternative B-1.

Alternative B-2: Same as Alternative B-1.

Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

- Energy: As discussed in section 3.6, Public Services, none of the project alternatives are anticipated to have significant effects on energy services.

In any event, connection fees and energy prices for electricity provided by the Sacramento Municipal Utility District (SMUD) and gas provided by the Pacific Gas and Electric Company (PG&E) would offset the cost of providing the service, including any cost for additional distribution equipment.

Alternative B-1: There would be no increases in net service costs to the City under Alternative B-1.

Alternative B-2: Same as Alternative B-1.

Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

- Schools: As discussed in section 3.6, Public Services, none of the project alternatives are anticipated to have significant effects on schools.

Alternative B-1: There would be no increases in net service costs to the City under Alternative B-1.

Alternative B-2: Same as Alternative B-1.

Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

Net Indirect Fiscal Impacts:

The City would incur no additional indirect service costs that would not be compensated for by the Zoo, and, in 2002/2003, would receive additional indirect tax revenues (excluding direct Zoo revenues and costs discussed above) ranging from approximately zero for Alternative B-1 to \$15,000 for Alternative B-4.

This impact, although positive, would be small in relation to both direct revenues generated by the Zoo and total City revenues, and would not be sufficient to offset the difference between operating revenues and costs discussed above.

Mitigation Measures

Alternative B-1: None Required.

Alternative B-2: Same as Alternative B-1.

Alternative B-3: Same as Alternative B-1.

Alternative B-4: Same as Alternative B-1.

Other Studies

It should be noted that the Sacramento Zoological Society has commissioned an independent, extensive economic study of all aspects of current and projected future Zoo operations. It is anticipated that this study will be available prior to preparation of the Final EIR.

## Endnotes

- 1 City of Sacramento Department of Parks and Community Services, Zoo-2002, Master Plan for the Sacramento Zoo and Surrounding Area, undated.
- 2 Sacramento Area Council of Governments, Growth Projections by Community Area, Final Draft for Sacramento, August 25, 1987.
- 3 Acceptable concentration levels for some pollutants are chosen after careful review of available data on health effects. Pollutants subject to federal ambient standards are sometimes referred to as criteria pollutants because the EPA publishes criteria documents to justify the choice of standards.
- 4 An inversion is a condition under which warm air aloft limits upward movement of pollutants contained in a colder layer of air near the surface.
- 5 U.S. Environmental Protection Agency, Compilation of Air Pollutant Emission Factors, AP-42, Third Edition, October 1980.
- 6 Zoo-2002: The City of Sacramento Department of Parks and Community Services Master Plan for the Sacramento Zoo and Surrounding Area, City of Sacramento, p. 26.
- 7 Dividing the Zoo's average annual consumption of 7,867 AF/yr by its existing 14 acres yields roughly 562 AF/yr per acre of Zoo. Multiplying that value by the additional 4 acres yields an additional demand of 2,240 AF/yr. As stated in the text, this is not a mathematically sound analysis, merely a means to judge the magnitude of the additional water demand.

- 8 Significantly excerpted from the Sacramento General Plan Update Draft EIR, Jones & Stokes Associates, Inc., March 1987.
- 9 Lee Fredericksen, Engineer, Robert E. Young Engineers, personal communication, 11/10/87 and 3/21/88.
- 10 Zoo-2002, p. 26-27.
- 11 Sacramento Library Plaza Project Draft EIR, EIP Associates, June 1987, pps. 3-29 - 3-30.
- 12 Officer Jim Barclay, Community Resources, Sacramento Department of Police, March 18, 1988, personal communication.
- 13 Sergeant Dean LaChapelle, Traffic Division, Sacramento Department of Police, March 18, 1988, personal communication.
- 14 Officer Jim Barclay, Community Resources, Sacramento Department of Police, March 18, 1988, personal communication.
- 15 Harold Ayers, Administrative Services Officer, Department of Fire, City of Sacramento, November 4, 1987, personal communication.
- 16 Library Plaza EIR, EIP Associates, June 1987, pps. 3-29, 3-30.
- 17 Kay Smith, Administrative Assistant, Department of Fire, City of Sacramento, September 11, 1987, personal communication.
- 18 Significantly excerpted from Zoo-2002, pps. 28-32.
- 19 Paul Smilanich, Superintendent of Solid Waste Collection, Solid Waste Division, Department of Public Works, City of Sacramento, March 21, 1988, personal communication.

- 20 Barry Bates, General Supervisor, Street Maintenance Division, Department of Public Works, City of Sacramento, March 22, 1988, personal communication.
- 21 Lori Smedley, Secretary, Sacramento Unified School District, March 21, 1988, personal communications.
- 22 City of Sacramento Department of Parks & Community Services. Zoo-2002 (no date).
- 23 Kuchler, A. W. Natural Vegetation of California (Map), 1977.
- 24 International Society of Arboriculture and the National Arborist Association. Plaque at base of oak tree on site.
- 25 Tree survey provided by the City, 1988.
- 26 Martin Fitch. City of Sacramento Tree Services, telephone conversation, March 26, 1988.
- 27 Robert P. Thomas, letter dated June 15, 1986.
- 28 Steve Taylor, Zoo Director, interview, March 22, 1988.
- 29 City of Sacramento, Department of Finance, Budget Division, City of Sacramento Approved Budget, 1987-1988, November 30, 1987.
- 30 City of Sacramento Department of Parks and Community Services, Zoo-2002, Master Plan for the Sacramento Zoo and Surrounding Area, undated.
- 31 Kay Smith, Administrative Assistant, Department of Fire, City of Sacramento, telephone conversation, September 11, 1987. Calculations by EIP Associates.

- 32 Jim Barclay, Officer, Community Resources, Sacramento Police Department, telephone conversation, December 3, 1987. Calculations by EIP Associates.
- 33 Gary Lambert, Senior Tax Auditor, California State Board of Equalization, telephone conversation, March 23, 1988.
- 34 Mike Medema, City Revenue Manager, Department of Finance, City of Sacramento, telephone conversation, March 23, 1988.
- 35 Jim Bloodgood, City of Sacramento, Traffic Engineer, telephone conversation, May 3, 1988.

## 4. Statutory Sections

### 4.1 Unavoidable Significant Adverse Impacts

There are no environmental impacts associated with any of the Zoo-2002 Master Plan Alternatives which cannot be mitigated to a less than significant level by implementation of the recommended mitigation measures. It is recommended that the mitigation measures listed for each impact identified as potentially significant be adopted by the City as conditions of approval for whatever alternative development plan is approved by the City Council.

### 4.2 Growth Inducing Impacts

Section 15126 (g) of the Guidelines for the Implementation of the California Environmental Quality Act requires a discussion of the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. None of the development alternatives for the Sacramento Zoo Master Plan being evaluated in this document would foster economic growth or construction of additional housing in the surrounding environment.

### 4.3 Cumulative Impacts

As discussed previously in Section 2 of this document, the population growth over the past few years in the Sacramento region has resulted in increased demand for many public services, including recreational services. As a result, the demand on the various recreational facilities in William Land Park, as one of only three regional parks in the City, has increased proportionally.



In addition to the increased demand due to a growing population, additional demand for use of City Parks in general increased significantly when the County of Sacramento began to charge admission fees to enter and use County Parks and Recreation facilities. As the only park in the Sacramento area containing the wide variety of recreational uses typical of a regional park, William Land Park has experienced an increase in use which is probably proportionally greater than increases seen in other parks which do not have as wide a range of facilities.

Several small improvement projects at the Zoo and Fairytale Town may also have contributed to increased demand pressure on these facilities as a result of the improvements. In May 1987 the City approved construction of modern leopard exhibits and off-exhibit cages for use in breeding management of the Zoo's rare and endangered cat species. Pursuant to provisions of CEQA, an Initial Study was prepared for this project and a Negative Declaration was approved by the City based on that study, determining that the project would not have a significant effect on the environment. Negative Declarations were also adopted for a new entry and gift shop for Fairytale Town (November 1987 Initial Study) and a new alligator and snapping turtle exhibit within the Zoo boundaries (January 1988).

Adoption and implementation of Master Plan Alternatives B-2, B-3, or B-4 would all result in increased demand for use of Zoo facilities due to the improvements which they entail. This increased demand will result in increased traffic, both automobile and pedestrian, in and around the Zoo, as well as increased parking demand. However, if the mitigation measures recommended in this document are implemented, the impacts of the increased demand would be reduced to a less than significant level. Creation of a pedestrian overcrossing at the Zoo entrance, addition of parking spaces in close proximity to the Zoo, and implementation of a residential parking permit system in neighborhoods adjacent to

the park would result in better traffic and pedestrian circulation, better safety conditions for pedestrians, and reduced traffic and parking problems in adjacent residential neighborhoods.

Adoption of Master Plan Alternative B-1, the No-Project Alternative, would probably eventually result in decreased demand for Zoo facilities as the exhibits continue to deteriorate. However, the traffic and circulation problems, pedestrian safety problems, and parking problems in residential areas would continue to increase in magnitude as a result of continued increased demand for other park facilities resulting from population growth in the region, and in the absence of any mitigation measures such as increased off-street parking, a pedestrian overcrossing, and a residential permit parking system.

#### 4.4 Irreversible Impacts/Irretrievable Commitment of Resources

Any expansion of the existing Zoo beyond its current boundary lines can probably be regarded as an irreversible commitment of those areas to Zoo uses. In addition, non-renewable resources such as aggregate, concrete, and steel used in constructing the new facilities would also be irreversibly committed to those uses.

## 5. Report Preparation

### EIR AUTHORS

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Walnut Creek, CA 94598

and

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San Francisco, CA 94105

Principal-in-Charge

Project Manager

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Land Use

Traffic, Circulation,  
and Parking

Air Quality

Noise

Public Facilities and Services

Vegetation

Cultural Resources

Aesthetics/Light and Glare

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Abrams Associates  
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Advanced Word Processing  
Michael R. Mitchell

### PERSONS CONTACTED

Individuals and agencies contacted during the course of the EIR preparation are listed at the end of Section 3 of this document.

**APPENDIX A**

**Notice of Preparation (NOP) and Responses**



# CITY OF SACRAMENTO

## DEPARTMENT OF PARKS AND COMMUNITY SERVICES

ROBERT P. THOMAS  
Director

G. ERLING LINGGI  
Assistant Director

CROCKER ART MUSEUM DIVISION  
GOLF DIVISION  
METROPOLITAN ARTS DIVISION  
MUSEUM AND HISTORY DIVISION  
RECREATION DIVISION  
PARKS DIVISION  
ZOO DIVISION

### NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE SACRAMENTO ZOO MASTER PLAN EIR

#### To Interested Persons:

The City of Sacramento Department of Parks and Community Services is the lead agency for an Environmental Impact Report (EIR) for the Sacramento Zoo Master Plan. The project site is located in William Land Regional Park (see Attachment A).

The site, located within a 166.5-acre regional park, includes a 14-acre zoo; Fairytale Town, a children's fantasy land (3.5 acres); children's amusement rides (6.5 acres); pony rides; an outdoor amphitheater; picnic areas; and parking (23.7 acres). The zoo is the primary focus of the project. Conceptual site plans are attached for your information (Attachments B-1, B-2, B-3, and B-4).

Staff has prepared an outline addressing the proposed scope and content of the EIR (Attachment C). We would appreciate receiving notice of additional considerations that you feel should be addressed in the Draft EIR. Please respond before June 12, 1986.

The consultant selected to prepare this EIR may be contacting you concerning your comments or concerns with the project. Your cooperation is appreciated.

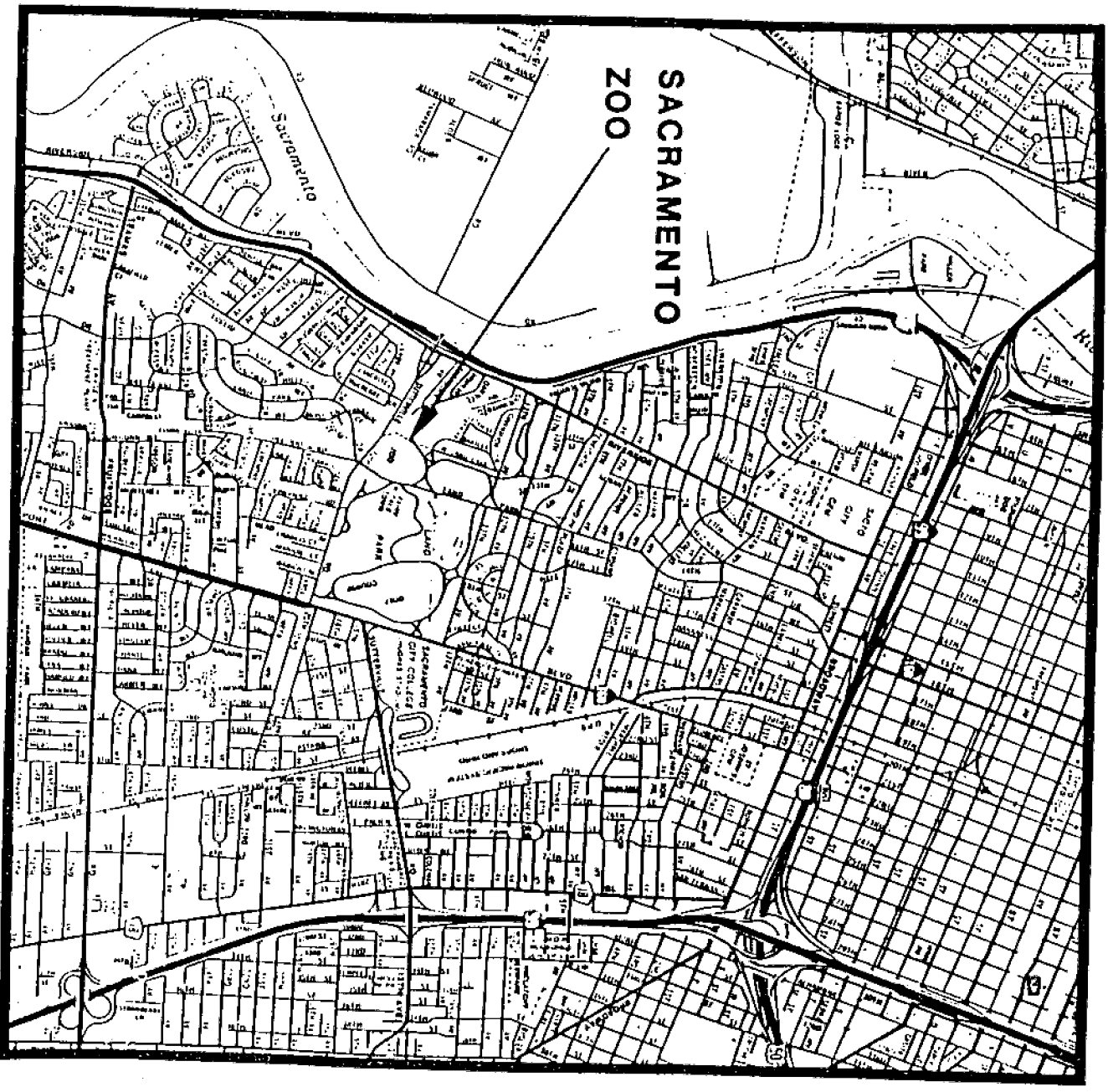
We anticipate that the Draft EIR will be circulated for public review in September 1986. Please call Debra Small-Maier at (916) 449-5198 if you have any questions about this matter. Thank you.

Sincerely,

Robert P. Thomas, Director  
Parks and Community Services

Attachments - A, Location Map  
B-1, B-2, B-3, B-4, Conceptual Plans  
C, Proposed Scope

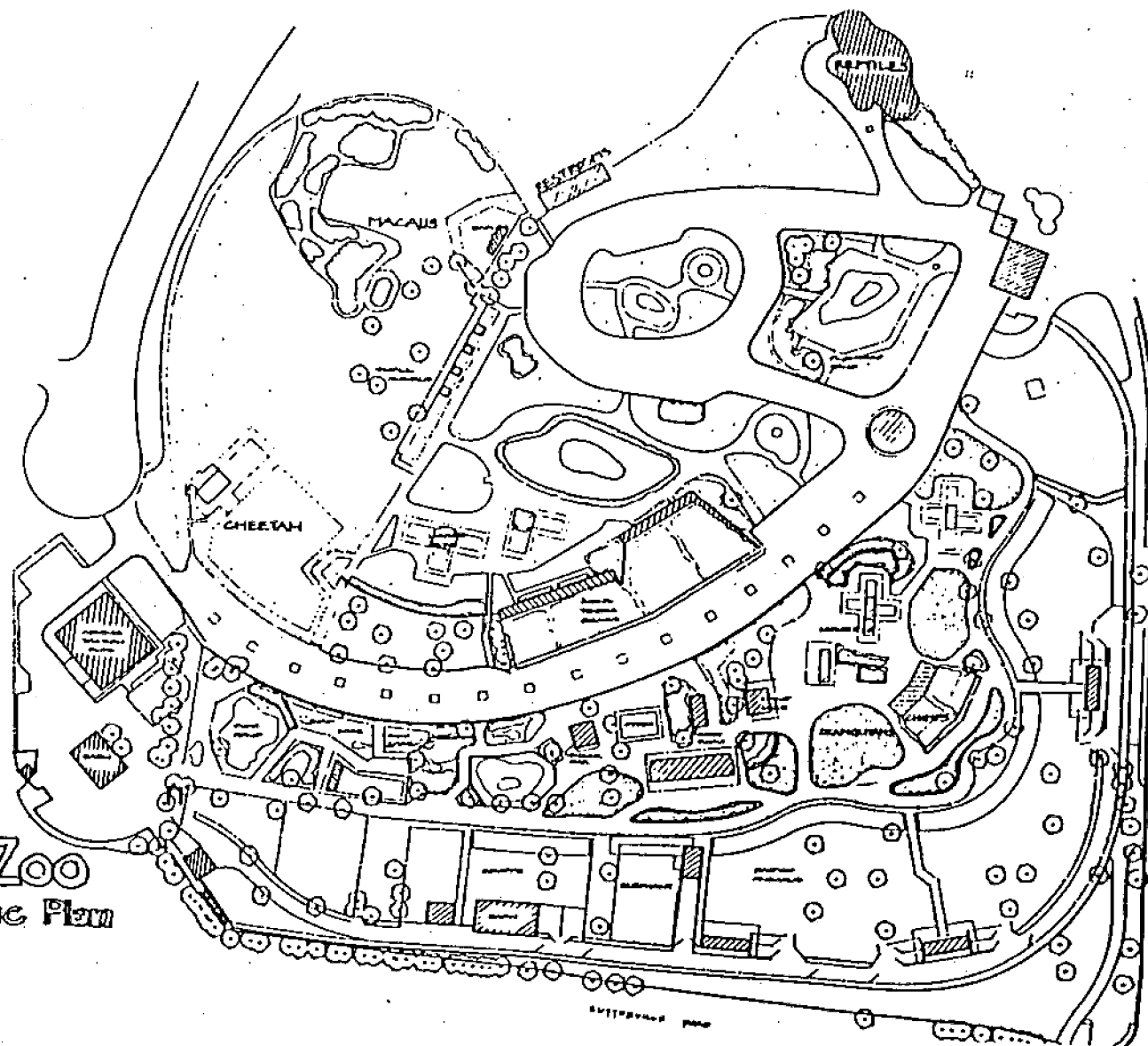
**ATTACHMENT A**

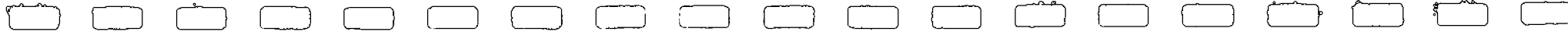


Vicinity Map

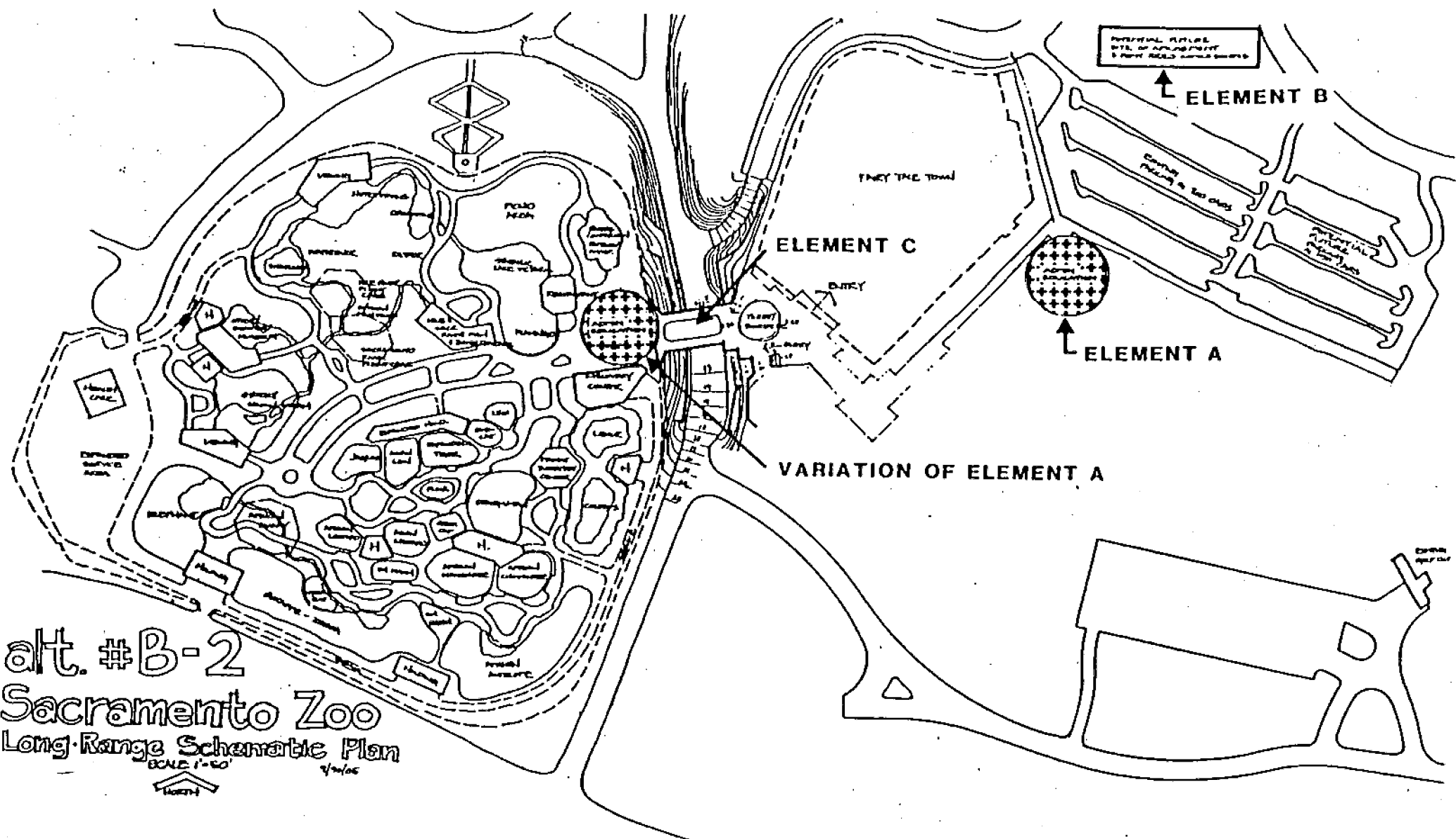
alt. #B-1  
Sacramento Zoo  
Long-Range Schematic Plan

SCALE 1"=10'

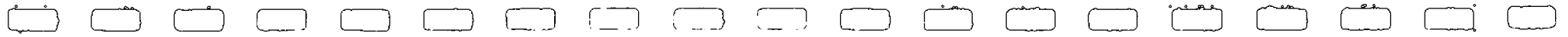


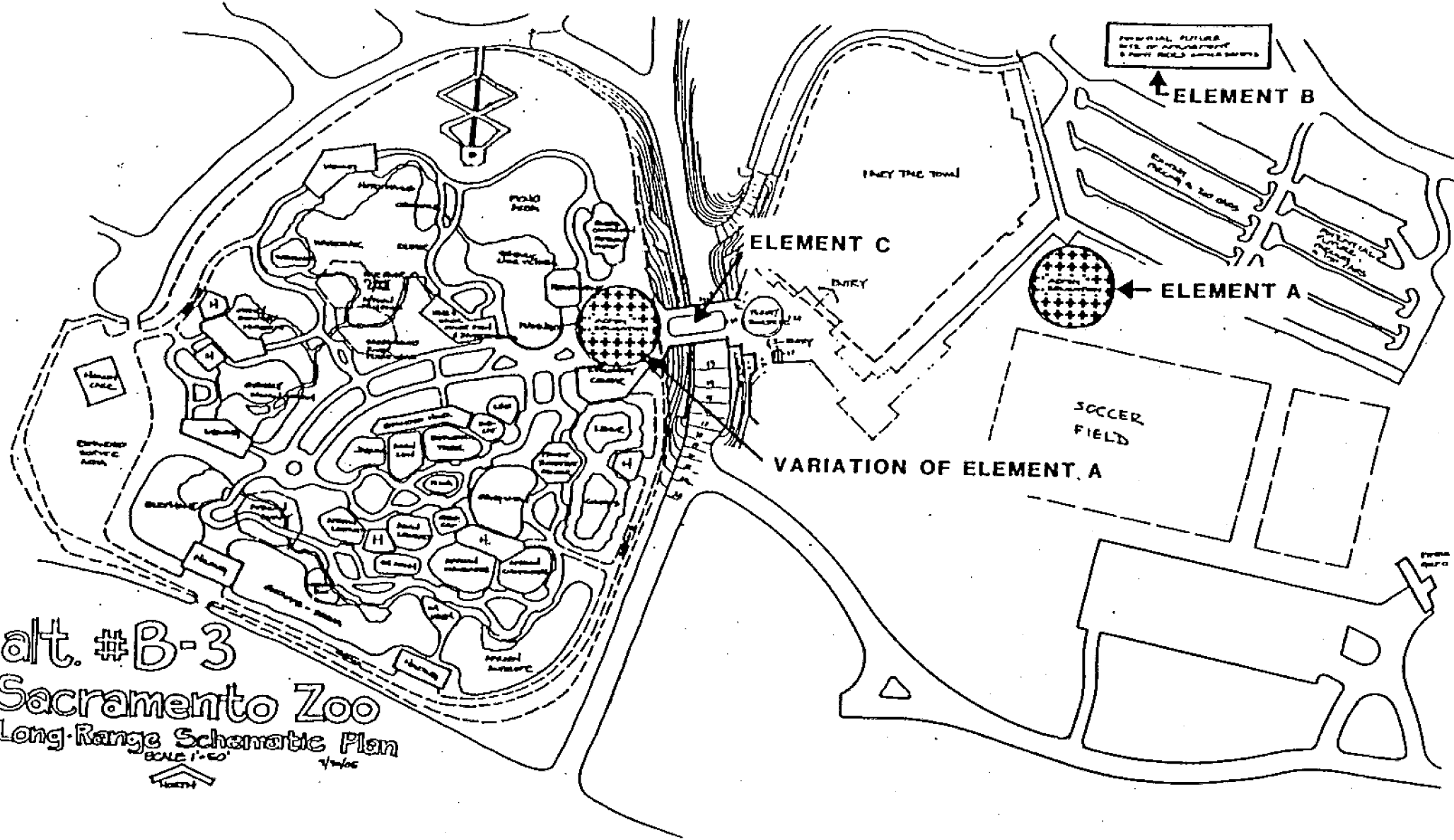






alt. #B-2  
Sacramento Zoo  
Long Range Schematic Plan  
SCALE 1"=50' 2/2/65





PERMANENT FUTURE  
SITE OF AMUSEMENT  
& PARTY BUILD SIMILAR SHOWN

ELEMENT B

ELEMENT A

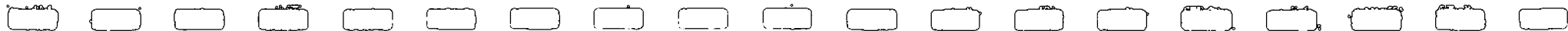
ELEMENT C

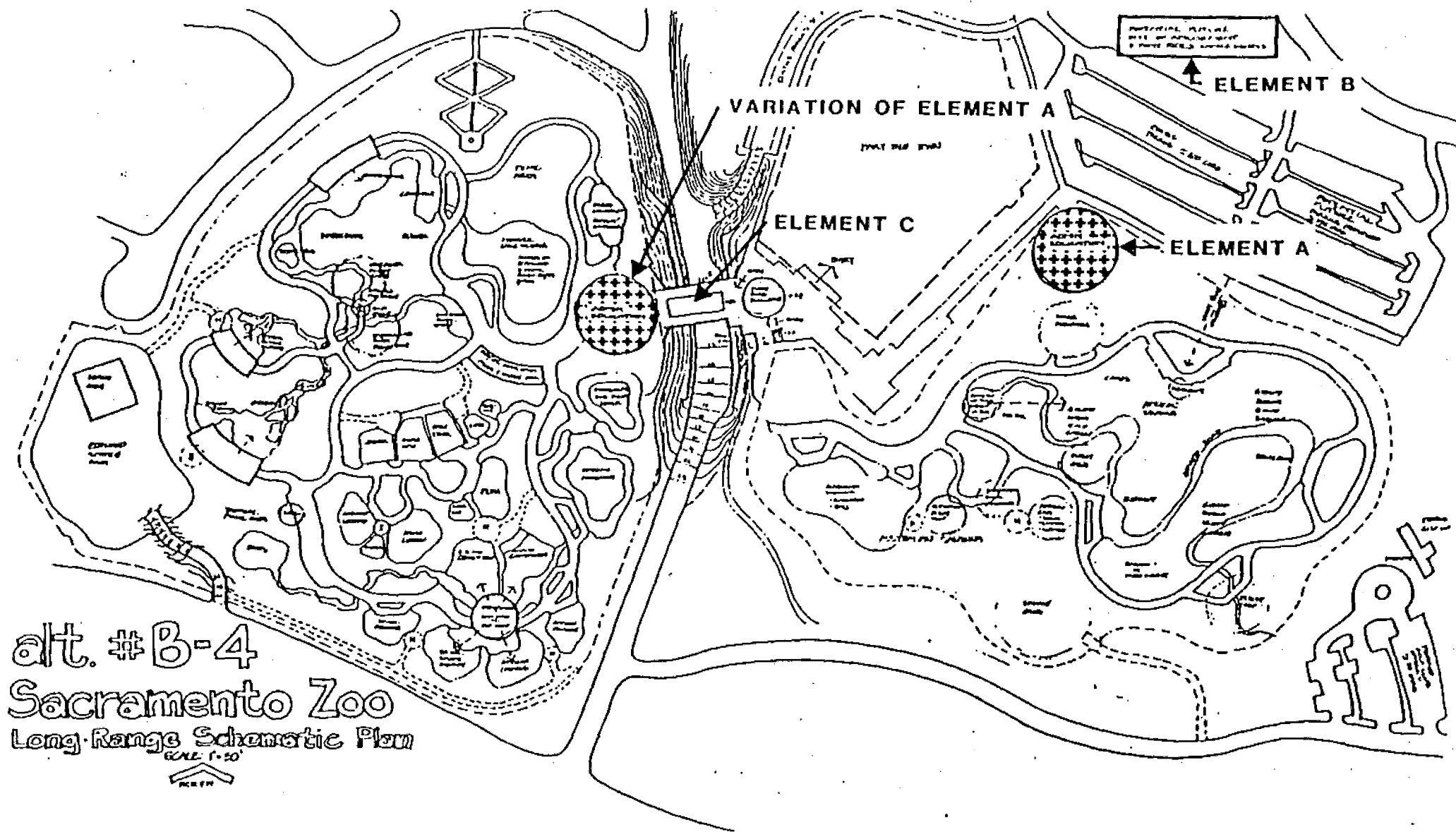
VARIATION OF ELEMENT A

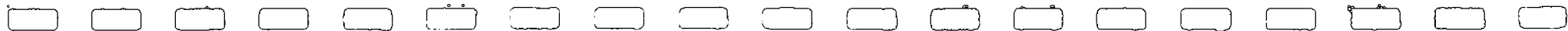
SOCCER  
FIELD

alt. #B-3  
Sacramento Zoo  
Long-Range Schematic Plan  
SCALE 1"=50'









PROPOSED SCOPE FOR THE  
SACRAMENTO ZOO MASTER PLAN EIR

PREFACE

Summary of why the EIR is being prepared and the purpose of the EIR.

PROJECT DESCRIPTION

Summarize proposed Sacramento Zoo Master Plan including goals and objectives.

SUMMARY OF FINDINGS

Discussion of seven questions required by CEQA, Section 15126:

1. The significant environmental effects of the proposed project and three alternatives.
2. Any significant environmental effects which cannot be avoided if the proposed plan is implemented.
3. Feasible mitigation measures to reduce the significant effects to a less than significant level. Other mitigation measures for impacts identified as less than significant. (Note: Develop and evaluate mitigation measures that could reasonably be expected to reduce adverse impacts. The expected reduction of impacts should be quantified in the text of the report.)
4. Land use alternatives to the proposed action:
  - . No project (Alternative B-1).
  - . Renovation of the Zoo within the existing boundaries (Alternative B-2).
  - . Expansion of the Zoo boundaries north to Fifteenth Avenue (2 $\pm$  acres) (Alternative B-3).
  - . Expansion of the Zoo boundaries north to Fifteenth Avenue (2 $\pm$  acres) and expansion of the zoo boundaries to include approximately 5 acres east of Land Park Drive and south of Fairytale Town (Alternative B-4).

Alternatives B-2, B-3, and B-4 shall all include the following three elements:

- a. Construction of a two-story education building behind Fairytale Town in close proximity to the existing parking lot (approximately eight thousand square feet) (Element A) and a variation of this building within the confines of the existing Zoo at the entrance gate facing Land Park Drive.
- b. Relocation of the amusement and pony rides concessions to the northern area behind Fairytale Town (Element B).
- c. Construction of a pedestrian overcrossing between Fairytale Town and the Zoo (Element C).

The above four alternatives (B-1, B-2, B-3, and B-4) shall be compared in a quantitative and qualitative method. The quantitative evaluation of alternatives is to take into account key issues of visitor impact, vehicular and pedestrian circulation, parking, public service capacities, noise, air quality, and major costs and revenues to the City. The qualitative evaluation of the alternatives is to take into account aesthetics and land use. This assessment will provide an order of magnitude of potential beneficial and adverse impacts to provide an equal comparable evaluation of the project and alternatives. The specific alternatives to be evaluated are:

5. The relationship between local, short-term uses of man's environment and the maintenance and enhancement of its long-term productivity.
6. Any significant irreversible environmental changes which would be involved in the proposed action should it be implemented.
7. The growth-inducing impact of the proposed action.

Each of the following subject areas will be assessed for each alternative utilizing the existing condition or no project (B-1) situation as the base. The analysis will be either qualitative or quantitative or both. Mitigation measures shall be identified for all impacts for each alternative.

#### Visitor Populations

Projection of visitor population for each alternative (B-1, B-2, B-3, and B-4). Description of visitor needs and expectations. Description of any special groups of visitor populations with particular emphasis on school groups. Assessment of proposed projects affect on visitors' educational, recreational, and aesthetic experience with attention to visitors' health, safety, and welfare. Analysis of capacity of the proposed project to serve large numbers of visitors with attention to their convenience and circulation, to enhancing the visitors' view, and to resolving assembly space needs. Assessment of projects affect on the density of various activities.

#### Land Use

The proposed project is a portion of William Land Regional Park in the City of Sacramento. Existing land use includes a 14-acre zoo; Fairytale Town, a children's fantasy land (3.5 acres); children's amusement rides (6.5 acres); pony rides; an outdoor amphitheater; picnic areas; and parking (23.7 acres). The Zoo is the major element of land use.

Comparison of the proposed project with the adopted Recreation Element of the General Plan and with the 1984 Master Plan for Park Facilities and Recreation Services. Comparison of the proposed project to uses typical in a regional sized park.

#### Traffic and Circulation

Description of the existing transportation system in terms of roadways, bikeways, public transit, and pedestrian pathways within that area bounded by



I-5, US 99, Fruitridge Road, and Vallejo Way with particular emphasis on the following intersections:

1. Sutterville Road and I-5 Southbound
2. Sutterville Road and I-5 Northbound
3. Sutterville Road and Riverside Boulevard
4. Sutterville Road and Land Park Drive
5. Sutterville Road and Freeport Boulevard, south leg
6. Sutterville Road and Freeport Boulevard, north leg
7. Sutterville Road and Franklin Boulevard
8. 12th Avenue and US 99 Northbound
9. 12th Avenue and US 99 Southbound
10. Freeport Boulevard and Land Park entrance
11. Land Park Drive, 16th Avenue, and Zoo entrance

Description of traffic and parking patterns and identification of any problems. Description of weekday morning and evening peak hour conditions as well as weekend peak conditions. Identification of any safety hazards to cyclists, joggers, and pedestrians. Description of current and estimation of future traffic volumes. Assessment of the effect of the project on traffic and circulation in the site vicinity including parking needs. Assessment of on-site circulation. Provision of screenline data for both existing conditions and proposed project for Riverside Boulevard, Land Park Drive, Freeport Boulevard, and Franklin Boulevard from Castro Way south to Fruitridge Road. This portion of the EIR shall provide quantitative data for traffic analysis.

Strategies for mitigation of traffic impacts to consider one-way streets, street closures or rerouting, elimination of left turns, and addition or elimination of on-street parking.

#### Air Quality

Quantitative analysis of the air quality in terms of carbon monoxide, hydrocarbons, and nitric oxides generated by vehicles. Qualitative assessment of the odors generated by the Zoo. Assessment of potential effects of the project on air quality with identification of measures which can mitigate identified impacts.

#### Noise

Identification of existing noise levels and noise sources in the vicinity of the project. Assessment of the effect of the proposed project on local noise levels. Quantify the impact of future noise levels as compared to the City General Plan Noise Element and Ordinance and State of California and Federal standards. Conduct a noise monitoring assessment to determine existing noise levels and project future noise levels.

#### Public Facilities, Services, and Utilities

Analysis of existing sewer system. Evaluation of capacity of interceptors, local service lines, and the treatment plan to support the proposed project.

Assessment of existing solid waste removal services and disposal of additional solid waste from the proposed project.

Description of existing maintenance levels of park roads and parking lots and effect of the project on future levels of necessary road maintenance.

Discussion of the current energy supply and demand situation in the project area with estimation of the demand for electricity and natural gas in the proposed project.

Description of the existing fire and police protection systems surrounding the project area including the location of fire stations, police patrol districts, response times, the amount of personnel and equipment, and strategies to reduce police and fire protection problems.

Assessment of future police and fire protection needs in terms of the location of stations, patrol districts, and the amount of personnel and equipment.

Description of how the project may have an impact on any area schools.

#### Water Quality and Drainage

Brief analysis of how water is currently supplied to the project area with discussion of future needs and existing and proposed improvement plans for supplying water to the project site.

Description of the existing stormwater drainage infrastructure at the project site and identify areas which have insufficient drainage including an assessment of how the project affects the overall drainage issue. Summary of the ability of existing and planned drainage improvements to accommodate the proposed project.

#### Vegetation

Summary of the existing index of vegetation within the current Zoo boundaries. Identification of additional vegetation types and locations within the study area. Description of the plant species present with particular attention to the existing on-site trees. Assessment of how the project affects the vegetation.

#### Cultural Resources

Identification of areas that may contain cultural resources. Assessment of potential impacts on any existing structure or archeological site.

#### Aesthetics

Description of the study area. Comparison of the aesthetic character of the proposed project to the existing site including area, height, materials, and visual image. Analysis of the aesthetics of the proposed project in relation to the surrounding park site.

Light and Glare

Description of the most prominent light sources including any glare nuisances. Assessment of the potential effect of the project on levels of light and glare.

Fiscal Analysis

Estimation of any revenues to the city from the proposed project. Analysis of the project's ability to increase revenue to the Zoo.

Determination of the future costs of services and utilities outlined in the Public Facilities, Services, and Utilities Section and assess the ability of the City to provide services with the costs broken down into capital, operation, and maintenance costs.

Provide an outline of the fiscal impact of the proposed project on the City.

Construction Impacts

Assessment of the impact of major construction (from project and elements) with regard to duration, noise, dust, and nuisance. Discussion of potential grading and soil excavation and importation. Assessment of master plan phasing impacts. Description of post-construction re-vegetation.

CITY OF SACRAMENTO

MAY 20 1986

DEPARTMENT OF  
PARKS AND COMMUNITY SERVICES

3860 West Land Park Drive  
Sacramento CA 95822  
May 17, 1986

Mr. Robert P. Thomas, Director  
Department of Parks and Community Services  
City of Sacramento  
1211 I Street  
Sacramento CA 95814

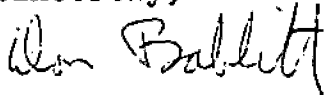
Dear Bob:

I have just received a Notice of Preparation of a Draft Environmental Impact Report for the Sacramento Zoo Master Plan. I am providing you with this timely notice that there are some serious problems with the notice so you can correct and reissue the notice. The problems include:

1. The City rather than the Department of Parks and Community Services should be identified as the lead agency.
2. The park is commonly (and as far as I know, officially) called William Land Park. "Regional" seems to be an addition coined and exclusively used by your staff.
3. Most importantly, the quality of the prints of Attachments B-1, B-2, B-3 and B-4 is so poor that one cannot determine what is planned or exists in the park and zoo.

While I am reasonably sure the California Environmental Quality Act and Guidelines require that the notice be corrected and reissued, there is a more compelling reason to do so, the credibility of the City of Sacramento. Currently, most of the parks neighbors and many of its users are convinced that the plans for changing the park are already set and participating in the EIR process would be a waste of time. The older people seem the most convinced. This situation needs correcting.

Sincerely,



Don Babbitt, Member  
Citizen Advisory Committee for  
the Master Plan of the Sacramento  
Zoo and Surrounding Area

cc: Steve Belzer  
Councilman Chinn  
Councilwoman Robie

*To Debra - 5-20-86  
Please prepare response  
for my signature!*

**APLP****ASSOCIATION TO PRESERVE LAND PARK**

July 10, 1986

CITY OF SACRAMENTO

Mr. Robert P. Thomas, Director  
Department of Parks and Community  
Services  
1231 I Street, Suite 400  
Sacramento, CA 95814

JUL 15 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Dear Bob:

Last month I sent you a detailed letter of our comments to the Notice of Preparation of the EIR. To date I have heard nothing from you in response to this letter, nor have I heard anything further about the progress of the selection of an EIR consultant for the Zoo, etc. Master Plan. Could it be you did not receive the letter? If not, I am enclosing a copy.

When last I spoke with Deborah Small-Maier, she indicated that the process had been delayed so that I was not bound to designate a representative to the selection committee at the time. I have tried to discuss the appointment with Larry Fein, who we would like to designate, but apparently he has been out of Sacramento on an extended vacation, so I am attempting to find a suitable substitute. As soon as I have found one, I will contact Deborah.

Finally, I was extremely surprised to read in the newspaper that a citizens' committee was appointed to recommend implementation of the 1984 Parks Master Plan, including a representative of the Land Park area, Shirley Plant. I am at a loss to understand why I was not asked to suggest or have other input into the selection of our neighborhood's representative since APLP is the recognized neighborhood association for Land Park and since you assured me you would communicate with me in a timely fashion on all issues that affect the neighborhood. Please call and give me your thoughts on this. Perhaps you had no role in this appointment, but I would like to know.

Yours very truly,  
APLP

Steven P. Belzer  
Chairman

June 15, 1986

Mr. Robert P. Thomas, Director  
Department of Parks and Community Services  
1231 I Street, Suite 400  
Sacramento, CA 95814

Recd. July 15, 1986  
after the date of  
cutoff for comment  
informed APLP  
that regardless  
of this fact, we  
will consider  
their comments.

DSM  
7/16/86

Dear Bob:

The Association to Preserve Land Park has reviewed your notice of preparation of a draft EIR and believes that the following considerations should be addressed, revised, or clarified in the EIR for the Sacramento Zoo Master Plan. Explanatory notes are included to help you understand our concerns. You will recognize some of our remarks from APLP's Recommendations for Zoo and Related Park Improvements, published in the Fall of 1985, and our various letters, newsletters and announcements. Additional copies of those materials can be furnished on request.

We do not understand why the results of 20 months of planning process have not been made available to the public. The material you have furnished indicates that there is no selected or preferred alternative at this time. If this is indeed the case, publication of the results could only help the EIR process. We are hopeful that the EIR consultants will not be burdened with prejudged conclusions that will hinder an unbiased presentation and evaluation of the facts.

#### General

The City's capital outlay budget contains zoo changes not clearly shown or discussed. Please clarify.

The proper or common name of the park is William Land Park or simply, Land Park. You should not include "Regional" in the name.

The "site" needs better definition. The attachments show a portion of the park including the zoo. The transmittal letter mentions the whole park and says the primary focus of the project is the zoo. The proposed scope of the EIR mentions studying traffic in a rather large part of the city.

The letter says the "site" includes 23.7 acres of parking. Please clarify what area is included. If on-street parking is included, identify which streets and blocks.

Considerable data needs to be collected on existing traffic, noise levels, air quality, etc. over a period of several months

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June 15, 1986  
Page 2

so that quantifiable assessments can be made of proposed park and zoo changes.

### The Project

We understand the "project" in the sense of CEQA, to be the adoption of a master plan for the Sacramento Zoo and an as yet to be defined portion of Land Park. The area of extent of the master plan must be fixed. The purpose of the master plan must be defined with specificity. That is, will it have the effect of a city master plan or zoning, or will it be an informational guide only?

While the zoo can be the focus of the EIR, the park, neighborhood, and affected parts of the city cannot be assigned secondary status in considering, avoiding and mitigating impacts. The tone of the proposed EIR is that they have been assigned such a status.

### Needs for Changes in the Park and Zoo

The needs for the proposed changes to the park and zoo have never been stated. The EIR should do so. Both general and specific needs must be given and justified.

The need "to create an inter-related family entertainment, wildlife educational and wildlife conservation center within William Land Regional Park," as stated in the agenda for the March 1985 public hearing, must be explained. Why was Land Park selected for this proposal when it is completely developed and used to capacity many days each year? Why is the City and not the County or State developing such a regional attraction? What is the basis for determining the need for the development? Isn't there a real threat that Marine World/Africa USA is, and will continue to fill the need for such a development in this area, particularly when it is in direct competition with the zoo in the exhibition of exotic animals?

Justify the need for zoo expansion. That is, specify the uses to which the existing underutilized zoo and any new park land would be used by stating, before and after proposed expansion, zoo land use by acres and fractions of acres.

What is the demonstrated need for a "corporate picnic area" in the zoo? What is the need for zoo support facilities independent from those in the park or Parks Division? How was

Mr. Robert P. Thomas  
June 15, 1986  
Page 3

the need for a large educational building with an auditorium, several classrooms and offices determined? What determined the need for increased breeding activities in the zoo?

#### Alternative Master Plans

B-2. The description, schematic and other components are not consistent. Much more than "renovation of the Zoo within the existing boundaries" is proposed. The zoo is expanded northward. Land Park Drive is lowered and a bridge is constructed across it. A large educational building is constructed east of Fairytale Town. The parking lot east of Fairytale Town is expanded.

B-3. The expansion from the existing fence line to the fence line shown along 15th Avenue appears to be more than two acres.

The lowering of Land Park Drive and bridge construction shown for B-2, B-3, and B-4 is impractical for the following reasons:

- The sight distance at the intersection of Land Park Drive and 15th Avenue would be extremely limited.
- The grade on 15th Avenue (east) would be too steep for safety.
- 16th Avenue would have to be relocated through the Memorial Camellia Garden or too close to Sutterville Road.
- Handicap and bus unloading would be next to impossible.
- Several mature trees would have to be removed and a permanent gash in the hillside would remain.
- The bridge would have to be ramped up starting at the existing zoo gate at one end and the Fairytale Town gate at the other.

There is no basis for requiring that Elements A, B and C be included in Alternatives B-2, B-3, and B-4. Requiring the connection implies you and/or your staff have some preconceived ideas on the project. See page 1 above.

Alternative, less dramatic ways of improving pedestrian safety in front of the zoo should be considered. They should start with separating the crosswalk from the bus stop lanes. An on-demand traffic signal could be added if found necessary. A school/charter bus loading and unloading facility should be developed at the northwest corner of Sutterville Road and Land Park Drive with a special entry gate for groups provided.

A large educational building is inappropriate for Land Park, as is any educational building located outside the present zoo



Mr. Robert P. Thomas  
June 15, 1986  
Page 4

fences. An alternative of using the more than 100 classrooms in the neighborhood must be considered. Rather than building a new 200 seat amphitheater (one of the features not clearly presented) the existing amphitheater should be upgraded and used. A trailer-mounted stage with holding areas for animals should be considered for use there and at other remote sites.

The site selected for relocating the amusement zone and pony rides has several of the same problems as the present site. The only access would be through a congested area of the park, now that 15th Avenue is blocked. Noise problems would be transferred from park neighbors to the golfers and possibly the amphitheater users. Since a noisy, dense amusement zone seems to be an economic necessity for the City, an alternative of moving the zone out of Land Park to an area where its inherent congestion and noise will not be overly disturbing, must be considered.

Park land, including zoo land, should not be given up for support facilities. Rental office space is available nearby and should be considered as an alternative, as should use of existing public land. The old sewer plant site is a typical example of the latter.

A true "renovation of the zoo in its present boundary" alternative must be considered. There is plenty of space available, since only about ten percent of the park land taken in the last zoo expansion 15 years ago has been developed.

If the City seriously considers that the zoo must be enlarged, Land Park Drive lowered, a large educational facility constructed, a parking lot enlarged, etc., all of which are drastic steps, then an alternative of moving the zoo to a larger site must be considered.

Removal of parking restrictions on selected park streets should be considered rather than expanding the parking lot. Park land should not be used for the corporate picnic area (another feature not clearly shown.) Fencing park land for such a purpose is contrary to long-standing City practice.

In discussing the comparison of alternatives, it is not clearly stated that you intend to make the quantitative and qualitative evaluation of impacts on the community--neighborhood. However, we are confident that you intend to do so.

Mr. Robert P. Thomas  
June 15, 1986  
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The second zoo gate blocked by a fence and planter should be used before consideration is given to a new kiosk.

#### Setting and History of Development

A thorough discussion, adequate mapping and good photographs of the existing environment are necessary parts of all EIRs. We have seen recent topographic mapping of the park. The master plan consultants did an interesting evaluation of land form and landscape patterns that should be included. (See notes of February 27, 1985 advisory committee meeting.)

Since the park and its surroundings have been completely developed for some time, special emphasis on the history of the park and zoo development is necessary. As a minimum, brief histories of the park and zoo, a map showing the original zoo and its several expansions, and zoo and park attendance for the past 25 years should be included.

Maps in the report should show street names and identify landmarks such as Holy Spirit School, the railroad tracks, the Swanston Statue, the Daughters of the American Revolution Grove, the Camellia Society of Sacramento Garden, Funderland, the pony rides, etc. Explain special features of these, such as the city's oldest living camellia and dedication of the Garden to the hostages in Iran.

#### Visitor Populations

Land Park serves a wide range of users. Placing "particular emphasis on school groups" as stated, is therefore inappropriate. As mentioned above, the needs of the community--neighborhood must be given equal consideration to those of visitors.

#### Land Use

Comparison to the city's General Plan must be to all aspects, not just to the Recreational Element. Major impacts to homes, streets, and other elements are proposed. Are all elements of the city's Master Plan current?

Comparisons to the 1984 Master Plan for Park Facilities and Recreation Services must be done with caution. By its nature, the plan was a general broad brush. Plans for Land Park included in the Master Plan could not have been given the close review that is now occurring. Fatal flaws in some of the planning will

Mr. Robert P. Thomas  
June 15, 1986  
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surely surface and should not be considered defects in the earlier planning process.

The comparison to "uses typical in a regional sized park" should not be attempted. There would be no agreement on what is "typical" and there is no definition of a "regional sized park."

The value of the park as open space in the middle of a relatively densely populated metropolitan area must be given primary consideration. Buildings and fences must, in this sense, be considered detrimental.

Commercialization of the park was a concern of many participants in the public hearings. A balance between public service and exploitation must be found. Also all costs of commercial ventures including cleanup and security must be evaluated.

#### Traffic and Circulation

The cumulative impacts on the transportation system of the State's steam excursion train and proposed changes to the park and zoo must be considered. Examples of potential congestion are the sidewalk-bike trail along Land Park Drive and the sidewalks south of Sutterville Road.

The impacts to the residential streets near the park should be given more attention than several of the intersections listed. These streets and the park streets carry much of the east-west traffic since Sutterville Road, a residential street itself, has limited capacity. The nearest east-west arterials are Broadway and Fruitridge Road. Park traffic also impacts other residential streets.

Removable street closures, like those currently being used in the park, are preferred to test traffic control changes before they are made permanent.

See comments on parking under the Alternative Master Plans heading above.

Large special event organizers, including the zoo, should be required to provide offsite parking and shuttle bus service. Events in the park should be coordinated to reduce traffic and other congestion problems. These two actions should be considered non-structural alternatives to proposed construction or alterations.

Add safety of motorists to the "identification of any safety hazards" list.

#### Air Quality

The cumulative impacts of proposed changes to the park and zoo and the State's steam excursion train must be considered.

Vehicles should not be considered the only source of air quality degradation. Zoo operations and maintenance and construction activities are some of the other sources that need to be considered as well as the steam locomotives proposed by the State to be present near the zoo.

#### Noise

Care must be taken in comparing noise levels in the park with published standards. Relative quiet is a necessary part of the open space experience mentioned under the Land Use heading above.

Sources of noise that should be considered include: traffic, building air conditioners, fund raising activities (especially at night), horn blowing, backfiring, etc. in the proposed tunnel on Land Park Drive.

#### Public Facilities, Services and Utilities

Consideration must be given to the cumulative effects of increased traffic and street blockage by changes to the park, zoo, and the State's steam excursion train and its discharged passengers, on the levels of police and fire protection and other emergency services.

There is no doubt that area schools are and would be impacted by zoo and park operations. After all, there are three elementary schools, one preschool and one college on the park perimeter. Potential impacts on those facilities must be assessed and avoided.

#### Water Quality and Drainage

Impacts on neighborhood water quality and drainage must also be considered. Drainage in this part of Sacramento is a continuing problem.

### Vegetation

The assessment of how the project would affect park vegetation should include analysis of how other changes in the park have affected the vegetation. One example should be the oak tree that was disturbed by the flamingo exhibit last year. The native oaks deserve the highest level of protection. The loss of mature trees, such as would be required for the proposed lowering of Land Park Drive, should be considered unmitigatable.

### Cultural Resources

The Camellia Garden, the D.A.R. Grove, the Swanston Statue, and the many other monuments and groves throughout the park must be considered cultural resources and treated accordingly.

### Aesthetics

See the first paragraph under the Setting and History of Development heading.

All proposed structures must be compatible with the park setting. The open space feeling could easily be destroyed by poorly located and designed structures and fences. Notable examples of what should not be done are: Funderland's flashy decor, the trailers currently in the park, the north fences of both the zoo and Fairytale Town, the blockhouse effect of the reptile exhibit building, and the proposed large education building.

### Fiscal Analysis

It is important that all costs, both direct and indirect, be included. Some costs not mentioned are personnel, overhead, supplies, and telephone. Personnel costs should include security and traffic directors.

The source of all funds for construction, operation, and maintenance should be identified. That is, identify all current and planned sources and amounts of sales taxes, city bonds, state bonds, federal grants, donations, etc.

### Construction Impacts

The most significant potential construction impact is lowering and bridging of Land Park Drive. The EIR must include a

Mr. Robert P. Thomas  
June 15, 1986  
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detailed account of how automobiles, buses, emergency vehicles, bicycles and pedestrians would get past the site and how zoo and Fairytale Town patrons would gain access, and how the facilities would operate. This construction is so potentially disruptive that a much more detailed plan must be developed before the impacts can be assessed and the draft EIR completed.

The cumulative impacts on the park of any current and proposed construction and zoo changes, and the State's steam excursion train must be assessed.

We have endeavored to give you all our concerns in this letter or by reference to our earlier publications. However, others may surface as we develop a better understanding of the alternative plans. We have generally followed your outline, but since we are not experts in the EIR process, we trust that you will not reject any of our comments merely because they are not in the correct form.

Sincerely,  
Association to Preserve  
Land Park

Steven P. Belzer  
Chairman



# CITY OF SACRAMENTO

## DEPARTMENT OF PARKS AND COMMUNITY SERVICES

ROBERT P. THOMAS  
Director

G. ERLING LINGGI  
Assistant Director

CROCKER ART MUSEUM DIVISION  
GOLF DIVISION  
METROPOLITAN ARTS DIVISION  
MUSEUM AND HISTORY DIVISION  
RECREATION DIVISION  
PARKS DIVISION  
ZOO DIVISION

July 31, 1986

Mr. Steven P. Belzer, Chair  
Association to Preserve Land Park  
1008 10th Street, Suite 191  
Sacramento, CA 95814

Dear Steve,

This letter is in response to your July 10, 1986 correspondence regarding the Notice of Preparation for the EIR and the Citizens Advisory Committee for the 1984 Parks Master Plan.

Following selection of an EIR consultant, all responses to the Notice of Preparation will be turned over to the EIR consultant for review. The consultant may opt to contact some or all respondents regarding their comments; however, state CEQA guidelines do not require this. Pending selection of a consultant, which as you are aware has yet to occur, all responses are filed in this office. You are correct in assuming this office did not receive the original letter containing APLP's comments to the NOP. The copy of these comments which you enclosed in your most recent correspondence is dated June 15, 1986. Although the NOP clearly states that the comment period closed on June 12, this office is willing to include your responses with those received prior to the deadline for review by the EIR consultant.

Insofar as we are still awaiting portions of the Draft Master Plan from Wildlife Associates, we are holding off on the EIR consultant selection process. Accordingly, you need not locate a substitute for your original nominee Larry Fein at this time, as it is possible that Mr. Fein will have returned from his vacation by the time we are ready to proceed with the selection process. Debra Small-Maier will contact you as soon as a new deadline for selection panel nominees has been set to insure that APLP has the opportunity to provide this office with the name and qualifications of a potential selection panel member.

The 1984 Park Facilities and Recreation Services Master Plan was an update of the Parks and Recreation Master Plan completed in 1968 and subsequently adopted by the City Council as part of the General Plan. The 1984 Parks and Recreation Master Plan adopted by the Council in May 1984 involved a thorough study of all recreation services and park facilities city-wide. This master planning process was funded by a national park service grant and involved 18 months of work, 85 committee meetings, 9 public meetings, and literally thousands of hours of citizen and city involvement. The final document, with which you are familiar, deals primarily with the Parks and Recreation Divisions of the department and clearly states that other divisions, such as the Crocker Art Museum and the Zoo, will undertake their own division master plans.

A mandate of the 1984 Master Plan for Park Facilities and Recreation Services was the establishment of an ongoing Citizens Advisory Committee with a membership representing a cultural and geographic cross section of the community. The committee is charged with advising the Director on the implementation of the 1984 Master Plan for Park Facilities and Recreation Services or will assist the Recreation and Parks Divisions on special studies and projects. Solicitation of committee members began in January 1986 and included notices in both major dailies and two weekly papers; letters to all 44 individuals who served on the 1984 Master Plan's Citizen Advisory Committees; letters to all citizens on the City Clerk's mailing list of persons wishing to serve on City committees; and a request to Council members to suggest possible committee members. All applicants were interviewed by Recreation and Parks Superintendents, after which time the Director's office presented a list of nominees to the City Council for approval.

The 1984 Parks and Recreation Master Plan included a study of and recommendations for each of the City's 11 planning areas. Consequently, the Citizens Advisory Committee is comprised of one member from each planning area and 3 members at large. You are correct in stating that APLP is a recognized neighborhood association for Land Park; however, the Citizens Advisory Committee focuses on planning areas each of which encompass several individual neighborhoods. For this reason, member solicitation efforts concentrated on the general public at large and on those planning area representatives who were involved in the actual Master Plan process. No special interest or neighborhood organizations, of which there are several city-wide, were individually contacted.



Mr. Steven P. Belzer  
July 31, 1986  
Page Three

The 1984 Parks and Recreation Master Plan with its city-wide parameters, its focus on planning areas, and its role in guiding the Parks and Recreation Divisions, is separate and distinct from the Zoo Master Plan project.

I assured you that I would keep you informed on the Zoo Master Plan process. This office has fulfilled that assurance to date and will continue to do so insofar as we appreciate your continued involvement in the Zoo Master Plan project.

Sincerely,



Robert P. Thomas, Director  
Parks and Community Services

RPT:lr



ADDRESS ALL COMMUNICATIONS  
TO THE COMMISSION

CALIFORNIA STATE BUILDING  
SAN FRANCISCO, CA 94102  
TELEPHONE: (415) 557-

-9884

T. S. Joe

## Public Utilities Commission

STATE OF CALIFORNIA

June 9, 1986

FILE NO. 183-34/EIR

CITY OF SACRAMENTO

Robert P. Thomas, Director  
Department of Parks and Community Services  
City of Sacramento  
1231 I Street, Suite 400  
Sacramento, CA 95814

JUN 11 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Dear Mr. Thomas:

This is in response to your Notice of Preparation of a draft Environmental Impact Report for the Sacramento Zoo Master Plan EIR.

Based on a review of the information transmitted, the Commission will not be involved. We appreciate having had the opportunity to review and comment on this .

Thank you.

Very truly yours,

DONALD R. CHEW, Supervisor  
Transportation Projects Section  
Railroad Operations & Safety Branch  
Transportation Division

cc: Peggy L. Osborn  
Office of Planning and Research  
1400 Tenth Street - Room 121  
Sacramento, CA 95814

4501 Mead Ave.  
Sacramento, CA 95822

10 June 1986

Robert P. Thomas, Director  
Parks and Community Services  
1231 "I" Street, Suite 400  
Sacramento, CA 95814

Dear Mr. Thomas:

To do anything with the Zoo at William Land Park less than moving it and Fun-land to Haggin Oaks or Del Paso Park will be very shortsighted and another "K-Street" debacle.

The whole Land Park area is over-crowded now and a traffac hazard. The over-crowding has already reduced the intent of the Park. (see letter attached).

To add anything more to Land Park would be ruinous to the existing park and a deplorable condition for the future.

Sincerely yours,



Mrs. William F. Jewett

CITY OF SACRAMENTO

JUN 11 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

4501 Mead Ave.  
Sacramento, CA 95822

25 May 1985

Sacramento City Council, Anne Rudin, Mayor

David M. Shore	Joe Serna, Jr.
Grantland Johnson	Bill Smallman
Douglas N. Pope	Terry Kastanis
Thomas Chinn	Lynn Robie

Dear Mayor Rudin and Council members:

The time has come to think about the welfare of the animals at the William Land Park Zoo. Land Park is no longer adequate for the care and housing of so many large animals. This was known years ago, when it was then proposed to move the Zoo to land owned by the City of Sacramento, in the North area.

Del Paso Park appears to be the ideal place for a Sacramento Zoo and Funland. The Del Paso Park Golf Course could be used for the Zoo. (More people visit the Zoo than play golf at Del Paso). Haggin Oaks Municipal Golf Course is available in the same area.

William Land Park should have a Senior Citizens Center, with club rooms available for Boy and Girl Scouts to meet in and other group activities; tennis courts and a swimming pool. Most of the taxpayers on both sides of Land Park, North and South, are Senior Citizens.

Unbelievable, the original very pleasant William Land Park Club House was removed to make way for the Snake house. The beautiful Rose Garden was destroyed.

With the center of Sacramento's population moving to the North Area, a Regional location for the Zoo and Funland should be at the Del Paso Park.

Please do not be short-sighted and spend any more money for an enlarged Zoo at William Land Park.

Please give William Land Park back to the people.

Sincerely,

  
Mrs. Myrtle G. Jewett

cc City of Sacramento, Dept. of Parks and Community Services  
Association for the Preservation of Land Park  
Sacramento Zoological Society

May 28, 1986

Debra Small-Maier  
City of Sacramento  
Department of Parks & Community Services  
1231 I Street  
Sacramento, CA 95814 .

CITY OF SACRAMENTO  
MAY 29 1986  
DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Dear Debra:

This letter is in reference to your Draft EIR for the Sacramento Zoo Master Plan. The proposed scope for the EIR seems fairly complete considering people oriented impacts, but lacking the positive aspects that the zoo's improvement will have on conserving the world's diminishing wildlife. All of the improvements in schematics B<sub>2</sub>, B<sub>3</sub>, and B<sub>4</sub> have positive impacts to wildlife conservation, learning experiences, zoo recreation, zoological research and improved community services. Please be sure to give appropriate text space to these positive subjects.

Visitor Population: Origin of visitors should be considered because the zoo is truly regional and upon implementation of the master plan we will impact more people from a larger area. This drawing of people from outside the city is an economic plus to the city and justifies future cooperative capital funding for our zoo by city, county, state and federal governments.

Present Land Use: Some present recreation uses will be impacted negatively by implementation of the zoo master plan. Could you emphasize alternatives (mitigations) for these uses? I see no irreversible recreation use loss with any of our plans.

Traffic and Circulation: Regional Transit, steam train from Old Sacramento, bike trails are all important to the zoo and the Zoological Society. These methods of transportation should be discussed in the text, both the positive and negative features.

I hope the EIR will be a balanced positive and negative impact document which will cover more than the negative aspects I heard at the public hearings. I am looking forward to reviewing the draft and hope we can get the EIR out of the way and start the zoo expansion with a good plan to guide us.

Sincerely,

*George E. Reiner*  
George Reiner  
6474 - 14 Street  
Sacramento, CA 95831

To  
Rera Small-Miller  
Department of Parks & Community  
Service

My voice (the normal) cannot  
be heard due to the rattle of golf  
Clubs. The golfers control more  
property than some large farmers.  
One day I took my grandsons  
to Williams Land Park. Nice day  
but no room, too many people for  
the space for the park.

Too people playing golf took  
up a whole lot of space.  
When I was a child I heard  
that Land Park was to be a park  
not a golf course to be used by  
less than 10% of the population.  
Time to stop this B.S.!!

John A. Keffner

8545 Johnson Blvd

Sacramento CA

95826

383-  
5883

OFFICE OF PLANNING AND RESEARCH

TENTH STREET

SACRAMENTO, CA 95814



DATE: May 20, 1986

TO: Reviewing Agencies

RE: The City of Sacramento Department of Parks & Community Services' NOP for  
The Sacramento Zoo Master Plan EIR  
SCH# 86051906

Attached for your comment is the City of Sacramento Department of Parks & Community Services' Notice of Preparation of a draft Environmental Impact Report (EIR) for the Sacramento Zoo Master Plan EIR.

Responsible agencies must transmit their concerns and comments on the scope and content of the EIR, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Debra Small-Maier  
City of Sacramento  
Department of Parks & Community Services  
1231 I Street, Suite 400  
Sacramento, CA. 95814

with a copy to the Office of Planning and Research. Please refer to the SCE number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Peggy Osborn at 916/445-0613.

Sincerely,

A handwritten signature in cursive script, reading "John B. Ohanian", is written over the typed name.

John B. Ohanian  
Chief Deputy Director

Attachments

cc: Debra Small-Maier

S - Sent by Lead Agency

X - Sent by Clearinghouse

☐ Anne Geraghty  
Air Resources Board  
1131 S Street  
Sacramento, CA 95814  
916/322-6161

☐ Barbara Kierbow  
Dept. of Boating & Waterways  
1629 S Street  
Sacramento, CA 95814  
916/323-9488

☐ Gary L. Holloway  
California Coastal Commission  
631 Howard Street, 4th Floor  
San Francisco, CA 94105  
415/543-8555

☐ Kim Branstetter  
California Energy Commission  
1516 Ninth Street, Rm. 200  
Sacramento, CA 95814  
916/324-3579

☐ Earl Tucker  
Caltrans - Division of Aeronautics  
1120 N Street  
Sacramento, CA 95814  
916/322-9955

☐ Mary Kelly  
Caltrans - Planning  
1120 N Street  
Sacramento, CA 95814  
916/323-7222

☐ Dennis O'Bryant  
Dept. of Conservation  
1416 Ninth Street, Room 1326-2  
Sacramento, CA 95814  
916/322-5873

☐ Div. of Mines and Geology

☐ Div. of Oil and Gas

☐ Land Resources Protect. Unit

☐ Harry Krade  
Dept. of Food and Agriculture  
1220 N Street  
Sacramento, CA 95814  
916/322-1992

☐ Dennis Orrick (send out 3 copies)  
Dept. of Forestry  
1416 Ninth Street, Room 1516-2  
Sacramento, CA 95814  
916/322-0128

☒ James Hargrove  
Dept. of General Services  
1125 Tenth Street  
Sacramento, CA 95814  
916/324-0209

☒ Kenneth Kizer  
Dept. of Health  
714 P Street, Room 1253  
Sacramento, CA 95814  
916/445-1248

☐ Bill Murphy  
Dept. of Housing & Community Dev't.  
921 - 10th Street, 5th Floor  
Sacramento, CA 95814  
916/324-8657

☐ Environmental Reviewer  
Native American Heritage Comm.  
915 Capitol Mall, Room 288  
Sacramento, CA 95814  
916/322-7791

☐ Hans Kreutzberg  
Office of Historic  
Preservation  
P.O. Box 2390  
Sacramento, CA 95811  
916/445-8006

☒ James M. Doyle  
Dept. of Parks and Recreation  
P.O. Box 2390  
Sacramento, CA 95811  
916/324-6421

☐ Mike Burke  
Public Utilities Commission  
926 J Street, Suite 1400  
Sacramento, CA 95814  
916/322-7316

☐ Kirk Stewart  
Public Works Board  
1025 P Street, 4th Floor  
Sacramento, CA 95814  
916/445-5332

☐ Mel Schwartz  
Reclamation Board  
1416 Ninth Street  
Sacramento, CA 95814  
916/445-2458

☐ Robert Batha  
S.F. Bay Conservation & Dev't. Comm.  
30 Van Ness Avenue, Room 2011  
San Francisco, CA 94102  
415/557-3686

☐ Eric Maher  
Calif. Waste Management Board  
1020 Ninth Street, Room 300  
Sacramento, CA 95814  
916/322-2674

☐ Ted Fukushima  
State Lands Commission  
1307 - 13th Street  
Sacramento, CA 95814  
916/322-7813

☐ Ken Fellows  
Dept. of Water Resources  
1416 Ninth Street  
Sacramento, CA 95814  
916/445-7416

☐ Reed Holderman  
State Coastal Conservancy  
1330 Broadway, Suite 1100  
Oakland, CA 94612  
415/464-1015



Department of Transportation  
District Contacts

Don Comstock  
Department of Transportation  
District 1  
1650 Union Street  
Eureka, CA 95501  
707/442-2313

Larry French  
Department of Transportation  
District 2  
1657 Riverside Drive  
Redding, CA 96001  
916/225-2308

Brian J. Smith  
Department of Transportation  
District 3  
703 B Street  
Marysville, CA 95901  
916/741-4277

J. M. Ellis  
Department of Transportation  
District 4  
P.O. Box 7310  
San Francisco, CA 94120  
415/557-8532

Jerry Laumer  
Department of Transportation  
District 5  
50 Elguera Street  
San Luis Obispo, CA 93401  
805/549-3161

Mert Parlier  
Department of Transportation  
District 6  
P.O. Box 12616  
Fresno, CA 93778  
209/488-4088

Wayne Ballentine  
Department of Transportation  
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120 Spring Street  
Los Angeles, CA 90012  
213/620-3335

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Department of Transportation  
District 8  
247 West Third Street  
San Bernardino, CA 92403  
714/383-4150

Tom Dayak  
Department of Transportation  
District 9  
500 South Main Street  
Bishop, CA 94514  
714/873-2290

Larry Burgess  
Department of Transportation  
District 10  
P.O. Box 2048  
Stockton, CA 95201  
209/948-7375

Jim Cheshire  
Department of Transportation  
District 11  
2829 Juan Street  
San Diego, CA 92138  
714/237-6755

Fish and Game - Regional Offices

A. Naylor, Regional Manager  
Department of Fish and Game  
601 Locust  
Redding, CA 96001  
916/225-2300

P. Jensen, Regional Manager  
Department of Fish and Game  
1701 Nimbus Road, Suite A  
Rancho Cordova, CA 95670  
916/355-0922

B. Hunter, Regional Manager  
Department of Fish and Game  
7329 Silverado Trail  
Napa, CA 94558  
707/944-2011

G. Nokes, Regional Manager  
Department of Fish and Game  
1234 East Shaw Avenue  
Fresno, CA 93725  
209/222-3761

Fred A. Worthley Jr., Reg. Manager  
Department of Fish and Game  
245 West Broadway  
Long Beach, CA 90802  
213/590-5113

Rolf E. Mall  
Marine Resources Region  
245 West Broadway  
Long Beach, CA 90802  
213/590-5155

State Water Resources Control Board

Joan Jurancich  
State Water Resources Control Board  
Division of Clean Water Grants  
P.O. Box 100  
Sacramento, CA 95801  
916/322-3413

Ed Anton  
State Water Resources Control Board  
Division of Water Quality  
P.O. Box 100  
Sacramento, CA 95801  
916/445-9532

Jerry Johns  
State Water Resources Control Board  
Delta Unit  
P.O. Box 2000  
Sacramento, CA 95810  
916/322-9870

Al Yang  
State Water Resources Control Board  
Division of Water Rights  
901 F Street  
Sacramento, CA 95814  
916/324-5716

Regional Water Quality Control Board  
Region # 5 City Sacto.

May 19, 1986

Department of Parks  
a Community Service  
Attention: Alex Small-Morris

When William Land gave the average  
for Land Park to the city of the -  
name, he did not envisage its being  
used by the population of the county  
which he means a million people.  
Land Park is not in the center  
of town nor in the center of the  
county. The gas brings cars and people  
to the extreme western section of town  
where there is neither adequate parking  
nor necessary facilities.

I suggest putting the large  
animal position either on the site of  
the old Fendale Hall house, or the  
old Fairgrounds, or even out from  
Boulevard where there is former land  
directly the gas cannot be enlarged  
in its present location with the  
congested traffic on downtown road.  
All for Land and Land Park!  
When we saw Land parked near?  
Think about it.

William Morris

2751 L. For Dr 50c 95818

May 20, 1986  
CITY OF SACRAMENTO

City of Sacramento  
Parks and Community Services  
Sacramento, Ca.

MAY 22 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Dear Mr. Thomas:

Your letter and attachments recently received regarding the EIR for the Sacramento Zoo is completely incomprehensible. The maps are unreadable so it makes the rest of the report useless.

The consultant who prepared this report should take a writing course. For example, what does this mean, "Feasible mitigation measures to reduce the significant effects to a less than significant level. Other mitigation measures for impacts identified as less than significant."?

I have read the report many times and have no idea what it says. Why can't this be written in simple language? What is being moved from where to where and why? Why are more buildings being planned? (I did get that much out of it.) What does all this cost and how much has already been spent? Why is the City doing an EIR? The crowd and traffic problems (or as your consultant would put it, the qualitative and quantitative impact of vehicular and pedestrian circulation) have already created a major problem this year. Any enlargement or additions to this Park will only create unsolvable problems. The whole thing from the beginning is so ridiculous I can't imagine reasonable people considering any part of it.

Attached is a letter I wrote to the Sacramento Union after the first meeting in March of 1985 and the editorial that followed. I still feel the same about the whole proposal. It is mentioned in the editorial that city officials acknowledge other locations are available. What happened to further consideration of these other locations?

I have not been able to attend recent meetings and seem to have missed a lot that is going on. I would appreciate being brought up to date if it is written so I can understand it.

Sincerely,

Esther E. Shoenberger  
1630 11th Ave.  
Sacramento, Ca. 95818

March 31, 1985

Mr. Peter Hayes  
Sacramento Union  
301 Capitol Mall  
Sacramento, Ca.

Dear Mr. Hayes:

I will try to make this as brief as possible but I feel so strongly about the subject it will be difficult. I wish our friend, Bob, was here to help me.

Enclosed is a copy of the agenda of the recent meeting I attended in regard to the zoo expansion at Land Park. Who is backing this? With all the maps and plans at the meeting, a lot of money has already been spent.

The whole subject is so obviously ridiculous I can't imagine intelligent people considering any of the projected plans

The zoo should not be in Land Park. It may have been fine fifty years ago when this area was the edge of the city but it should have been relocated years ago. As was stated by the "experts" at the meeting, the crowds and parking are out of hand now and will become more so even without enlarging the zoo.

It was stated that this was the major zoo of Northern California! This may be true but to have it in Land Park is insane. There is not enough room for a first class zoo there if they used it all. A literal "concrete jungle" in the middle of one of the finest residential areas of the City! Plans were shown and suggestions were made from underpasses, overpasses, re-routing of streets and even a high-rise parking structure was mentioned. In Land Park? I couldn't believe what I was hearing. Will it eventually be suggested to move Holy Spirit School, B'nai Israel Synagogue And Sacramento City College to provide adequate access and parking for the zoo?

Land Park is one of the most beautiful green areas in Sacramento and was never intended to contain a full size zoo, a Fairy Tale Town, and children's rides in quantity.

I would like to see a fine zoo and all the rest at some adequate location where it can grow with the increasing population. I thought years ago the old State Fairgrounds would have been ideal but there are many other areas that would suit the purpose. Why has this never been investigated or suggested?

I feel this is very important to the City and County of Sacramento. Much time, study, consideration and publicity should be given to the planning of a major zoo at another site.

I could go on for pages about the other problems involved but I'm sure they will be obvious to you. Why can't the people organizing these plans see them and the increasing problems for years to come?

I think of you often and hope all is well. How is the state of the "Union"?

Sincerely,

Esther E. Sheenberger  
1630 11th Ave.  
Sacramento, Ca. 95818

Michael R. Eaton

---

June 26, 1986

Debra Small-Maier  
Department of Parks and Community Development  
1231 I St. Suite 400  
Sacramento, CA 95814

4421 Moss Drive  
Sacramento, CA 95822  
(916) 447-6000

Dear Ms. Small-Maier:

The following comments on the NOP for the Zoo Master Plan are late due to my recent vacation. I hope they will be considered to the extent possible.

The following issues, covered by the NOP, deserve particular emphasis:

- o Pedestrian access and safety, with emphases on children and on the five-way Sutterville-Land Park Drive intersection;
- o Bicycle access, circulation, and safety, with an emphasis on the five-way Sutterville-Land Park Drive intersection;
- o Vehicle circulation, with an emphasis on the Sutterville-Land Park intersection.

In addition to these issues, the NOP did not reference State plans for an excursion steam train to Land Park. This project, the subject of an EIR that will be prepared over the next six months, will affect traffic in the vicinity of the Zoo and pedestrian levels. It is very important that the Zoo EIR incorporate the steam train into its baselines and projections regarding traffic and pedestrian levels, that impacts and projections be consistent in the two EIR's, and that mitigation measures be developed with both projects in view.

Please contact me if I can further explain any of these concerns or be of assistance in any other way.

Sincerely,

  
Michael R. Eaton

June 9, 1986

Norman E. Hill  
3500 13th Street  
Sacramento, CA 95818

Robert P. Thomas, Director  
Department of Parks & Community Services  
City of Sacramento  
1231 T Street, Suite 400  
Sacramento, CA 94814

CITY OF SACRAMENTO

JUN 16 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Dear Mr. Thomas:

Thank you for sending a copy of the Notice of Preparation of the Sacramento Zoo Master Plan EIR. We appreciate the extra effort your department is making to reach out to the affected public.

From a review of the notice of preparation, it appears that the analysis overlooks the impact on recreational soccer. The description of land use does not mention soccer. Only one of the maps, B-3, shows any soccer fields, and none of the maps show the encroachment on one or more soccer fields. Currently there are three soccer fields located east of Fairy Tale Town. One is a "regulation" size field used by adults and children eight years of age and older. In addition there are two small soccer fields, one east of the regulation field and the other located east of the existing parking lot where Alt. B shows possible future parking for cars.

All three soccer fields are used intensively but not exclusively by the Land Park Soccer Club from August through early December each year. During weekday afternoons after school, the fields are used for team practices and scrimmages. On Saturdays the fields are used for soccer games from 9 a.m. through 2 or 3 p.m. The fields are used as three of the home fields where Land Park teams play visiting teams from all the other recreational clubs in the Sacramento Youth Soccer League. The two small fields are used by small children, ages 4 and 5 in the "under 6" age group and by 6 and 7 year olds in the "under 8" age group. The large field is normally used by teams in the "under 10" group, composed of 8 and 9 year olds. On Sundays the field is often used by women's teams in the Sacramento Valley Women's Soccer League.

It is difficult to place an economic value on the use of the fields for recreational soccer because the Land Park Soccer Club is a non-profit organization run entirely by volunteer efforts. The more than 40 teams are coached and managed by volunteers. Last year the club had more than 600 registered players.

June 9, 1986

Expanding the Sacramento Zoo as shown in Alternative B-2, B-3, and B-4 would have a significant adverse impact on the existing use of the park for recreational soccer. The expansion of parking in Alternatives B-2 and B-3 would wipe out one of the small soccer fields used by "Under 6" and "Under 8" teams. Alternative B-4 would wipe out all the fields.

I understand that in 1985 someone with city government asked the then manager of the Land Park Soccer Club if the club would object to a loss of the fields in Land Park if the city would provide replacement fields. The manager said that he had no objection so long as the city provided replacement fields of equal quality. He took this action without consulting the other members of the board of directors. This year the club has a new manager and a new board of directors. In a meeting on May 14, 1986, the board of directors voted unanimously to oppose the possible loss of the fields in Land Park. They believed that the Land Park Soccer Club should be able to play in Land Park. The use of the fields in the park helps provide a sense of community to the people living in this area.

The city would be hard pressed to provide fields of equal quality. The fields are enhanced by the beauty of the park. The trees provide shade for substitute players and spectators on the sidelines, a highly desirable feature lacking in school yards. This shade is especially important during the hot practices and games in August and September. The turf on the small fields is well established, limiting the mud after the fall rains begin. The large field is well drained since the re-grading several years ago, and the porous soil allows water to soak in quickly after wet weather. The turf on the large field is reestablishing itself and may finally be in good condition for the fall. Another advantage of the fields is the availability of open rest rooms.

Closing the fields in Land Park would contribute to a significant cumulative loss of soccer fields within easy driving distance of people's homes while youth soccer continues to grow. Recently two small soccer fields were lost to residential development on Semas Avenue between South Land Park Drive and Cabrillo School. The two soccer fields in Miller Park are expected to be lost to the expansion of the Miller Park Marina.

The EIR on the Zoo expansion should include a viable alternative that would avoid the adverse impact on recreational soccer and another viable alternative that would minimize the impact. Possibly the soccer fields could be rearranged to make more space available close to Land Park Drive.

The attached diagram shows one possible rearrangement with one of the small fields moved to a new location and the large field shifted east about 30 yards so that one end of the field would occupy the space previously used by the small field. A variation to this alternative



June 9, 1986

would reduce the large field to the minimum regulation dimensions -- 50 yards by 100 yards. This change would make the field more suitable for "Under 10" teams but would spoil the field for adult soccer. Consideration should also be given to limiting the zoo expansion to areas west of Land Park Drive with additional diagonal parking - as in Miller Park - provided near the baseball diamonds in a way that could also serve the zoo. A second entrance at the back of the zoo could also facilitate use of this parking.

In developing the alternatives in the EIR you should try to allow as varied a mix of uses as possible. It is always difficult to see exactly where the greatest public interest may lie, but in a city with a broad range of activities and interests in the public, city government should seek to accommodate as wide a variety of existing interests as it possibly can. You should avoid an approach that allows one group to destroy something of value to another group.

Sincerely,

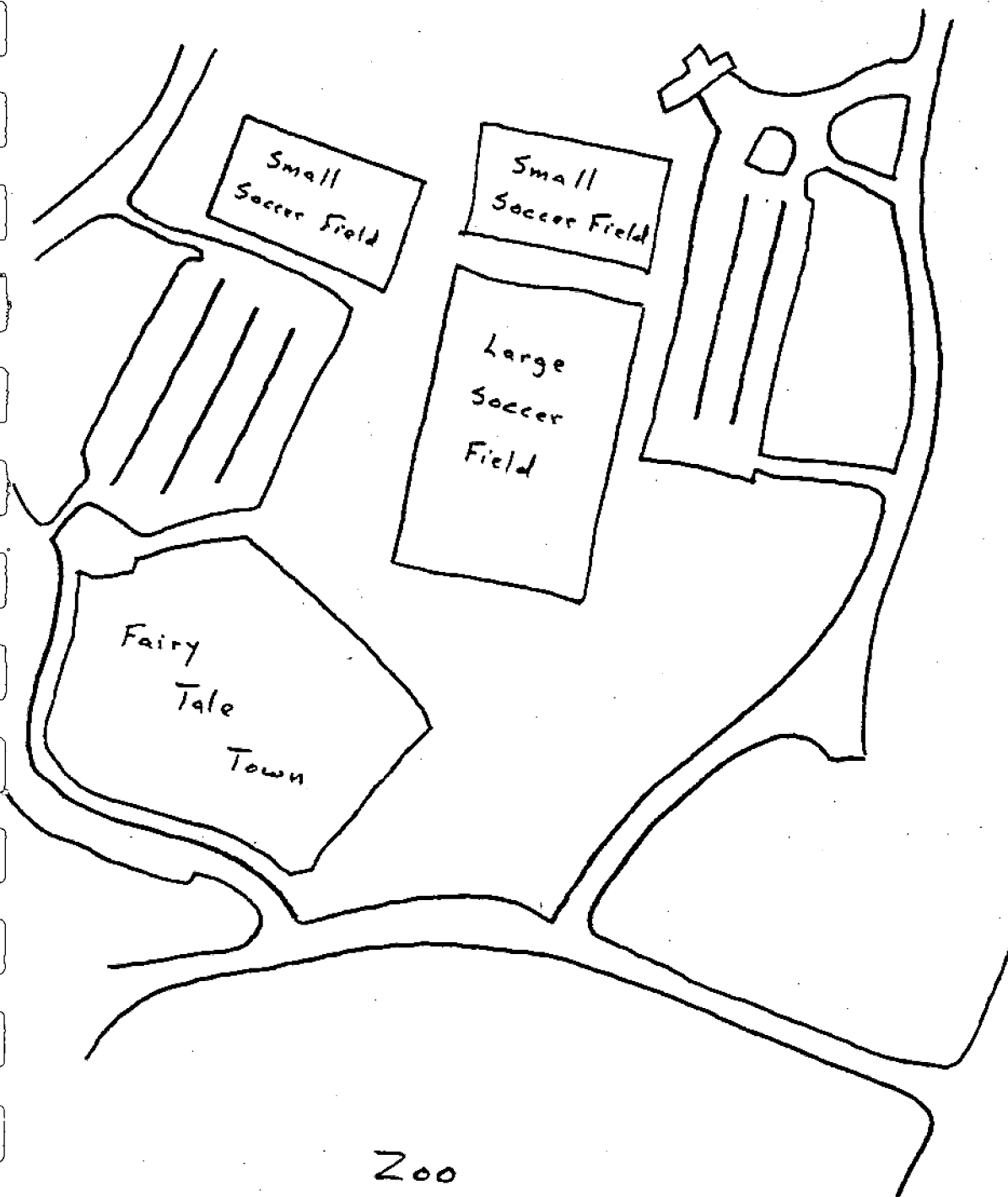
*Norman E. Hill*

Norman E. Hill

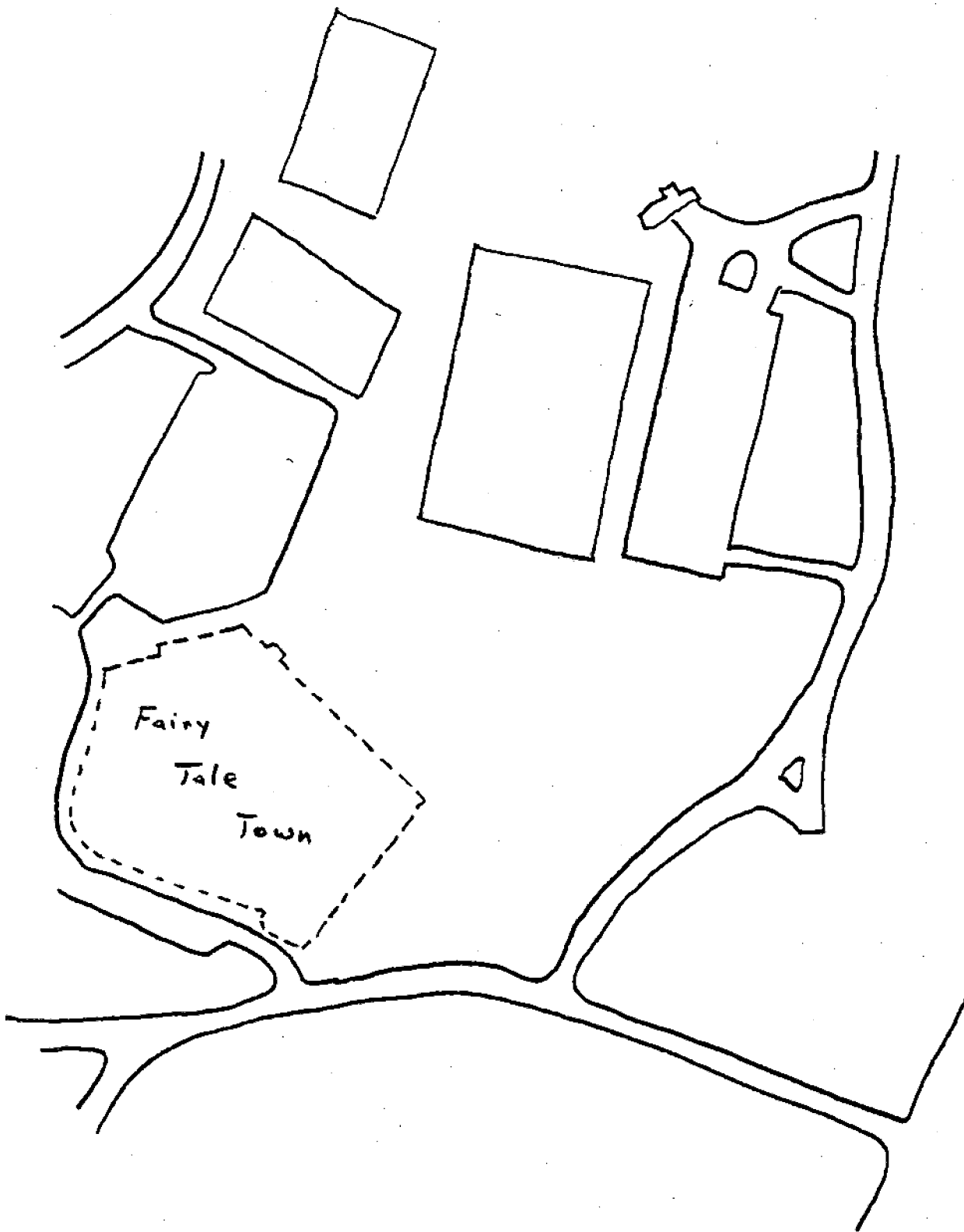
Attachments

cc: Ann Rudin  
Tom Chinn  
George Wallace  
Manager, Land Park Soccer Club  
Claudine Desimone  
President, Sacramento Youth Soccer League

# Existing Soccer Fields



# Possible Rearrangement of Soccer Fields





**SMUD**

SACRAMENTO MUNICIPAL UTILITY DISTRICT ☐ 6201 S Street, P.O. Box 15830, Sacramento, CA 95813; (916) 452-3211  
AN ELECTRIC SYSTEM SERVING THE HEART OF CALIFORNIA

June 12, 1986

**CITY OF SACRAMENTO**

**JUN 16 1986**

**DEPARTMENT OF  
PARKS and COMMUNITY SERVICES**

ROBERT THOMAS, DIRECTOR  
PARKS AND COMMUNITY SERVICES  
CITY OF SACRAMENTO  
1231 "I" STREET, SUITE 400  
SACRAMENTO CA 95814

The Sacramento Municipal Utility District has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Sacramento Zoo Master Plan.

Although this project will have a slight cumulative increase on the electrical demand for the area, no significant long-range impacts to the SMUD system would take place as a result of this project.

Please send us a copy of the EIR when it is completed.

Thank you for the opportunity to comment.

PAUL OLMSTEAD  
ENVIRONMENTAL SPECIALIST

5011 South Land Park Drive  
Sacramento, Ca. 95822

City Parks & Recreation  
1231 I Street  
Sacramento, 95814

Gentlemen:

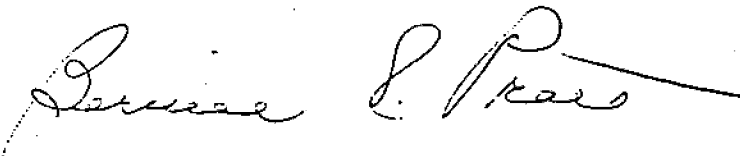
My cleaning girl apparently threw out the information on the changes suggested for The Sacramento Zoo.

I would like to vote for ZOO PLAN#1

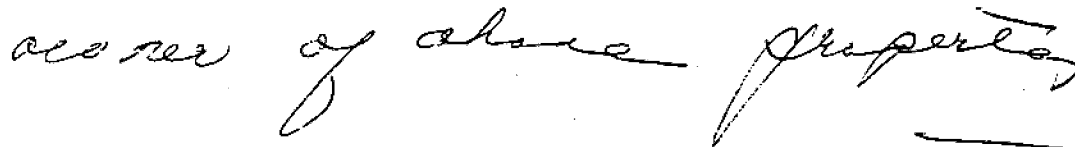
We have a beautiful park and if you want to increase the size of the zoo I would suggest it be put someplace with plenty of room.

We have a great sufficiency of traffic right now and certainly do not need any more.

Fairy Tale Town ruined what was a lovely full sized golf course and now apparently the city wants to ruin the whole thing.....



Bernice S. Pratt or Mrs. Robert G. Pratt

---

## DEPARTMENT OF TRANSPORTATION

DISTRICT 3  
P.O. BOX 911, MARYSVILLE 95901



(916) 741-4498

June 10, 1986

03-Sac-5/160  
Sacramento Zoo  
Master Plan  
SCH 86051906

Ms. Debra Small-Maier  
City of Sacramento  
Parks and Community Services  
1231 I Street, Suite 400  
Sacramento, CA 95814

Dear Ms. Small-Maier:

Thank you for the opportunity to review the notice of preparation of a draft EIR for the Sacramento Zoo Master Plan. The zoo is located on Sutterville Road at Land Park Drive.

The Traffic analysis should address impacts to State Route 160, on weekdays and weekends. In addition to those listed in the project description, mitigation strategies should include transit options and means of promoting transit use.

If you have any questions, please contact Mrs. Jeannie Baker, telephone (916) 741-4498.

Sincerely,

Jeffrey M. Loudon  
Chief, Environmental Branch

cc: Peggy Osborn, State Clearinghouse

4515 MEAD AVE Sacramento CA 95822

Regarding the Zoo Master Plan

Mr. Robert P. Hansen, Director  
CITY OF SACRAMENTO

Parks + Community Services JUN 12 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

I am strongly in favor of  
Plan # 1. Having lived  
nearly 45 years, I would like  
the Park to remain as it  
is. If you consider a larger  
Zoo etc., purchase land  
somewhere else + enlarge +  
take the large no. of cars + people  
with you. Helen Giese

## DEPARTMENT OF PARKS AND RECREATION

P.O. BOX 2390  
SACRAMENTO 95811



June 12, 1986

City of Sacramento  
Department of Parks and Community Services  
1231 "I" Street, Suite 400  
Sacramento, CA 95814  
Attn: Debra Small-Maier

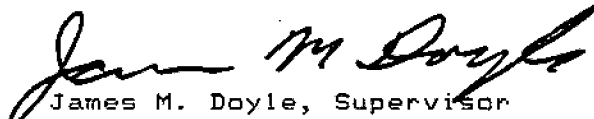
Dear Ms. Small-Maier:

We appreciate the opportunity to respond to the NOP for the Sacramento Zoo Master Plan EIR.

The Department of Park and Recreation's interest in this project concerns the cumulative impact on traffic flows along Sutterville Road and South Land Park Drive that would result from both the zoo expansion and the Department's proposed steam train operation from Old Sacramento to Land Park. The excursion trains would block traffic on Sutterville and, possibly, South Land Park Drive on weekends and holidays during the warm season -- precisely when the greatest crowds would be drawn to the zoo. The EIR, then, should consider the excursion trains in its analysis of traffic impacts.

For questions regarding these comments, please call Roger Willmarth at 324-6419.

Sincerely,

  
James M. Doyle, Supervisor  
Environmental Review Section

cc: Walter Gray, State Railroad Museum



## NATIVE AMERICAN HERITAGE COMMISSION

915 Capitol Mall, Room 288  
Sacramento, California 95814

(916) 322-7791

3 June 1986

Robert P. Thomas, Director  
Parks and Community Services  
City of Sacramento  
1231 T Street, Suite 400  
Sacramento, CA 95814

## CITY OF SACRAMENTO

JUN 06 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Re: Sacramento Zoo Master Plan

Dear Mr. Thomas:

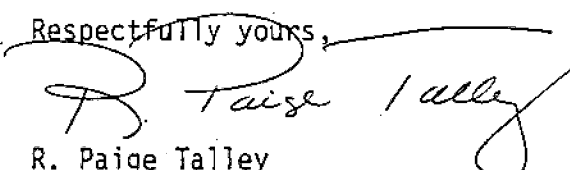
Enclosed, please find a list(s) referencing the Commissioner for your region and the Native Americans from whom you may seek advice, guidance, and consultation regarding the cultural resources contained within the subject property, as well as the potential for religious sensitivity of said property.

The preservation and protection of areas maintaining religious and cultural value for California's Native Americans is the responsibility of the Native American Heritage Commission, pursuant to the Public Resources Code Section 5097.9 et seq. This mandate includes a provision for assistance to Native Americans when human remains are at issue; Section 5097.94 (k). Additionally, and in accordance with the Health and Safety Code Section 7050.5, a representative of the Coroner's office must be notified when human remains are located during any and all phases of a project. If the remains are determined to be of Native American origin, the Commission must be informed, whereupon we will assist, in a timely and dignified fashion, in the protection and preservation of the inhumations/cremations and associated grave goods.

The Commission extends its appreciation in affording us the opportunity for expression of concern and opinion relative to your project. Please be advised that the enclosure(s) is provided as a measure for ensuring that the concerns of the local Native American community are addressed and, therefore, is not for public disclosure.

Please, if you have any questions do not hesitate to call.

Respectfully yours,



R. Paige Talley  
Special Assistant

Enclosure(s)  
RPT:gt

William J. Franklin, Commission Member  
P.O. Box 4  
Sloughhouse, CA 95683

# COUNTY REFERRAL LIST

NAME, ADDRESS TELEPHONE NO.	TRIBAL AFFILIATION	AREA(S)	B	C	R	S	W	OTHER
Sally Goodwin 3345 Fourth Avenue Sacramento, CA 95817 (916) 736-0445	Miwok/Wailaki	Sacramento Amador El Dorado Placer	X	X				
Margaret Franklin Ruvalcaba P.O.Box 4 Sloughhouse, CA 95683 (916) 351-0843	Miwok	Sacramento						
William J. Franklin Regional Commissioner P.O.Box 4 Sloughhouse, CA 95683 (916) 351-0848	Miwok	Sacramento El Dorado						
Sam Starkey 953 Rancheria Road Auburn, CA 95603 (916) 885-2533 (parents) (916) 823-9113 (work) (916) 878-2378 (after 5:00 pm before 8:00 am)	Miwok							
Raymond Tripp (916) 354-2147	Miwok							
Frank LaPena 5859 Woodleigh Drive Carmichael, CA 95608								
Elsie Shilin, Chairman Shingle Springs Rancheria 8005 Westboro Way Sacramento, CA 95823								
Sacramento Indian Center P.O.Box 160194 Sacramento, CA 95816 (916) 448-3797								
Federated Tribes of California Attn: Joe Marine 2727 Santa Clara Way Sacramento, CA 95817								

## KEY:

B: Burial place/Cemetery  
C: Collection Area  
R: Rock art (picto., petro., intaglio, etc.)

S: Sacred/Power area  
W: Worship/Ritual area

CITY OF SACRAMENTO

JUN 06 1986

DEPARTMENT OF  
PARKS AND COMMUNITY SERVICES

Department of Parks and Community Services  
City of Sacramento  
Robert P. Thomas, Director  
G. Erling Linggi, Assistant Director

Dear Sirs,

I was interested in your proposed projects for the zoo and Land Park. I live close to the area, also I am a retire draftsman, and in addition during my school years I was told that I had an above average I.Q...Regardless of these things it was difficult to determine what your proposals entailed..

What would the average person who hadn't worked in a planning office, with little map reading experience understand about it?

Item 1. all plans are labeled 1" = 50' alt..#B-1 is patently of a larger scale than ~~the~~ the three other plans.

Item 2 It has Sutterville Road indicated as a landmark and a north arrow. The North arrow on the others is so stylized as to be unrecognizable.. There are no street designations at all.. 15th a venue mentioned in the text does not appear to be anywhere on any of the maps including the vicinity map.

Item 3 The stylized lettering does not reduce well and with the poor grade of paper the lettering bled until it is completely unintelligible.. Has you draftsman heard of mechanical lettering such as "Leroy" ? Putting letters further apart when they are to be reduced also helps.. Perhaps these were simple presentation maps that were reduced later,

Item 4 A legend is helpful.

. Is the dashed line the proposed zoo limit? Are the whiskers a long Land Park drive contour line? If so what is their relevance and why do they appear only in this area..

As presented, this printed matter is a total waste of tax payers' money. As a tax payer, I tend to resent this. There is 35¢ postage to each recipient, the cost of printing, the paper, cost of time and effort writing text, salary of draftsman, salary of stenographer, etc. I have enclose two maps which have been greatly reduced, older eyes may need a magnifying glass to read them but the lettering no matter how small is perfectly legible. The water ways are hand printed the other lettering is done by mechanical means.

On to the plans.. As far as I can see, except for moving the pony rides, putting in the educational buildings and an overpass the area stays approximately the same except for that small down slope area North of the Zoo which isn't used for anything much but pretty, now.. on. alt..# B3 and Alt. #B3.. However, everything seems to be re-arranged. I can't figure it out--why? Is it for the comfort of the animals, to make it prettier, or just to make it more esthetic, or to spend some money? I can't read the maps and there is no explanation in the text. I feel the public would be interested.

It would be quite expensive to rebuild and tear down all the paths, pens, ponds, grottos etc., especially if you contemplate natural appearing enclosures. Any or all of this might be alright but it is the sort of thing I think the public would like to know.

On to Alt. #B-4-- whop-de-doi! We certainly took a giant leap here. This one looks very expensive. What is the squiggle in the lower right hand corner that looks like an airplane ~~making~~ on a three runway airfield? What happened to the soccer field? Does it move someplace else or just disappear? I like the idea of the overpass for pedestrians, I wish I could make some sense out of the rest of the plans. Pages 2 through 5 of your text could probably <sup>have</sup> been cut to one or two pages for presentation to the general public, maybe with details on request. With a couple of pages of legalistic verbosity and most people would tend to drop the whole thing in the waste basket in angry frustration. I got irritated enough to study it through..

As a suggestion may I present an outline of what I think the public would like to see in a presentation such as this.

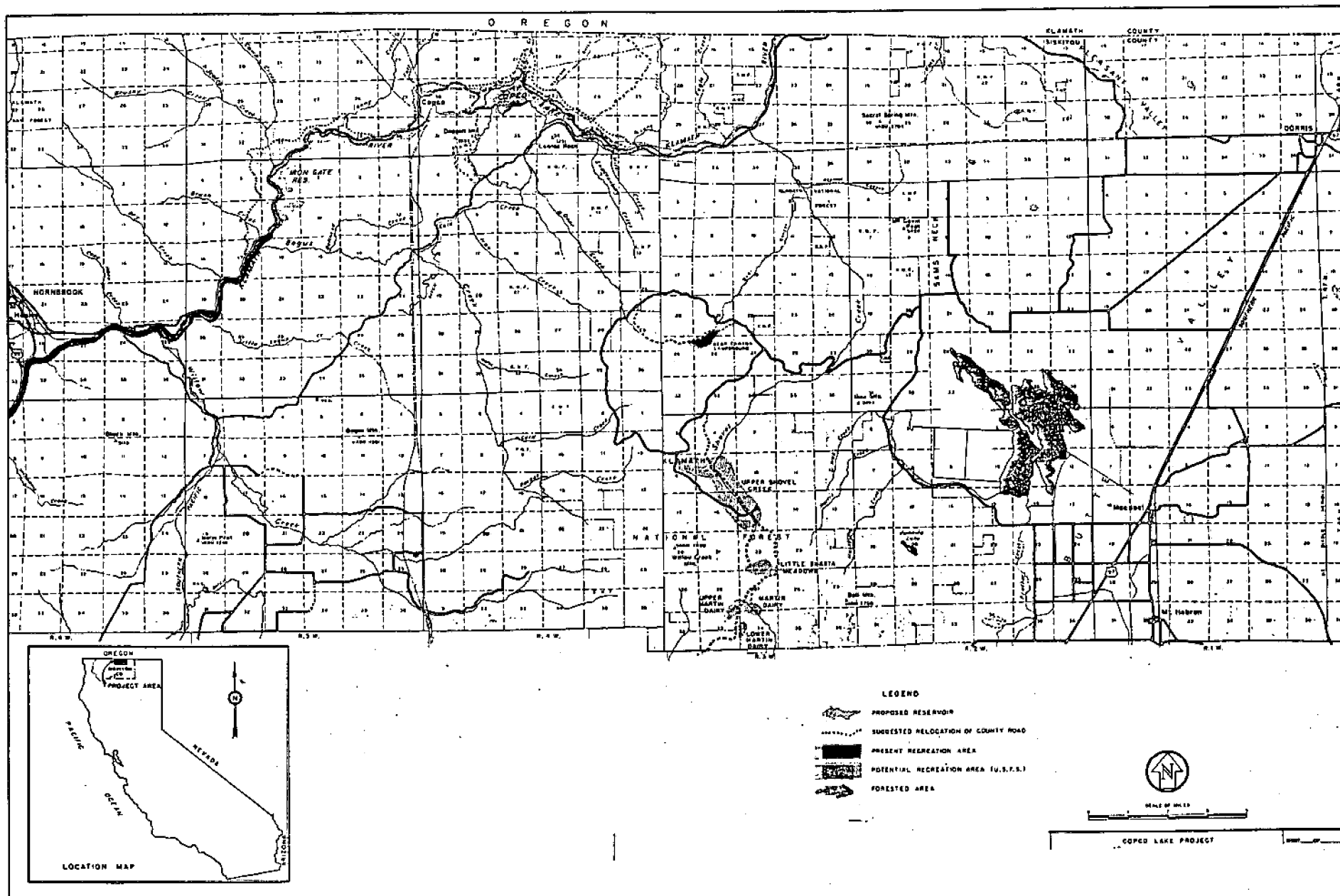
1. What is the project or projects with a simple explanation of enlargements, enhancements and or changes and additions.
2. How will each alternative change the present zoo and park. Increase in size of zoo, addition of educational buildings and overpass etc.. show on map with diagram of change could use hatching or heavier dashed lines or something and a legend.
3. What impact will it have on the surrounding area- homes, traffic, intersections pollution etc. stated simply and to the point we certainly don't need 4 pages to explain that there will be ~~some~~ some environmental impact here. Since we have to wait for the report anyway.
- 4.. What will be the approximate cost of each alternate of the project? Why will the expenditure be worth while in value to the city as a whole.
5. Why will the present zoo be enlarged in preference to moving to a new more roomy location where additions can be made much easier without tearing down and replacing the whole thing.

See-- I have just about covered your whole text in a third of a page. What we need are explanations and diagrams that are direct and to the point. More detail on the maps and less words in the text. We want to know what your plans are-- pages 2 through 5 is just a lot of rhetoric.

This is not just idle criticism, I hate to see all this work relegated to the circular file. At this point I think a straight forward presentation of the various plans and their general effect on the community is all that is required. After all you are just in the planning stage--right?

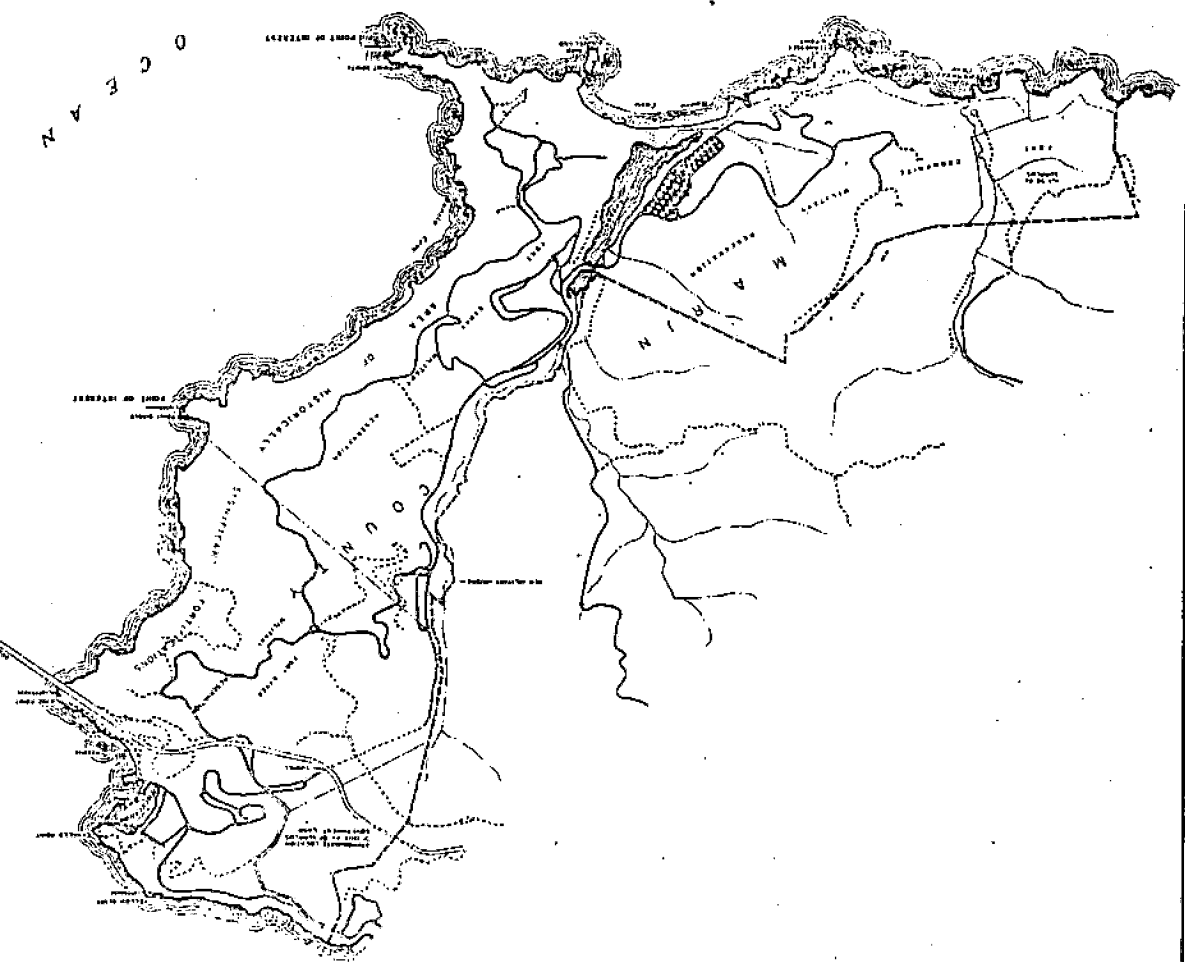
Very sincerely,

A very interested citizen

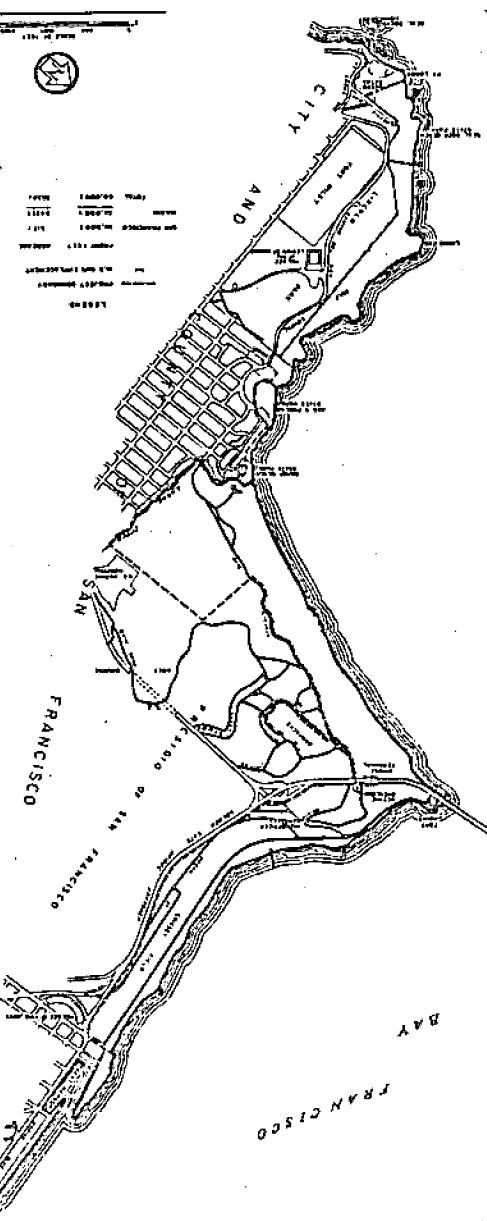


*Letting mechanical  
at cost for water ways*

PACIFIC  
OCEAN



SAN FRANCISCO BAY



PROPOSED GOLDEN GATE PROJECT



LEGEND	SYMBOL	DESCRIPTION
1	[Symbol]	Proposed Project
2	[Symbol]	Existing Project
3	[Symbol]	Proposed Project
4	[Symbol]	Existing Project
5	[Symbol]	Proposed Project
6	[Symbol]	Existing Project
7	[Symbol]	Proposed Project
8	[Symbol]	Existing Project
9	[Symbol]	Proposed Project
10	[Symbol]	Existing Project

*Work this kind of work  
it takes time no matter how much*

1304 Normandy Lane  
Sacramento, CA 95822  
June 1, 1986

CITY OF SACRAMENTO

JUN 04 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Robert P. Thomas, Director  
Parks and Community Services  
1231 "I" Street, Suite 400  
Sacramento, CA 95814

Dear Mr. Thomas,

As homeowners in the South Land Park Hills community we were recipients of your recent Notice of Preparation of a Draft Environmental Impact Report for the Sacramento Zoo Master Plan EIR. In the cover letter, you specifically ask to receive notice of "additional considerations."

Following are some additional considerations:

1. Paramount to its function in the community is the open space and open land in Land Park. Any physical alteration which intrudes a manmade structure into the park setting crowds the eye back into the developed surrounding community, and thereby destroys the openness of the park. For this reason, we are opposed to the construction of a two story building for any purpose either behind Fairy Tale Town, or near the entrance to the Zoo. But we would not oppose the construction of such a structure UNDERGROUND. Such a structure, if properly planned and executed, once completed, would not be an interruption of the openness and landscaping of the existing setting.
2. With proper design, a pedestrian overcrossing between Fairytale Town and the Zoo would be a useful means of eliminating congestion on Land Park Drive. But, again, the design must be one to provide the least intrusion on the openness of the park.
3. Renovation of the Zoo within its existing boundaries would be most acceptable, if it were tied to a ten or fifteen year plan to relocate the Zoo into a more accessible, expandable, and accomodating site elsewhere in the County. Expansion of the current site in any direction would tend to encourage the Zoo constituency that theirs is the primary use of the park, that their site is permanent, and that the park should be turned more and more toward development of facilities to support an ever larger and more attractive Zoo.

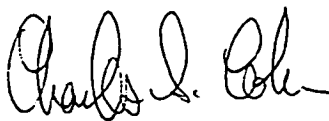


4. Relocation of the amusement concession is also a must; that is, relocation OUT OF Land Park. In no case should this concession be expanded or given a more permanent site within the park. Those who come to use such a concession are there to enjoy crowds and noise. That use is inconsistent with what the park does for the community and the people who live in the community. The pony rides are of the lowkey nature that is consistent with proper use of the park, and are properly located where they are.

5. It is extremely shortsighted on the part of the City to expect the expansion of the Park facilities to provide positive revenues. The real revenues that flow to the City from the large Land Park community come from ever increasing property taxes. The City should encourage development in the area only to the degree that it fosters the maintenance of high quality executive style housing. Such housing is in short supply in the City's heart. The maintenance of those features of the community (space, landscaping, quiet,...) that are attractive in quality housing will more than pay the City in substantial growing tax revenues. The failure to maintain those qualities will cost the City in slow deterioration of the community and gradual erosion of the tax base. It is always attractive to go for the quick dollar today and to let future residents carry the cost.

Park spaces are not just wasted areas more valuably developed into asphalt, with concrete, glass and plastic structures. Park spaces are what maintains in Sacramento habitable communities for creative happy family living. Sacramento does not need more overused regional parks. Sacramento does need to continue to maintain the character and quality of its community parks in the context of their local communities.

Sincerely,



Charles S. Cohn



Mary T. Cohn

6/1/86

Dear Mr Thomas

The following comments are in response to the "Notice of Preparation of a Draft EIR for the Sac Zoo Master Plan EIR" sent to park neighbors by your department.

1) My understanding is that the land for Wm Land Park was donated to the City by Wm + Ann Land to be used for the public. Much of the park is limited in use to specific activities (golf, etc.). Now that the zoo requires payment to enter (& I have no quarrel with that), thereby excluding some of the public, I am in favor of keeping as much of the rest of the park available to the public as possible. Therefore I encourage no or minor expansion of the zoo, alternatives B-1 or B-2.

2) There is presently quite a bit of undeveloped land within the zoo boundaries, as well of many ~~new~~ existing exhibits that need renovating. I suggest that the city and zoo society spend their money on that aspect before they start expanding.

3) Aside from the zoo plan, I would like to bring to your attention an existing awkward situations for bicyclists: getting onto the bike lane legally, without disruption to traffic (car or bike), ~~is~~ going in a northerly direction starting at the intersection of SLP, Del Rio + Sutterville streets. It's also a bit awkward (on fair weather days) to bike around the people loolling about in front of the zoo entrance and concession stand, which is exactly where the bike path aims the bicyclists.

These comments are mine alone. I am not affiliated with any other individual or group.

BR

CITY OF SACRAMENTO

JUN 02 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

June 3, 1986

Robert P. Thomas, Director  
Parks and Community Services  
City of Sacramento

1231 I St. Suite 400  
Sacramento Ca 95814

CITY OF SACRAMENTO

JUN 04 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Dear Sir:

This is in response to the notice of proposed  
EIR for the Sacramento Zoo Master Plan.

Since I grew up in the area, and recently  
was able to move back to this vicinity, I have  
some concerns on the changes to the park. These  
are addressed below.

1. Zoo expansion/renovation (Re: SUMMARY OF  
FINDINGS #4)

I do not think the zoo should be expanded  
unless the addition was located elsewhere.  
For example, the San Diego Zoo has an ex-  
tension where animals roam open fields  
and are viewed from a tram. This concept  
is better for the public and the animals.  
The public sees various animals together as

-2-

they would be in the wild.

If expansion outside the vicinity is not feasible, I would favor Alternative B-2, renovation within existing boundaries. However, I oppose relocation of the amusement and ~~gony~~ rides if it means reduced picnic areas. Free use of the park and picnic areas was the main intent of Mr. Wm. Sand when he donated the area. I am also hesitant about the two-story education building. If construction is inevitable, be sure it is aesthetically in keeping with the surroundings.

The pedestrian crosswalk is a splendid idea, long overdue. (There's also a need for left-turn signals at Sutterville and Land Park.)

## 2. PARKING

Parking should remain FREE, in keeping with the intended use of the park. Parking should only accommodate as many people as the park can handle. Also, to avoid subtracting park

space, underground parking should be considered  
(like Union Square in San Francisco).

### 3. VEGETATION

I grew up in the 50's and somehow I remember  
an abundance of colorful flowers in the park. Now  
I go through the park and, outside of a small  
area near the amphitheater and a few camellias,  
flowers are scarce. When previously there were  
flowers, now there is ivy or groundcover. If costly  
maintenance is an issue, why not consider  
reforestation workers. Casa de las Nieves has been very  
successful at this, and maintain a lovely garden.  
There must be many people, such as apartment  
dwellers, who would love the opportunity to tend a  
garden. Just a thought.

I hope you will consider the above and come up  
with the best way to improve the zoo while  
maintaining the beauty and enjoyment of the rest  
of the park. Thank you for the opportunity  
to comment.

Sincerely,  
Anne S. Clark  
2000 ARGAIL WAY  
SAC CA 95822  
May

1656 Eighth Avenue  
Sacramento CA 95818  
May 29, 1986

Ms. Debra Small-Maier  
Dept. of Parks and Community Services  
1231 "I" Street Suite 400  
Sacramento CA 95814

Dear Ms. Small-Maier,

I am writing in response to the notice of a draft environmental impact report for the Sacramento Zoo Master Plan. I have been a resident of Land Park for over eleven years and enjoy the scenic beauty, open green space, and numerous recreational activities it provides. My son has played in the park since infancy and most recently on the soccer fields as a team member of the Land Park Soccer Club.

As an individual citizen and concerned parent, I strongly object to any of the proposed plans which would eliminate the existing soccer fields which are well used and loved by my son and many other children and parents who belong to Land Park Soccer.

As treasurer and board member of the Land Park Soccer Club I speak for our organization as well in a formal objection to this real threat to our wholesome and positive athletic program. Over six hundred boys and girls play in our club every season with many coaches, parents and friends joining in a community activity which provides fun, exercise, and friendships for the residents of Land Park, Hollywood Park, and other surrounding neighborhoods.

I am sympathetic to the need for improvements at the Zoo but feel it must be accomplished without sacrificing our very important soccer fields.

Thank you for the opportunity to express my views. I look forward to participating in all future discussions and forums regarding this vital matter.

Sincerely,

*Regina F. Gandour M.D.*  
Regina F. Gandour, M.D.

CITY OF SACRAMENTO

JUN 02 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

May 29  
Thursday 1986

Dear Mr. Small-Miller,  
I'm a kid who  
plays soccer. I like to  
play on the fields  
in Sand Park and  
help them to stay  
alive. Please help us  
keep the soccer  
fields.

Sincerely,

John Barker

8 years old

CITY OF SACRAMENTO

JUN 02 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES



# REGIONAL TRANSIT

P.O. BOX 2110 • 1400 29TH STREET • SACRAMENTO, CA 95810-2110 • (916) 321-2800

CITY OF SACRAMENTO

MAY 30 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

May 27, 1986

Mr. Robert P. Thomas, Director  
City of Sacramento  
Department of Parks and Community Services  
1231 I Street  
Sacramento, CA 95814

NAME OF DEVELOPMENT: Sacramento Zoo Master Plan

CONTROL NUMBER: N/A

TYPE OF DOCUMENT: Notice of Preparation of a Draft EIR

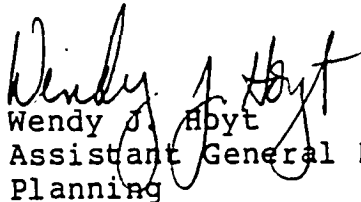
DATE RECEIVED AT RT: May 20, 1986

COMMENTS: RT's riders account for less than 0.1% of the zoo's patronage each day. This is well below an average 2% transit mode sp generated by most facilities in Sacramento. RT is willing to explore and develop a joint marketing and public relations effort with the Department of Parks and Community Services to increase public transit use and reduce traffic congestion impacts to the surrounding community.

RT requests that the traffic analysis to be conducted as part of the EIR discuss public transit and address measures which would increase bus use.

RT also supports the construction of a pedestrian overcrossing at the entrance of the zoo and Land Park Drive. However, RT requests that the overcrossing not interfere with the bus stops and turnouts located at the entrance of the zoo and Land Park Drive.

CONTACT PERSON(S): David Melko, Associate Planner - 732-2262  
Ken DeCrescenzo, Assistant Planner - 732-2254

  
Wendy J. Hoyt  
Assistant General Manager,  
Planning

c: Fred Goodrich, City Planning



OFFICE OF PLANNING AND RESEARCH

TENTH STREET  
SACRAMENTO, CA 95814



DATE: May 20, 1986

TO: Reviewing Agencies

RE: The City of Sacramento Department of Parks & Community Services' NOP for  
The Sacramento Zoo Master Plan EIR  
SCH# 86051906

Attached for your comment is the City of Sacramento Department of Parks & Community Services' Notice of Preparation of a draft Environmental Impact Report (EIR) for the Sacramento Zoo Master Plan EIR.

Responsible agencies must transmit their concerns and comments on the scope and content of the EIR, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of this notice. We encourage commenting agencies to respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Debra Small-Maier  
City of Sacramento  
Department of Parks & Community Services  
1231 I Street, Suite 400  
Sacramento, CA. 95814

with a copy to the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the review process, call Peggy Osborn at 916/445-0613.

Sincerely,

John B. Ohanian  
Chief Deputy Director

Attachments

cc: Debra Small-Maier

We have reviewed subject project or report & have no comments at this time	
<b>COPY</b>	Original signed by Jerry L. Mensch
Regional Manager	
Department of Fish & Game	
Region II	
Date:	MAY 23 1986

Edwin Z. Crawford  
Barbara Crawford  
8404 Bennington Way  
Sacramento, CA 95826  
July 26, 1986

CITY OF SACRAMENTO

JUL 29 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Mr. Robert P. Thomas, Director  
Parks and Community Services  
City of Sacramento  
1231 "I" Street, Suite 400  
Sacramento, CA 95814

Dear Mr. Thomas:

We appologize for not responding sooner to the NOP of the Draft EIR for the Sacramento Zoo Master Plan.

The zoo is the one aspect of William Land Park which serves all the residents of Sacramento. Expansion of the zoo is needed because the existing facilities are overcrowded. People are generally creatures of habit. Many people started using the park because it was free and readily accesible. If the zoo is expanded, some people will go elsewhere for their recreational activity because their habit pattern is broken.

William Land could not have forseen Proposition 13. However, it's a fact of life and we will have to live with it. Expansion of the zoo will improve revenue. It will also provide more space for people who want a quiet atmosphere. At the present time there is a conflict in the park between those who want serenity and those who want loud music and a more active recreational activity.

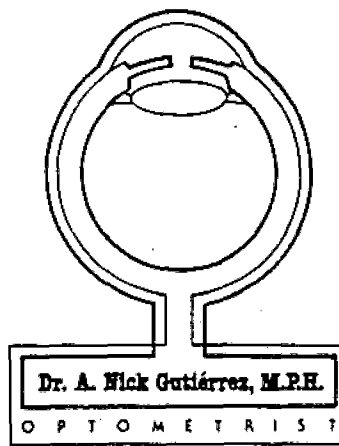
There is excessive pressure on all aspects of the park. Neither No Project nor one of the alternatives will satisfy everyone. After consideration of all the facts, we believe that Alternative No. 4 will provide the greatest benefit to the greatest number of people with the least long term impact on the environment.

Sincerely,

*Edwin Z. Crawford*  
*Barbara Crawford*

Edwin Z. Crawford  
Barbara Crawford

Small-Mail



July 7, 1986

CITY OF SACRAMENTO

JUL 10 1986

DEPARTMENT OF  
PARKS and COMMUNITY SERVICES

Recd. Past the date  
the NOP period  
closed

Robert P. Thomas, Director  
City of Sacramento  
Dept. of Parks and Community Services  
1231 I Street Suite 400  
Sacramento, CA 95814

Dear Mr. Thomas:

Re: EIR for Sacramento Zoo Master Plan

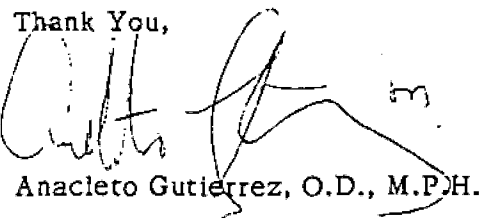
I would like to register my opposition to the zoo expansion at William Land Park and recommend that the City review another alternative in its review of expanding the zoo.

I suggest that the former Union Pacific shops and yards is an excellent location to relocate the zoo. This entire area could be developed into a regional zoo with more than ample area to house the zoo and other regional facilities such as a outdoor amphitheatre.

However, I believe that the alternatives for expansion at the zoo's current location are all unacceptable due to its major impact on the current recreational uses of the park by the greater Sacramento area and its impact on the surrounding communities with the increase in noise, light glare, parking problems, and vandalizing. At present on any given weekend the park is at full capacity with the picnics, zoo attendance, recreational sports, strollers, fairytale, ammusmant rides and pony rides.

Please use my comments in your evaluation of William Land Park expansion.

Thank You,

  
Anacleto Gutierrez, O.D., M.P.H.

AG:tg

Member American Optometric Association

APPENDIX B

Air Quality Modeling Data

## CALINE4 Input Data and Assumptions

### Meteorology

Wind Speed	1 meter per second
Wind Angle	CALINE4 finds worst case
Stability	Pasquill-Turner class F
Mixing Height	1000 meters
Averaging Time	1 hour
Surface Roughness	108 centimeters
Temperature	75 degrees F

### Traffic

Traffic volumes and other data taken from the traffic analysis by Abrams Associates. CALINE4's Intersection Link option was used to account for excess emission by vehicle delays.

### Emission Factors

Emission factors were generated by the CARB's EMFAC7PC computer program. At 10 mph, the assumed average cruise speed in the vicinity of a signalized intersection, the emission factors were 36.9 grams/mile and 18.6 grams/mile in 1988 and 2005, respectively.

### CO Background Concentration

Because no CO monitoring is being done either in downtown or southern Sacramento, no data on the CO background in the vicinity of the Zoo is readily available. After consultations with Paul Allen and Jeffrey Cooke of the CARB and Bruce Nixon of the Sacramento County APCD the following methodology to estimate a CO background was adopted: Data from nearby stations in the southern Sacramento Valley Air Basin (i.e., the Woodland station in

Yolo County and the Citrus Heights station in northeastern Sacramento County) were reviewed to select the highest one-hour and eight-hour CO concentrations measured there during winter and summer periods over the past three years. Ratios of eight-hour/one-hour and summer/winter CO concentrations were calculated. The existing summer one-hour CO background near the Zoo was taken as the average of the highest one-hour CO concentrations measured at the two stations from 1984 to 1986 (i.e., 5.2 ppm). The existing summer eight-hour CO background near the Zoo (i.e., 2.9 ppm) was obtained by multiplying the one-hour background by the average eight-hour/one-hour ratio (i.e., 0.55) at the two stations. Table B-1 summarizes the available monitoring data and calculated ratios. Future CO background concentrations were assumed to remain at existing levels because Sacramento County CO emissions are projected to remain approximately constant into the foreseeable future. The emissions data was obtained from the Report on Reasonable Further Progress During the Calendar Year 1983, SACOG, March 1985.

Table B-1

Comparison of Highest Measured Carbon Monoxide Levels During Summer  
and Winter Periods in the Southern Sacramento Valley Air Basin

	Summer 1984		Winter 1984		Summer/Winter Ratio 1984	
	SCTO	WDL	SCTO	WDL	SCTO	WDL
Highest 1-hour	6.0	6.0	9.0	9.0	0.67	0.67
Highest 8-hour	NA	NA	5.1	4.1	NA	NA
8-hour/1-hour Ratio	NA	NA	0.57	0.46		
	Summer 1985		Winter 1985		Summer/Winter Ratio 1985	
	SCTO	WDL	SCTO	WDL	SCTO	WDL
Highest 1-hour	6.0	6.0	9.0	12.0	0.67	0.50
Highest 8-hour	NA	NA	7.4	4.9	NA	NA
8-hour/1-hour Ratio	NA	NA	0.82	0.41		
	Summer 1986		Winter 1986		Summer/Winter Ratio 1986	
	SCTO	WDL	SCTO	WDL	SCTO	WDL
Highest 1-hour	5.0	2.0	11.0	13.0	0.45	0.15
Highest 8-hour	NA	NA	6.1	6.0	NA	NA
8-hour/1-hour Ratio	NA	NA	0.55	0.46		

CO concentrations given in parts per million; NA = Not Available

Stations: Sacramento County, Citrus Heights (SCTO)  
Yolo county, Woodland (WDL)

Source: California Air Quality Data, California Air Resources Board, 1984-1986.

APPENDIX C

Traffic & Parking Data



Sacramento Zoo  
Parking Surveys  
Sunday, March 6, 1988

Parking Location		Total No. of Spaces	Number of Spaces Occupied					
			10am	11am	12pm	1pm	2pm	3pm
<u>Area 1 - 16th/17th/Golf Clubhouse</u>								
1.1	16th Avenue	42	26	42	42	42	42	42
1.2	17th Avenue	136	13	52	114	124	134	118
1.3	Clubhouse	26	24	25	28	27	24	25
1.4.1	Aisle 1	35	32	23	35	32	34	37
1.4.2	Aisle 2	25	24	19	25	25	25	25
1.4.3	Aisle 3	25	18	18	25	26	24	26
1.4.4	Aisle 4	25	11	23	25	25	24	25
1.4.5	Aisle 5	24	11	28	24	24	25	25
1.4.6	Aisle 6	28	12	20	28	27	24	25
Total		366	171	240	346	352	356	348
<u>Area 2 - 15th Avenue Parking</u>								
2.1	Diagonal	87	57	84	87	87	87	85
2.2	On-Street	133	0	34	70	134	134	115
<u>(Fairytale Town)</u>								
2.3.1	Aisle 1	22	6	9	16	22	19	16
2.3.2	Aisle 2	20	0	6	15	20	17	6
2.3.3	Aisle 3	23	0	3	19	23	15	11
2.3.4	Aisle 4	24	0	0	15	24	23	13
2.3.5	Aisle 5	27	0	5	12	27	25	13
2.3.6	Aisle 6	26	0	4	7	26	21	15
2.3.7	Aisle 7	26	0	11	26	26	25	19
2.3.8	Aisle 8	24	0	10	24	24	23	17
2.3.9	Aisle 9	16	1	0	0	16	14	4
2.3.10	Aisle 10	9	1	1	4	10	6	2
2.3.11	Aisle 11(R)	6	2	1	2	2	2	0
Total		443	67	168	297	441	411	316

Sacramento Zoo  
Parking Surveys

Sunday, March 6, 1988  
(Continued)

Parking Location		Total No. of Spaces	Number of Spaces Occupied					
			10am	11am	12pm	1pm	2pm	3pm
<u>Area 3 - 13th Avenue/15th Avenue</u>								
3.1	15th Avenue E.	42	10	44	42	42	43	40
3.2	15th/13th Avenue	100	7	23	57	97	102	71
3.3	13th Street	95	3	11	45	71	95	61
3.4	West Land Park	0	0	0	0	0	0	0
3.5	Bartley Drive	70	19	21	22	33	44	34
Total		307	39	99	166	243	284	206
<u>Area 4 - Sutterville Road On-Street Parking</u>								
4.1	On-Street	200	12	14	31	57	78	75

Sacramento Zoo  
Parking Surveys  
Summary

Sunday, March 6, 1988

Parking Location	Total No. of Spaces	Number of Spaces Occupied					
		10am	11am	12pm	1pm	2pm	3pm
<u>Parking Lots</u>							
Fairytale Town	223	10	50	140	220	190	116
Golf Clubhouse	188	132	146	190	186	180	188
Total Lots	411	142	196	330	406	370	304
<u>On-Street Spaces</u>							
Angel-15th Avenue	87	57	84	87	87	87	85
16th/17th Avenues	178	39	94	156	166	176	160
15th Avenue	133	0	34	70	134	134	115
13th/15th (N)	237	20	78	144	210	240	172
Sutterville Road	200	12	14	31	57	78	75
Total On-Street	835	128	304	488	654	715	607
Grand Total	1,246	270	500	818	1,060	1,085	911

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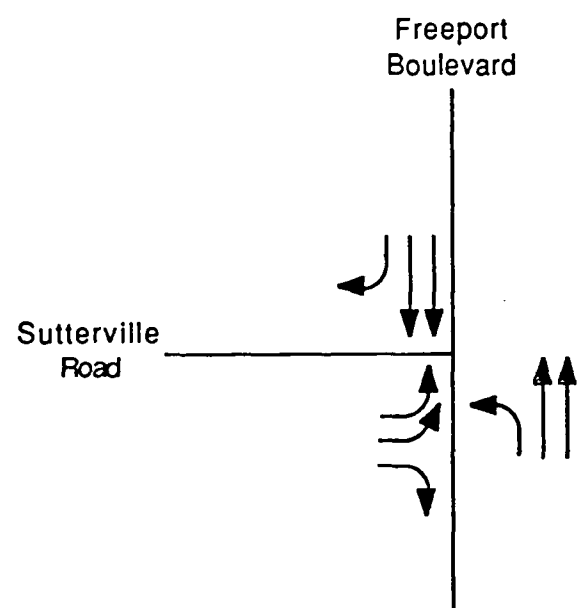
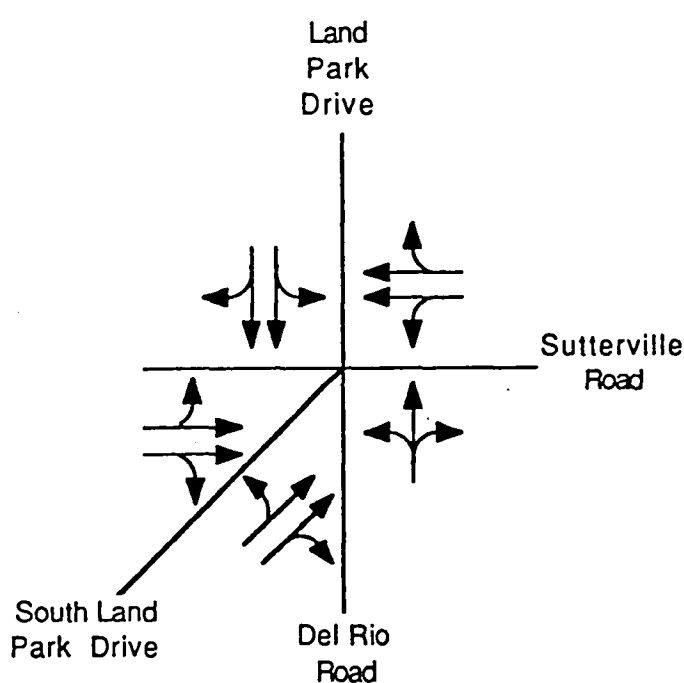
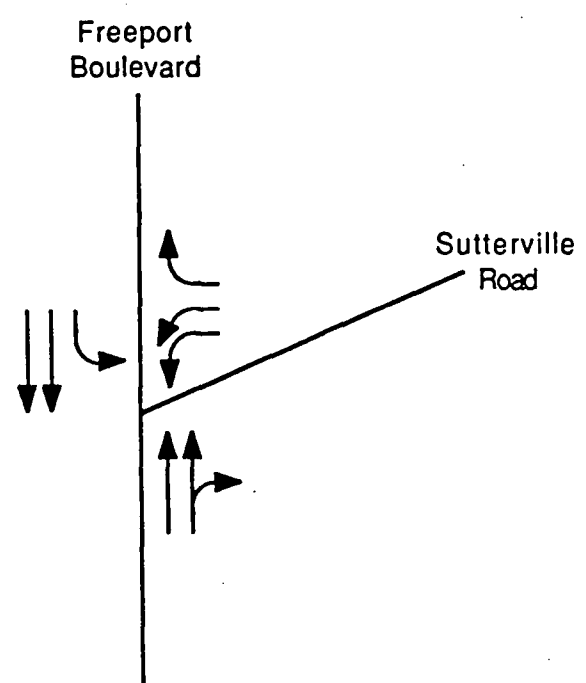
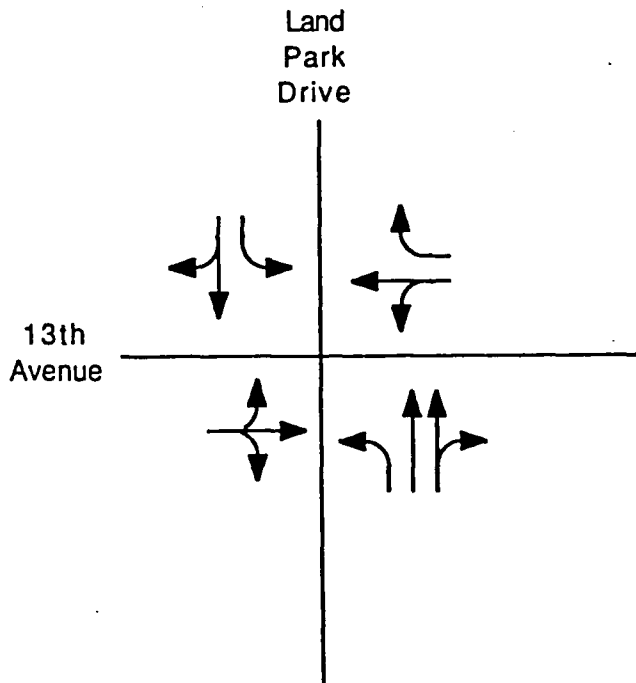
Hourly Attendance Data  
Typical Sunday

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Hour	Zoo Entries	Fairytale Town Entries
9-10 AM	83	---
10-11 AM	429	165
12-12 AM	687	263
12- 1 PM	872	359
1- 2 PM	1,000	465
2- 3 PM	1,005	493
3- 4 PM	557	405
4- 5 PM	---	76
Totals	4,627	2,226

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Sacramento Zoo  
Master Plan  
Traffic Analysis

Figure

Intersection  
Lane Configurations

Abrams Associates