

## Section 1.4: Facilities Maintenance

- ◆ **The Zoo is an aging facility that has experienced many years of unfunded and deferred maintenance under the City’s Recreation and Park Department and now under the San Francisco Zoological Society. The effect of deferred maintenance has been compounded by aging facilities, limited funds, and a harsh ocean climate.**
- ◆ **A review of USDA inspection reports from 1994 to 1999 shows that the Zoo is not adequately responding to violations that have been identified by the USDA. It is the responsibility of the Zoo to evaluate all structures and exhibits in the Zoo in light of the nature of the violations identified in the USDA inspections, make such repairs and replacements throughout the Zoo, and to establish a schedule of periodic inspections. Therefore, we recommend that Zoo management develop a maintenance quality control program to ensure that significant maintenance items are identified and addressed prior to USDA inspections.**
- ◆ **As of July 7, 1999, the Zoo had a total of 173 maintenance requests pending. The requests range from the minor, such as requests to fix dripping faucets, to major repair projects in need of outsourcing, such as repairing floors and grading exhibit areas. The oldest dated request had been submitted two years prior to July 7, 1999.**
- ◆ **We found that, out of a total of 292 maintenance requests which were submitted during 1998, 227 or 78 percent were completed as of July 7, 1999 and 65 requests or 22 percent were still pending, six months to one and a half years after they had been submitted. Of the 65 work orders still pending, 32 were deemed to be “emergency” or “critical.”**
- ◆ **The Zoo will need to continue to enhance its animal care and the quality of its visitor experience, as well as address USDA compliance issues while the new Phase II capital projects are being constructed. We recommend that Zoo management increase the maintenance department to address deferred maintenance items until maintenance is reasonably caught up. In order to accomplish this without increasing operating costs, new maintenance employees should be assigned strictly to Phase II program repair items, thereby qualifying all costs for the force-account labor category in the Phase II program. – Zoo management has recently received approval to use force-account labor to perform necessary construction work related to its Phase II “Repair and Replacement” project.**

As part of this management audit, the Budget Analyst reviewed the state of facilities maintenance at the Zoo. In order to assess maintenance of the Zoo's facilities, we:

- Obtained and reviewed the Zoo's work order maintenance logs;
- Reviewed United States Department of Agriculture (USDA) inspection reports from 1994 to 1999;
- Observed Zoo facilities;
- Interviewed Zoo maintenance personnel and management;
- Obtained the services of the current director of the Oakland Zoo who issued a report, which in part addressed maintenance issues.

### **Assessment of Facility Conditions**

The Zoo is an aging facility that has experienced many years of unfunded and deferred maintenance under the City's Recreation and Park Department. The effect of deferred maintenance has been compounded by aging facilities and the harsh ocean climate. The oldest buildings still in use by the Zoo were built in the 1920s and 1930s, many as Works Progress Administration (WPA) projects, including the Elephant House, Lion House, and bear grottos. Other major sections of the Zoo were completed in the 1960s and 1970s such as the Africa Scene, Insect Zoo, and the Animal Hospital. Later developments in the 1980s and 1990s were the Primate Discovery Center, Wolf Woods, Musk Ox Meadow, Gorilla World, Penguin Island, Koala Crossing, Otter River, Feline Conservation Center, and the Australian WalkAbout.

As reported in the Zoo's 1996 Bond Program Report, nearly three-fourths of the Zoo needs to be rebuilt. Many of the old doors that lead into and out of the exhibit areas do not function properly and expose animal keepers to unnecessary risk. Most of the older facilities are severely out of date and in a state of poor maintenance. The concrete shelters built by the WPA are no longer appropriate animal habitats, nor are exhibits that require animals to be moved into separate quarters every night. In addition, visitor facilities including restrooms, food services, and playgrounds are substandard and inadequate.

## **USDA Inspection Findings**

The United States Department of Agriculture's (USDA) Animal and Plant Health Inspection Service is charged with enforcement of the federal Animal Welfare Act. USDA veterinary inspectors make routine, unscheduled visits to ensure that all sites licensed under the animal Welfare Act are in compliance with federal guidelines. A review of USDA inspection reports from 1994 to 1999 shows that the majority of the citations issued by the USDA concerned maintenance and repair of animal enclosures at the Zoo.

Violations found by the USDA are put into one of four categories, with Category IV as most serious. Category IV violations are those of which the Zoo has already been informed and have either not been addressed or have recurred. These violations are not just site specific. For example, if the Zoo receives a warning about peeling paint in one area the first violation will carry a Category I violation. However, if any instances of peeling paint are subsequently observed elsewhere in the Zoo, the Zoo will receive a Category IV violation. In such cases, the USDA assumes that the licensee is knowingly violating federal regulations.

The 1994 to 1999 USDA reports show that during this period, the Zoo has been making mandated repairs to areas which have been specifically identified by the USDA but has not made adequate efforts to identify and address similar deficiencies in other locations. In the most recent inspection report of February 22-24, 1999, the Zoo received three Category IV citations for previously identified items. The USDA found that the specific problems identified in the prior reports had been addressed but that the same problems were occurring elsewhere. For example, the USDA cited rusting wire mesh and areas in need of floor repair in the Primate Discovery Area and noted that the Zoo has been cited for these same types of violations in the Primate Discovery Area in the past. According to the USDA, the Zoo has made repairs in only those areas that were cited in prior inspections instead of resolving the problem in all areas of the exhibit. The Zoo advises that it is planning on addressing these items throughout the exhibit later this year.

The Zoo faces many challenges in addressing in its critical maintenance needs, including limited funding, old facilities, years of deferred maintenance, and the ocean climate. However, it is not the USDA's responsibility to identify and cite similar deficiencies in all specific locations in the Zoo. Instead, it is the responsibility of the Zoo to evaluate all structures and exhibits in the Zoo in light of the nature of the violations identified in the USDA inspections, make such repairs and replacements throughout the Zoo, and establish a schedule of periodic inspections. Therefore, we recommend that Zoo management develop a maintenance quality control program to ensure that significant maintenance items are identified and addressed prior to USDA inspections.

## General Maintenance Completion Rate and Backlog

The current Zoo maintenance staff consists of 12 FTEs with skills in plumbing, carpentry, electrical work and general maintenance. In general, repair requests are submitted on work order forms by staff throughout the Zoo. In addition, maintenance staff report that a large volume of requests are submitted verbally, primarily for more minor repairs. Requests, which are submitted on work order forms, are assigned the following priority codes which are then logged into a database:

**1 = Emergency** (includes USDA cited item or Safety Hazard of any magnitude). Must be mitigated immediately and has probably already been requested verbally. *Examples of currently pending Emergency items include: repair jaguar exhibit holding mesh chewed by animal; repair unstable gate and replace back perimeter fence in the giraffe exhibit; replace rotten wood in wild dog exhibit door with hole large enough for dog head; patch cracks in Commissary floor; and repair broken food stand windows.*

**2 = Critical.** Situation is stable but repercussions to the operations are severe. *Examples of currently pending Critical items include: repair rope climbing structure in Children's Zoo; repair leaky roof in carnivore staging area; repair hole in floor and crack in island of the sea lion exhibit; repair Asian rhino door latching mechanism; replace hinge on Lion building kitchen door.*

**3 = Needed.** The situation is being managed but there is a persistent negative effect on operations, safety, etc. *Examples of currently pending Needed items include: stabilize inflow at the Children's Zoo South Pond to prevent damage; replace food stand fence post; repair pool valve in elephant barn; install new rollers in aviary door between kitchen and exhibit; paint Children's Zoo nursery.*

**4 = LAFNBNS** (limping along for now but needed soon). The situation can be managed indefinitely but resolution would create positive effects on operations. *Examples of currently pending LAFNBNS items include: install radiant heater in Pygmy hippo exhibit; fill and regrade area in front of zebra yard holding pens; remove kiosk that housed computer enrichment device in Feline Conservation Center; fill in holes in black rhino yard and adjust service gate; fix door in Graphics Department.*

**5 = Stable.** Staff have gotten so used to working around it that it is essentially considered normal but resolution would have positive effects on operations. *There are no Priority 5 maintenance requests currently pending.*

To determine the maintenance completion rate and backlog of requests, we examined the Zoo's maintenance logs. As of July 7, 1999, the Zoo had a total of 173 maintenance requests pending. The requests range from minor, such as requests to fix dripping faucets, to major repair projects in need of outsourcing, such as repairing floors and grading exhibit areas. The oldest dated request had been submitted two years prior to July 7, 1999.

Under the Zoo's maintenance record keeping system, the date a requested repair was made is not recorded. Instead, completed projects are simply moved to a list of completed items, with no indication of the date on which they were completed. Therefore we were unable to determine the amount of time that had elapsed between the date a repair request was submitted and the date that the repair was completed.

Instead, in order to examine the Zoo's maintenance requests and develop assessment of the completion rate, we examined all repair requests submitted during 1998. A summary of those work orders is shown below:

**Table 1.4.1**  
**1998 Zoo Maintenance Work Order Requests**

	<u>Number</u>	<u>Percent</u>
Completed as of 7/7/99	227	78%
Pending as of 7/7/99	<u>65</u>	<u>22%</u>
Total received in 1998	292	100%

*Average monthly requests: 24*

As shown in Table 1.4.1 above, a total of 292 maintenance requests were submitted during 1998. Of those, 227 or 78 percent were completed as of July 7, 1999, and 65 requests or 22 percent were still pending. The data were further evaluated to determine the nature of the pending requests. It was found that the 65 requests submitted in 1998 that were still pending were prioritized as follows:

**Table 1.4.2**  
**1998 Maintenance Requests Still Pending, by Priority Level**  
**As of 7/7/99**

	<u>Number</u>
Priority 1 (Emergency)	2
Priority 2 (Critical)	30
Priority 3 (Needed)	20
Priority 4 (LAFNBNS)	7
Priority 5 (Stable)	0
No Priority Level Indicated	<u>6</u>
	65

As shown in Table 1.4.2 above, there were 32 repair requests which had been submitted from 6 through 18 months prior and were determined to be emergency or critical situations, those which needed to be mitigated immediately or were determined to have severe repercussions to operations. Twenty of the repair requests were for Priority 3 “needed” repairs that indicate that the situation is being managed but there is a persistent negative effect on operations and/or safety.

Among the 32 repair requests which were deemed to be emergency or critical situations were repair and replacement of exhibit animal enclosure and visitor barrier fences; locks and doors to animal exhibits; damaged mesh in animal enclosures; and improvements required for animal enclosure areas subject to flooding.

## **Phase II (New Zoo) Repairs and Renovations**

Under the Phase II plan, over \$75 million in public and private funds will be used to build new exhibits and renovate existing exhibits with nearly \$2.5 million of that amount allocated to repair and replacement projects. Repair and replacement projects include critically needed improvements to existing exhibits identified by the USDA such as to repair the bear grotto roofs, repair the wire mesh in the Primate Discovery Center, and replace the chimpanzee climbing structure. Of the \$2.5 million, \$0.5 million is earmarked for emergency maintenance. In addition, Phase II includes a new warehouse facility that will address the Zoo’s limited storage capacity issues for the Zoo Maintenance Department’s equipment and supplies.

The Zoo will need to continue to enhance its animal care and quality of its visitor experience, as well as address USDA compliance issues while the new Phase II capital projects are being constructed. We recommend that Zoo management increase the maintenance department to address deferred maintenance items until maintenance is reasonably caught up. In order to accomplish this without

increasing operating costs, new maintenance employees should be assigned strictly to bond-approved repair items, thereby qualifying all costs for the force-account labor category in the Phase II program. According to the Zoo's Phase II expenditure plan, \$2,470,000 has been earmarked for repair and replacement projects.

The Zoo expects to realize steadily increasing revenues from improved attendance, and revenue-generating special functions and events as the Phase II improvements get underway and new exhibits are opened. It is planned that a portion of these increased revenues would be used to support the expansion in maintenance services once the funds set aside for Phase II repair and replacement projects have been exhausted.

## **CONCLUSIONS**

The Zoo is an aging facility that has experienced many years of unfunded and deferred maintenance while under the management of the City's Recreation and Park Department and under the San Francisco Zoological Society. The effect of deferred maintenance has been compounded by aging facilities and the harsh ocean climate. The SFZS has been working to address maintenance issues at the Zoo and faces many challenges in addressing its critical maintenance needs, including limited funding, old facilities, years of deferred maintenance, and the ocean climate.

A review of USDA inspection reports from 1994 to 1999 show that the Zoo is not adequately responding to violations, which have been identified by the USDA. It is the responsibility of the Zoo to evaluate all structures and exhibits in the Zoo in light of the nature of the violations identified in the USDA inspections, make such repairs and replacements throughout the Zoo, and to establish a schedule of periodic inspections. Therefore, it is recommended that Zoo management develop a maintenance quality control program to ensure that significant maintenance items are identified and addressed prior to USDA inspections.

As of July 7, 1999, the Zoo had a total of 173 maintenance requests pending. The requests range from the minor, such as requests to fix dripping faucets, to major repair projects in need of outsourcing, such as repairing floors and grading exhibit areas. The oldest dated request had been submitted two years prior. We found that, out of a total of 292 maintenance requests that were submitted during 1998, 227 or 78 percent were completed as of July 7, 1999 and 65 requests or 22 percent were still pending, six months to one and a half years after they had been submitted. Of the 65 work orders still pending, 32 were deemed to be "emergency" or "critical."

The Zoo will need to continue to enhance its animal care and the quality of its visitor experience, as well as address USDA compliance issues while the new Phase

II capital projects are being constructed. We recommend that Zoo management increase the maintenance department staff to address deferred maintenance items until maintenance is reasonably caught up. In order to accomplish this without increasing operating costs, new maintenance employees should be assigned strictly to Phase II program approved repair items, thereby qualifying all costs for the force-account labor category in the Phase II program. – Zoo management has recently received approval to use force-account labor to perform necessary construction work related to its Phase II “Repair and Replacement” project.

## **RECOMMENDATIONS**

The Zoological Society should:

- 1.4.1 Develop a maintenance quality control program to insure that significant maintenance items are identified prior to USDA inspections.
- 1.4.2 Improve its maintenance work order log system by recording the date work orders were completed in order to provide Zoo management with improved record keeping and controls over the timeliness of repairs.
- 1.4.3 Increase the maintenance department staff to address deferred maintenance items until maintenance is reasonably caught up. In order to accomplish this without increasing operating costs, new maintenance employees should be assigned strictly to the Phase II program approved repair items, thereby qualifying all costs for the force-account labor category in the Phase II program.

## **COSTS/BENEFITS**

The recommendations contained in the section will provide better quality controls, improve operations, and enhance the quality of animal exhibits and other facilities at the Zoo. Our recommendations will not result in any increase in Zoo operating costs since the recommended increase in maintenance department staff to address deferred maintenance items should be assigned strictly for the Phase II program approved repair items, thereby qualifying all costs for the force-account labor category in the Phase II program.