

Santa Barbara Zoological Gardens Permanent Pollution Prevention Plan

For the purpose of the Permanent Pollution Prevention Plan, the Zoo campus has been divided up into Zones A, B, C and D (see Sheet A1.1) The Zones are based up on watershed areas on the campus all which emanate from the hilltop open space. Within these Zones lie the Zoo's Master Plan projects.

Pollution Prevention Measures – Master Plan Project Introduction

Cats of Africa – The Cats of Africa exhibit was completed as part of the Master Plan in 2002. The exhibit scope of work included not only drainage and pollution prevention measures for the exhibit space itself, but also improvements for Zone A and portions of Zone D. A bio swale of approximately 700' along with two bio basins were constructed to capture and treat runoff in Zone A. Additionally in Zone D, repairs to approx 200' of existing concrete swales and service vehicle roadways were made. These swales were tied into another swale and bio basin system along Cabrillo Boulevard.

Asian Elephant – The renovation of the Asian Elephant exhibit saw pollution prevention improvements made to Zone B. Much of the western portion of the Zoo hilltop drains to the Asian Elephant Exhibit. During the course of construction pathways were regraded and area drains added through out the project. The surface flow for much of Zone B is now directed into the existing Gibbon Moat. This serves two purposes, the surface runoff for Zone B now serves as a major source of water for the moat reducing the Zoo's water consumption and the moat acts as a bio basin. In cases of large storms, the Gibbon Moat has an overflow valve and drains into another bio basin located directly to the east.

Discovery Pavilion – The Discovery Pavilion will be located in Zone C. The project entails demolishing several low lying existing buildings and animal holding areas and construction a new multi use building which will house education, staff and animal food kitchen functions. Zone C flow from south to north, Zone C also includes the Zoo parking lot which also flows from south to north. City of Santa Barbara approved pollution interceptors will be placed on all area drains in the driveways along the northern property line and the drop inlet in the main parking lot.

Wave – The Wave project located in Zone B is a renovation of the existing hilltop facilities including bridal changing rooms, restrooms and concession area. The north and east portions of the hilltop flow toward the bio basins in Zones A and B, the surface flow from this area will be directed to both existing and new area drains.

Condor Exhibit – The new Condor exhibit will be located in Zone B at the site of a former Bald Eagle exhibit. The exhibit slope away from the hilltop toward the northern property line and surface flow will be directed to the existing bio basins in Zones A and B.

Service Yard Renovation – The existing service located in Zone D will receive a remodel and other service type functions which are currently located elsewhere will be consolidated here. The road and associated concrete swale through the Service Yard was reconstructed during the Cats of Africa project. These improvements tie into the bio basin located on the southern edge of the Zoo along Cabrillo Blvd. The Service Yard Renovation project will include area drains with filter inserts for all driveways within the Service Yard.

Sumatran Tiger – The Sumatran Tiger exhibit will be located in Zone C. The project footprint is within previously developed exhibit area. As detailed in the Discovery Pavilion section above, the Tiger exhibit area will utilize the site improvements to be implemented by the Discovery Pavilion. The surface flow will be directed via area drains w/ City approved pollutant interceptor devices toward the northern property line.

Pollution Prevention Plan - Existing Conditions

Cats of Africa – The Cats of Africa exhibit was completed as part of the Master Plan in 2002. The exhibit scope of work included not only drainage and pollution prevention measures for the exhibit space itself, but also improvements for Zone A and portions of Zone D. A bio swale of approximately 700' along with two bio basins were constructed to capture and treat runoff in Zone A. Additionally in Zone D, repairs to approx 200' of existing concrete swales and service vehicle roadways were made. These swales were tied into another swale and bio basin system along Cabrillo Boulevard.

Asian Elephant – The renovation of the Asian Elephant exhibit saw pollution prevention improvements made to Zone B. Much of the western portion of the Zoo hilltop drains to the Asian Elephant Exhibit. During the course of construction pathways were regraded and area drains added through out the project. The surface flow for much of Zone B is now directed into the existing Gibbon Moat. This serves two purposes, the surface runoff for Zone B now serves as a major source of water for the moat reducing the Zoo's water consumption and the moat acts as a bio basin. In cases of large storms, the Gibbon Moat has an overflow valve and drains into another bio basin located directly to the east.

Pollution Prevention Plan – Proposed Measures

Discovery Pavilion – With the construction of the Discovery Pavilion project, pollution interceptor inserts will be placed in all storm water drains along the western property line, from the Bird Refuge to Mission Creek and main parking lot drop inlet. This portion of the property is the lowest in grade and the most developed without any area for bio basins. Additionally two exhibits which are not currently on sewer, Leopards and Geoffrey Cats, will be converted to sewer from french drains.

Wave & Condor – The Wave will be constructed in conjunction with the Condor project due to their proximity to one another. All existing and new area drains will direct storm water toward the existing bio basins located in Zones A and B.

Service Yard - The road and associated concrete swale through the Service Yard were reconstructed during the Cats of Africa project. These improvements tie into the bio basin located on the southern edge of the Zoo along Cabrillo Blvd. The Service Yard Renovation project will include area drains with filter inserts for all driveways within the service yard and provide two new bio-swales through the project site which will handle storm water coming down from the animal exhibits and pathways above the Service Yard in Zone D as well as runoff from the Service Yard Structures. Please see below for details pollution prevention measures regarding materials handling and service functions within the Service Yard.

Sumatran Tiger – The project will make use of the pollution prevention improvements implemented by Discovery Pavilion.

Other Activities –

Pond Maintenance – Ponds are bodies of water not contained in an animal space. The ponds located on the campus all drain to existing sewer lines including their overflow lines. No chemicals are used to treat the ponds and all work with bio filtration.

Pool Maintenance – Pools are bodies of water which are contained within animal spaces. Currently, all pools drain to existing sewer lines including their overflow lines. No chemicals are used to treat the pools and all work with bio filtration.

Animal Waste Management – Solid animal waste is picked up daily by Zoo staff and deposited in trash dumpsters or in the case of Elephants, green waste dumpsters. The dumpsters are picked up three times per week. All hardscape areas are daily washed down and drain to sewer.

Veterinarian Hospital – All operations and material storage are handled inside of the hospital building. All equipment clean out areas are located inside the building and drain to sewer.

Zoo Train – Currently the train is serviced inside the covered Zoo Train Barn. Oil and gas is stored in drums with secondary containment systems, these drums are also stored within the Zoo Train Barn. Used oil is collected and disposed of by a professional company. The new Zoo Train Barn will be a part of the Service Yard Renovation. All service and materials storage will be within covered areas.

Food Service – The animal food preparation and storage is done inside the current animal kitchen and food area. All food is prepared raw with no cooking. The food kitchen is serviced by existing sewer. The animal kitchen and storage will be re located to the Discovery Pavilion and will again be located inside and connected to sewer. Food preparation for the existing public restaurant and future Wave concession area does and will continue to take place inside the existing restaurant. Wash off areas outside drain to a grease interceptor and then onto the sewer.

Vehicle Maintenance – All vehicle maintenance is done off site. Vehicle washing is currently done on site in the Service Yard and drains to an existing bio swale. This practice will be modified after the Service Yard renovation.

Infrastructure Maintenance – All paint brushes are cleaned in a sink that drains to sewer. Hand tools are cleaned outside and is a practice that will be modified w/ the Service Yard renovation. The welding, carpentry, metal shops and material storage (paints, cements, stains, sealers caulks...) are all located inside currently and will continue to be so after the Service Yard renovation. All hardscape (pathways, parking lot and sidewalks) are swept three times per week. As part of Zoo policy, all Zoo Staff from the Director to Grounds are required to pick up litter seven days per week. Trash and recycling cans are located throughout the Zoo for public use. All trash dumpsters have lids and are required to be closed. If a case arises that Zoo staff cannot clean or clear a clogged main sewer line, Marborg is used to make repairs.

Material Deliveries, Disposal & Storage –

Food for both animal and public consumption is stored inside (restaurant, animal food storage room and hay barn). Any excess food is disposed of in trash or green waste dumpsters depending on type.

Gas, diesel and oil are stored in drums w/ secondary containment, these drums are stored inside covered areas. McCormick's delivers gas, diesel and oil to the campus.

Construction materials are purchased for specific projects or maintenance and are used immediately for construction. Used paint and cleaning supplies are collected and disposed of at UCSB. Construction waste is disposed offsite by Marborg.

All chemical cleaning materials used by housekeeping or grounds staff are stored indoors.

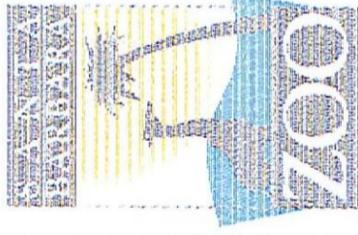
All veterinary medical supplies are stored under lock and key in the hospital.

Water & Sewer – Public water, reclaimed water and sewer serve the campus. All animal exhibit spaces and public areas are supplied by public water. Irrigation for the campus outside of animal spaces is supplied by reclaimed water. Water for the existing Fox exhibit and proposed Condor exhibit emanates from an existing onsite well. Water from the well tumbles down a waterfall and flows to the Bird Refuge.

Landscaping – No pesticides are used on the Zoo campus as a matter of larger environmental goals of the Zoo and for the safety of the Zoo animal collection. Fertilizers are used sparingly and when purchased prior to use, they are stored indoors at the Service Yard. Fertilizers are not used just prior to the rain season.

American Zoo and Aquarium Association (AZA) – As part of their accreditation, the Zoo is required to comply with strict standards set by the AZA. Part of the accreditation process is periodic scheduled and surprise inspections by the AZA to verify that the Zoo is providing the proper animal care and maintenance and care for the site. A portion of AZA requirements deal with good housekeeping of the site, the proper handling of hazardous materials and the proper maintenance of site infrastructure. The AZA guidelines have been attached for reference.

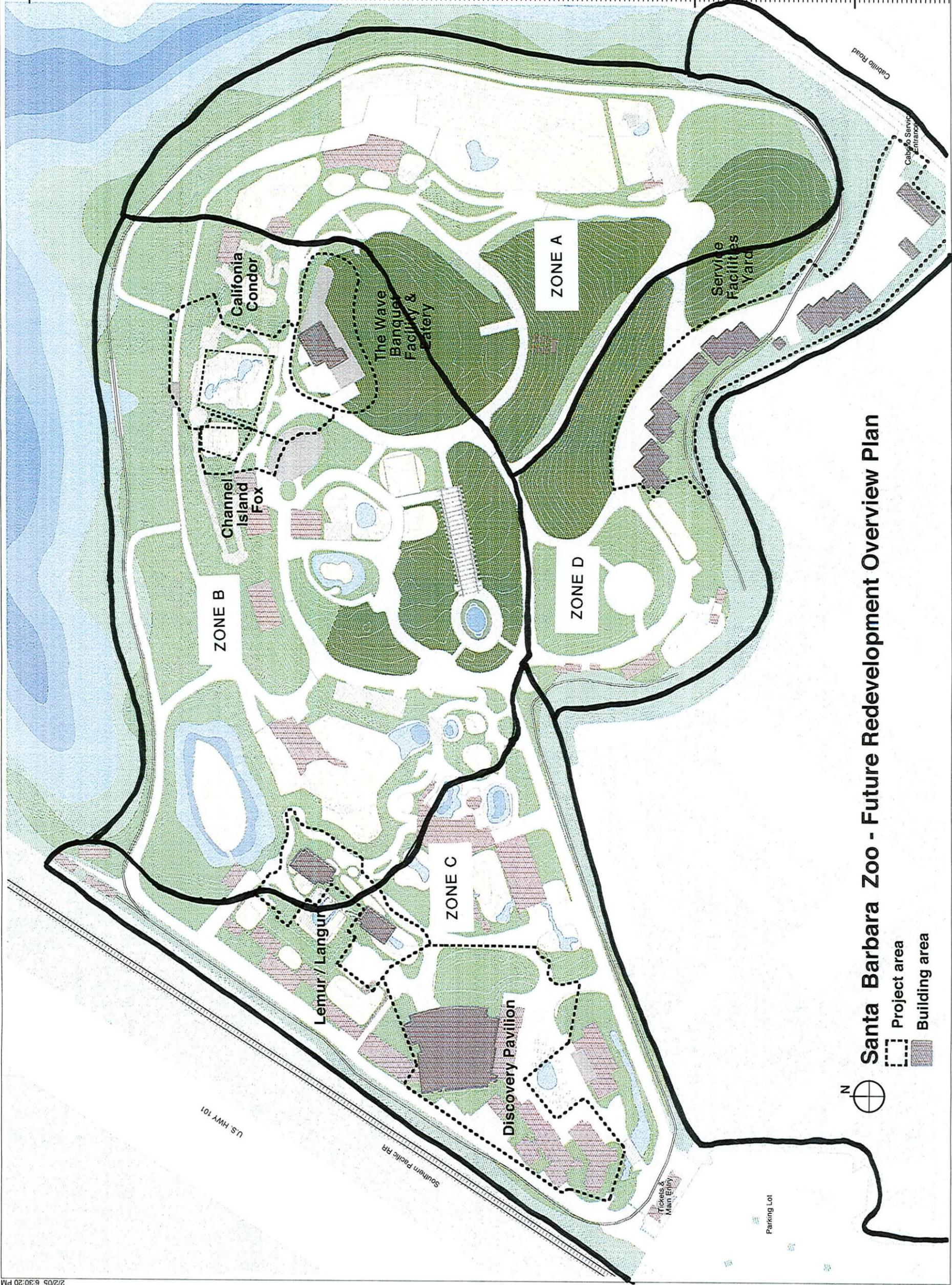
Blackbird Architects Inc.
 235 Palm Ave.
 Santa Barbara CA
 93101 USA
 1 805 957 1315
 f 805 957 1317
 www.bb1d.com



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Santa Barbara Zoological Gardens
 500 Ninos Drive
 Santa Barbara, CA 93103
 805.962.5339

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Santa Barbara Zoo - Future Redevelopment Overview Plan

Project area
 Building area

A1.1