



# CABRILLO MARINE AQUARIUM INTERPRETIVE MASTER PLAN

OCTOBER 2013





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## PREPARED BY



**SPLIT ROCK**  
STUDIOS

Split Rock Studios

2071 Gateway Blvd  
St. Paul, MN 55112  
651-631-2211  
[www.splitrockstudios.com](http://www.splitrockstudios.com)

PLANNERS: Ron Zimmerman and Chris Wilson

## PREPARED FOR

Cabrillo Marine Aquarium and the  
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of Recreation and Parks

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The FRIENDS of Cabrillo Marine Aquarium

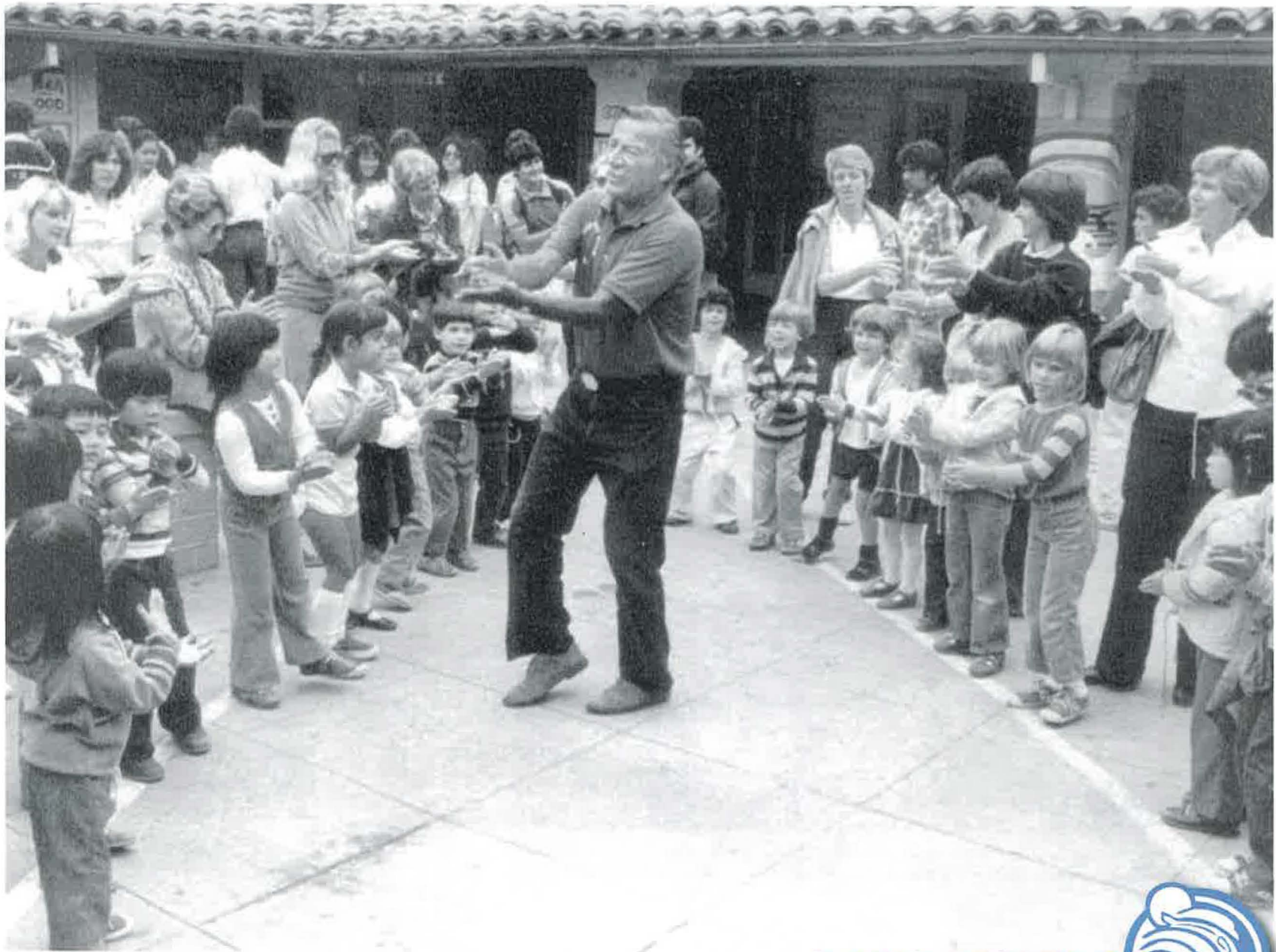
Cabrillo Marine Aquarium  
is a trusted resource that inspires  
exploration, respect and conservation  
of Southern California marine life.

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CHAPTER 1 **HISTORY**



## **HISTORY**—The evolution of a teaching aquarium— reflecting environmental and social trends of the last 75 years



The Cabrillo Beach Bathhouse was constructed in 1932 to serve the Los Angeles Olympics. It was a place where beachgoers could rent a towel or an umbrella. It became home to the Cabrillo Marine Museum in 1935.

The Cabrillo Marine Aquarium began as a humble collection of sea shells and beach artifacts that were displayed on a folding table by an enterprising Venice Beach lifeguard in the early 1930s. The popularity of this collection led the Los Angeles Department of Recreation and Parks to establish the Cabrillo Beach Marine Museum in 1935 and to relocate it in the existing Cabrillo Beach Bathhouse. Built to accommodate some of the water events for the 1932 Summer Olympics in Los Angeles, this impressive structure had the size and architectural qualities to house a museum. The 1930s, although an era of economic depression, was also a





Dr. Lloyd and the collection of specimens were the backbone of Cabrillo Marine Museum

period of growth and popularity for museums, parks and other public entities that served as public works projects across America. Municipal sponsorship of Cabrillo Marine Museum by the city's Department of Recreation and Parks has remained a reliable base of support for 75 years.

Dr. William Lloyd, a retired dentist, served as the first director of the museum. He oversaw the accumulation and preservation of taxonomic collections of local marine organisms as well as foreign specimens from around the world. Cabrillo Marine Museum typified classical museum collecting popular in that the era. The museum's prominent seaside location and orderly exhibits gained community recognition and popularity. Local restaurants would donate empty jars for preserving specimens so the museum was affectionately referred to by some as the "mayonnaise jar museum." The building's proximity to the beach made it accessible and pertinent to the interests of beachgoers.



The beach was named for Juan Rodriguez Cabrillo who was the first European explorer to navigate the California coast. He entered San Pedro Bay on October 8, 1542 and named it Baya de los Fumos after the chaparral fire nearby. A statue of the explorer stands before the restored bathhouse.

### Growth of Educational and Public Programming

The postwar surge in the California population and the increase in school aged children, which began in the 1950s, was an ideal time for the museum to transition to a strong educational focus that served the swelling populations of area schools. Lifeguard Captain John Olguin, a charismatic person and the second museum director, was well suited to lead the Museum into an era of increased public programming during the 1950s, '60s, and '70s. John's infectious enthusiasm and deep community involvement were tremendous assets in the creation of a cadre of volunteer teachers that were needed for the blossoming educational program.

The public persona of the Museum was greatly enhanced in the early 1950s by highly visible public events such as the evening grunion runs. These were such a popular phenomenon that they were featured in the May, 1969 National Geographic Magazine. The Museum also capitalized on programs that featured the earliest wave of whale watching since the great gray whale migration was visible right off Cabrillo Beach. By the early 1970s the Aquarium partnered with The American Cetacean Society to lead school groups in boats to observe the winter gray whale migration.



Visitors enjoy the immersive experience of the late night grunion runs. For many it becomes a lifetime memory. This photograph is from the first Grunion Run in 1951.



Although the bathhouse was a traditional museum, it was also an active center for hands-on learning and a hub from which people could visit shoreline habitats.



In 1969 John Olguin championed creation of the Point Fermin Marine Life Refuge for educational purposes.

The maritime artifacts that were originally housed in the bathhouse museum were transferred to the Los Angeles Maritime Museum when it opened in 1980.



## A New Building and Philosophy

The momentum of 40 years of success resulted in the expansion of the Museum into a state of the art aquarium facility that focused on Southern California marine life and its relationship to the urban community of Los Angeles. This conversion came at a time just after the first Earth Day in 1970 and when Green Peace was founded in 1971. During this time there was an awakening of nationwide awareness concerning humans' place in the environment.

The most significant transition for the Cabrillo Marine Museum at this time was the decision to display only locally collected Southern California marine life, instead of featuring preserved museum specimens, and to take a decidedly scientific perspective. The Aquarium's innovative approach preceded the national trend to create destination aquariums that compete within large commercial tourism markets. The nearby Long Beach Aquarium was not yet envisioned and places like the Monterey Bay Aquarium were nonexistent. Marine science was entering a period of popularity and public respect.

Dr. Susanne Lawrenz-Miller, a marine biologist, was hired as co-director of the anticipated new Aquarium facility in 1974. She sought advice from a committee of notable marine scientists during the planning of

the new aquarium, keeping with a philosophy grounded in science. The interpretive area in the new building was meant to feature dynamic, ever changing, and updated research and exhibits to give visitors a glimpse into current issues in marine science.

Environmentally concerned citizens petitioned the city to “respect the beach” and build the new structure back against the bluff and away from the old bathhouse and shoreline. This was not without practical merit considering that the historic bathhouse had nearly flooded on several occasions. A complicating result of locating below the bluffs was that the structure is, today, separated from the water and away from the potential audience on the beach.

The architect who was eventually chosen for the design of this new facility was a relatively unknown Frank Gehry, who would soon rise to national prominence. Gehry was challenged to reflect the industrial aspect of the nearby Los Angeles harbor. Gehry incorporated his signature chain link fencing in the building design to frame the roofline of the aquarium and to protect the building and open courtyard from vandalism. The fencing, which was also incorporated into the spacious



Co-directors Susanne Lawrenz-Miller and John Olguin standing in front of the new Cabrillo Marine Aquarium circa 1981.



Chain link fencing and corrugated metal siding are important architectural features of the Gehry design.



The chain link fencing in the interior of the exhibit has lost its original function of defining space.

interior of the building, allowed interpretive messages to be added to exhibits and visitors to see behind the scenes. The building was designed for versatility and simplicity of use. Drainage from aquaria maintenance within the building seeped into the sand beneath concrete block pavers which formed the floor. Electricity was also placed in the sand under the pavers. The building's open and innovative design allowed for change and reuse, and showed the "behind-the-scenes" of a research lab.

The grand opening of the new three million dollar aquarium was held on October 21, 1981. All exhibits and operations were moved to the new building and the old bathhouse was closed. The California Coastal Commission presented a Special Merit Award to the Aquarium "for embodying the importance of educating the public on the marine environment and for its thoughtful design and arrangement of exhibits." During the next 10 years new exhibits and programs were developed and enthusiastically received by the visiting public. The CMA Volunteers formed a general public membership branch called FRIENDS of Cabrillo Marine Museum. Nearby Marineland closed its doors in 1987, leaving Cabrillo Marine Museum as the lone public aquarium in Los Angeles.

### Strategic Approach to Planning

In anticipation of the opportunity for continued growth and physical expansion, a long range planning effort was undertaken in 1989. A 10-year plan called for tripling the size of the facility and adding support space and staffing. This undertaking would transform the character of the Museum from a relatively small, intimate aquarium to a major destination aquarium with tourism implications. The name was officially changed at this time from Cabrillo Marine Museum to Cabrillo Marine Aquarium to better reflect the proposed status as a significant public entity and as a living collection.

Also, in 1993, the FRIENDS, which had been growing in numbers since its official creation in 1975, reorganized as a nonprofit 501c3 organization. This allowed them to legally support the aquarium and supplement the existing municipal budget in preparation for the expected expansions of the 1990s.

By 1995 a master plan for expansion was complete and planning for fundraising had begun. Programming continued to expand as well with such innovations as Ocean Outreach, Sea Rangers, and Discovery Labs. The FRIENDS of Cabrillo became significantly more important for grant writing and other support.



The new Cabrillo Marine Aquarium expansion opened to the public on October 23, 2004. It features a courtyard, an Aquatic Nursery, an Exploration Center, and a research library.

The opening of the Aquarium of the Pacific, Long Beach, caused Cabrillo Marine Aquarium to revisit their mission and re-evaluate their plans for an expanded facility.

### The Plan is Modified and the Mission is Reaffirmed

The rapid development of the massive Long Beach Aquarium of the Pacific forced Cabrillo Marine Aquarium to re-evaluate the scope of its master plan. The modified plan still called for doubling the size of the facility, but with more emphasis on specific educational goals and facilities instead of large public exhibits and tanks. It was at this time that CMA reaffirmed its mission as a unique teaching aquarium and identified its niche in the aquarium community as a world class educational marine institution specializing in promoting conservation of Southern California marine life.

The revised plan called for a new interactive marine laboratory, a hands-on exhibit hall, a library, and the addition of exhibits throughout the coastal park. The goal was to demonstrate the research process and to provide an open classroom for exploration.

The new, 10 million dollar expansion officially opened to the public on October 23, 2004. It featured a public Exploration Center, the S. Mark Taper Foundation Courtyard, the Aquatic Nursery, and the Virginia Reid Moore Research Library.

The national accrediting organization known as the Association of Zoos and Aquariums honored Cabrillo Marine Aquarium in 2005, on the 70-year anniversary of CMA, by presenting the prestigious Munson Aquatic Conservation Exhibit Award for the Aquatic Nursery exhibits. In 2006 the Exploration Center exhibits also received this award.

In 2006, Exhibits Director Mike Schaadt was hired as Aquarium Director following the retirement of Dr. Susanne Lawrenz-Miller.

Cabrillo celebrated **75** years  
of educating people about conserving  
Southern California's marine life in October, 2010.







CHAPTER 2 **RESOURCES**



## CABRILLO SITE RESOURCES



Cabrillo Coastal Park and Aquarium is on the edge of the rich interface between two separate ocean currents and the Los Angeles urban ocean.

At Cabrillo you can view massive container ships plowing into the harbor or gaze down on small, gemlike organisms sheltered in a tide pool.

Cabrillo Marine Aquarium is poised on the shore of one of the biggest ports in the world. It hovers on the edge between an open ocean and a sea of urban humanity. From the same spot where you view massive container ships plowing into the harbor, you can gaze down on small, gemlike organisms sheltered in a tidepool or look out to see migrating gray whales in the channel.

The beach was born from the dredged sand of the harbor in 1927, well after the Los Angeles Breakwater was finished in 1910. The Cabrillo Beach Coastal Park includes both sides of the Breakwater with a surf-exposed outer beach, rocky tide pools, kelp forests, and fossil embedded cliffs. On the opposing side of the breakwater lies a protected inner beach, a man-made mudflat salt marsh, and a public fishing pier. Cabrillo Coastal Park is a medley of diverse habitats.

Few marine aquariums enjoy such a choice seaside location. In a larger sense, the offshore ocean habitat is an ever changing blend of tepid southern waters and chilled northern seas where a rich mixture of organisms from both can be found. Cabrillo is a uniquely rich and dynamic site.



### The Outer Beach

This is an active habitat of moving sand and surf; a place where sea animals may haul out or wash up on a rising tide or during storms. It is the dependable beach for the famous grunion spawning grounds that are the icon of Cabrillo Marine Aquarium. During spring and summer nights, just after the highest tides, grunions ride in on the waves to reproduce on the sand. Females burrow into the wet sand and lay eggs that are fertilized by males' milt. The fish depart on another wave and the buried eggs wait for the next highest tide in nine-to-ten days when the waves vibrate the eggs causing them to hatch into baby fish that ride the waves back to sea.



The pounding waves of the outer beach provide a treasure chest of marine surprises for beachcombers.

A dynamic beach habitat was created in 1927 when sand was deposited from the dredging of the harbor.

Ironically, this dynamic beach habitat was created in 1927 when sand was deposited here as part of the dredging of the San Pedro Harbor. From its beginning the outer beach has been a popular attraction to beachgoers.



## The Tidepools

The shoreline of Point Fermin is a classic example of rocky Southern California coastal cliffs and tidepools. The pulse of life here swings between the crashing surf at high tide to hot sun and desiccating winds at low tide. It can be an exhilarating place for visitors to experience.

Life here is diverse. People are fascinated with the rich variety of life and the continuum of special niches that one can see in this rocky place. The Aquarium staff has led trips to these pools for many decades. In 2000 a boardwalk was constructed to provide universal accessibility to all visitors. Some of the creatures seen in the pools can also be studied in the Aquarium's touch tank.



The Point Fermin tidepools are a rare resource for an aquarium to have so nearby. They add credibility to Cabrillo's reputation as a special location.



The tidepools invite "hands-on" exploration for all ages.



The fishing pier offers opportunities to increase interactions with an interested audience.



The breakwater shelters a myriad of ocean creatures.

### The Breakwater and Fishing Pier

The breakwater curves out invitingly for two miles to Angel's Gate, which is marked by a light station. The breakwater was built to protect the harbor from the slamming and pounding of Pacific waves, but it also shelters a vast population of creatures that find protection and food in its honey combs of crevasses and tiny caves in the limestone and granite blocks. It attracts feeding fish and resting birds. The bright sun, slamming waves, and wind are a vibrant setting for fishermen.

The safest place to experience the breakwater is the fishing pier, built just for that purpose in 1969. Until the 1980s a small snack shop on the pier offered food, bait, tackle, and shelter for fishers to socialize. In the '90s its empty spot was replaced with a canopy roof to provide some shade. For years Cabrillo Marine Aquarium has conducted fishing-on-the-pier programs.



### The Inner Beach

Protected by the breakwater, the inner beach is a sheltered location. The calm water is preferred by families with small children and the sandy beach has an extensive breadth that invites families and other groups to spread out and socialize. On weekends thousands may gather for the good weather, water, and each other's company.

This broad beach is also a versatile place to conduct large scale school programs and group activities from the Aquarium. It is also a great place to bird watch, picnic, and play.

An unfortunate side effect of quiet water is that the lack of cleansing wave action and water replacement can also create a breeding area for bacteria and other unhealthy pollutants. In recent years this beach has gained some local infamy for poor water quality and the existence of coliform bacteria.



The inner beach offers calm water but consequently has high counts of coliform bacteria.



The broad beach and the harbor atmosphere provide an immersive outdoor classroom for school groups.



A viewing deck overlooks the marsh.



Salt marshes are productive but rare coastal habitats.

### Salt Marsh/Mudflat

A wetland of 3.75 acres was restored by the Los Angeles Port Authority in 1985. This is an example of a rare California habitat that has largely been lost to dredging, shoreline development, and filling. This salt marsh works as a filter to cleanse shoreline runoff before it enters the sea. The vegetation that thrives in a salt marsh is adapted to expelling the salt through their roots and leaves. Wading birds are easy to watch here and are abundant on the mudflats where they probe for food in the mud and on the wet surface.

An elevated observation platform allows a good view over this small mudflat and serves as a relatively large teaching station. The area is fenced and usually locked, so it is not readily available to most unguided groups and casual visitors. However, it does protect the animal inhabitants and interpretive panels located here. Visitors can check out a key from the Aquarium office if they wish to visit this area.



## The Cultural Environment

San Pedro has authenticity that can't be manufactured like a theme park or a contrived subdivision. The community grew up around the working harbor and embraces its colorful history with pride. It retains the look and feel of a port town.

The great port of Los Angeles is an energetic location for a marine aquarium. Nothing seems at rest including the mesmerizing movement of the surf and tides or the myriad of vessels entering and leaving the harbor. It feels like a perpetually changing place even to a new visitor.

The venerable breakwater is a fitting backdrop to the restored Cabrillo Bathhouse. All the houses perched on the San Pedro cliffs and hills are looking out to sea. The focus at Cabrillo is toward the water.



The Port of Los Angeles has an energized atmosphere that adds authenticity and immediacy to the marine stories of CMA.



The environment surrounding the Aquarium is alive with the activities of a working port.





The Korean Memorial, the Fort McArthur WWII gun emplacements, and the Point Fermin Lighthouse stand watch on the Palo Verde Peninsula just west of Cabrillo Beach. The Marine Mammal Care Center and International Bird Rescue Center are also nearby. North in the Port, tourists book passage on boats to Catalina Island, tour the Battleship Iowa, or visit the Los Angeles Maritime Museum. The Aquarium is a significant link in this coastal landscape and theme.

The Cabrillo Bathhouse has an architectural charm that greets people as they enter the Coastal Park. Its history as an Olympic site and as the original Cabrillo Marine Museum is a story that many would be interested in learning.



Point Fermin Lighthouse was preserved through the efforts of long-time Aquarium Director, John Olguin.

Model of Frank Gehry's design for the current Cabrillo Marine Aquarium

The current Cabrillo Marine Aquarium was designed by world famous architect, Frank Gehry. Although it is an early and somewhat modest project for him, many people are familiar with his work and are interested in learning about the structure and development of the architect's style.

## The Cabrillo Coastal Park

The Aquarium is part of the municipal park system and benefits greatly from that relationship. However, it has input but no political or management authority over the Coastal Park. Therefore parking is subject to larger municipal policies that can be difficult for users. (Cash only for payment and no on-site ATMs are available.) The boat launch and boater parking can be problematic during festivals and large programs and require careful coordination.

Food concessions are “permitted” by the city. This sets parameters on what the FRIENDS of Cabrillo Marine Aquarium can do in regard to contracting a concessionaire to best meet the needs of the Aquarium’s visitors.

Signage and gateway entry to the park are not focused on Aquarium visitors’ needs for orientation and information.

This lack of authority and jurisdiction over the park does have advantages. CMA has no responsibility for maintenance of parking lots, landscaping, polluted beaches, litter pickup, vandalism, or law enforcement staffing.



Behavior of beachgoers is the responsibility of the LA City Parks and Recreation Department who also rely on the Los Angeles Police Department and the Port Authority.

There are many maintenance issues in Cabrillo Coastal Park that are beyond the authority of the Aquarium to control.

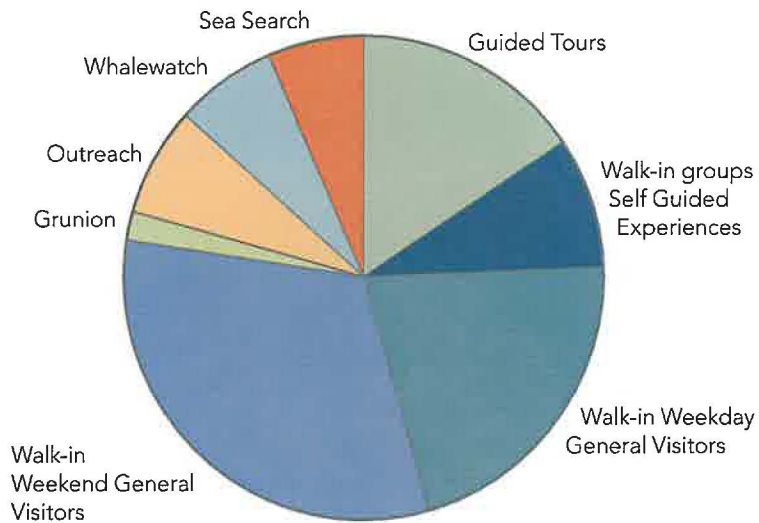






CHAPTER 3 **AUDIENCES**





“Walk-in visitation” is a major segment of the Aquarium audience and yet this group is largely underserved. A minimal input of additional staff time and resources can result in optimal public relations and a heightened experience for these visitors.

Distinct categories of visitors can be identified at Cabrillo Marine Aquarium. Casual, unscheduled visitors are the largest segment of visitor types according to records documenting attendance from 2000 to 2010. School and youth programming attendees are the second largest visitor group and remain a cornerstone of CMA's reputation both locally and in the aquarium profession. School attendance at the aquarium is declining, which is consistent with the national trends for environmental education field stations. Many educators suggest that the standardized testing requirements of the “No Child Left Behind” program leave a smaller window of opportunity to schedule field trips, particularly early in the fall term.

There is potential for attracting a larger and even more diverse audience from the Los Angeles area and from the increasing number of tourists who are drawn to the San Pedro waterfront. While the Aquarium already has an adequate number of people visiting, it needs to continuously engage new audiences and to seek out underserved populations to be true to its mission.

### The Beach Audience



The large multi-cultural families who visit the beach present an opportunity for interacting with a new audience segment. The social experience for this recreational audience requires a fundamentally different approach than what is needed for visitors who have selected to visit the Aquarium as their primary activity.

From the Museum's earliest beginnings, beachgoers serendipitously dropped in to view the shell exhibits and maritime curiosities displayed in the bathhouse. While their visits were secondary to their experience at the beach, the knowledge and appreciation that visitors gained from viewing the displays and interacting with the lifeguard guides provided deeper insights and meaning to their recreational trip to the seashore.

Today, beach recreationists still venture into the Aquarium. Weekend visitor counts are quite substantial, with 2,000 people entering the facility during the good weather weekends in spring and summer. Some of these visitors are probably visiting the beach and choose to explore the Aquarium as a secondary activity.

First time visitors to the Aquarium encounter some strong visual and psychological barriers that discourage entry and disorient them once they are inside. The large parking lot and the maturing trees in front of the building keep many beachgoers from recognizing the Aquarium as a public facility. The closed courtyard doesn't invite exploration partly due to the long corridor entry, the steel fencing, and a lack of visual cues to identify this place as public and free.

The corrugated metal entrance booth is intimidating to many people because it appears to be a guarded gateway where entrance fees are extracted. Because it is inside the facility, one has to cross the courtyard and make contact with people inside the booth before learning that the experience is very affordable.

Some staff members suggest that cooler afternoon winds off the water drive people up to the building for shelter. There are some concerns that loitering should not be allowed and that beach towels and wet sand are problematic in the exhibit hall. If these serendipitous visitors are to be accommodated, facilities that serve their fundamental needs will need to be addressed before they can better interact with the exhibits. Currently, there are few areas where families can gather to rest, reorganize, or let children play.

Many visitors tell us that they enjoy the beachside location of CMA because it allows them to experience the waterfront as part of their visit. Numerous online postings cite the beach location as a reason that they attend programs and view the exhibits. The seaside location is a definite benefit for attracting visitors to CMA. This potential audience of beach visitors is already on the doorstep of the Aquarium and just needs to be invited inside.



The entrance booth can appear intimidating to some first-time visitors.

Visitors tell us that the seaside location is a significant reason they come to Cabrillo Marine Aquarium.





One of the enduring strengths of the Aquarium is its well developed school programming which relies on a trained cadre of staff and volunteers.



Volunteer training programs include junior docents training

### School and Youth Programs

The fame of Cabrillo Marine Aquarium within the professional marine community is based on the strength of its educational reputation as a teaching aquarium. A good measure of its popularity in the local community relies on this service which is the result of high quality, customized education programming.

As guided programming at CMA developed over decades into increasingly sophisticated venues, particular market segments were increasingly targeted. School groups required structured programs that addressed curricular needs and fit with school and busing schedules. The development and coordination of a cadre of trained volunteers was required. Marketing and seasonal planning became increasingly important. In the post WWII era, the Los Angeles school population was exploding and offered tremendous educational opportunities for an organization like Cabrillo Marine Museum. The 1950s and 60s were ripe for the development of educational programs to serve these burgeoning audiences. Field trips to the ocean for site-based science classes and after-school enrichment activities were a strong trend in education during this era.

Over the course of 70 years a sophisticated series of programs and staff has evolved to accommodate the ever increasing diversity of school-aged audiences, including after school organizations and special interest groups. School programs are designed to meet national, state, and local science standards. Pre- and post-visit materials are provided for teachers, and program fees are kept to a minimum. An Ocean Outreach mobile van program delivers off-site programming with live animals to schools. Research in the Aquatic Nursery and interactive exhibits in the Exploration Center was developed in 2004 to better meet the needs of specific school-aged users. This highly respected educational program serves a large audience but requires a considerable investment of time and effort on the part of Aquarium staff.



The Aquatic Nursery appeals to an audience of young marine scientists as well as to an expanded audience of satisfied sponsors, funding sources, and science mentors.

A festive atmosphere is created for school classes by a large, well trained cadre of volunteers.





### Site Specific Interpretive Programming

The Aquarium's educational mission is most evident in its extensive school and youth program offerings. Informal family presentations like grunion runs and whale observations are also significant, as are self-guided interpretation such as exhibits.

Visionaries like John Olguin, who had intimate knowledge of the maritime happenings in San Pedro, created public interpretive programs and festivals that capitalized on the tremendous potential of the natural events occurring in the channel and on the beach, which also appealed to people's need to connect with authentic and big natural events. The spring grunion runs became a premier event that has remained a crowd pleaser for over 60 years. The gray whale migration in the channel can be seen from Cabrillo Beach and CMA was an early pioneer and leader in guided whale watching expeditions along with the American Cetacean Society. Many people indicate that they value the Aquarium partly because of its seaside location and because of the intimacy of their experience here.



Grunion programs connect visitors intellectually and emotionally with the ocean and can help them forge lasting relationships with CMA and marine biology.

Lifeguard Captain John Olguin had an intuitive sense of showmanship and a flair for getting people involved in programs.

### Visitor Loyalty

Cabrillo Marine Aquarium enjoys a large, loyal population of supporters. Based on informal interviews with San Pedro residents and weekend visitors to CMA, it appears that people's affinity for the Aquarium is often rooted in pleasant, memorable childhood visits to the aquarium with school classes or with family. Recollections of watching a grunion run or of witnessing grunion eggs hatch are often cited as strong memories.

Most people express positive comments and attitudes about CMA, both on-line and in personal interviews. Cabrillo Marine Aquarium strives to provide services to all visitors. Admission fees are by donation and visitors are not limited by their ability to donate.

"I came here as a child with my family to see the grunion run. I decided it was time to return and bring my wife to this place."

Former San Pedro resident interviewed while visiting the exhibit hall, summer 2012



Some adult visitors recall pleasant memories of touching tidepool creatures in early visits to CMA.

"This is no Sea World, but you have to really give this place some respect. This place is definitely where you can go on a budget and the family and friends....One can get the sense that Cabrillo prides itself in that they provide to students (and adults)."

8/12/2012 yelp.com-review



"I love how small and unassuming this aquarium is. It doesn't have any big exciting animals like polar bears (although it does have a dead shark in formaldehyde), forcing you to appreciate the less flashy sea life..."

6/22/2012 yelp.com-review

### First-time Visitors

The free attendance policy appears to be an honored tradition supported by many, if not most, staff members. This perspective is seemingly in the tradition of "what would John have done?" (John Olguin was community service oriented.) Staff seem to support the philosophy that Cabrillo Marine Aquarium is more a service institution than a business. When viewed in the continuum of public to private and commercial museums, zoos, and aquariums, this self-identification becomes significant to marketing and branding. CMA does very minimal advertising when compared to more commercial aquariums and zoos.

Many first-time visitors indicate that they are visiting CMA because it was recommended to them by a friend or acquaintance. Many attend with someone who has been to the Aquarium before and wants to return and share the experience with them.

Some visitors say that they discovered the Aquarium online while searching for places to visit on the coast or when they were looking for a weekend activity. This number is likely to increase as consumers rely more and more on the internet for information and orientation.

Mothers who are seeking an out-of-the-house experience with young children often visit during weekdays as do home-schooled families.

Beachgoers still drop in as part of their trip to Cabrillo Beach although the Aquarium is very hard to identify from the beach.



Beachgoers are a large potential audience that can be easily reached



Clipboard kids are common at many educational centers in Los Angeles and Cabrillo is no exception. The Aquarium has a loyal following of teachers who assign students to visit the exhibits.

### Clipboard Kids

“Clipboard kids”—students assigned by teachers to visit the Aquarium and answer questions about the exhibit—are a noticeable segment of visitors.

A significant number of high school and college teachers have developed assignments that are closely tied to the exhibits at CMA. Students find answers to questions by exploring the exhibits. A quick survey of some of the assignment forms verifies that most are from biology and other natural history classes. While these biological “scavenger hunts” do introduce new audiences to the Aquarium, they are, according to some learning specialists, of questionable value from an educational perspective. When asked, many staff members felt that this activity, while sometimes superficial, was a positive way to introduce these new visitors to the Aquarium. Some staff were concerned that if text and information was reduced it might negatively affect these assignments.

Most Cabrillo staff and many ardent supporters believe that the deeper levels of content currently designed into the exhibits makes for a more meaningful and educational experience than what clipboard visitors find at other facilities.



John Cubit, NOAA

An inviting public entrance that can be seen from other areas in Cabrillo Beach Park will increase visitation substantially.

### Fishers on the Public Pier

On weekends, hundreds of people fish from the public pier. While some programs have been developed to serve this audience, there is potential for greater connections with this group. These people are a passively preoccupied but generally receptive audience who have a personal interest in learning about the ocean.

### Other Potential Audiences

A growing number of tourists in the Los Angeles Harbor are looking for short, thematic activities that take only a portion of their day. Authenticity and proximity to the beach can be quite compelling but do require an investment in marketing.

Weekend visitors to Ports O'Call and to other emerging San Pedro attractions can easily become visitors to Cabrillo Marine Aquarium with the development of a travel corridor and public transportation.

An investment in creating a more inviting public entrance to both Cabrillo Coastal Park and into the Aquarium will undoubtedly result in more attendance from beach visitors and weekend walk-in visitors. Many weekend visitors (almost half) are already traveling more than twenty-five miles to reach Cabrillo.









CHAPTER 4 **INTERPRETIVE EXHIBIT ANALYSIS**



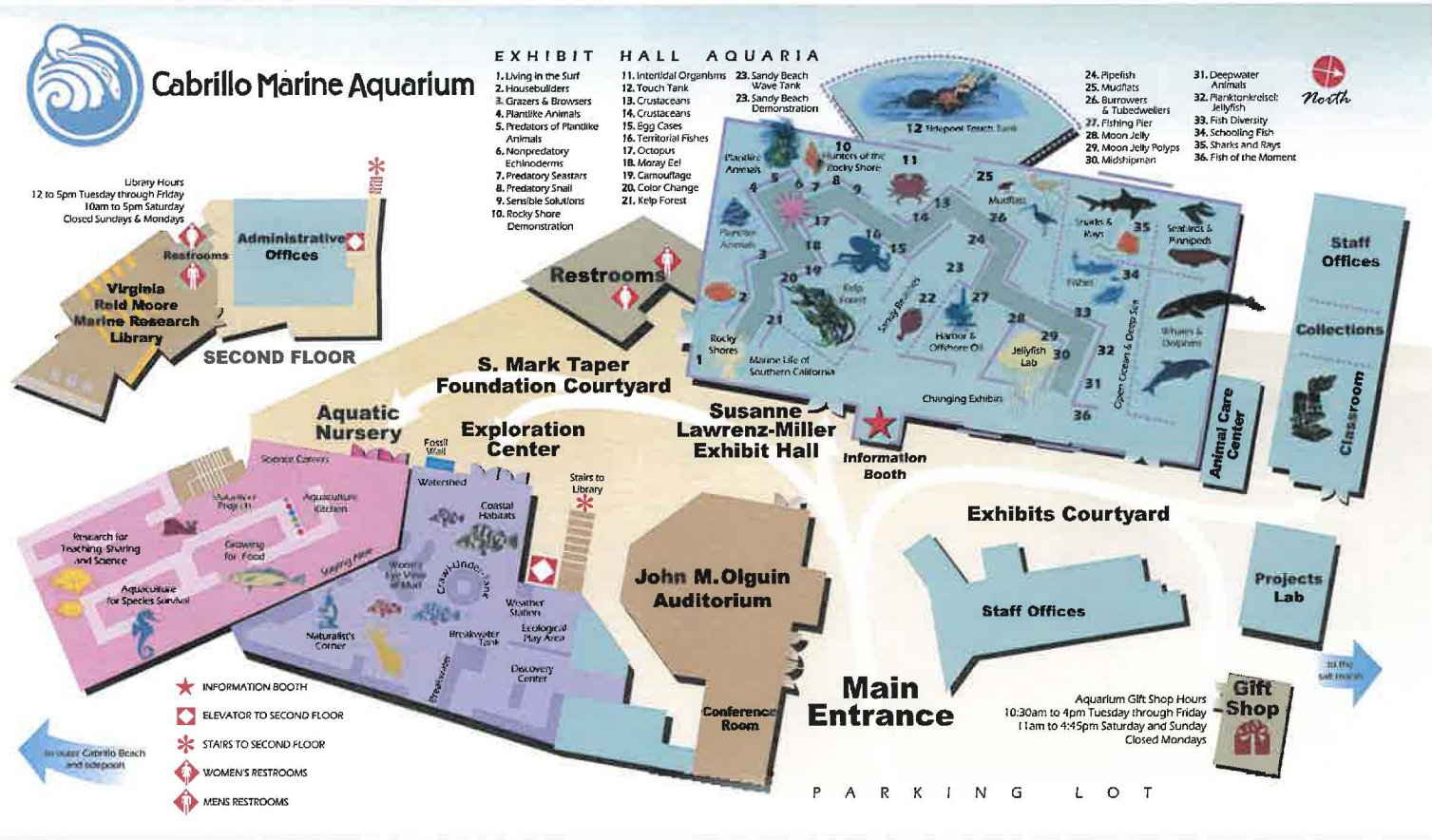


Cabrillo staff were initially interviewed in departmental work groups with follow up visits touring their work sites.

### This evaluation information is based on the following qualitative techniques:

1. Personal interviews of aquarium staff and volunteers that were conducted over a two-week period. The consultant team walked the exhibit hall with the exhibit staff and discussed the philosophy and the thematic framework of the exhibition as well as the most successful and the most challenging aspects of the hall.
2. Observation of visitor use during spring and summer weekends. (A total of 19 hours was devoted to unobtrusive visitor observation and follow-up interviews by the consultant.) Additional periods of time permitted casual observation of visitor interactions with exhibits.
3. Posted comments and opinions offered by visitors online were studied.
4. Individual exhibits were analyzed in regard to their perceived purpose and effectiveness and were evaluated based on the personal experience of the exhibit evaluator and on practices and principles recognized within the museum and interpretive fields.
5. Existing visitor survey data were examined. The data were collected by classes from California State University at Long Beach. The consultants then interviewed Dr. James Kisiel who supervised the research for better insights into the studies and clarification of their conclusions.

Cabrillo Marine Aquarium maintains three public exhibition areas: The Susanne Lawrenz-Miller Exhibit Hall, the Exploration Center, and the Aquatic Nursery. The open air S. Mark Taper Courtyard that unites the campus also contains some islands of exhibits available for public viewing, but they are not thematically arranged as an exhibition.





The Susanne Lawrenz-Miller Exhibit Hall is rich in layered information and authenticity of artifacts which includes original artwork.

### Susanne Lawrenz-Miller Exhibit Hall

The Susanne Lawrenz-Miller Exhibit Hall is a unique exhibition that began as a pioneering effort to combine traditional static museum exhibits with living collections of aquatic organisms organized within habitat-themed areas. All of the exhibits in the approximately 7,600 square foot room have been designed and fabricated “in house” by CMA exhibit staff over a period of several decades.

The exhibit hall is the primary resource available to the general, leisure-time public. It is also used as an educational component of the school program. This exhibit hall predates the Exploration Center and the Aquatic Nursery by several decades. Exploration Center exhibits were professionally fabricated for specific audiences and uses as part of the 2004 expansion.

The Susanne Lawrenz-Miller Exhibit Hall contains 7,600 square feet in addition to an outdoor tide pool touch tank. True to the mission of the Aquarium it interprets Southern California marine habitats. Specifically, these exhibits attempt to demonstrate how various Southern California aquatic plants and animals are adapted to their environments, how they

behave, and how they interact and affect each other. There has been an attempt to focus on habitats that people will come in contact with at or near the Cabrillo Coastal Park.

The exhibits are arranged topically by habitat: rocky shores with tidepools, kelp forests, sandy beaches, salt marshes and mudflats, the harbor, open ocean, islands, offshore habitats, and creatures like whales. Typically, the small invertebrates, fish and plants of each particular habitat are integrated into each corresponding exhibit to create a holistic perspective of each habitat. Shell, rock, and artifact collections are also incorporated into these habitat exhibits.

The exhibit hall contains dynamic “jewel tanks”—colorful, small aquarium tanks—that allow visitors to get up close and study the animals featured in them. The exhibits are rich with artifacts such as historic collections of shells, rocks, and mounted specimens. The interpretive panels and labels were developed over a span of decades so they demonstrate an evolution of style. The personality of the interpretive panels bridges the gap between the somewhat scientific



The tidepool touch tank is a popular sensory attraction at CMA just as they are at most aquariums. The need to “rest” the animals requires that the exhibit be closed down at regular intervals during the day.



The small tanks encourage intimate close-up observations of animals. The interpretive messages are more educational and lengthy than most commercial aquariums which are streamlined for efficiency and for cost effective entertainment of crowds.

order of the exhibit themes with the more casual interest of many drop-in visitors. There is a definite attempt to relate to the interests of the lay visitor and the broad spectrum of age groups that use the facility.

These exhibits are educational in nature when compared to most zoos and aquaria that present information in a more streamlined entertainment approach. During interviews, many visitors to the Aquarium commented on the amount of information that was layered in each exhibit. Those who made these observations often inferred that it was desirable to have this volume of information available even if it made the effort to understand basic messages more difficult.

People visiting Cabrillo Marine Aquarium have a different expectation of what their exhibit experience will be than visitors to larger destination aquaria like Long Beach, Monterey, or The Shedd Aquarium. The financial investment of \$16 or more when entering a large facility sets an expectation of a level of entertainment comparable to the purchase price and a corresponding amount of time. Most CMA visitors are surprised that the entry price is “free”



and therefore view their experience as a gift. Since they have not “purchased” a product, they tend to be quite positive about the quality of the experience.

Personal interviews with exhibit visitors yield some interesting insights. Many people appreciate the authenticity and the intimacy of the exhibit hall. They feel like there are minimal barriers between them and the creatures in the tanks and the artifacts being displayed. The exhibits are easily accessed since one can usually view them from at least three sides. A visitor can usually “see” behind the scenes and therefore doesn’t feel like they are being shown only one superficial view designed for “the public.” They value the opportunity to interact with aquarium staff who take the time to share information with them about animal diets, care, or even marine issues.

Rusty pipes, dusty surfaces, aging or dated exhibit panels, and



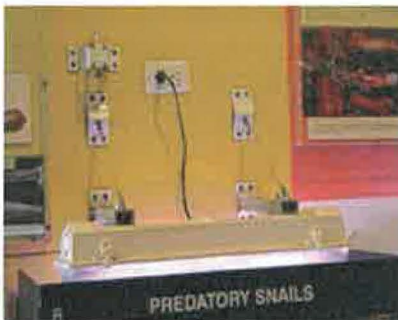
Many visitors appreciate the intimate atmosphere and the ability to view the tanks from various perspectives at CMA.

People who visit Cabrillo Marine Aquarium have different expectations for their visit than when they attend a large commercial zoo or aquarium.



poor lighting are observed by visitors but largely tolerated because they sense that this is an underfunded public service. In the future, improvements that do not incorporate sustainable features and better public access—such as the Americans with Disabilities Act—will likely not be tolerated by visitors or the certifying Association of Zoos and Aquariums. Current mobility-impaired access to some satellite areas are marginal and the needs of individuals who are sight-impaired have not been addressed in many cases. For example, low levels of lighting and low contrast values of labels and interpretive text should be addressed in exhibit renovation.

- There is a **tremendous amount of information** available for those



A critical mass of maintenance issues must be addressed before major exhibit remodeling is undertaken. Rusting metal, eroding concrete, and a deteriorating life support system require immediate attention.

Although visitors like to “peek behind the scenes,” rusting brackets and electrical cords detract from the beauty of the specimens.

### What users tell us that they value about their Susanne Lawrenz-Miller Exhibit Hall experience

who are seeking in-depth knowledge about the habitats and biology of the specimens on display. Many people acknowledged that there is too much information to digest in one visit but many said that they appreciated being able to search for in-depth answers to some of their questions.

- **The authenticity of the real artifacts and the honest presentation** of “in-house” construction of components of the exhibit hall are cited by a number of visitors as factors that they valued in their exhibit experience. Some volunteered that they preferred to observe animal behavior first hand instead of in a video presentation and that the small tanks with the exposed sides allowed this. Others liked the mixture of organic artifacts and preserved specimens that are incorporated into the living collections.
- **Active, healthy animals that are easy to see** and well-displayed were singled out as positive aspects of the exhibit hall. The small but easily accessed “jewel tanks” were appreciated because viewers can observe the creatures in them from several perspectives and up close.



The moderate size and personality of Cabrillo Marine Aquarium is on a human scale and at a pace that many visitors enjoy.

Many people appreciate the authenticity and the intimacy of the exhibit hall.



In 2004 exhibits were created in the Exploration Center that invite sensory interactions and hands on investigations by users.

The dark corridor offers brilliant views of the colorful tanks but presents potential hazards that must be addressed when remodeling occurs.

- **The relaxed, unthreatening atmosphere invites leisurely exploration.**

A large percentage of visitors who were personally interviewed commented on the relatively informal and unpretentious atmosphere of the exhibit hall. Although the need for remodeling and upgrading the facility was noted by many, they were happy with the “down home” feel of the hall. Some suggested that it was a nice contrast to the slick, commercial nature of their visits to larger destination aquariums. It is an intimate experience on a small, invitingly human scale (tanks and creatures) that welcomes up-close views that are especially appealing to young children.

- **Some visitors, and especially staff, like the dark viewing corridor**

within the center of the exhibit hall because there is no clutter or interpretive information to distract viewers from seeing the beauty of the marine animals in the lit tanks. The dark room becomes an immersive environment.

- **Many visitors stated that they valued the availability of working staff** to answer questions and to interact with them. It made them feel important and it personalized the experience. Some, who observed the feeding protocol, enjoyed the insights that were provided by the staff member who was feeding the animals. Others simply spoke with aquarists as they cleaned and maintained tanks but were seemingly happy that the staff person took the time to interact with them.
- **Location near the water and beach** is often noted as a major reason for a visit to CMA. For some, the visit to the Aquarium is incidental to the beach visit but for many the two experiences are linked.
- **The free admission is greatly appreciated** by many. Most first time visitors are pleasantly surprised by the lack of an entry fee but seem prepared to make a donation to support the Aquarium.
- **Visitor traffic flow is not well-defined** and is without focal points, environmental variations, or architectural cues that promote desired visitor behavior and satisfaction. The entire visitor orientation experience—from when one enters and navigates the courtyard and the campus of buildings—is not intuitive but confusing.



Personal interpretation provided by staff, as seen here while feeding the animals, is the most effective technique for communicating with visitors.

Most first-time visitors are pleasantly surprised by the lack of an entry fee.



### Weaknesses and areas that can be improved for better traffic flow and for more effective exhibit design

The Susanne Lawrenz-Miller Exhibit Hall entry doors appear rather ordinary and do not set high visitor expectations. They are somewhat hidden under a low ceiling that connects to the auditorium and above the doors there is a modest, understated title.

When visitors enter the hall they are greeted by a message that is designed to give them an overview of the importance of this site. However, because the area is restricted in size, most people feel rushed to make an instantaneous decision as to which of three hallway corridors to take. Only the corridor to their left, at the surge tank, will take them through a sequential story line. The other two corridors will require them to reorient themselves to the habitat themes of the exhibits.



The modest entry doors into the Susanne Lawrenz-Miller Exhibit Hall are difficult to see and fail to build visitors anticipation for their experience inside.

The key exhibit that is intended to make visitors aware of CMA's strategic ecological location is missed by nearly all who enter the hall because of its crowded position in the small entry area.

- **The narrow exhibit hallway is crowded and can be monotonous.**

Its narrow width does not permit appropriate line of sight to elevated interpretive text on the walls. Most studies show that information placed more than 30 degrees above a viewer's line of sight will not be seen.

The corridor width, floor color and texture, lighting, and uniform sizes of tanks and display cases lack variation and contrast that could better focus visitor attention on important differences between habitats and, more importantly, could keep the experience fresh and create a sense of exploration within the exhibition.

Some habitat areas like the sandy beach, which should be metaphorically placed in a big open room, are sandwiched into a dark, narrow space. The whale exhibits in the open ocean habitat are indicative of the advantages offered by opening up the tight corridor. Visitors roam this whale exhibit for longer time periods than most other areas, in spite of it not having live creatures on display.



The narrow passageways through the exhibit hall restricts visitors sense of freedom and reduces their "line of sight" through the space.



Visitors are seeking information about specific sites and species found in southern California. They value facts and information that affect them personally according to national surveys conducted by the Ocean Project.

- **There are no organizing elements to prepare visitors to comprehend BIG IDEAS and important concepts.** For example, the animals that people see in these exhibits are all species from HERE, right off the San Pedro coast. The unique blend of cold and warm waters produces an exciting array of species from both environments. There is no obvious way that visitors are given this important message. When visitors enter a new habitat there is no transitional thresholds or visual cues to subliminally announce that one is entering a new and different space.
- **There are few “take home” messages** that reinforce the Aquarium’s values or that challenge visitors to “make a difference” in their own lifestyles and behavior that will result in a healthier marine environment.
- **Exhibits were designed to educate people according to what scientists think that they need to know**, not what visitors want to know or that have take-home value within their lives.



- **The similarity of tank size and shape can become visually monotonous to viewers** and can restrict some natural behaviors of fish as well. For example, open ocean schooling fish are in a square tank that restricts their natural behavior. The kelp tank is reduced in height and does not create the sense of vertical depth that can be found in the kelp forests of the California coast.
- **The large amount of interpretation and the aging interpretive labels can be overwhelming to many visitors.** There is no consistent hierarchy of descending messages making it difficult for readers to comprehend the organization of information, and to be able to quickly decide what an exhibit is about.
- **Attractive graphics but inconsistent styles and colors tend to create disunity** and confusion for visitors looking for organizing cues within the exhibits.



Visitors value the rich authenticity of artifacts but some of the deteriorating old mounts and interpretive panels must be removed or replaced.



Fencing in the exhibit hall has an old and restrictive feel today.



The variety of sizes, colors, and fonts on signs throughout the Aquarium often conflict and are difficult for first time visitors to understand.

- **Lack of continuity and of unity.** Interpretive labels, font styles, lighting, and colors are not standardized or coordinated for ease of understanding and readability.
- **The entrance booth is intimidating** and serves as a barrier to entry for some first time visitors. In combination with the enclosed fencing and courtyard, “the guard house” appearance of the corrugated metal building can look a bit ominous as one ventures into the courtyard. The people inside the booth are sometimes hard to see because they are in the shade.
- **There is poor and inconsistent lighting** of most exhibits and within the building generally.
- **Storage clutter on the mezzanine is visible** to people touring the exhibit hall. Offsite storage solutions should be explored.

### Safety and Maintenance Issues

- Uneven floors and dark hallways in some areas are perceived as potentially dangerous to those with mobility impairments and people who have difficulty seeing. The vertical support beams in the dark exhibit corridor present a real obstacle for anyone entering from the outdoors or when the space is crowded.
- Flammable storage items clutter the mezzanine and create a potential fire hazard. These items are also visible from the public visitor hall below.
- Crowded hallways present traffic flow problems during peak periods of visitation and restrict groups from gathering around points of interest.
- Exposed wiring in the life support system and in the overhead exhibit lighting conveys a sense of inadequacy within the electrical system.



The materials stacked up on the mezzanine add to a sense of visual discord for people who are already encountering a confusing array of visual stimuli in the exhibit hall.

Uneven floors and disintegrating concrete present tripping hazards and add to a worn out appearance.





Rusting fence adds to a sense of discordance and disrepair.

- Chain link fencing has lost its original use as a defining element of open space within the original open exhibit hall and is now a harsh distraction to visitors who see no connection to the exterior design element of Frank Gehry's signature fence motif. Additionally, this fencing is rusting and creates a sense that the facility needs repair.
- Rust and dust which is visible on white conduits and overhead pipes conveys a visual message that the facility is inadequately maintained.
- Deterioration of concrete block floor is a visual distraction to some visitors and a potential tripping hazard to others as noted above.
- There are few hallways wide enough for program staff to hold group gatherings.

## The Exploration Center

This 2,500 square foot interactive discovery area was created in 2004 as part of a 10 million dollar expansion. It was developed to optimize class and group involvement in science investigations of marine life. When the facility is open to the general public, a well-trained staff of marine biologists and a cadre of volunteers help children and families better understand what they experience at Cabrillo Beach and to become better stewards of the marine environment. It addresses some site-specific concepts that are not covered in the Susanne Lawrenz-Miller Exhibit Hall. Life size models bring visitors close to the Breakwater Habitat and fossils embedded in nearby coastal rocks. A weather station with current tide information, an interactive model of the Los Angeles watershed, an ecological role-playing area, and a naturalist's corner, all encourage exploring and investigating in an open-ended and immersive way.

The greatest limitation for this area is that it is difficult for walk-in visitors to find. It is not proximal to the main public exhibit hall and doesn't have a colorful public entrance. Attempts have been made to increase traffic from casual visitors into this room. Friendly staff and volunteers are proactive in inviting people in. Many visiting families are hesitant to enter unless other similar users are already inside.



The Exploration Center is intended as a portal to launch groups out into the natural environment at Cabrillo Beach Coastal Park. The Exploration Center won an AZA exhibit award for conservation exhibitory in 2006.





The Aquatic Nursery is very successful with its audience of young scientists, classes, and supporting patrons but not generally understood by casual visitors.

### The Aquatic Nursery

The 2,500 square foot nursery opened in 2004 as a laboratory where “we grow young sea animals and young scientists.” Exhibits interpret scientific methods, on-going research, and the challenges of aquaculture. Southern California marine life examples are emphasized.

This laboratory won an Association of Zoos and Aquarium award for conservation exhibitory in 2005. It has attained a solid reputation for training young scientists and has a strong support base of patrons willing to underwrite its needs.

Unfortunately, the purpose of this exciting student-centered research lab is not well understood by the general public. On many weekends a staff member welcomes visitors and offers an overview of the facility. But too often visitors are left on their own during the week.

Student researchers and staff are often available to interact with visitors and to explain the work that they are engaged in. However, because they are primarily involved in their own research, they do not see interpreting their work to visitors as a priority function. They frequently appear to be preoccupied and unavailable for questions.



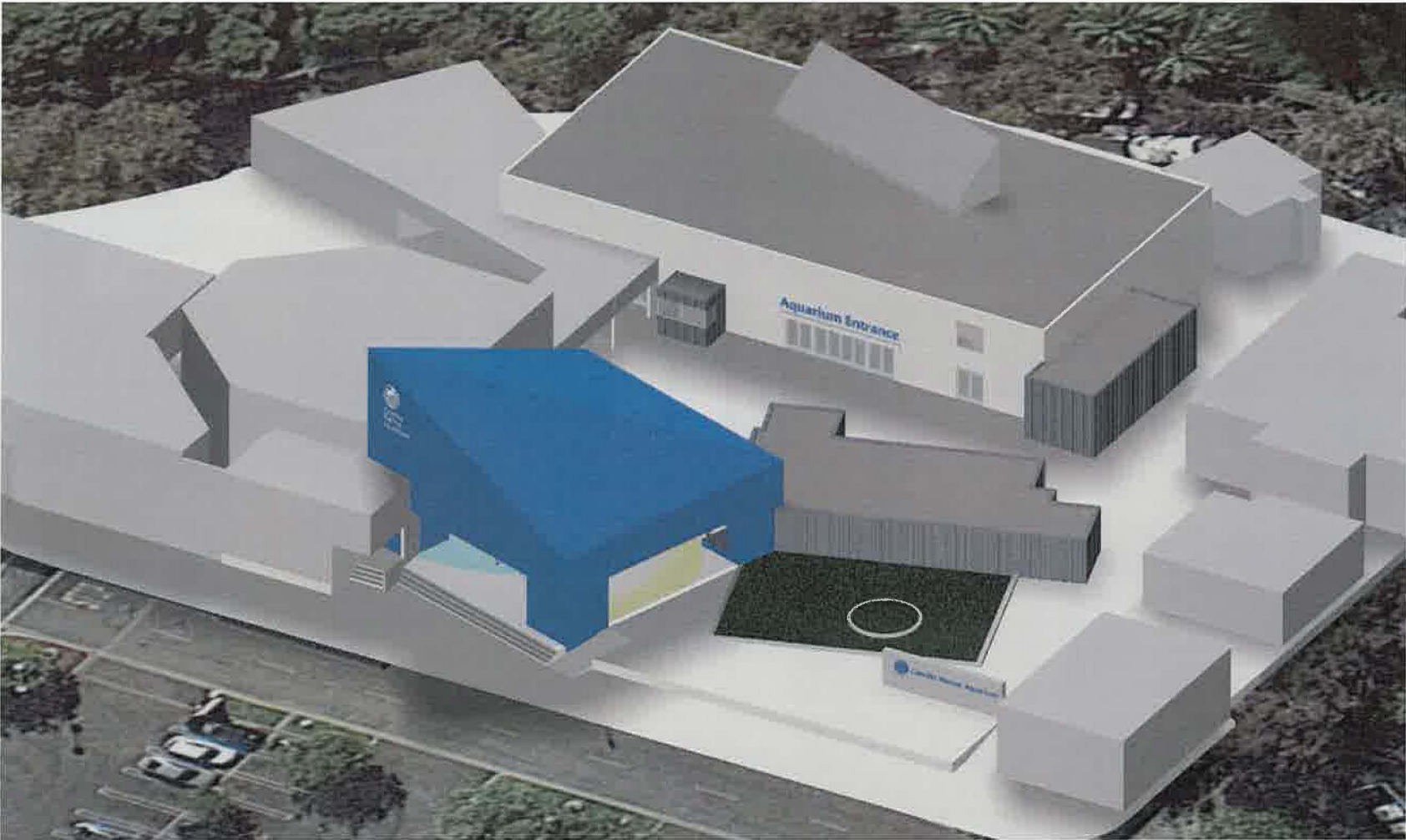






CHAPTER 5 **RECOMMENDATIONS**





An introduction and orientation will help visitors appreciate their aquarium experience.



Exhibits in the Exploration Center alert visitors to habitats at Cabrillo, but not all visitors realize that they can explore these sites because there are few signs or maps to guide them.

There is an institutional desire to improve services, but not necessarily to increase attendance or to generate revenue.

### The Need for Planning

Cabrillo Marine Aquarium remains relevant and beloved in the Los Angeles area. The Aquarium enjoys a modest municipal base budget, the staff is well-trained, and the FRIENDS of CMA is active and supportive of the program. It is from this position of strength that a proactive planning process is being initiated rather than as a reaction to external pressures.

There is an institutional desire to improve services, but not necessarily to increase attendance or to generate profit. There is a strong motivation to identify opportunities and to develop strategies that keep the CMA program fresh and innovative. There is a desire to excel within a special niche and to continue to be fundamentally unique among aquariums regardless of size or funding.

There is a desire to strengthen community support, to diversify the constituent base, and to grow monetary supporters of the institution. There is an expectation that these supporters will become increasingly significant if municipal budgets are reduced because they will provide external support that can alleviate the restrictions of a cumbersome bureaucratic budgeting process.

Casual visitors to Cabrillo Marine Aquarium are an underserved audience. Currently the highly successful school program is viewed as one of the primary functions of CMA. However, the number of walk-in visitors outnumbers the participants in educational and structured groups. This casual audience segment also has the capacity to increase in size and in the quality of experience with a modest investment of time and money. This visitor demographic offers opportunity to increase local support cost-effectively and to address the needs of casual visitors with more intensity. Cabrillo Park and Beach attracts a large, ethnically diverse urban audience that most museums and aquariums unsuccessfully strive to attract. CMA is uniquely positioned to serve this audience. Special events and the exhibit hall experience are the primary methods of serving these community walk-in visitors, so addressing these areas should be considered a priority.



There are tremendous opportunities to increase the quality of visits for the casual visitor to CMA

Casual visitors to the Aquarium are an under-served audience. However, the number of walk-in visitors outnumbers the participants in educational and structured groups.



Most visitors enjoy their visit to the aquarium but few take home any big ideas or deeper meanings about marine conservation.

There is opportunity to create a higher quality experience for walk-in visitors. First-time visitors often enter the facility quite cautiously and are unsure of what to expect of their visit. There are few advance organizers to help orient and prepare walk-in visitors to get the most from their experience. They are not aware that the creatures they will see here are all from just off this California Coast, and they don't realize the ecological richness of this site. In short, they are missing some of the big ideas that make Cabrillo Marine Aquarium special. Most enjoy some aspects of the exhibits and have a good feeling about this cost-effective attraction, but don't leave with a comprehensive understanding of the marine environment or their connection to it.

There are few advance organizers to help orient and prepare walk-in visitors to get the most from their experience.

## General Recommendations for Improving the Visitor Experience

A few fundamental actions will yield large benefits because CMA already has underutilized resources and potential audiences to expand its educational mission. The following recommendations are based on a premise that the scope of any construction projects should be in proportion to the existing facility and its potential budget and fundraising capabilities. A second assumption is that Cabrillo Marine Aquarium is primarily an educational institution that serves the public in an effort to further marine conservation.

Therefore the following actions are recommended as ways to optimize visitor satisfaction and to better achieve the goals and mission of the Aquarium.

- **Create** a welcoming public face and improve the facility to make it easier for the public to access and use.
- **Prepare** people for their experience by showing them an overview of the significant stories at CMA.
- **Improve** wayfinding within the buildings, the exhibits, and throughout the coastal park.
- **Strengthen** ties to the coastal site by “claiming” the bathhouse, fishing pier, tidepools and salt marsh, and by establishing a presence on AltaSea.

New exhibits and construction projects must be proportional to the existing facility, its operational budget, and to its fundraising capabilities.



The life support system is in critical need of replacement before the exhibit hall can be remodeled.

A public appearance and a well-defined traffic pattern will greatly improve the visitor's experience.

## Specific Recommendations

We propose that Cabrillo Marine Aquarium undertake four basic actions to better serve its mission and its audience.

### **Action 1:**

Develop an Experience Hub as a dramatic and welcoming public entrance to the facility.

### **Action 2:**

Redesign and Remodel the Susanne Lawrenz-Miller Exhibit Hall.

### **Action 3:**

Develop a Strong Presence on the Los Angeles waterfront.

### **Action 4:**

Develop a Presence at AltaSea.



Metallic schools of grunion will be a unifying visual element throughout the park and aquarium. A large aquarium name and logo will help to identify this public building.





This blank wall that faces the beach offers an excellent opportunity to dramatically identify the building.

Many visitors are unaware of the free, public aquarium only a few hundred feet away from the beach.

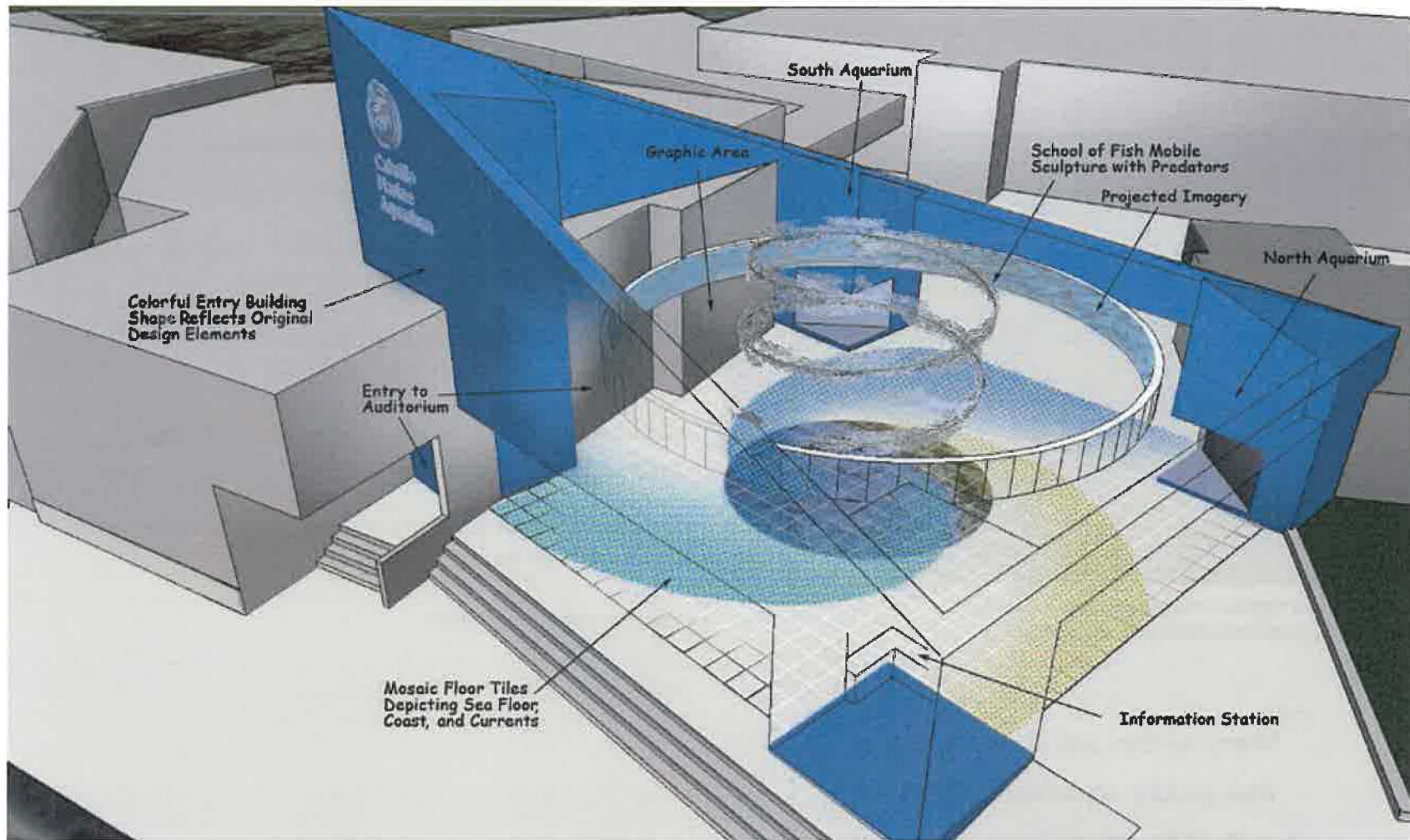
## Actions to Improve Visitor Services

### Action 1:

*Develop an Experience Hub as a dramatic and welcoming public entrance to the facility.*

The purpose of this experience hub is to:

- Identify this building as a public aquarium
- Welcome visitors and help them understand the ecological significance of this special place
- Function as a starting place for an easily-navigated traffic pattern through the entire facility
- Improve visitor orientation



This hub will be a welcoming gateway where visitors are prepared to get the most from their Cabrillo experience.



### Visually Identify the Building as Open to the Public

An important factor limiting attendance at the Aquarium is its lack of public exposure. Marketing is minimal and the building is tucked away within the Cabrillo Beach Coastal Park where it is virtually hidden from view. Beachgoers and people fishing and boating are unaware that this public resource is available to them.

The vertical mass of the proposed hub and the name Cabrillo Marine Aquarium and its logo will make the building recognizable from the beach and the parking area. Its prominent glass doors and open appearance will indicate that it is a public entrance into the aquarium.

Once inside the entry hub, visitors will be introduced to a few key organizing concepts that explain the significance of this ecologically rich site and that prepare them to get the most out of their visit to the Aquarium complex.

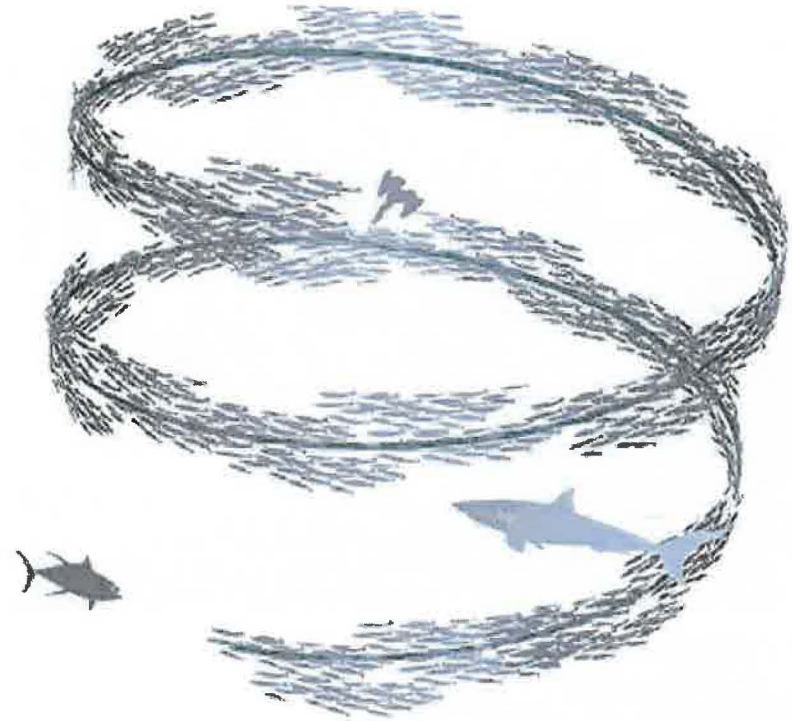


A welcoming public entrance will draw in casual visitors.

**Create a Focal Point Exhibit that Sets Expectations for a Dynamic Experience**

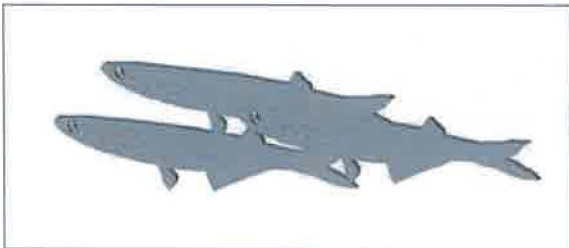
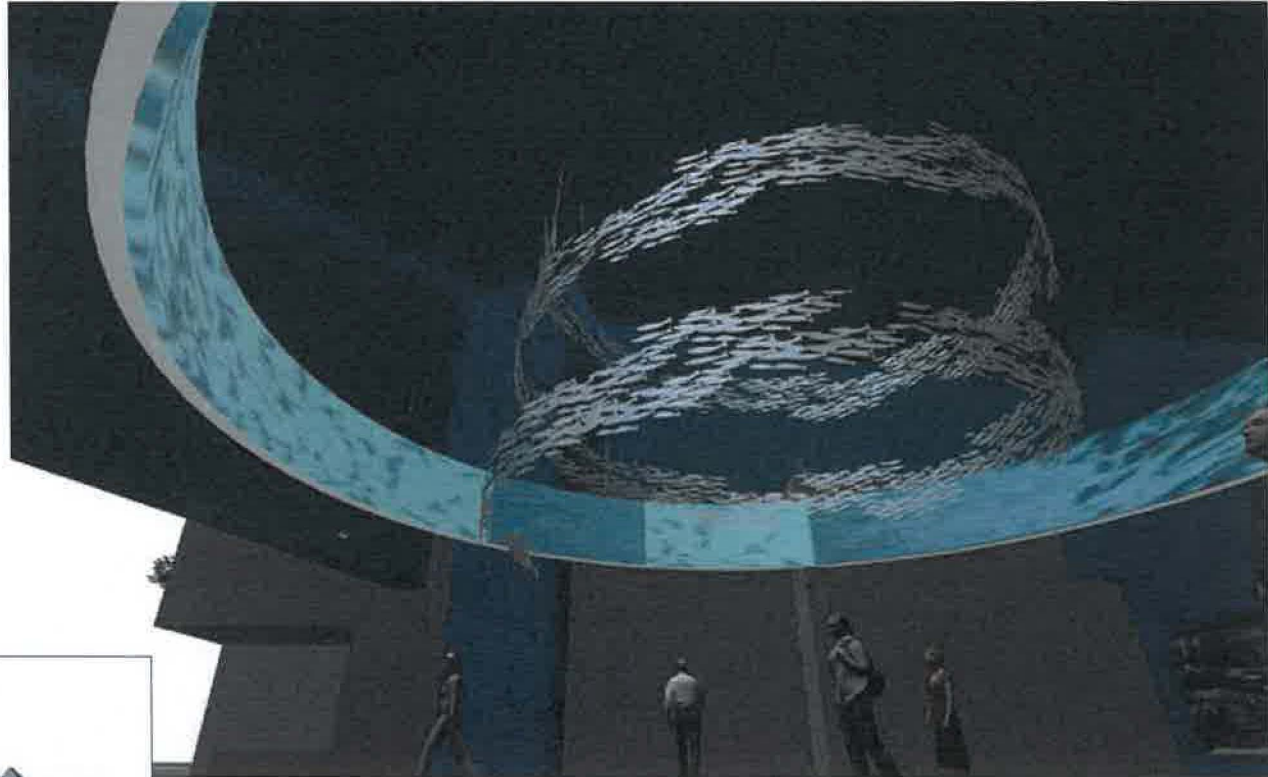
A sculpture of grunion will “swim” dramatically in the center of the entry hub. Multitudes of silvery fish will form a spiraling vortex above the floor and into the ceiling. Spotlights illuminate the tiny fish. Periodically a light flashes above them as a predator seemingly bursts through the top of the “school.” This sculpture is intended to introduce visitors to the excitement of the ecosystem and to build on the mythology of the grunion runs. People walking through the room will sense the energy around them.

Grunion are the iconic symbol of Cabrillo. They provide brand recognition and a visual focus to capture visitors’ attention. They are the compelling story of this place. Most aquariums adopt a recognizable marine creature as a symbolic mascot. Marineland claimed orcas; Monterey Bay has life-size sculptures of grey whales, while Long Beach highlights dolphins. These mega fauna have more massive presence than a 5-inch long fish like grunion. Grunion have an elegance of their own. They move in synchrony with others in open water. Mysteriously, they visit the beach only at high tide under a full moon to re-create life.



The illusion of movement is created by light flashing in a wave-like pattern over the grunion.

Visitors will be immersed in the moving sculpture of flashing fish above them as they enter the hub.



Grunion will be the unifying symbol throughout the facility, even down to the brackets holding the sign panels.

The hub introduces people to the key stories at Cabrillo.



South Aquarium

Mosaic Floor Tiles  
Depicting Sea Floor,  
Coast, and Currents

School of Fish Mobile  
Sculpture with Predators

Projected Imagery

North Aquarium

Information Station



**Create an Introductory Exhibit that Highlights Cabrillo Marine Aquarium’s Significance**

The concept of the “mingling of the waters” was identified by marine scientists, who planned the original exhibits, as the single most important factor that makes this Southern California location special. Unfortunately this concept was never fully developed in the existing exhibit hall. This new plan proposes that two aquarium tanks dominate opposing walls in this room. The species in one tank represent the warm southern waters of the Baja Peninsula, and in the other, the cold waters of Northern California. Three-dimensional dioramas of the contrasting landscapes will frame each tank and give added evidence of the diversity of the habitats.



A tile map will focus visitors’ attention on the significance of the underwater topography and complex currents just off this coast.

The diverse habitats of the Everglades “River of Grass” are clearly seen in the tile map by visitors to Florida’s National Park Headquarters. Cabrillo would benefit from a similar map.

An artistic tile map will cover the entire floor of this orientation room. It will graphically display the Los Angeles coast and the intricate, underwater topography of the area. The colors of mosaic tile will add a rich organic quality to the room and introduce a thematic blue that will be used to unify exhibits throughout the facility. This tile motif can be embedded in the courtyard or in the exhibit hall to aid in orientation as well.

**Develop a Well Defined Traffic Pattern Throughout the Facility**

Orientation will be improved by developing standardized directional signage and thematic public entrances that invite people into the exhibit halls. These attractive portals will be visible to people in the courtyard. Currently, visitors are confused by the array of signs of different colors, typefaces, and sizes that compete for their attention as they enter the courtyard.

There are very few architectural features that serve as landmarks or that channel people through these rather large public areas. Generally, when finding their way through any facility, people follow the most direct physical cues and markers that are available to them. When in doubt, they will read signs or consult a map to find their way.

Visitors standing in this experience hub will see a clear route to the main exhibit hall; a door into the theater; a view into the sales area; and friendly employees behind a welcome counter. Everything branches out from this hub.

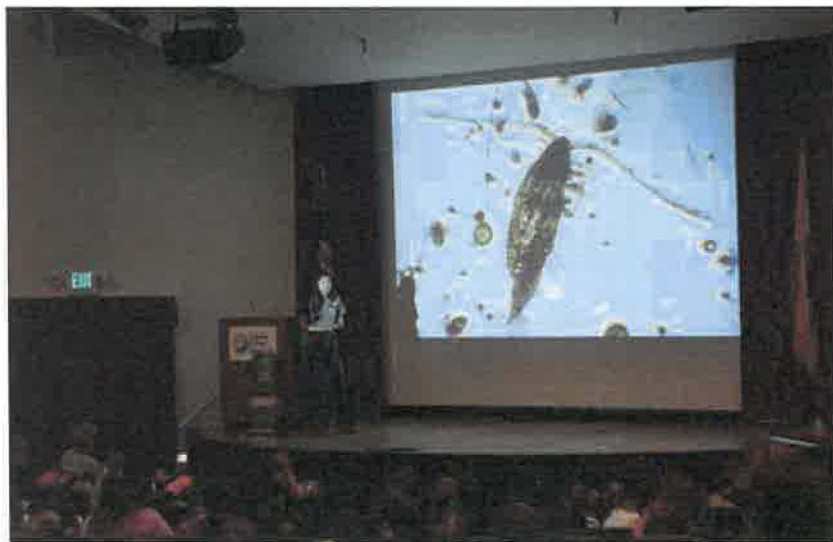


When people feel welcome and comfortable they can explore and enjoy their visit. Apprehension about parking, how to enter a building, or orientation of exhibits can spoil a visit.



A "family" of signs provides a recognizable unity to wayfinding.





Open doors to the theater in the hub will invite visitors to view orientation videos or participate in a program.

The theater offers some exciting possibilities when it is close to the visitor's entry experience. Many facilities present a holistic introduction to their story through an audio-visual theater presentation. A video has the benefit of being able to tell a complex story in a concise and dramatic fashion. Something as simple as an eight-minute presentation that underscores the values and the mission of the Aquarium would serve as a good advance organizer to help visitors appreciate concepts that are difficult to grasp like research in the Aquatic Nursery, or the Outreach Program with vans, or those dynamic events like a grunion run or a whale watch. Eventually video programs could be developed that tell specific stories, like how the Port of Los Angeles is introducing sustainable practices to restore and protect the harbor, the story of John Olguin, etc. This might be a popular activity when the exhibit halls are at peak visitation and when the weather is not optimal for outdoor activities.

### Design an Inviting Entrance to the Exhibits

The visitors' attention will be directed out into the courtyard by views through a wide set of glass doors that focus on the new thematic entrance into the Susanne Lawrenz-Miller Exhibit Hall. This gateway will "tell" people that this is an important doorway to enter because of its size and the sculptural elements that surround it. Similar thematic doorways will also invite visitors into the Exploration Center and the Aquatic Nursery.





A well-lit reception desk near the sales area stimulates interaction between staff and visitors.



Windows into the sales area (currently offices) will attract visitors who are resting in the courtyard.

### Centralize Visitor Services

Provide visitors with an immediate overview of what they can do in the Aquarium. They should feel as though the place was designed to accommodate their visit. Restrooms, sales area, exhibits, and food service should be easy to find and use. If some services are not in view, then unified signs and maps should quickly orient visitors to these locations.

The sales area, an important visitor service, will be adjacent to the experience hub and information desk. It will be moved into the space currently used as staff offices to make it easy to access from the new experience hub and from the interior courtyard.

The windows in this building face the courtyard and offer inviting views into the sales area, which is important since this is the area where many people wait for other members of their group. This location also allows shoppers a leisurely pace while browsing because they can maintain visual contact with members of their group that might choose to stay in the courtyard or in the exhibit hall.

An additional advantage to locating the sales area adjacent to the experience hub is that one employee can greet visitors and monitor both the Hub and the sales area when necessary.

Although the courtyard is the place where people rest and wait for others in their group to see exhibits or use the restrooms, it has not been a space designed for visitors to linger. It affords protection from cool ocean winds but on hot, sunny days doesn't provide adequate shade. Landscape plantings in a few discreet areas will soften the concrete feel and provide additional cool gathering areas. More seating is also needed if the public is to be invited to spend time here.



The courtyard will be more inviting and comfortable with the addition of a few trees and benches as well as a fabric shade covering in 2013.





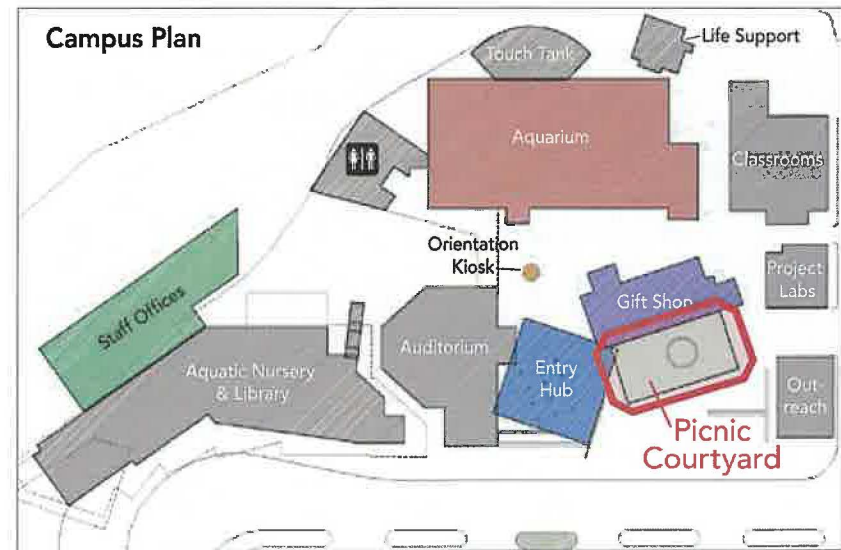
The lone shade tree is a magnet for group activities and programs.

Perhaps the courtyard should be considered a place where visitors can passively absorb interpretive messages as they rest and socialize. Benches can incorporate conservation messages in the form of quotes or fun facts. Ocean-themed play areas and statues for photo opportunities and for children to climb on can be placed strategically in the plaza. This is a relaxing location where people can spend time in quiet contemplation. If it is a rewarding, pleasant experience then it is also a good location for placing donation receptacles that highlight projects that people can donate to based on their personal interests.

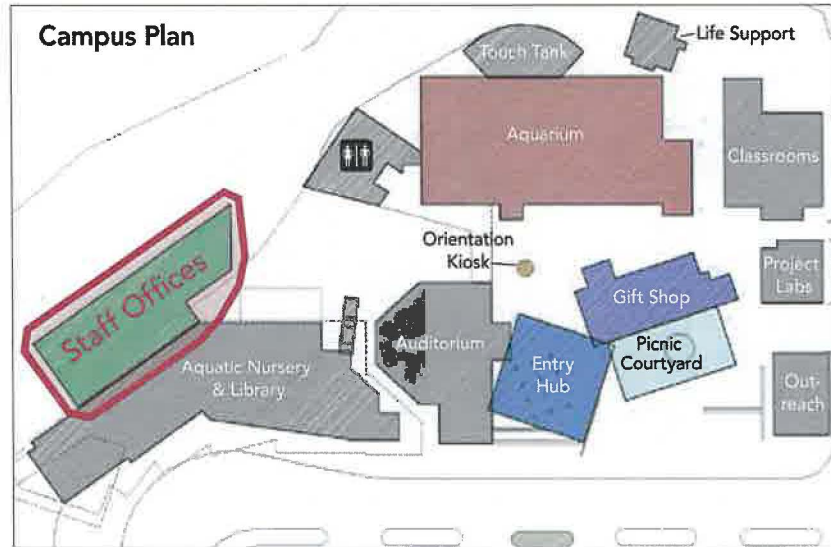
This plaza is the appropriate place to add an interpretive panel that describes that the Susanne Lawrenz-Miller Exhibit Hall was designed by the world famous architect Frank Gehry. It will explain the reasoning for the use of fencing to define space. This insight adds a level of richness to some people's appreciation of this place.

**An outdoor vending/picnic courtyard** will be located off the sales area facing the beach and thereby separating food and drink from the exhibit areas. Trees and green landscaping will cool the area and soften the environment for people relaxing there. It will serve as a teaching and waiting area for organized groups and classes as well. The vegetation can be of native species that demonstrate sustainable practices for home landscaping.

The vending machines should be housed in a lockable room adjacent to this plaza as theft and vandalism are a real possibility in the evening. The Cabrillo Beach food concessionaire could relocate here during the week and during the slow seasons because potential customers would be more abundant in the Aquarium than on the beach.



This courtyard will serve as a transition between the recreational beach and the more educational atmosphere of the aquarium.



This office complex centralizes administrative space for improved staff communications while utilizing a preexisting elevator and restrooms.

### Create New Staff and Volunteer Offices

Current staff office space is crowded and many offices are located throughout the facility. A new office complex adjacent to the “library addition” should be considered. Existing elevators will permit a two-story addition to be built at moderate cost. Bathrooms are already available in the existing second story. The building would close off the open end of the Mark Taper Courtyard, replacing the concertina wire fence that is there now. Windows overlooking the courtyard would allow program staff to view visitor activity from their offices. A central location for lunch and break times could encourage socializing between staff and volunteers. This would be a positive way to foster communications and understanding among otherwise dispersed work departments.

This new office addition could also include a much needed multipurpose room where groups of up to 50 people could meet. Currently the library is often used for gatherings, which can be disruptive to its intended public use.

Archival storage and a specimen preparation lab is another space need. Since formaldehyde and other chemicals are used in this archival lab and also in the Aquatic Nursery, it would be logical to build the archives into this office building with appropriate vented chemical storage located here as well. A window into this space would allow visitors to view artifact preparation. An exhibit area, designed to display selected artifacts that are rotated periodically, could generate interest in return visits.

The staff offices now occupy a central area that would serve the Aquarium more effectively as a public space like a sales area.



A multipurpose room will be used frequently for a diversity of meetings and informal gatherings.



Current archival space is crowded and inadequate for specimen preparation. Valuable artifacts like this sperm whale tooth and scrimshaw can be displayed in temporary exhibits in a new, more public friendly area.





**Create New Workshops for Program Outreach and Project Lab**

The present work spaces for these departments are overcrowded and inadequate. Existing plans to build new work spaces on the northeast side of the courtyard will provide better access for the outreach vans to be loaded. Perhaps the vans should be visible to the public to advertise this important program to visitors. Likewise, it may be desirable to interpret the communications/art laboratory to the public as well.



The original artwork in the exhibit hall should be reused in the remodeled hall, and photos and examples of the work should be displayed in proximity to the lab where it is created to give visitors an appreciation of this authentic work.

**Action 2:**

*Redesign and Remodel the Susanne Lawrenz-Miller Exhibit Hall.*

The Susanne Lawrenz-Miller Exhibit Hall is rich in institutional history. Some artifacts and exhibits date back to the earliest years of the museum. Much of the original artwork in the exhibit hall is exquisite and irreplaceable. Many visitors tell us that they value the authenticity and the intimacy of the exhibit hall experience.

Unfortunately, the exhibit hall is aging and deteriorating at an accelerated rate. Much of the infrastructure in this exhibit hall is in need of upgrading and remodeling. Pipes, metal brackets, and supports are rusting, the concrete pavers are disintegrating, and the interpretive panel designs are becoming visually outdated.

The level of remodeling required in this exhibit hall means that the aquarium staff will need to schedule a major upgrade of the life support system to synchronize with the installation of a new electrical/lighting system, poured concrete floor, and the fabrication of at least three major habitat components that serve as focal elements for sandy beaches and mud flats, rocky shores, and open ocean.



Visitors appreciate the intimacy and authenticity of the organic exhibit hall. Care should be taken to retain these qualities in new exhibits.



People understand and accept information that focuses on a particular place. The Port of Los Angeles and the Channel Islands are right in front of them here.

### **Address Contemporary Issues**

There is a need to address current ecological issues within the exhibits. The Ocean Project is providing updated research information to zoos, museums, and aquariums that is timely to the development of exhibits at the Aquarium. This organization, of which CMA is a member, has identified five key points with implications for programs and exhibits at Cabrillo Marine Aquarium.

- 1. Concern for the ocean:** The majority of visitors already favor ocean conservation and need no convincing, i.e. aquariums can focus on messaging on the need to act now and provide visitors with ways to help personally.
- 2. Understanding of the threats:** The public is much more likely to understand and accept information about threats when it is presented in relation to a particular place or specific species rather than in terms of "the ocean" or "the climate" and is presented in ways that relate to them personally.
- 3. Start with the solution:** Suggest small but significant actions that both help address a problem and align with visitors' desire to be "green." Include your audience as part of the solution (rather than as part of the problem).

**4. Importance of Teens:** Focusing on youth, and teens in particular, is the most effective way to engage the public and advance ocean conservation.

**5. Aquariums are seen by their visitors as a credible source of information about the ocean:** They can turn their visitors' heightened interest into action by effective communication on-site, and increasingly, online.

The redesign of exhibits should incorporate this knowledge about visitors and how they receive information. The redesign will reuse many of the existing exhibits but in a modified form where they will be subservient to key introductory habitat exhibits.

A template for interpretive text will be standardized into a hierarchal layered format following the 3-30-3 rule for ease of reading and comprehension.

The jewel tanks will be retained but a few larger and more sculptural tanks will be added for variation and to allow for more natural fish behavior.



Exhibits and interpretive text should be designed in an easy-to-understand hierarchy of information arranged in a descending order of importance from objects, photos, and large font to smaller typeface and sizes of visuals.



A few tanks of varying sizes and shapes will diversify the visitor experience and promote better schooling of some fish species.



### **Develop a Traffic Pattern Within the Exhibit Hall**

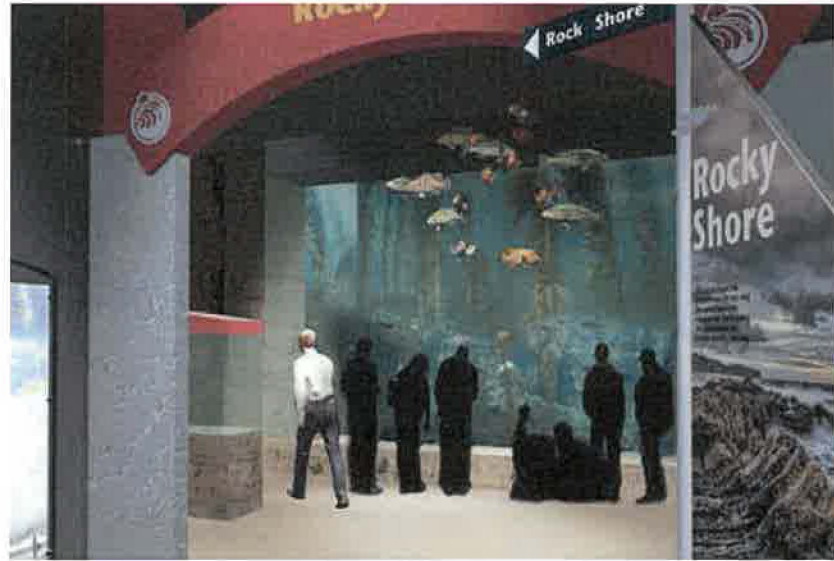
Once inside the exhibit hall, visitors need some cues to help them make decisions about where to go and what to attend. Ample space must be provided to accommodate groups of people acclimating after entering this room from a bright outdoor courtyard. The same concepts that we have come to expect in commercial sales outlets are relevant in an exhibit hall as well. People want to see into spaces before entering them. They are reluctant to stand in crowded spaces when surveying their surroundings. They prefer to turn right when entering a room unless there are barriers or invitations to do otherwise.



Space, light, and architectural design guide people better than signs but words confirm the information that we infer from our environment.

**Some general recommendations for the exhibit hall include the following:**

- Prepare people for the exhibit visit and for a total Cabrillo Marine Aquarium experience before they enter the exhibit hall.
- Develop exhibits that organize a few BIG IDEAS, cues, and keystone exhibits that help people better comprehend meanings and concepts—especially prior to and at the climax of the exhibit experience.
- Develop a standardized format within each exhibit for faster visitor comprehension. Ideally, visitors will be able to perceive themes, stories, and messages in layered form, where the most important ideas are paramount with supporting concepts and information organized visually “beneath” these fundamental points.
- Keep exhibits friendly, authentic, and unpretentious. Be judicious in removing classic old elements but simplify and organize in a consistent framework of media that helps to organize information for viewers.



The Rocky Shore/Hard Bottom:  
All three habitat exhibition areas will feature focal point exhibits like this large, vertical kelp tank that draws visitors into the hall.



The whale exhibit presents the subject holistically and allows visitors to access interpretive messages selectively.

- Create a stimulating variety of environments and spaces (size of elements, lighting, floor surfaces, and an easily discernible traffic flow through the hall). Visitors should feel the difference each time they enter a new habitat.
- Give visitors take-home messages that allow them to help make a difference in marine conservation. These can be integrated into many exhibits and re-emphasized as they leave the facility.
- Reduce the density of exhibits by creating an organizing “hub” in the entry to the facility and by moving some historic exhibits to the bathhouse where they can entice beachgoers to become exhibit participants.
- Make all of the exhibits accessible to people who are challenged by mobility, sight, hearing, or language. Design for a high contrast between text and background on interpretive panels. Use a variety of techniques to involve all of the senses.

**Action 3:**

*Develop a Strong Presence on the Beach.*

The greatest asset of CMA is arguably its location on the coast where there is a diversity of habitats, a strong sense of place, and a large recreational audience. Every attempt should be made to optimize use of these cost-effective resources.

- **A Cabrillo Marine Aquarium identity should be reestablished in the historic Cabrillo Bathhouse.** This is a “beachhead” where many park visitors can be made aware of the aquarium. It occupies the prime location at Cabrillo Beach. It is the first thing people see when entering the park. It has a welcoming and unintimidating appearance. It presents an opportunity to reclaim some of Cabrillo Marine Aquarium’s history.

This iconic structure is an excellent location to introduce people to the human story of how Cabrillo Marine Aquarium grew and it is an opportunity to invite visitors to see what it has become. Space is too limited in the Susanne Lawrenz-Miller Exhibit Hall to tell this history story as well as it deserves to be told, but here is an appropriate atmosphere with lots of room to do so in an historic setting.



Visitors tell us that the beach is a contributing factor in drawing them here. The Aquarium should make efforts to invite more people to explore the tidepools, mudflats, and to enter the facility.







The ambiance of this restored structure appeals to almost everyone who enters the park. It has potential to be an outreach of the Aquarium on the beach.

In addition to its use as an exhibit area, this restored building has the ambience for hosting parties, workshops, and other thematic gatherings.

- **The “satellite” resource areas—tidepools, salt marsh, etc.—need to be publicly identified so casual visitors can explore them on their own.** They are not discovered by most visitors and if they are, their ecological significance is unappreciated. Each site has the potential to be an immersive and educational experience for visitors. Vandal-resistant directional signage and lockable kiosks with interpretive panels could serve this function. Thematically designed iron cutouts and sculptural structures that contain full-color interpretive panels can effectively introduce ecological concepts at these sites.

- **Connect the Aquarium to the beach both visually and physically.** The large parking area and the roadways isolate the Aquarium from other areas of the park. A “green” pedestrian walkway from the beach to the front door of the Aquarium will visually inform people that the Aquarium is part of this public recreational area and will encourage exploration of the building. A large low-profile sign identifying the Aquarium should be placed between the Bathhouse and the Aquarium to greet visitors as soon as they drive through the gate. An Aquarium presence in the bathhouse can effectively connect the two buildings as well.



There is an existing green corridor between the Bathhouse and the Aquarium that only needs signage to invite visitors to the Aquarium’s doorstep.



AltaSea offers an opportunity to serve an expanded audience of Port visitors.

**Action 4:**

*Develop a Presence at AltaSea.*

Cabrillo Marine Aquarium should be proactive in securing a marine education niche on AltaSea. Cabrillo’s mission of marine education will be well-served at this satellite location where there will be an expanded market of potential visitors. One of the self-identified weaknesses of the CMA site is the relatively restrictive transportation route required by people to reach Cabrillo Beach. This city dock location is more accessible to tourists and other attractions.

Association with such a large and potentially prestigious research facility will enhance Cabrillo Marine Aquarium’s reputation and may offer opportunities for collaboration in the future. Cabrillo Marine Aquarium’s credibility as a reliable source of marine information is also implicit in its presence at this facility.

Site specific research on Southern California marine life that will be conducted here is fundamental to Cabrillo Marine Aquarium's mission. The Ocean Project's extensive public surveys show clearly that Americans understand and accept information when it is presented in relation to a particular place or a specific species rather than in terms of "the ocean" or "the climate." Therefore, research conducted in Southern California waters will be of interest to visitors and will provide convincing local and concrete examples of threats and opportunities to marine life. Cabrillo Marine Aquarium will fill a highly visible education/interpretation niche that many aquariums would envy.



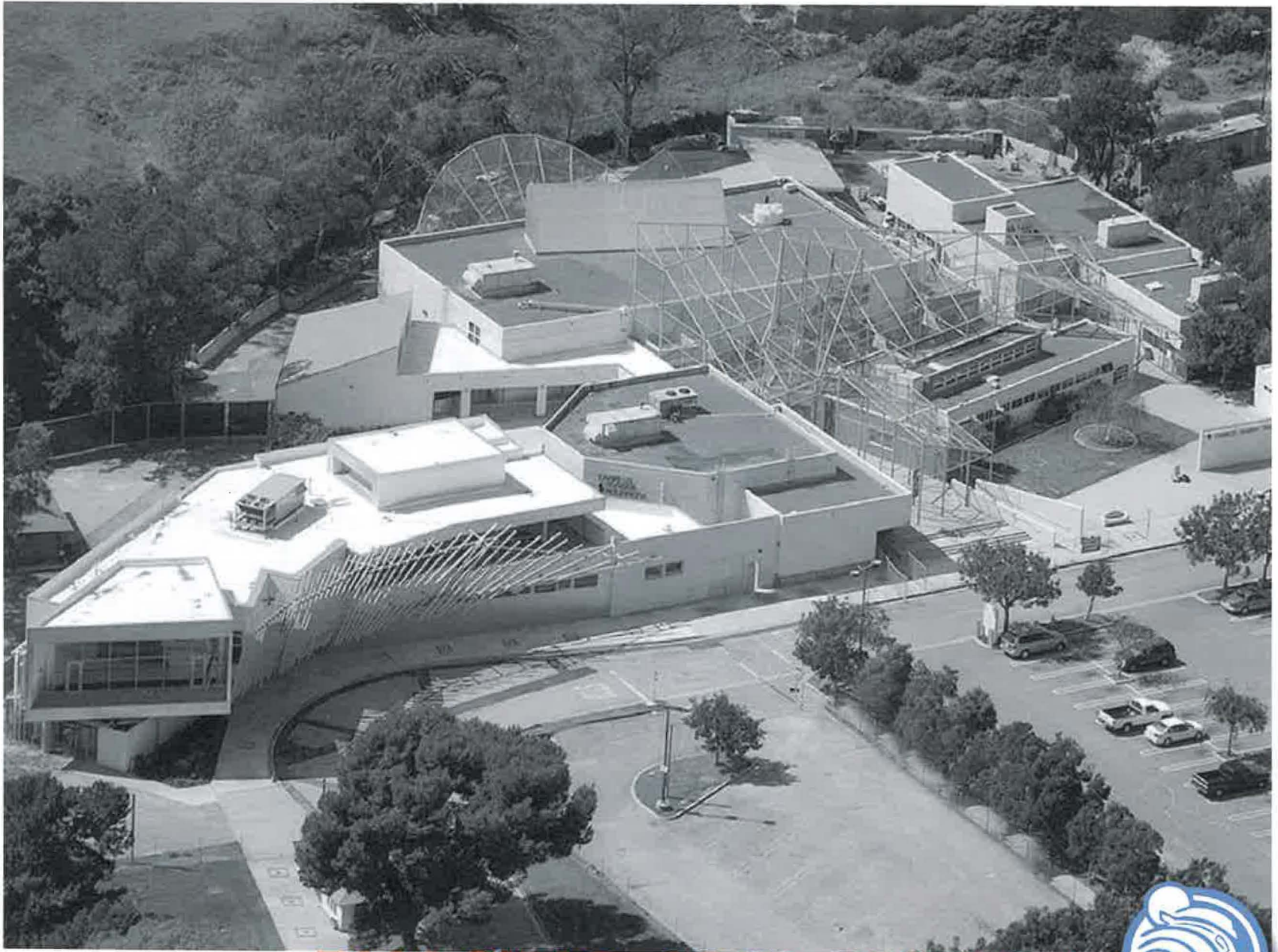
Visitor research confirms that people are interested in information about specific places and species such as the interaction between migrating whales and shipping traffic at the Port of Los Angeles.



Port Authority programs designed to make the Port of Los Angeles more environmentally sustainable are of great interest to area visitors.

At this time, October 2013, little is known about the development schedule for the entire project at AltaSea. Cabrillo Marine Aquarium’s strategic planning efforts should incorporate ideas that optimize the potential of this opportunity. For example, the Port of Los Angeles is committed to sustainable practices that save energy and protect the marine environment. This is a site-specific story in which the Aquarium’s mission and the Port’s mission converge fortuitously. Visitors want evidence of things that they can see right before them, and be told stories of specific species, and activities that are on an understandable human scale. This is a great example of thinking globally and acting locally in Cabrillo’s backyard. The national surveys conducted by the Ocean Project clearly indicate that visitors will trust information presented by an organization like the Aquarium. The Port will value knowing that credible research supports the Aquarium’s educational involvement in interpreting to the public.





APPENDIX A **PHASING AND BUDGET**



## Cabrillo Marine Aquarium Interpretive Master Plan

### Implementation Strategy

During this master planning process we have identified four general recommendations and four specific action items. Taken together these recommendations should ensure the success of the Cabrillo Marine Aquarium in achieving its mission and meeting its strategic goals over approximately the next 15 years.

### Mission:

Cabrillo Marine Aquarium is a trusted resource that inspires exploration, respect, and conservation of Southern California marine life.

### Strategic Goals:

- Inspire all visitors to explore Southern California marine life by connecting to CMA's collections and resources (living and non-living) and the nearby coastal park
- Connect guests to positive ocean conservation messages and actions
- Attract, welcome, and engage all segments of the community
- Be a leader in informal marine sciences education





## Appendix A: PHASING AND BUDGET RECOMMENDATIONS



Our recommendations were based on many hours of observations and interviews with CMA staff, stakeholders, and visitors. Our big picture general recommendations include:

- Create a welcoming public face and improve the facility to make easier for the public to access and use
- Prepare the visitors for their experience by providing an overview of the significant CMA stories.
- Improve way-finding within the courtyard, buildings, exhibits, and throughout the coastal park
- Strengthen ties to the coastal site by “claiming” the bathhouse, fishing pier, tidepools, and establishing a presence at AltaSea



Our Specific Recommendations were based on our general recommendations and include:

- Develop an Experience Hub as a dramatic and welcoming public entrance
- Redesign the Susanne Lawrenz-Miller Marine Habitat Exhibit Hall to address aging infrastructure and to provide varied opportunities for all visitors to explore Southern California marine life
- Develop a strong presence in the Cabrillo Beach Coastal Park and at AltaSea

## Cabrillo Marine Aquarium Interpretive Master Plan

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The following phasing plan is proposed based on the current facilities and needs of Cabrillo Marine Aquarium. These recommendations are independent of funding, but often sequencing of design and construction are dependent on funding and parameters of funding sources. Therefore phasing and scheduling of these components will be a strategic and temporal decision based on a diversity of criteria. Rationale for phasing and scheduling these components is a balance between facility and visitor's needs. Funding estimates are generalized and are provided as a target for fundraising purposes. Detailed architectural, engineering and exhibit design will be needed to implement each phase of the master plan.

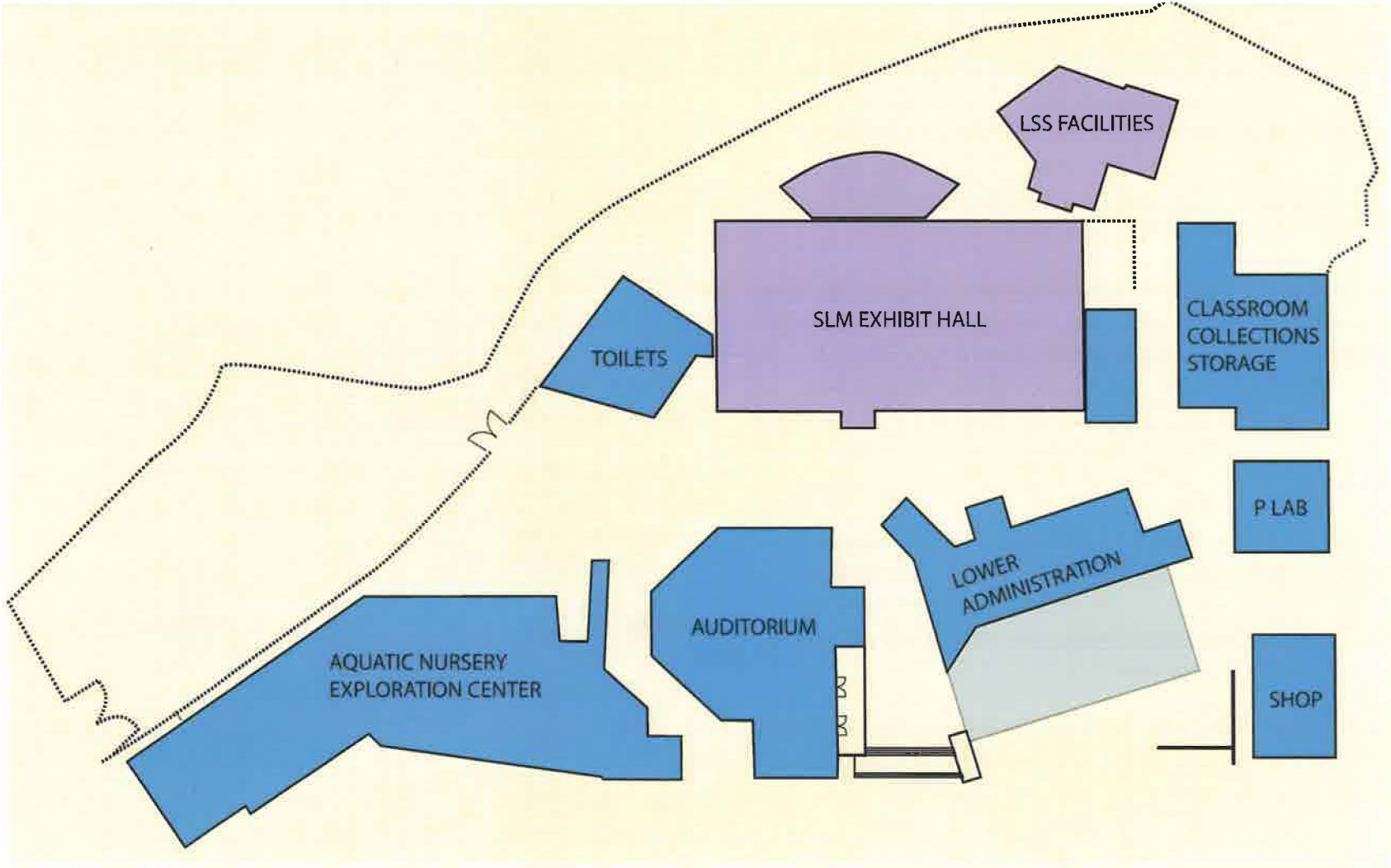
### Phase One (Immediate)

Immediate: The life support system for the aquarium is currently in critical need of upgrading and/or replacement. The entire Susanne Lawrenz-Miller Exhibit Hall should be remodeled at the same time in order for rewiring and the new plumbing to be installed efficiently. Floors will need to be removed during the process for the installation of life support piping.

As the SLM Exhibit Hall is undergoing renovation, CMA can still invite visitors to explore the nearby Cabrillo Beach Coastal Park by developing visitor services and interpretive elements along the coastal park.

### Estimated funds needed:

Remodel Life Support System	\$2,326,250
Remodel SLM Exhibit Hall	
Building Infrastructure	\$2,964,000
Interior Exhibits and Furnishing	\$4,484,189
Develop a presence along the beach	\$250,000
<b>TOTAL</b>	<b>\$10,024,439</b>



## Cabrillo Marine Aquarium Interpretive Master Plan

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### Phase 2 (High Priority)

The visitor entrance and orientation hub is an opportunity to help organize a holistic and meaningful experience for CMA guests. It can be undertaken simultaneously with the remodeling of the main exhibition hall, or as the next phase of development. The entry hub will provide a strong visual entrance point to Cabrillo Marine Aquarium, and is a logical step in tying together the diverse activities and facilities that most visitors have trouble comprehending on their first visit to the aquarium.

As the front entrance and orientation hub are developed, additional facilities will need to be addressed. The original staff offices would be adjacent to the new hub. We recommend repurposing this aging, crowded office space for use as a sales area and public space. This will allow the sales area to be located in a more visible and accessible public space next to the orientation hub and central courtyard.

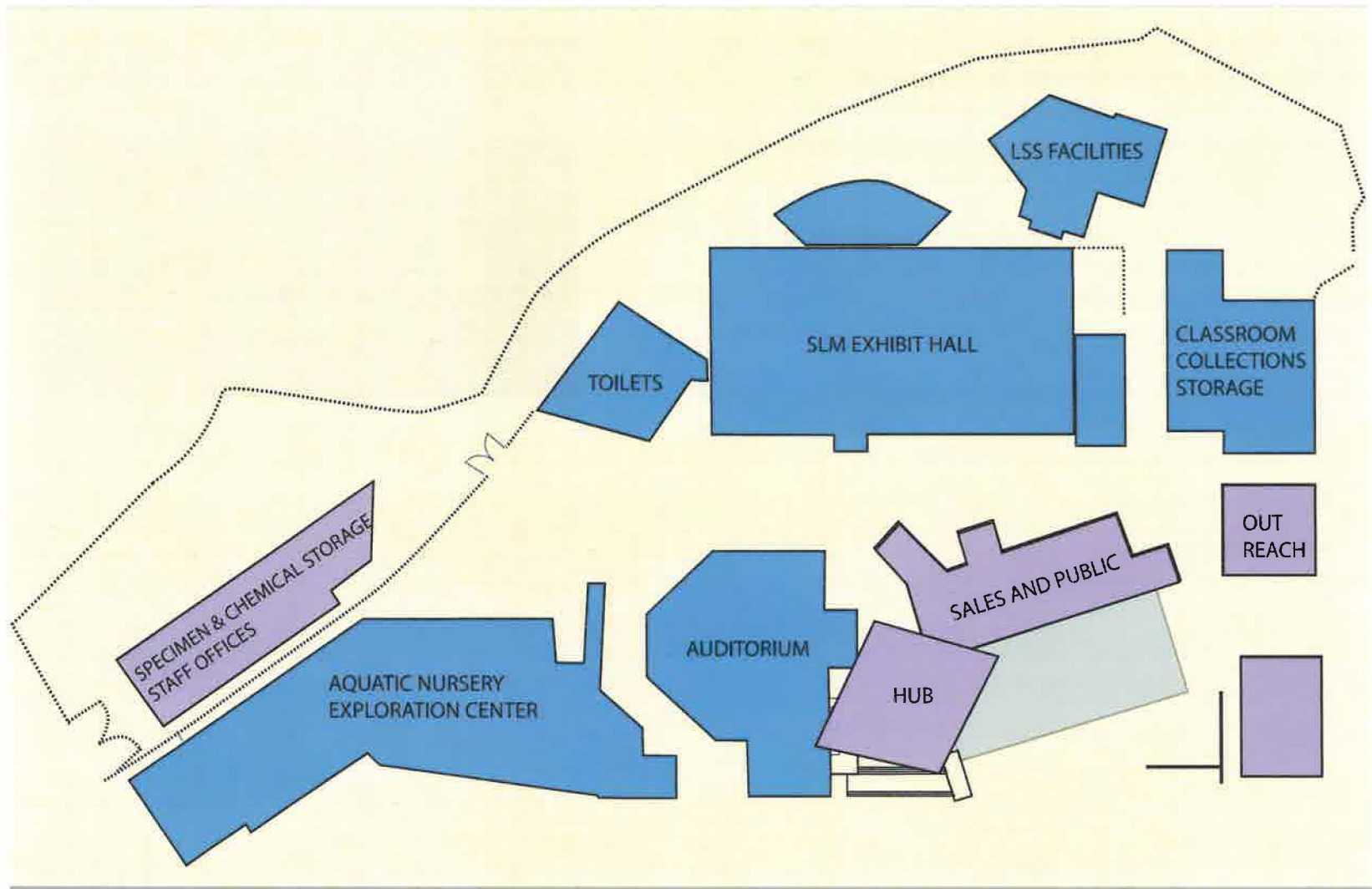
This will require relocating the staff offices to another area, and we recommend developing a controlled and secure collections storage facility as well. New staff offices and collections will then be adjacent to the existing administrative offices which are now located in the 2004 expansion.

When the new offices are constructed some of the secondary office space can be relocated into this new centralized work area, vacating

existing facilities. The successful Ocean Outreach program requires facilities to house supplies and most importantly their live program animals. The existing Project Lab workspace can be repurposed to accommodate the needs of the Outreach program.

#### Estimated funds needed:

Construct a Visitor Entry Hub	
Construction Costs	\$1,300,000
Furnishing and Exhibits	\$1,723,400
Construct a new two story staff office adjacent to current offices	\$5,160,000
Repurpose staff offices to public sales area	\$1,147,000
Repurpose Project Lab to Ocean Outreach facility	\$ 640,000
<b>TOTAL</b>	<b>\$9,970,400</b>



## Cabrillo Marine Aquarium Interpretive Master Plan

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### Other Opportunities

Currently the Port of Los Angeles and the LA Waterfront community is developing a 28-acre campus to unite marine science, education, business, and the community. Entitled AltaSea, this \$500 million, 20 year vision has high aspirations for innovative solutions and deep roots in scientific research, collaboration and community

Included in this vision is a public interpretive center, classrooms and auditorium for education and community programming for school groups and general visitors. The Cabrillo Marine Aquarium is a partner in this development, but as of now, the roles of CMA are undefined.

We recommend that CMA continue to pursue and develop a presence on the AltaSea campus as the provider of quality marine education and visitor engagement that has been perfected over the 80 year history of CMA.

### Estimated Funds needed

Unknown



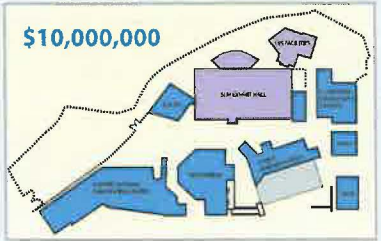
# Appendix A: PHASING AND BUDGET RECOMMENDATIONS

## Summary of Phasing and Budgets

This summary illustration outlines three suggested growth phases for the Cabrillo Marine Aquarium. Each has its own merits and may be completed in any order as oppurtinities arise.

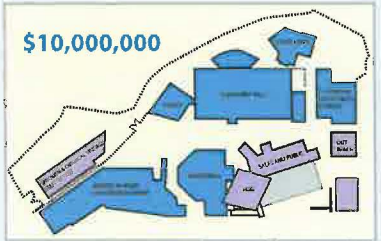
### Phase 1

- Improve Visitor Experience
- Upgrade SLM Exhibit Hall
- Develop Coastal Park Exhibits
- Upgrade LSS-Pump House



### Phase 2

- Develop Introduction Area
- Orientation Hub
- Relocate Sales Areas
- Develop Areas for Outreach
- Ocean Outreach Quarters
- Develop Areas for Collections
- Dry Specimen Storage
- Chemical Storage
- Develop Staff Offices



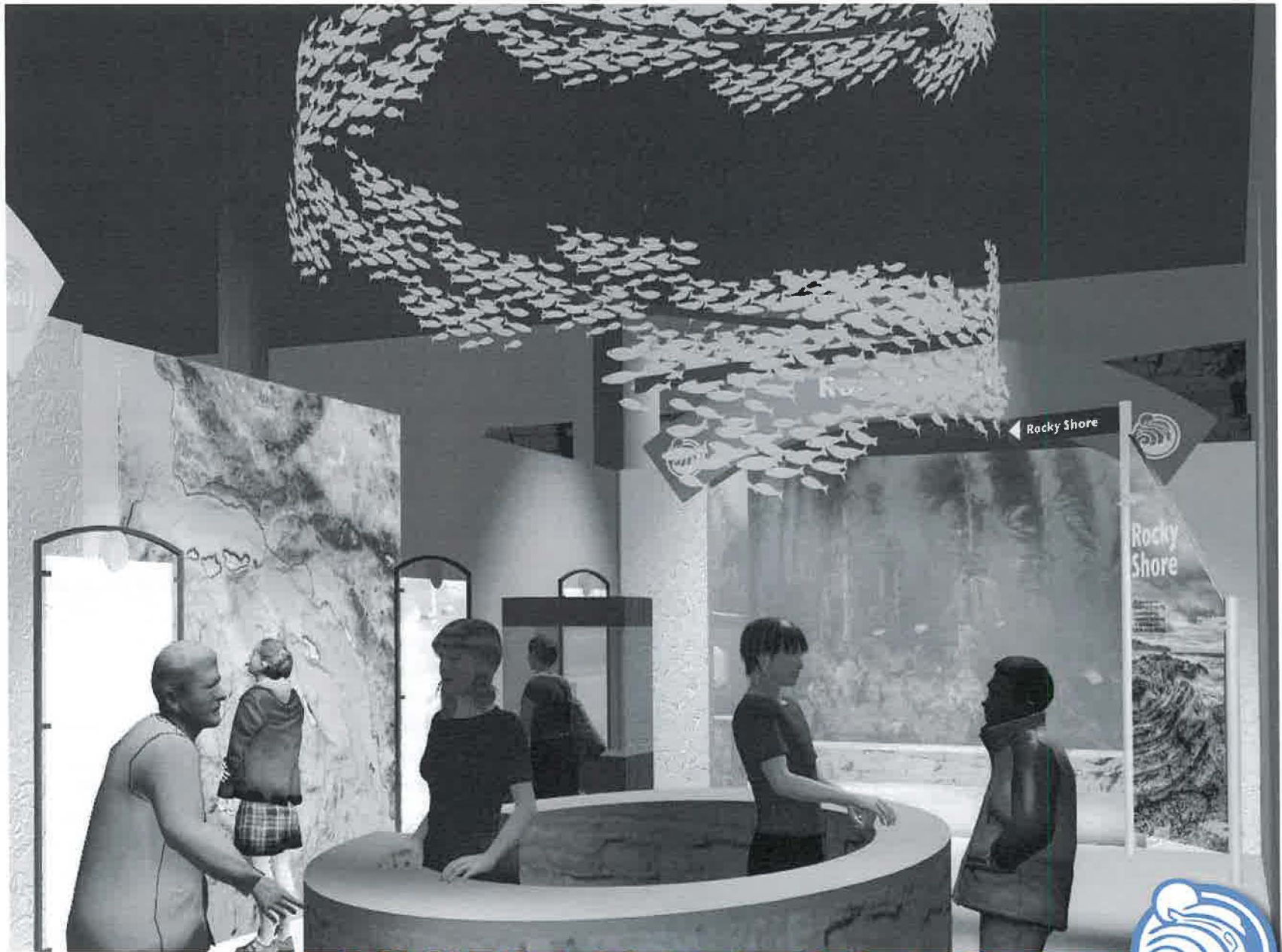
### Other Opportunities

- Develop Community Partnerships
- AltaSea









APPENDIX B **EXHIBIT HALL CONCEPT**



The goals of this plan are to:

- Create a visitor friendly aquarium experience that emphasizes the significance of these Southern California waters
- Maintain the warm, personal, and authentic feel to the Cabrillo exhibit experience
- Provide visitors with in-depth stories and interpretation while headlining the most important ideas and concepts
- Create optimal versatility within the exhibit hall and permit change

### One Exhibit Hall, Three Environments

The three habitat galleries showcase unique and striking designs so that a visitor will sense transition while moving from one environment to another. The redesigned floor plan optimizes free choice learning, an effective style that empowers visitors to pursue personal interests in the gallery. The design enhances long views across much of the 7,600 square foot space and gives inviting glimpses from one habitat area to another. A rhythmic pattern is created by the use of large focal point exhibits surrounded by clusters of related jewel tanks and artifacts, as well as half walls that define without confining space.

**Rocky Shores/Hard Bottom Habitat** features a large and vastly improved rocky shore surge tank. The popular tidepool touch tank can be viewed through glass doors even when it is resting, while jewel tanks are clustered throughout the gallery and include a dark enclosure for optimal viewing. A large vertical kelp tank near the exhibit entrance door commands attention and spotlights the kelp forest as an important component of the hard bottom habitat. A textured floor suggests an impression of life-like rocky surfaces, complemented by a synthetic rock outcropping to reinforce this hard bottom concept.

**Sandy Beaches/Soft Bottom Habitat** is a brightly lit exhibition with a simulated sandy beach that transitions to dark mud flats in the concrete floor. Ambient light from the clear story windows and artificial lighting sets the scene of a sunny, southern California beach. A wave tank adds a dynamic visual element, joined by a keystone exhibit tank that showcases grunion as the iconic symbol of Cabrillo Marine Aquarium. A large AV monitor mounted on the wall shows the excitement of a grunion run on Cabrillo's beach. To round out the gallery, an improved continental shelf tank highlights the ecological diversity in southern California's largest marine habitat.

**Open Ocean/Deep Sea Habitat** sparks imagination, encouraging visitors to feel as if they are walking below the water's surface. Shimmering blue lights dance off the darkened ceiling above the exhibits. Photographic murals depict scenes of vast open ocean and whale flukes above the surface. A whale skeleton lures viewers into the exhibit hall and serves as a symbol of this habitat. Although there are

fewer live specimens in this exhibit area, an array of photos, artifacts, and preserved specimens encourage active exploration. An island diorama features an up-close perspective of sea birds, mammals, and pelagic sharks.

### Everyone is Welcome

This floor plan thoughtfully accommodates the flow of large crowds, while facilitating an efficient use of space for guided groups and school groups to gather around key exhibits. The open floor space permits staff to stage talks and interact one-on-one with visitors over specimen carts. Multiple travel routes through the exhibits allow optimal use of the exhibit hall by several groups at a time.

### An Invitation to Enter

Visitor expectations are established in the orientation hub as they enter the Aquarium and discover an exciting array of options to see in the galleries. Most casual visitors will follow the dominant traffic flow and visit the Susanne Lawrenz-Miller Exhibit Hall before exploring other areas of the aquarium and park. Visitors will be attracted to this entrance by a dramatic statue of grunion spawning on sand. When visitors approach the statue they will see the smaller life-size grunion

sculpted into the railing, suggesting the true size of these symbolic Cabrillo fish and the special significance they hold on these beaches. Prominent glass doors into the exhibits give a clear view of the spacious lobby and the friendly staff inside.

### What's So Special Here?

An inscription near the grunion statue informs readers that this exhibition hall focuses on the coasts and ocean of Southern California. Visitors will quickly learn they are in the midst of one of the only places where grunion perform this unique ritual. A large wall-size satellite photo in the lobby entry dramatically reinforces the importance of this place by inviting visitors to view the intriguing maze of underwater canyons, rocky coastlines, and the continental shelf that help create this extraordinary environment. This satellite image illustrates the unique interface between the metropolis of Los Angeles and the waters of the Pacific Ocean, while introducing humans into the ecological equation of our local urban ocean.

### Preparing the Visitor

The spacious entry room of the Susanne Lawrenz-Miller Hall prepares visitors intellectually and emotionally for their aquarium visit. Dramatic lighting, a unifying pallet of colors and textures, and professionally designed interpretive panels elevate expectations for the impending experience. The open floor space enables visitors to take time to study their options, get oriented, and select a route that guides them through the hall. Aquarium staff members cheerfully greet visitors as they enter this lobby, answer questions, and invite them to take a closer look at specimens and artifacts that are featured for the day.

### Creating Clues to Discovery

Thematic arched portals frame glimpses into the three major habitat exhibit halls. The simulated sand floor glows in the brightly lit Sandy Beaches/Soft Bottom Exhibit and the sound of waves beckons prospective visitors. The distant doorway into the Open Ocean and Deep Sea Habitat displays a huge whale skeleton that appears invitingly touchable. These visual cues create lines of sight that help guide people onto routes through the three marine habitats in the building. A swaying kelp forest towers over visitors when they enter the Rocky Shores/Hard Bottom Habitat. Many visitors may select to enter the Rocky Shores Habitat first since most people prefer to turn right as they enter a room,

as well as its proximity to the lobby. However, personal interests or crowds can easily encourage visitors to select one of the other inviting and easily accessed routes.

Accessibility and line of sight are important factors in the myriad ways visitors will explore this exhibition. Dynamic elements like mounts of swimming sharks draw visitors out of the covered area where they have been quietly observing jewel tanks in a semi-darkened observation pod. The reduced light and lowered ceiling height help create an intimate environment where people feel comfortable watching creatures move in the water. The roar of a dynamic surge tank will draw visitors through the exhibits to the entrance of the popular touch tank.

### Visually Diverse Experiences

Aquarium tanks will vary in size and shape to create unique and interesting views and to promote more natural animal behavior. Tanks are clustered around columns that house electrical conduit and water pipes for the life support system. This allows for a cleaner, simpler appearance where the artifacts and animals take center stage instead of mechanical systems dominating the view. These columns will be designed to optimize maintenance and cleaning. In this design, jewel

tanks continue to be an important exhibit component because they allow visitors an intimate connection with smaller creatures with close-up viewing from many angles. The clean, uniform surfaces of the columns allow interpretive text and panels to become dominant visual components.

### Authentic Exhibits

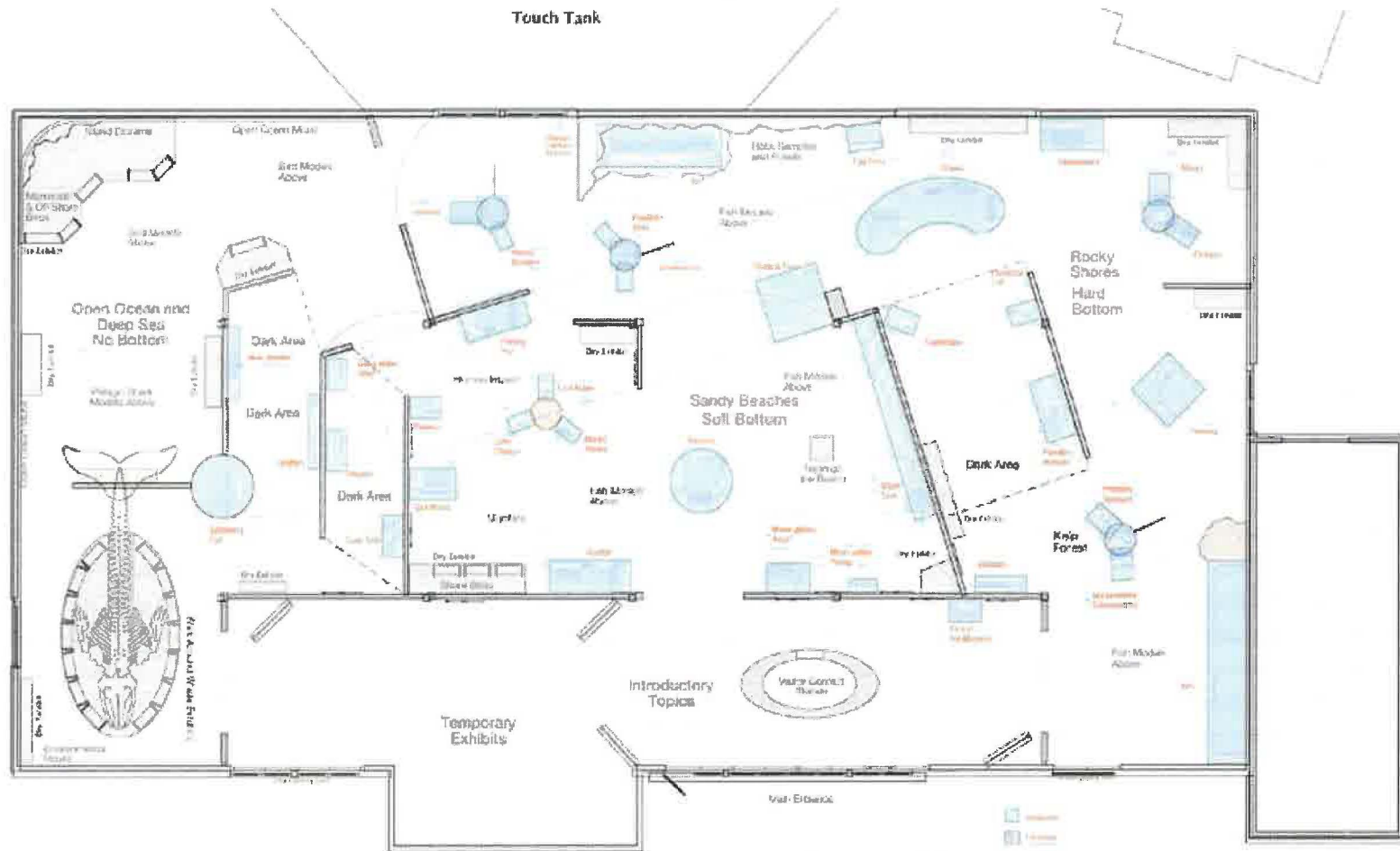
Authenticity is the core strength of Cabrillo Marine Aquarium exhibits. Therefore, creating a new environment around popular specimens like the whale skeleton builds on visitor interest. Dropping the whale down to within a few feet of visitors creates an unexpected view and brings the bones tantalizingly close. The clusters of thematic interpretive panels address questions that viewers might have when studying the whale, but also protect the skeleton from being handled. The professional treatment of this central exhibit sets the tone of the visitor's experience as they explore the other parts of the exhibition.

The concentration of interpretive media around the whale provides space in the gallery for better circulation and makes room for small group tours. It also allows for the creation of longer views of large murals and photographs that place the objects into context while simulating more immersive environments.

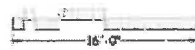
### Multiple Layers of Interpretation

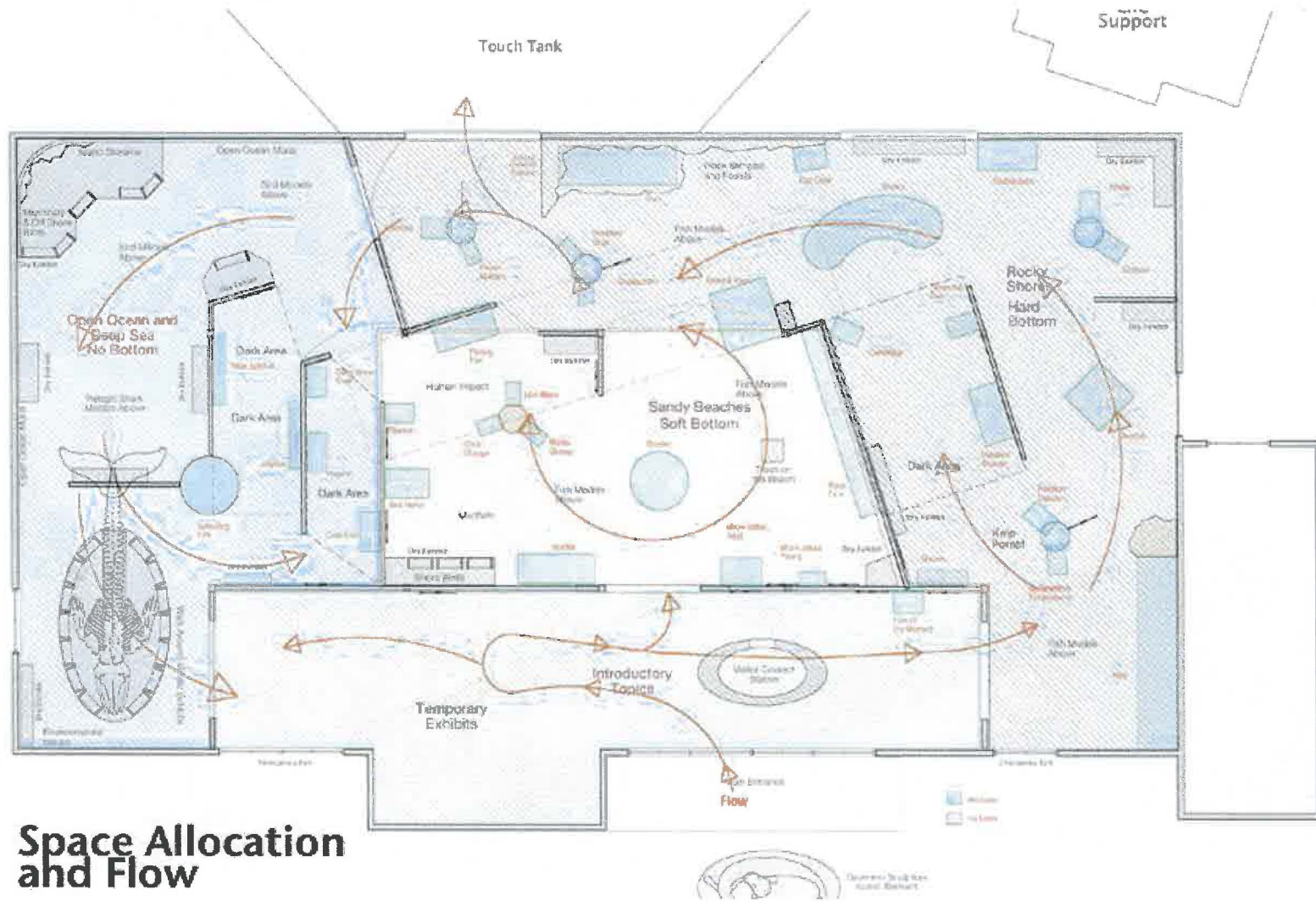
The redesigned exhibit hall uses a format within each exhibit to promote easy learning comprehension of exhibit ideas. The most important concepts are presented with dominant objects like the whale skeleton. Supporting ideas, sub-stories, and tidbits of facts are layered in a descending order of importance by size of interpretive text, photo size, and placement. Standardized typefaces, font sizes, and color are used in consistent ways to simplify and organize interpretive messages into a clean, well-organized framework.

The large interpretive panels are a conscious attempt to maintain a place within the standardized "family" of panels to incorporate large amounts of information while maintaining a clear and concise message. Some standard methods will be developed that provide a unified look for temporary material, new research, and for the detailed and in-depth layers of interpretive stories that underscore the Aquarium's commitment to educational excellence.



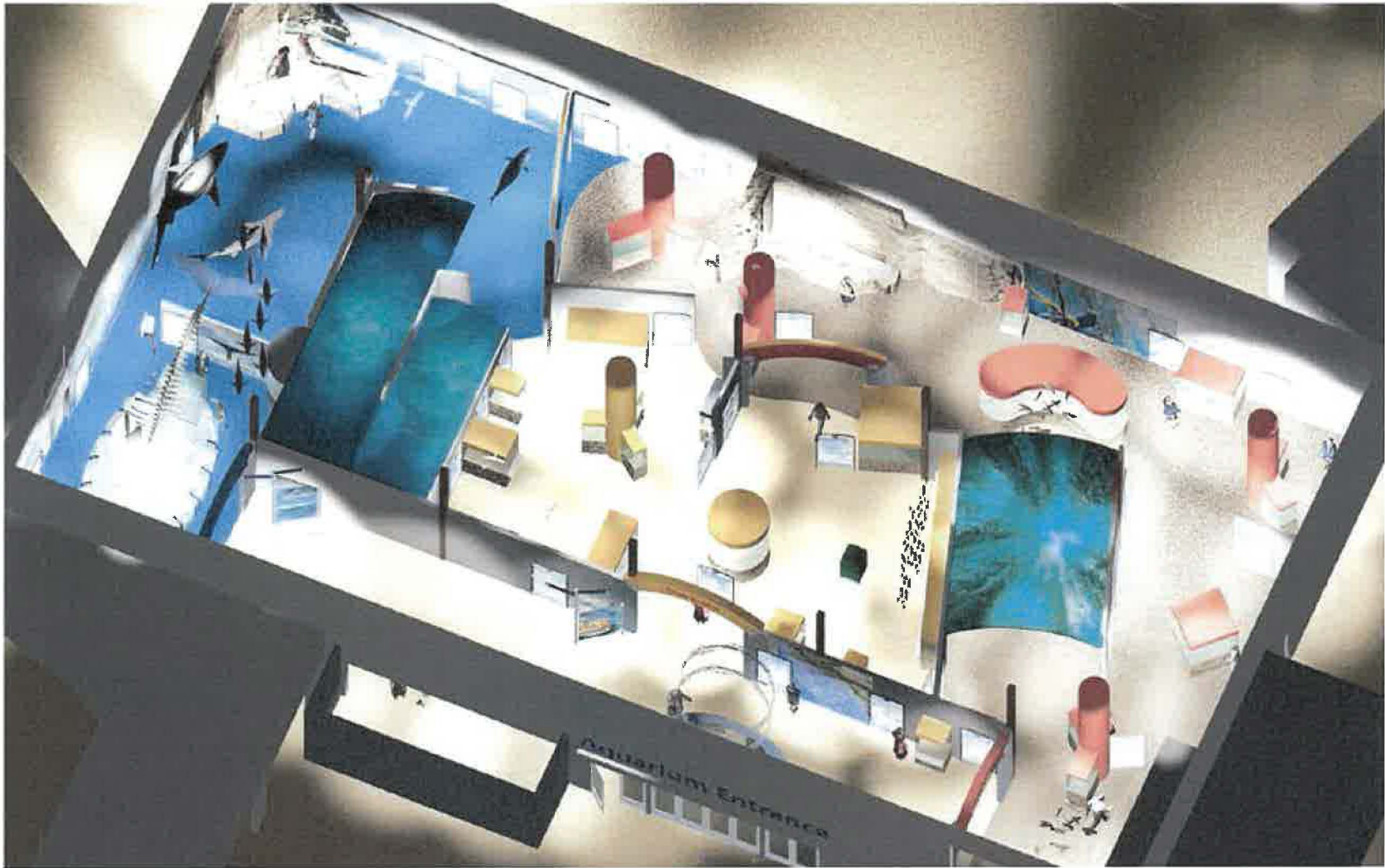
**Aquarium Concept Plan**



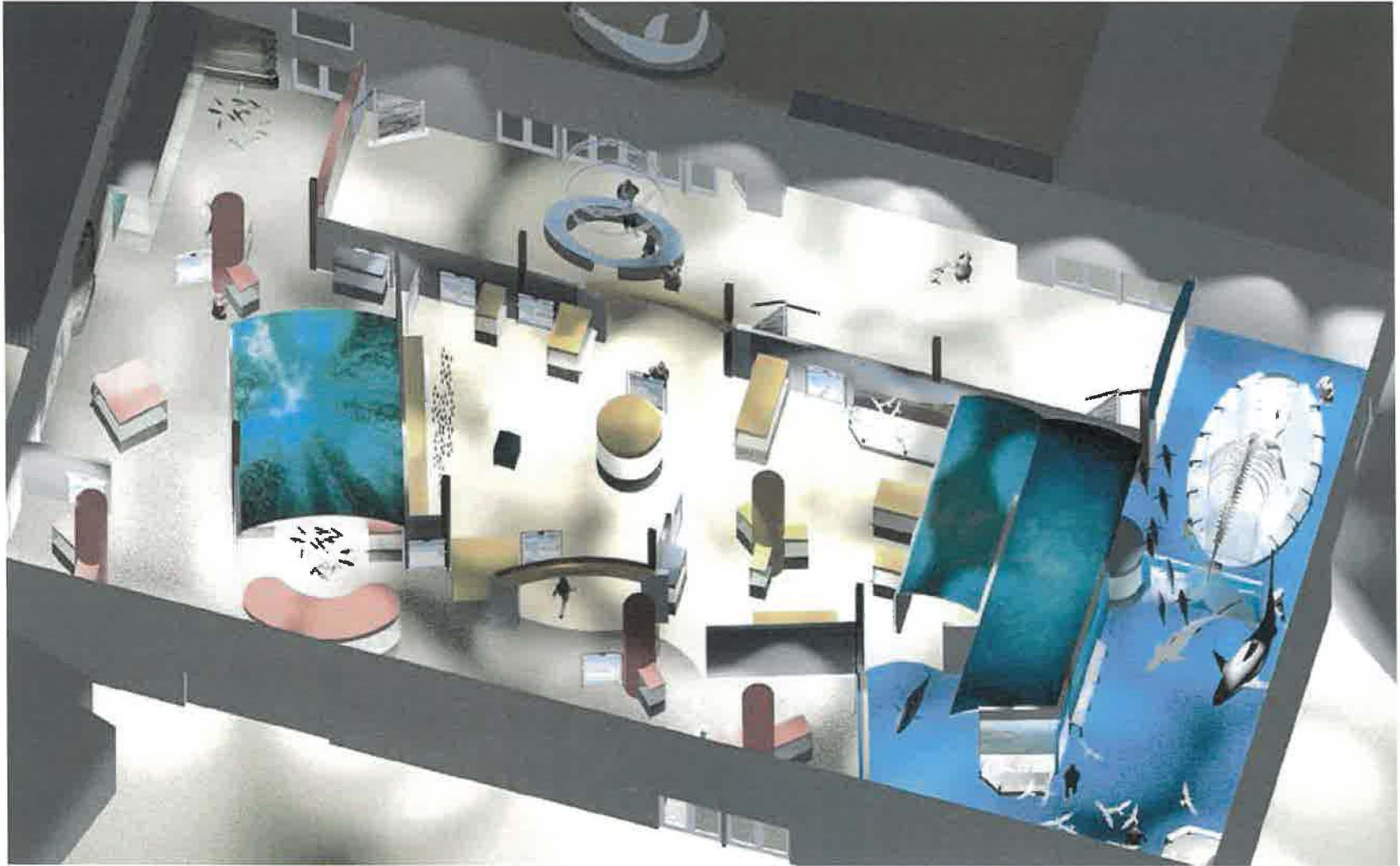


## Space Allocation and Flow

Cabrillo Marine Aquarium Interpretive Master Plan

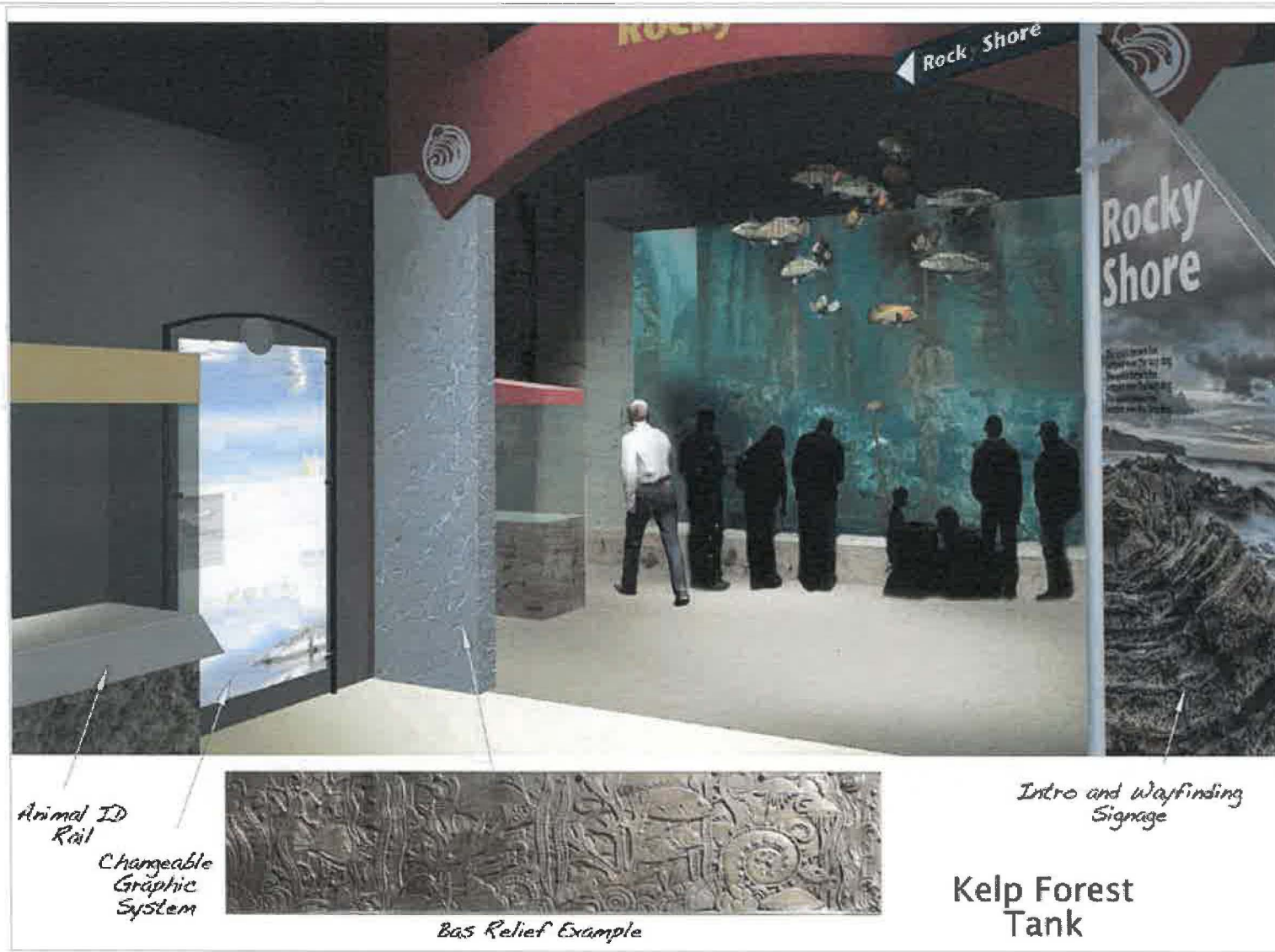








Appendix B: SUSANNE LAWRENZ-MILLER HALL CONCEPTUAL DESIGN



*Animal ID Rail*

*Changeable Graphic System*



*Bas Relief Example*

*Intro and Wayfinding Signage*

**Kelp Forest Tank**





**Surge Tank and  
Tide Pools**

*Rockwork  
Surround*

*Changeable  
Graphic  
System*

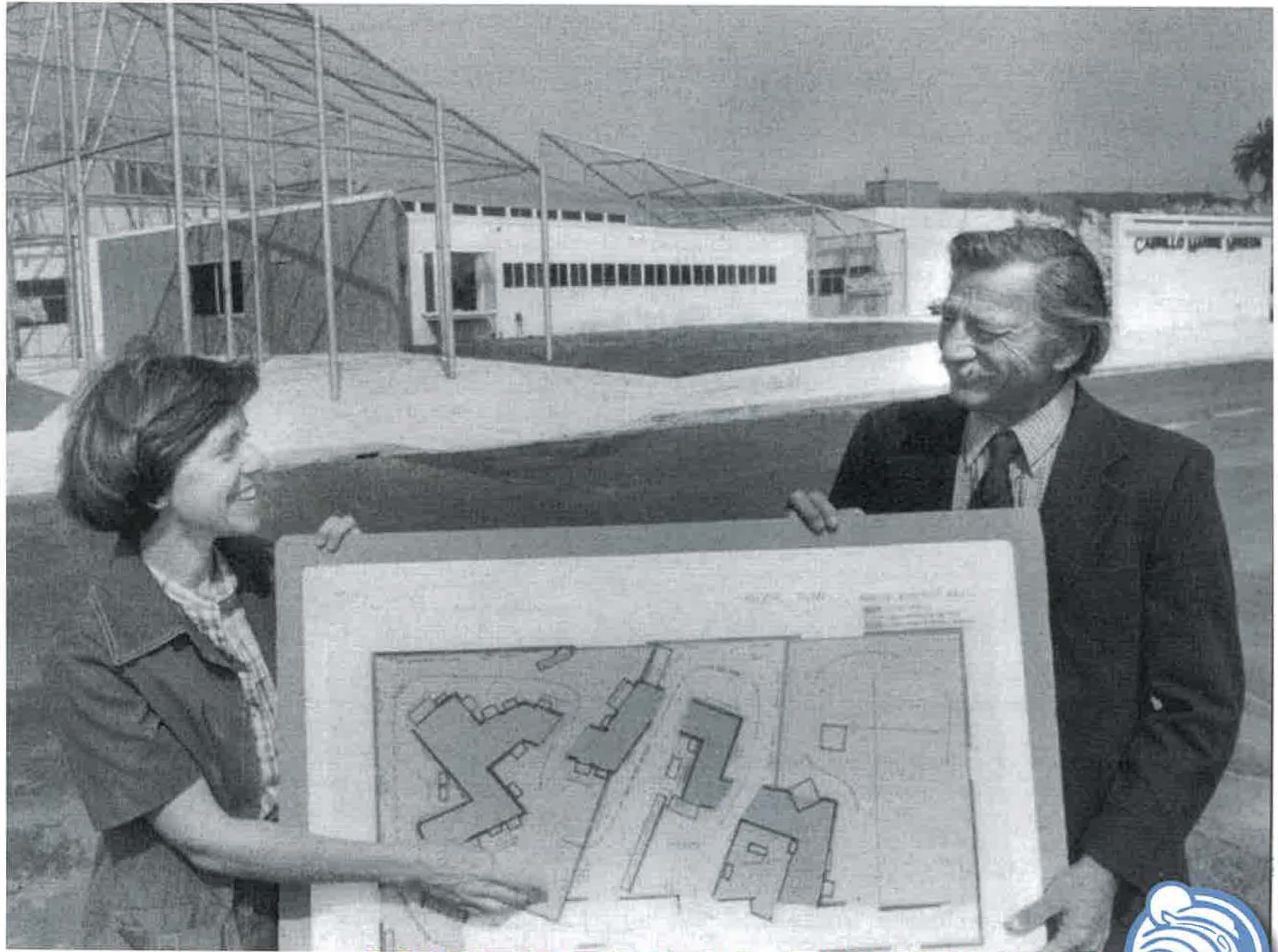


Appendix B: SUSANNE LAWRENZ-MILLER HALL CONCEPTUAL DESIGN









APPENDIX C **HISTORICAL TIMELINE**



- 1935** Marine specimens collected at Venice Beach by local City of Los Angeles beach lifeguards were moved to the Cabrillo Beach Bathhouse, which became the Cabrillo Marine Museum under the City of Los Angeles Recreation and Parks Department. Dr. William Lloyd, a retired dentist, was hired to curate the collection.
- 1949** John Olguin, Captain of the Cabrillo Beach Lifeguards, was appointed Director of the Museum. He began to give impromptu talks to visiting school groups and later, as the popularity of the museum as a school field trip site grew, began recruiting volunteers to assist with tour and beach walk programs.
- 1951** Under John Olguin's leadership, the Museum began an evening program that highlighted a local marine phenomenon, the grunion fish spawning on the beach. The unique and highly popular program continues to this day.
- 1969** Cabrillo Marine Aquarium and its evening grunion program were recognized nationally by National Geographic magazine in May.
- 1971** The City of Los Angeles Department of Recreation and Parks initiated the planning for an entirely new Cabrillo Marine Museum with a new building and new exhibits.
- 1972** The Museum's Whalewatch program, cosponsored by the American Cetacean Society, began taking school groups to sea in boats to observe the winter migration of the Pacific gray whales.
- 1974** Hiring of initial staffing for the new museum was completed with the appointment of Dr. Susanne Lawrenz-Miller as Exhibits Director.
- 1975** The Museum's volunteers became incorporated as the Cabrillo Marine Museum Volunteers and began raising funds in support of the museum as well as recruiting and training volunteers for its programs and activities.
- 1976** John Olguin and Susanne Lawrenz-Miller were appointed Associate Directors, jointly in charge of the Museum. Planning for the new museum was reactivated when a new architect, Frank Gehry and Associates, received a contract from the Department of Recreation and Parks in May.

- 1980** The Cabrillo Marine Museum Volunteers formed a general public membership branch, FRIENDS of Cabrillo Marine Museum.
- 1981** On October 21, the grand opening of the new \$3 million Cabrillo Marine Museum was held. Programs were transferred to the new Museum and the original building was closed to the public. The Museum won a Special Merit Award from the California Coastal Commission "for embodying the importance of educating the public on the marine environment and for its thoughtful design and arrangement of exhibits."
- 1982–1988** New exhibits opened on a regular basis, and new programs, including Sea Search, were developed and enthusiastically received by the community. John Olguin retired and became Director Emeritus. Dr. Susanne Lawrenz-Miller was appointed Museum Director. Marineland closed, leaving Cabrillo Marine Museum as the only public aquarium in the greater Los Angeles area.
- 1989** A Long Range Plan for the 1990s was developed, including major expansion and capital expenditure over the next 10 years. The plans detailed large new exhibit spaces plus additional support space and staffing. Size of CMM would triple.
- 1993** The Museum changed its name to Cabrillo Marine Aquarium to highlight its living collections and in anticipation of major expansion as a public aquarium in the future. The Cabrillo Marine Aquarium Volunteers merged into a new non-profit support group, called FRIENDS of Cabrillo Marine Aquarium, headed by a Board of Directors.
- 1995** A Master Plan for expansion was completed and strategic planning for its funding and implementation begun. In the meantime, expanded and new programs, such as Ocean Outreach, Sea Rangers and Discovery Labs, were added as FRIENDS of Cabrillo Marine Aquarium increased their grant-seeking and other support.
- 1997** Master Plan was modified when the development of the Long Beach Aquarium of the Pacific reduced need for large-scale growth. The Revised Master Plan would double the size of CMA and focus on expansion of programs and exhibits throughout the coastal park and new interactive laboratory, exhibit halls and library.

- 2000** Fully accessible trails and interpretive exhibits were added throughout the Cabrillo Coastal Park, staffed during low tides with volunteers from the Sea Ranger Program.
- 2001** Following ideas presented in the Master Plan, Phase 1 of the CMA expansion was approved by the Los Angeles City Department of Recreation and Parks. The Aquarium will almost double in size with the addition of an Exploration Center, Aquatic Nursery, Research Library, and volunteer and staff offices.
- 2002** On July 19, CMA Staff, volunteers, FRIENDS, and members of the community celebrated the groundbreaking ceremony for the new expansion. This event was highlighted by the attendance of local dignitaries and received media coverage.
- 2004** On October 23, the new \$10 million expansion was opened to the public following dedication and "Kelp Cutting" ceremonies. Expansion highlights include an Exploration Center, S. Mark Taper Foundation Courtyard, Aquatic Nursery, and the Virginia Reid Moore Research Library. Earlier in the month, special preview receptions were held for the funders, supporters, volunteers, and members.
- 2005** Cabrillo Marine Aquarium opened the Virginia Reid Moore Marine Research Library to the public and celebrated its 70<sup>th</sup> anniversary with special programs, exhibits, and celebrations. CMA also received the prestigious Munson Aquatic Conservation Exhibitory award for its Aquatic Nursery exhibits through the Association of Zoos and Aquariums.
- 2006** For the second year in a row CMA received the prestigious Munson Aquatic Conservation Exhibitory award for its Exploration Center exhibits through the Association of Zoos and Aquariums. Dr. Susanne Lawrenz-Miller retired and Exhibit Director Mike Schaadt was named Aquarium Director.
- 2010** In October, CMA celebrates 75 years of engaging all visitors in education, recreation, and research to promote knowledge, appreciation, and conservation of the marine life of Southern California. CMA received the Association of Zoos and Aquariums Bean Significant Achievement Award for raising Garibaldi.
- 2013** Recipient of the Association of Zoos and Aquariums Education Award.