

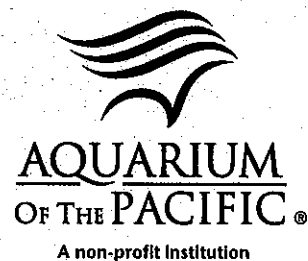
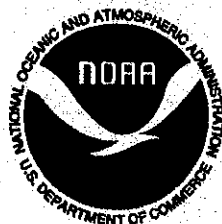
MARINE CONSERVATION RESEARCH INSTITUTE

AQUARIUM OF THE PACIFIC

*Forum on Ports*  
*Summary of Forum II*

DECEMBER 3, 2003

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**Port Forum II Summary**  
A Forum of the Aquarium of the Pacific  
Marine Conservation Research Institute  
December 3, 2003

Jerry R. Schubel  
Adam Lau  
Barbara Long  
Corinne Monroe

## INTRODUCTION

This is a brief summary of the Port Forum held on December 3, 2003. The forum agenda is attached as Appendix A, the list of participants as Appendix B, and a PowerPoint presentation given by Dr. Thomas Johnson, Manager of Environmental Planning at the Port of Long Beach, as Appendix C.

This meeting was the second in what is planned to be a series of meetings having the end goal of creating a public exhibit and collateral programs on the Ports of San Pedro Bay at Aquarium of the Pacific. These programs and exhibits will serve to educate guests of all ages about our ports and why they are an essential component of a sustainable coastal community in the future.

At the first forum, "Our Ports in Perspective", participants layed out preliminary conceptual ideas for exhibits and programs on the Ports of San Pedro Bay, in collaboration with the Cabrillo Marine Aquarium. The goal of this second meeting was to advance the planning on those exhibits and programs. At this forum, only the Port of Long Beach was represented and discussed. Our commitment however, remains to creating an exhibit and programs for the Ports of San Pedro Bay.

The goals for the day are summarized below:

- Identify the metrics by which ports are measured.
- Identify some of the qualities that make a great port *city*.
- Identify examples of great port *cities*.
- Address the question: What would it take to make Long Beach a great port *city*?

- “Advance the ball” in designing an exhibit and collateral programs for the Ports of San Pedro Bay, with an emphasis today on the Port of Long Beach.

## WHAT MAKES A GREAT PORT?

The group identified the following metrics for measuring the size and importance of ports:

- |                                       |   |
|---------------------------------------|---|
| 1. Total tonnage across docks         | 16. Intermodal connections<br>(highways and rail connections)             |
| 2. Value of cargo                     | 17. Inland access   |
| 3. Acreage                            | 18. Relative economic contribution to city (economic impact)              |
| 4. Number of containers               | 19. Number of acres set aside for public use/access (retail, parks, etc.) |
| 5. Number of berths                   | 20. Exports (amounts, volumes, weights, products)                         |
| 6. Number of cranes                   | 21. Innovation & reinvestment   |
| 7. Number of employees                | 22. "Greening" of port  |
| 8. Age of port                        | 23. Imports   |
| 9. Number of vessel calls             |   |
| 10. Number of countries/<br>companies |   |
| 11. Depth of channel                  |   |
| 12. Number of passengers              |   |
| 13. Possible mix of uses              |   |
| 14. Efficiency                        |   |
| 15. Trading partners                  |   |

## WHAT MAKES A GREAT PORT CITY?

The discussion next turned to a discussion of what makes great port *cities*. It was acknowledged that great ports and great port cities are not always, and indeed may seldom be, synonymous. The following characteristics of great port cities were identified:

- Working waterfront as an integral part of the cityscape:
  - Seattle today. San Francisco, at least in the past;
  - Boston and Baltimore *formerly* great port cities;
  - New York is *not* a great port city—it does everything it can to conceal the port;
- Cultural activity/impact
- Port exhibit, school programs, port tours

- Citizens as part of the "port city".

What U.S. Port Cities are Great Port Cities?

This is a question that we continue to ask individuals and groups across the country. According to this group, Seattle is a great port city.

There was a strong consensus that while Long Beach is a great port, Long Beach is not a great port city. The placement of the port is a challenge in terms of physical access and embracing the port within the life of the city, but there is still a huge opportunity. The Port of Long Beach is a distinctive and dominant feature of Long Beach. There is clear visual access. The cranes are a prominent feature on the horizon. All great cities have personalities and character that come from authenticity. The port is one of Long Beach's most authentic features as a hub of national and international trade and transportation.

#### CHALLENGES TO MAKING LONG BEACH A GREAT PORT CITY

In Long Beach, we cannot have the same awareness of and access to the port district (as in Seattle) because of the physical separation of the port from the downtown area. In particular:

- Waterfront access is restricted.
- Ship traffic is less visible.
- Loading and offloading of ships is less visible.

In Rotterdam, the port is continually building farther and farther away from the city, making the city less and less interesting as a port city.

The group felt that the probability of Long Beach becoming a great city was coupled to it also becoming a great port city.

There was a brief discussion of the metrics of great cities. The following characteristics of great cities were identified:

- Community support
- Job market
- Standard of living
- Innovation
- Culture

- Authenticity

*{Richard Florida, in his book "The Rise of the Creative Class", identifies three qualities of great cities—Technology, Tolerance, and Talent. According to Florida, the top three cities in the U.S. by these criteria are San Francisco (1), Austin (2), Seattle and Boston (3)}.*

The group then turned its attention to a discussion of the relationship of Long Beach with the port. Most of the news the public gets is negative; they hear little about the positive impacts of the port. It was characterized as a love/hate relationship that was conditioned by the following factors:

- Pollution and environmental degradation
- Traffic on the 710 Freeway
- Jobs
- Positive economic impact

#### MAKING LONG BEACH A GREAT PORT CITY

The group identified elements of a program to help make Long Beach a great port city:

- The Mayor's office, Long Beach City Council, and the Convention and Visitors Bureau must consistently acknowledge the port in the city's description of itself. At the moment, they do not.
- Signage: the City should have a sign off the 710 Freeway—"Entering Long Beach, A Great Port City", or "Long Beach: Gateway to a World Class Port".
- Education
  - The port should be included in the formal education of Long Beach school children by incorporating it into the curriculums at different grade levels, consistent with California state standards. The port can be a powerful vehicle for teaching a range of subjects from social studies to science and engineering.
  - There was a time when the city did much more about the port in the schools than it does now.
  - Amy Coppenger, Director of Education for the Aquarium, pointed out that as a child growing up in Long Beach, she was very aware

- of the port. She and her kindergarten classmates made a port out of blocks.
  - The Aquarium's recent "Sustainable Coastal Communities Project", in which 10-11 year old Long Beach children focused on creating a sustainable Long Beach in 2025 used the theme "Long Beach: A Port City".
  - In the past, there was a curriculum used in a number of Southern California school districts that included tours of the coast and ports on a tallship, the Californian. It ran for about eight years. (The Californian no longer docks at Long Beach).
  - Tom Johnson recently spoke in high school Advanced Placement science classes at Cabrillo High School and reported that the students had very little knowledge about our ports.
  - The port story should also be included in the appropriate informal science education institutions. Aquarium of the Pacific is certainly one of those.
- Branding the city as a port city—creating an image and an identity:
  - Identity can be defined as how we perceive ourselves; image is how others perceive us. Both need attention.
  - Beyond signage, the city residents should know about the importance of the port to the city, the region, the nation, and the world. At present the focus is only on the negatives—air pollution, traffic, etc.
  - Long Beach must embrace the port if it is to become a great city!
    - The city never talked about the port until the mid '90s. Involvement by City Hall increased since then because council members started to get upset about the 710 Freeway.
    - *The degree to which the city looks outward reflects on its own identity, and on how good a port we are.*
      - We can look north for our identity, with our backs to the port, or...
      - We can look south for our identity, looking to the port and "to distant lands" beyond.

## "OVERVIEW OF OUR PORT": A POWERPOINT PRESENTATION

The discussion turned to an overview of the Port of Long Beach, presented by Dr. Thomas Johnson. The slides presented by Dr. Johnson are attached as Appendix C, with a brief commentary repeated below:

### 1. Port Today

- Los Angeles/Long Beach ports are built out from the coastline into the ocean (unusual, for U.S. ports).
- The breakwater effectively forms what is the harbor.
- The port is not a taxpayer-supported operation. The port creates revenue for the city.
- Leading trading partners = Pacific Rim: The economic development of the Pacific Rim cities and countries is the driving force for the growth of the ports of Long Beach and Los Angeles over the last 20 years. China, Japan, S. Korea, Taiwan, and Hong Kong are among the most important.
- Long Beach and Los Angeles are the leading U.S. *container ports*. Together, they are the largest container port complex in the U.S., and the third largest in the world!
- Why we have grown:
  - We are the gateway to Pacific Rim manufacturing centers.
  - We are in the middle of a huge community of affluent consumers.
  - Port infrastructure is one of the best in world (despite problems of traffic on the 710 Freeway).

### 2. Port Future

- The number of "boxes" (another name for containers) on the dock has tripled in the last 10 years.
- It is estimated that the number of boxes will triple again in 20 years, (by 2020).
- The balance of trade has always been skewed heavily toward imports.
- Larger ships are here; and they are getting even bigger!
- We have naturally very deep water, but we'll need deeper water, wider channels, and more land to accommodate the projected growth of the two ports. (It was pointed out that serious consideration of how a full 24/7 operation would affect the need for more land, expansion of highways, and other infrastructure will be required before any decisions are made. These discussions are underway).
- The port complex has a number of what are referred to as mega-terminals.
- Environmental impacts:

- Air quality—diesel emissions and air-borne toxics.
- Stormwater runoff.
- Water pollution (ballast water).
- Soil contamination.
- Wildlife.
- To offset environmental impacts of port operations and expansion, the port has an active mitigation program that involves wetlands restoration projects. Golden Shore, Anaheim Bay, and Bolsa Chica are three examples. The port is anxious to do a Los Cerritos project in the future once land ownership issues are resolved.
- By law, land and aquatic mitigation projects are restricted to tidelands, and the port cannot do mitigation of rivers.

After Dr. Johnson's presentation, the discussion turned to an exploration of exhibits that were developed for two other ports by exhibit designer Tom Hennes.

#### RESPONSE OF A LEADING EXHIBIT DESIGNER BASED UPON EXPERIENCES WITH TWO OTHER PORT EXHIBITS

Tom Hennes, President of Thinc, based in New York City, has created exhibits for two major ports—Rotterdam and Norfolk—over the past five years. While both of these ports are very different from the ports of San Pedro Bay (and while neither exhibit has been built), the assumption was that Mr. Hennes' experience with the design of exhibits for these ports and his other design experience would give the working group valuable new insights on what form a port exhibit and collateral programs might take. That assumption was validated.

The notes below on the two exhibits for Rotterdam and Norfolk are based upon Mr. Hennes' remarks. No visual material was presented. While these plans were for a larger scale than space will allow at the Aquarium of the Pacific, both exhibits prompted the working group to envision an exhibit on the "Ports of San Pedro Bay".

#### Rotterdam

Four years ago, the Port of Rotterdam, in the Netherlands, spent 4-5 months working on a project called "World Port Rotterdam". The proposed project was to include a port visitor center, dock re-development, and a major new public relations program. The visitor center/exhibit would be housed partly within a



ship, the Rotterdam, and partly within a new, free-standing building that would be submerged partly underwater. Visitors would follow a path which led them into the port exhibit building, through a hole punched into the side of the ship, and then up an escalator and out. The planned area for the entire project was approximately 40,000 sq. ft.

Some examples of planned exhibits within "World Port Rotterdam" were:

- *"A World of Products"*
  - Large kaleidoscope, with video screen.
  - Enormous globe projected onto screen that was designed to use a variety of audio/visual effects to show a "globe of products"
- *"Transformation of Raw Products → Manufactured Products"*  
(e.g. oil → plastics)
  - A rich collage of images showing transformation of raw materials into finished goods.
- *"History of the Port"*
  - The Port of Rotterdam had an interesting history of manipulating and shifting rivers around to make the port work differently, and more effectively.
  - The most recent modification to the port was a pair of doors that could be used to close off the major river during storms, and could potentially have been a point of focus.

## Norfolk, VA

Several years ago, Thinc was contracted to design an exhibit about the Port of Norfolk for the Nauticus Museum. The exhibit was to be housed within the existing museum building, covering an area of about 8,000 sq. ft. (200 person capacity), at an estimated cost of \$6 million. Tom described a brief walk-through experience of the Norfolk exhibit (estimated to last 20-30 minutes), which is summarized below:

- *"Arrival Soundscape"*
- *"History"*
- *"Outlook"*
  - Setting provided direct-viewing of the port. A row of telescopes was proposed, with optical pointers inside explaining exactly what

visitors would be looking at, to take advantage of the reality of the setting.

- *"A World of Products"*
- *"Ships and Trains and Trucks"*
  - models and films
- *"Working Interactives"*
- *"Container"*
  - Used as a theater. Designed to have some motion and 3D effects.
- *"Group Activities"*
  - There was a menu of choices which visitors could choose to pursue. Format would be a hosted activity around a "gaming table".
- *"Temporary Exhibit Gallery"*
  - To keep the entire experience fresh and relevant and to increase repeat visitation.
- *"Small Scale Exit"*
  - Small scale screens throwing out statistics about size of the port (in absolute and relative senses), number of products, etc.
  - Left a last impression about the size, complexity, and importance of the port within the network of national and international ports.

## Visitation

Both Rotterdam and Norfolk planned to rely heavily on tourists in relation to resident visitors. For repeat visitation, their interest was primarily in two groups: school groups, and people who work at the port and their associated friends, family, and relatives.

## PLANNED EXHIBITS AT ROTTERDAM AND NORFOLK—POSSIBLE IDEAS FOR AOP?

- *"Historical Exhibit"*
  - Important to show why the port is located where it is, how it developed.
  - Geology of the port, ecology of the port.
  - Before the existence of a port, focus was inward (landward). After a port built, focus shifted outward (seaward), and to the far edges of the country.
- *"A House of Products"*
  - Held everyday objects (furnishings, electronics, food, clothing, etc)

- that went through the port
  - "Port interpreters" are there. The encounter with the typical house could be the first time a visitor meets these docents. They personally explain how each of these products gets to "you".
  - The Aquarium could perhaps choose a house in the midwestern section of the U.S., and explore how many of the furnishings, electronics, food, clothing, etc., came through the ports of Long Beach and Los Angeles. Do this in a dramatic way. It could be done in a film, or in a theatrical setting in the exhibit.
- *"Ships, and Trains, and Trucks"* — the Transportation Infrastructure.
  - What's the transportation hardware of a port, and how does it work?
  - Use models. (The Rotterdam design paired models with interactives and simulations to let people play).
  - Loading/unloading bulk interactive (3-5 min.)
  - Docking interactive:
    - Create a ship's bridge simulator which provides opportunities for visitors to experience what it is like to dock a huge ship in all kinds of weather and sea conditions.
    - Create an experience that requires cooperation among a small group of visitors (say 5).
    - *Problem:* true docking speed is very slow, vs. kids' short attention span
    - *Solution:* transit through the port part of the experience was sped up, so that the focus was on the actual docking challenge.
    - *Hennes:* "3-5 minutes is about the right amount of time for this kind of exhibit. Maybe 5-10 minutes if you have an interpreter there."
  - Create a tug interactive. People of all ages love tugs.
- *"Combination of Model and Virtual Reality"*
  - Model of container ship, actually in water, that moves slightly with visitor(s) riding.
  - Plus a surround screen that gives an added sense of changing perspective, maneuvering around the port.
- *"Container Spaceship"*
  - Forced, small perspective. Visitor sitting inside container (theater).

- You see things getting loaded in, custom officers looking inside.
  - Then suddenly, whole thing opens up, container becomes a space-ship, and takes off.
- Create a sequence that includes a variety of experiences to “move” visitors from their normal familiar surroundings into the unfamiliar world of the port. Examples:
  - Ship models - in “forced perspective” to give sense of scale
  - Tunnel - visitors walk through, and see something bigger, then bigger, then even bigger. (Expanding scale).
  - Escalator - a soundscape, entry to a port exhibit.
  - Natural sounds - water, then people, port sounds, and so on.
- Create an exhibit that gives a sense of the vast expanse of a major port.
  - A relief of map under a glass floor.
  - Multi-user interactives for different parts and aspects of ports. (radar, loading/unloading, etc.)

## MAJOR IMPRESSIONS OF MR. HENNES CONCERNING THE IMAGES AND STORIES AN EFFECTIVE PORT EXHIBIT MUST CONVEY

### Size, Scale, and Complexity

- When you get into a major modern port, everything seems *huge*, and it just gets bigger & bigger & bigger the farther you go into the port.
- It is important for people to viscerally experience the almost exponential increase in scale. The experience should be one of an “explosion” of scales from the average streetscape to the portscape.
- Modern ports are made up of a nested set of complex systems, (not just systems for moving “stuff” from Point A to Point B).
- Ports are also economically complex as nodes in local, regional, state, national, and international trade and transportation systems.
- *A very large hourglass turned on its side might be a metaphor for major ports:* the enormous world out there, all products are funneled in through a port, and then out to the community, the region, the country, and beyond. (The flow is in both directions: imports and exports).
- Ports are interesting and complex technological systems.
  - Ships, trucks, cranes, etc.
  - Diversity & scale.
- One strategy might be to let a visitor find a product which he/she is

interested in, and to provide opportunities for the visitor to follow the product's path—from point of origin, into and through the port, to final destination.

### The Relationships of Ports to Their Natural and Socio-Economic Settings

- The natural setting—geological and ecological—often determines whether a port works on a sustainable basis: whether channels can be deepened and widened to accommodate increasingly larger ships, whether intermodal connections exist or can be created, etc. (Long Beach did not have a natural harbor. It had to create one by building breakwaters to partially enclose San Pedro Bay. Prevailing depths are quite deep).
- A port is a special kind of “ecotone”—a transition zone between two adjacent ecological communities usually exhibiting competition between organisms common to both. In the case of a port, it is a transition between a human urban ecological community and coastal marine and terrestrial communities. There is an intense competition for space.
- A port is a zone of interaction. In every port, we find a unique collection of species of animals and plants, and economic products interacting with the local and regional natural and socio-cultural settings. And, humans are “in charge” of it all.
- Each port has a diversity that is unique to its particular location and setting.
- Any successful port exhibit must capture the uniqueness and the particular local flavor of that port and put it into larger contexts in time, space, and the constellation of ports—if it is to be authentic.

### People and Ports

- People are an integral part of any port story: people who work at the port, people who are affected by the port directly and indirectly, etc.
- People at the port can be a MAJOR point of connection for visitors. People like to know about others of their species.
- One good strategy might be to have port people—real port people—speak for the port. Most of these would have to be done by video or by live-links, but one might try to get port workers, past and present, to be volunteers in the exhibit. It will be critical to include diverse peoples and people with diverse jobs.
- Don't underestimate the “romance of ports”. For many, ports conjure up images of adventure and romance. The film, “On the Waterfront” is rich

with images.

- A port exhibit should appeal to as many senses as possible. In the past, ports were much dirtier and smellier than now. Those sights and smells can be used to conjure up images of the past.

### Ports and the Environment

- Ports have environmental and ecological impacts.
- Management of runoff was important for the Port of Norfolk exhibit: most damage from the port to Chesapeake Bay was historical, not today.

### The Magic Box

- The shipping container is magical!
- Cost of shipping a pair of Nikes (Japan → port in U.S.) = 1/10 average cost of shipping (U. S. port → store in U.S.). Across the sea vs. over land.
- Container has annihilated the distance between continents. The container can be portrayed as a "time-space machine".
- These approaches make containers much more interesting than just boxes.

### Specific Points of Focus in Creating a Port Exhibit

- Focus on getting the rhythm of the experience "right"!
  - "concrete" things, at full-scale -----> abstract things and ideas
  - smell, sounds, scale -----> "gateway to the world"
- "You don't want all the abstract things up front in the exhibit experience." Should have a good/dynamic mix.
- Voice of the port (one of the less abstract items).
  - Need to find the right voice. The challenge is finding it.
  - Include sensorial dimensions.
  - Include sounds of the port as background "hum".
  - Alternatively, ask a series of questions: who are port people and what do they do? Let "real people" answer those questions. In this strategy, there is not one "voice of the port", but a richly-textured tapestry of voices.

### THOUGHTS FOR AOP AND A "PORTS OF SAN PEDRO BAY" EXHIBIT

- Capitalize on containers – "They are the stars here!"
  - A film is probably the best way to show this story.

- Explain what a container is, what it does, how it transforms a lot of "things".
- Look for synergies of a port exhibit with the Aquarium.
  - Create a transition from live exhibits underwater → up to an industrial port environment.
  - Create an experience that allows the visitor to see/hear/experience the port underwater.
  - Such an experience could "dovetail" perfectly with what the Aquarium is about...telling the story of the changing relationships of people with nature with an emphasis on the Pacific Ocean.
- Demonstrate ways in which people/ports/wildlife are compatible.
  - Just as with Rotterdam and Norfolk, there are negative aspects of our ports, but there are lots of positives too. These need to be brought out.
  - This is a possible "double-edged" sword, and needs to be treated carefully and honestly.
- Cost of Construction.
  - Theme parks today spend an average of about \$450/sq. ft., with wide range among them.
  - Disney typically spends between \$1000-2000/sq. ft.
  - Hennes' estimate for a port exhibit with good interactives and electronics would be about \$750/sq.ft.
- Difference between Disney & Museums/Aquariums.
  - Tom Hennes had an interesting perspective on the defining difference between the Disney approach and museums, aquariums, and other free-choice learning institutions. According to Hennes:
    - Disney attractions are geared toward one, single outcome.
    - Aquarium and museum programs are geared toward *multiple outcomes*.

## WHAT IS UNIQUE HERE? WHAT MAKES THIS PORT COMPLEX DIFFERENT FROM OTHER REPORTS?

The group agreed that at one level, the ports of Long Beach and Los Angeles are like "all other West Coast container ports", but that there are some important differences. These differences could potentially be highlighted in an exhibit on

the ports of San Pedro Bay.

## Ports Built Out into the Ocean

The building of our ports out into the ocean raises a different kind of “why here” question. For older ports, “the ports and the people were there because a natural harbor was there”. In the case of our ports however, the reverse is true. San Pedro Bay is not a natural harbor, but is entirely artificial. This makes for a different story to be told in a historical exhibit.

The driving forces for locating a port in Long Beach were a combination of railroads and population growth in LA. Southern California grew largely because of the railroads, and the Port of Long Beach’s first cargo was lumber. (Today, all lumber is shipped from Seattle and Humboldt). Another contributing factor to the growth of our ports was good year-round weather. And politics also obviously played a role. Because LA had a port, Long Beach wanted one.

## Port of Long Beach’s Growth in WWII

The Port of Long Beach had its most dramatic growth during WWII. The Port of Long Beach is here primarily because of the Navy (unlike the Port of Los Angeles). The Port of Long Beach is also a strategic port, as designated by the Department of Defense, while the Port of Los Angeles is not. The fascinating, and quite different histories between our two local ports were seen by the group as another thread that could be explored in a ports exhibit.

## A CHALLENGE OF ISOLATION

One of the challenges we face both as an Aquarium and as a city is that the port is isolated from the Aquarium and from downtown Long Beach. There is no easy public access—either physically or visually. We don’t have the “charismatic artifacts” right up front.

Unlike Nauticus and the proposed visitor center in Rotterdam, we are not located directly on the port. As a result, we lose that sense of magnitude and scale very quickly (i.e. can't have any observation deck). But, there are some approaches that might reduce this obstacle.

Some possible partial solutions to reducing the impact of separation from the port were discussed:



- Staggering view
  - Can have real-time cameras in a number of different locations: top of the hill in San Pedro, behind Aquarium, top of City Hall, etc.
  - The Port of Los Angeles is planning a promenade with restaurants and shops which may have dramatic views of the ports of San Pedro Bay.
  - Homeland Security = No cameras on the docks!
  - Real-time cameras can play what's going on "now", and they can allow the viewer to go back, and at fast-speed, play everything that happened in last 24 hrs, or the last week, or in the last month, etc.
- Video
  - 3D video replicates scale (but not depth).
  - Time-lapse video of a ship being unloaded over several days (stunningly beautiful).
  - Compression of time.
  - Different angles, moving cameras, cranes and moving boxes = a ballet!
  - Portals provide a "forced perspective".
  - A 360-degree surround theater could dramatize the scale and activities of the ports.
  - An Imax film could dramatize the scale, complexity, and action of our ports. (But, the Aquarium has no Imax Theater and none is planned for the Pike).
- Sounds
  - Sound spectrum/acoustic niches. Interesting to look at the port from this perspective.
  - Most complicated sound would be on the wharf apron (cranes, hustlers, gulls, etc.)
  - Might include underwater sounds of ships, recreational boats, fish, diving birds, etc.
  - We might even capture some seismic sounds.
  - A "Week in the Life of a Port" Symphony - This might be something we could work on with the Long Beach Symphony.

## PROPOSED AOP EXHIBIT ON THE PORTS OF SAN PEDRO BAY

The discussion then focused on the location, the "hook" of a proposed exhibit, and other various issues involved in creating an exhibit on the Ports of San Pedro Bay at Aquarium of the Pacific.

### Location

By far the most likely candidate location for any port exhibit at the Aquarium will be in the extended campus at the back of the building. The consensus was that we could dedicate a footprint of at least 5,000 square feet and achieve a total exhibit space of up to 10,000 square feet. This might require that the second floor be cantilevered out over the parking area. If this is done, it would be critical not to lose any parking spots.

### Anticipated Length of Stay

There was some debate on this, but the consensus was that it would be an incremental addition to the total stay at the Aquarium, lasting between 15-30 min. The present average length of stay of an Aquarium visitor is about 2 hr., 20 min.

### What's the Hook?

A proposed hook for the ports exhibit was "The Unseen World of the Port". "Unseen" has two aspects:

- The cargo (goods) that goes through.
  - Could cut a container in half, create a path that people walk through surrounded by goods on both sides. Actual goods, plus some on video.
  - Visitor sees a cross-section of all the goods that go through our ports.
- The people who work at the port.
  - These are the people who control the ships, the cranes, the trucks, the trains, etc.
  - Visitors could get union cards, be assigned roles (crane driver, longshoreman, dockworkers, etc.), and then proceed through the rest of the exhibit in that way.

## Staff Uniforms

Staff could wear longshoreman outfits, hard hats, etc. Visitors could wear costumes too. This would add a human element.

## Walk-through

- Transition between Aquarium and port exhibit
  - An underground tunnel from aquarium, “emerging up from Harbor depths”, into port exhibit?
  - Sounds from underwater, moving up through sound profile, up into the port.
  - Possibility: using container on a ramp, can re-immense underwater and move up.
  - Transition is key!
  - Setting expectations (context) before arrival, & once inside.
- Beginning of experience: SOUND!
  - If we can't get visitors out there to the ports physically, we can get them there emotionally with sound.
  - “Sense of arrival” is important. Different possible arrival modes (e.g. as cargo from a ship).
  - “Immerse” people in sound—announces arrival at the port.
  - Sound can build up in a crescendo, then flatten out. Visitors orient, and make their decisions from there.
  - Can either enclose visitors, or raise them up into the open (observation platform).
  - Concern: Is just sound good enough to pull a visitor in? Maybe people need to do something interactive in order for them to care enough to get pulled into the port exhibit.
- Time-traveling container
  - Could we stack up containers to increase height of observation deck?
  - Containers = naming opportunity.
  - A container building? Could “skin” a building with container skin.
  - Important to meshing containers with the pre-existing architecture of the Aquarium.
  - Biggest challenge is the Aviary.

- Original Aquarium building has a wave metaphor. Should elaborate on that.
- Are container's ugly? We have to figure how to make a container not be ugly, and rather be something positive.

## SHIFTING GEARS

Participants began a free-wheeling exploration of "out of the box" options for delivering a port exhibit.

### Sandbox

The question was posed – do we really have to recreate a whole experience of the port? One disadvantage of a port exhibit at the Aquarium is that, unlike Rotterdam and Nauticus, our location is not directly on the port. Because of that, it may be hard to fully capture the sense of scale and authenticity. An alternative might be to recreate the "immersive port experience" in a movie, or conduct a port boat tour. The exhibit at Aquarium of the Pacific could then be an introductory experience to that greater, immersive experience.

It was pointed out that the expansion area being discussed was formerly a large sandbox, and was very popular among visitors (although not among volunteers). Large whale bones were set in the sand, and kids used the area as a playground, while adults used the opportunity to take a rest. In creating a port exhibit, we can choose to preserve the space as a playscape. Advantages of this idea are summarized below:

- We need a place for kids to burn energy.
- Educational opportunity for kids while they're playing.
- Adults are waiting for kids doing their play (can access adults then)...but also, the magic happens when we can get adults playing with the kids.
- Modern parents don't leave their kids, they watch/play with them.
- Interactive activities that adults and kids can work together is important!
- Important Note: 25% of our visitors are adults without children. Adults can have competitive play also.

### A New Idea: Port Exhibit All Behind a Barrier

The group then began to re-imagine a Ports of San Pedro Bay exhibit at the Aquarium in the "sandbox" vein. The ideas are summarized below:

- Front of building meshes with Aquarium's architecture.
- Walk around to back of building, see a wall of containers.
- Observation deck, with telescopes.
- Tunnel.
  - Continual "band of products".
  - Goods are 1:1 scale, interrupted by insets of a beautiful model of the ports at night. Zoom into ports by powers of 10. (i.e. port → ship → truck)
  - Peepholes: can play with depth. Have slits at different heights for different audiences to look at.
- Gaming area.
  - Kids get union cards, are put into groups for role-playing.
  - Cooperative craneworks games, moving containers.
  - Working together is necessary!
  - Can work against the clock.
  - Model of terminal: 5 model container cranes lined up. Different kids control cranes, trucks, ship. Requires coordination & communication.

### Miscellaneous Issues

- Products—the important thing is to not lose sight of where they're coming from, who produces them, and where they are going.
- No matter what kind of exhibit is the end result, kids ought to have some kind of "take-away" that they take along.
- Corny video: "The Power Source: Port of Long Beach" (1988). While this video is out of date, it delivers a powerful message and could be updated.
- 3 threads for an exhibit about the Ports of San Pedro Bay:
  1. people
  2. scale
  3. funnel of goods
- Other places to explore and learn from:
  - **Odyssey** (Seattle). Outstanding website and participants visiting the facility gave it high marks, but why is attendance there low?
  - San Francisco also has a maritime museum that is poorly attended. Do we know why? (vs. SF Exploratorium which is very popular).
  - **Belle Isle, Michigan**. There is a zoo and an aquarium on Belle Isle which is on the Detroit River. It is a wonderful viewing platform for freighters and tankers going up and down the Detroit River.

## THE "STRAWMAN" FOR AN AOP EXHIBIT ON THE PORTS OF SAN PEDRO BAY

At this point in the discussion, the challenge to the group was to take all we had heard during this forum and the previous forum, and add to that mix Tom Hennes' experience with designing exhibits for two other major ports, and see if we could create a rough order conceptual design for an Aquarium exhibit on the Ports of San Pedro Bay.

The exhibit is envisioned as a low, sweeping building (viewed from the Aquarium) with an exhibit program in six parts. It is conceived as a 10,000 sq. ft. concept that can be stacked in various combinations to fit a 5,000 sq. ft. footprint. (Note: square footages below are approximations of minimums, and are included for reference only).

### Walk-through

- Entrance Ramp
  - Gently sloping ramp which leads visitors from direction of the Aquarium southwest of the port, to an elevation of approximately 6' above grade. The ramp provides a gentle transition from the Aquarium to the port experience. Visitors may be given "union cards" which allow them to operate some of the interactive devices in the exhibit. (500 sq. ft.)
- Overlook
  - A semicircular observation deck from which the nearby cranes of the port are visible. This view will be augmented by audio effects (the sounds of the port) and augmented-reality telescopes which together bring the port much closer to visitors. The sounds will seem to come from all around, while the telescopes will overlay an information layer onto the optical view of the cranes and parts of the port beyond. "Port Interpreters", real people from the working port who are on video and graphics, are introduced here. (700 sq. ft.)
- Tunnel
  - A passageway constructed as if from containers, including a cross-section (literally and figuratively) of common products which move through the port (along with either basic signage or video

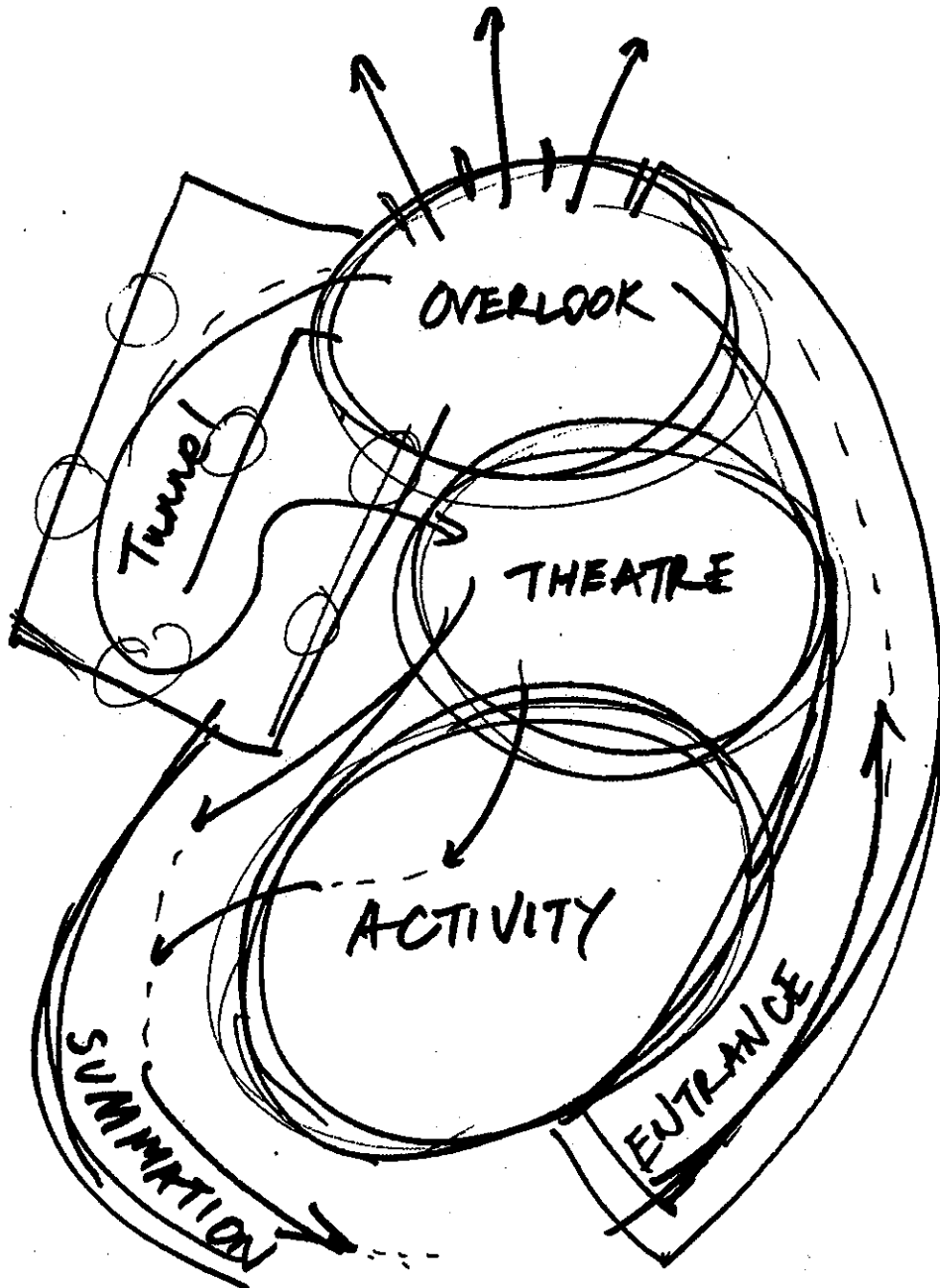
- All about scale! People moving through.

- A container-turned-theatre for up to 45 standing people. This 5-6 minute film will take people through the "Unseen Port" below water, and out to the world beyond the Port. A varied journey which combines great spectacle with a real journey through several of the port's many layers of meaning. (1,000 sq. ft., including technical space).

- A free-flow area of different, simple games and physical activities like unloading a scale container ship, bulk-loading of granular materials, or a "supply chain" activity involving multiple players and conveyors, which provide opportunities for adults and children to work and play as teams to accomplish a variety of port-related activities. Many of these activities may have "Port Interpreters" on video associated with them, to give perspective to the activities as they relate to the work and life of the port. A minority of the activities may be more realistic, simulator-style activities. There may be some living exhibits in this area as well, showing native and exotic species. Additionally, some exhibits may use water. (2,000–5,000 sq. ft.)
- Additional ideas? Jacob's ladder, tug interactives, camera hook-ups out to the real-live port.

- o A short passageway to the outside, in which are displayed a variety of changing statistics, live video, and other materials which give a further dimension to the Port activity and its place in the Long Beach community and the nationwide system of ports and sea transportation. (500 sq. ft.)

Figure 1: The Strawman.





## CONCLUSIONS

We now have descriptions of the Ports of Long Beach and Los Angeles and also a "strawman" for a conceptual design of an exhibit at the Aquarium. Our next step is to take the stories of the two ports and "map them" to the strawman. This will provide the basis for a proposal to the Ports of Long Beach Harbor Commission for a planning grant. The group agreed that this proposal should have as much detail as possible, and that the conceptual design should first be refined by a small group of people before it is enhanced and expanded.

Possible funding sources were also discussed: Ports of Long Beach and Los Angeles, steamship companies, unions, law firms that specialize in marine law, and other appropriate sources. It was agreed that each funding source could be considered at the appropriate time in the future.

Forum participants agreed to schedule a follow-up meeting.

## Appendix A

### Port Exhibit/Program Session

December 3, 2003

#### Agenda

Our goals for a one-day session are ambitious, but we believe they are achievable because we have assembled a small group of individuals knowledgeable about the subject and because we all come to the table having done a significant amount of work on the topic.

Our goals for the day are:

- To identify the metrics by which ports are measured.
- To identify the qualities that would make a great port CITY. (Are there examples we can cite?)
- To explore the port exhibit concepts Tom Hennes of Thinc has developed for other ports and determine what modifications would be required to make it work for the Port of Long Beach.
- To determine steps in the creation of a powerful exhibit on the Port of Long Beach, and perhaps the Ports of San Pedro Bay.

9:00	Welcome, Introductions, and Goals for the Day
9:15	Posting of the metrics for measuring ports.
9:30	Posting of the qualities that would make a great port CITY.
9:45	An overview of the Port of Long Beach: A View from 35,00 feet of its past, present, and future. Geraldine Knatz and Tom Johnson
10:15	The Odyssey Maritime Discovery Center
10:30	Break
10:45	Description of the port exhibit created by Tom Hennes.
11:30	Working Lunch: Brainstorming to morph Tom's exhibit into a Port of Long Beach exhibit...and perhaps an exhibit on the Ports of San Pedro Bay.

- 2:30 A View from the Balcony: An examination of the list of qualities that would make a great port CITY to see how many of these Long Beach has and discussion of what it would take to add others.
- 3:00 Identification of next steps in the creation of an exhibit and a program that would tell the story of the Port of Long Beach and its place in a network of the nation's and the world's ports and the place of ports in the nation's and the world's trade and transportation systems.
- 4:00 Adjourn

Notes:

The Port Authority of NYNJ worked with the Liberty Science Center to create an exhibit on their port. The exhibit designer was Jonn (yes, that's the way I was told it is spelled) McCollum. The project is on hold because of lack of funding.

When asked what great port cities are there? These are some of the responses.

- Director of the PANYNY: can't think of any in this country.
- Board of IRG: Domestically - Chicago, Seattle, Baltimore, Long Beach has potential. Internationally - Hong Kong, Rotterdam, Karachi, Barcelona.

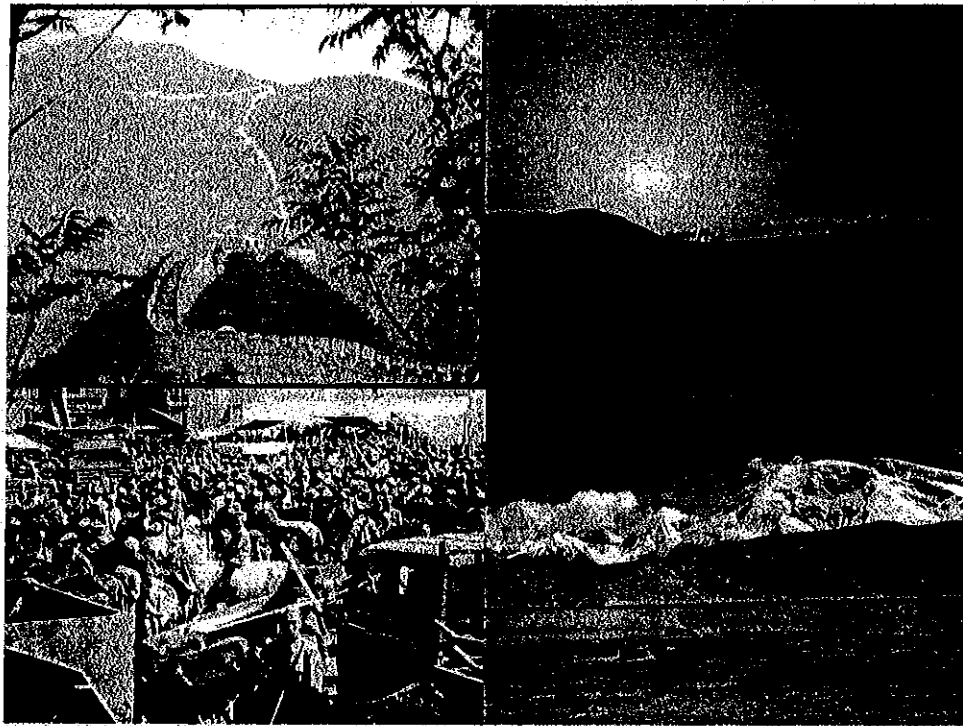
## Appendix B

### Port Forum Participants

	Name	Position	Org./Affiliation	Address	Phone	E-mail
1.	Jerry Aspland	Retired	Arco Marine, CA Maritime Academy	9655 La Amapoca Ave. Fountain Valley, CA 92078	562-951-1654	jerryaspland@yahoo.com
2.	Jim Fawcett	Marine Transportation/ Seaport Specialist	USC Sea Grant Program	Sea Grant Program MC-0373 University of Southern California Los Angeles, CA 90089	213-740-4477	fawcett@usc.edu
3.	Norman Fassler- Katz	Sr. Consultant, Assembly Select Committee on Ports	CA State Assembly	Legislative Office Bldg. Room 167A 1020 N. Street Sacramento, CA 95814	916-319-3735	Norman.Fassler-Katz @asm.ca.gov
4.	Tom Hennes	President	Thinc Design	435 Hudson St. 8 <sup>th</sup> Floor New York City, NY 10014	212-741-8344	tomh@thincdesign.com
5.	Tom Johnson	Manager of Environmental Planning	Port of Long Beach	Port of Long Beach 925 Harbor Plaza Long Beach, CA 90802s	562-590-4160	tjohnson@polb.com
6.	Jeanne Brodeur	VP Development	AoP	320 Golden Shore #150 Long Beach, CA 90802	562-951-1707	JBrodeur@lbaop.org
7.	Amy Coppenger	Dir. of Education	AoP	100 Aquarium Way Long Beach, CA 90802	562-951-1621	ACoppenger@lbaop.org
8.	Adam Lau	Research Assistant	AoP	320 Golden Shore #100 Long Beach, CA 90802	562-951-3198	ALau@lbaop.org

9.	Barbara Long	VP Gov't. Relations & Strategic Planning	AoP	320 Golden Shore #150 Long Beach, CA 90802	562-951-1636	BLong@lbaop.org
10.	Steve Mayer	Consultant	AoP	2170 Jackson San Francisco, CA 94115	415-346-1078	SMayer@aol.com
11.	Corinne Monroe	Education Volunteer	AoP	320 Golden Shore #100 Long Beach, CA 90802	562-951-1654	CMonroe@lbaop.org
12.	Tony Promessi	Manager of Life Support	AoP	100 Aquarium Way Long Beach, CA 90802	562-951-1711	TPromessi@lbaop.org
13.	Jeff Rach	A/V Supervisor	AoP	100 Aquarium Way Long Beach, CA 90802	562-951-3122	JRach@lbaop.org
14.	John Rouse	Dir. of Operations	AoP	100 Aquarium Way Long Beach, CA 90802	562-951-1665	JRouse@lbaop.org
15.	Jerry Schubel	President/CEO	AoP	320 Golden Shore #100 Long Beach, CA 90802	562-951-1608	JSchubel@lbaop.org

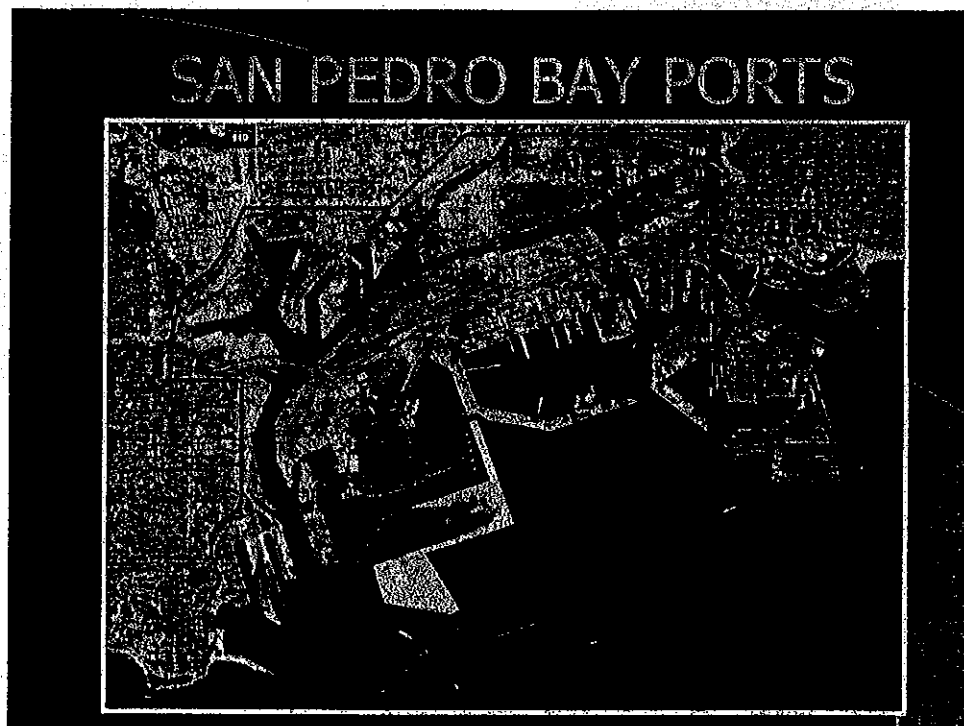
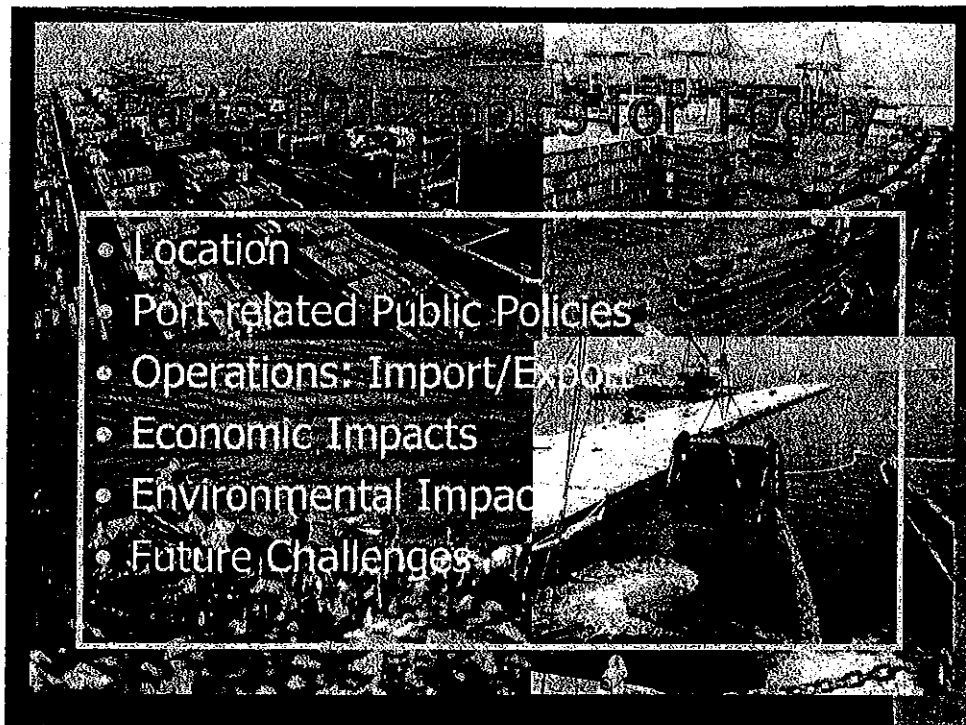
Appendix C  
PowerPoint Presentation: "Overview of Our Port"  
Created by Dr. Tom Johnson



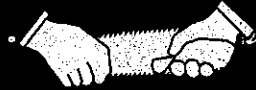
The View From 35,000 Feet:  
Operations and the  
Environment at the Port of  
Long Beach

*Thomas D. Johnson*  
*Manager of Environmental Planning*



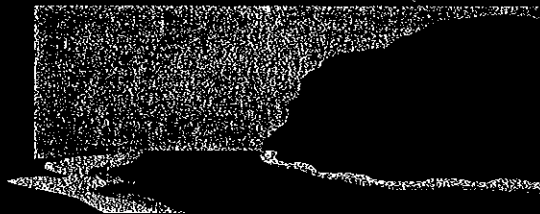


## TIDELANDS TRUST



- GRANT FROM STATE TO CITY
- MANAGE FOR PEOPLE OF CALIFORNIA
- RESTRICTED USES: Commerce, Navigation, Fisheries and Marine Recreation.

## CALIFORNIA COASTAL ACT

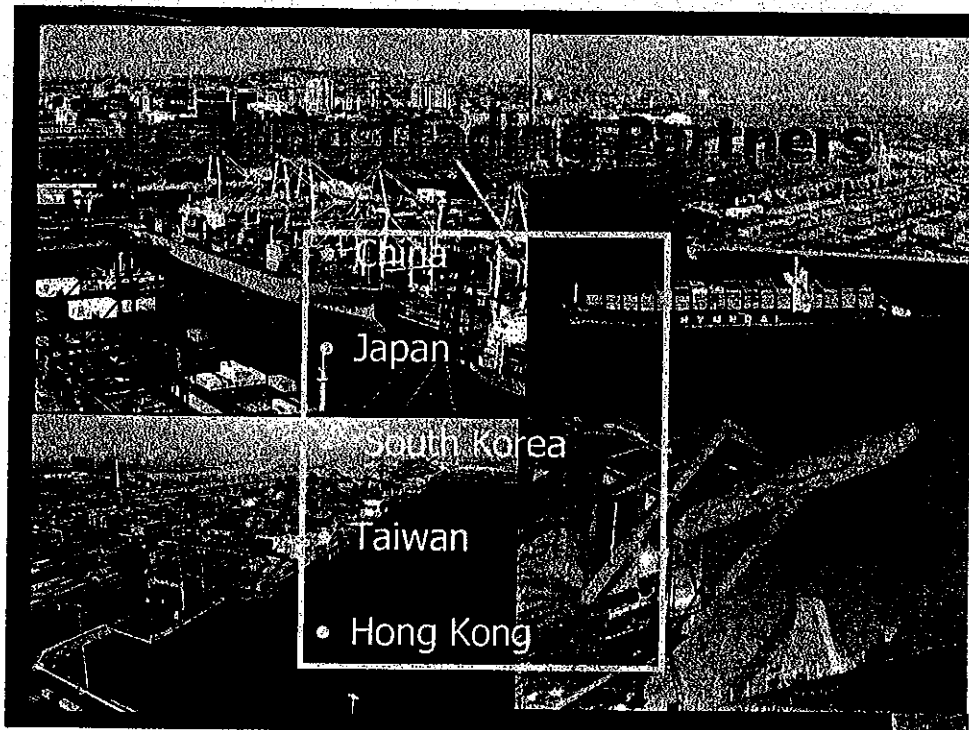


- GOVERNS COASTAL ZONE
- SPECIAL CHAPTER ON PORTS

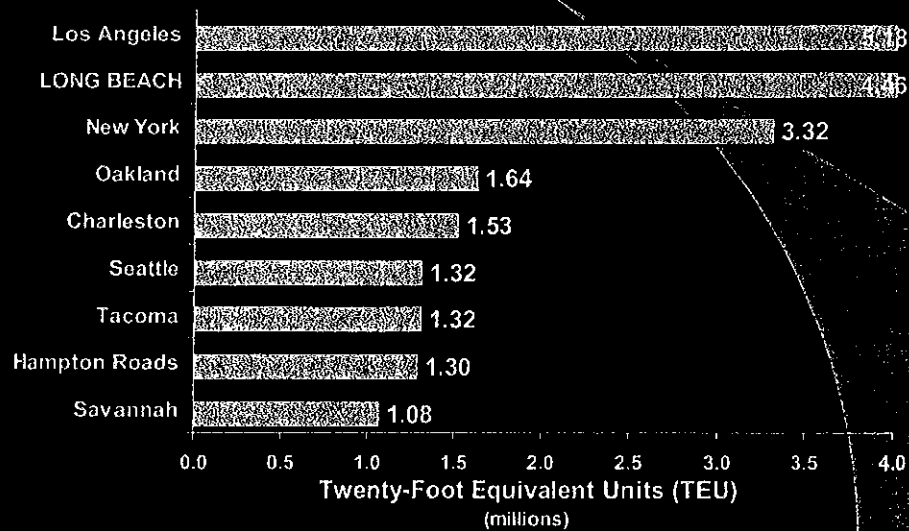


## City of Long Beach Harbor Department

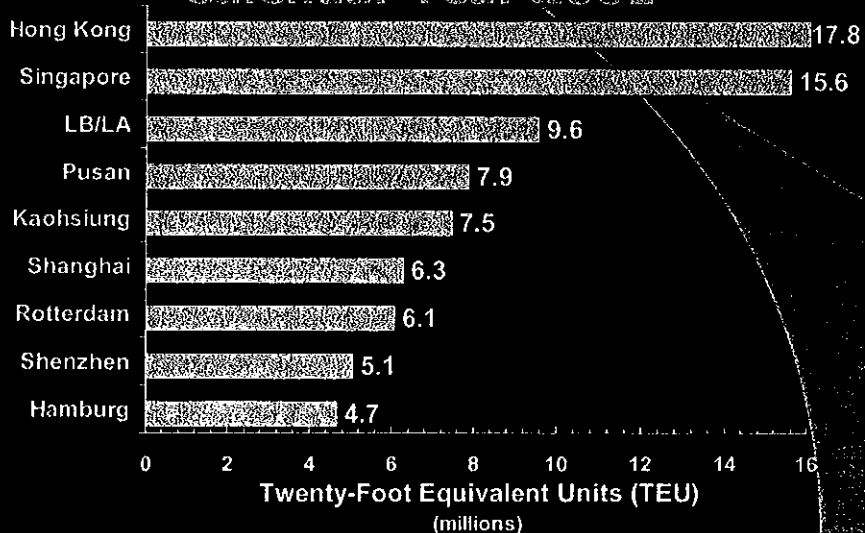
- Commissioners set policy.
- Executive Director administers.
- Harbor Commissioners appointed by mayor; confirmed by City Council.
- Council approval required only for bonded indebtedness; annual budget.
- Receive no tax revenue.
- Reimburse city for services.



## Top U.S. Containerports Calendar Year 2001



## Top World Containerports Calendar Year 2001



## Leading Import Commodities

by weight

by value

- Crude Petroleum
- Cement
- Electrical Machinery
- Furniture and Bedding
- Vehicles

- Machinery
- Electrical Machinery
- Vehicles
- Toys/Sporting Goods
- Woven Apparel

## Leading Export Commodities

by weight

by value

- Petroleum Coke
- Chemicals
- Petroleum Products
- Wastepaper
- Agricultural Products

- Machinery
- Plastic
- Electrical Machinery
- Organic Chemicals
- Meat

## Economic Benefits

- Value of foreign trade ~ \$89 Billion
- Approximately \$4.8 Billion in U.S. Customs Revenue for San Pedro Bay
- More than \$47.1 Billion in business revenue
- Approximately \$4.9 Billion in federal, state, and local tax revenue

## Growth Economic Prosperity

- **Port trade generates 26,000 Long Beach jobs.**
- **318,000 regional jobs.**



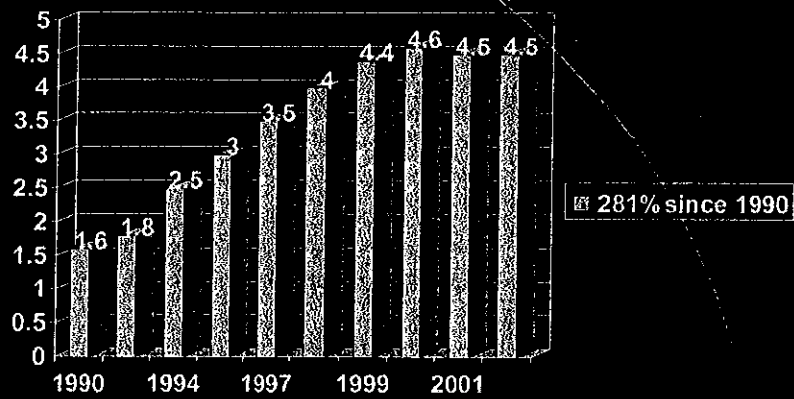
## Why We Have Grown Location, Location, Location

- Temperate climate year-round.
- Gateway to Pacific manufacturing centers.
- Demographics: 17 million consumers and producers in the LA region
- Port infrastructure:\$1 billion-plus in 4 years

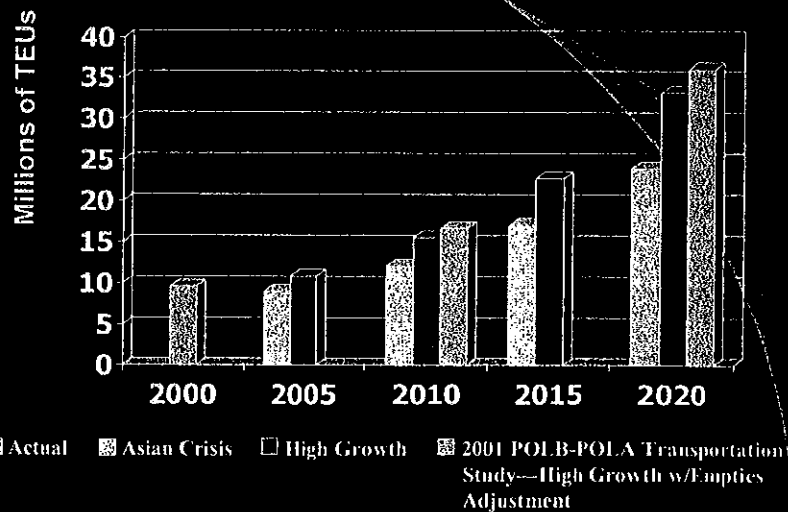
## The Challenges of Escalating Trade



# Port Container Growth In millions of twenty-foot container units

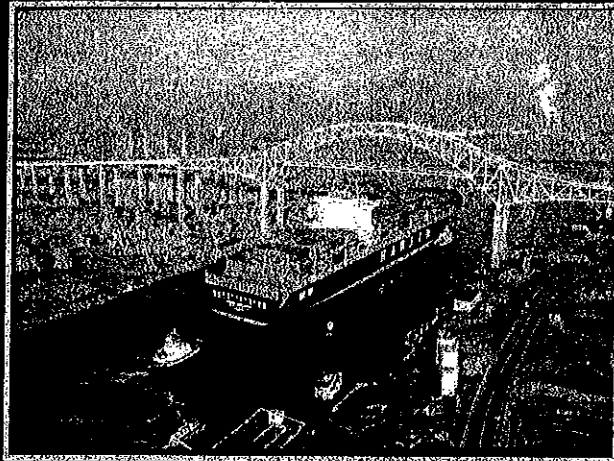


# Port of Long Beach -- Los Angeles Container Forecast (POLB-POLA Transportation/URR)



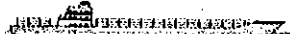
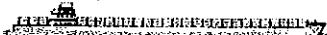




## Larger Ships Are Here

- >6000 teu containers per ship
- Deeper water
- Wider channels
- More land

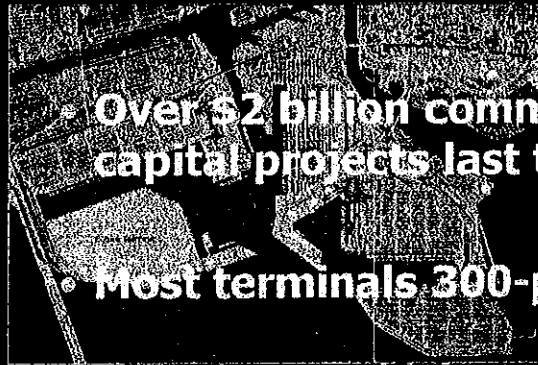


## Evolution of Vessel Capacity

Generation		Capacity (TEU)	Length (m)	Beam (m)	Draft (m)
1. (1968)		750	180	25	9.00
2. (1972)		1,500	225	29	11.50
3. (1980)		3,000	275	32	12.50
4. (1987)		4,500	275	39	11.00
5. (1998)		7,900	347	43	14.50
6. (2001+)		11,000	360	55	14.5

Future Suezmax

## Meeting Future Needs



- Over \$2 billion committed to capital projects last ten years

- Most terminals 300-plus acres

- Water depths to 50 feet

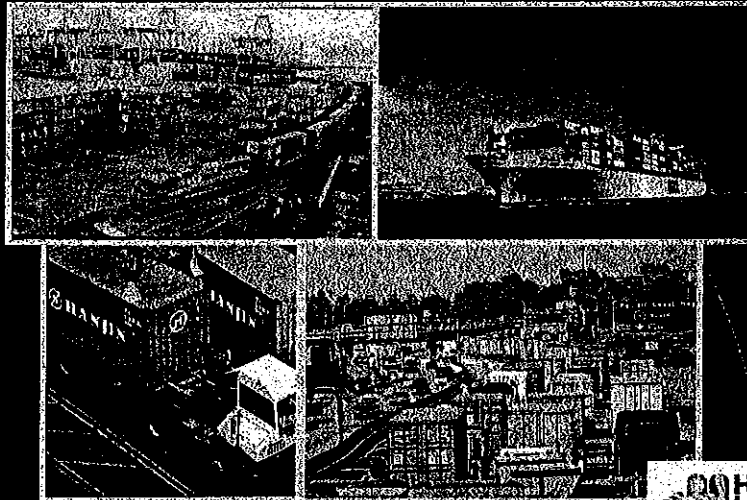


## Planning for Growth

- Megaterminal Plan
- Better utilization of assets
- Extended gate hours
- Technology in the workplace
- Increase efficiency in terminals
- Highway and rail transportation improvements



## Environmental Impacts: Sources and Challenges



## What Is the Port Doing?

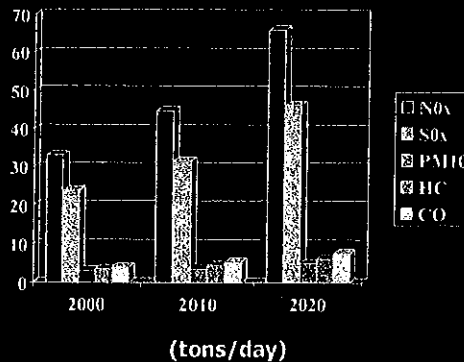


- Air Quality Improvement Program
- Storm Water Management
- Remediation of Soil Contamination
- Wildlife Protection



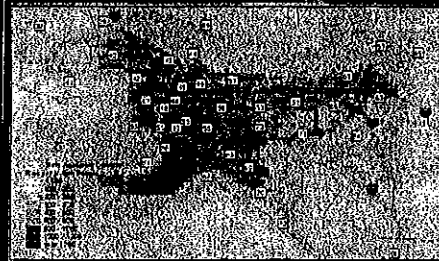
# San Pedro Bay Emissions Issues

## Increasing Emissions



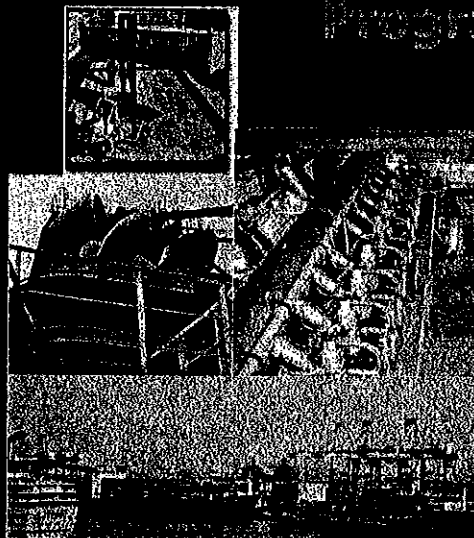
(Marine Vessel Emission Inventory  
SCAQMD Sep. 1999)

## Diesel Air Toxics



(Multiple Air Toxics Exposure Study  
SCAQMD Mar. 2000)

## Air Quality Improvement Programs

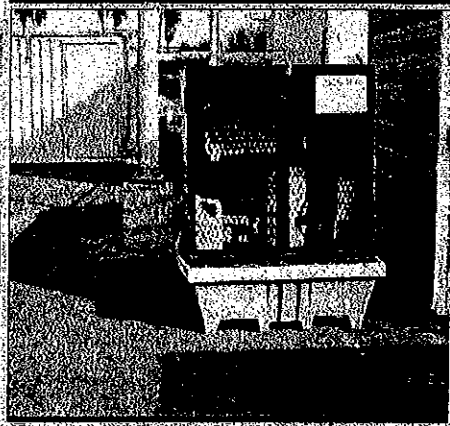


Diesel Emissions Reduction:  
Retrofit/convert diesel  
equipment

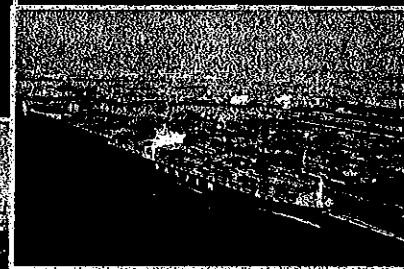
Vessel Speed Reduction:  
Voluntary program for  
maneuvering emissions

"Cold-Ironing" Feasibility:  
Shoreside electrical  
power/alternative fuels for  
at-berth emissions

## Storm Water Program

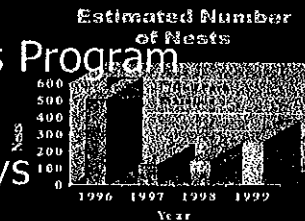


## Soil Remediation: State Superfund Sites Converted To Marine Terminals



## Wildlife Protection

- Black-crowned Night Heron Relocation
- Least Tern Feeding Habitat
- Invasive Species Program
- Biological Surveys



## Year 2000 Biological Baseline Survey: Marked Improvement Since 1970s

- Eelgrass and kelp beds
- 45 million fish belonging to 74 species
- 99 species of birds
- 400+ species of benthic invertebrates



## Wetlands Restoration Projects



- Anaheim Bay: 116 ac
- Upper Newport Bay: 23 ac
- Bolsa Chica: 270 ac



## Issues to Balance

- Trustee Obligations
- Growth Demand
- Need to Develop
- Infrastructure Costs
- Environmental Impacts