

**CHRISTOPHER COLUMBUS CENTER
FOR MARINE RESEARCH AND EXPLORATION
BALTIMORE, MARYLAND**

ENVIRONMENTAL ASSESSMENT

AUGUST 1992

**U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION III**

PHILADELPHIA, PA

In Cooperation With

**GENERAL SERVICES ADMINISTRATION AND
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION**

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LIST OF ACRONYMS

BCCC	-	Baltimore City Community College
BRESCO	-	Baltimore Refuse Energy System Company
BTEC	-	Baltimore Thermal Energy Corporation
CCC	-	Christopher Columbus Center
CMA	-	Center of Marine Archaeology
COMB	-	Center of Marine Biotechnology
EO	-	Executive Order
EPA	-	Environmental Protection Agency
FEMA	-	Federal Emergency Management Agency
GSA	-	General Services Administration
HABS	-	Historic American Buildings Survey
HAER	-	Historic American Engineering Record
LICO	-	Little Italy Community Organization
MNHP	-	Maryland Natural Heritage Program
MOA	-	Memorandum of Agreement
MPA	-	Maryland Port Administration
MSDS	-	Material Safety Data Sheet
MTA	-	Mass Transit Administration
NAAQS	-	National Ambient Air Quality Standards
NASA	-	National Aeronautics and Space Administration
NEPA	-	National Environmental Policy Act
OSHA	-	Occupational Safety and Health Administration
SOP	-	Standard Operating Procedures
USFWS	-	United States Fish and Wildlife Service
WRA	-	Water Resources Administration

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

This Environmental Assessment has been prepared in compliance with the National Environmental Policy Act (NEPA) to evaluate the potential environmental impacts resulting from the construction and operation of the Christopher Columbus Center for Marine Research and Exploration (the "Center") at the Inner Harbor in Baltimore, Maryland. The assessment has been developed by the U.S. Environmental Protection Agency (EPA), in cooperation with the General Services Administration (GSA) and the National Aeronautics and Space Administration (NASA).

The Christopher Columbus Center is needed to accommodate the projected growth of the Center of Marine Biotechnology (COMB). COMB is a national and international leader in marine biotechnology research and the Center would capitalize on this leadership. The Center is also needed to help establish the Greater Baltimore region as a global life sciences community and help the State of Maryland fulfill its obligations under the Federal Abandoned Shipwreck Act of 1987.

Site selection criteria for the Center include public accessibility, and proximity to water, the National Aquarium, and to other university and research institutions.

Congressional appropriations for the Center, channelled through the EPA, GSA, and NASA total over \$54 million through fiscal year 1993. To date, total funding for the Center from Federal, State, City, and private sources totals over \$160 million.

The following alternative actions were examined to determine whether they would meet the above project needs and site selection criteria:

- (1) no action,
- (2) project postponement,
- (3) renovation/expansion of existing facilities,

- (4) acquisition and renovation of alternate existing facilities,
- (5) alternative sites, and
- (6) the proposed action - the construction of the Center at Baltimore Inner Harbor.

Only the proposed action, the construction and operation of the Christopher Columbus Center at Baltimore Inner Harbor, would meet the project needs and site selection criteria, as well as take advantage of Congressional appropriations and other sources of funding.

The environmental assessment identified the following potential adverse environmental impacts resulting from the construction and operation of the Center: (1) construction of a facility within a 100-year flood hazard area, (2) disturbance of tidal wetlands (waters and bottom sediments) adjacent to Piers 5 and 6 at Baltimore Inner Harbor, (3) temporary decrease in ambient air quality due to construction operations, (4) temporary increase in noise due to construction operations, (5) permanent loss of approximately 400 public parking spaces, (6) demolition of one historic building and reconstruction of one historic resource, both of which are eligible for the National Register, and (7) temporary impacts to water quality and aquatic ecosystems as a result of dredging.

1.0 DESCRIPTION OF PROPOSED ACTION

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1.1 Project Location and Description

The proposed action is the construction of the Christopher Columbus Center for Marine Research and Exploration (the "Center") in Baltimore, Maryland. The Center would serve as a national and international focal point for marine science research and related academic and business activities.

The proposed site for the Center is an 8.3 acre, City-owned parcel on Piers 5 and 6, in Baltimore's Inner Harbor (Figure 1-1). Piers 5 and 6 extend south from Pratt Street into the harbor and are bounded on the east by the Jones Falls and on the West by a docking slip and Pier 4. Piers 5 and 6 are connected to East Falls Avenue to the east by a vehicular bridge and to Pier 4 to the west by a pedestrian bridge. Except for a former restaurant building occupying the northwest corner of Pier 5, the proposed site is currently entirely paved and used as a public parking lot for 620 vehicles (Figure 1-2 and Appendix A - Photo Survey).

The Center would include the following in Phase I of its development: a national center of marine biotechnology, a graduate studies and research center for marine biotechnology and nautical archaeology, teaching and educational enrichment facilities, and an exhibition area. Approximately 255,200 square feet of space would be provided for research, education, administrative, and public/exhibition uses. A preliminary breakdown of square footage by function is as follows:

Research and Education:	Center of Marine Biology	156,000 sq. ft.
	Center of Marine Archaeology	19,000 sq. ft.
General Administration:	Christopher Columbus Center	8,000 sq. ft.
	Exhibit Area and Training	43,200 sq. ft.
Other:	Mechanical/Electrical	<u>29,000 sq. ft.</u>
	Total -	255,200 sq. ft.

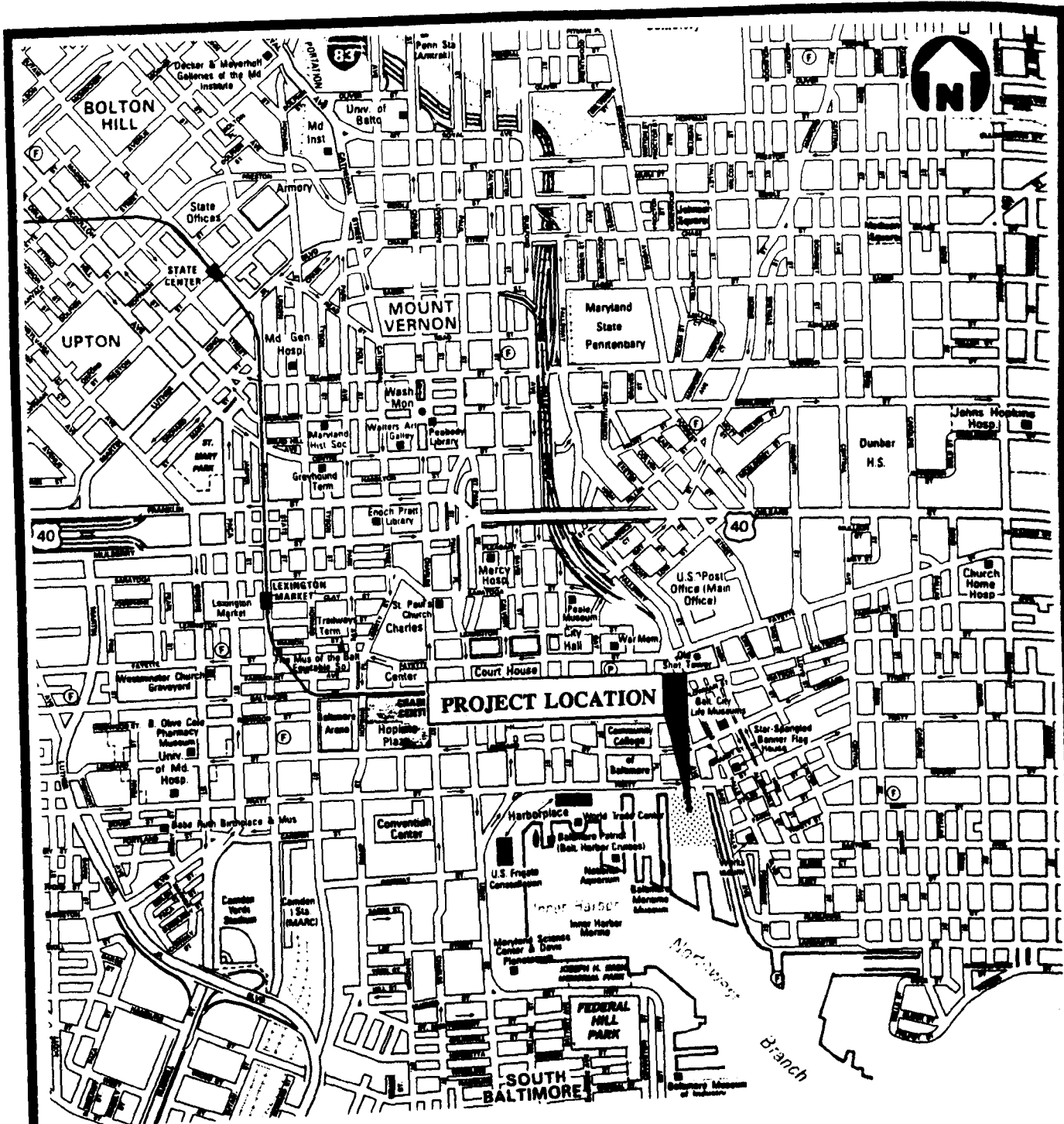


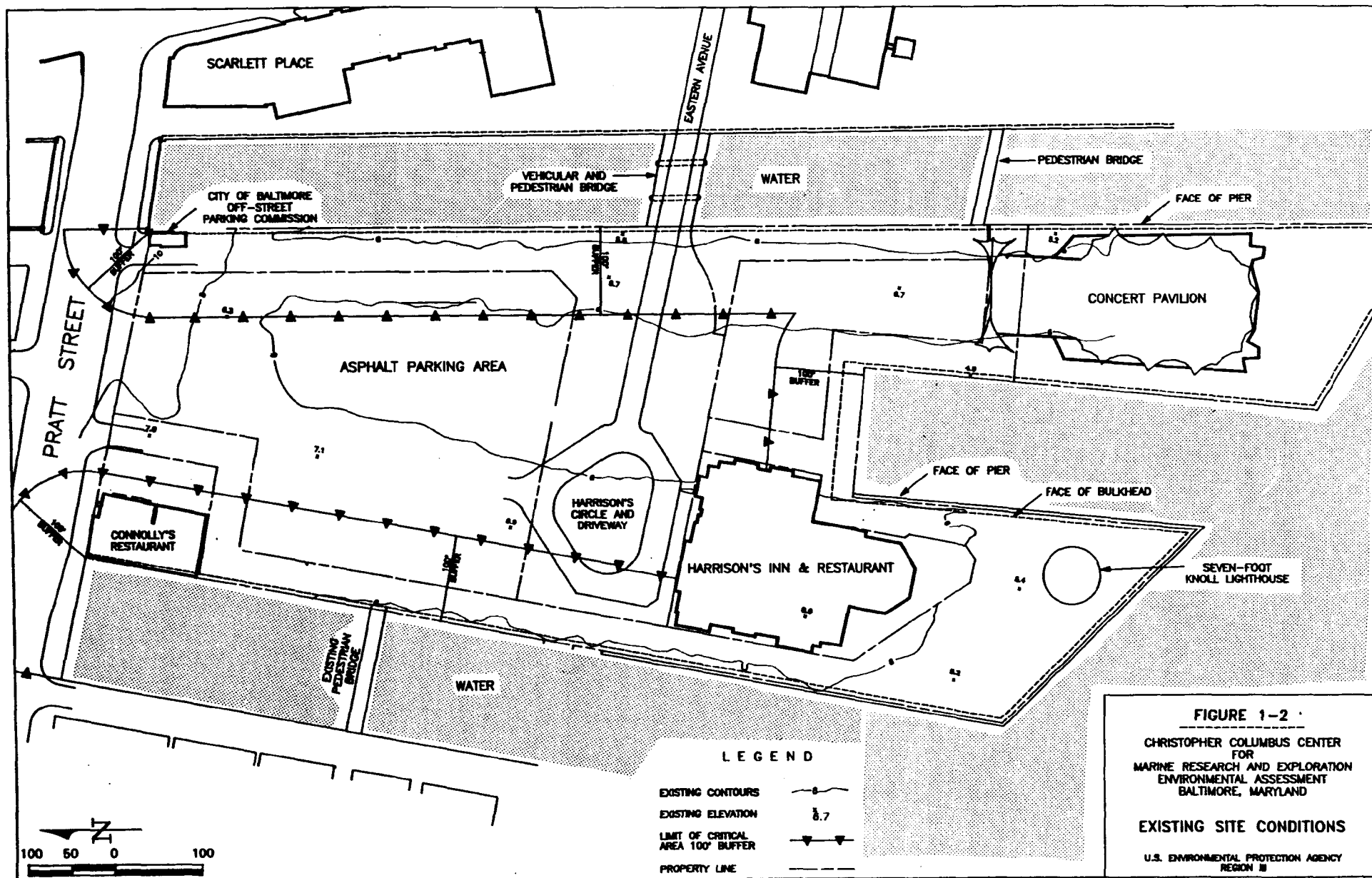
FIGURE 1-1

**CHRISTOPHER COLUMBUS CENTER
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PROJECT LOCATION MAP

SCALE: 1 INCH = APPROX. 3 MILES

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Approximately 230 parking spaces will be provided outside the facility for the general public and 25 spaces will be provided inside the Center for COMB personnel.

Phase II of the Center's development is designed to occur on the project site, to the east of the primary facility. The facility expansion would eliminate the 230 public parking spaces on the site.

Docking facilities for oceanographic research vessels are contemplated along the western bulkhead of Pier 5 and between Piers 5 and 6. When not in use, the ships may be open to the public as part of the Center's exhibition facilities. Three historic vessels, the Coast Guard Cutter Taney, the submarine Torsk, and the lightship Chesapeake, would also be moved to permanent locations adjacent to the Center and be opened to the public. The location of the historic vessels would not affect docking of the research vessels.

The facility will be five-stories high, with an additional two-level mechanical penthouse, at a scale which is compatible with surrounding buildings. The design for the facility will be of an organic nature, consistent with the mission of the Center and with the aesthetic/architectural character of the Inner Harbor area. Figure 1-3 illustrates the proposed site layout with landscaping including ornamental trees, shrubs, and flowers, a possible reflecting pool and fountain, and promenades.

The bulkheads surrounding the northern portion of Piers 5 and 6 are deteriorating. In order to develop the proposed site, new bulkheads would be constructed in front of the existing installation, with new pilings placed outside the existing bulkheads. These pilings would support a relieving platform that would remove the loading on the current construction, while leaving the existing bulkheads, which are historically significant, in place.

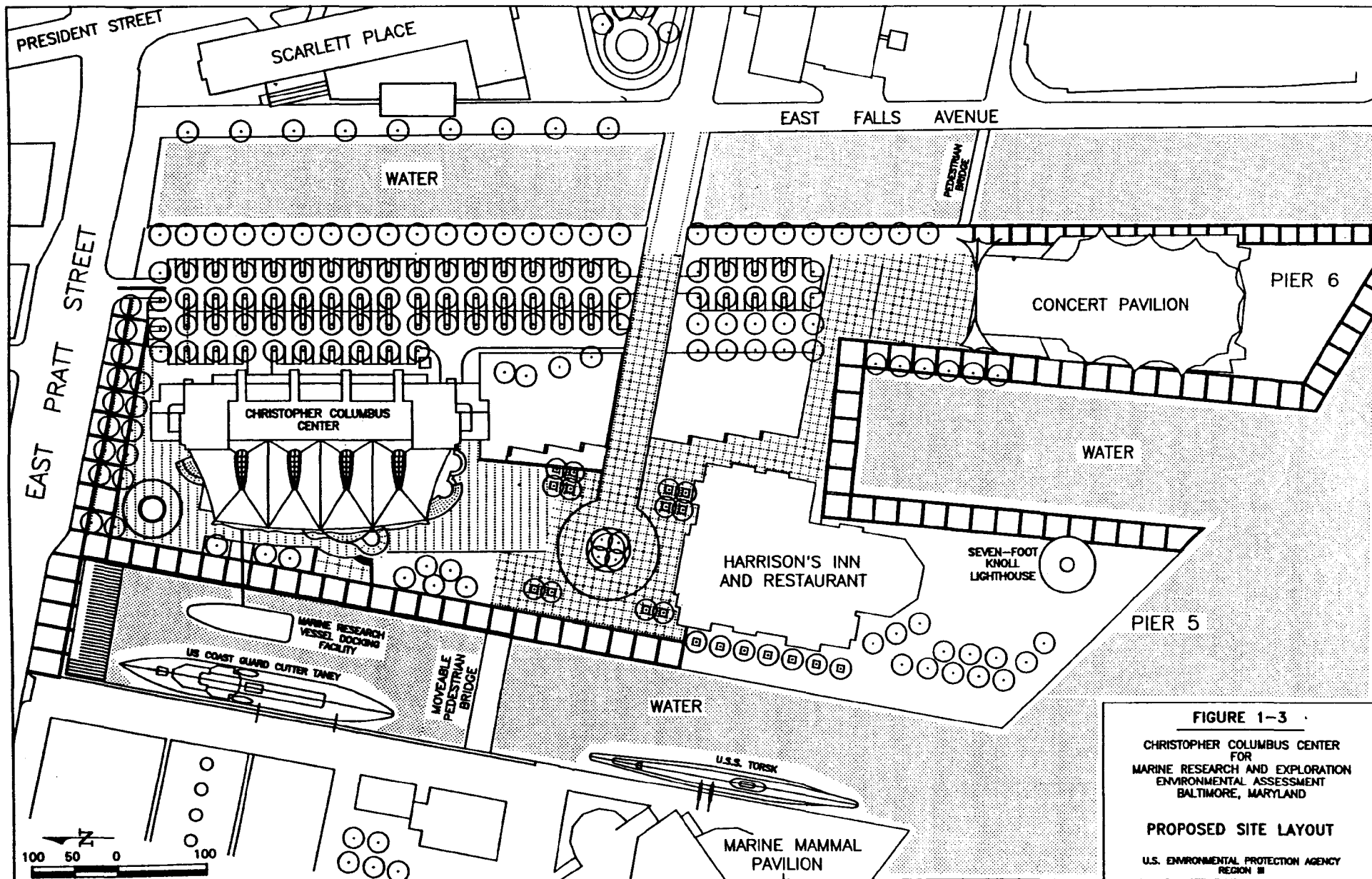


FIGURE 1-3
 CHRISTOPHER COLUMBUS CENTER
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PROPOSED SITE LAYOUT
 U.S. ENVIRONMENTAL PROTECTION AGENCY
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1.2 Project History and Background

The concept of a public exposition/marine research institution is not a new one to the City of Baltimore. In fact, the idea for the Christopher Columbus Center has evolved over a period of more than ten years, beginning with the establishment of the National Aquarium in 1983. The Aquarium was designed for a purpose similar to that of the Center: to combine marine research with public exposition.

In 1982, a marine museum was proposed for the Piers 5 and 6 site in an effort to create a waterfront institution in the Inner Harbor that would link the harbor with the Chesapeake Bay through a focus on history and environmental education. This museum concept was modified to become a principle component of the Center.

In 1985, the Center of Marine Biotechnology (COMB) made a decision to move its facilities from College Park, Md., to the Baltimore City Community College on Pratt Street, just north of the project site. COMB, which is the scientific cornerstone of the Christopher Columbus Center, moved its facilities in order to ensure greater access to the molecular biology and medical research conducted in Baltimore and to take advantage of the National Aquarium's experience in fish-handling.

In 1986, an ad hoc group, formed by prominent Marylanders from both the public and private sectors, met to develop a concept for a major public project that would commemorate the Christopher Columbus quincentenary in 1992. The concept that emerged was to create a new downtown institution that would serve as a scientific research center and an educational magnet for workforce training. This concept coincided with earlier visions for a maritime research facility in the Inner Harbor area and was formally proposed to the Mayor of Baltimore in 1986.

The ad hoc group approached the directors of the National Aquarium in 1987 to discuss the possibility of the Aquarium managing the development and operation of such an institute.

The Aquarium board declined because at the time it was focusing on its own expansion and lacked the capital and staff to undertake such an effort.

The ad hoc group decided to proceed without the Aquarium's direct involvement, and in November 1987, met to plan the development and implementation of a marine research, exposition, and training center. This formed the basis of what later became the Board of the Christopher Columbus Center of Marine Research and Exploration.

The Federal Abandoned Shipwreck Act of 1987 (43 U.S.C. 2101 *et seq.*) mandated that individual states take charge of and preserve their underwater heritage as part of a national conservation and cultural mission. This legislation coincided with and reinforced previous state efforts related to marine research and exploration. A Center for Marine Archaeology, which will help meet Maryland's obligations under the Act, is a unit of the proposed Center.

Early in 1988, the Board of the Christopher Columbus Center Development, Inc., a non-profit entity, was formed to define the purpose of the Center, to direct its development, and to manage its operations. By-laws were established in August, 1988. Fundraising studies and an Economic Impact Analysis for the Center were conducted in 1990. The Christopher Columbus Center for Marine Research and Exploration was formally dedicated in October 1991, with the aim of maintaining the United States' leadership in the field of marine biotechnology.

Federal appropriations for the Center, granted through the Environmental Protection Agency (EPA); National Aeronautics and Space Administration (NASA); and the General Services Administration (GSA), for fiscal years 1991 and 1992 were the result of strong Maryland Congressional Delegation involvement in the project. This Federal funding necessitated compliance with the National Environmental Policy Act (NEPA). The EPA has assumed the lead agency role in complying with NEPA, with GSA and NASA acting as cooperating agencies.

1.3 Project Funding

The Christopher Columbus Center will be funded by a combination of federal, state, city, and private funds. To date, Congress has appropriated \$31,500,000 to the Christopher Columbus Center (3 P.L. 102-139 and 102-141). EPA granted \$6.0 million for planning for the Center. GSA granted \$5.5 million for planning and design and NASA granted \$20.0 million for construction.

The sources and timing of project funding as of 7/1/92 are as follows:

TABLE 1-1
FUNDING SOURCES FOR THE CHRISTOPHER COLUMBUS CENTER
(\$ 000's)

	Approved to Date	FY 1993	FY 1994	FY 1995 and beyond	TOTAL
Federal	31,500	12,500***	10,304***	NA	54,304
EPA	6,000	NA	NA	NA	6,000
GSA	5,500	NA	NA	NA	5,500
NASA	20,000	***	***	NA	***
State	11,680	---	7,120	NA	18,000
City	55,680	---	6,680	8,300	70,660
Land	34,200	NA	NA	NA	34,200
Parking*	12,000	NA	NA	NA	12,000
Other	9,480	---	6,680	8,300	24,460
Private	50	10,000	6,950	NA	17,000
TOTAL	98,910	22,500	31,054	8,300	160,764

*** - To be determined

NA - Not Applicable

* - Source: Revenue Bonds

--- - Included in "approved to date"

Source: Christopher Columbus Center of Marine Research and Exploration Fact Sheet, 7/7/92.

1.4 Project Purpose

The purpose of the Christopher Columbus Center is to serve as an international marine research, development, and educational facility dedicated to state-of-the-art science and exhibition. It is designed to capitalize on American leadership in the field of biotechnology, to create economic opportunity in the region (by creating jobs and job training facilities and stimulating investment and growth), to help further the Baltimore region's goal of becoming a global life sciences community, and to help bring science and technology into the public realm.

The major components of the Christopher Columbus Center are the Center of Marine Biotechnology, the Center of Marine Archaeology, a training and development center, and an exhibition facility.

The Center of Marine Biotechnology

The Center of Marine Biotechnology (COMB) is a unit of the University of Maryland's six-division Maryland Biotechnology Institute and will serve as the scientific cornerstone of the Center. It is the only marine science institution in the United States totally dedicated to the fields of marine molecular biology and molecular genetics. Examples of current and proposed COMB activities and their projected impact include:

Pharmaceuticals - development of treatments for cancer, AIDS and other auto-immune disorders, and cardiovascular disease based on marine organisms.

Food Supply - development of disease-resistant fish and shellfish, with specific focus on the Chesapeake Bay oyster; genetic research aimed at increasing the growth of selected food species, thereby enhancing the potential for investment-scale aquaculture and marketing.

Biodiversity - understanding mechanisms to ensure the preservation of threatened game and commercial species.

Bioremediation - development of environmentally-safe methods for cleaning fouled marine environments, including micro-organisms that reduce toxic substances.

Marine Products - development of longer lasting and environmentally safe paints and treatments for ships, hulls and other marine structures that will resist barnacles and other organisms; development of new adhesives and bonding agents for paint based on marine organisms.

COMB facilities in the Center would include state-of-the-art lab modules, lab support functions including electron microscopy and magnetic resonance imaging, fish handling and storage facilities, and teaching facilities.

Center of Marine Archaeology

The Center of Marine Archaeology (CMA) would focus on research in the areas of marine exploration in deep water, diving technology and instrumentation, underwater robotics, contract archaeology and salvage, resource recovery, and chemical preservation technology. The following will be included in the CMA:

- A graduate studies program affiliated with the University of Maryland
- A first stage conservation laboratory associated with the Maryland Historical Trust
- The National Center for Preservation Technology, an affiliated project with the National Oceanographic and Atmospheric Administration

CMA facilities in the Center would include classroom and teaching space; preservation labs; research space for fiber-optics, robotics, side-scan sonar, and other underwater retrieval technologies; and exhibition space for the display of recovered artifacts.

Training and Development Center

The training and development center would be a shared, multipurpose operation used by COMB, CMA, and others for teaching and other routine academic facilities, as well as for community outreach. Joint programs will be conducted between the Christopher Columbus Center and area schools, colleges, and universities.

The training and development center would augment the already successful, existing lab technician program between COMB and Baltimore Community College. This type of job training program is a critical component of the region's new life sciences strategy for economic development. In addition, the center would serve as a location for conducting conferences and for facilitating dialogue with the industrial and financial sectors that will play pivotal roles in turning the Center's research into marketable products.

Exhibition Facility

Complementing the Center's training and development facility and other Inner Harbor attractions such as the National Aquarium and the Maryland Science Center, the exhibition area would serve as a working, participatory science laboratory space. The design of the entire Christopher Columbus Center, with public spaces, visible lab facilities, and interconnected units, is intended to show actual work in progress, not simulations. The exhibition facility will be oriented toward science exposition (showing change and technical evolution in progress) as opposed to a museum approach. Oceanographic research vessels docked at the facility may be used for exhibition when not otherwise in use.

1.5 Project Need

Marine biotechnology is a rapidly growing and economically rewarding area of scientific research and development. The field has already begun to achieve impressive results in areas such as pharmaceuticals, food supply, bioremediation, and products for marine applications. The Christopher Columbus Center would be the first facility in the United States devoted specifically to this science and is needed to capitalize on American leadership in the field.

The greater Baltimore region is committed to establishing itself as a global life sciences community. The Center would help Baltimore become an anchor in an increasingly science- and technology-driven economy. In the business community, the Center would help attract private-sector investment and promote the growth of local technology-based firms. The Center will emphasize generating marketable outputs from marine research. The Abell Foundation projects that companies spawned by research at the Center would pump \$300 million annually into Maryland's economy. In the education community, the Center will help educate and train technicians and scientists needed in the life sciences industry.

The Federal Abandoned Shipwreck Act of 1987 requires states to take initiative in preserving their underwater heritage. The Center has been designated as the home of a number of new programs that will help Maryland fulfill its obligations under this Act.

The Center of Marine Biotechnology is currently housed in facilities at the Baltimore City Community College. These facilities are too small and technologically inadequate for the needs of a major scientific research institution. Projected growth of COMB will only intensify the situation as expansion space is not available and renovation costs are excessive. In the business community, the Center would help attract private-sector investment and promote the growth of local technology-based firms. The Center will emphasize generating marketable outputs from marine research. The Abell Foundation projects that companies spawned by research at the Center would pump \$300 million annually into Maryland's economy. In the education

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2.0 ALTERNATIVES ANALYSIS

2.0 ALTERNATIVES ANALYSIS

2.1 No Federal Action

The need for this facility is substantial as outlined in Section 1.5; thus, no federal action is not a reasonable option. In the context of the National Environmental Policy Act (NEPA), no action would be the denial of funding assistance by General Services Administration (GSA), Environmental Protection Agency (EPA), and National Aeronautics and Space Administration (NASA) or denial of Federal permits. Congressional appropriations for planning, design, and construction of the Center total \$31.5 million to date. Without such funding the Center would be forced to seek alternate sources of financial support.

The site is zoned a Central Commercial District and the land use is designated Residential/Commercial (see Section 3.2.1). Thus, the site will eventually be developed according to these regulations. This area constitutes the last major waterfront development area in the Inner Harbor and the principal pedestrian artery between Inner Harbor and the redeveloping Inner Harbor East and Fells Point areas. The City of Baltimore has, for many years, envisioned and planned a maritime-oriented exhibition, training and entertainment facility at this location. The City will implement an appropriate alternative facility construction project if this project does not move forward.

2.2 Project Postponement

Postponing development of the Center is not a reasonable alternative. The Center's principal occupant, the Center of Marine Biotechnology (COMB), has outgrown its current quarters and is operating in cramped and technologically inadequate facilities at the Baltimore City Community College (BCCC). Projected growth of the COMB and the development of joint projects between it and other institutions such as the National Aquarium justify development of the Center. The Center for Marine Archeology (CMA) is the designated home of a number of new programs required to meet the State's obligations under the Abandoned Shipwreck Act.

Lastly, the need to address educational and employment opportunities for the citizens of the City of Baltimore is a priority.

As mentioned in the previous section, Congressional appropriations totaling \$31.5 million, of which approximately \$3.1 million has been expended, would be forfeited if the project were postponed.

2.3 Criteria for Site Selection

The following section outlines the criteria that were considered in the selection of the proposed site for the Christopher Columbus Center. Listed below are the selection criteria in order of importance:

1. Location in Baltimore Area - COMB, the major component of the Center, is a national and worldwide leader in the science of marine biotechnology research; must relocate to larger facilities due to inadequate space at their existing facilities.
2. Direct access to navigable waters to allow docking and public exposure of research vessels used by COMB and CMA.
3. Proximity of the facility to National Aquarium to continue joint fish breeding projects, to share technology and staff experience, and public involvement and education.
4. Proximity of facility to other university and research institutions to share resources, as well as to provide accommodations and support services to visiting scientists.
5. Proximity to public attractions to enable successful public outreach.

2.4 Renovation/Expansion of Existing Facilities

The proposed project's major user, the Center of Marine Biotechnology, occupies quarters in the nearby Baltimore City Community College building. This structure is inadequate for the technical and technological needs of a major scientific research institution. The COMB occupied what is converted classroom space with the expectation that it would eventually relocate to more adequate facilities when they became available.

Operational costs are excessive and even minor renovations are expensive. Additionally, BCCC's own academic programs and need for space to offer other educational programs limit any expansion potential for COMB. Another disadvantage for COMB at its existing location is the lack of water access, which is necessary for biotechnology research. Due to these facts, this alternative is not feasible. Figure 1-1 and Figure 3-2 are maps of Baltimore's Inner Harbor and highlight geographic locations of the existing COMB facility, National Aquarium, and other research facilities.

2.5 Acquisition and Renovation of Alternate Existing Facilities

The acquisition and renovation of an existing facility is not feasible.

No existing facilities meet all the criteria for site selection. In addition, within the immediate area of the Inner Harbor, which is a locational attribute addressed in Section 2.3, there are no existing buildings suitable for redevelopment. Technical limitations are significant and potential renovation costs would be excessive. Use of this building might also require displacement of the existing tenants that have invested significant capital in customizing their space.

2.6 Alternative Construction Sites

As indicated earlier, there are no other sites within the Inner Harbor area that meet the site selection criteria. While there may be additional sites within the Baltimore area that are of sufficient size for the Center, there are no other available sites with direct water access and in close proximity to the National Aquarium and major tourism areas.

Required proximity to the waterfront precludes inland sites for the project. Scientists must have ready access to visiting research vessels. As mentioned previously, COMB and the National Aquarium have launched a joint fish breeding project, which increases efficiently and is practical. This joint venture may spur other joint projects in the future.

2.7 Summary

Based on project need, congressional appropriation of funds, local and state financial and political support for this project, and the above listed site criteria, the preferred alternative is the only reasonable alternative for development of the Christopher Columbus Center.

3.0 EXISTING ENVIRONMENT OF THE PREFERRED ALTERNATIVE

3.0 EXISTING ENVIRONMENT OF THE PREFERRED ALTERNATIVE

3.1 Natural Environment

3.1.1 Physiography

The proposed site lies within the Atlantic Coastal Plain physiographic province and is characterized by Cretaceous (water deposited) soils which thicken southeastward and overlie weathered crystalline bedrock of Pre-Cambrian Age. The project site was once part of the marshy, delta-like area where the Jones Falls emptied into the northwest branch of the Patapsco River. The original shoreline was located several blocks north of the project site.

Soils underlying Piers 5 and 6 consist of various man-made and natural fill materials, highly compressible organic silts and sands, gravely and silty residual soils before reaching gneiss bedrock at depths ranging from 55 to 77 feet below the existing ground surface.

The site slopes gently from elevation +10 feet in the northeast corner of Pier 6 to elevation +6 feet in the center of the site. The first floor elevation of Harrison's Inn and Restaurant on the southern end of Pier 5 is +9.4 feet. The property surrounding Harrison's slopes from +9.4 feet to +6.0 feet inside the bulkheads. Elevations of the top of bulkheads around Harrison's range from +7.0 feet to +6.0 feet. The lowest elevation on the site is +5 feet, on the southeastern corner of Pier 6.

3.1.2 Vegetation and Wildlife

Terrestrial vegetation and wildlife are virtually nonexistent in the proposed project area. Aquatic vegetation and wildlife is limited to those species which are present are commonly found in urban areas. The U.S. Fish and Wildlife Service and the Maryland Natural Heritage Program were consulted to determine if any state or federally protected, threatened, or endangered species

are present at or near the site. According to the U.S. Fish and Wildlife Service (USFWS), the peregrine falcon is the only federally listed endangered species known to be present in the Inner Harbor area. A pair of the falcons nest on the USF&G building, seven blocks west of the proposed site. According to the Maryland Natural Heritage Program (MNHP), no known Federal or State threatened or endangered plant or wildlife species are present at the project site. Appendix B contains correspondence from USFWS and MNHP.

The State of Maryland Department of Health and Mental Hygiene issued a health advisory on February 6, 1986, concerning recreational fishing and consumption in some areas of the Baltimore Harbor. Studies indicated that certain fish species in the Harbor, including channel catfish and american eel, may contain unusually high concentration of Chlordane. Chlordane is an insecticide that is a suspected carcinogen and long-term exposure is considered a risk. This health advisory is still in effect today.

3.1.3 Floodplains and Wetlands

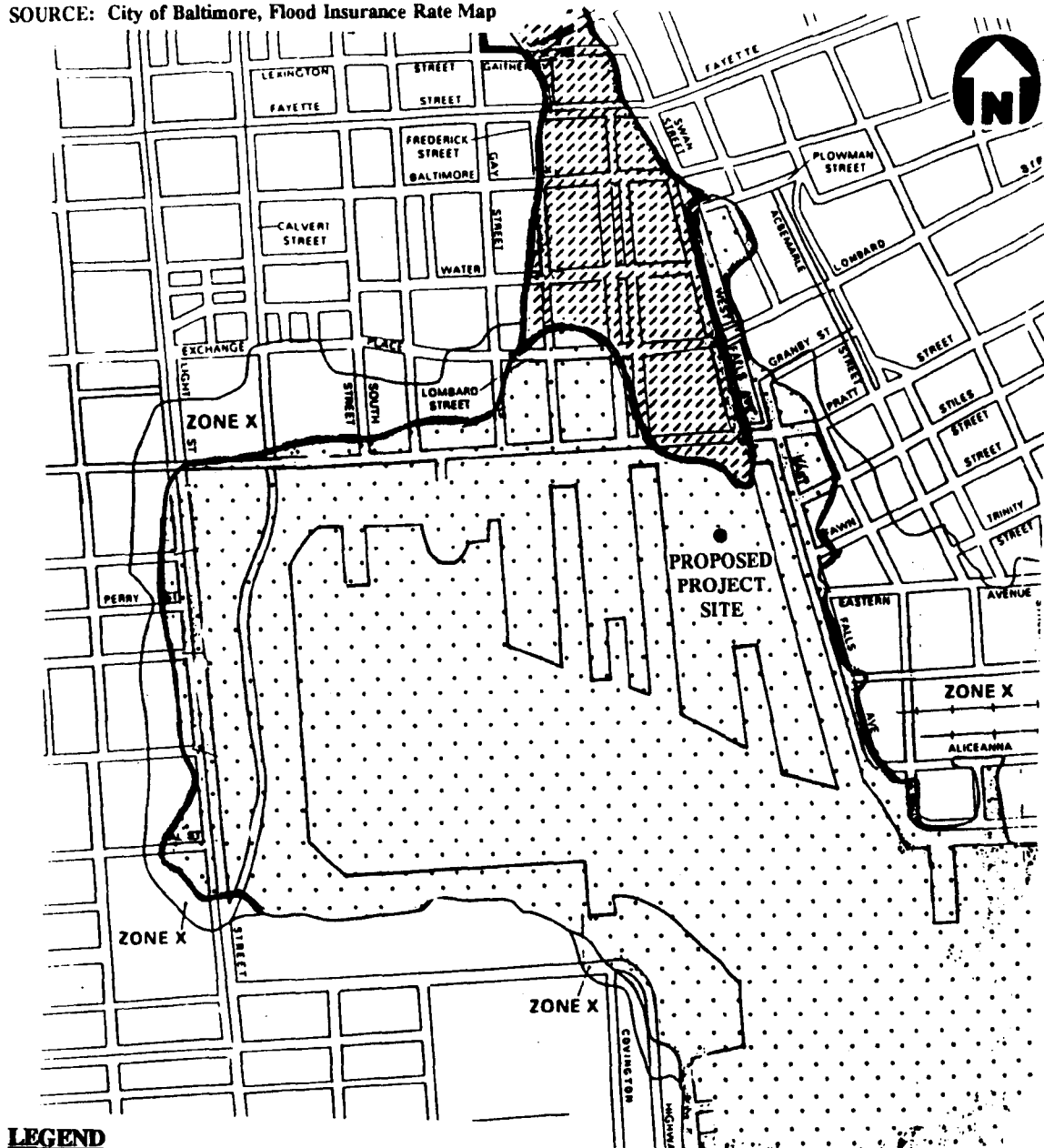
Floodplains

The proposed project site is located within the 100-year flood hazard area as identified by the Federal Emergency Management Agency (FEMA), as is the rest of the Inner Harbor waterfront area (Figure 3-1). Virtually the entire site is located in Zone AE, which is the 100-year flood hazard area associated with the Patapsco River sub-estuary. The 100-year flood depth (or depth of inundation from 100 year flood waters) in Zone AE is estimated to be 3.7 feet. The extreme northeast corner of Pier 6 is located in ZONE AO, which is the 100-year flood hazard area associated with the Jones Falls. The 100-year flood depth in Zone AO is estimated to be 2 feet.

Wetlands

There are no wetlands located on the proposed building site. The proposed project

SOURCE: City of Baltimore, Flood Insurance Rate Map



LEGEND



-  Zone AE 100-Year Flood Hazard Area (Patapsco River)
-  Zone AO 100-Year Flood Hazard Area (Jones Falls)

FIGURE 3-1

**CHRISTOPHER COLUMBUS CENTER
ENVIRONMENTAL ASSESSMENT
BALTIMORE, MARYLAND**

100-YEAR FLOODPLAIN MAP

SCALE: 1 INCH = 700 FEET

AUGUST 1992

area includes the waters adjacent to the piers which are classified by the U.S. Fish and Wildlife Service system as estuarine, subtidal, unconsolidated-bottom wetlands. There are no shallow waters (less than six feet) and no productive habitats within the proposed project area.

3.1.4 Ambient Air Quality

The City of Baltimore is in non-attainment with the National Ambient Air Quality Standard (NAAQS) for ozone and is classified as a severe region, meaning that ozone concentrations exceed 0.18 ppm.

The central business district of Baltimore is also in non-attainment with the NAAQS for carbon monoxide. The area is classified as moderate, with ambient values exceeding 9.1 ppm.

3.1.5 Ambient Noise

No ambient noise measurements are available for this site. The predominant noise source is vehicular traffic typical of an urban area. The noise-sensitive areas closest to the site are the condominiums at Scarlett Place, located approximately 200 feet east of Pier 6; the Baltimore City Community College, located approximately 300 feet northwest of the piers; Harrison's Inn on Pier 5; and the Pier Six Concert Pavilion.

3.1.6 Groundwater

Groundwater is present on the site at depths ranging from 7 to 10 feet. Groundwater testing was conducted by May 1992. Unfiltered groundwater samples indicated elevated concentrations of several trace metals when compared with Marine Waters Quality Criteria. Filtered samples indicated no significant concentrations of trace metals. Details of the groundwater study can be found in *Draft Soil Borings and Analyses, Fill Material and Groundwater, Pier 5 and 6*, EA Engineering, August 1992.

Groundwater in the vicinity of the project site is not used for drinking water.

3.2 Man-made Environment

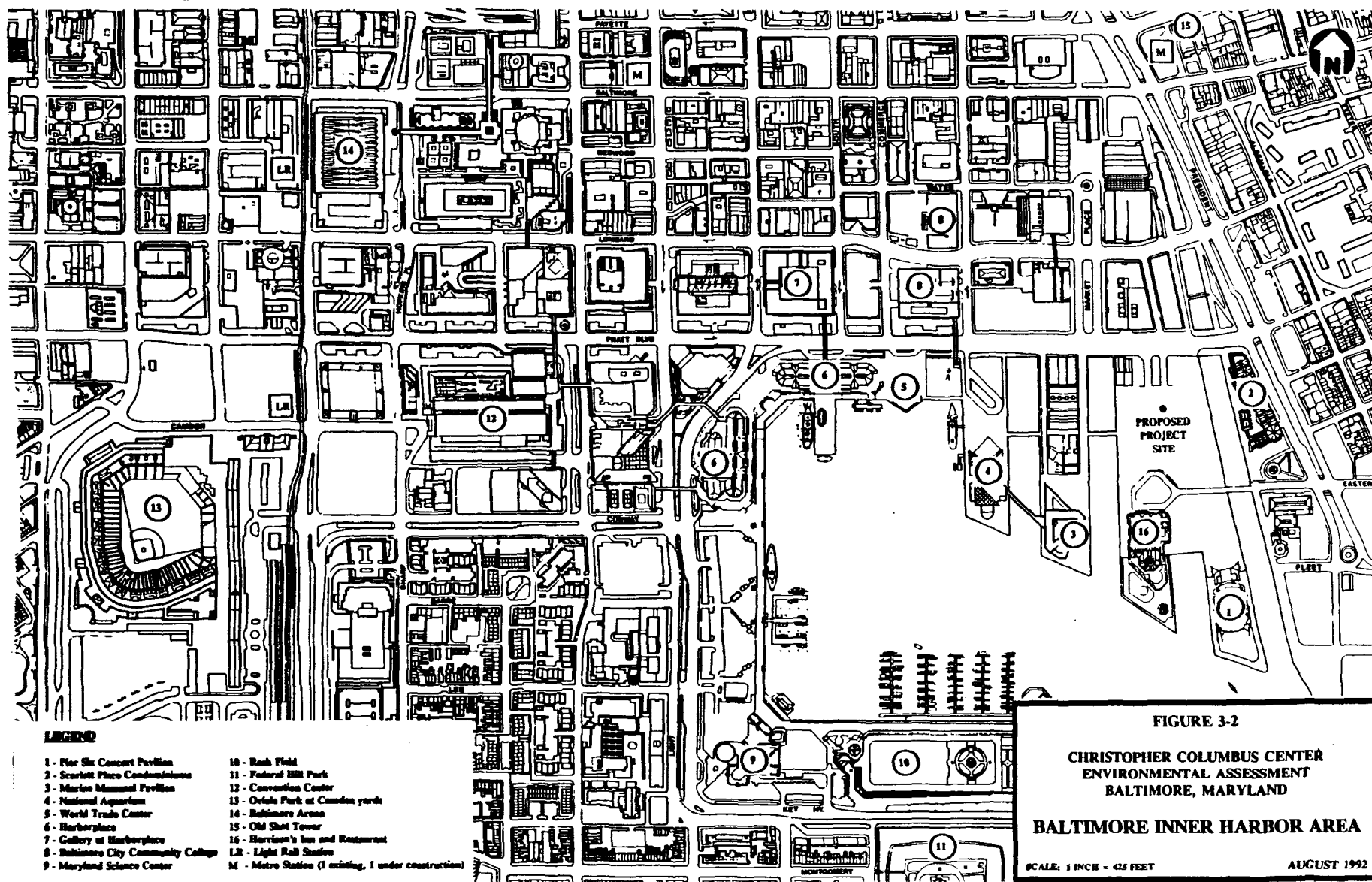
3.2.1 Land Use Patterns

The Baltimore City Planning Department's proposed land use designation for the project site, under the Inner Harbor East Renewal Plan, is Residential/Commercial. The site is zoned B-5-1 (Central Commercial District) and is currently being used for parking.

The proposed site is located entirely within the 1,000-foot Critical Area for the Chesapeake Bay. Baltimore City's Critical Area Management Program establishes development guidelines for its Critical Area, a strip of land 1,000 feet from mean high tide extending along the entire length of the shoreline. Within this Critical Area, the City has enacted provisions to establish and protect vegetation and wildlife habitat within the Critical Area Buffer - a strip of land extending 100 feet inland from the water's edge. Baltimore has divided its Critical Area according to land use types and densities described in the state law. The project area has been designated Waterfront Revitalization, and as such, the City's Critical Areas Management Program requires that buffer and stormwater management regulations be addressed. Buffer regulations require a walkway or promenade and landscaped vegetative plantings in the area 100 feet landward from the water's edge. Stormwater management regulations require a ten percent reduction of phosphorus runoff from pre-construction conditions.

Surrounding land uses are commercial, institutional, recreational, open space, and urban residential. Commercial activity in the area is a mixture of public, professional, financial, and retail services typical of a major urban center.

As illustrated in Figure 3-2 (Baltimore Inner Harbor Area), the site is adjacent to the National Aquarium (Pier 3), the Marine Mammal Pavilion (Pier 4), Harrison's Inn and Restaurant, and the Pier Six Concert Pavilion. It is in close proximity to Scarlett Place, the



Baltimore City Community College, Harborplace, the Gallery at Harborplace, the Convention Center, the Maryland Science Center, Rash Field, Federal Hill Park, Oriole Park at Camden Yards, and the Baltimore Arena.

Open space in the Inner Harbor is provided by numerous, individual landscaped areas and by the harbor promenade which extends from the Canton to the South Baltimore Neighborhood. The promenade will ultimately connect all of the attractions located along the Harbor for a 7.5 mile stretch.

The aesthetic character of the area surrounding the proposed site is typical of a revitalized urban area. Architectural styles are an eclectic mix, ranging from early 20th century commercial structures to contemporary condominiums and the almost futuristic Aquarium.

Both rental and owner-occupied housing are available in the immediate vicinity of the proposed site, as well as throughout the Baltimore metropolitan area. A variety of forms of urban housing are available within one mile of the site. Suburban housing is accessible by automobile commute or mass transit.

3.2.2 Transportation Facilities

3.2.2.1 Existing Street System

As illustrated in Figure 3-2, the proposed project site is bounded by Pratt Street on the north, with an existing access point off Pratt Street. An extension of Eastern Avenue, west of President Street, bridges the Jones Falls and provides vehicular and pedestrian access to Piers 5 and 6.

The street system in downtown Baltimore is characterized by pairs of one-way streets in alternating directions designed to efficiently move the traffic into and out of the downtown area. Interstate 83 begins just east of the project site as President Street, an arterial highway, and

continues north of Fayette Street as a four-lane interstate facility through Baltimore City and Baltimore County to Pennsylvania. This interstate provides the major connection to areas north of the City. Connection to I-95, east of the city, can be made via Fayette Street or Eastern Avenue through Little Italy. The terminus of I-395, with access to I-95 and the southern metropolitan area, is 9 blocks west and 2 blocks south of the project site.

Major morning traffic movement into the Inner Harbor area follows I-83 and St. Paul Street south and Lombard Street west, or I-395 or Maryland 295 north and Pratt Street east. Calvert and Charles Streets are also used by northbound traffic. Afternoon return traffic reverses these patterns. The peak traffic flows near the site occur between 7 and 9 am and 3 and 5 pm. Morning traffic volumes reach 2,200 to 2,400 vehicles per hour on both Pratt Street and Lombard Street. Evening traffic volume is approximately 500 vehicles per hour lower than the morning volume on Lombard Street and 300 vehicles per hour higher on Pratt Street. (Source: City of Baltimore, Department of Transportation)

3.2.2.2 Parking Access

The proposed site currently consists of a large asphalt-paved area, divided into four, city-owned parking lots totaling 620 metered, ticketed, and free spaces. Within three blocks north and three blocks west of the site are approximately 160 on-street parking spaces, 472 parking lot spaces, and 3,625 garage spaces. (Source: City of Baltimore, Department of Transportation, Parking Rate Survey)

3.2.2.3 Mass Transit

Bus service is provided throughout the City by the Mass Transit Administration (MTA). Eight of the MTA express routes have stops near the site on Lombard, Pratt, and President Streets.

The Baltimore Central Light Rail Line, currently under construction by the MTA, will provide a transit connection between northern Anne Arundel County, near the Baltimore-Washington International Airport (BWI), and Baltimore County. The first leg, between Camden Station in Baltimore City (west of the Center) and Timonium in Baltimore County was opened in Spring 1992. The closest station to the Center is the Pratt Street Stop, which is approximately ten blocks west of the site.

The METRO, Baltimore's subway, extends from the Charles Center Station northwest to a terminus station at Owings Mills in Baltimore County. A total of twelve stations and 8,000 parking spaces line the existing system. An eastern extension, currently under construction, will terminate at the Johns Hopkins Hospital. On the current line, the nearest station is approximately ten blocks from the proposed site, at Charles and Fayette Streets. A new station, five blocks northeast of the site, is under construction just east of the Jones Falls Expressway near the Shot Tower. The anticipated completion date for this section of the METRO is late 1994.

3.2.2.4 Pedestrian and Bicycle Access

Because the Inner Harbor is a commercial, business, and tourist district of the City, large volumes of pedestrian traffic are evident on weekends as well as on weekdays. Two pedestrian footbridges connect Piers 3 and 4 and Piers 4 and 5. A vehicular and pedestrian bridge connects Pier 6 to Eastern Avenue. Other elevated pedestrian walkways provide connections to ships, employment centers, and hotels. A pedestrian bridge will soon be completed that will connect Piers 5 and 6 to the Inner Harbor East Subdivision, a major mixed-use development east of the site at Fleet Street.

There are no designated bicycle lanes or trails in the immediate area, although there is limited bicycle usage of the roadways in the area.

3.2.3 Historic and Cultural Resources

3.2.3.1 Historic Resources

In order to prepare necessary documentation for compliance with Section 106 of the National Historic Preservation Act, a historic resources survey was conducted in April 1992 to identify historic resources on the site which might be eligible for the National Register of Historic Places. The survey identified two eligible historic resources on the proposed site; Connolly's Seafood Restaurant and the bulkheads of Piers 5 and 6. (Detailed information on the two resources can be found in the Historic Sites Inventory Forms prepared for the Maryland Historical Trust.)

Connolly's Restaurant, located on the northwest corner of Pier 5, was probably constructed during the 1920s, and is the last remaining example of structures devoted to early mid-20th century commercial activity on the piers in Baltimore's Inner Harbor. Connolly's meets National Register Criterion A because it was associated with the Chesapeake-based commerce of the early 20th century.

Piers 5 and 6, constructed from 1908 to 1910, were among the first concrete piers constructed in seawater in the United States. The piers meet National Register Criterion C because they embody the distinctive characteristics of a method of construction. The solid piers, consisting of filled bulkheads, were important in the evolution from timber pile to reinforced concrete for seawater construction.

Historic resources near the project site which have been listed or determined eligible for listing on the National Register include the Seven Foot Knoll Lighthouse on the southern end of Pier 5, moved to the site in 1986 in connection with the development of Harrison's Inn and Restaurant; the Pratt Street Power Plant which occupies the northern half of Pier 4; the US Coast Guard Cutter Taney; the USS Torsk; the lightship Chesapeake; and the US Frigate Constellation docked at Pier 1. The Business and Government Historic District is also adjacent

to the site and is listed in the National Register. Appendix B includes correspondence received from the Maryland Historical Trust and Baltimore City's Commission for Historic and Architectural Preservation.

3.2.3.2 Archaeological Resources

In 1987 and 1988, archaeological investigations were conducted on Piers 5 and 6 in conjunction with the development of the Harrison's Inn and Restaurant at Pier 5 and the installation of new utilities on the Piers. The Baltimore Center for Urban Archaeology performed the investigations for the Charles Center Inner Harbor Development, Inc., in anticipation of federal involvement in the project which would necessitate compliance with Section 106 of the National Historic Preservation Act. The investigations included exploratory trenching followed by intensive excavations.

The testing revealed the presence of intact structural remains along with fill materials used in the creation of the piers. In addition, excavations uncovered several industrial features related to a large scale manufacturing plant which occupied the block in the late 19th and early 20th centuries. In particular, the structural remains of the Smith and Wicks Tin Can Manufactory (1880 - 1890) and the R. Tynes Smith Can Company (1890 - 1904) were uncovered. For a detailed description of the investigations, see Simmons, Scott E., *An Investigation of the Archaeological Resources Associated with Piers 5 and 6 and the Harrison's at Pier 5 Complex, Baltimore, MD*, Baltimore Center for Urban Archaeology, 1990.

3.2.4 Public Utilities

The Christopher Columbus Center site, encompassing Piers 5 and 6 and the fill area between these piers as well as Pratt Street bordering the site to the north, contains utility systems representing both public and private ownership. The utility systems now serving Piers 5 and 6 were constructed from 1905 to the present. The majority of the utility systems were renewed, however, during the "Pier 5 & 6 Utilities" project in 1987.

These utilities will serve as the source for the Center connections to accommodate the increased load requirements for project construction and operation. This section briefly outlines water, electricity, communications, gas and steam utility systems that exist adjacent to and at the project site.

Water

The water distribution systems contained within the proposed site are publicly owned by the City of Baltimore. The systems are located within easements and rights-of-way that are maintained by the City. The components of the systems include building service connections, distribution mains, fire hydrants, metering facilities, landscape plumbing, and valving and vaults.

Electric

The electrical system found within the site is cooperatively owned by the City of Baltimore and Baltimore Gas & Electric Company. The City owns the majority of the duct systems, and Baltimore Gas & Electric Company has proprietorship of the electrical distribution system located within the site rights-of-way and easements; however, a portion of the system lies inside older ducts that were constructed within the project site itself. The components of the duct system include below-grade ducts, handboxes, junction boxes, distribution lines, switch gear and line and transformer manhole/vault structures. The components of the electrification system include cables, conductors, certain metering, transformer, and system controls.

Electrical service for Connolly's Restaurant is independent of the site electrical system. This structure is serviced by electrical conductors which are contained in a duct system lying north-south under Pratt Street at the northeast section of the restaurant.

Communications

The communications duct system on-site is cooperatively owned. The cables, equipment, and the older duct systems including manholes (found within the project site) are owned by the Chesapeake & Potomac Telephone Company of Maryland; the new duct systems and manholes are owned by the City of Baltimore. The new duct system is located within easements and rights-of-way of the site, and the older duct system is primarily located within the project site. The components of the communications system include below-grade ducts, manholes, pedestals, terminals and other communications-related equipment.

Gas

The gas system existing on-site is owned by the Baltimore Gas & Electric Company. It has been installed within rights-of-way of the project site and is maintained by BG&E personnel. The components of this system include gas main piping facilities, appurtenant pressure regulating devices, and valving and vaults. A 6" wrapped steel pipe containing medium pressure gas is the main that services the project site. It enters the site on the west side of Pier 6 originating from a 24" gas main running east-west in the center of Pratt Street.

Steam

Although steam piping is currently absent within the site boundaries, it may be considered as a possible utility service connection to Christopher Columbus Center. The Baltimore Thermal Energy Corporation (BTEC) is the owner of the district heating system within the City and has expressed interest in expanding their system from the Central Business District to the Harbor East area and specifically to provide service to the Christopher Columbus Center. BTEC steam is partially produced by incineration of municipal waste by the Baltimore Refuse Energy Systems Company (BRESKO) incinerator, owned by Wheelabrator Environmental Services.

3.2.5 Water Quality Management

3.2.5.1 Dredging

Dredged material from the Inner Harbor, according to previous studies, contains excessive metallic salts of zinc, chromium, copper, lead, mercury, cadmium, molybdenum, nickel, manganese, and cobalt. The Maryland Department of Natural Resources has indicated that some bottom material in areas of the Inner Harbor does not support benthic organisms - aquatic plants, worms and small shellfish.

Dredging of materials from Inner Harbor requires that permits be obtained from the U.S. Army Corps of Engineers and the Maryland Port Administration (MPA).

3.2.5.2 Stormwater Management

The storm drainage systems contained within the project are publicly owned and maintained by the City of Baltimore. The components of the system include roof drains, drainage piping, manholes, inlets, and trench drains. Within the project site, the longest drainage piping system is found along the west side of Pier 6. This system drains stormwater collected from a low point through inlets piped to manholes and discharged into a concrete headwall/box type structure at the north end of the slip between Piers 5 and 6. This system was expanded to the west to drain Harrison's Circle during the construction of that circular landscaping area and driveway.

A short drainage system at the south end of Connolly's Restaurant drains stormwater from a driveway on the east side of the building. This system is discharged into the slip area between Piers 4 and 5 at the southwest corner of the restaurant.

Trench drains and a slotted drain remove runoff from the filled area on the east side of Harrison's Inn and Restaurant, discharging the stormwater directly into the slip area between Piers 4 and 5.

In 1983, the State of Maryland adopted rules and regulations establishing criteria and procedures for stormwater management in an effort to decrease the deterioration of the Chesapeake Bay and its waterways. In addition, in 1985 the State created the Critical Area Commission to oversee and regulate development of the environmentally sensitive 1,000-foot zone landward from all state tidal waters. The City of Baltimore Department of Planning, in conjunction with the Department of Public Works, oversees the Baltimore City Critical Area Management Program for the State Critical Areas Commission. The site of the proposed Center lies within the critical area designated in the City Critical Area Management Program as a "Waterfront Revitalization Area". The implications of this designation for stormwater management measures at the proposed Center are discussed in Section 4.2.5.2.

3.2.5.3 Wastewater Management

The sanitary sewer system located on-site is publicly owned by the City of Baltimore. The system is located within easements and rights-of-way and is maintained by Baltimore City Maintenance personnel. The components of the system include building service connections, lateral and connector sewers, manholes and cleanouts.

A 10" sanitary sewer system exits the site in the center of Pier 5 to an existing 15" sanitary system which then flows northeast across Pratt Street. The 10" sanitary pipe is laid south to Eastern Avenue where it splits to two separate drainage areas with 8" pipes, one heading further south to the Lighthouse area for Pier 5 waste collection, and the other heading east to a terminal manhole at the northeast corner of Harrison's Inn and Restaurant. An extension of this main is anticipated during the Concert Pavilion renewal, which will extend the sanitary main on from the terminal manhole to the east side of Pier 6 and south to the Music Tent. The system services Connolly's Restaurant from 10" and 15" pipes in Pratt Street,

Harrison's Inn and Restaurant from the 8" sanitary sewer in Eastern Avenue, the Lighthouse and utility benches from the 8" sanitary sewer along the perimeter of Pier 5.

3.2.5.4 Erosion and Sediment Control

There are no existing measures in place at the project site to control erosion and sediment that may originate from existing site conditions and uses because the site is currently asphalt.

3.2.6 Waste Management

3.2.6.1 Hazardous Waste Management

There is currently no hazardous waste generated at the project site.

In August 1992, EA Engineering, Science, and Technology, in association with RK&K Engineering, assessed the environmental conditions present at Piers 5 and 6. The testing consisted of geotechnical soil borings to determine the type of materials contained within the piers. These tests were conducted in preparation for the construction of the Christopher Columbus Center. Soils were analyzed using Full Toxicity Characteristics Leaching Procedures for volatile and non-volatile organic compounds, and trace metals. Groundwater analyses included both total and dissolved metals on the EPA Priority Pollutant List.

The results of the soil boring tests indicated that no significant environmental problems are associated with the site. In addition, no evidence of disposal of hazardous waste or other materials was identified. However, some soil samples did reveal elevated concentrations of copper and lead.

3.2.6.2 Solid Waste Management

All solid waste generated at the project site is disposed of primarily at the BRESCO incinerator, or secondarily at the Pulaski incinerator, both under contract with the City of Baltimore. All ash from incineration at both BRESCO and Pulaski is disposed of at the Quarantine Road Landfill. Refuse generated by commercial and quasi-public uses is removed by privately-contracted commercial haulers. The City provides refuse collection for its residents.

3.2.6.3 Biological Waste Management

There is currently no biological waste generated at the project site.

3.2.6.4 Recycling

There is currently no recycling of any materials at the project site. According to the Maryland Recycling Act of 1988, the City of Baltimore is required to recycle 20% of its waste stream by January 1, 1994. At this time, commercial and institutional establishments are not required to recycle, although it is suggested. However, the Northeast Maryland Waste Authority has indicated that a number of counties in Maryland are or have considered mandatory recycling initiatives for commercial and institutional facilities.

4.0 IMPACTS AND MITIGATIVE MEASURES

4.0 IMPACTS AND MITIGATIVE MEASURES

4.1 Impacts to the Natural Environment and Mitigative Measures

4.1.1 Physiography

Development of the proposed site would require the removal of the existing asphalt paved surface, the excavation of subsurface fill, and the installation of foundation piles. Generally accepted soil erosion and sediment control practices, as addressed in Section 4.2.5.4, would be implemented during construction to minimize the amount of soil loss and associated adverse impacts.

Dewatering of the proposed site may be necessary. A water appropriation permit has been requested from the Maryland Water Resources Administration (WRA) with the understanding that it may not be needed, or that the actual volume may be much less than that stated in the permit request. A response to the permit application is expected from WRA by 10/15/92.

4.1.2 Vegetation and Wildlife

Construction on Piers 5 and 6 would not have a negative impact on vegetation and wildlife, as essentially none exists. Landscaping associated with the project is estimated to re-vegetate approximately 0.8-1.2 acres of the site with native, drought-tolerant trees, shrubs, and flowers. Activities associated with the proposed action (i.e. bulkhead replacement, pedestrian bridge replacement, and dredging) that may affect aquatic ecosystems adjacent to the Piers are addressed in Section 4.2.5.

The U.S. Fish and Wildlife Service (USFWS) has determined that the proposed action would not adversely affect the peregrine falcons that currently nest in the Inner Harbor area. Correspondence received from USFWS is included in Appendix B.

4.1.3 Floodplains and Wetlands

Floodplains

Because the proposed site lies within the 100-year flood hazard area, the proposed action must be reviewed for compliance with Executive Order (EO) 11988 of 1977 - *Floodplain Management* (as amended by Executive Order 12148 of 1979). The proposed action is not considered to be a "critical action" as defined in Executive Order 11988, as it would not "pose a greater than normal risk for flood-caused loss of life or property." According to the Executive Order, the proposed action can be undertaken only if:

- (1) there is no practicable alternative outside the floodplain,
- (2) the no action alternative is not practicable, and
- (3) the floodplain site has been determined to be practicable.

Chapter 2 demonstrated why (1) an alternative outside the floodplain, and (2) no action would not be practicable.

The City of Baltimore Planning Department, which largely follows Federal Emergency Management Agency (FEMA) regulations and guidelines for floodplain development, is responsible for determining whether the proposed floodplain site would be practicable. In addition, the Planning Department is responsible for reviewing project development to ensure floodplain requirements are met. The design of the Center is being coordinated with the Planning Department and FEMA to address its location in the flood hazard area. To comply with the Baltimore City ordinance, all occupiable space in the Center would be located at elevation 9.7 feet or above, which will place it at least one foot above the 100-year flood hazard level. The Center will not be a "critical area" facility.

The proposed action would meet all Federal and State Coastal Zone Management requirements (16 CFR 923).

Wetlands

Construction on Piers 5 and 6 would not affect wetlands because none are present. However, activities associated with the proposed action (i.e. bulkhead replacement, pedestrian bridge replacement, and dredging) would affect the adjacent waters and bottom sediments, which are regulated under the Maryland Wetlands Regulations (COMAR 08:05.07). These effects are addressed in Section 4.2.5.

A state wetlands license has been issued by the Maryland Board of Public Works for bulkhead replacement. It is valid until 12/31/95. A wetlands license issued by the Maryland Department of Natural Resources is required for slip dredging. Approval is expected in November 1992. The original scope of work included a cul-de-sac to be built over tidal wetlands. The cul-de-sac was eliminated from the plans.

4.1.4 Air Quality

Impacts

Air quality in the project area would be affected by short-term construction operations and long-term operation of the Center. The construction of the Center would result in air contaminant emissions of particulate matter (dust from clearing, excavation, filling, etc.) and a relatively small amount of smoke, noxious odors, and gases from construction equipment.

Air quality impacts related to the long-term operation of the Center involve (1) emission discharges from the research laboratory fume hoods and (2) emissions from vehicles.

Mitigation

A number of measures can be implemented to minimize or eliminate the amount of dust and particulates generated from construction. Wetting exposed earth or using dust palliatives

are effective dust control measures. Wheel washing devices can be used when construction vehicles enter public roads from the construction area. Loaded material taken from the construction area should be covered to avoid spillage and reduce the possibility of dust being blown from the carrier vehicle. These measures are typically required in the construction contract documents, either as standards or special provisions. Heavy-duty diesel equipment is subject to requirements under the Federal Motor Vehicle Emissions Control Program, and measures must be incorporated into the construction contract to assure that the appropriate emissions control equipment remains on the vehicles and is properly maintained and serviced.

Laboratory discharges are exempt from air permit requirements under the Maryland Air Pollution Control Regulations -- COMAR 26:11.02.03(6)(f). The primary source of air emissions at the Center will be from laboratory hood exhaust. Chemicals at COMB are used in such small quantities that insignificant impacts to air quality are anticipated. Vehicular emissions associated with the Center would be insignificant and not expected to effect the area's non-attainment status for ozone and carbon monoxide.

4.1.5 Noise

Impacts

Construction activities at the proposed project site would result in a temporary increase in noise levels in the immediate vicinity of the site. Construction noise would be of fixed duration, usually limited to the daylight hours.

Operation of the facility would not be expected to result in a significant change from the present ambient noise conditions, with the exception of noise from research vessels' horns as they enter and leave the docking area.

Mitigation

Impacts due to construction noise are a function of the length of construction, equipment types, and equipment usage cycles. The following Construction Noise Specifications would mitigate adverse noise impacts in the area:

1. All construction equipment powered by an internal combustion engine shall be equipped with a properly maintained muffler.
2. Air compressors shall meet current EPA noise emission exhaust standards.
3. Air powered equipment shall be fitted with pneumatic exhaust silencers.
4. Stationary equipment powered by an internal combustion engine shall not be operated within 150 feet of noise sensitive areas without portable noise barriers placed between the equipment and the noise sensitive sites.
5. To minimize the duration of high noise levels, construction operations responsible for high noise levels should be scheduled, whenever possible, to coincide with each other.

4.2 Impacts on the Man-made Environment and Mitigative Measures

4.2.1 Land Use Patterns

The proposed action is consistent with the City's Residential/Commercial proposed land use designation for this site and with the Central Commercial District zoning.

In accordance with the City of Baltimore's Critical Areas Management Plan, buffer and stormwater management regulations must be addressed. Buffer regulations require a promenade and landscaping in the area 100 feet landward from the water's edge. A promenade is planned for the site as well as vegetative landscaping; however, the Critical Areas Plan allows the development of 100 percent of the 100-foot buffer area in the Waterfront Revitalization Subarea,

subject to a \$2.50 per square foot offset fee for the total buffer area not landscaped. Stormwater management is further discussed in Section 4.2.5.2.

The design of the site, including a promenade and landscaping, would contribute to the availability of open space and recreational areas in the Inner Harbor area.

Because housing availability in the metropolitan area is adequate for the proposed action, no negative housing impacts are anticipated.

4.2.2 Transportation Facilities

4.2.2.1 Existing Street System

The proposed action would have minor effects on the existing street system. It would not require the addition of a new access point to the site, nor would it result in an increase in traffic flow, since the site is currently used for parking. However, relocation of some utility services would result in the temporary obstruction of one lane of traffic on Pratt Street.

4.2.2.2 Parking Access

The existing site currently provides 620 public parking spaces, while the Center would provide only 230 public and 25 private parking spaces. This reduction in available parking should have little impact on parking availability since numerous parking facilities are located near the project site. (City of Baltimore, Department of Transportation, 1992 Parking Rate Survey) Upon completion of Phase II, only the 25 private parking spaces will remain. The combination of uses at the project site will not require any off-street parking spaces per Section 9.0-3 of the Zoning Ordinance of Baltimore City (see Appendix B).

4.2.2.3 Mass Transit

The proposed action may result in increased use of mass transit, but no adverse impacts are expected.

4.2.2.4 Pedestrian and Bicycle Access

During construction, the sidewalk on the south side of Pratt Street would be closed and pedestrian traffic would be re-routed to the north side of the street. The replacement of the pedestrian bridge between Piers 4 and 5 will require the installation of a temporary bridge until construction of the permanent bridge is completed. Construction of the replacement bridge would require the placement of pilings to support the structure. Placement of pilings to support a bridge is not considered by the Corps of Engineers to be within their jurisdiction. Letters of approval for the bridge replacement have been received from the U.S. Coast Guard, the Maryland Water Resources Administration, and the Maryland Department of Natural Resources. An approval letter from the Maryland Port Administration is expected by September 1, 1992.

After construction, the proposed action would not interfere with pedestrian or bicycle access. The extension of the harbor promenade, a component of project development would enhance pedestrian and bicycle usage.

4.2.3 Historic and Cultural Resources

4.2.3.1 Historic Resources

The General Services Administration (GSA) has been the Federal agency responsible for ensuring project compliance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470 *et seq.*).

Both Connolly's Restaurant and the Pier 5 and 6 bulkheads have been determined eligible for listing on the National Register of Historic Places (36 CFR Section 60.4). Application of the Criteria of Adverse Effect (36 CFR Section 800.9) has determined that the proposed action would have an adverse effect upon both resources. Connolly's Restaurant would be demolished under the proposed action. However, construction of the replacement bulkheads would take place in a manner that would allow the existing bulkheads to remain in place.

A Memorandum of Agreement (MOA) between the Maryland Historical Trust and GSA has been prepared as set forth in Section 106. The MOA has been signed by both the Trust and GSA and has been sent to the Advisory Council for final approval.

The MOA includes the following mitigation measures: (1) recordation of both Connolly's Restaurant and the bulkheads according to Historic American Buildings Survey/Historic Engineering Record (HABS/HAER) standards, with review and approval by HABS/HAER, (2) salvage of architectural elements from Connolly's Restaurant for curation, reuse, or public education, and (3) design review for new construction by the Maryland Historical Trust.

The contemporary design for the Center would be compatible with the historic and architectural qualities of the surrounding historic properties in terms of scale, massing, size, and materials. The Center would not be expected to have a negative impact on the nearby Business and Government Historic District because of the eclectic mix of architectural styles and building sizes found in the Inner Harbor area.

4.2.3.2 Archaeological Resources

Archaeological resources at the proposed site have been thoroughly documented. Based upon the available archaeological information, the Maryland Historical Trust has concluded that the impact of the proposed action on archaeological resources would not be significant and that

further archaeological investigation of the proposed site would not be necessary. Correspondence from the Maryland Historical Trust is contained in Appendix B.

4.2.4 Public Utilities

4.2.4.1 Water, Electricity, Communications, Gas, and Steam

Implementation of the proposed action would require connections to utility services on and near the site. In addition, it may be necessary to relocate several water mains, electrical duct systems, and a gas main. The following utility service connections and/or uses are anticipated:

- Electrical service would enter from one or more of the systems on Pratt Street or from the existing system servicing Piers 5 and 6.
- Telephone service can enter from the existing system or from a different system in Pratt Street.
- Water service would be provided from Pratt Street.
- Gas service, if required, can be served from Pratt Street or possibly from the on-site 6" system.
- Steam service, if used, can be provided from the existing system in Lombard Street.

Construction impacts to existing distribution systems on site can be avoided or mitigated by measures such as supporting the utility structures during construction and placing carefully tamped backfill upon completion in order to prevent subsidence and collapse. For utilities in the vicinity of pile-driving operations, preauguring below the elevation of the utilities and use of vibration monitoring equipment may be required.

As further site design preparations become available for construction of the Center, such as the extent of the building footprints, and the mechanical, electrical, and plumbing systems,

a determination of utility loads required at the site will be made. At that time, a reevaluation of possible impacts of the proposed project on exiting utilities may be required. However, load capacities are sufficient for all utilities required for project construction and operation.

4.2.4.2 Energy Conservation Measures

Energy conservation measures would be incorporated into the design of the facility. Measures under consideration include: variable speed fan and pump drives, energy efficient lighting, special glass systems, wall and roof insulation, and energy recovery from the laboratory exhaust systems. In addition to energy conservation measures, energy management practices would be followed to shift consumption to off-peak periods, thus reducing the need to build additional power generating plants. The effectiveness of using district steam for heating purposes would also be considered (see correspondence in Appendix B).

The EPA - Region III staff would assist the Christopher Columbus Center Development, Inc. to identify new design technologies and other opportunities for conserving energy.

4.2.5 Water Quality

4.2.5.1 Dredging

The City of Baltimore obtained a U.S. Army Corp of Engineers dredging permit (Section 10 of the Rivers and Harbors Act) in 1987. In 1990, the permit's original expiration date was extended to 1993. The permit allows the City to dredge approximately 4,700 cubic yards of silt and debris from an area between Piers 4 and 5, extending as far as 200 feet channelward of the bulkhead along Pratt Street. The permit indicates clamshell dredging is the preferred dredge technology and that all dredged spoil materials would be deposited at the Masonville, Maryland Disposal Facility.

Other agencies requiring permits for dredging include the Maryland Port Administration (disposal approved for Masonville, MD), the Maryland Department of the Environment (Water Quality Certification for dredging - approval expected by November 1992), and Maryland Department of Natural Resources (Wetlands License required for slip dredging - permit needed by January 1993).

An analysis of sediments between Piers 5 and 6 was conducted in October 1984 (Elutriate and Bulk Sediment Analysis of Inner Harbor Sediments Between Pier 4 and 5 - A Data Report, 1984). Parameters tested in the report included: arsenic, cadmium, total chromium, copper, lead, mercury, selenium, and silver. The Maryland Port Administration (MPA) has accepted the data as adequate for their purposes for reviewing disposal requirements. As noted previously, disposal of the dredge spoil has been approved by the MPA. Additional testing of dredged material using; particle size, distribution, moisture content, and Atterberg limits, will determine the type of permitted disposal facility that can accept the dredged material.

The physical process of removing sediments from the slip would resuspend sediment, possibly strip away existing aquatic habitat; and disturb invertebrates and fish. Increased turbidity due to resuspended sediment causes decreased light penetration, elevated water temperatures, a shift of free-floating algae, lowered dissolved oxygen, and irritation of fish gills.

To restrict the entrance of suspended solids into adjacent harbor waters during dredging, a silt curtain is to be placed channelward of all operations. U.S. EPA standard dredge and/or fill conditions incorporated in the permit require that the dredging is to be done so as to minimize both disturbance of the bottom and increases in turbidity. Also, deposition of dredged material on shore and all earthwork operations on shore are to be carried out so as to minimize erosion of the material and preclude its entry into the waterway. Finally, measures must be employed to prevent spills of fuels or lubricants.

4.2.5.2 Stormwater Management

City stormwater management criteria require that the post-development 2- and 10-year storm flows not exceed pre-development levels. Also, because the proposed site is located in the Jones Falls watershed, post-development 100-year flows also must not exceed pre-development levels. These requirements would be met by eliminating runoff where the reflecting pool would replace impervious surface and by decreasing the total area of impervious surface through incorporation of vegetative landscaping.

Current designs outline that stormwater runoff would be treated by passage through oil and grease separators and grit chambers before discharge to the harbor.

Due to its location within 1,000 feet of a state tidal area, the proposed site is subject to the Baltimore City Critical Area Management Program. Under this program, the project must reduce the pollutant loading to 90% or less of the pre-development loading. Some of the "Best Management Practices" that have been identified by the Critical Area Commission as means to achieve this reduction include reducing the impervious area, oil/grit separator inlets, infiltration devices, and retention/detention ponds. Due to the high groundwater levels, miscellaneous fill material in the soil, and lack of space, it may not be feasible to achieve the 10% reduction through the suggested measures. Under the City Critical Area Management Program, if site conditions make it infeasible to achieve the 10% reduction on site, a developer of a site may satisfy the requirement by paying an offset fee to be used by the City to fund reductions in runoff pollutants in another area.

4.2.5.3 Wastewater Management

The volume and characteristics of wastewater generated at the Center are not yet estimated. Wastewater would be discharged to the City system; no wastewater would be discharged from the site to the adjacent waters. Wastewater contaminated from carcinogens or other processes undertaken at the Center are to be collected for disposal. Specific disposal

procedures will be consistent with the Resource Conservation and Recovery Act and local pollutant discharge requirements.

Existing service connections to the Pratt Street sewer may be undersized, necessitating construction of new connections. The Center would conform to pretreatment standards for laboratory discharges, if required.

4.2.5.4 Erosion and Sediment Control

Construction of the Center would require an erosion and sediment control plan approved by the City of Baltimore Department of Public Works. Measures to control erosion and sediment during construction activities are required for all developments disturbing more than 5,000 square feet of land. Erosion and sediment control devices must remain functional until the contributing drainage area is stabilized with paving, vegetation, or adequate ground cover.

Typical measures to control erosion and sedimentation for this type of development include:

- Silt fence around the perimeter of small drainage areas to trap and filter dirty runoff.
- Storm drain inlet protection devices to restrict dirty runoff from entering the storm drain system.
- Sediment traps or ponds for larger drainage areas to collect and retain dirty runoff. However, these may not be practical on the proposed site due to space constraints.
- For an excavated area, sediment-laden runoff is collected in traps or pits and pumped to portable tanks or adequate above-ground devices for retention and settlement prior to discharge.

4.2.6 Waste Management

4.2.6.1 Hazardous Waste Management

The Christopher Columbus Center's main tenant is the Center of Marine Biotechnology (COMB). COMB is a component of the Maryland Biotechnology Institute of the University of Maryland system. COMB's role is that of a research institute dedicated to the study of molecular biology and molecular genetics in the area of marine science. COMB incorporates thirteen individual research laboratories, and is projected to double its size within the next four years.

COMB's status as a laboratory facility dictates that certain safety programs are to be outlined in a facility safety plan. These safety programs include hazardous waste management, employee training program, safety inspections, control equipment and operation (including vented fume hoods) and medical programs. Therefore, the COMB has developed a "Chemical Hygiene Plan" that describes COMB's safety programs and procedural guidelines. This plan is required by the Department of Labor (29 CFR 1910 - Subpart Z - enacted December 1990). The Chemical Hygiene Plan can be obtained or referenced at the COMB facilities at Baltimore City Community College.

A number of hazardous chemicals are currently used at COMB for ongoing marine biotechnology research, although quantities used are relatively small. As required by the Occupation Safety and Health Administration's (OSHA) Health and Safety Standards, all chemicals at COMB are manifested on Material Safety Data Sheets (MSDS). All hazardous wastes that require disposal by COMB are also manifested so as to track this waste from point of generation to final disposal site. This procedure also ensures proper storage, handling, and transport of all hazardous wastes, as well as disposal.

Hazardous waste generated at COMB is disposed of every three (3) months in association with disposal schedules at the University of Baltimore at Maryland. According to COMB, approximately 60 gallons of hazardous waste requiring disposal is generated at the facility every

3 months. As the facility expands at the Christopher Columbus Center, these volumes are expected to increase. Currently, Laidlaw Environmental Services collects, transports, and disposes of all hazardous waste generated at COMB at permitted disposal facilities.

The above listed hazardous waste management practices at COMB are not expected to alter or change significantly at the Christopher Columbus Center.

4.2.6.2 Biological Waste Management

Biological waste at COMB includes fish manure and carcasses as a result of research. The fish manure is currently disposed of directly into the City of Baltimore sanitary sewer system, as per pollutant discharge requirements. Fish carcasses and other parts are transported to the University of Maryland at Baltimore and are incinerated at their medical waste incinerator. This practice will continue at the Center.

4.2.6.3 Solid Waste Management

Non-hazardous and non-infectious refuse generated at the Center will be removed by a licensed commercial refuse hauler and disposed at the Baltimore Refuse Energy System Company (BRESKO) incinerator or the Pulaski incinerator, both of which are under contract with the City to process the City's waste. The City's contracts provide sufficient capacity to dispose the waste generated at the proposed Center.

4.2.6.4 Recycling

Recycling programs for paper, plastic, glass, and aluminum will be incorporated into the facility operation procedures. The use of recycled materials and supplies (i.e. drywall, tile, pavers, insulation material, and rated doors) will be considered in the facility design.

4.2.7 AquaCulture

Standard Operating Procedures (SOP) are being developed for the housing and use of aquatic species in the aquaculture facility at the Christopher Columbus Center. Guidelines of the United States Department of Agriculture concerning animal welfare and the American Association of Accreditation for Laboratory Animal Care will be followed for design and for care and use of aquatic species. A manual will be developed by the Animal Care Committee at the COMB to adopt and establish these guidelines for users of the Christopher Columbus Center aquaculture facility. Plans have been made to employ an experienced, full-time person to manage and operate the aquaculture facility.

Water supplies within the tanks will be thermoregulated. Fresh, brackish, and salt water tanks are planned. Fresh water will be obtained from the City of Baltimore's water system, while salt water environments will be prepared using Instant Ocean®. Fresh and salt water will be continually filtered, circulated to large tanks, and pumped back to the fish-holding tanks. Brackish water will be prepared by mixing fresh and salt water. Water quality will be controlled by monitoring and adjusting for such parameters as dissolved oxygen, ammonia, Ph, water hardness, nitrates, etc. To prevent fish loss, troughs, grates, and screens will cover all discharge openings to the city sewer system. Veterinary care of aquatic species will be through contractual arrangements with the National Aquarium of Baltimore.

4.3 Summary of Impacts

The construction and operation of the Christopher Columbus Center would result in both beneficial and minimal adverse environmental impacts to the following:

- **Vegetation and Wildlife** - Landscaping associated with the proposed action would re-vegetate approximately 1.5 acres of the site, which is currently a paved parking area. Construction activities may affect aquatic ecosystems adjacent to Piers 5 and 6.

- **Floodplains** - The Center would be constructed on a site located entirely within a 100-year flood hazard area.
- **Wetlands** - Bulkhead replacement, pedestrian bridge replacement, and dredging would affect waters and bottom sediments adjacent to Piers 5 and 6.
- **Air Quality and Noise** - Construction activities may result in temporary or short-term adverse impacts to air quality and noise. Operation of the facility would result in minimal, if any, adverse impacts to air quality.
- **Transportation Facilities** - Construction activities may result in temporary or short-term adverse impacts to transportation facilities. Permanent impacts would include the loss of approximately 400 public parking spaces. Pedestrian access in the Inner Harbor area would be enhanced.
- **Historic and Cultural Resources** - Implementation of the proposed action would necessitate the demolition of Connolly's Restaurant, and the reconstruction of the Piers 5 and 6 bulkheads, both of which are eligible for listing on the National Register of Historic Places.
- **Water Quality** - Dredging activities may result in short-term adverse impacts to water quality and aquatic ecosystems adjacent to Piers 4 and 5.
- **Finally, the functions of the Center would greatly increase scientific knowledge and public understanding of marine ecology, biotechnology and related fields.**

5.0 PUBLIC PARTICIPATION

5.0 PUBLIC PARTICIPATION

Development of the site has been subjected to significant public scrutiny and comment with respect to both previous planning and the current project development plans. Listed below is a brief history of public review procedures throughout the project's development.

- City of Baltimore budget hearings and process for fiscal years 1991, 1992 and 1993, leading to commitment of \$24,660,000 in General Obligation bonds and other support, \$12 million in parking revenue bonds, and \$34 million in land.
- State of Maryland budget hearings and process for fiscal years 1991, 1992 and 1993, leading to commitment of \$12.18 million.
- Federal government budget hearings and process for fiscal years 1991, 1992 and 1993, leading to commitment of \$31.5 million.
- Baltimore City Planning Commission preliminary review of concept plan
- Meeting with representatives of the neighboring institutions, such as the National Aquarium, the Scarlett Place condominiums association, and the Little Italy Community Organization (LICO), which represents the residential community to the east of Scarlett Place, across President Street, have been held
- Public notice and opportunity for public comment about the concept of the project through the review and approval process undertaken by the U.S. Army Corps of Engineers in connection with the dredging and fill permit, NABOP-RW (City of Baltimore) 84-0950, dated June 14, 1984.

- Widespread publicity in the media Numerous articles from the print media supporting a finding that information about the project has been broadly disseminated and there has been on-going opportunity for public input
- Development of the site in general, the current proposal for which is fully consistent with past efforts, has also been publicly addressed in the context of the Inner Harbor Urban Renewal Plan dated November 19, 1971, and subsequently amended for the construction of the Harrison's complex and the Pier Six Concert Pavilion
- EPA - Region III Inter-agency meeting for the Environmental Assessment as required under the National Environmental Policy Act (NEPA) that was held on August 12, 1992, in Baltimore The session was held to solicit comments and concerns for the preparation of this Environmental Assessment
- EPA placed Public Notices in the Baltimore Sun and Capital-Gazette (Annapolis) on 8/3/92 describing the proposed project and soliciting comments and concerns about the project

Refer to Appendix C (Public Participation) for additional public participation information that includes federal, state and local public meetings and hearings that were held, and newspaper articles pertaining to the Christopher Columbus Center

REFERENCES

REFERENCES

- Aquaculture at the Christopher Columbus Center. August 1992. Prepared by Richard E. Cowart.
- Baltimore Center for Urban Archaeology. 1987. An Archival Investigation of the Archaeological Resources Associated with Harrison's at Piers 5 and 6, Baltimore, Maryland. Prepared by Barbara K. Weeks.
- Baltimore Center for Urban Archaeology. 1990. An Investigation of the Archaeological Resources Associated with Piers 5 and 6 and the Harrison's at Pier 5 Complex (18BC62 & 18BC63) Baltimore, Maryland. Prepared by Scott E. Simmons.
- Center of Marine Biotechnology Chemical Hygiene Plan. 1991.
- Christopher Columbus Center Development. 1990. Christopher Columbus Center Development Site Study. Prepared by Rummel, Klepper, and Kahl.
- Christopher Columbus Center Development. Draft Environmental Information Document, Christopher Columbus Center for Marine Research and Exploration, Baltimore, Maryland. June 1992. Prepared by EA Engineering, Science, and Technology.
- City of Baltimore, Department of Housing and Community Development. 1973. Engineering and Feasibility Report, Inner Harbor East, Baltimore, Maryland. Prepared by Whitman, Requardt, and Associates.
- City of Baltimore, Department of Planning. Baltimore City Critical Area Management Program. 1988.
- City of Baltimore, Department of Transportation. 1992 Parking Rate Survey.
- Harbor Development Services Partnership. July 1992. Draft Asbestos and Lead Paint Assessment, Pier 6 Parking Building, Baltimore Harbor, Baltimore, Maryland. Prepared by EA Engineering, Science, and Technology, Inc.
- Harbor Development Services Partnership. July 1992. Final Asbestos and Lead Paint Assessment, Connolly's Seafood Restaurant, Pier 5, Baltimore Harbor, Baltimore, Maryland. Prepared by EA Engineering, Science, and Technology, Inc.
- Harbor Development Services Partnership. August 1992. Draft Soil Borings and Analysis, Fill Material and Groundwater, Piers 5 and 6. Prepared by EA Engineering, Science, and Technology, Inc.

State of Maryland Department of Health and Mental Hygiene. February 5, 1986. Health Advisory.

Whitman, Requardt, and Associates. October 1984. Elutriate and Bulk Sediment Analyses of Inner Harbor Sediments Between Piers 5 and 6. A Data Report. Prepared by EA Engineering, Science, and Technology, Inc.

APPENDIX A



PHOTO 1: View looking west across project site (Piers 5 and 6) toward the National Aquarium, Marine Mammal Pavilion and the Power Plant.



PHOTO 2: View looking south across the project site. The Pier Six Concert Pavilion and the Harrison's Inn and Restaurant are in the background.

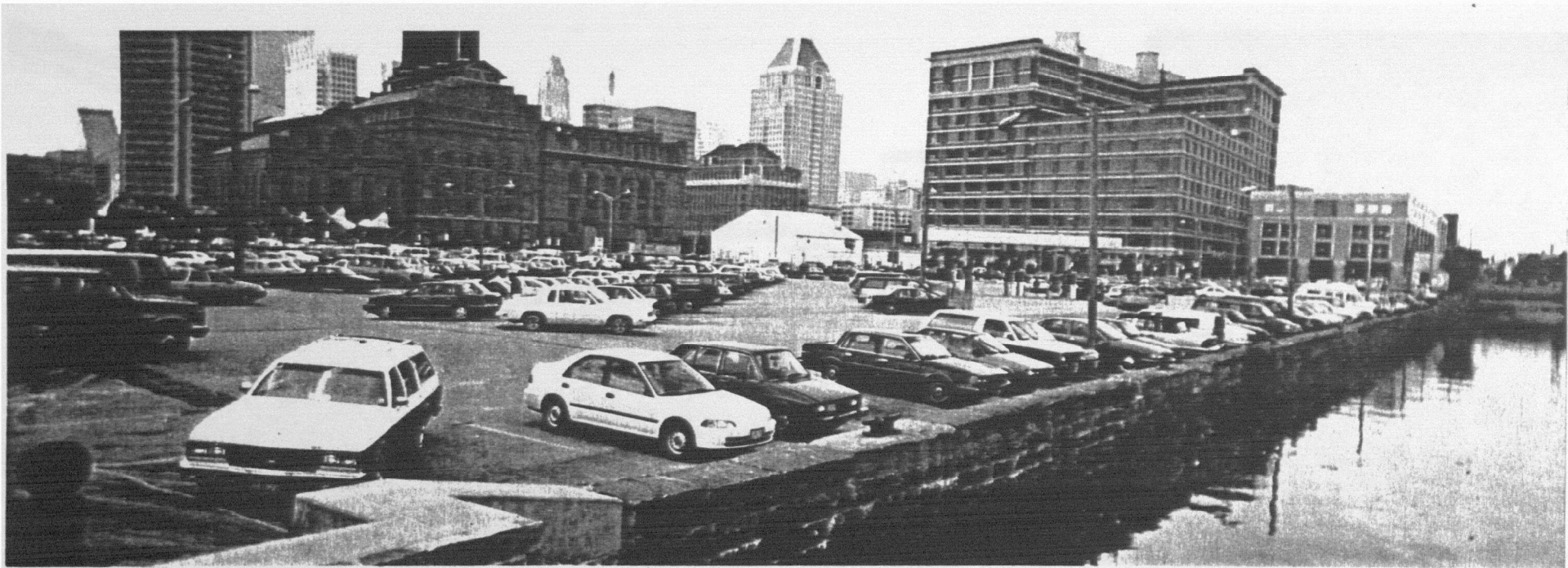


PHOTO 3: View looking northwest from Pier 6 slip across project site toward downtown Baltimore. The Power Plant and Baltimore City Community College are pictured in the background.

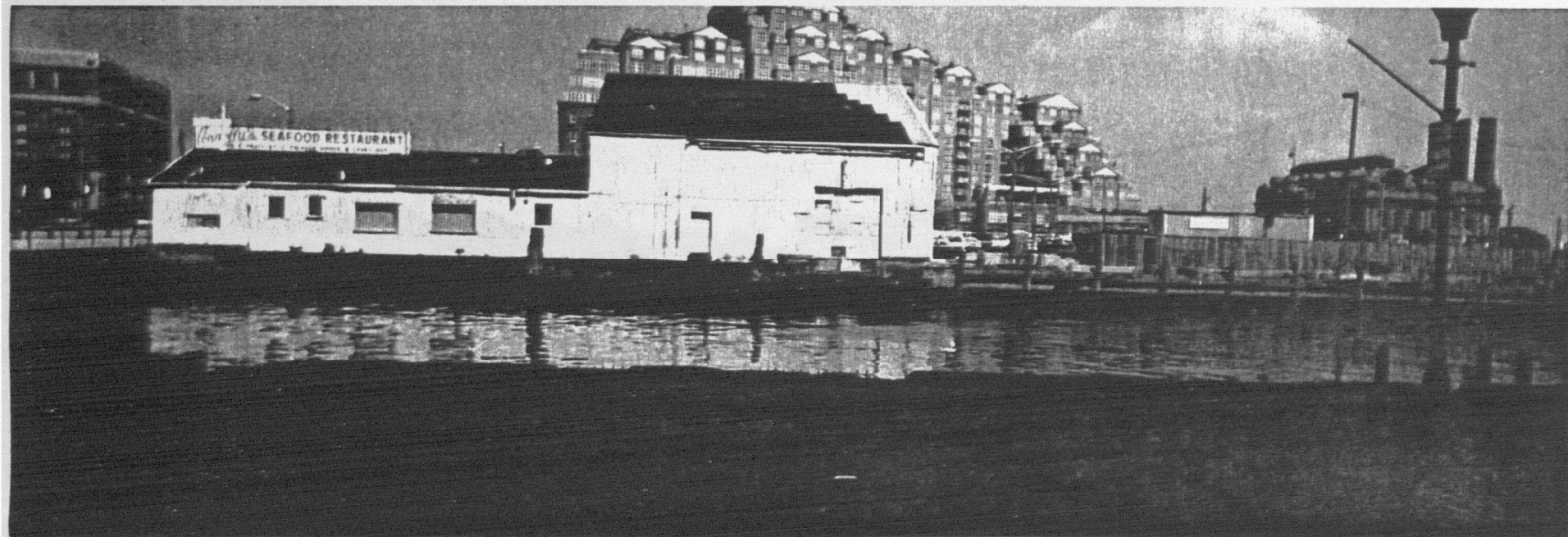


PHOTO 4: View east of Pier 5 and Connolley's Seafood Restaurant. The Scarlett Place Condominiums are pictured in the background.



PHOTO 5: View south from Pratt Street at slip between Piers 4 and 5. The Marine Mammal Pavilion and Harrison's Inn and Restaurant are pictured in the background.



PHOTO 6: View southwest looking across project site from Pratt Street. Pictured in background are the Marine Mammal Pavilion, the National Aquarium and Harrison's Inn and Restaurant.

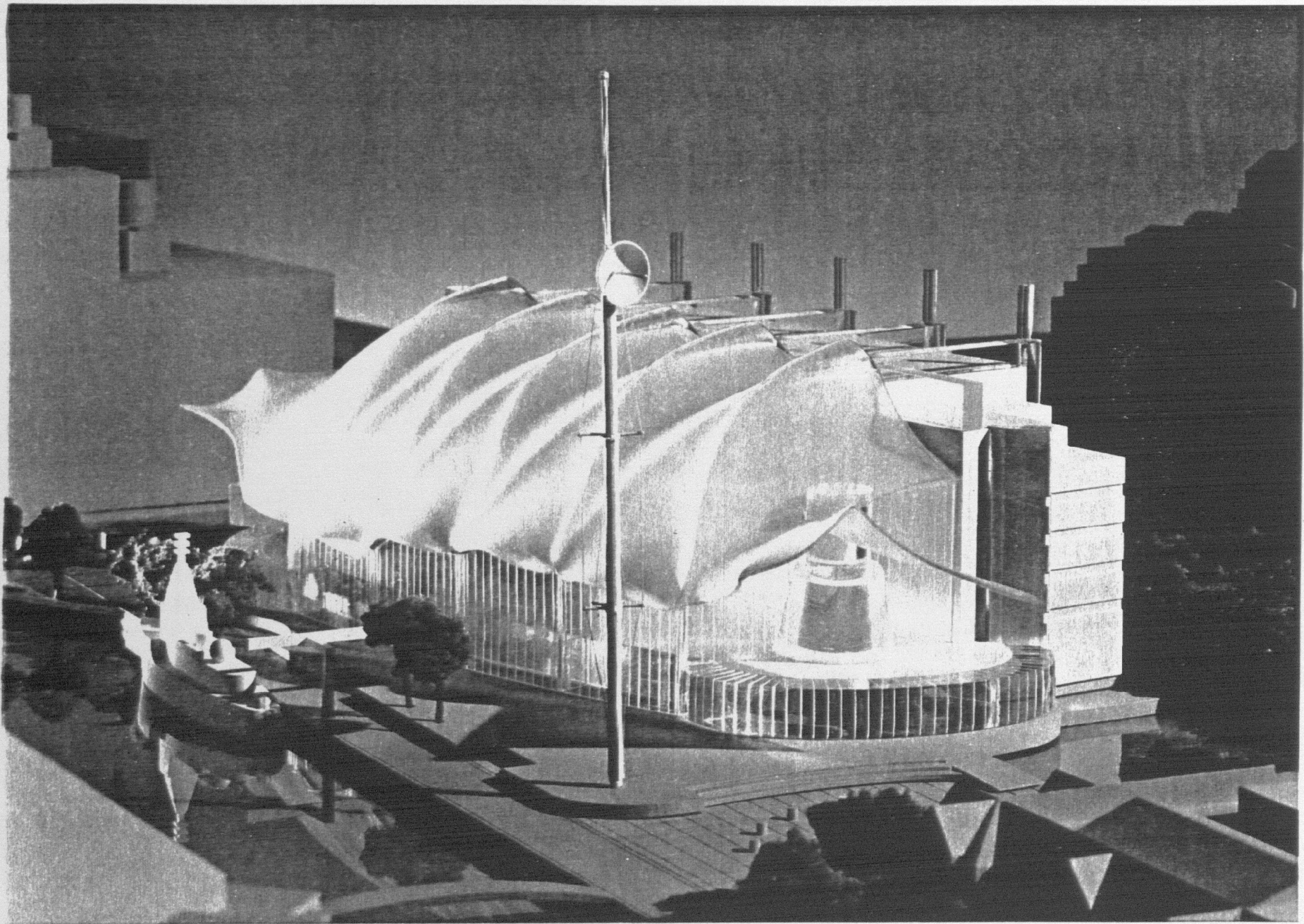


Photo 8: Architects' rendition of the Christopher Columbus Center.
Photograph courtesy of LENScape INCORPORATED, 747 Dundas Street East, Toronto, Ontario, Canada M5A 2C4.

APPENDIX B

CITY OF BALTIMORE

KURT L. SCHMOKE, Mayor



COMMISSION FOR HISTORICAL AND
ARCHITECTURAL PRESERVATION

Charles L. Benton, Jr. Building
Suite 1037, 417 E. Fayette Street
Baltimore, Maryland 21202

May 27, 1992

received
5/29/92

Ms. Lauren Bowlin
Preservation Officer
Office of Preservation Services
Review and Compliance
The Maryland Historical Trust
100 Community Place
Crownsville, Maryland 21032-2023

RE: Christopher Columbus Center
(Piers 5 and 6, and Connelly's
Restaurant)

Dear Lauren:

Elinor Bacon has kindly forwarded to us the inventory forms for Piers 5 and 6, and the Connelly's Restaurant, which were recently prepared by Betty Bird. We know that you are presently working on the Section 106 documentation and mitigation process for the Christopher Columbus Center, and that this is the appropriate time for you to receive our comments regarding eligibility.

Please be advised that we concur with Betty Bird's findings and recommendations, regarding the significance of these structures and their National Register eligibility. The research presented in the inventory form is very complete and clearly cites the ways in which the structures meet eligibility criteria. Connelly's Seaford Restaurant is the only remaining early 20th century structure located on an Inner Harbor pier and, for that reason, it is worthy of documentation. The significant early reinforced concrete construction of Piers 5 and 6 establishes the National Register eligibility of these structures, as well.

Please advise us if you wish to receive any additional comment or information from CHAP. Betty's inventory forms are so complete that you probably have everything that you will need.

Thank you for your consideration.

Sincerely,

Kathleen

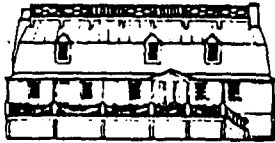
Kathleen G. Kotarba
Executive Director

cc. Elinor Bacon ✓
Betty Bird

KGK/lw

XL *Sola Sembré*
Jim Lano
Jim Buchell

MARYLAND
HISTORICAL



TRUST

→ B. Koger
William Donald Schaefer
Governor

Jaqueline H. Rogers
Secretary, DHCD

June 6, 1991

Office of Preservation Services

Mr. David M. Gillece
Acting President
Center City - Inner Harbor Development, Inc.
Suite 2100, Two Hopkins Plaza
Baltimore, Maryland 21201

RE: Christopher Columbus Center of
Marine Research and Exploration
Bulkhead Reconstruction
MD910416-0302

Dear Mr. Gillece:

Our office has received the project listed above for our review and comment through the Maryland State Clearinghouse for Intergovernmental Assistance.

The Christopher Columbus Center is a large, multi-phased construction project proposed for Piers 5 and 6 in Baltimore. The current phase of the project, according to the information supplied by the Clearinghouse, concentrates on the bulkhead construction of Pier 5. Funding for this work will be a Public Works Grant from the Economic Development Administration (EDA) of the U.S. Department of Commerce. Funding for the Pier 6 bulkheads is anticipated from the U.S. Environmental Protection Agency.

The bulkhead construction is only a small portion of the overall project. Federal financial assistance is anticipated from the General Services Administration (GSA) and the Environmental Protection Agency (EPA). Permits from the Army Corps of Engineers and the United States Coast Guard will be necessary to complete the project. A financial commitment from the State of Maryland is also being sought.

Because the project will utilize federal and state assistance, it is subject to Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations, 36 CFR Part 800, and Article 83B Sections 5-617 and 518 of the Annotated Code of Maryland. These laws require all federal and state agencies to consider the effects of their undertakings on historic properties. Because multiple agencies share this responsibility, it will be advantageous for Center City - Inner Harbor to consult with the agencies to identify one which will agree to take the lead in the Section 106 review.

Maryland

Division of Historical and Cultural Programs
Department of Housing and Community Development
100 Community Place, Crownsville, Maryland 21032-2023 (301) 514-7600

Mr. David Gillece
June 6, 1991
page 2

The first steps of the Section 106 process are the identification and evaluation of historic properties within the project's area of potential effects (see enclosed pamphlet).

In reviewing the Clearinghouse material, the Trust believes that:

Extensive archeological investigations have already been completed for the project area; further archeological work is not warranted.

The extent of historic standing structures eligible for the National Register located within the area of potential effect has not been identified nor evaluated. The piers are currently composed of bulkheads which date to 1904-1908. They were constructed after the Baltimore Fire of 1904 and display advanced engineering technology for the period. The Trust requests that a determination of eligibility report be prepared to assess the National Register eligibility of these structures.

Connelly's Restaurant is an additional historic property located within the area of potential effect which may be eligible for the National Register. The Trust recommends that Connelly's be evaluated as well.

The reports should be completed in accordance with the "Interim Guidelines for Completing Maryland Inventory of Historic Properties Form" and address the National Register Criteria of Evaluation. Our office is willing to assist in the development of the reports. The determination of eligibility reports should be prepared by a qualified professional whose credentials meet the standards identified in 36 CFR 61, Appendix A. Enclosed you will find a list of consultants who meet these standards.

Additional historic properties have been identified adjacent to the project site: the Seven Foot Knoll Lighthouse, the Pratt Street Power Plant and the U.S.C.G. Taney. All of these historic structures have already been determined eligible or listed in the National Register of Historic Places. The Business and Government Historic District is listed in the National Register and are adjacent to the project site as well.

The second step in the 106 process is the determination by the lead federal agency of the effects of the project on all National Register listed and eligible properties. This determination

Mr. David Gillece
June 6, 1991
page 3

assesses how the project impacts the significant historic resources. The Trust believes that:

The bulkhead proposal includes the demolition and reconstruction of the original 1904 bulkheads due to structural deterioration and the demolition of Connelly's Restaurant. If the structures are determined eligible for the National Register, then the construction work should be performed in accordance with the Secretary of the Interior's Standards for Rehabilitation. According to the federal regulations 36 CFR 800.9(b), demolition and reconstruction constitutes an adverse effect on an historic resource. The Standards advocate the repair and reuse of existing historic materials. Please provide evidence of the structural deterioration of the bulkheads such as photographs illustrating the deterioration and an engineer's report discussing the conditions as well as alternatives that were considered in addition to demolition. We would be very interested in receiving a copy of the following reports: "Engineering Feasibility Report - Inner Harbor East - Baltimore, Maryland;" Whitman, Requardt and Associates, March, 1973 and "Pier 6 Bulkhead Inspection;" Whitman Requardt and Associates; August, 1990.

Once the Trust and the involved agencies reach consensus regarding the effects of the proposed construction work on historic properties, a Memorandum of Agreement (MOA) would be prepared and submitted to the Advisory Council on Historic Preservation, an independent federal agency established to monitor federally-assisted projects affecting historic properties. The MOA would include stipulations developed as measures to mitigate any adverse effects on historic properties. The recording and selective salvage of structures to be demolished are typical stipulations of an MOA. The lead agency would have the option of inviting the Advisory Council into the review process now. The Council has thirty days to respond to the signed MOA.

Due to the complexity and importance of this project, the Trust is willing to meet with you and other involved agencies at your convenience to discuss the Section 106 review and its requirements. Please feel free to call me or Ms. Lauren Bowlin at (301) 514-7600.

Mr. David Gillece
June 6, 1991
page 4

We look forward to working with you on this exciting project.

Sincerely,



William J. Pencek, Jr.
Chief

Office of Preservation Services

Enc.

WJP/LLB

cc: Mr. Anthony Costa (GSA)
Ms. Judith Troast (EPA)
Mr. Frank Monteferrante (EDA)
Mr. Jeff Middlebrooks
Ms. Kathleen Kotarba
Mr. J. Rodney Little
Mr. Larry Fogelson
Ms. Mary Johnson
Mr. Joseph M. Coale III
Mr. Fred Shoken

CITY OF BALTIMORE

REPORT OF BALTIMORE, MARYLAND



DEPARTMENT OF HOUSING AND
COMMUNITY DEVELOPMENT

ROBERT W. HEARN, Commissioner
222 East Saratoga Street, Baltimore, Maryland 21202

July 20, 1992

received
7/26/92

Elinor R. Bacon, Partner
Harbor Development Services
Partnership
527 N. Charles Street, Suite 300
Baltimore, Maryland 21201

Subject: Christopher Columbus Center

Dear Ms. Bacon:

This is in response to your letter requesting verification of the off-street parking requirements for the proposed Christopher Columbus Center Development.

The proposed development is located in a B-5-1 Central Commercial Zoning District. The Christopher Columbus Center, as you indicate in your preliminary net square footage report submitted with your letter, will contain a total of 255,200 square feet consisting of a center of Marine Biology, a center of Marine Archeology, a public Exhibit area, administration offices and other accessory support areas.

The combination of uses as noted will not require any off-street parking spaces per Section 9.0-3 of the Zoning Ordinance of Baltimore City.

I can be reached by telephone at 396-4185 if you require any additional information.

Sincerely,

David C. Tanner

David C. Tanner
Zoning Administrator

DCT/bd

cc: S. Serhi
J. Lano
J. Bruchell
B. Hopewell

CITY OF BALTIMORE

KURT L. SCHMOKE, Mayor



PLANNING COMMISSION
DEPARTMENT OF PLANNING

RACHEL F. EDDS, Acting Director
8th Floor, 417 E. Fayette Street
Baltimore, Maryland 21202-3416

August 18, 1992

Mr. Peter Claggett
U. S. Environmental Protection Agency
Region III
841 Chestnut Building
Philadelphia, PA 19107

Re: Christopher Columbus Center for
Marine Research and Exploration

Dear Mr. Claggett:

At the inter-agency coordination meeting held on August 12, 1992, for the above referenced project, the City's Coordinator for the State's Critical Areas Management Program, Bob Hewitt, commented on the impact of the program on the temporary surface parking lot currently designed for the Christopher Columbus Center. I would like to clarify and elaborate on that impact.

The City's Planning Department, in conjunction with the Department of Public Works, administers the Critical Areas Management Program. The Program provides for a one hundred foot "Buffer Zone" at the water's edge within which any use must be water dependent. However, the State has long recognized that the unique geography of the Inner Harbor renders strict compliance with this limitation unduly onerous. Consequently, the State has allowed City to approve non-water dependent uses within this Buffer Zone and impose an offset fee against the development project. The fees collected in this manner are used to implement water quality improvement and habitat enhancement projects in other parts of the Critical Area.

With respect to the Christopher Columbus Center, the Planning Department completely supports the Project in its entirety. Recognizing that the temporary parking area is a necessary component of the initial phase of the project, the Planning Department will recommend to the Chesapeake Bay Critical Area Commission that an offset fee be imposed for the area of the Project located in the Buffer Zone.

All aspects of the project are also being designed within the requirements of Baltimore City's Flood plain regulations, which have been approved by appropriate State and federal agencies.



Mr. Peter Claggett

Page 2

August 18, 1992

Re: Christopher Columbus Center for
Marine Research and Exploration

The Planning Department is enthusiastic about the excitement this project is generating and intend to fully support the development of the Project in all respects. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Rachel F. Edds". The signature is fluid and cursive, with the first name "Rachel" being more prominent than the last name "Edds".

Rachel F. Edds, Acting Director
Department of Planning

RFE/RAH/tme



Received
7/22/92

William Donald Schaefer
Governor

Maryland Department of Natural Resources
Tawes State Office Building
580 Taylor Avenue
Annapolis, Maryland 21401

Torrey C. Brown, M.D.
Secretary

James W. Peck
Assistant Secretary

July 1, 1992

Mr. Jeffrey Elseroad
EA ENGINEERING, SCIENCE, AND TECHNOLOGY
EA Eastern Division
Hunt Valley/Loveton Center
15 Loveton Circle
Sparks, MD 21152

RE: Christopher Columbus Center for Marine Research and
Exploration in Baltimore City

Dear Mr. Jeffrey Elseroad:

This is in response to your request for information regarding the
above referenced project. There are no known Federal or State
threatened or endangered plant or wildlife species present at this
project site.

Sincerely,

Janet McKegg/dec
Janet McKegg, Director
Natural Heritage Program

JM:dec

cc: Cynthia Sibrel
Peter Bendel
Robert Hewitt
ER# 92.06.377

*cc: S. Lano
P. Bendel ✓
R. Hewitt*

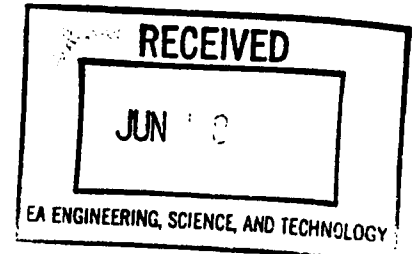


United States Department of the Interior

FISH AND WILDLIFE SERVICE
DIVISION OF ECOLOGICAL SERVICES
1825 VIRGINIA STREET
ANNAPOLIS, MARYLAND 21401

June 17, 1992

Mr. Jeffrey Elseroad
EA Engineering, Science, and Technology
Hunt Valley/Loveton Center
15 Loveton Circle
Sparks, MD 21152



Re: Endangered Species
Piers 5 and 6, Baltimore City, MD

Dear Mr. Elseroad:

This responds to your June 8, 1992, request for information on the presence of species which are Federally listed or proposed for listing as endangered or threatened within the area to be affected by construction of the proposed Christopher Columbus Center for Marine Research in the Inner Harbor area of Baltimore, Maryland. We have reviewed the information you enclosed and are providing comments in accordance with Section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Peregrine falcons (Falco peregrinus) nest on the U.S.F. & G. Building approximately 1/2 mile west of the project area. However, we would not expect construction at this site to have an appreciable effect on this endangered species. No other Federally listed or proposed endangered or threatened species are known to exist in the project impact area. Therefore, no biological assessment or further Section 7 consultation is required with the Fish and Wildlife Service. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to endangered species under our jurisdiction. It does not address other Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other legislation.

Thank you for your interest in endangered species. If you have any questions or need further assistance, please contact Andy Moser of our Endangered Species staff at (410) 269-5448.

Sincerely,

John P. Wolflin
For John P. Wolflin
Supervisor
Annapolis Field Office



William Donald Schaefer
Governor

**Maryland Department of Natural Resources
Water Resources Administration**

Tawes State Office Building
Annapolis, Maryland 21401

Torrey C. Brown, M.D.
Secretary

Catherine P. Stevenson
Director

"A Commitment to Excellence in Managing Maryland's Water Resources"

August 17, 1992

Mr. Peter Claggett
US EPA Region III
841 Chestnut Building
Philadelphia, PA 19107

Re: Christopher Columbus Center
Baltimore, MD
DNR Tidal Wetlands Ref. 93-PL-0095

Dear Peter:

The Tidal Wetlands Division's questions concerning the project referenced above were fairly well addressed in the August 12th scoping meeting. However, earlier in the project planning process the possibility of fill over wetlands for a cul-de-sac was discussed. There was no mention of this project component at the recent inter-agency meeting. We ask that your Assessment address any project components which have been deleted from the scope of work such as this unnecessary fill. We would like this issue put to rest formally. If you have any questions, please call me at 410-974-3871. Thank you.

Sincerely,

Diana M. Reynolds

ROUSE-COLUMBUS, INC.

August 20, 1992

Mr. Peter R. Claggett - 3ES43
Environmental Protection Agency - Region III
841 Chestnut Building
Philadelphia, PA 19107

Re: Christopher Columbus Center
Energy Conservation Measures

Dear Mr. Claggett:

The design of the Christopher Columbus Center is investigating numerous energy conservation measures ranging from upgrades in the design of the building to waste recycling programs that will continue for the life of the building. It is the intent of the Christopher Columbus Center to investigate and use all proven technologies which are financially viable to the project.

We are working with Baltimore Gas & Electric on design enhancements that will either save fuel through more efficient equipment or shift electrical consumption to night hours, thus reducing the need to build additional power generating plants. We are working with Baltimore Thermal Corp. to determine the effectiveness of using steam, a portion of which is generated from the incineration of trash, to heat the facility.

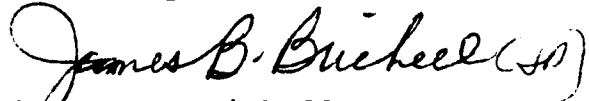
Energy conservation measures being reviewed include a thermal ice storage system which shifts a portion of the electrical consumption to the night hours, variable speed fan and pump drives, T-8 fluorescent lighting, special glass systems, wall and roof insulation and methods of recovering energy from the laboratory exhaust systems. We are also looking at the possibility of using self closing faucets on the restrooms throughout the facility.

Christopher Columbus Center's efforts are not confined to the inside of the building. The specification of landscape plants shall be sensitive to the type of plant material that can thrive without large quantities of water irrigation.

Mr. Peter R. Claggett - 3ES43
August 20, 1992
Page 2

Christopher Columbus Center is looking forward to interfacing with Region III of the Environmental Protection Agency to identify any new design technologies that can be incorporated into the project or used after the building is occupied. While it is our intent to be on the leading edge of technology, each proposal must be financially viable with a reasonable payback.

Sincerely,

A handwritten signature in black ink that reads "James B. Brickell" followed by a stylized flourish or set of initials in parentheses.

James B. Brickell
Senior Project Manager

JBB:jp

cc: A. F. Albanese
E. Bacon
R. Minutoli
O. O. Seriki
File 2.43.14

APPENDIX C

August 10, 1992

CHRISTOPHER COLUMBUS CENTER
The Public Process - Baltimore City

I. Capital Improvement Program Review Process

Baltimore City Planning Commission
CIP Review Hearings - March, 1991; March, 1992

Board of Finance - CIP Review for Fiscal Impact
Public Meeting - March, 1991; March, 1992

Board of Estimates
May, 1991; May, 1992

City Council
Budget and Finance Committee Hearings - May, 1991; May, 1992
Full City Council - June, 1991; June, 1992

II. Budget Review for Bond Issuance

Referendum approvals of Bond Issues - November, 1990 and 1991
ballot

Presented to Baltimore City Delegation of the State General
Assembly - December, 1998 and 1990

III. Project Briefing - City Planning Commission - April, 1992

IV. Meetings with Elected Officials

City Council President, Mary Pat Clarke - April, 1992

Baltimore City Comptroller, Jacqueline McClean - April, 1992

First District City Council Representatives - April, 1992

CHRISTOPHER COLUMBUS CENTER MEETINGS

Meeting with Representatives of neighboring institutions such
as the National Aquarium, Scarlett Place Condominium
Association, Little Italy Community Organization - February
28, 1992

Regional Minority Business Enterprise/Women's Business
Enterprise meeting with prospective contractors, consultants,
and professionals. 2800 invites; invitee list from City,
State, counties; 250 attendees - July 8, 1992.

**CHRISTOPHER COLUMBUS CENTER
OF MARINE RESEARCH AND EXPLORATION
STATE BUDGET HEARINGS - PUBLIC MEETINGS**

o STATE OF MARYLAND BUDGET HEARINGS FOR FY 1991

DATE	COMMITTEE	PURPOSE
3/90	SENATE CAPITAL BUDGET SUBCOMMITTEE	BUDGET HEARING
3/90	HOUSE SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT	BUDGET HEARING
3/90	SENATE BUDGET AND TAXATION	DECISION MEETING
3/90	HOUSE APPROPRIATIONS	DECISION MEETING

o STATE OF MARYLAND BUDGET HEARINGS FOR FY 1992

DATE	COMMITTEE	PURPOSE
3/91	SENATE CAPITAL BUDGET SUBCOMMITTEE	BUDGET HEARING
3/91	HOUSE SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT	BUDGET HEARING
3/91	SENATE BUDGET AND TAXATION	DECISION MEETING
3/91	HOUSE APPROPRIATIONS	DECISION MEETING

**Christopher Columbus Center of
Marine Research and Exploration
Newspaper Articles**

The Baltimore Sun, Editorial: "Marine Research Center", May 11, 1989.

The Baltimore Evening Sun, Column: "Spirit of Columbus", May 13, 1989.

The Evening Sun, Editorial: "Losing the Lead", May 19, 1989..

The Sun, Column, Personal Viewpoint: Committed to the Columbus Center, "Benjamin L. Cardin, U.S. House of Representatives"

The Evening Sun, Editorial: "Treasures of the Sea", October 6, 1989.

The Evening Sun, Editorial: "Holding onto a Lead", July 26, 1990.

The Evening Sun, Editorial: "A Dream Becoming a Reality", October 22, 1990.

The Evening Sun: "Marine Center Funds Secured", October 23, 1990.

The Sun: "UM Gene-Splicers Say They See Progress in 'Redesigning' Fish to Grow Faster, Bigger" , January 7, 1991.

The New York Times: "New Prospects for Gene-Altered Fish Raise Hope", November 27, 1990.

The Evening Sun: "Farming Strategy May Help Stop Spill" February 21, 1991.

The Evening Sun: "\$1.4 Billion Capital Budget Approved for City", March 8, 1991.

The Evening Sun: "Biotech Alley?, High-tech Hopes for Maryland's Economic Future" May 21, 1991.

The Sun, "Senate Panel Votes \$20 Million for Columbus Center", July 12, 1991.

The Sun, Editorial: "Boost for Columbus Center", July 14, 1991.

The Evening Sun: "Columbus Center Funds Voted", July 19, 1991.

The Sun: "Rouse to Oversee Development of Columbus Center",
July 28, 1991.

The Sun: "Columbus Center Aweigh" , October 13, 1991.

The Evening Sun, Editorial: "A Vision for the Future",
October 14, 1991.

The Sun: "Biotechnology's Big Sell", October 23, 1991.

The Evening Sun, Editorial: "Designs and Dreams", December
11, 1991.

The Sun, "Oscar-winning Firm Will Design the Exhibits for
Columbus Center", January 15, 1992.

The Sun: "City Approves \$210.5 Million Capital Budget" ,
January 9, 1992.

The Sun: "Science on the Half-Shell Proposed for Marine
Facility", March 9, 1992.

The Evening Sun, Editorial: "Science on the Half-Shell",
March 11, 1992.

**CHRISTOPHER COLUMBUS CENTER OF MARINE
RESEARCH AND EXPLORATION
STATE BUDGET HEARINGS
August 7, 1992
Page 2**

o STATE OF MARYLAND BUDGET HEARINGS FOR FY 1993

DATE	COMMITTEE	PURPOSE
3/10/92	SENATE CAPITAL BUDGET SUBCOMMITTEE	BUDGET HEARING
3/12/92	HOUSE SUBCOMMITTEE ON HEALTH AND THE ENVIRONMENT	BUDGET HEARING
3/23/92	SENATE CAPITAL BUDGET SUBCOMMITTEE	BUDGET HEARING
3/92	SENATE BUDGET AND TAXATION	DECISION MEETING
3/92	HOUSE APPROPRIATIONS	DECISION MEETING

PUBLIC NOTICE

The U.S. Environmental Protection Agency (EPA) is soliciting public comments on the proposed Christopher Columbus Center for Marine Research and Exploration in Baltimore, Maryland. The project consists of a 6-story 256,000 sq. ft. building to be constructed on a city-owned parcel at Piers 5 & 6 of Baltimore's Inner Harbor. The Center will serve as a research, educational and exhibition facility eventually employing approximately 500 people. The project would be financed by a mix of federal state, local and private funding. EPA, serving as the lead federal agency, is preparing an Environmental Assessment to address environmental, as well as, social cultural, and economic impacts from the proposed project. This document is being prepared in accordance with the National Environmental Policy Act (NEPA). Comments must be submitted in writing to EPA by August 17, 1992 for consideration in the Environmental Assessment. Please address any comments to:

Mr. Peter Claggett (3ES43)

EPA, Region III

841 Chestnut Building
Philadelphia, PA 19107

**NOTICE OF FINDING OF
NO SIGNIFICANT IMPACT ON THE ENVIRONMENT**

Richard V. Pepino, Chief
Environmental Assessment Branch (3ES40)
U.S. Environmental Protection Agency, Region III
841 Chestnut Building
Philadelphia, PA 19107
(215) 597-1182

To all interested agencies, groups, and persons:

Proposed Action: Christopher Columbus Center Development, Inc., a non-profit quasi public entity, has proposed to construct and operate a Center for Marine Biotechnology and Exploration in Baltimore, Maryland. The Center, which has received Federal funding, would serve as a national and international focal point for marine science research and related academic and business activities. The Center would consist of a five-story facility with a two-story mechanical penthouse, on a city-owned lot at Piers 5 and 6 of Baltimore's Inner Harbor. An environmental assessment has been written for the project.

Anticipated Impacts: The assessment identified the following potential adverse environmental impacts resulting from the construction and operation of the center: (1) construction of a facility within a 100-year flood hazard area, (2) disturbance of tidal wetlands (waters and bottom sediments) adjacent to Piers 5 and 6 in the Baltimore Inner Harbor, (3) temporary decrease in ambient air quality due to construction operations, (4) minor long-term impacts to air quality from increased vehicular traffic, (5) temporary increase in noise due to construction operations, (6) permanent loss of approximately 400 public parking spaces, (7) demolition of one historic building and reconstruction of one historic resource, both of which are eligible for listing on the National Register, and (8) temporary impacts to water quality and aquatic ecosystems as a result of dredging.


Mitigation Measures: The assessment stipulates the project will be subject to specifically identified mitigation measures for each potential impact. These mitigation measures are incorporated as part of the proposed action and include, but are not limited to: (1) conformance with Executive Order 11988 (Floodplain Management) of 1977, the Coastal Zone Management Act, and FEMA regulations regarding construction in floodplains, (2) implementation of construction noise and air emissions specifications including, but not limited to scheduling construction operations responsible for high noise levels to coincide with each other, fitting air powered equipment with pneumatic exhaust silencers, and wetting exposed earth or using dust palliatives as a dust control measure, (3) conformance with the Memorandum of Agreement between the General Services Administration and the Maryland State Historic Preservation Officer (SHPO) which provides for the recordation and salvage

of the historic resources, and design review for new construction by the SHPO, (4) implementation of a stormwater management plan, (5) implementation of an erosion and sediment control plan, and (6) implementation of energy conservation, recycling, and other pollution control measures.

Conclusion: The assessment concludes that anticipated impacts, when coupled with the specified mitigation measures, are sufficient to warrant the conclusion that (1) a significant environmental impact is not expected to occur, (2) the project is not environmentally controversial, and (3) an environmental impact statement will not be required.

An environmental assessment for the proposed action has been developed by the U.S. Environmental Protection Agency, in cooperation with the General Services Administration and the National Aeronautics and Space Administration. The assessment is available for public examination at the U.S. Environmental Protection Agency, Region III, 841 Chestnut Street, Philadelphia, PA, 19107. Appointments for reviewing this document should be made by calling (215) 597-0580. All interested agencies, groups, and persons not in agreement with this decision are invited to submit written comments for consideration to the U.S. Environmental Protection Agency within 30 days of this publication date. The proposed action will not be implemented prior to this thirty-day comment period. Comments should be directed to:

Richard V. Pepino, Chief
Environmental Assessment Branch (3ES40)
U.S. EPA, Region III
841 Chestnut Building
Philadelphia, PA 19107



Richard V. Pepino, Chief