SDMS DocID 000220381

PRC Consoer Townsend
Suite 600
303 East Wacker Drive
Chicago, IL 60601
312-938-0300
TWX 910-2215112
Cable CONTOWENG

Planning Research Corporation

Site: NEW BEDFORD
Breq: 3.10
Other: 220381

NEW BEDFORD HARBOR ENDANGERMENT ASSESSMENT

TASK 2.4

NEW BEDFORD HARBOR SITE VISIT

DRAFT SUMMARY REPORT

DATE: 3/10/89
BY: C Baring

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Waste Programs Enforcement
Washington, D.C. 20460

Work Assignment No.	:	560
EPA Region	:	1 (C)
Site No.	:	TGB811443
Date Prepared	:	October 17, 1986
Contract No.	:	68-01-7037
PRC No.	:	15-5600-78
Prepared By	:	Alliance Technologies Corporation
Telephone No.	:	(617) 275-5444
EPA Primary Contact	:	Frank Ciavattieri
Telephone No.	:	(617) 223-1951

ENFORCEMENT CONFIDENTIAL

PRIVILEGED WORK PRODUCT PREPARED IN ANTICIPATION OF LITIGATION

prc
Planning Research Corporation

PRC Engineering
[illegible]
East Wacker Drive
[illegible] L 60601
[illegible]8-0300
[illegible]
[illegible]NTOWENG

October 16, 1986

Mr. Frank Ciavattieri
U.S. EPA REGION 1
JFK Federal Building
Boston, MA 02203

Dear Mr. Ciavattieri:

PRC Environmental Management, Inc. and its subcontractor Alliance Technologies Corporation (formerly GCA Corporation, Technology Division) are pleased to submit two reports entitled: New Bedford Harbor Endangerment Assessment, Task 2.3 - Review of the Menzie Approach - draft letter report, and New Bedford Harbor Endangerment Assessment, Task 2.4 - New Bedford Harbor Site Unit - draft summary report, for Work Assignment No. 560.

Should you have any questions or wish to discuss these reports or the work assignment in general with me directly, please feel free to do so.

Thank you for your assistance and cooperation.

Sincerely,

PRC Environmental Management, Inc.
Eric S. Morton
Public Health Scientist

EM/klb

Enclosure

cc: Nancy Deck
Bruce Bakaysa (letter)
Susan Santos, Alliance Technologies Corp.

TABLE OF CONTENTS

Introduction 1

Public Health Observations 2
Fairhaven Side of Harbor 2
New Bedford Side of Harbor 4
Summary 6

Additional Activities 8
Identification of Areas of Possible Concentration of Sensitive Subpopulations in the New Bedford Harbor Area 8
Visit to City Hall 9
Meeting with Brad Bourque 9

Environmental Observations 11

Conclusion 12

FIGURES

1. New Bedford Harbor Area 3

2. Location of Possible Exposure Points and Areas of Possible Concentration of Sensitive Subpopulations in the New Bedford Harbor Area 10

NEW BEDFORD SITE VISIT
Task 2.4 Summary Report

INTRODUCTION

Under Task 2.4 of the revised workplan dated 20 August, 1986, GCA conducted a site visit to New Bedford, Massachusetts which lasted from September 5 to September 8, 1986. The purpose of this site visit was twofold. First, it was conducted to familiarize the endangerment assessment (EA) staff with the New Bedford Harbor area, both the actual aquatic environment of the harbor for the environmental EA, and the surrounding industrial/residential area for the public health EA. The second purpose of the site visit was to attempt to refine identification of both the activities and the locations which may bring persons in the New Bedford area into contact with PCB contamination from the harbor, in order to provide information for the exposure assessment to be conducted as part of the public health and environmental EA. This was accomplished by observing different locations at different times (weekdays and weekends) to identify the activities which occur, the persons involved in the activities and the locations of potential exposure points. Observations in the site study area were made at a number of locations at different times (low tide, high tide, early morning, early evening) to account for activities associated with varying conditions (weather, tide, etc.). This was meant to provide GCA with visual observations only. The conclusions drawn concerning the type of activities which occur cannot be considered representative of all potential exposures occuring throughout the year. However, the observations do provide site specific information regarding actual exposure to the harbor area.

This report summarizes the observations made by the GCA environmental and public health staff during the site visit. In the first section, the route taken to observe the area is outlined and the observations made by the public health EA staff are summarized. The second section gives a brief description of additional activities performed by GCA during the site visit to aid in the preparation of the EA exposure assessment. In the third section the observations made by the environmental EA staff are summarized.

PUBLIC HEALTH OBSERVATIONS

Although GCA has previously identified potential exposure points and receptors, a site visit was felt necessary for the public health exposure assessment. The site visit was intended to give the technical staff involved in preparation of the exposure assessment familiarity with the area, as well as to obtain information on:

- who uses the harbor area and to what extent;
- the types of activities which occur in the area;
- the ease of access to contaminated areas, i.e. is the area restricted or are there warning signs posted;
- the location of potential high density of sensitive subpopulations in the area, e.g. playgrounds, hospitals, schools, etc.

This was done by using maps to choose several observation locations, visiting them at various times of the day and week, and keeping a record of visual observations at these locations. Locations were chosen so that the entire harbor within the EA study area would be covered. Figure 1 is a map of the New Bedford Harbor area. The route which GCA took to observe the harbor area is outlined with a solid black line, and the locations of Aerovox and Cornell-Dubilier are marked for comparison purposes. The information which GCA obtained by observing the numbered locations at different times and under varying conditions is synthesized and briefly described below.

Fairhaven Side of Harbor

1) Fairhaven. The first observation point is in a very residential area of Fairhaven. Near this point is Fairhaven High School, approximately 1/4 mile from the Acushnet River. A nursing home is located just north of this point and, again, about 1/4 mile from the river. There are many grape arbors and vegetable gardens located throughout this area.

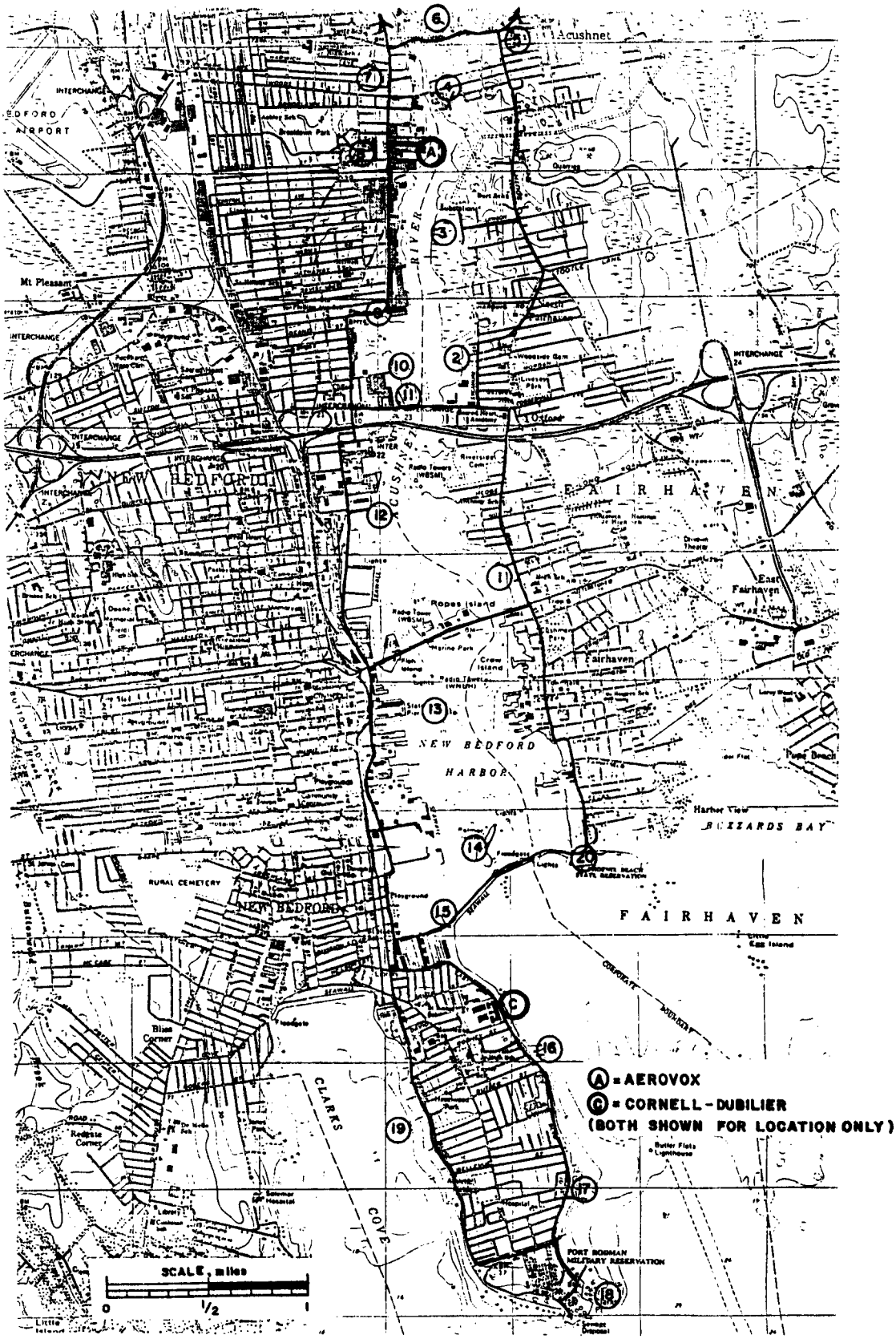

Figure 1. New Bedford Harbor area. (Observation points are denoted by numbers and observations are explained in the text).

2) Marsh. At this location GCA observed the first of many warning signs showing evidence of the PCB contamination problem. The sign is written in both English and Portuguese, it is yellow with black lettering, and states:

KEEP OUT
NO SHELLFISHING
LOBSTERING
FISHING
SWIMMING
ENVIRONMENTAL HAZARD

Around this marsh the area is very residential, and many houses with gardens and domestic animals (including roosters and geese) were observed. Although the warning sign is posted, the river can be accessed very easily at this point.

3) Substation. This observation point is in a marshy area located near an electrical substation. Although the area is overgrown, there is a well worn path that leads through the brush into the marsh. Just north of this area is the Burt School, and just north of the school is a large cornfield.

4) Wood Street Bridge. Acushnet. Observations on this area can be found in Number 7 below.

5) Main Street Bridge. Residential area.

6) Upper Estuary. This area becomes more rural and is characterized by extensive cranberry bogs further north. There are houses around the bogs and many fruit trees in the vicinity.

New Bedford Side of Harbor

7) Wood Street Bridge. New Bedford. This is a very industrial area. There are four warning signs in the immediate vicinity, identical to the sign described in 2) above. At both high and low tide there is a lot of trash visible from the bridge, as well as several well worn paths leading to the water. At various time GCA staff observed eels, minnows and heron in and around the water, which appears dirty and foul smelling.

8) Aerovox/Acushnet Industrial Area. This area is very industrial along the water, but is densely populated just across the street. Behind the industrial buildings there are more warning signs, and the access to the water is restricted by fences.

9) Playground. Around this area there is very easy access to the water. There are no warning signs along the road in this area, but there are several around the playground area that have been vandalized. There is a well worn path that leads along the water from the playground toward the industrial area. There is a great deal of trash in the water that is especially noticeable at low tide. The water at this point appears dirty and has a foul smell. There were many bikes and motor bikes observed in this area during fair weather conditions, along with many children including quite a few under the age of six. Triple-decker houses across from the playground had large vegetable gardens.

10) Dead End Street. There are several vandalized warning signs posted here. Several paths mark areas where people walk toward the water. There is a soccer field located between 9) and 10) which abuts the water. Although the warning signs are posted, there are definite signs of human activity all along the water here, including the remains of fires, trash and broken beer bottles.

11) Coggeshall Street Bridge. There are several bait and tackle shops on the New Bedford side of the bridge. Just north [between 10) and 11)] there is a pebbly "beach" area with black colored, foul smelling sand/rocks. There are posted warning signs at this area, but the water is easily accessed at this point. No additional warning signs were observed south of this bridge.

12) South of Coggeshall Street Bridge. There are wharves and boats in this area, but foot access is restricted by fences.

13) State Pier. Docking area for large fishing boats. Auction house is located here. South of this pier is mostly industrial, with many warehouses; access to the water is restricted in places by fences. Densely populated apartment buildings are located across the street.

14) Palmer's Island. Very inviting, tree covered island; easy access. Water looks relatively clear. No activities were observed in this area during the site visit.

15) Hurricane Barrier. There is no restriction of water access at this point. Many men were observed fishing from the Buzzards Bay side of the seawall; the water looks clear and inviting and there is no foul odor. No one was observed fishing on the estuary side of the barrier.

16) Small Wharf. Boat launching area. (Fishing closure area 3.) People were observed pulling boats out of the water. One boat contained 13 large striped bass, and another had a cooler full of scup. South of the wharf are several small, well kept beaches with picnic tables. Many small boats were moored around this area; however, no one was observed fishing/swimming.

17) Pier. (Closure area 3.) Many men observed fishing off this pier.

18) Fort Rodman. Sewage disposal plant. No activity observed in this area; water looks clear and inviting, and there is no restriction of water access except in the immediate vicinity of the sewage disposal plant.

19) Beaches. Large, attractive well kept beaches with park across the street. No fishing/swimming observed during site visit; however, there are beach houses in this area indicating that swimming does take place.

20) Fort Phoenix Area. North of this area is an attractive beach, approximately 200 yards from the hurricane barrier. Many people were observed fishing in this area with great success; GCA staff observed people catching and keeping several tautog, bluefish, and scup. People were observed swimming in the state park. (There are no swimming restrictions in this area.)

Summary

The New Bedford Harbor site visit provided information regarding potential exposure points useful for preparing the exposure portion of the Public Health Endangerment Assessment. The site visit occurred during the early weeks of September and therefore the conclusions drawn concerning the types of activities which occur should not be considered representative of all potential exposures occurring throughout the year. However, the observations do provide site specific information regarding actual exposure to the harbor area. A summary of the major conclusions that may be drawn is as follows:

Acushnet River North of Coggeshall Street Bridge

- The Fairhaven side of this section of the river is less commercially developed than the New Bedford Harbor side. Access to the river is unrestricted although warning signs are posted. Persons may be accessing this area, as visual observations of this River do not indicate overt signs of contamination or trash. Swimming may be unlikely although wading in the marshy areas is possible.

- The New Bedford Harbor side of this section of the river is very industrial. This section of the Acushnet River looks very dirty (brown, pungent water, oil stains and trash observed). At low tide this area has a pugent odor. It does not appear very appealing and direct contact exposure from swimming and/or wading appears unlikely. At low tide approximately 10 feet of bottom sediment is exposed suggesting that exposure by inhalation may be significant as approximately 25 children were observed playing within 100 yards of the river bank.

Coggeshall Street Bridge to Fairhaven (Hutchinson Street) Bridge

- The Fairhaven side of this section of the river is less commercially developed than the New Bedford Harbor side. Access to the river is unrestricted, no warning signs were observed. Although no persons were observed in this area, wading in this section of the river seems like a reasonable activity considering the lack of visual signs of contamination. Swimming seems less likely due to the limited beach access.

- The New Bedford Harbor side of this section of the river is very industrial. The river still appears polluted both with trash and visual oil stains on the water suggesting that wading and swimming do not occur. Inhalation may be a significant exposure given the pungent odor of the water and area of bottom sediments exposed at low tide.

Fairhaven (Hutchinson Street) Bridge to Hurricane Barrier

- The Fairhaven side of this section of the river is very residential. Access to the river is unrestricted and persons were observed fishing around the Hurricane Barrier. Wading and swimming in this section of the river seems likely.

- The New Bedford Harbor side of this section of the river is less commercially developed than areas to the North. Access to the river is restricted mostly by the presence of fenced private property (warehouses). Swimming, wading and fishing are likely activities in this area, especially around Palmer Island, which can be accessed by foot at low tide.

Hurricane Barrier to Fort Rodman

- On the Fairhaven side of this section of the river is Phoenix Beach State Reservation. Children and adults were observed fishing, wading and swimming in this area,.

- The New Bedford Harbor side of this section of the river is very residential with some commercial development around the Hurricane Barrier. Fishing, wading and swimming are all likely activities in this area. Beaches run along the river bank for most of this area.

ADDITIONAL ACTIVITIES

In addition to the observations described above, GCA performed several activities during the site visit that should aid in the preparation of the EA exposure assessment. They can be described as follows:

Identification of areas of possible concentration of sensitive subpopulations in the New Bedford Harbor area

There are within any population certain individuals who, for various reasons, are more sensitive to environmental contaminants. This includes the following groups:

1) Infants and Young Children--Infants and young children are more sensitive to hazardous chemicals because of their small size and rapid development. This effectively reduces their functional reserve capacity, or ability to compensate for chemical insult.

2) Pregnant Women--Pregnant women are classified as a sensitive subpopulation because of the rapid development of the fetus, especially during the first trimester of pregnancy. During this period of time anything that interferes with fetal development could cause teratogenicity (birth defects), low birth weight, etc.

3) The Elderly--The elderly are a sensitive subpopulation because of the lower hormonal levels and the frequent presence of disease and specific organ pathology in individuals within this subgroup. As with infants and children, this effectively reduces their functional reserve capacity or ability to compensate for chemical injury through regeneration/repair of cells or metabolism of the chemicals.

4) In addition to the groups mentioned above, there are also people within the mainstream of the population who may be hypersensitive to contaminants found at the site because of their immunologic status (presence of allergies, immunodeficiencies, etc.) or because of the presence of disease or specific organ pathology.

In order to do an initial investigation of the likelihood of the presence of the above mentioned individuals, it is necessary to identify areas where these sensitive subpopulations may be concentrated and/or may congregate. These areas include:

1) Beaches
2) Parks and Playgrounds
3) Hospitals
4) Nursing Homes
5) Schools

GCA has identified the approximate location of many of these areas by using topographical maps, census maps, land use maps and visual observation. The location of these areas within approximately one mile of the harbor can be found on Figure 2.

Visit to City Hall

While in New Bedford, GCA obtained copies of the necessary census information and maps, land use maps and additional demographic information from various offices at the city hall.

Meeting with Brad Bourque

GCA staff also met with Brad Bourque, New Bedford Shellfish Warden, in order to get his unique perspective on activities which occur in the Harbor area. Mr. Bourque confirmed many of the observations that GCA staff made on the site visit, and added his impressions on the presence/absence of fishing, poaching, etc.

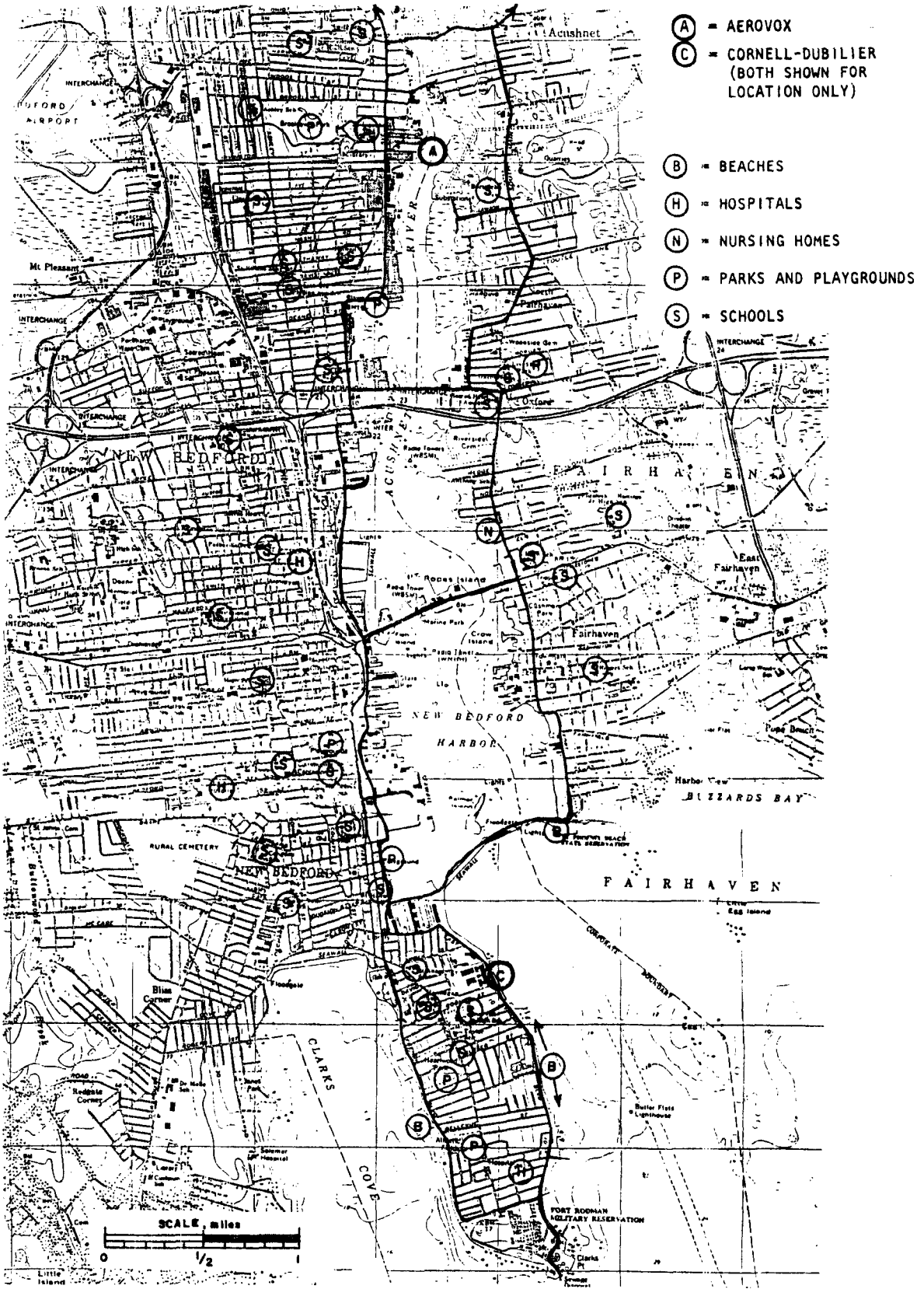

Figure 2. Location of possible exposure points and areas of possible concentration of sensitive subpopulations in the New Bedford Harbor area.

NOTE: All locations approximate.

ENVIRONMENTAL OBSERVATIONS

The NBH site investigation is useful to familiarize the environmental EA staff with the relative abundance and distribution of marine organisms at NBH. The data collected were useful to compare to the scientific literature collected to generate the exposed species analysis. Observing marine organisms first hand at NBH was also useful in describing the different exposure routes individual organisms are subject to in their natural environment. This investigation was split into four areas;

- Zone 1 (Figure 1, points 2-11);
- Zone 2 (points 1 and 12);
- Zone 3 (points 13-15); and
- Zone 4 (points 16-18).

A list of organisms that were observed in the respective zones is included below:

Zone 1	Zone 2	Zone 3	Zone 4
American Eel	Soft-Shell Clam	Oyster Drill	Razor Clam[a]
Surf Clam[a]	Ribbed Mussel	Periwinkle	Tautog
Soft-Shell Clam[a]	Surf Clam[a]	Green Crab	Scup
Ribbed Mussel	Eastern Oyster[a]	Quahog[a]	Quahog
Eastern Oyster[a]	Quahog[a]	Cockle[a]	Slipper Snail
Quahog[a]	Green Crab	Slipper Snail	Bay Scallop[a]
Horseshoe Crab		Nut Clam[a]	Bluefish
Green Crab		Bay Scallop[a]	
Atlantic Silverside			

[a] Shell only.

This data will be used in the exposed species analysis that is being generated by the GCA Environmental staff at this time.

CONCLUSION

The New Bedford site visit helped the staff to obtain a better understanding of conditions in the harbor area, as well as to gather information necessary to perform both Public Health and Environmental EA exposure assessments. It is anticipated that the information obtained by GCA during the site visit will be used to support the preparation of the EA and will therefore not have to be repeated for the EA.

PRIVILEGED WORK PRODUCT PREPARED
IN ANTICIPATION OF LITIGATION

ENFORCEMENT
CONFIDENTIAL