



Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Cumberland Bay Sludge Bed-Wilcox Dock Site

(OU-1)

Plattsburgh, Clinton County

Site Number 5-10-017

December 1997

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor*

JOHN P. CAHILL, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

"Cumberland Bay Sludge Bed - Wilcox Dock Operable Unit #1" Inactive Hazardous Waste Site Plattsburgh, Clinton County, New York Site No. 5-10-017

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedial action for the Cumberland Bay Sludge Bed - Wilcox Dock Inactive Hazardous Waste Disposal Site operable unit #1 which was chosen in accordance with the New York State Environmental Conservation Law (ECL). The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based upon the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Cumberland Bay Sludge Bed - Wilcox Dock Inactive Hazardous Waste Site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A bibliography of the documents composing the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential threat to public health and the environment.

Description of Selected Remedy

Based upon the results of the Site Characterization Study (SC) and the Feasibility Study (FS) for the Cumberland Bay Sludge Bed - Wilcox Dock Site and the criteria identified for evaluation of alternatives the NYSDEC has selected sludge bed removal with off-site disposal at an approved facility. The components of the remedy are as follows:

- A Remedial Design to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the SC and FS will be addressed;
- Isolating the sludge bed with temporary sheet piling and silt curtains;
- The sludge bed waste materials would be removed using a combination of hydraulic dredging and dewatering/dry excavation;
- Construction and operation of a temporary sludge dewatering facility on site;
- Construction and operation of a temporary waste water treatment facility on site;
- The transportation and off-site disposal of the dewatered sludge;
- Restoration of site wetlands;
- Confirmatory sampling and use of mitigative measures, if required;
- Continuation of the beach cleaning IRM as needed.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

Date

12/30/97


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TABLE OF CONTENTS

SECTION	PAGE
1: Site Location and Description	4
2: Site History	4
2.1 Operational/Disposal History	4
2.2 Remedial History	5
3: Current Status	5
3.1 Summary of Site Characterization Study	5
3.2 Interim Remedial Measures	7
3.3 Summary of Human Exposure Pathways	7
3.4 Summary of Environmental Exposure Pathways	8
4: Enforcement Status	9
5: Summary of Remediation Goals	9
6: Summary of the Evaluation of Alternatives	10
6.1 Description of Remedial Alternatives	10
6.2 Evaluation of Remedial Alternatives	13
7: Summary of the Selected Remedy	18
8: Highlights of Community Participation	20
Figures	
- Site Location Map	Figure 1
- Site Map	Figure 2
- Alternative 2A	Figure 3
- Alternative 2B	Figure 4
- Alternative 3D	Figure 5
Tables	
- Remedial Alternative Costs	Table 1
Appendix	
- Appendix A: Responsiveness Summary	
- Appendix B: Administrative Record	

SECTION 1: SITE LOCATION AND DESCRIPTION

The Cumberland Bay Sludge Bed is located in the Cumberland Bay of Lake Champlain within the City of Plattsburgh, N. Y. (see Figure #1). The bed is composed of wood pulp, wood chip debris and other processing wastes from local wood processing industries. Records show that these processing waste discharges occurred for several decades and the wastes either settled or were directly discharged into this area of Cumberland Bay. Untreated waste disposal to the Bay ended in the early 1970's when the City of Plattsburgh's wastewater treatment plant began treating wastes from the local industries. The site definition includes all underwater areas within and along the northwestern portion of Cumberland Bay that contain accumulations of contaminated sludge. The sludge bed occupies an area of the bay that is approximately 34 acres in size. The average thickness of the sludge bed is between one and two feet, however, the thickness of the bed by Wilcox Dock exceeds ten feet. The volume of the sludge bed is estimated at 93,000 cubic yards with PCB contamination detected throughout the bed. Concentrations of PCB's have been detected as great as 1,850 parts per million (ppm) in sludge samples.

Operable Unit No. 1, which is the subject of this ROD, consists of the remediation of the sludge bed within Cumberland Bay. An Operable Unit represents a discrete portion of the remedy for a site which, for technical or administrative reasons, can be addressed separately to eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

The Operable Unit No. 2 for this site is described in Section 2.2 below.

SECTION 2: SITE HISTORY

2.1: Operational/Disposal History

As described above, the sludge bed within Cumberland Bay is the result of years of disposal of local wood processing industrial wastes directly into Lake Champlain. By 1960, Vanity Fair was pulping secondary fiber (recycled waste paper) at the Plattsburgh facility. Reference materials reviewed during the Department's investigation indicate that certain PCB contaminated wastes are the byproduct of this process due to the high PCB content of carbonless copy paper, which was used in such manufacturing processes during that era. Carbonless copy paper containing PCBs was produced in the United States between 1957 and 1971 using PCB Aroclor 1242 exclusively as an ink carrier. Aroclor 1242 is the predominant PCB Aroclor found in the sludge bed. The paper making process which may have involved the pulping of recycled carbonless copy waste paper was continued at the Plattsburgh mill after Vanity Fair was purchased by and merged with Georgia Pacific in 1963. Georgia Pacific continued this process until 1966, when it stopped pulping secondary fibers at the Plattsburgh mill. In 1973, untreated discharge of wastes ended when the mills were connected to the city wastewater treatment plant. The Department's data also indicates that a wood processing and manufacturing facility adjacent to the Georgia Pacific facility also used the same outfall pipe to release process wastes to the site. This facility has had various operators since the 1950's and is currently owned and operated by the Tenneco Packaging Corporation. In addition, other parties may have released various wastes to the site over the years. Therefore, the Department's investigation regarding the complete origins of the wastes and materials released to the site remains open.

2.2: Remedial History

The NYSDEC has conducted a monitoring program of contaminant levels in the fish of Lake Champlain since the 1970's. The results of this monitoring have shown that certain species of fish within Cumberland Bay have the highest PCB levels of any fish found in the lake. Environmental sampling performed between 1992 and 1994 confirmed the presence of high levels of PCBs in the sludge bed at the Wilcox Dock area. This sampling also detected PCBs in the woodchip debris washing ashore in the Bay. The site was added to the Registry of Inactive Hazardous Waste Sites in November, 1994.

The characterization of the sludge bed was initiated in July, 1995 and completed in September, 1995. The major objectives of the site characterization were to determine the extent of the sludge bed, the contaminant distribution within the bed, and a volume estimate of the sludge bed. This included the collection of data to evaluate the physical, chemical and geotechnical properties of the sludge bed and underlying sediments.

In addition, the NYSDEC has initiated a beach cleaning interim remedial measure (IRM) to remove the PCB-contaminated debris washing up on the Cumberland Bay beaches. The purpose of this IRM is to reduce the potential for exposure to this waste material.

Operable Unit No.2 consists of the identification and recommendations for the remediation of any off-site impacts of the sludge bed. The areas identified in OU-2 are the beach debris disposal area at the Cumberland Bay State Park and the public and private beaches on Cumberland Bay. An investigation of these off-site impacts is currently underway. Recommendations for the remediation of these areas will be determined upon the completion of these studies.

SECTION 3: CURRENT STATUS

In response to a determination that the presence of hazardous waste at the Site presents a significant threat to human health and the environment, the NYSDEC has recently completed a Site Characterization and Feasibility Study (SC and FS). In addition, a beach cleaning IRM is currently underway to reduce the public's exposure to the waste material washing onshore in Cumberland Bay.

3.1: Summary of the Site Characterization Study

The purpose of the Site Characterization Study was to define the nature and extent of sludge bed contamination, characterize the site and gather the data necessary to support the evaluation and selection of remedial alternatives for the site.

The SC was conducted in one phase with field work performed between June and September of 1995. A report entitled Site Characterization Report Sludge Bed - Wilcox Dock IRM Cumberland Bay November 1995 has been prepared describing the field activities and findings of the SC in detail.

The SC included the following activities:

Major Investigative Tasks

- Sediment coring survey to determine the horizontal and vertical extent of the sludge bed.
- Sampling and chemical analyses of sludge and sediments as well as physical properties of sludge and sediment. Geotechnical sampling was performed to determine geologic conditions.
- Coring and sample analyses of beach areas to determine extent of contamination.

To determine which media (soil, groundwater, etc.) contain contamination at levels of concern, the SC analytical data were compared to environmental Standards, Criteria, and Guidance (SCGs). Drinking water and surface water SCGs identified for the Cumberland Bay Sludge Bed - Wilcox Dock Site were based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part V of the NYS Sanitary Code. Background conditions and the Division of Fish and Wildlife Technical Guidance for Screening Contaminated Sediments were used for surface water sediments.

Based upon the results of the site characterization in comparison to the SCGs and potential public health and environmental exposure routes, certain areas and media of the site require remediation. These are summarized below. More complete information can be found in the SC and FS Reports.

3.1.1: Nature of Contamination:

As described in the SC Report, a sampling grid was established across the site with nodes at 200 foot intervals. A total of sixty-six cores were taken within the sludge bed and along the beach. In addition, 5 borings of the lake bottom were taken to characterize the subsurface conditions. 183 chemical analyses were performed on samples from these cores. These samples were collected at the site to characterize the nature and extent of contamination.

3.1.2: Extent of Contamination

The Site Characterization Study concluded that the sludge bed occupies an area of the bay that is approximately 34 acres in size. The average thickness of the sludge bed is between one and two feet with the thickness of the bed by Wilcox Dock exceeding ten feet (see Figure #2). The volume of the sludge bed is estimated at 93,000 cubic yards. The waste materials within the sludge bed are contaminated with PCBs. PCB contamination has been detected throughout the bed (up to 1,850 ppm localized). However, the PCB concentrations within the waste materials are not uniformly distributed and there is no practical way to differentiate highly contaminated from lower or non-contaminated material without performing chemical analyses.

Sediments

The analytical results from the sampling performed during the Site Characterization and the previous investigations have shown that the sediments (underlying sands) within Cumberland Bay are for the most part not contaminated with PCBs. The sediment and beach sands that did contain detectable levels of PCBs also contained wood debris. Analytical tests indicate the PCBs are adsorbed on and contained within the wood debris.

Surface Water

The sampling of surface waters within Cumberland Bay did detect low levels of PCBs in the water column over the sludge bed. The water samples collected elsewhere in the Bay did not detect PCBs exceeding the NYS public drinking water standard.

Waste Bed Materials

The sludge bed materials contain levels of PCBs that are considered hazardous waste by legal definition (greater than 50 ppm). However, the distribution of contaminants within the bed is not uniform and most of the volume of the sludge bed may average under 50 ppm of PCB. There are other contaminants present within the sludge at levels much lower than the PCB levels. These chemicals include phthalates, polynuclear aromatic hydrocarbon (PAH) compounds (common petroleum byproducts), polychlorinated dibenzodioxins and polychlorinated dibenzofurans (present at levels often found in paper sludge). These other contaminants are present at concentrations below current action levels. However, the remedial action chosen to remediate the sludge bed PCB's would also address these compounds.

3.2: Interim Remedial Measures:

Interim Remedial Measures (IRMs) are conducted at sites when a source of contamination or exposure pathway can be effectively addressed before completion of the RI/FS.

An IRM consisting of removing contaminated woodchip debris from the beaches of Cumberland Bay started in May 1995. The IRM included an initial beach cleanup and subsequent cleanups were done on an "as needed" basis. Over 220 tons of contaminated material were removed from the Cumberland Bay beaches as a result of this IRM during 1995 and 1996. This IRM will be continued during the 1997 season and until it is determined that the beach cleanup is no longer required.

3.3: Summary of Human Exposure Pathways:

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in the fact sheet dated December 15, 1994 that was released by the NYSDOH and NYSDEC and the Site Characterization Report Addendum No. 1 Baseline Health Risk Assessment and Baseline Environmental Risk Assessment May, 1997.

The major contaminant of concern at the Cumberland Bay Sludge Bed - Wilcox Dock Site is polychlorinated biphenyl (PCB). PCBs cause cancer and non-carcinogenic adverse effects in laboratory animals exposed to high levels over their lifetimes. Whether PCBs cause cancer in humans is unknown. However, chemicals that cause cancer in laboratory animals may also increase the risk of cancer in humans exposed to lower levels over long periods of time. Chemicals that cause adverse health effects in humans and/or animals following high exposure may also increase the risk of adverse effects in humans exposed to lower levels over long periods of time.

Human health effects reported after exposure to PCBs include skin, eye, and respiratory tract irritation and less frequently effects on the liver, nervous and digestive systems. Maternal exposure to PCBs may produce developmental effects on the unborn child.

An exposure pathway is the process by which an individual comes into contact with a contaminant. The five elements of an exposure pathway are: 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Completed pathways which are known to or may exist at the site include:

- Ingestion

This includes ingestion of the PCB contaminated fish from Cumberland Bay. The NYSDOH has issued advisories concerning the consumption of fish from Cumberland Bay and has banned the commercial fishing for yellow perch in the Bay. Nevertheless, it has been documented that human consumption of Cumberland Bay fish continues to some extent and this is the most significant known source of human ingestion of PCB's in Cumberland Bay.

This exposure pathway also includes the incidental ingestion of the contaminated woodchips washing ashore in Cumberland Bay. The contaminated woodchips washing ashore are being addressed via the beach cleaning IRM.

- Direct contact

This includes direct contact with the woodchips washing ashore and contact with the waste bed itself. As noted before, these contaminated woodchips are being addressed via the beach cleaning IRM.

3.4: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures which may be presented by the site. The sampling performed by the NYSDEC since the 1970s has shown the presence of PCBs in certain species of fish within Lake Champlain. The studies also have shown that the highest levels of PCB found in Lake Champlain fish are found in the fish collected from Cumberland Bay. The Cumberland Bay Sludge Bed is a significant source of PCB contamination to fish in the lake. Fish or wildlife that consume PCB contaminated fish have been shown to suffer a host of adverse toxicological effects.

The contaminated sludge bed is in the waters of Cumberland Bay on the lake bottom adjacent to the Wilcox Dock. High concentrations of PCBs have been detected in the sludge bed and PCBs have also been detected in low levels in the water column over the sludge bed itself. The woodchip debris in suspension in the water and washing ashore along the beaches of Cumberland Bay also contains PCBs. Ongoing studies of the sludge bed by the Department, confirm that the bed is being actively eroded and that the PCB contaminated materials found in the bed impact a large area of Cumberland Bay. The PCB congener patterns found in the sludge bed, water column, suspended material off Wilcox Dock, and in the fish taken from over the sludge bed are similar. This pattern differs from the PCB congener pattern found

in the outer Bay and main Lake. Additional studies are planned to refine the Department's understanding of the extent of the sludge bed's impact upon Cumberland Bay and Lake Champlain.

SECTION 4: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination due to the release of hazardous waste as defined under 6 NYCRR Part 371 at a site. This may include past or present owners and operators, waste generators, and haulers.

The Potential Responsible Party (PRP) for the release of PCB to the site, documented to date, is Georgia Pacific Corporation on the basis of the firm being a generator and successor of former generators that discharged waste containing PCB into the bay.

In January 1995, Georgia Pacific denied any responsibility for the release of PCB to the site during a meeting with New York State. However, Georgia Pacific did present a large amount of information in response to the Department's information request. This information alleged that numerous other parties either contiguous to the site or along the Saranac River were site related PRPs for the release of PCB to the site.

To resolve this conflict, the Department retained a PRP search contractor who reviewed this information and gathered new information related to historic waste releases to the site. Based on the information gathered in this process, in September 1996 the Department has again concluded that Georgia Pacific is a PRP for the release of PCB as a hazardous waste to the site although other PRPs may exist for the site and the Department's inquiry in this matter remains open. Georgia Pacific continues to maintain that it is not the source of PCBs at the site.

In December 1994, the NYSDEC and NYSDOH released a fact sheet for the site which confirmed the need to perform the beach cleaning IRM.

On July 6 1995, a referral to conduct an RI/FS using state monies was issued.

In July 1997 the NYSDEC and Georgia Pacific Corporation reached an agreement regarding a settlement of that companies liability for the remediation of the sludge bed.

Upon issuance of the Record of Decision the NYSDEC will approach the PRPs identified up to that time to implement the selected remedy under an Order on Consent. If an agreement cannot be reached with the PRPs then identified, the NYSDEC will remediate the site under the State Superfund. The identified PRPs may be subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 5: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to restore the site to pre-disposal conditions, to the extent feasible and authorized by law. At a minimum, the remedy selected should eliminate or mitigate all significant threats to the public health and to the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- Mitigate the immediate threat to the environment posed by the PCB contaminated sludge bed;
- Rapidly and significantly reduce human health and environmental risks;
- Prevent further environmental degradation resulting from this known source of PCB contamination.

SECTION 6: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy should be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Cumberland Bay Sludge Bed - Wilcox Dock Site were identified, screened and evaluated in a Feasibility Study. This evaluation is presented in the report entitled Feasibility Study Report Cumberland Bay Sludge Bed - Wilcox Dock OU-1, May 1997.

A summary of the detailed analysis follows. As used in the following text, the time to implement reflects only the time required to implement the remedy, and does not include the time required to design the remedy, procure contracts for design and construction or to negotiate with responsible parties for implementation of the remedy.

6.1: Description of Alternatives

The potential remedies are intended to address the contaminated sludge bed at the site.

The Site Characterization Study concluded that the waste materials within the sludge bed were contaminated with PCBs. The PCB concentrations within the waste materials are not uniformly distributed and there is no practical way to differentiate highly contaminated from lower or non-contaminated material without performing chemical analyses. Therefore, any attempts to perform a partial removal of selected portions of the sludge bed were screened out of consideration because it would be neither cost effective nor practical. The entire sludge bed will be addressed as part of any remedial action. The waste material has very different physical characteristics than the surrounding and underlying natural sediments, therefore, several different removal technologies were evaluated during the FS. The specific site conditions including the depth of water, site location and the sludge bed's physical properties make it very amenable to hydraulic dredging techniques. It was determined that this technique would cause the least disruption of the lake bottom and keep resuspension of sediments to a minimum.

The Feasibility Study reviewed the data collected on the PCB concentrations within the sludge bed along with the results from the beach cleaning IRM and used a ratio of 90 % of the sludge bed volume as under 50 ppm (non-hazardous waste) to 10 % as greater than 50 ppm (hazardous waste) to be used as an estimate for the purpose of cost comparison.

ALTERNATIVE 1

No Action

The no action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. Under this alternative, the site would remain in its present condition and human health and the environment would not be provided any additional protection. The existing beach cleaning program would have to remain in effect as long as contaminated debris continued to wash ashore. The existing health advisories on fish consumption would also remain in effect because nothing would be done to mitigate the effects that the sludge bed has on the lake's fauna. Human and wildlife exposure will continue.

ALTERNATIVE 2A

Removal and On-Site "WET CELL" Disposal

See Figure 3 for a conceptual drawing of this alternative. The sludge bed waste materials would be removed using a combination of hydraulic dredging (with measures taken to control resuspended sediments) and dewatering/dry excavation. The sludge would then be placed in a confined disposal facility (CDF) which would be constructed in an area adjacent to the northern portion of Wilcox Dock where the sludge bed is the thickest. The CDF construction would consist of a double-wall sheet pile cofferdam installed to a depth below the highly consolidated till unit underlying the natural bay sediments. However, TSCA has minimum requirements for disposal facilities which are designed to ensure protection of human health and the environment. Because this CDF design would not have a bottom liner, concerns regarding leachate migration associated with this CDF would need the approval from the USEPA Regional Administrator. This CDF would, when constructed, be about four acres in size and encompass approximately one half of the volume (46,000 cubic yards) of the sludge bed in place. This is due to the fact that the sludge bed is the thickest in this area. The remaining 30 acres of the sludge bed would be hydraulically dredged and/or dry excavated and contained within the CDF. Prior to dredging, 2,800 feet of temporary sheet pile would be installed along the perimeter of the dredge area to provide a lower energy environment in which to perform dredging. This would allow the dredge to be more stable in the water, enhancing the effectiveness of precision dredging techniques. If resuspension should occur, the sheet pile wall would limit the transport of suspended material to within the current work area. Upon completion of the sludge bed removal, the CDF would be covered with a low permeability cap consisting of synthetic membranes and soil. Structural surface features or solidification would be considered for achieving the necessary bearing capacity for future use of the dock. The CDF proposed in this alternative would require long term operation, maintenance and monitoring to ensure its structural integrity and to maintain hydraulic gradients to prevent leakage from the CDF. All water generated during the dredging would be decanted from within the CDF and treated prior to discharge back to the bay. An on-site water treatment system would need to be constructed and operated as part of the remedial action. The beach cleaning IRM would be continued on an "as needed basis".

ALTERNATIVE 2B

Removal and On-Site "DRY CELL" Disposal

See Figure 4 for a conceptual drawing of this alternative. The sludge bed waste materials would be removed using a combination of hydraulic dredging (with measures taken to control resuspended sediments) and dewatering/dry excavation. Prior to dredging, 2,800 feet of temporary sheet pile would be installed along the perimeter of the dredge area to provide a lower energy environment in which to perform dredging. This would allow the dredge to be more stable in the water, enhancing the effectiveness of precision dredging techniques. If resuspension should occur, the sheet pile wall would limit the transport of suspended material to within the current work area. The sludge would be dewatered on shore and then placed in a five acre confined disposal facility (CDF) which would be constructed in an area along the shoreline north of Wilcox Dock. This CDF would be constructed in accordance with TSCA landfill requirements, including liner and cover systems constructed above the lake high water level. This CDF would require long term operation, maintenance and monitoring to ensure its structural integrity. All water generated during the dredging and dewatering operations would be treated prior to discharge back to the bay. An on-site water treatment system would be constructed and operated during the remedial action. The beach cleaning IRM would be continued on an "as needed basis".

ALTERNATIVE 3

Removal, Dewatering and Off-Site Disposal

See Figure 5 for a conceptual drawing of this alternative. The sludge bed waste materials would be removed using a combination of hydraulic dredging (with measures taken to control resuspended sediments) and dewatering/dry excavation. Prior to dredging, 2,800 feet of temporary sheet pile would be installed along the perimeter of the dredge area to provide a lower energy environment in which to perform dredging. This would allow the dredge to be more stable in the water, enhancing the effectiveness of precision dredging techniques. If resuspension should occur, the sheet pile wall would limit the transport of suspended material to within the current work area. The sludge would be dewatered on shore and then transported to a permitted landfill for disposal. The dewatering process for this alternative would be more extensive than the dewatering process for Alternative 2 because the dewatered sludge would have to meet all transportation requirements. All water generated during the dredging and dewatering operations would be treated prior to discharge back to the bay. An on-site water treatment system would be constructed and operated during the remedial action. This alternative would not require long term operation and maintenance because the waste would be removed from the site. The beach cleaning IRM would be continued on an "as needed basis".

OTHER ALTERNATIVES

One other alternative was carried through the initial screening process as being potentially applicable for the Cumberland Bay Sludge Bed site. This was the use of on-site treatment by supercritical water oxidation. However, this alternative did not meet the necessary criteria to qualify to be carried through the entire evaluation process. The technology could not process the volume of sludge required to remediate the site in a timely and cost efficient manner. A more detailed description of this alternative is provided in the FS.

6.2: Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6NYCRR Part 375). For each of the criteria, a brief description is provided followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is contained in the Feasibility Study.

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs)

Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

Alternative 1

This alternative would not comply with SCGs.

Alternative 2A

This alternative would be consistent with TSCA for disposal of PCB wastes in that the sludge would be confined in a manner that would be protective of human health and the environment. All sludge would be isolated on site by this alternative. However, this alternative would not be compliant with 6NYCRR Part 608 in that there would be an unacceptable loss of natural resources of the state, specifically a loss of approximately four acres of aquatic habitat that would result from the construction of the CDF.

Alternative 2B

This alternative would comply with the specific requirements of RCRA and TSCA for disposal of PCB wastes. All sludge would be removed from the lake bottom and disposed in a manner that would be protective of human health and the environment. A containment cell would be constructed on the shoreline of the site. However, this alternative would not be compliant with 6NYCRR Part 608 in that there would be a loss of natural resources of the state, specifically a loss of approximately five acres of wetland habitat along the shoreline.

Alternative 3

This alternative would comply with both TSCA and RCRA requirements for disposal of PCB wastes. All sludge would be removed from the site. There would be no long term loss of littoral habitat with this alternative.

2. Protection of Human Health and the Environment

This criterion is an overall evaluation of the health and environmental impacts to assess whether each alternative is protective.

Alternative 1

This alternative would protect the public from the contaminated wood chip debris washing ashore only as long as the beach cleaning IRMs were continued, however, it would not protect the environment or reduce the health risks associated with the consumption of contaminated fish.

Alternative 2A

This alternative would effectively isolate the contaminated sludge and provide protection against migration of PCBs only as long as long term operation and maintenance of the CDF is provided. However, under this alternative there would be a loss of approximately 4 acres of lake bottom adjacent to Wilcox Dock which would become dedicated for the construction of the CDF. The wetlands area along the shoreline would be restored following remediation. This alternative would result in the loss of littoral habitat and the natural resources of the state.

Alternative 2B

This alternative would effectively isolate the contaminated sludge, provide protection against migration of PCBs and greatly limit the potential for exposure. However, under this alternative approximately 5 acres of shoreline would become dedicated for the construction of the CDF. This alternative would result in the loss of littoral habitat and the natural resources of the state.

Alternative 3

This alternative would include the permanent removal of contaminated sludge from the site. The wetlands area along the shoreline would be restored following remediation. It would provide the highest level of overall long-term protection to human health and the environment.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

Alternative 1 (No Action) is included as a procedural requirement of the evaluation process. However, Alternative 1 does not meet the requirements of the first two threshold evaluation criteria as described above. Since it does not meet these criteria, it will not be evaluated under the follows balancing criteria.

Alternatives 2A and 2B were conditionally retained for the balancing analysis. These alternatives are inconsistent with ECL Article 15 and 6NYCRR Part 608 but are retained in the event that other options are not feasible.

3. Short-term Effectiveness

The potential short-term adverse impacts of the remedial action on the community, the workers, and the environment during the construction and implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared with the other alternatives.

Alternative 2A

This alternative would require the disturbance and removal of about one half of the sludge bed material. The potential for impact to the community, workers or the environment would be present during sludge removal activities. Supplying workers with the proper personal protective equipment, monitoring air and water quality during sludge removal, transport and disposal, water treatment and employing engineering

controls, as necessary, would mitigate exposure risks. The time estimated to construct the CDF and remediate the sludge bed is currently estimated at two years.

Alternative 2B

This alternative would require the disturbance and removal of the sludge bed material. The potential for impact to the community, workers or the environment would be present during sludge removal activities. Supplying workers with the proper personal protective equipment, monitoring air and water quality during sludge removal, transport and disposal, water treatment and employing engineering controls, as necessary, would mitigate exposure risks. The time estimated to construct the CDF, dewatering and water treatment facility and remediate the sludge bed is currently estimated at two years.

Alternative 3

This alternative would require the disturbance and removal of the sludge bed material. The potential for impact to the community, workers or the environment would be present during sludge removal activities. Supplying workers with the proper personal protective equipment, monitoring air and water quality during sludge removal, transport, water treatment and employing engineering controls, as necessary, would mitigate exposure risks. The time estimated to construct the dewatering and water treatment facility and remediate the sludge bed is currently estimated at two years.

4. Long-term Effectiveness and Permanence

This criterion evaluates the long-term effectiveness of alternatives after implementation of the response actions. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternative 2A

The long-term risk of exposure for this alternative is low, but not eliminated. The long-term effectiveness of this alternative is directly dependant upon the continued proper operation and maintenance of the CDF and land use restrictions. The sludge bed materials would be contained and isolated within the CDF. The migration of PCBs through the CDF would be negligible due to the low permeability of the CDF walls, floor and cap assuming hydraulic gradients are controlled through the proper operation of the CDF. The sludge bed materials would not be treated, therefore, a failure or breach of the CDF would result in a release of contaminants directly into the lake and a reoccurrence of the health-based and environmental risks.

A CDF should prevent direct contact and migration of the wastes. The implementation of a long-term maintenance plan and land use restrictions for the CDF would significantly reduce the potential for a CDF breach.

Alternative 2B

The long-term risk of exposure for this alternative is low, but not eliminated. The sludge bed materials would be contained and isolated within the CDF. The migration of PCBs through the CDF would be negligible due to the low permeability of the CDF walls, floor and cap. The sludge bed materials would not be treated, therefore, a failure or breach of the CDF would result in a reoccurrence of the health-based

and environmental risks. Proper maintenance and land use restrictions would significantly reduce the potential for a CDF breach.

A CDF should prevent direct contact with and migration of the wastes. The implementation of a long-term operation/maintenance plan and land use restrictions for the CDF would significantly reduce the potential for a CDF breach.

Alternative 3

The long-term risk of exposure for this alternative would be eliminated. The disposal of the sludge in a permitted off-site facility effectively removes the PCB from any potential site receptors. Continued exposure of Cumberland Bay fish is eliminated to the maximum extent practicable, leading to the most certain recovery of the fishery resource.

Off-site, industrial, TSCA or RCRA facilities are designed to achieve the requirement of preventing direct contact and migration of wastes. There would be no long-term maintenance or land use restrictions at the Cumberland Bay site, since the sludge bed would be removed.

5. Reduction of Toxicity, Mobility or Volume

Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative 2A

A reduction in contaminant mobility would be achieved by isolating the sludge in the CDF. The volume would be reduced by a small percentage due to the dewatering process, however, there would be no reduction in toxicity of the contaminants. The sludge bed materials would not be treated, therefore, a failure or breach of the CDF would result in a release of contaminants directly into the lake and a reoccurrence of the health-based and environmental risks.

Alternative 2B

A reduction in contaminant mobility would be achieved by isolating the sludge in the CDF. The volume would be reduced by a small percentage due to the dewatering process, however, there would be no reduction in toxicity of the contaminants.

Alternative 3

A reduction in contaminant mobility would be achieved by removing the sludge from the site and transporting it to a disposal facility. The volume would be reduced by a small percentage due to the dewatering process, however, there would be no reduction in toxicity of the contaminants. However, the threat to the site posed by the waste would be eliminated with this alternative because the waste would be shipped off site.

6. Implementability

The technical and administrative feasibility of implementing each alternative is evaluated. Technical feasibility includes the difficulties associated with the construction, the reliability of the technology, and the ability to monitor the effectiveness of the remedy. Administrative feasibility includes the availability of the

necessary personnel and material evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

Alternative 2A

The technologies to be used in this alternative have been implemented at sediment removal sites. This alternative would require the approval by the USEPA Regional Administrator. The design of the CDF would need to be consistent with the requirements of TSCA Part 761.60(a)(5)(iii). Administratively this alternative would be difficult to implement. This alternative would not be compliant with 6NYCRR Part 608 in that there would be an unacceptable loss of natural resources of the state, specifically a loss of aquatic habitat. Also, Canal Law requires approval from the NYS Thruway Authority and/or the New York State Legislature to change or abandon a barge canal terminal.

The time required to meet the administrative obligations may also extend the remediation time of the project for this alternative. This could also increase the total cost of the remedial action.

Alternative 2B

This alternative is technically implementable. However, administratively this alternative would be difficult to implement. This alternative would not be compliant with 6NYCRR Part 608 in that there would be a loss of natural resources of the state, specifically a loss of the wetland and littoral zone habitat along the shoreline. In addition, gaining access or ownership of the shoreline properties for the construction of the CDF could be problematic and extend the remediation time of the project. The time required to meet the administrative obligations may also extend the remediation time of the project for this alternative. This could also increase the total cost of the remedial action.

Alternative 3

This alternative is both technically and administratively implementable. The potential delays associated with gaining property access and constructing the on-site CDF would be eliminated with this alternative because the waste would be shipped off site. There would also be no permanent loss of aquatic or shoreline habitat.

7. Cost

Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision. The costs associated with each of the alternatives are estimates based on the mean lake level for Lake Champlain, data collected during the site investigation and other assumptions discussed in the FS. Though the actual cost of the remedy will depend upon site conditions at the time of the remedial action, these feasibility level estimated costs are appropriate for the comparison of alternatives under this balancing criterion. The costs for each alternative are presented in detail in the attached Table 1 and summarized as follows:

Alternative 2A

The total present worth cost is \$11,309,000

Alternative 2B

The total present worth cost is \$12,932,000

Alternative 3

The total present worth cost is \$18,366,000

8. Community Acceptance

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is applied after public comments on the Proposed Remedial Action Plan have been received.

Concerns of the community regarding the SC and FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised.

To date, a public meeting was held in Plattsburgh on March 17, 1996 to present the findings of the Site Characterization Study and to discuss the alternatives that passed the evaluation of alternatives in the Feasibility Study. Two separate public meetings (as announced in Section 1 of this document) were held to present the PRAP. However, due to the amount of public interest in the site, the Department extended the public comment period and held eleven additional meetings with various groups to describe the details of the PRAP. The Department has listed the comments received during the comment period and public meetings in the "Responsiveness Summary". In general, the public comments received were supportive of the selected remedy. Comments were received, however, pertaining to several issues including; the anticipated loss of revenue to local businesses during the remedial action and the State providing financial compensation. Other concerns were about the remedial action spreading contamination to the main lake, the effectiveness of removal remedies in reducing contaminant levels in the environment, the increase in traffic that the remedial action will cause, the placement of the temporary sheet pile wall, the time required to perform the remedial action and other specific details of the proposed plan. These comments are covered in detail in the Responsiveness Summary.

SECTION 7: SUMMARY OF THE SELECTED REMEDY

Based on the results of the SC and the FS, and the evaluation presented in Section 6, the NYSDEC is selecting Alternative 3, Sludge Bed Removal with Off-site Disposal, as the remedy for this site. This selection is based on the following advantages that Alternative 3 has over Alternatives 2A and 2B:

- Removal and off-site disposal is the most permanent and effective remedy for restoring Cumberland Bay and the lake for unrestricted future use;
- This alternative is the most permanent and effective remedy for restoring the fishery;
- There will be no long-term on-site maintenance associated with sludge bed removal and off-site disposal;
- The potential delays associated with acquiring property or administrative approvals for the on-site CDF are eliminated;
- Alternative 3 is administratively consistent with the Department's policies and State law (Article 15 and Article 24) on wetland protection, shoreline and lake development;
- There will not be a loss of 5 acres of wetlands or four acres of lake bottom associated with this alternative as would be the case for the other on-site alternatives;

- There will not be a hazardous waste landfill located within the City or along the shore of Lake Champlain;
- This alternative eliminates the potential of recontamination of the lake if a CDF were breached, leaked or otherwise failed;
- The complete removal of waste from the site will allow the potential for the site to be delisted as opposed to re-classified;
- This alternative will provide unrestricted recreational use of the lake in this area that would not be provided by the other alternatives;

The estimated cost to implement the remedy is \$18,366,000.

This does not include the cost for the continuation of the beach cleaning IRM. The cost estimate for the IRM is \$150,000 per year.

The elements of the selected remedy are as follows:

- A Remedial Design to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Uncertainties identified during the SC and FS will be addressed;
- Isolating the sludge bed with temporary sheet piling and silt curtains;
- The sludge bed waste materials would be removed using a combination of hydraulic dredging and dewatering/dry excavation;
- Construction and operation of a temporary sludge dewatering facility on site;
- Construction and operation of a temporary waste water treatment facility on site;
- The transportation and off-site disposal of the dewatered sludge;
- Restoration of site wetlands;
- Confirmatory sampling and use of mitigative measures, if required;
- Continuation of the beach cleaning IRM as needed.

SECTION 8: HIGHLIGHTS OF COMMUNITY PARTICIPATION

As part of the remedial investigation process, a number of Citizen Participation (CP) activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

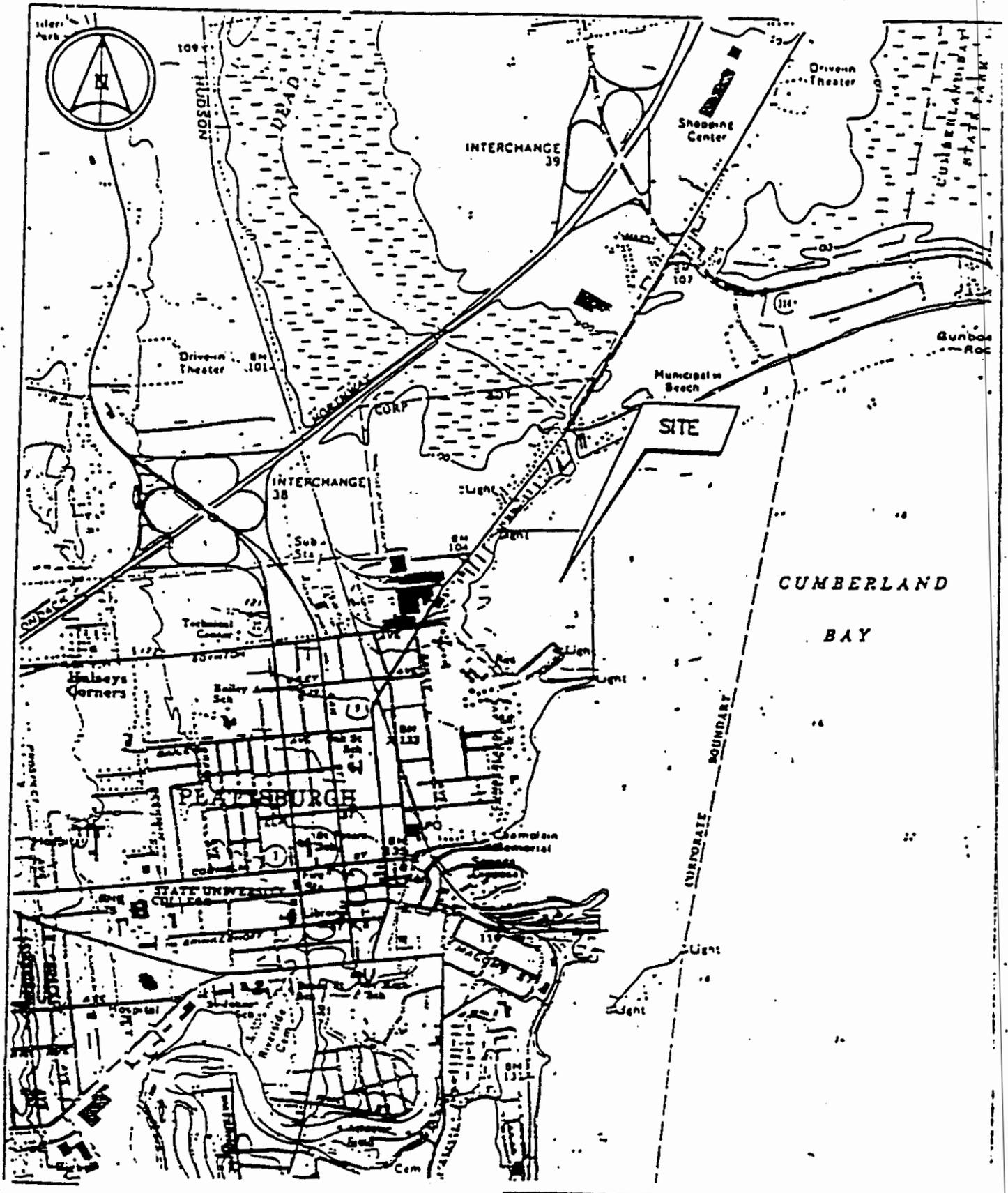
- A repository for documents pertaining to the site was established.
- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.
- Public meetings were held on several dates to present the results of the investigation , feasibility study and the PRAP.
- In December 1997, a Responsiveness Summary was prepared and made available to the public, to address the comments received during the public comment period for the PRAP.

Table 1

Task	ALTERNATIVE 2A WET CDF	ALTERNATIVE 2B DRY CDF	ALTERNATIVE 3 OFF-SITE DISPOSAL
hydraulic dredging	\$564,000	\$1,116,000	\$1,116,000
shoreline sludge removal	\$474,000	\$ 474,000	\$474,000
sheetpiling/siltcurtain resuspension control	\$672,000	\$672,000	\$672,000
monitoring	\$166,000	\$222,000	\$222,000
CDF construction	\$3,526,000	\$2,421,000	
sludge dewatering		\$1,860,000	\$3,255,000
water treatment system	\$1,199,000	\$1,199,000	\$1,199,000
off-site disposal			\$6,270,000
wetlands restoration	\$160,000	\$160,000	\$160,000
total direct costs:	\$6,761,000	\$8,124,000	\$13,368,000
engineering (25%)	\$1,690,000	\$2,031,000	\$1,774,000
contingency (20%)	\$1,352,000	\$1,625,000	\$2,674,000
bottom restoration (sand)	\$550,000	\$550,000	\$550,000
total indirect costs:	\$3,592,000	\$4,205,000	\$4,998,000
annual O&M costs:	\$62,000	\$39,000	
present worth O&M costs:	\$956,000	\$602,000	
present worth costs: (direct, indirect & O&M)	\$11,309,000	\$12,932,000	\$18,366,000

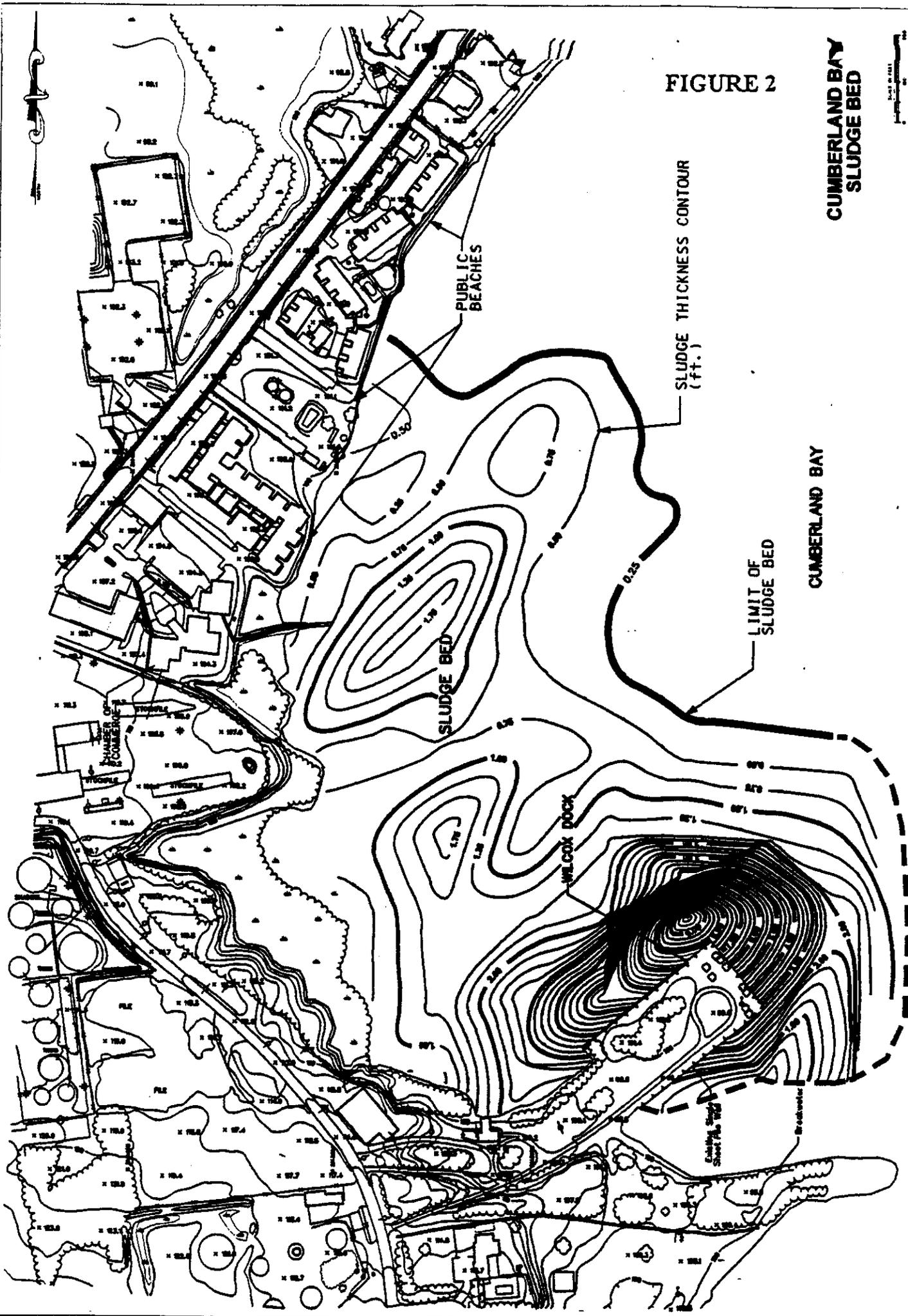
SITE LOCATION MAP

FIGURE 1.



CUMBERLAND BAY SLUDGE BED

FIGURE 2



CUMBERLAND BAY

PUBLIC BEACHES

SLUDGE THICKNESS CONTOUR
(ft.)

LIMIT OF
SLUDGE BED

SLUDGE BED

WELCOX DOCK

Coaling Street Pier
Water Tower

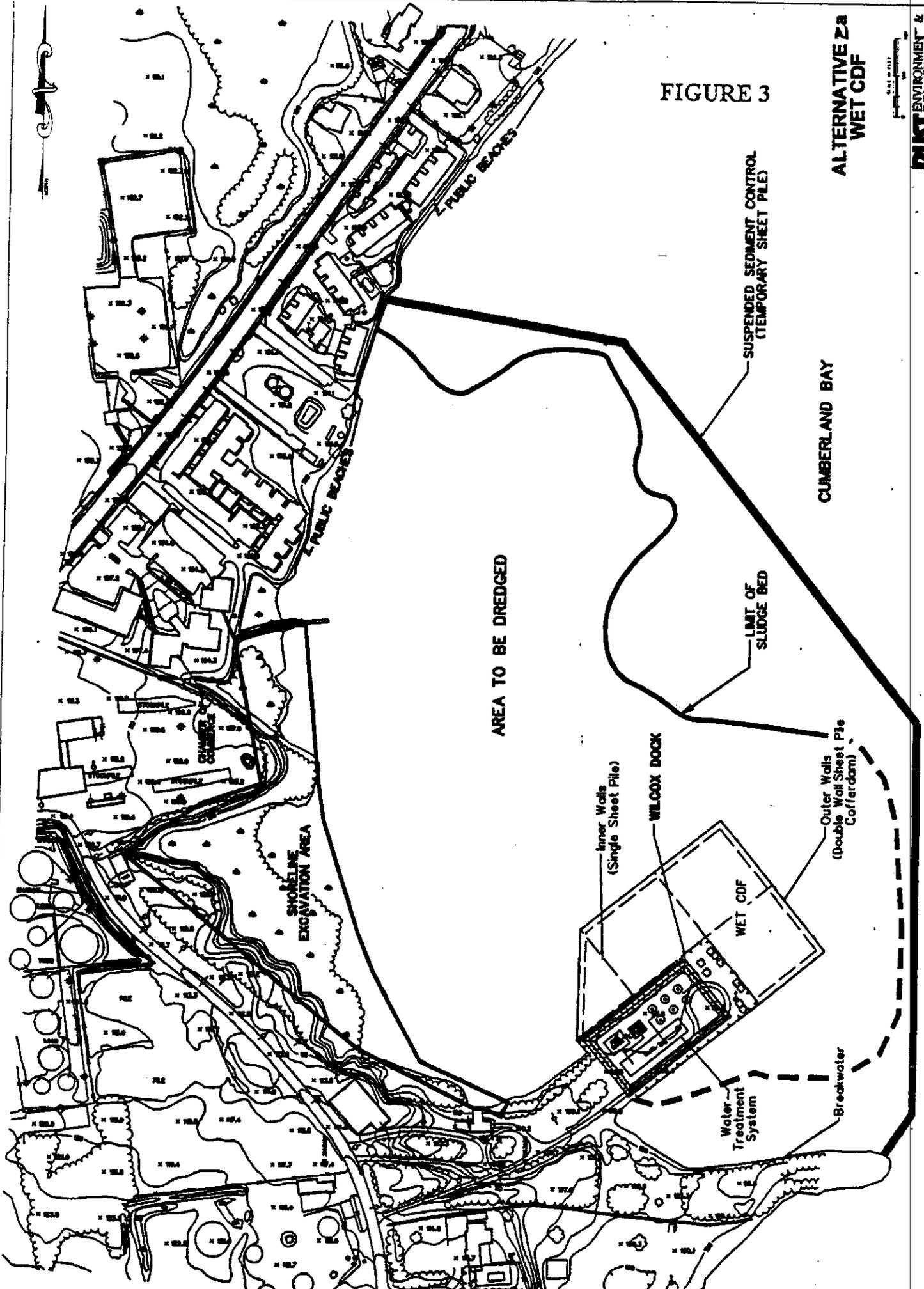
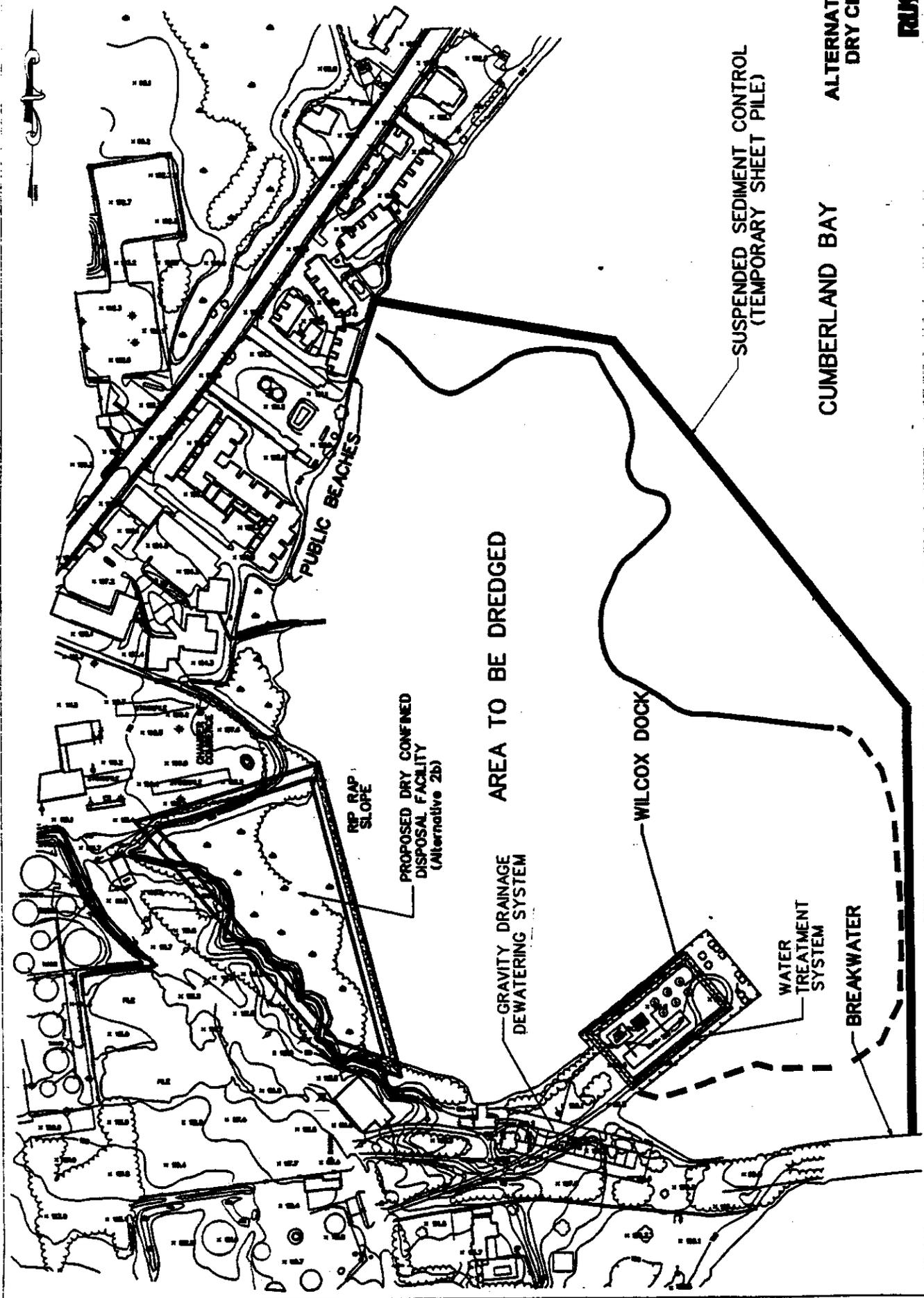


FIGURE 3

ALTERNATIVE 2a
WET CDF

FIGURE 4



CUMBERLAND BAY

ALTERNATIVE 2b
DRY CDF

AREA TO BE DREDGED

PROPOSED DRY CONFINED
DISPOSAL FACILITY
(Alternative 2b)

GRAVITY DRAINAGE
DEWATERING SYSTEM

RP RAP
SLOPE

PUBLIC BEACHES

SUSPENDED SEDIMENT CONTROL
(TEMPORARY SHEET PILE)

WILCOX DOCK

WATER
TREATMENT
SYSTEM

BREAKWATER

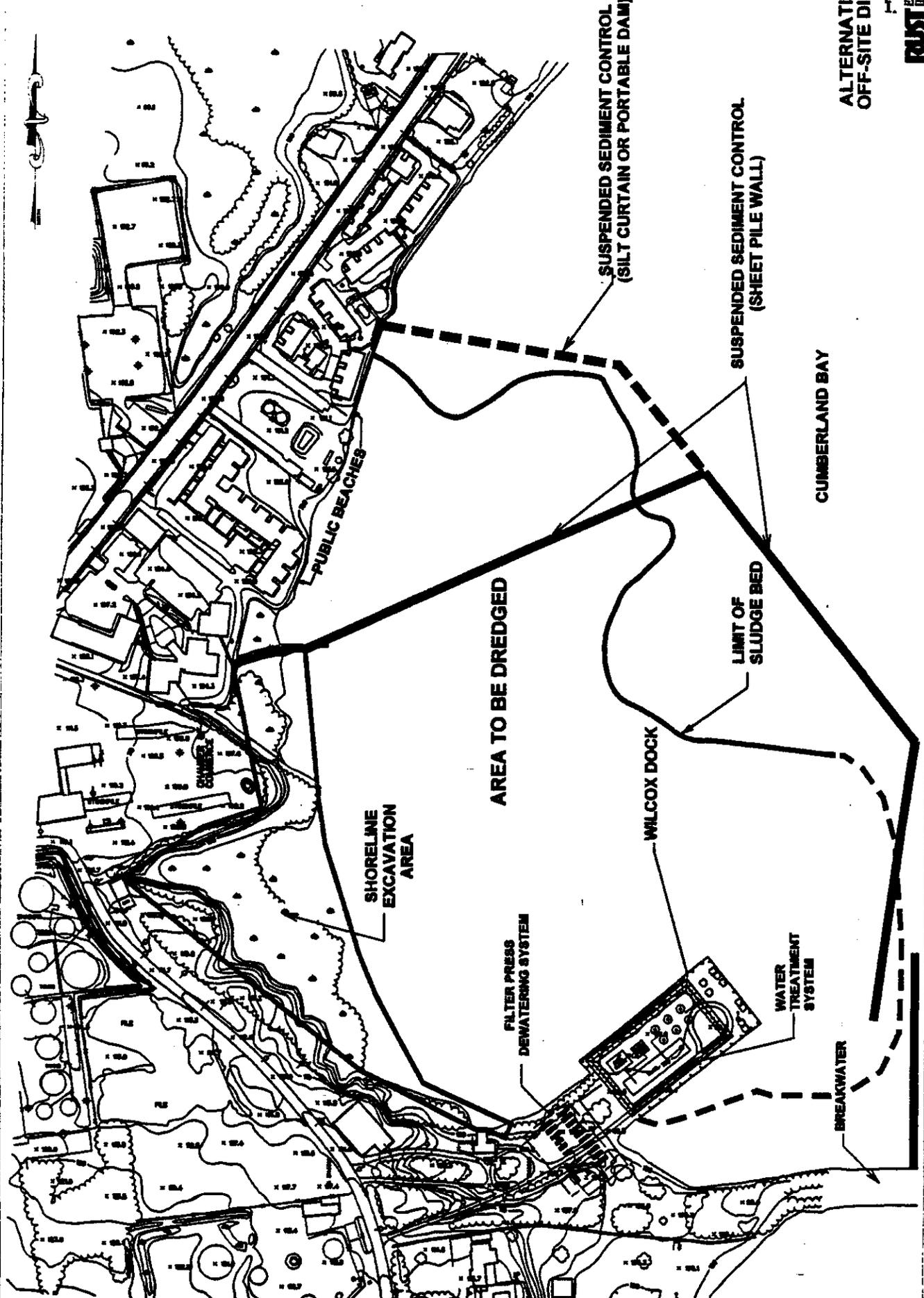
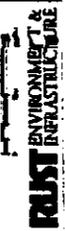


FIGURE 5

ALTERNATIVE 3d -
OFF-SITE DISPOSAL



**APPENDIX A:
RESPONSIVENESS SUMMARY**

QUESTIONS RECEIVED DURING PUBLIC MEETINGS AND PRESENTATIONS

Questions concerning the investigation:

1 - question: What is the extent of the contaminated area?

response: The sludge bed covers an estimated 34 acres of the lake bottom and shoreline by Wilcox Dock. The debris from the sludge bed is currently washing ashore and about 2 miles of beach is being cleaned by the NYSDEC. This includes the City and State park beaches.

2 - question: Are there other sludge beds in the lake?

response: There is another sludge bed in the lake near Ticonderoga, but it is not contaminated with PCBs.

3 - question: How big is the sludge bed?

response: The sludge bed covers about 34 acres of the bottom and shoreline of Cumberland Bay.

4 - question: 50 ppm is the concentration of PCBs for a site that is considered a hazardous waste site. How was the determination made that the PCB concentration was greater than 50 ppm and what was the highest reading?

response: Samples of the sludge were collected from the lake bottom and shipped to an environmental laboratory for analysis. The highest PCB concentration in the sludge bed material sampled to date is 1,850 ppm.

5 - question: How was the volume of the bed calculated?

response: A sampling grid was established over the sludge bed and the thickness of the sludge was measured at each point. The average for each grid section was determined and added together to estimate the volume.

6 - question: What is the average depth of the sludge bed?

response: The average thickness of the sludge bed is about two feet with a maximum thickness of about ten feet.

7 - question: When did the mill stop dumping into the lake?

response: 1973

8 - question: Is there sludge under the buildings along Margaret Street by the site?

response: There is not direct evidence to verify that there is sludge under the buildings along Margaret Street. There would be no complete pathway for exposure even if there were some sludge buried there. This issue will be examined further during the second operable unit of the site.

Questions concerning the feasibility study:

9 - question: Have you considered shipping contaminated material by barge?

response: That option was discussed during the FS. However, at this time that mode of transportation may not be feasible. The mode of transportation of the material detailed in the FS was trucking because that mode of transport is currently in use and there exist accurate cost figures for it. The final mode of transport of the waste will be determined during the design or as a part of the contractor's bid package.

10 - question: What economic impact analysis was done, specifically with regard to the businesses adjacent to Cumberland bay as well as the City and State beaches?

Response: An economic impact analysis was not performed as part of the remedial investigation for the site. There are several actions already underway that are specifically aimed at relieving some of the potential economic impacts from the site. These include the State funded beach cleaning IRM. The benefits of this IRM are that it allows for the continued use of the beaches that are currently impacted by waste from the site washing ashore and that the cost of removing and disposal of the waste is not borne by the property owners. This action is currently costing about \$150,000 per year. In addition, the construction and removal contractors will have many employees on site for the duration of the project. Typically, these workers will require lodging in the vicinity of the site. Also, there are many products and services that can be purchased locally.

11 - question: Were in-situ alternatives eliminated only because of time constraints?

response: No, although that was one of the screening criteria. In-situ technologies were eliminated because they either were not applicable to this type of waste, would not be effective in a shallow water environment or would have adversely impacted the environment.

12 - question: Can bio-degradation be used?

response: Bio-degradation has received a great deal of attention and research in the last few years.

To date, it has not been demonstrated to be an effective remedial alternative for in-place PCB destruction.

13 - question: How are costs based?

response: The methods for performing the cost analysis are detailed in the Feasibility Study and conform to NYSDEC and USEPA guidance.

14 - question: Have you looked globally for places to take the waste?

response: No. There is an international agreement regarding the shipping and disposal of hazardous wastes. The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal imposes a series of obligations on parties regarding the shipments of hazardous wastes. Many countries have imposed bans on the importation of PCBs. Additionally, the costs for transportation would be prohibitive if the waste could be shipped overseas.

15 - question: Is the sludge compactable? Can it be compacted and stabilized and left in place?

response: These treatment technologies were evaluated during the Feasibility Study and dropped because the sludge material is not suitable for this method of remediation and if it were, the resultant mass of solidified sludge would have a negative impact of the ecology of the bay.

16 - question: What is the temperature at which the PCB waste has to be incinerated?

response: The temperature must be a minimum of 1,800 degrees Fahrenheit.

17 - question: Why can't cement kilns be used?

response: If a PCB waste is to be incinerated, it must be shipped to a permitted hazardous waste disposal facility. Cement kilns normally are not permitted for the incineration of hazardous waste.

18 - question: Did the State use a manufacturer's estimate or did it look at other sites to determine the dredging rate estimate?

response: The NYSDEC and its consultant have evaluated several environmental dredging projects across the country and used the results from these projects along with the waste characteristics to develop the dredge rate used in the Feasibility Study.

19 - question: With the on-site disposal alternatives, Were 100 year storm events considered?

response: Yes. 100 year storm events were considered because of the long term operation and

maintenance requirements. The highest recorded lake level was used, this elevation of approximately 102 feet above mean sea level was used for developing the conceptual designs.

Questions concerning the selected remedial alternative:

20 - question: How often do beach cleaning events occur?

response: The initial cleanup is to be completed prior to Memorial Day weekend each year. The maintenance cleanings are done on an as-needed basis. There are weekly inspections.

21 - question: Is anyone monitoring the sludge washing up on the beach?

response: Yes. The beaches are inspected weekly during the summer and cleanup is undertaken when it is determined that it is required.

22 - question: Will beach cleaning continue even in the future when the PCB contamination is gone?

response: The beach cleaning will continue during the removal activities and the beach cleaning will continue as long as the NYSDOH determines that it is required for the removal of PCB waste washing up on the beaches.

23 - question: What are the goals from the dredging and what will be the uses of the bay when it is over?

response: The goals of the cleanup are to:

- mitigate the immediate threat to the environment posed by the PCB contaminated sludge bed;
- rapidly and significantly reduce human health and environmental risks;
- prevent further environmental degradation resulting from this known source of PCB contamination.

There should be no restrictions on usage of the Bay resulting from the remedial program when the cleanup is completed. The fish advisories will remain in effect until the NYSDOH revises them based on post remedial monitoring results.

24 - question: Will the mouth of the Saranac River be restricted during the cleanup?

response: No.

25 -question: What is the potential for odor and how will it be prevented?

response: Generally, dredged material has the potential to cause odors when sulfur-bearing compounds, especially hydrogen sulfide, are released into the air when the material is pumped to the surface. The odor potential depends on the total amount of sulfide in the material, and on the general chemistry of the material (ph, organic content, oxidation/reduction potential). This potential will be further defined during the design of the remedy. The hydraulic dredge system is essentially enclosed until the material reaches the treatment facility. If necessary, additives can be added at the treatment facility to adjust the chemistry of the dredged material to control odors, the use of surface applications of suppressants or other methods.

26 - question: Will Cumberland Avenue be closed during the project?

response: There are no current plans to close Cumberland Avenue to traffic. However, the details of any truck routes and temporary traffic routes will be determined in consultation with the City of Plattsburgh.

27 - question: Will there be mooring restrictions?

response: There should not be any mooring restrictions outside the temporary sheet piling. There will not be public access to the actual site within the work zone during the cleanup project.

28 - question: Where will the material be trucked to?

response: The waste will go to a permitted commercial disposal facility. The non-hazardous portion of the waste (less than 50 ppm) can legally go to a Part 360 landfill given certain conditions, however, it is up to the operator of the facility to decide if the facility will bid on the waste disposal contract. To date, no local facility has chosen to participate in the disposal of the waste generated from the beach cleaning IRM.

29 - question: Will they be open trucks?

response: The transportation of the waste from the site must conform to Department of Transportation regulations regarding the shipment of hazardous materials. The trucks will be covered.

30 - question: Could you elaborate on the future use of the dock?

response: The NYSDEC and NYSDOT have a memorandum of understanding which has a section on the potential development of the Wilcox Dock. Development plans were drafted in 1992, the same year that the PCBs were discovered in the sludge bed. The plans are for the

construction of a boat launching facility with parking. The implementation of these plans are on hold until the hazardous waste issues at the site are addressed. The State is currently discussing other redevelopment options with the City of Plattsburgh. After the sludge bed removal is completed, there will be no restrictions on the future use of the area from the hazardous waste program.

31 - question: What will the State do to reduce the time required for the cleanup?

response: The NYSDEC has reviewed the processes used at several other remedial projects in NY and other states to evaluate the treatment systems that are being used and is looking at ways to increase productivity. The processes that are applicable to the waste at the Cumberland Bay site will be evaluated and the potential time savings associated with details such as increasing the treatment system size will be included in this evaluation.

32 - question: The state has \$100,000 earmarked for developing future recreational venues at Wilcox Dock. It should be using that money now.

response: Beginning the redevelopment of the dock for recreational uses prior to the completion of the remedial activities would be a waste of taxpayer money because of the extensive construction requirements of the cleanup project at the dock. The most cost effective manner to deal with the future development of the dock area is to incorporate the infrastructure of the cleanup project with the future use plans. The conceptual plans for the redevelopment of Wilcox Dock including a boat launching facility have been formed and the State is interested in any ideas that the community may have on this issue.

33 - question: If the dewatered sludge is to be placed in an approved landfill it should be confined and the specific site identified in order to facilitate complete breakdown of PCBs should feasible technologies become available.

response: The waste will be sent to a facility permitted to handle this PCB contaminated waste. These facilities do keep records as to where all waste is placed in their landfills.

34 - question: One estimate holds that up to 40,000 truck trips may be required to remove the material. What are DEC's estimates?

response: The DEC estimates that there will be about 4,000 truck loads of waste leaving the site. There will also be a number of trucks in and out of the site to deliver the necessary supplies and equipment to perform the cleanup. The current estimate is less than twenty trucks trips per day based on a duration of two construction seasons.

35 - question: What will be the impact be on city streets and what compensation and or repairs will be provided?

response: This will be estimated during the design and measures will be taken to minimize the impact on the city streets.

36 - question: What will the impact be on traffic and noise?

response: There should be little additional impact on traffic in the site area. The site and the most likely truck route is already in an industrial area. The site is within one half mile of Interstate I-87. There will be no need to route site traffic through any residential areas.

37 - question: What hours will this activity be limited to, if there is a limit?

response: Most site related traffic should be during the day, however, this can be coordinated with the City and local residents.

38 - question: What is the target level DEC hopes to achieve of remaining PCB contamination?

response: The NYSDEC has not set an action level. The goal of the remedial action is the removal of the sludge bed in its entirety.

39 - question: How will this be assessed and monitored?

response: The current plan for performance monitoring of the removal activities will include both visual and analytical methods of verification.

40 - question: What happens if this target level is not found to have been met?

response: If it is found that an area still contains sludge, a determination will be made as to the best method of addressing the issue. This would include making another pass with the removal equipment or attempting to use a different removal method.

41 - question: What are the chances that further dredging or remedial action will be required and pursued beyond 2 years?

response: The NYSDEC believes that the proposed schedule of two full construction seasons to complete the removal activities is realistic, however, unusually high lake levels or adverse weather conditions could have a severe impact on the project schedule.

42 - question: Where will the sheet pile wall tie into the shoreline?

response: Due to the response from the figures used at the public meetings depicting the temporary sheet pile wall, the actual placement if the wall will be addressed during the initial stages of the design. An alternate placement of the wall presented during the August public meeting seemed to address many of the public's concerns. The wall will be designed in a manner

to minimize its impact on local businesses and residents.

43 - question: The sheet pile wall will take the form of an unsightly wall which will enclose us in an area of constant noise, fumes and vibration and will ruin our view of the lake.

response: The sheet pile wall is not planned to enclose any dwelling or business within it. There are engineering controls that will be developed during the design that should address the aesthetic aspects of the wall. The dredging operation will not generate any more noise than that of a power boat and will not generate fumes or vibration.

44 - question: What will the sheet pile wall look like?

response: The temporary sheet pile wall construction details will be determined during the design of the project. The height of the wall, its placement, its visual impact and public perception will be taken into consideration.

45 - question: How long will the wall be there and what will it be made of?

response: It is anticipated that the remediation will require two construction seasons. Parts of the wall may be removed after a given area within the wall is remediated. This scenario will be given a more detailed evaluation during design. Most walls of this type are made of steel piles although other materials have been used.

46 - question: How high will the sheet pile wall be?

response: This issue has caused a great deal of concern with local businesses and residents. The NYSDEC is currently discussing this issue and others with the USCOE which has jurisdiction over these matters. The outcome of these discussions will determine the required height of the temporary wall. It appears that the height of the wall could be several feet lower than that stated at the public meetings. The figure given at the public meetings was based on the height requirements of a permanent structure, such as an in-lake containment cell.

47 - question: What kind of safety devices are to be used?

response: The construction and maintenance of the temporary wall will follow US Coast Guard and DOT requirements.

48 - question: With regard to the drying facility/ process and the adjacent treatment facility what will this all look like when built and operating?

response: The design of the treatment facilities will be conducted during the winter of 1997/8. A part of the design process includes determining the optimum size of these facilities to complete the removal in the most time effective and cost effective manner. Exactly what these facilities will

look like will not be determined until the completion of the design. Projects of a similar nature have utilized treatment facilities that had a footprint of two to five acres and looked similar to small municipal wastewater treatment facilities.

49 - question: Will process water be treated prior to discharge back to the lake?

response: Yes. The water generated from the removal activities will be treated to remove PCBs prior to its return to the Lake.

50 - question: When you put it in a landfill you may eventually still have to deal with it won't you?

response: This is one of the reasons that the on-site landfill alternatives were screened out of consideration for the preferred remedy. The hazardous waste program of NYS like that of the federal government prefers permanent remedies when possible. In this case, the destruction of the waste is cost and time prohibitive. The DEC has selected a remedy that is permanent in relation to the site and Lake Champlain, in that the waste will be removed from the site thereby allowing the potential for the site to be delisted.

51 - question: Isn't there a long term cost associated with that?

response: Yes, there is a long term commitment associated with any hazardous waste landfill. The commercial landfills include the estimated cost of this commitment in their tipping fee.

52 - question: Will a new landfill be constructed in the county for the 90% of the waste which is non-hazardous?

response: This is very unlikely. The time frame which this project is following would preclude the construction and permitting of a new landfill. The waste from the site will, in all likelihood, be shipped to an existing facility.

53 - question: Why can't you do the remediation in the winter?

response: The Lake surface freezes in the winter. The removal of the sludge cannot be performed when the Lake is frozen and the treatment systems would be difficult to operate in subfreezing temperatures.

54 - question: Truck traffic may impact tourist traffic.

response: It is anticipated that the impact from site related traffic because of the cleanup will be minimal. The most likely traffic route for the site would be through an area that is currently an industrial area.

55 - question: What is the definition of a workday?

response: It is anticipated that the in-lake activities will be conducted using a 8 to 12 hour workday and that the treatment facilities will be operating on a 24 hour schedule.

56 - question: Can work start in spring 1998?

response: The current schedule for the project estimates that site preparation work may begin in the fall of 1998. The design and bidding process are expected to be completed by the end of summer 1998.

57 - question: How will the water intake for the Georgia Pacific mill be protected during the remediation?

response: The temporary containment wall will be designed to allow for the continued flow of lake water to the mill intake.

58 - question: How often do beach cleanups occur?

response: There are weekly inspections during the summer with cleanups performed on an as-needed basis.

59 - question: Is the cost of the beach cleaning part of the \$18 million?

response: No. The cost of the beach cleanups is not included in this estimate. It is being contracted separately on an annual basis by the NYSDEC Bureau of Construction Services.

60 - question: Will all of the water need to be removed behind the containment wall before the area is dredged?

response: No. However, there will be a portion of the site that will be excavated instead of hydraulically dredged because the water depth is too shallow to allow the dredge to operate in the area. The water from this area will have to be removed.

61 - question: Will the remediation process be loud?

response: Yes. Certain parts of the project may be noisy. These would include the installation of the sheet pile wall and construction of the treatment facilities. However, there are techniques for installing the wall that are far less noisy than the conventional methods (such as vibrating beams). Otherwise, the project should not be any louder than a normal construction project. Noise mitigation will be addressed during design, including the feasibility of enclosing noise-generating equipment.

62 - question: Will the wall create stagnant water which will have a horrible stench?

response: This is not expected to occur but will be looked at in detail during the design phase of the project. There are several engineering controls that can be used to prevent this from occurring, if the potential exists.

63 - question: What visual impact will the treatment facilities have on the bay, on visitors and on the community?

response: The visual impact from the selected remedy is far less than the impact from any of the other alternatives which would have required a permanent hazardous waste landfill be constructed at the site. The treatment facilities will be located near or on the Wilcox Dock and breakwater. The temporary wall will enclose the majority of the sludge bed. The exact position and height of the temporary wall will be determined during design with a goal of minimizing the visual impact on residents.

64 - question: Will material be backfilled to replace the sludge that is removed?

response: Yes. The amount of material to be backfilled will be determined during design. The NYSDEC has already started discussions with the USCOE on this issue. It is likely that the wetland area of the site will require material to be backfilled as part of the restoration project.

65 - question: What about the structural integrity of adjacent structures?

response: None of the waste is adjacent to any existing structures other than the dock itself. Therefore, it is not believed that the structural integrity of any existing structure should be impacted by the removal of the sludge from the lake.

66 - question: Will there be a resuspension of materials during dredging?

response: Resuspension of the sludge material will be minimal based on the waste characteristics and experience from other paper pulp sites where environmental dredging has been performed. There will be precautions taken to minimize resuspension during the removal activities. Turbidity levels will be monitored during the removal activities.

67 - question: Are you 99% certain that this will work and you don't need to go back a third year?

response: The actual time it takes to perform the remediation will depend on many factors including the weather. The NYSDEC feels that the estimate of two construction seasons for the actual removal of the sludge bed to be an accurate estimate.

68 - question: What is the estimated impact of tourist perception of recreating in a bay while a

"toxic removal" project is underway?

response: There are several impacts to tourism from the site now. These include; the contaminated waste material washing ashore, the current fishing ban and the health advisories. It is hoped that the public would recognize that the removal of a "toxic waste site" from the lake is superior to the "toxic waste site" remaining in the lake.

69 - question: What compensation will be provided to directly affected motels and businesses?

response: The NYSDEC cannot provide compensation to businesses for being near a hazardous waste site. However, this does not preclude the impacted businesses from pursuing other legal options. The remediation of the site will require the products and services of many local businesses during the project duration. It is hoped that the anticipated improvement in fishing and other recreational opportunities will enhance future commercial opportunities in the area.

70 - question: Our property during the time it takes to complete this project will be unmarketable and unmortgageable. What value will our businesses possess to support the balance of our mortgage? What risk will the bank be willing to take based on the fact that we now exist as part of a hazardous waste project?

response: The businesses along Cumberland Bay are not considered part of the Cumberland Bay Sludge Bed - Wilcox Dock Site. Occasionally, at other locations where businesses are near a hazardous waste site such properties have been considered to be devalued. It is unfortunate, but this perception exists at hazardous waste sites across the State and Nation. The Department is available to discuss the site and its impacts on local property with any lending institution that would be interested, however, the State cannot require any institution to lend someone money. While the Department cannot guarantee property values in any given area, these often increase when a hazardous waste site is remediated and removed from the state registry.

71 - question: This process does not comply with the Basin Plan in terms of the process which NYS committed to. Some officials have attributed this to the fact that this project was already underway.

response: This project is consistent with the Basin Plan, specifically, 1) the process has brought together, informed and involved the key groups, 2) facilitated an information exchange, 3) informed and involved the public, and 4) provided a better understanding of the issues. Also the Basin Plan does not usurp the authority of the involved Agencies in administering their programs. The process that is being followed for this project is required by Statute and Regulation.

Questions concerning the PRPs:

72 - question: Two specific PCB aroclors were found in the lake. Are either tied to a specific industrial process?

response: The PCB aroclor 1242 is the prevalent aroclor found at the site although 1254 was also detected at much lower concentrations. Aroclor 1242 was used in the paper industry during the manufacture of carbonless copy paper. During the late 1950's through the early 1970's paper mills that used recycled office paper (including carbonless copy paper) as their feedstock were often using a feedstock that was contaminated with PCBs. The PCBs were released to the mill's waste stream during the deinking process. At the Plattsburgh mill, this waste water was discharged to Cumberland Bay, and along with it, PCBs.

73 - question: None of the DEC's alternatives were the same as GP's. Why?

response: The NYSDEC developed the remedial alternatives as part of a detailed analysis called a Feasibility Study. Georgia Pacific had presented a conceptual alternative that they stated was a modification of a NYSDEC alternative. Specifically, a modification of the NYSDEC Alternative 2A.

74 - question: Who is paying for the cleanup?

response: Currently, the anticipated costs will be funded as allowed under law from the State Hazardous Waste Remedial Fund. A significant amount of the present and anticipated costs have already been reimbursed to the Fund as part of the Georgia Pacific settlement. Future reimbursements of these costs may be possible from additional PRP's when identified.

75 - question: GP has said that they want to contain the material on site. Who makes the decision on what alternative is chosen?

response: The decision is made by the NYSDEC in partnership with the NYSDOH. Public opinion is also taken into consideration. That is the purpose of the Citizen Participation program, the public comment period and the public meetings.

76 - question: Why aren't any of the state's proposals similar to GP's?

response: As stated above, the GP proposal was conceptually developed after GP reviewed the alternatives that were developed by the NYSDEC and was described by GP as a modification of the NYSDEC alternative 2A.

77 - question: You have known since 1979 that there was a PCB problem in the lake. Why did it take so long to track down the sludge bed?

response: The NYSDEC has been investigating this issue for a number of years and has investigated various sites in the area. Although it was known that the sludge bed has been a nuisance for years and that throughout the disposal history of the site there have been numerous coliform problems associated with the sludge bed, it was not determined to be a PCB problem until 1992.

78 - question: Does the GP plan call for building a barrier wall and capping?

response: GP and the NYSDEC have reached a settlement and GP's proposal is no longer being offered as an alternative.

79 - question: Is GP going to continue monitoring and pay for the cost of monitoring?

response: GP and the NYSDEC have reached a settlement where GP will contribute \$9 million towards the remediation of the site. Any costs above that will come from the Hazardous Waste Remedial Fund. The NYSDEC will provide for site monitoring.

80 - question: The GP proposal included a lot of recreational components. Will any of those be incorporated in this plan?

response: While State law prohibits the use of remedial monies for recreational purposes alone, it is anticipated that certain aspects of the remedial program will enhance future recreational uses of this area. These enhancements include the improvement of access roads, site preparation and the construction of a boat launch. Money for recreational development of the Wilcox Dock will have to come from outside this program. A private corporation, municipality or individual may aid in the future development of the dock after the remediation is complete. These plans will be made in coordination with the local community and other state agencies.

81 - question: Does the city own any of the property?

response: No.

82 - question: What is the City's position on the project?

response: The City of Plattsburgh has issued three recommendations and its conditions for acceptance of the State's plan. They are:

- Business and land owners will lose income and experience depreciated property values during the remediation activities. Reimbursement for these losses must be provided.
- Minimal impact to the Cumberland Avenue residential area and traffic flow must be assured. Provisions for emergency vehicle access and street reconstruction must be made.

- That at least \$100,000 is presently reserved for the development of the Wilcox Dock area for recreation and public use. The city intends to take a strong role in helping DEC formulate the ultimate reuse plan, but expects DEC to assume the development costs and long term operation and maintenance responsibilities.

Questions concerning human health and the environment:

83 - question: Will the project cleanup the environment so that the fish advisories can be dropped?

response: That is a goal of the project. There is evidence of this occurring at other sites across the country where environmental dredging has been completed. The sludge bed has been identified as the major source of PCBs to Cumberland Bay and the removal of the bed should allow the advisories on the fishery to be relaxed.

84 - question: How do you explain finding PCBs in fish but not in lake water?

response: PCBs were detected in the water column over the sludge bed. Additionally, PCBs are bioaccumulative. Bioaccumulation is a combination of uptake directly from the water column and from the food web. PCB uptake from the water column (called bioconcentration) can result in concentrations in the fish which are 100,000 times or more than water concentrations. If PCB concentrations are 20 parts per trillion in water (which is below the detection limit for PCB by most analytical techniques) this would result in PCB in some fish species that average about 2.0 parts per million, the U. S. Food and Drug Administration tolerance for PCB which defines whether fish are acceptable for consumption. Therefore, desorption of PCB from the sediments (or in the case of this site, the sludge bed) to the water column, even in small quantities, can be problematic. Similarly, PCBs are acquired from food organisms which reside in or near the surface of the PCB contaminated sediments or waste material. The food organisms may have PCB concentrations that are similar to those in fish.

85 - question: Are there health risks from exposure to PCBs from this site?

response: The waste material of the sludge bed contains the highest concentrations of PCBs at the site. The material washing up on the beaches is also contaminated with PCBs. While the health concern from the levels found in the beach material is low, it is prudent to avoid exposure to PCBs. In children born to mothers that regularly eat PCB contaminated fish, PCB has been linked with neurological impairments including reduced visual acuity, reduced fine locomotor skills, and reduced IQ. Based on the determination of the New York State Department of Health, the health risk is considered sufficient to warrant closure of the commercial fishery for yellow perch, and the issuance of health advice for consumers of yellow perch, American eel and brown bullhead taken from Cumberland Bay. Please contact the NYSDOH for additional information on the health effects of PCBs.

86 - question: How many people are getting sick as a result of the PCBs in the bay?

response: There are no known illnesses related to PCB exposure at this site. The PCB concentrations present in fish and the waste material washing up the beaches do not cause acute short term illnesses.

87 - question: Is it safe to swim in the water?

response: Yes. There is no significant exposure to PCBs from swimming in Cumberland Bay. The risks associated with the site are direct contact with sludge bed material and consumption of contaminated fish.

88 - question: Won't fish and wildlife be killed when you put the wall in and dredge?

response: There will likely be some limited mortality to fish during remediation, as well as displacement of some wildlife usage of the area.

89 - question: What potential exists for interruptions in swimming and boating?

response: There should be no disruption of recreational opportunities outside of the work zone. Public access including swimming and boating will not be permitted within the active work zone. These latter recreational impacts will be removed upon completion of the project.

90 - question: Once the project is complete, what are the estimated impacts on fish and what time frame? On what are such assumptions based?

response: It is anticipated that PCB concentrations in fish will decline dramatically, hopefully to levels similar to those observed for the same species of fish outside Cumberland Bay. The fishery would then be judged acceptable for human consumption, and recreational and commercial harvest would no longer be impeded. The anticipated time frame for an acceptable fishery to be achieved would be two to three years following completion of the dredging project. Removal of exposure to PCB is a prerequisite to reduced PCB in aquatic biota. Past experience has shown that the suggested response time frame is generally realistic if the exposure is effectively eliminated or dramatically reduced.

91 - question: Could plants or insects be taking up PCBs from the sludge bed?

response: Generally, plants are not good accumulators of PCB although PCB may be present on aquatic plant surfaces as a result of settlement from disturbance of sediments. Aquatic insects actively accumulate PCB from the sediments.

92 - question: Have you found elevated levels of PCBs in waterfowl?

response: Waterfowl that reside in Cumberland Bay have not been examined for PCB concentrations. However, waterfowl in several flyways throughout New York State, including the Champlain-Hudson flyway, have been examined. Generally, the fish consuming species (such as mergansers) have elevated PCB concentrations and should not be eaten. Other waterfowl species are less contaminated and may be consumed following removal of skin and fat. In decreasing order of PCB concentrations are diving ducks, dabbling ducks and grazing waterfowl (such as Canada geese).

93 - question: What level of PCBs in fish is your goal?

response: The long term goal of less than 0.1 part per million PCB in fish is sought although a short term goal of less than 1.0 part per million is reasonable.

94 - question: Don't salmon live on perch and won't they be impacted?

response: Perch are an incidental prey item for salmon. A discernible impact on salmon is not expected and has not been observed.

95 - question: How long will it take the food chain to cleanse itself of PCBs?

response: Without removal of the sediments, the period required for the food web, including the fishery, to become acceptable would be many decades. With remediation, it is believed the food web and the fishery will become acceptable within two to three years following completion of the project.

96 - question: What will happen to local fish and wildlife during dredging?

response: There will be some disruption of the status quo during remediation due to the increased human activity at the site. Some habitat will be adversely impacted in the short-term during the removal activities. These areas will be restored after the project is completed. There may also be some mortality of fish within the temporary sheet piling during the cleanup activities.

WRITTEN COMMENTS RECEIVED DURING THE COMMENT PERIOD

Written comments were received from 27 groups and individuals. Many comments were statements of support for the PRAP. Many comments expressed gratitude to the Lake Champlain Committee for their efforts in publicizing the public meetings for the PRAP. A number of

comments expressed concerns about the proposed remedy or about the short term impacts that the proposed remedy would generate. Other comments were in opposition to the PRAP.

Below are the major issues and comments from the written comments received during the comment period:

Written comments were received from 14 individuals in support of the PRAP. The comments received included:

- The plan should include restoration of wetland habitat and provide sanctuary for waterfowl and wildlife along with recreational development. Some official action must be taken to ensure that wildlife will continue to have an undisturbed habitat in this area.
- The plan should include the appropriate preventive measures to minimize the spread of PCBs. The plan should include provisions for the sludge to be disposed in a manner which will allow for access should future technologies for destruction become available.
- The NYSDEC should use pre-qualified contractors in the bidding process to prevent "low bidder syndrome".
- The sludge bed has been a problem for many decades. The containment alternatives may be cheaper but are less effective, leave the waste in the community and are not permanent solutions.

Written comments were received from seven organizations in support of the PRAP. These organizations were:

The Lake Champlain Committee
The Adirondack Council
Conservation Law Foundation
Scenic Hudson
The Greater Laurentian Wildlands Project
Lake Champlain Maritime Museum
State University of New York at Plattsburgh Center for Earth and Environmental Science

The comments received included:

- The effectiveness of the cleanup can be maximized by selecting equipment and methods with proven track records. Recommend the use of dredge operators with experience in remedial dredging.

- The NYSDEC should take every available measure to minimize resuspension and should monitor the cleanup before, during and after remediation.
- The NYSDEC should take steps to control volatile losses of PCBs. Filter presses should be enclosed and settling basins should have floating covers. Recommend air monitoring at treatment facility.
- The NYSDEC has not stressed the long term advantages of the Proposed Plan over the in-lake containment alternatives. These advantages were not made clear at the public meetings.
- The PRAP is consistent with the spirit and intent of the Objectives and Highest Priority Actions for Group 1 toxic substances in the Lake Champlain Management Conference's "Opportunities for Action: An Evolving Plan for the Future of the Lake Champlain Basin". It will be important to monitor PCBs in fish flesh, in sediments and in the water column after the remedial action is completed.
- Other proposals would have left the contaminants in place, stored them on the shoreline, or attempted to contain them in an in-lake facility, further compromising current uses and future opportunities.
- The PCB contamination currently limits economic and recreational opportunities in the Bay and poses a potential threat to community health. PCBs are potential carcinogens and studies show that children of women who ate PCB-contaminated fish had learning disabilities and delayed development. We can best ensure the health of the community by removing PCBs from the site.
- The site is a significant contributor of PCB contamination for Lake Champlain fish resulting in health advisories. People are currently advised to limit or avoid eating certain fish from the Bay and banned from selling yellow perch. Removing the contaminants from the Lake is the only permanent way to break the link between PCBs, fish and humans.
- An on-shore disposal facility would have destroyed five acres of wetland habitat and converted prime shore land into a hazardous waste landfill. An in-lake containment facility would have limited use of the Bay and not have been able to withstand the effects of wind, waves and ice.
- It is the only permanent fix for the site, enabling Cumberland Bay to eventually be removed from the ranks of contaminated waste sites thereby providing greater public, recreational and economic opportunities.

- All of the alternatives would have limited rather than enhanced uses of the Bay. An in-lake containment facility would have removed a four acre chunk of the lake from use and if it failed, water quality, public health and the fishery would have been further compromised.
- The NYSDEC should take extreme care in designing all aspects of the remediation strategy.
- To ensure an effective clean-up it is critical that water treatment aspects of the proposal are carefully defined prior to going out to bid.
- The NYSDEC should evaluate the impact of the proposed plan on cultural resources. Plattsburgh has been the site of much military and commercial activity.

Written comments were received from six organizations expressing concern or opposition to the PRAP. These organizations were:

City of Plattsburgh
 Clinton County Legislature
 Georgia Pacific Corporation
 Plattsburgh North Country Chamber of Commerce
 Northway Motel
 Sidley & Austin representing the General Electric Company

The comments received included:

- Business and land owners will lose income and experience depreciated property values during the remediation activities. Reimbursement for these losses must be provided.
- Minimal impact to the Cumberland Avenue residential area and traffic flow must be assured. Provisions for emergency vehicle access and street reconstruction must be made.
- That at least \$100,000 is presently reserved for the development of the Wilcox Dock area for recreation and public use. The city intends to take a strong role in helping DEC formulate the ultimate reuse plan, but expects DEC to assume the development costs and long term operation and maintenance responsibilities.
- The Clinton County Legislature adopted Resolution # 621 which requested county residents to attend the NYSDEC public meetings and which restated Resolution #397 which requested the NYSDEC to approve the Georgia Pacific remediation plan.
- The PRAP contains no detailed information on how the water intake for the Georgia Pacific mill will be protected during the remediation. It is vital to the operations of

Georgia Pacific that all precautions be taken to prevent the water supply from being contaminated with PCBs.

The Chamber of Commerce has reviewed the PRAP and has identified four major areas of concern. They are:

- **1- potential impact on a major employer.**
- **2- enhancement of recreational opportunities and tourism.**
- **3- impacts and effectiveness of the selected approach, including potential impacts on the community and economy.**
- **4- compliance with the letter and spirit of the Lake Champlain Basin Plan as adopted by the State.**

**RESPONSE TO COMMENT LETTER FROM SIDLEY & AUSTIN REPRESENTING
THE GENERAL ELECTRIC COMPANY**

1 - Comment: The Feasibility Study did not identify a risk based goal against which the remedial alternatives can be measured.

Response: The objective of an FS is to identify suitable remedial technologies for the site and to formulate remedial alternatives using these technologies. The remedial alternatives are then subjected to a detailed analysis in which each alternative is assessed against evaluation criteria that have been established by NYSDEC TAGM 4030 which is consistent with the criteria used by the USEPA. This evaluation assesses whether each alternative provides adequate protection to human health and the environment.

2 - Comment: DEC must conduct a more sophisticated analysis to show that removing or capping the sludge bed will actually reduce the risks of direct contact and fish consumption significantly faster than would natural attenuation.

Response: The risk of direct contact comes from contacting the waste. Currently the sludge bed is being eroded and contaminated material is washing up on the beaches of Cumberland Bay. Also, access to the sludge bed although restricted, cannot be eliminated due to its location in the Bay. The removal of the sludge bed will eliminate the potential of contacting the waste. The risks associated with fish consumption are directly related to PCB concentrations in the fish consumed. The NYSDEC anticipates that PCB concentrations in these fish will decline dramatically after the bed is removed. PCB concentrations in Cumberland Bay fish have remained elevated since measurements began in 1979. The sludge bed has been in its current unremediated state during this time. Any reduction of PCBs that might be occurring via natural attenuation is not discernable from the existing fish / PCB data.

3 - Comment: The FS and PRAP understate the difficulties and costs of a remedial dredging project of the scope proposed. The experiences with remedial dredging at other contaminated sites shows that it will take longer and be more expensive than the FS and PRAP assume.

Response: The costs and time frames that are detailed in the FS and PRAP are based on site specific conditions, waste characteristics and experiences at other remedial dredging sites. The NYSDEC believes that the costs and schedule for the remedial action are reasonable. The cost estimate used is within the accuracy required for feasibility studies, and is based on the current site information.

4 - Comment: DEC's summary rejection of a capping remedy is based on the mistaken premise that capping is not legally permitted and would require an unreasonable amount of monitoring. The legal basis for rejecting capping is mistaken. The monitoring required to assess the success of capping should not be more complicated than other types of engineered remedies.

Response: The capping technology was evaluated for the Cumberland Bay Sludge Bed - Wilcox Dock Site. In place capping was technically screened out because the nature of the waste was such that it could not properly support a cap and because of long term operation and maintenance issues, not monitoring. The in place capping of the waste bed was not eliminated solely on a legal interpretation of Environmental Conservation Law.

These comments deal with questions and issues raised in relation to the PRAP and FS fail to demonstrate that the proposed remedy will reduce risk to protective levels materially faster than other alternatives, including no action.

5 - Comment: The PRAP and FS do not candidly and straightforwardly set out the basic elements by which any remedy should be judged and justified.

Response: The FS and PRAP state the Remedial Action Objectives for the site. The FS identifies suitable remedial technologies for the site and formulates remedial alternatives using these technologies. The remedial alternatives are then subjected to a detailed analysis in which each alternative is assessed against evaluation criteria that have been established by NYSDEC TAGM 4030 which is consistent with the criteria used by the USEPA. These criteria are clearly stated and defined in both of these documents.

6 - Comment: There is a clear analytical framework for addressing the effectiveness of remedial alternatives at contaminated sites, such as Cumberland Bay, which can be applied here: 1. What is the level of the contaminant in the sludge bed, water column and aquatic biota that will protect human health and other biota? 2. When and at what cost will the various remedial alternatives, including no action or natural recovery, reach these protective concentrations? 3. What are the adverse or detrimental effects associated with each remedial alternative? 4. After weighing the estimates for remedial alternative provided by the answers to the second and third questions, is there a remedial alternative that one is confident will achieve its predicted result that is more beneficial and cost-effective than no action or natural recovery?

Response: As it is stated in the FS and PRAP, the nature of the site contamination was used to determine the remedial approach that would be taken at the Cumberland Bay Sludge Bed - Wilcox Dock Site. It was determined that the source of PCBs at the site was the industrial waste that was discharged to the Lake, therefore, the industrial waste became the focus of the remedial

action. Technologies for destroying, treating, isolating or removing the waste from the Lake were evaluated. The alternatives developed and evaluated in the FS were created by using the technologies that were feasible for this waste type and site conditions. The Department followed TAGM 4030 to evaluate the remedial alternatives. This included evaluating how each alternative addressed the exposure pathways identified at the site and both the short and long term impacts each alternative would have.

7 - Comment: If the above questions are answered, one should be able to determine the effectiveness of the various remedial alternatives in addressing the two problems DEC has identified at the Site.

Response: The FS did evaluate the effectiveness of each of the remedial alternatives developed for the site by following the above described process.

8 - Comment: Neither the PRAP nor the FS, however, sets out clearly whether the proposed remedy or any of the other alternatives will actually fix these problems, nor does it allow one to apply the analytical framework to determine the appropriateness of moving forward with the proposed remedy.

Response: The alternatives underwent a detailed analysis that followed the above stated procedures. This evaluation does allow one to compare the effectiveness of each alternative.

9 - Comment: The remedial documents indicate that either DEC is uncertain about the benefits of removing the sludge bed or, in fact, that its removal will have little impact on PCB levels in water and biota.

Response: Removing the sludge bed will have the greatest impact on reducing the PCB levels in the water and biota.

10 - Comment: In the case of Cumberland Bay, what level of PCBs in the sludge bed, water column and aquatic biota will be protective of human health and the environment? This needs to be directly and forthrightly expressed. It is not.

Response: The NYSDEC did not select a cleanup number for the sludge bed because it was not necessary. The State's selected remedy will remove the sludge bed from the Lake. It is therefore, irrelevant to specify a PCB removal concentration for the waste material. The established NYS standards, criteria and guidance address the other media for the site.

11 - Comment: We have reviewed the PRAP, the FS and the Baseline Human Health and Ecological Risk Assessment documents for the Site, and none identify a specific, numerical, risk-based cleanup level in water or biota that DEC seeks to achieve at the Site.

Response: The State has developed statewide criteria for contaminants in water. The US Food and Drug Administration has criteria regarding contaminant levels and the sale of fish for consumption.

12 - Comment: For example, what is the concentration of PCBs in fish that the DEC deems to be protective of human health and environment? What concentration of PCBs in the sludge bed will protect humans from the risks of direct exposure? Without clearly defined remedial goals, one is unable to analyze and compare remedial alternatives because one does not know when and at what costs each of the remedial options will achieve the remedial objectives. Instead, one is left with the simplistic and unsupportable assumption that removing contaminants is better than leaving contaminants in place, even when they may be sequestered and unavailable to a human or biological exposure route.

Response: The State's selected remedy will remove the sludge bed from the Lake. It is therefore, irrelevant to specify a PCB removal concentration for the waste material. As stated many times in the reports, the sludge bed is being actively eroded and the contaminants are currently available for human and biological exposure.

13 - Comment: Will any of the analyzed remedies ultimately protect human health? If so, how and to what extent?

Response: The major exposure pathways identified at the site are direct contact and consumption of contaminated fish. The risk of direct contact comes from contacting the waste. Currently the sludge bed is being eroded and contaminated material is washing up on the beaches of Cumberland Bay. Also, access to the sludge bed although restricted, cannot be eliminated due to its location in the Bay. The removal of the sludge bed will eliminate the potential of contacting the waste. The risks associated with fish consumption are directly related to PCB concentrations in the fish consumed. The NYSDEC anticipates that PCB concentrations in these fish will decline dramatically after the bed is removed. PCB concentrations in Cumberland Bay fish have remained elevated since measurements began in 1979. The sludge bed has been in its current unremediated state during this time. Any reduction of PCBs that might be occurring via natural attenuation is not discernable from the existing fish / PCB data.

14 - Comment: Will any alternative result in removal of the fish consumption advisories?

Response: The removal of the health advisories will be based upon post remedial monitoring results. The NYSDEC anticipates that PCB concentrations in these fish will decline significantly after the bed is removed.

15 - Comment: What degree of confidence does DEC have in its answers to those questions? The remedial documents simply do not present enough information to allow one to answer these questions.

Response: The NYSDEC has a high degree of confidence that, based on site specific conditions, the selected remedy will achieve the Remedial Action Objectives (RAO's) for the site.

16 - Comment: The PRAP and FS are flawed because they do not permit one to discern DEC's prediction of what actually will be achieved in terms of human health protection and the Department's level of confidence in these predictions. It is essential to rational judgment that this be set out clearly and its basis explained.

Response: The NYSDEC has been clear in its conclusions that the removal of the waste bed will eliminate the threat of direct contact and that the PCB concentrations in Cumberland Bay fish will decrease rapidly. These conclusions are stated in the PRAP and FS, however, a specific date has not been identified.

17 - Comment: It is equally essential that the preferred remedial alternative be compared against other remedial alternatives, including no action or natural recovery. For instance, if clean sediment is covering the sludge bed, it may well be that over twenty or thirty years of equal benefits would be derived from either course.

Response: There was a comparative analysis of alternatives performed during the FS which included the no action alternative. Clean sediment is not covering the sludge bed.

18 - Comment: With sufficient data and the right tools, DEC could answer these questions. We draw your attention to work the U.S. Environmental Protection Agency ("EPA") did in examining the Buffalo River in New York under the Great Lakes National Program Office's Assessment and Remediation of Contaminated Sediments Program: Comparative Human Health and Wildlife Risk Assessment: Buffalo River, New York, Area of Concern, EPA 905-R-95-008 (May 1995) (Attachment 1), which showed, with the benefit of modeling, that dredging would not result in a reduction of fish PCB levels faster than no action. It is apparent from the remedial documents for the Cumberland Bay Site that DEC has not conducted the sort of careful analysis that EPA conducted for the Buffalo River.

Response: The conclusions derived from the Buffalo River investigations should not be taken out of context and applied to other sites with differing site conditions and waste characteristics.

19 - Comment: Mass removal of contaminants sounds like a sensible and beneficial objective, but it is mistaken. Evidence at a number of sites shows that there is no necessary or clear casual relationship between the mass of PCBs removed and reduction in risk to human health or the environment, typically measured by fish contaminant levels. While counterintuitive, this conclusion makes sense in light of the dynamics of bioaccumulative contaminants, such as PCBs, in aquatic systems:

- At many sites, sediments were contaminated years ago as a result of long abandoned waste handling practices. As a result, most of the PCBs are now found

in depositional areas because PCBs initially deposited in non-depositional areas have eroded. In these depositional areas, however, more recently deposited, cleaner sediments have buried the older, more contaminated sediments or sludges.

- The PCBs found in aquatic organisms are typically derived from the surficial sediment or sludges, not from the deeper portions where the bulk of PCBs are likely found.
- In light of their bioaccumulative nature, PCB concentrations in surficial sediment or sludges and/or a water column must be at consistently low levels in order to achieve protective concentrations of PCBs in the tissue of edible fish. There are immense practical difficulties in reducing sediment and water column concentrations to low levels.

As a result, it does not follow that a program designed to remove a large percentage of the mass of PCBs will effectively reduce PCB levels in biota to the levels sought or attain risk reduction goals.

Response: The Cumberland Bay Sludge Bed has been identified as a source of PCBs to Lake Champlain. The benefits of source control and removal have been demonstrated many times. Source control and source removal are remedial goals of the Department. The NYSDEC has routinely performed successful source control and source removal remedies at many to date. As for the specific conditions listed in this comment, none is applicable to the conditions existing at the Cumberland Bay Sludge Bed Site.

20 - Comment: It is apparent from the FS and PRAP that DEC itself is uncertain whether mass removal of the sludge bed will, in fact, result in lower PCB concentrations in fish.

Response: The NYSDEC disagrees with this conclusion. Removing the sludge bed will have the greatest impact on reducing the PCB levels in the water and biota.

21 - Comment: The PRAP notes that although there apparently is a match in congener patterns between PCBs found in the sludge bed and fish caught over the sludge bed, no such similarities exist with fish caught in the outer Bay or Lake Champlain as a whole.

Response: This data verifies that the sludge bed is responsible for the elevated levels of PCBs in the fish of Cumberland Bay and the elevated levels are not from a source from elsewhere in the Lake.

22 - Comment: Although DEC promises additional studies "to refine the Department's understanding of the extent of the sludge bed's impact upon Cumberland Bay and Lake Champlain," (PRAP at 6, without such an analysis it is impossible to determine what benefits will be achieved through any remedial course. The lack of relationship between congener patterns in

fish caught in the outer Bay and the lake and the sludge bed and DEC's confession that further analysis of this issue is needed undermines the basis for the selected remedy.

Response: The NYSDEC disagrees with this conclusion. The data verifies that the Cumberland Bay Sludge Bed Site is a source of PCBs to the biota of the Bay and it is not necessary to study all of Lake Champlain prior to addressing this PCB source.

23 - Comment: It also makes DEC unfounded conclusion on page 6 of the PRAP -- "It is expected that Cumberland Bay PCB's are a significant source of PCB contamination of fish throughout the lake" --untenable. If the sludge bed does not contribute PCBs to the fish actually consumed by anglers in Lake Champlain there obviously will be no benefit to that fishery from removing the sludge bed.

Response: The elevated PCB level in yellow perch within Cumberland Bay is the basis for closing the commercial fishery for yellow perch in Cumberland Bay. This and the health advisory are attempts to reduce the number of contaminated fish being consumed by anglers and the public. The statement referenced in this comment has been revised to read "... the Cumberland Bay Sludge Bed is a significant source of PCB contamination to fish in the Lake..."

24 - Comment: The PRAP asserts that "Concentrations of PCB's have been detected as great as 1,850 parts per million (ppm) in sludge samples," PRAP at 2, and that "there is no practical way to differentiate highly contaminated from lower or non-contaminated material without performing chemical analyses." PRAP at 4. The implication is that there are tremendously high levels of PCBs distributed throughout the sludge bed. The more detailed description of DEC's findings contained in the Baseline Risk Assessment and FS, however, contradict these conclusions. The Baseline Risk Assessment states that the average concentration of PCBs in the sludge bed is actually 21 ppm (with many samples below detection limits) and that PCB concentrations in excess of 2 ppm are limited to the upper foot of the sludge bed. Baseline Risk Assessment at 2-1 to 2-2. These differences are not academic; the misleading data presentation in the PRAP implies far greater benefits from mass removal than a more careful and accurate portrayal of the data might suggest.

Response: There are high levels of PCBs throughout the sludge bed as stated in the FS and PRAP. Samples that were below detection levels for PCBs were generally not of sludge. Also, as stated in the PRAP, the concentrations of PCB within the sludge bed are variable with average concentrations in many cores often below 50 ppm. However, this comment does correctly state that in most areas, the highest PCB concentrations were detected in the upper portions of the sludge bed. This condition allows the PCBs to be available to the food chain and not buried under clean sediments as inaccurately described in other comments.

25 - Comment: It is essential that the objective of the remedial action for Cumberland Bay be clearly defined in terms of benefit to human health or biota and that alternative remedies be measured against that objective. As the National Research Council has concluded, it is

inappropriate to use mass removal of PCBs as a proxy for protection of human health or the environment

Response: The Remedial Action Objectives are clearly defined in the FS and PRAP.

26 - Comment: When the gloss of "mass removal" is taken away, it is not clear what benefits DEC hopes to obtain through the proposed remedy. The remedial documents do not discuss or present any evidence to show whether the proposed \$18 million dredging remedy will actually reduce risk faster than other alternatives, including "no action" means that there will be no reduction in risk over time. This simply is not the case. Natural processes, such as sedimentation and biological dechlorination and degradation will often greatly reduce the toxicity, bioaccumulation and exposure to PCBs. As the National Research Council has concluded:

Natural recovery is a viable approach if the contaminants are being buried by cleaner sediments or if ongoing processes destroy the contaminants so that contaminant transport into the overlying water column is minimal and decreases with time. Some natural recovery processes are obviously very effective.

Response: This comment does not describe existing site conditions. As stated previously, the site in its current uncontrolled state has not shown evidence of natural recovery or natural attenuation. The concentrations of PCBs in the fish of Cumberland Bay are still elevated despite the fact that waste disposal to the sludge bed ended in 1973 (actual PCB disposal most likely ended several years prior to 1973). The National Research Council conclusions stated in this comment are based on site conditions that do not exist at the Cumberland Bay Sludge Bed Site.

27 - Comment: DEC's simplistic analysis that mass removal is better than no action does not withstand scrutiny. Moreover, despite that fact that the FS retained the remedy of "no action with institutional controls" for further consideration (FS at 2-3 and Table 2-3), DEC failed to examine this alternative in its subsequent analyses in Chapters 3 (Development and Screening of Alternatives) or 4 (Detailed Analysis of Alternatives). The failure to compare this feasible and cost-effective alternative for risk control to the more active remedies of capping or dredging fatally undermines DEC's analysis of alternatives.

Response: The no action alternative was carried through in the detailed analysis of alternatives. Please to refer sections 3 and 4. Specifically, see table 4-6, Comparative Analysis of Remedial Alternatives.

28 - Comment: The Buffalo River study is a good example of the comparative analysis required for Cumberland Bay. Moreover, it demonstrates that using mass removal by dredging as a proxy for risk reduction does not withstand close scrutiny in many cases. In that study, EPA's modelers compared PCB levels in water and biota after 10 years under various remedial alternatives, including remedial dredging. The modeling compared half a dozen remedial alternatives and concluded that:

Sediment remediation will not have a significant impact on reducing water column contaminant exposure. Environmental or full dredging of bottom sediments will not alleviate water column concentrations for the five chemicals examined. Also, the potential to exacerbate the water column problem still exists with these dredging options by exposing higher contaminated sediments in deeper layers.

Comparative Human Health and Wildlife Risk Assessment: Buffalo River, New York Area of Concern at 3-8 (emphasis in original). In fact, the modeling showed that after ten years, PCB concentrations in carp would be virtually the same under any of the alternatives considered, including no action.

Response: The conclusions derived from the Buffalo River investigations should not be taken out of context and applied to other sites with differing site conditions and waste characteristics. Additionally, the proposed remedy for the Cumberland Bay Sludge Bed includes the removal of the industrial waste which forms the sludge bed and is a source of PCBs to the Bay. The Cumberland Bay remedy does not leave highly contaminated sediments exposed after remediation, as was modeled at the Buffalo River. The site specific conditions modeled at the Buffalo River are not comparable to the Cumberland Bay Site, therefore, some care must be taken prior to using the conclusions derived from the Buffalo River at other sites.

29 - Comment: To justify a remedial decision on a rational basis, DEC must conduct a similar analysis for Cumberland Bay; without such an analysis, it is impossible to assess whether DEC's proposed remedy is justified. When such an analysis is complete, the public deserves to have it candidly presented. Neither the FS nor the PRAP does this.

Response: The NYSDEC disagrees with this conclusion. The Cumberland Bay Sludge Bed has been identified as a source of PCBs to the Bay and it is not necessary to study all of Lake Champlain prior to addressing this PCB source. The NYSDEC has performed many of successful source control and source removal remedies to date.

30 - Comment: Not only is DEC's justification for the dredging remedy insufficient, its faith in the likely success of this remedy is unwarranted. Experience at other sites shows that remedial dredging projects are difficult to perform, always cost more than projected, and do not usually attain their target cleanup levels when the target concentrations are low. Casting aside these failures, the FS and PRAP simply assume that dredging the sludge bed is both technically feasible and will reduce risks to acceptable levels. DEC, however, has not presented any data to show that the project it is proposing will actually succeed in meeting the vague goals the Department has set.

Response: The Department's review of similar remedial projects has drawn a different conclusion. Environmental dredging of this waste material has been and is currently being performed successfully at other sites across the country.

31 - Comment: The remedial documents for the Site suggest that DEC has not carefully considered the technical challenges and complexities posed by a remedial dredging project of this size. Not only would the proposed remedy be one of the largest remedial dredging projects performed to date, the FS and PRAP, without any supporting analysis or data, mistakenly assume that remedial dredging is a "proven technology" that has worked at other sites. To the contrary, however, the limited data that do exist demonstrate that remedial dredging has not proven to be a successful technology. See, e.g. Attachment 2.

Response: The NYSDEC disagrees. The Department's review of similar remedial projects has drawn a different conclusion. Environmental dredging of this waste material has been and is currently being performed successfully at other sites across the country.

32 - Comment: DEC's cost estimate for the proposed remedy, moreover, is based on unfounded assumptions about the dredging rate and cost of remedial dredging. Rather than conduct a careful analysis of how quickly the sludge bed could actually be removed, the FS simply assumes that the project can be completed in six months and, based on the projected 93,000 cubic yards of sludge to be dredged, calculates the costs of completing the project, with a resulting estimate of \$12 per cubic yard. These estimates, however, are inconsistent with dredging rates actually achieved and costs actually incurred at other remedial sites. As explained in Attachment 2, the dredging rates achieved at other remedial sites are less than 100 cubic yards/day, and the costs at these sites are in the hundreds of dollars per cubic yard. Experience teaches, therefore, that the proposed remedy will likely take longer and be dramatically more expensive than DEC estimates.

Response: The costs and time frames that are detailed in the FS and PRAP are based on site specific conditions, waste characteristics and experiences at other remedial dredging sites. The NYSDEC believes that the costs and schedule for the remedial action are reasonable. The cost estimate used is within the accuracy required for feasibility studies, and is based on the current site information. The unit cost stated in the above comment is part of the detailed cost breakdown for the project and has been mistakenly assumed to be the total dredging cost. The dredging rate that has been experienced at other sites is dependant upon the technology used at the site and other conditions. Again, this conclusion appears to be taken out of context. Dredging rates at some remedial sites have approached 1,000 cubic yards/day. The dredge rate used in the FS was approximately 340 cubic yards/day. The FS estimated that two construction seasons would be required at this removal rate.

33 - Comment: First, the cited provisions of the Environmental Conservation Law and implementing regulations do not restrict "capping" in the manner that the FS suggests. Article 15 of the Environmental Conservation Law simply requires that any person proposing to "evacuate or place fill below the mean high water level in any of the navigable waters of the state" must first obtain a permit from DEC. Environmental Conservation Law Section 15-0505(1). In issuing such permits, DEC is directed first to "ascertain the probable effect on the use of such waters for navigation, the health, safety, and welfare of the people of the state, and the effect on the natural

resources of the state...likely to result from the proposed project or work." Id. Section 15-0505(3). Nothing in the law restricts the use of remedial capping simply because other alternatives might exist. Similarly, NYCRR Section 608, the implementing regulation for Section 15-0505, does not restrict the use of remedial capping in this manner. Rather, NYCRR Section 608.8 sets out three criteria for DEC to consider in deciding whether the proposed is in the public interest:(1) whether the proposal is reasonable and necessary; (2)whether the proposal would endanger the health, safety and welfare of the people of the State; and (3) whether the proposed project would cause unreasonable, uncontrolled or unnecessary damage to the natural resources of the State.

Response: Implementation of in place capping of Cumberland Bay PCB laden debris would require issuance of a permit for excavation and fill in a navigable water (ECL §15-0505). To issue such a permit, a finding that it met the permitting standards of 6 NYCRR 608.8 would be necessary. Those standards state:

608.8 Standards. The basis for the issuance or modification of a permit will be a determination that the proposal is in the public interest, in that:

- (a) the proposal is reasonable and necessary;*
- (b) the proposal will not endanger the health, safety or welfare of the people of the State of New York; and*
- (c) the proposal will not cause unreasonable, uncontrolled or unnecessary damage to the natural resources of the state, including soil, forests, water, fish, shellfish, crustaceans and aquatic and land-related environment."*

In place capping will not meet these permitting standards in that 12 acres of benthic habitat would be lost, resulting in unreasonable damage to the natural resources of the state, and that damage is unnecessary when these materials can reasonably be removed leaving clean bottom sands and leaving the area essentially as it was prior to deposition of the debris.

34 -Comment: These provisions, moreover, apply equally to dredging. Environmental Conservation Law Section 15-0505(1) sets the same permit requirements and review standard for projects involving either excavation from (dredging) or placing fill in (capping) navigable waters. This, if DEC were correct that Environmental Conservation Law Article 15 and NYCRR Section 608 restrict capping, the Department cannot legally proceed with dredging, which is subject to the same restrictions as capping.

Response: The Department will meet all of the requirements necessary to proceed with the removal of the PCB contaminated sludge bed material. Short term impacts will occur but these are outweighed by the long term benefits of the remedial action. The standards of 608.8 will be met because the lake will be restored to pre-release conditions with no long term sacrifice of littoral habitat. Dredging removal in this case is reasonable and necessary because it is the only reasonable way to get the PCB laden debris out of the lake.

35 - Comment: Second, the perceived difficulty of monitoring the effectiveness of capping is not a valid basis for rejecting it as an alternative. As the National Research Council has recognized, a cap is simply an engineered structure, like any other engineered structure, such as a bridge or road, the performance of which must be verified and maintained over time. There is nothing so inherently unique about a cap used to cover contaminated sediments or sludges that makes monitoring its effectiveness and integrity more difficult than other engineered structures (such as a cap used to cover a landfill). The real questions raised by the capping alternative are the same issues of efficacy which we have posed in discussing dredging. DEC needs to address and answer those questions rather than rejecting capping on the spurious grounds provided in the FS.

Response: The capping of the waste bed at the site was not an alternative in the FS. Therefore, this comment's claims that the capping alternative was rejected because of difficulty of effectiveness monitoring is inaccurate. As stated previously, capping was technically screened out because the nature of the waste was such that it could not properly support a cap and because of long term operation and maintenance issues, not monitoring.

36 - Comment: A remedy other than no action should be selected only when it will attain clearly enunciated, risk-based cleanup levels appreciably faster than natural attenuation.

Response: As stated previously, the site in its current uncontrolled state has not shown evidence of natural recovery or natural attenuation. The major exposure pathways identified at the site are direct contact and consumption of contaminated fish. The removal of the sludge bed will eliminate the potential of contacting the waste. The risks associated with fish consumption are directly related to PCB concentrations in the fish consumed. PCB concentrations in these fish will decline significantly after the bed is removed. The removal of the sludge bed will have the greatest impact on reducing the PCB levels in the water and biota and eliminate the risk of direct contact. The removal of the sludge bed will also eliminate the source of the contaminated material that is currently washing ashore on the beaches of Cumberland Bay.

**APPENDIX B
ADMINISTRATIVE RECORD**

- 1 - Proposed Remedial Action Plan, July 1997, NYSDEC
- 2 - Site Characterization Report Sludge Bed - Wilcox Dock IRM Cumberland Bay, November 1995, Rust Environment and Infrastructure.
- 3 - Cumberland Bay Sludge Bed Treatability Study Final Report, November 1995, KIBER Environmental Services, Inc.
- 4 - Sediment Core Dating Analysis Report Cumberland Bay Sludge Bed - Wilcox Dock, May 1996, Rust Environment and Infrastructure.
- 5 - Site Characterization Report Addendum No. 1 Baseline Health Risk Assessment and Baseline Environmental Risk Assessment Cumberland Bay Sludge Bed - Wilcox Dock, May 1997, Rust Environment and Infrastructure.
- 6 - Feasibility Study Report Cumberland Bay Sludge Bed - Wilcox Dock Operable Unit No.1; May 1997, Rust Environment and Infrastructure.
- 7 - Final Report Mudflats Removal Feasibility Study, Plattsburgh New York, July 1979, Frederic Harris, Inc. Consulting Engineers.
- 8 - Preliminary Report of the Physical Parameters of the Plattsburgh, New York Sludge Bed, March 1974, SUNY Plattsburgh.
- 9 - PCBs Involvement in the Pulp and Paper Industry,. February 1977 prepared for the USEPA, by Versar, Inc