SECTION 5
ANY PROBABLE ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

SEDIMENT-WATER INTERFACE

5.01 The older underlying sediments are exposed to the water during the dredging process. The original sediment-water interface may have been in a state of relative chemical equilibrium with the overlying water. The newly exposed strata must interact with the water before reaching a relative state of balance. In this process adsorbed toxic metal and biostimulants may be released into the water. The extent of this impact is not known. These effects are being studied as part of the Dredged Material Research Program presently underway at the U. S. Army Corps of Engineers, Waterway Experimental Station, Vicksburg, Mississippi.

BENTHIC DISRUPTIONS

5.02 The bottom dwelling organisms inhabiting the channel where dredging occurs will be eliminated as a result of the dredging. The channel will begin to repopulate from adjacent areas as soon as the dredging stops. This temporary loss of bottom dwelling organisms is not critical for the functioning of aquatic food chains in Green Bay.

INCREASED LEVELS OF TURBIDITY

5.03 The proposed project will cause a temporary increase in turbidity levels of the Fox River and the waters of southern Green Bay. Associated with the accentuated turbidity is a decrease in available oxygen utilized by many aquatic organisms. Nutrients are released into the water tending to accelerate algae growth. Reduced sunlight inhibits both aquatic plant growth and productivity. Another effect of increased turbidity is the smothering of organisms living in the area adjacent to the dredging operation. Monitoring has not been done to determine dredging produced turbidity. However, the effects of dredging related turbidity are expected to be insignificant compared to natural forces e.g. wave action, etc.

HABITAT DESTRUCTION

5.04 The use of the existing disposal site again will further destroy its value as a wildlife habitat.

SECTION 6
ALTERNATIVES TO THE PROPOSED ACTION

NO ACTION (CEASING DREDGING AND DISPOSAL)

6.01 An alternative to maintaining the Green Bay Navigation Project is the "no action" alternative of discontinuing maintenance dredging. If maintenance is discontinued, areas of shoaling would create safety hazards and would require in the short run a greater number of vessel trips with lesser drafts to maintain the present levels of commerce. These additional trips would increase per ton transportation costs. In the long run (serious shoaling estimated to be within three years), the continued decrease in vessel drafts and rising per ton transportation costs would divert commerce to other modes, principally rail. Eventually all commercial vessels would be unable to enter the harbor. The most significant environmental practical advantage of this alternative would be that there would cease to be a need for the present disposal area or the proposed future disposal area presently being searched for at Green Bay. However, because the City of Green Bay intends to complete filling of the present disposal site if the Corps does not, the advantage of ceasing filling the present disposal site is negated. In selecting the future disposal site at Green Bay environmental compatibility is a prime consideration. Critical shoaling at Green Bay as well as the negative economic effects of no action make it imperative that dredging continue at Green Bay.

PARTIAL MAINTENANCE (DREDGE TO A LESSER DEPTH)

6.02 This alternative would result in a reduction in the amount of material to be dredged and disposed of and a resultant decrease in maintenance costs including a reduced cost for a new disposal facility related to the decrease in the amount of material dredged. However, it would have similar negative economic effects to "no action". The extent of the economic effects would be determined by the depth to which dredging is done which controls the amount to which incoming vessels can be loaded. There would be no significant environmental advantage to this alternative.

DISCONTINUE DREDGING AND DISPOSAL UNTIL OTHER SITES ARE SECURED

6.03 The choice of this alternative would have no positive environmental effect unless the City of Green Bay decided to discontinue filling the area and drop all plans for developing the site as a port-industrial complex. The City stated in a letter dated 27 March 1974 (Appendix A) that they plan to complete filling the area, whether or not the Corps continues its disposal in this site, so that it may be used for its intended purpose, i.e., marine industrial development. Shoaling has become critical at the Green Bay Navigation Project and the responsibility for maintaining the project lies with the Corps. During coordination

with other Federal, State and local agencies and the general public, numerous other sites were proposed and analyzed. The preferred plan, however, consists of completing the present filling of the existing site in combination with another site for future use.

DREDGE ALTERNATIVES

6.04 There are basically three types of dredging plants: hopper dredges, which primarily remove loose materials; clamshell and dipper dredges, which remove loose or compacted materials; cutter head pipeline dredges which remove loose or compacted materials (U.S.A.C.E., June 1972). A Hopper dredge is to be used at the Green Bay Navigation Project because of its practicality and cost effectiveness. At present the type of dredge plant used on a project is based on the amount and type of work to be accomplished, the availability of the various dredge types, and the economics of the project. The environmental compatibility of one dredge type over another has not been documented well enough to make environmental compatibility a basis for selective dredge type. Research into the environmental compatibility of the various dredge types is currently underway by the U. S. Army Corps of Engineers Waterways Experiment Station, at Vicksburg, Mississippi.

DIKING OFF REMAINING 30 ACRES OF ESTABLISHED DISPOSAL SITE AND SECURING A NEW SITE

6.05 The Bureau of Sport Fisheries and Wildlife (BSFW) had suggested the alternative of diking off approximately 30 acres of the partially filled area in the northwest portion of the diked disposal area in its present condition. Since the City of Green Bay owns the present disposal site, the alternative of diking off the remaining acreage to preserve it in its present state was discussed with the City, who felt it would be purposeless for the Corps of Engineers to dike off the area because the City "would more or less proceed to fill the area for its original intended purpose" i.e., industrial development, even if the Corps does not continue to fill the area. The City of Green Bay pointed out the fact that "...the area involved which the BSFW wishes to maintain in its present condition is already partially filled, part of it in its extreme quarter of only three to four inches of fill, and ranging to as much as one foot or more. The City stated that the filled area cannot reasonably be restored, to its original area while the Bureau of Sport, Fisheries and Wildlife maintained that it is in better condition for their purpose than it originally was." The City further stated, "We would expect that as a minimum we should be reimbursed by the U. S. Department of the Interior the sum of $15 million to replace its potential afforded to the City of Green Bay." The City also stated that they feel the area north of Duck Creek would be of more value to preserve and that BSFW should expend their efforts in making that area a wildlife preserve.

6.06 Diking off the 30 acres and securing a new site will cause a serious delay in the critically needed maintenance dredging. This was recognized by the Bureau of Sport Fisheries and Wildlife in a letter to Colonel James M. Miller dated 28 June 1974. This letter also laid out plans to postpone the 1974 dredging in order to save some Forester's terns that had nested in the disposal area. This was agreed to by the Corps of Engineers and the dredged material was deposited in a manner to discourage the return of the terns as requested by the Bureau of Sport Fisheries and Wildlife in the same letter.

OTHER SITES

6.07 Any local subdivision of the State of Wisconsin would be able to provide another disposal site if it appeared necessary to discontinue use of the established site. To date none of them have suggested any alternative sites for immediate use. The Chicago District does not feel that it is either possible or warranted to secure an alternative site for immediate use, since the present site only has a remaining capacity for 1977 dredgings. The Chicago District with the cooperation of local interests, is attempting to identify an environmentally acceptable site(s) for future use.

Tower Drive Site

6.08 The Bureau of Sport Fisheries and Wildlife suggested the "possible short-term alternative of utilizing the east end of the lowland area which lies between Tower Drive and the C&NW Railroad tracks. The road and tracks lie in the vicinity to the south of the present disposal area and could serve as dikes." This property is privately owned and therefore could not be used by the Corps under the diked disposal program. It could be used if the owner would agree to many costly provisions, one of which is the construction and maintenance of all dikes. An added expense would be the operation of the booster pump required to pump the dredged material the long distance from shore to the site. The pipeline would have to pass over or under Tower Drive disrupting traffic and making this short range site (one or 2 years of dredged material capacity) economically as well as socially unacceptable. Furthermore, the owner has not offered this land as a disposal area.

OPEN LAKE DISPOSAL OF POLLUTED DREDGINGS WITH AND W/O ADVANCED WASTE TREATMENT

6.09 Open water disposal of polluted dredge material is considered presumptively undesirable because of its long-term effects on the ecology of the Great Lakes (U.S.A.C.E., 1969). This practice has been discontinued at those Federal navigation projects on the Great Lakes where the Governor of the state involved has requested it. This is in keeping with the purposes

and policy of the Federal Water Pollution Control Act. An interim policy has been adopted whereby such material will be placed in confined disposal areas with a capacity not to exceed ten years worth of dredged materials. During this time a national comprehensive program of research in studying the problems associated with dredge material and attempting to determine the most environmentally compatible means of managing dredging projects is underway. If the quality of the material could be improved by an advanced waste treatment to surpass EPA sediment pollution criteria, the dredge material could then be disposed of in a suitable open water disposal area in deep water or used for other purposes. Many waste treatment techniques were investigated in the "Study of Dredging and Water Quality Problems in the Great Lakes." Studies were made of treating dredge materials in existing waste treatment plants, in separate special plants, in mobile units, and on board dredges. Several processes and combinations of processes were studied in the separate treatment plants. Even the least costly treatment process requires costs many times the cost of open lake disposal, and was also more expensive than disposal in diked areas. An added disadvantage of the method is the need for a disposal site for the dredgings after they were treated and, in certain processes, the need for a temporary storage site before treatment. Since treatment of the material appears to be much more expensive, and possibly no more effective than the proposed method, this alternative course of action is not considered a realistic alternative.

SECTION 7
THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

7.01 Although the site has already been altered and seriously degraded as a wildlife habitat by past disposal, the wetland habitat value of the site has decreased. Completion of the filling of this site will eliminate its remaining value as a wetland habitat. This site is insignificant in comparison to the state's total wetland area but the total area of wetland is continually being eliminated by filling. If the site is developed after it is filled, additional pressure will be placed on the adjoining natural areas to be developed. In addition, the adjoining areas may be polluted by industrial effluent if the site is developed for industry. Maintenance dredging is not expected to have any significant long-term impact on the aquatic environment of Green Bay.

SECTION 8
ANY IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

MAINTENANCE DREDGING

8.01 Maintenance dredging itself should not pose any significant problem with respect to a commitment of resources. Dredging and disposal operations would entail a commitment of man-hours, dredge operation time, and

logistical support for the men and machinery to function. Substantial Federal funding is also required to support and maintain the Green Bay Harbor Project. Dredging irrevocably removes natural sediments and bottom dwelling organisms from the river and bay system.

THE EFFECT OF CONTINUED FILLING ON THE ECOSYSTEM

8.02 The disposal area has already been substantially altered by previous disposal. The approximately 1 acre which remains in a ponded water condition with wetland biota as well as the remainder of the 30 acres which were substantially filled by the 1975 disposal will be totally altered to a terrestrial environment by the proposed action.

DEVELOPMENT PRESSURE

8.03 Continued use of the established disposal site for dredge materials would narrow the potential diversity and range of beneficial uses of the environment. The site would become more attractive for industrial and port development, while the natural environment would be further degraded. The proposed development of the disposal site will put increased pressures upon the remaining West Bay Shores natural areas to be developed.

SECTION 9
COORDINATION AND COMMENT AND RESPONSE

9.01 This statement reflects formal and informal coordination with the personnel of Federal, State, and local agencies. Letters of coordination received prior to circulation of the draft EIS have been included as Appendix A. Letters of comment on the draft EIS are included as Appendix E. No public meetings were held specifically related to this project, however, a public workshop was held on 22 March 1976 to identify future alternative disposal sites and discuss the completion of the filling of the existing disposal area. Notices of the intention to dredge were sent out prior to dredging in the spring of 1975.

9.02 The Fish and Wildlife Service of the U. S. Department of the Interior expressed concern about continued use of the existing disposal site. Their concerns were resolved through a series of coordination meetings. This was discussed in Sections 1.07, 6.05 and 6.06 of the EIS.

9.03 Comments were received from the following agencies.

9.031 Federal Agencies

Advisory Council on Historic Preservation
United States Environmental Protection Agency
United States Department of Interior

United States Department of Commerce
United States Department of Agriculture Soil Conservation Service
United States Department of Transportation
United States Coast Guard

9.032 State Agencies

State of Wisconsin
Department of Natural Resources
Department of Business Development
State Historical Society of Wisconsin

9.033 County Agencies

Green Bay Brown County Planning Commission

9.034 City Agencies

City of Green Bay
Industrial Development Authority

9.04 QUESTIONS, COMMENTS, AND RESPONSES

9.041 Advisory Council on Historic Preservation

9.0411 Comment:

To ensure a comprehensive review of historical, cultural, archeological, and architectural resources, the Advisory Council suggests that the final environmental statement contain a copy of the comments of the Wisconsin State Historic Preservation Officer concerning the effects of the undertaking upon these resources.

Response:

The comments of the Wisconsin State Historic Preservation Officer are included in Appendix E. He states, "There are no sites in, or eligible for, the National Register of Historic Places within the boundaries of the proposed project nor will any other known historic sites be affected. Furthermore, no known archeological sites will be affected."

9.0412 Comment:

Finally, it should be noted that the document referred to on page 19 is the National Register of Historic Places.

Response:

Corrected text to read "National Register of Historic Places."

9.042 United States Environmental Protection Agency

9.0421 Comment:

After contacting your staff on May 15, 1975, we discovered that dredging and disposal operations at Green Bay had begun on April 29, 1975 and will continue through May 30, 1975. We received the subject EIS on April 7, 1975 and were requested to comment by May 30, 1975. The EIS was not filed with the Council on Environmental Quality (CEQ) until April 18, 1975; CEQ's due date for comments on the EIS is June 3, 1975. Although your regulations allow for suspension of CEQ's mandatory 90-day waiting period subsequent to the filing of a Draft EIS on operations and maintenance activities, the preparation and review period for the EIS should have been better coordinated with maintenance schedules so as to allow consideration of comments and concerns on the project and any constructive mitigative measures before adverse environmental effects of the project could occur. We do not believe the Draft EIS demonstrated an imminent need for dredging. Therefore, we fail to understand why dredging was commenced before comments were due on the Draft EIS and before the Final EIS was filed with CEQ and the normal waiting period for administrative action had expired. We understand the problems faced with equipment scheduling and the responsibility to maintain navigation, but we believe that environmental values would be better served by compliance with the procedural aspects of the EIS process.

Response:

We recognize that you did not have sufficient time to comment on the draft EIS prior to our dredging and disposal operations this spring. We are still catching up on all those EIS's for Federal navigation projects which were in operation at the time NEPA became law. As a matter of Corps policy, this backlog will be eliminated by 1 January 1976, and no dredging will be initiated after 1 January 1976 without a Final EIS if an environmental assessment indicates an EIS is required. We did advise you and other interested Federal and State agencies, private groups and individuals of our plans through issuance of a public notice dated 17 January 1975 in which we outlined our plans for dredging and disposal in the Bayport site, including our intent to dredge during May 1975. The need for dredging is explained in Response 9.0422.

9.0422 Comment:

We note that alternative disposal sites have been disregarded primarily because of the declaration of intent by the City of Green Bay to fill the remaining wetlands of the 400-acre dike site regardless of the Federal actions. While it may not be the policy of local governments to preserve and protect valuable wetlands, it is the policy and responsibility of the Federal Government to do so. To justify the current destruction of Atkinson's Marsh from Federal

disposal practices because the City plans on filling it anyway does not conform with our wetland policies. We do not believe satisfactory consideration was given to alternative disposal sites to avoid this remaining wetland. We note that the EIS and the FWS indicated that this remaining wetland was made more valuable because of partial filling. It should be realized, however, that the potential of this area to have become more productive in the future existed regardless of the filling practices. While filling may have to some degree accelerated that productivity process, secondary wetland encroachment and current Federal disposal practices are destroying the marsh's remaining potential for productivity. The extent of this current damage should be detailed in the Final EIS.

Response:

Our reasons for continuing to use this site were based primarily on the fact that the dredging was urgently needed and no other alternative sites were immediately available. Our examination soundings indicated that dredging was necessary in order to maintain an adequate channel for the deep draft vessels using the harbor. Shoaling along the channel limits was reducing the channel width available for these vessels. Also, a shoal area extending the entire width of the channel reduced the project depth by two to three feet at the entrance to the Fox River. Based on these considerations, it was decided to schedule the dredging in May, 1975. It would have been difficult to reschedule the dredging for a future time period because the dredging plant is committed to other projects in advance and would not be available until next dredging season at the earliest. Also, preparation of the disposal area, including pipeline layout, is required so that it can be ready when dredging begins. The Chicago District is currently completing the process of idendifying a disposal area for future dredging operations. At present, the most acceptable alternative consists of continued use of the existing disposal area in conjunction with a new site. Only the effects of completing the filling of the existing site, which will destroy the present marsh, are covered in this EIS.

9.0423 Comment:

According to Exhibit B-6, the Brown County Regional Planning Commission in 1967 planned that the bay shore area west of the Fox River would be reserved for conservancy purposes. An explanation should be presented on the apparent conflict between this proposed land use plan and the City of Green Bay's intended industrial usage of the shore from Fox River west to a point near Duck Creek and the intersection of West Tower Drive and Military Road.

Response:

The planning map denoted as Exhibit B-6 in the draft EIS is not a Green Bay-Brown County Regional Planning Commission proposal. This map, which indicates that a large part of the present Bayport

site should be for conservancy purposes, was actually a proposal by the Department of Interior in 1968, as stated in the text in paragraph 2.19 on page 11. Exhibit B-6 has been deleted from the Final EIS as this proposal is no longer viable.

9.0424 Comment:

Since dredging and disposing practices have begun and it was stated in the EIS that the overflow effluent from the diked disposal site would be monitored during dredging and disposal, we request that samples be analyzed and this data provided to us as early as possible. A summary of this data should be presented in the Final EIS. The expected inadequacies of the present site with regard to detention time and effluent quality that were indicated in the EIS should be discussed in more detail in the Final EIS. If the effluent discharge fails to meet applicable water quality standards and water quality in the bay is degraded, dredging and disposal operations should cease until appropriate design modifications are made at the disposal site and a suitable quality of effluent is obtained.

Response:

The effluent from the disposal area will be monitored. A water quality monitoring program could not be implemented in time for the 1975 dredging operation due to the urgency of the work. In developing a program for future dredging at Green Bay Harbor, water quality monitoring will be included as part of any plan. The U. S. EPA has provided the Corps (since publication of the DEIS) with an outline for a water quality monitoring program for diked disposal areas on the Great Lakes. Recommendations from the EPA monitoring program plus recommendations from the Wisconsin DNR will be incorporated into the contractor's specifications for the 1977 and any future dredging and confined disposal at Green Bay Harbor. No dredging is scheduled for 1976

9.0425 Comment:

Future dredging and disposal in this harbor will constitute a Section 404 action (PL 92-500). Section 404(b) guidelines are currently proposed and were recently published in the Federal Register. In the future, Section 404(b) guidelines will have to be considered in dredge and fill operations in this harbor.

Response:

The guidelines outlined in the rules proposed by the EPA pursuant to Section 404(b) of Public Law 92-500 will be considered.

9.0426 Comment:

While it is not our intention to delay current maintenance activities or next year's maintenance activities, we believe a better effort by the Corps of Engineers, City of Green Bay and Brown County should be made in considering more environmentally compatible sites for polluted dredge material, protecting the remaining marsh in the diked area for conservancy purposes and avoiding further encroachment in Atkinson's Marsh and Duck Creek estuary.

Response:

The Corps is currently coordinating with applicable Federal, State and local agencies on selection of a new disposal site for post-1977 dredgings. Avoiding further encroachment into wetlands is a major constraint in this study.

0.043 United States Department of Interior

9.0431 Comment:

The discussion of alternatives concludes that "no immediate alternate disposal sites are available at Green Bay" (p. 21, par. 6.03). How However, it was previously stated that the Grassy Island Disposal Area was diked but was never used for dredge disposal (p. 3, par. 1). This area is delineated on the map on page B-8, surrounded by dikes 5 feet high, situated alongside the navigation channel near Grassy Island. The alternative of using that site does not appear to have been discussed, as far as can be determined.

Response:

Consideration of the Grassy Island Site was undertaken very early in the project. This site is not feasible for usage since the dikes have been destroyed. The original dike walls were constructed of sand and clay materials. The suitability of this site has been eliminated. The advantage of utilizing this site offers no more than any other open water site (Appendix B-2). In addition, U. S. Fish and Wildlife objects to construction in this area because of a risk of disturbing presently nesting double crested cormonrants.

9.0432 Comment:

In addition, the alternative of confining future spoil deposition to the 350 acres of the proposed disposal site that have already been filled merits further consideration. Since the anticipated volume of spoils is about 800,000 cubic yards, that volume would cover a 350-acre area to a depth of only about 22 inches.

Response:

This is not a feasible alternative. The acreage of the "Green Bay Diked Disposal Area" which was filled previously is already at the maximum elevation specified by the City of Green Bay which owns the site and has allowed us to use it.

9.0433 Comment:

From the standpoint of fish and wildlife resources, the main body of the draft statement and the appendicized letters from the U. S. Fish and Wildlife Service document sufficiently that the dredge spoiling in the wetlands of the "Green Bay Diked Disposal Area" has resulted in extensive and irreparable biological losses. Since the destruction of the remaining wetland habitat appears inevitable, without any attempt to avert or compensate for anticipated natural resources losses, Section 6, "Alternatives to the Proposed Action" is superfluous. Although this section possibly complies with the National Environmental Policy Act of 1969 (Section 102 (2) (D), failure to circulate an Environmental Impact Statement until filling of the marsh has nearly been completed is not consistent with the intent of the Act.

Response:

Refer to response of subparagraph 9.0421.

9.0434 Comment:

The selected plan for future dredge spoil disposal in this area is unacceptable to the Fish and Wildlife Service.

Response:

Coordination with the Fish and Wildlife Service of the U. S. Department of the Interior conducted in the spring of 1974 resulted in their agreeing that we should continue using the existing disposal area at Green Bay until it is filled as long as we met the conditions they specified to protect Forster's terns hatching within the area. The Department of the Interior letter dated 29 August 1975, included in Appendix E, indicates that they have not reversed their position as this comment implies. They will still permit our use of the site as previously agreed upon.

9.0435 Comment:

In several places it has been implied that the 30 acres of wetland within the disposal site has already been partially filled with spoils. For example, it is stated that this area "has been filled somewhat by runoff from the rest of the site"(p. 5, par. 1.15). However, it should be emphasized that the rest of the disposal site was filled largely with sand and clay dredged in a channel-deepening

project, and that this material has been described as "relatively less polluted" than spoils now proposed for disposal there. The present proposal should not be viewed as simply a continuation of past actions, as the spoils would now evidently be dredged largely from an area described as a "grossly polluted area with black foul-smelling sediments" (p. 8, par. 2.06).

Response:

It is true that the dredged material to be disposed of in this disposal area in 1977 will be polluted as compared to the new work dredging which were put into the site when it was first used. However, although the nature of the material differs, the proposed action must still be considered a continuation of the previous action since the primary effect of the disposal action is related to the filling action itself regardless of the nature of the sediment.

9.0436 Comment:

In general, the possible impacts of the proposed action on ground-water resources seem to be properly anticipated, although a few additional details would be helpful. Sediments underlying the present disposal site apparently are fairly impermeable (p. 8, 10) and disposal of fly ash as well as dredged materials has been in progress for some years. Use of additional areas adjacent to the disposal site will further spread pollutants, but damaging migration into significant aquifers seems unlikely, in view of reported thicknesses of clay and clayey materials underlying the site (p. 8). Slow movement, low permeability, high porosity, ion exchange, and normal organic reactions should prevent excessive damage; however, the statement should address these factors at least in the summary fashion. Even a gross comparison of vertical versus lateral permeability and a statement concerning underlying aquifers would be helpful in the evaluation of impacts on ground-water.

Response:

The clay and clayey materials under the disposal facility will sufficiently contain any pollutants. This will prevent any materials from adversely impacting groundwater resources. The construction of the containment walls was designed to contain the materials within the facility. Effluent discharged through the sand filter will be monitored to assure water quality.

9.0437 Comment:

After a description of the location of the proposed disposal site in paragraph 2.31, it is stated that "the remainder of the west bay shore south of Long Tail Point is mostly marshland which is proposed as a conservancy area (Appendix B-6)" (p. 14-15, par. 2.31). However, the map on page B-6 shows that the proposed conservancy

area coincides with most of the proposed disposal site as delineated on pages B-5 and B-8. The area identified on the map of proposed land-use (p. B-6) as having been "zoned for general industry" apparently comprises only a narrow strip of land along Tower Drive within the proposed disposal area. It is not entirely clear what agency or agencies are the authorities for the proposed or zoned land uses shown on the Planning Map (p. B-6). The authority identified on the map is the Green Bay-Brown County Regional Planning Commission, and the date is shown as November 1967. However, no revision of the land-use plan during the intervening period of nearly ten years is mentioned in the draft statement. The plan depicted on page B-6 now appears to have been rendered obsolete by the subsequent filling of at least 350 acres of marsh-land within the area shown as "proposed conservancy," and by the fact that officials of the City of Green Bay now evidently consider the area zoned for general industry to include a considerable acreage within the "proposed conservancy." We suggest this discrepancy be clarified.

Response:

Refer to response of subparagraph 9.0423.

9.0438 Comment:

Paragraph 4.14 indicates that "The State Historical Society has been contacted and the Federal Register of Historic Places has been consulted to determine the possible locations of affected sites." However, the final statement should reflect that the State Historic Preservation Officer, Mr. James Morton Smith, was consulted, and should contain a copy of his written response.

The statement should discuss the action taken or proposed to professionally determine the presence or absence of archeological resources in the project area and the effect of the proposal upon any such resources present. The statement should further reflect procedures to be followed should previously unknown archeological resources be encountered during project development.

Response:

A letter has been included within Appendix E of this statement from the State Historic Preservation Officer. Paragraph 4.14 of the text has been revised to refer to this coordination.

9.044 United States Department of Commerce.

9.0441 Comment:

We see no serious environmental problems which would prohibit the continuation of maintenance dredging in Green Bay Harbor and the Disposal of polluted spoil in an existing diked facility.

Response:

No response necessary.

9.0442 Comment:

Considering the difficulties in obtaining additional land or water areas for disposal of polluted spoil, effort should be made to reduce the amount of spoil. A much more definite knowledge is needed of sediment sources and rates of supply. With this knowledge, measures could be taken to intercept the sediment before it enters the waterways. Careful exclusion of any lightly polluted spoil from disposal in a contained facility will require a smaller facility.

Responses:

Based on the type of maintenance dredgings removed from this project, it would appear that they are derived from the side slopes of the channel sloughing into the channel. Also, because of the shallow nature of the southern portion of Green Bay and its resultant shifting nature, the remainder of the dredging is attributed to shifting bay sediments. There is no practical way to intercept the sediment from these sources. In regard to the last sentence of this comment, the intent of this comment is well taken since any reduction in the amount of dredgings to be confined will result in a savings of Federal and local expenditures. There are two practical points which must be considered related to this comment.

1. Procedurally the Corps is required to confine any dredgings which are unacceptable according to U.S.E.P.A. sediment pollution criteria.

2. At harbors where sediment sampling has been completed, either all or portions of a harbor's sediments have been determined to be polluted and unacceptable for open lake disposal. For those harbors where only a portion of the harbor's dredgings must be confined, dredging is carried out in such a manner that dredgings from the general area defined as polluted are confined.

9.0443 Comment:

In addition, an experimental disposal of nutrient-rich spoil could be tested in nearby marshy areas with the aim of improving them. The city of Green Bay in a letter dated March 27, 1974 (Page A-2a) stated that prior to filling in the present disposal area, the only vegetation existing was marsh grass growing to a height of four to five feet with a few box elders near the bay shore. As to the wildlife, two flights of a single duck were observed under a half-day period. After partial filling with spoil rich in nutrients and organic material, conditions in the marsh visibly improved with considerable amounts of vegetation and animal life of one type or another.

Response:

The suggestion to experiment with the use of dredged material at Green Bay for marsh enhancement is a good one in that it may potentially provide an additional alternative for dredging disposal while at the same time creating better or additional wetland areas to replace those wetlands deteriorated or lost to development. It is the Chicago District's intention to further pursue this idea. However, coordination with and the concurrence of Federal, State and local agencies and other groups would be essential in determining the feasibility of developing and monitoring such a plan. Additionally, coordination with the U.S.A.C.E. Waterways Experiment Station would be necessary to avoid duplicating any of their research efforts under their "Dredged Material Research Program" and to incorporate their findings into the plan.

9.0444 Comment:

A water level gage is located on the Wisconsin Public Service Corporation Power Plant dock in the Fox River. Geodetic control survey monuments are located in the immediate vicinity of the proposed project area. If there is any planned activity which will disturb or destroy these monuments, the Department of Commerce, National Ocean Survey, of which the National Geodetic Survey is a part, requires not less than 90 days notification in advance of such activity in order to plan their relocation. This Department also recommends that funding for this project include the cost of any relocation required for these monuments. We request that this advance notification be given to: Director, National Geodetic Survey, Room 204A - WSC # 1; 6010 Executive Blvd., Rockville, Maryland 20952.

Response:

There are no survey monuments which would be affected by this project.

9.045 United States Department of Agriculture Soil Conservation Service.

9.0451 Comment:

The statement should include some indication of the potential use of the disposal site after the project is completed. The final use of the site could have greater impact than the proposed action.

Response:

Refer to paragraphs 3.01, 4.07 - 4.13, 7.01, and 8.03.

9.0452 Comment:

The disposal site may be subject to wind erosion. Provisions for revegetating the disposal site should be included.

Response:

Portions of the site covered by dredging have not been subject to significant wind erosion since they have begun revegetating immediately after disposal operations ceased in any area of the site. Portions of the site covered by flyash have, however, have been subject to wind erosion.

Since the site is owned by the City of Green Bay and used for disposal purposes by parties other than the Corps, the responsibility for erosion control belongs to the City of Green Bay.

9.0453 Comment:

According to the draft statement, 30 acres of type 3 wetlands will be destroyed. Will any new areas be created to replace this loss?

Response:

No mitigative action is planned.

9.046 United States Department of Transportation.

9.0461 Comment:

The Department of Transportation has reviewed the material submitted. We have no comments to offer nor do we have any objection to this project.

Response:

No response required.

9.047 United States Coast Guard.

9.0471 Comment:

The referenced Draft Environmental Impact Statement has been reviewed by this office and at this time we have no comments to offer.

Response:

No response required.

9.048 Wisconsin Department of Natural Resources.

9.0481 Comment:

We understand that the Corps of Engineers has already commenced the dredging activity which is the subject of the draft environmental impact statement under review. Such an action is obviously

contrary to the spirit and intent as well as the provisions of the National Environmental Policy Act. The impact statement becomes nothing more than a paper exercise which is being used to justify an action which the Corps has already undertaken. Under these circumstances, the time spent reviewing and commenting on this document is largely wasted. We submit the following comments with the hope and intention that the concerns and suggestions presented will be addressed in the final environmental impact statement and that they will be considered in all impact documents on any future Corps dredging activity in Green Bay Harbor. We also hope that all future impact documents will be prepared in full compliance with the National Environmental Policy Act.

Response:

Refer to response of subparagraph 9.0421.

9.0482 Comment:

Page 3, paragraph 1.07 - If the Forster's terns are to be discouraged from nesting in the disposal area, where are they going to nest?

Response:

Coordination with the U. S. Fish and Wildlife Service and the Wisconsin DNR indicate that if the Corps begins filling the existing site in early spring before the terns begin nesting, they will be encouraged to seek alternate nesting sites. All efforts will be made to schedule the maintenance dredging for this early spring period. If the dredging cannot be made in early spring, the Corps will again try to reschedule dredging for August to allow the terns to complete nesting. Regardless of how the tern nesting problem is handled in 1977, after 1977, the terns will be forced to nest elsewhere as the present wetland will have been filled. The Wisconsin DNR has indicated that they had hoped the terns would nest on Atkinson Marsh or other westside similar habitats. Apparently, according to the Wisconsin DNR, the only reason the terns are utilizing the existing disposal site is that their traditional nesting wetlands bayward of the disposal site, are presently covered by the high lake levels.

9.0483 Comment:

Page 6, paragraph 1.16 - We do not feel that the problem of the present facility becoming inadequate after a period of years has been completely addressed in this portion of the impact statement. It is simply stated that a modified design would be used which would meet State and Federal standards. The fact that this design is not discussed in any degree of detail does not allow for a proper assessment of the impacts of the project during its later stages of development.

Response:

The Corps is presently conducting a site selection analysis to find a new site for post-1977 dredgings. A public workshop was held in Green Bay on 22 March 1976 to solicit public opinion on a series of alternative disposal sites. Any new dredged disposal areas will be covered by a separate EIS. Final design modification of the existing "Green Bay disposal area" has been altered since preparation of the Draft EIS to include a sand filter in the northwest corner of the site and internal diking around the fly-ash areas. Raising the elevation of the outer dikes or other remedial measures will be implemented if water quality monitoring indicates a problem.

9.0484 Comment:

A pair of 24-inch overflow pipes drain the disposal area. No mention is made of any filtering mechanism before discharge to Green Bay. Other dredging projects have provided a sand and gravel filtering system which provides some protection from the discharge of suspended pollutants to a water body. Is this not a possibility at Green Bay?

Response:

A sand filter will be installed in the northwest corner of the site to filter effluent prior to use of the site for 1977 dredgings.

9.0485 Comment:

While it is not clearly stated in the impact statement that the Grassy Island disposal site is proposed to be used as a part of the project, its inclusion in appendix B as an alternate site indicates that this is a possibility. The conditions under which this site might be used should be clarified.

Response:

There is no intention of using the Grassy Island disposal site in the near future (next one-three years). At present, attempts are being made to secure a new disposal site(s) for future use after the present site is filled. If the Grassy Island is considered under this site selection process, it will be discussed in the environmental impact statement for the new site(s).

9.0486 Comment:

Page 12, paragraph 2.21 - There are two significant omissions in the discussion of the avian fauna of Atkinson Marsh. The first, which has been referred to, is the colony of nesting Forster's terns. This is one of the few nesting sites of this bird remaining

in Wisconsin. The little gull (Larus minutus) has been observed nesting in Atkinson Marsh. The bird is an European straggler and has not been reported from anywhere else in Wisconsin.

Response:

The mention of Forster's terns and the little gull (Larus minitus) will be incorporated. See paragraph 2.21.

9.0487 Comment:

Page 13, paragraph 2.25 - Appendix C-2 which is mentioned in this paragraph contains numerous mammal species which are not found in the immediate project area. The list should be revised to indicate which species inhabit the marsh in the spoil area.

Response:

The mammal species list included in the draft EIS (Appendix C-2) has been deleted from the final EIS since it does not specifically describe those species which can be found within the disposal area. In order to prepare an accurate inventory, extensive baseline field efforts would be required. The costs associated with such an effort are not considered to be warranted based on the nature and scope of the proposed project.

9.0488 Comment:

Page 16, paragraph 4.01 - It is stated that the magnitude of the environmental impact associated with maintenance dredging is not known due to the fact that dredging at Green Bay has not been monitored. Monitoring of this and all other maintenance dredging activities should be undertaken by the Corps at the earliest opportunity.

Response:

Our intent is to monitor disposal area effluent during disposal operations. In addition, we do feel that some monitoring of dredging operations should be done to provide information to determine dredging effects; however, only at selected sites where specific problems are anticipated.

The EIS addresses dredging impacts in a qualitative manner. The paragraph cited was intended to note that a more quantitative estimate is not possible, given present knowledge. In this regard the the U. S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi is currently conducting a dredged material research program which includes monitoring of dredging at a number of locations to determine the impacts and the best methods of dredging. It is expected that this research, to be published in 1977 or 1978, will add to the understanding of dredging and disposal impacts and assist in setting up future dredging and disposal policies and programs.

9.0489 Comment:

An impact statement which cannot accurately describe or predict the probable environmental impacts of the proposed action is not considered adequate.

Response:

It is the responsibility of the EIS originator to present all impacts in the most complete and accurate manner possible. Specific degrees of impact as well as the impacts themselves are often difficult to measure. As a result, the EIS must reflect an estimate of impact. In the case of dredge projects, significant research projects are being completed on a wide variety of related topics through the U. S. Army Engineers Waterways Experiment Station in Vicksburg, Mississippi. As the findings become known, reports are expected in 1977 or 1978, the data will be incorporated within the Corps decision making process.

9.04810 Comment:

Earlier in the impact statement, there is a brief discussion of the role that marshlands play in maintaining water quality in associated water bodies. What adverse effects on water quality can be expected with the destruction of an additional 30 acres of marshland?

Response:

Because the disposal site is a diked area, it has effectively been cut off from the flow of Green Bay. 1975 filling has also substantially filled the remaining 30 acres. Therefore, the area's value in improving water quality no longer exists to any significant extent.

9.04811 Comment:

Page 17, paragraph 4.06 - It is doubtful that very many of the marshland organisms would be displaced. Most would be eliminated either through direct mortality or subsequent increased competition for the available habitat.

Response:

Concur

9.04812 Comment:

Page 18, paragraph 4.07 - The secondary impacts described would probably be even more damaging to the remaining marsh area than the dredge spoil disposal.

Response:

Concur

9.04813 Comment:

Page 19, paragraph 4.12 - It is stated that the land values in the disposal area will increase with or without the dredging due to the intention of the City of Green Bay to fill this area. This statement should be modified to indicate that while the monetary value of the land may increase, the value of the land in the overall sense will not necessarily increase.

Response:

Concur. The statement has been revised.

9.04814 Comment:

In general, this section of the statement does not address impacts specifically expected to result from this project. The discussion of impact is a general one related to limited observational and experimental determinations. It should again be emphasized that unless specific information is given, the actual effects upon the local environment will not be known. It should be specifically stated what materials might be reintroduced into the aquatic environment as a result of dredging of bottom sediments in Green Bay Harbor and what effects these would have upon organisms living specifically in this area.

Response

This subject was discussed in the draft EIS in as great detail as possible based on available data. Additional information about material reintroduction into the aquatic environment resulting from dredging is expected to be obtained from the research being conducted by the U. S. Army Corps of Engineers Waterways Experiment Station as part of their "Dredged Material Research Program." However, this research has not been completed, although, reports are expected in 1977 or 1978.

9.04815 Comment:

Page 20, paragraph 5.03 - It is stated that monitoring has not been done to determine the dredging-produced turbidity in Green Bay Harbor. Therefore, it does not appear that justification is given for stating that the effects of dredging would be insignificant when related to natural forces. While the dredging period may be of a relatively short duration, turbidity levels may also be substantially higher than under normal conditions.

Response:

Although we have no monitoring data available to substantiate our case, we feel that in general dredging is done in shallower inshore waters which are typically high energy environments with strong wave and storm action which may resuspend sediments more than the action of dredging.

9.04816 Comment:

Page 21, paragraph 6.03 - The fact that the City of Green Bay intends to complete the filling of the present disposal site regardless of future Corps activity does not justify dismissing the cumulative impact of continued dredge spoil disposal around Green Bay in the future. The possibility of utilizing upland sites sufficiently removed from the lake to prevent damage to valuable wetland areas should be looked into.

Response:

Since the only purpose of Section 6.03 was to consider the tradeoffs involved in deciding whether or not to cease using the present site and therefore discontinue dredging until another site(s) is secured, the key issues in Section 6.03 were related only to the impacts of using the existing site and not to cumulative impacts of present and future use. This EIS only covers dredging disposal using the present site since no other sites are available for immediate use. Any future disposal sites will be covered by separate EIS(s)

9.04817 Comment:

Page 21, paragraph 6.04 - We believe that hydraulic dredges are generally more environmentally compatible provided that a satisfactory spoil disposal location and method can be found. The hydraulic dredge causes less turbidity in the water and performs a more complete removal of polluted bottom materials.

Response:

The environmental compatibility of hydraulic dredging over other methods in the Great Lakes is still not very well defined.

9.04818 Comment:

Page 24, paragraph 7.01 - It is noted that there are no comments in this section regarding the effects on the long-term productivity of the aquatic environment of Green Bay exclusive of the present disposal site.

Response:

Because of the apparent temporary nature of the effects of dredging on the aquatic environment, it appears that there will be no significant effects on the long-term aquatic productivity of Green Bay other than on the disposal site.

9.04819 Comment:

Appendix B-8 - The northwest boundary of the disposal site indicated on this map lies outside of the bulkhead line approved by the Public Service Commission. We believe this is a cartographic error. If so, the map should be corrected to more accurately indicate the location and size of the disposal site.

Response:

This map was correct as shown, however, we have deleted this map to avoid confusion. The portion of the site affected by the bulkhead line lies several hundred feet landward of the line. A portion of the disposal site (northeast end) extends beyond the terminus of the established bulkhead line. Development in this area is therefore not controlled by a bulkhead line.

9.049 Wisconsin Department of Business Development.

9.0491 Comment:

The Wisconsin Department of Business Development has carefully reviewed the environmental statement which has been prepared covering the maintenance dredging and continued disposal of dredged materials at Green Bay Harbor, and while we are very much interested in the preservation of vegetation and wildlife, we also hope to see substantially more industrial growth occur in the Green Bay area.

Therefore, it is our opinion that continued fill of the southwest shore bulkhead line will further enhance the future potential of Green Bay's industrial development effort. The city has already expended a substantial amount of money for industrial development in the area, and therefore it is our hope that this present specific land use can be continued through the mutual satisfaction of all concerned parties.

The city of Green Bay, through this action, has expressed a strong interest in strengthening their economic base, and we have every reason to believe this can be successful through their program which is designed for orderly growth and development and encompasses a continued interest on their part for a strong, healthy environment as well. Therefore, we have every reason to feel much can and will be accomplished through joint cooperation.

Response:

No response required.

9.0410 State Historical Society of Wisconsin.

9.04101 Comment:

There are no sites in, or eligible for, the National Register of Historic Places within the boundaries of the proposed project nor will any other known historic sites be affected. Furthermore, no known archeological sites will be affected.

Response:

No response required.

9.0411 Green Bay Brown County Planning Commission.

9.04111 Comment:

We would like to correct Page B-6, "Planning Map Depicting Proposed Conservatory Areas." In as much as we are credited as being the source, it should read "Proposed Conservancy".

Response:

Refer to response of subparagraph 9.0423.

9.04112 Comment:

Since the Bay Port diked disposal areas is almost completed, and in view of the lengthy legislative legal and engineering research needed to begin to advance one of the alternatives in the recently prepared Plan, there is little justification not to endorse completion of this disposal area.

Response:

Comment noted.

9.0412 Green Bay Industrial Development Authority.

9.04121 Comment:

It is my opinion that fill within the Bay Port containment should continue until such time as the overall elevations reach the recommended 103 datum levels.

With regard to future disposal of dredged materials from the navigation channel or elsewhere in the Bay itself, such materials

would best serve the public interest if they are deposited in previously constructed containment area lying between Grassy Island and Long Tail Point. As a long range alternative, my department would like consideration of another possibility. Specifically, I refer to the possibility of establishing a totally new dredgings disposal area which would lie approximately 1,600 feet westerly from Bylsby Avenue along the established pierhead-bulkhead line, thence northerly for about 2,000-feet. The area between this proposed site and the navigation channel could be dredged and the spoils placed in a containment area approximately 1,600 feet at the base (or pierhead-bulkhead line) and approximately 1,200 feet at the northerly boundary of the proposed site where it would lie 2,000 feet north of the pierhead-bulkhead line. This could, at some future date, provide for adequate municipal dockage and, at the same time, substantially retain the integrity of the wetland areas, outside the existing containment dike.

Response:

Relative to future disposal, the Corps acknowledges this comment and makes no response at this time since this analysis is primarily concerned with the present dredging and disposal problem. Coordination with the city of Green Bay and others in the selection of a new disposal site at Green Bay has been initiated.

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