Great Lakes Confined Disposal Facilities

Appendix A

Contents

on rivers and harbors for flood control, and for other purposes", approved August 18, 1941 (55 Stat. 650; 33 U.S.C. 701n).

SEC. 24. CONTAINED SPOIL DISPOSAL FACILITIES IN THE GREAT LAKES AND THEIR CONNECTING CHANNELS.

(a) Period for Depositing Dredged Materials.--Section 123 of the River and Harbor Act of 1970 (33 U.S.C. 1293a) is amended by adding at the end thereof the following new subsection:

"(j) Period for Depositing Dredged Materials.--The Secretary of the Army, acting through the Chief of Engineers, is authorized to continue to deposit dredged materials into a contained spoil disposal facility constructed under this section until the Secretary determines that such facility is no longer needed for such purpose or that such facility is completely full.".

(b) Study and Monitoring Program. --Such section is further amended by adding at the end thereof the following new subsection:

"(k) Study and Monitoring Program. --

"(1) Study. --The Secretary of the Army, acting through the Chief of Engineers, shall conduct a study of the materials disposed of in contained spoil disposal facilities constructed under this section for the purpose of determining whether or not toxic pollutants are present in such facilities and for the purpose of determining the concentration levels of each of such pollutants in such facilities.

"(2) Report. --Not later than 1 year after the date of the enactment of this subsection, the Secretary shall transmit to Congress a report on the results of the study conducted under paragraph (1).

"(3) Inspection and monitoring program. --The Secretary shall conduct a program to inspect and monitor contained spoil disposal facilities constructed under this section for the purpose of determining whether or not toxic pollutants are leaking from such facilities.

"(4) Toxic pollutant defined. --For purposes of this subsection, the term `toxic pollutant' means those toxic pollutants referred to in sections 301(b)(2)(C) and 301(b)(2)(D) of the Federal Water Pollution Control Act and such other

pollutants as the Secretary, in consultation with the Administrator of the Environmental Protection Agency, determines are appropriate based on their effects on human health and the environment.".

SEC. 25. SOUTH PIER TO CHARLEVOIX HARBOR, CHARLEVOIX, MICHIGAN.

The Secretary shall take such action as may be necessary to restore recreational uses established prior to May 1, 1988, or provide comparable recreational uses at the South Pier to Charlevoix Harbor project, Charlevoix, Michigan, in order to mitigate any adverse impact on recreational uses resulting from reconstruction of the South Pier. Costs incurred by the Secretary to carry out this section shall be allocated among authorized project purposes in accordance with applicable cost allocation procedures and shall be subject to cost sharing or reimbursement to the same extent as other project costs are shared or reimbursed.

SEC. 26. COYOTE AND BERRYESSA CREEKS, CALIFORNIA.

The Secretary is directed to include in the feasibility report for the project for flood control, Coyote and Berryessa Creeks, California: Report of the Board of Engineers for Rivers and Harbors, dated May 11, 1988, recommendations for reimbursement of local interests for work undertaken after the date of the enactment of this Act which is integral to the Federal project as recommended in the feasibility study. Such reimbursement shall not exceed $3,000,000 and shall be made at such time as the federally funded work is carried out.

SEC. 27. LAND CONVEYANCE, WHITTIER NARROWS DAM, LOS ANGELES COUNTY, CALIFORNIA.

(a) Authority To Convey.--Subject to the provisions of this subsection, the Secretary may convey to the city of South El Monte, California, approximately 7.778 acres of real property, together with improvements thereon, located within the Whittier Narrows Flood Control Basin, south of the Pomona Freeway (Highway 60) and east of Santa Anita Avenue, in the city of South El Monte, California.

(b) Consideration. --In consideration for the conveyance authorized by subsection (a), the Secretary may accept real property in the Los Angeles area or cash, or both. The value of the

Lakes water quality initiatives in such preceding fiscal year;

(B) describes the progress made in such preceding fiscal year in implementing the system of surveillance of the water quality in the Great Lakes System, including the monitoring of groundwater and sediment, with particular reference to toxic pollutants;

(C) describes the long-term prospects for improving the condition of the Great Lakes; and

(D) provides a comprehensive assessment of the planned efforts to be pursued in the succeeding fiscal year for implementing the Great Lakes Water Quality Agreement of 1978, which assessment shall—

(i) show by categories (including judicial enforcement, research, State cooperative efforts, and general administration) the amount anticipated to be expended on Great Lakes water quality initiatives in the fiscal year to which the assessment relates; and

(ii) include a report of current programs administered by other Federal agencies which make available resources to the Great Lakes water quality management efforts.

(11) CONFINED DISPOSAL FACILITIES.—(A) The Administrator, in consultation with the Assistant Secretary of the Army for Civil Works, shall develop and implement, within one year of the date of enactment of this paragraph, management plans for every Great Lakes confined disposal facility.

(B) The plan shall provide for monitoring of such facilities, including—

(i) water quality at the site and in the area of the site;

(ii) sediment quality at the site and in the area of the site;

(iii) the diversity, productivity, and stability of aquatic organisms at the site and in the area of the site; and

(iv) such other conditions as the Administrator deems appropriate.

(C) The plan shall identify the anticipated use and management of the site over the following twenty-year period including the expected termination of dumping at the site, the anticipated need for site management, including pollution control, following the termination of the use of the site.

(D) The plan shall identify a schedule for review and revision of the plan which shall not be less frequent than five years after adoption of the plan and every five years thereafter.

(12) REMEDIATION OF SEDIMENT CONTAMINATION IN AREAS OF CONCERN.—

(A) IN GENERAL.—In accordance with this paragraph, the Administrator, acting through the Program Office, may carry out projects that meet the requirements of subparagraph (B).

(B) ELIGIBLE PROJECTS.—A project meets the requirements of this subparagraph if the project is to be carried out in an area of concern located wholly or partially in the United States and the project—

including design of "fish-friendly" turbines, for use on the Columbia River hydrosystem.

(2) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated $12,000,000 to carry out this subsection.

(c) IMPLEMENTATION.—Nothing in this section affects the authority of the Secretary to implement the results of the research and development carried out under this section or any other law.

SEC. 512. COLUMBIA RIVER TREATY FISHING ACCESS.

Section 401(a) of the Act entitled "An Act to establish procedures for review of tribal constitutions and bylaws or amendments thereto pursuant to the Act of June 18, 1934 (48 Stat. 987)", approved November 1, 1988 (102 Stat. 2944), is amended—

(1) by striking "(a) All Federal" and all that follows through "Columbia River Gorge Commission" and inserting the following:

"(a) EXISTING FEDERAL LANDS.—

"(1) IN GENERAL.—All Federal lands that are included within the 20 recommended treaty fishing access sites set forth in the publication of the Corps of Engineers entitled 'Columbia River Treaty Fishing Access Sites Post Authorization Change Report', dated April 1995,"; and

(2) by adding at the end the following:

"(2) BOUNDARY ADJUSTMENTS.—The Secretary of the Army, in consultation with affected tribes, may make such minor boundary adjustments to the lands referred to in paragraph (1) as the Secretary determines are necessary to carry out this title.".

33 USC 1293a note.

SEC. 513. GREAT LAKES CONFINED DISPOSAL FACILITIES.

(a) ASSESSMENT.—Pursuant to the responsibilities of the Secretary under section 123 of the River and Harbor Act of 1970 (33 U.S.C. 1293a), the Secretary shall conduct an assessment of the general conditions of confined disposal facilities in the Great Lakes.

(b) REPORT.—Not later than 3 years after the date of the enactment of this Act, the Secretary shall transmit to Congress a report on the results of the assessment conducted under subsection (a), including the following:

(1) A description of the cumulative effects of confined disposal facilities in the Great Lakes.

(2) Recommendations for specific remediation actions for each confined disposal facility in the Great Lakes.

(3) An evaluation of, and recommendations for, confined disposal facility management practices and technologies to conserve capacity at such facilities and to minimize adverse environmental effects at such facilities throughout the Great Lakes system.

SEC. 514. GREAT LAKES DREDGED MATERIAL TESTING AND EVALUATION MANUAL.

The Secretary, in cooperation with the Administrator of the Environmental Protection Agency, shall provide technical assistance to non-Federal interests on testing procedures contained in the Great Lakes Dredged Material Testing and Evaluation Manual developed pursuant to section 230.2(c) of title 40, Code of Federal Regulations.

Great Lakes Confined Disposal Facilities

Appendix B

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Monroe Harbor – Sterling State Park
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Saginaw River – Middleground Island
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Sebewaing Harbor – Marina Site
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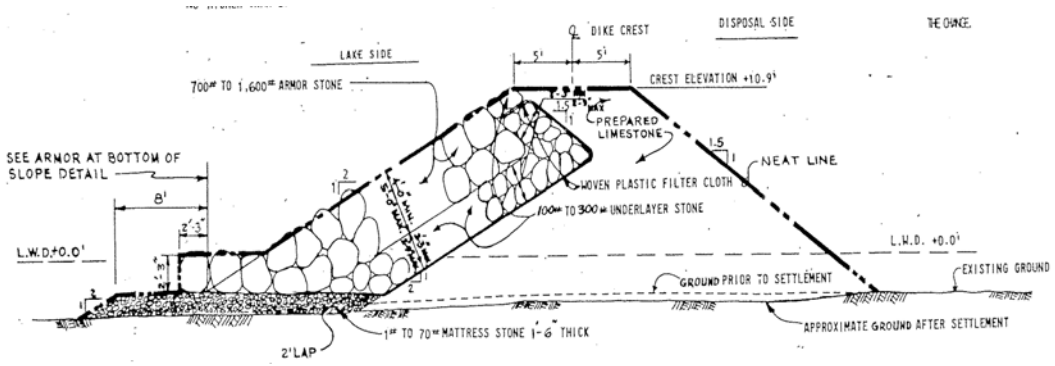
Summary Table of Great Lakes CDF Information

BOLLES HARBOR
CDF Fact Sheet

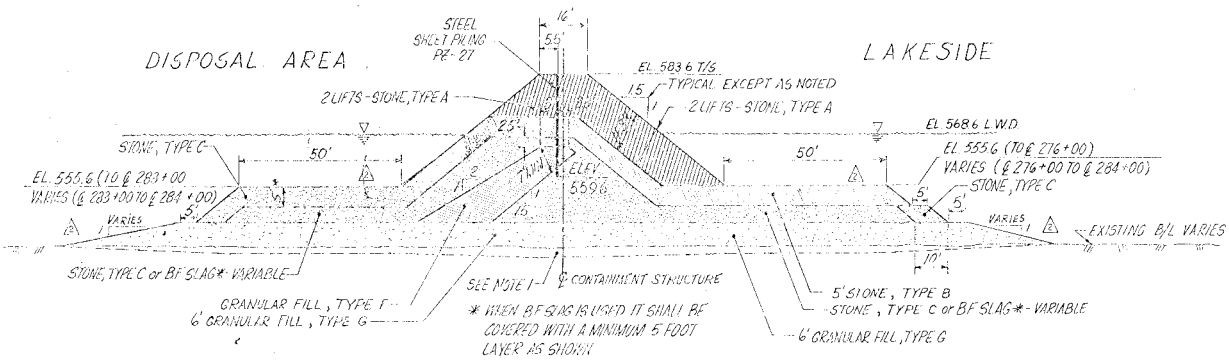
- Bolles Harbor CDF is an in-water facility in Bolles, Michigan, located on flat coastlands of Lake Erie at the mouth of La Plaisence Creek.
- Navigation project served: Bolles Harbor
- Local sponsor is the Michigan Department of Natural Resources.
- CDF area: 25 acres with a total capacity of 335,000 y^3; available capacity is 187,600 y^3
- EIS completed April 1975: "Confined Disposal Facility for Bolles Harbor, MI"
- Constructed in 1978 at a cost of $972,000.
- Dike design is a prepared limestone; portions with a clay core and coverstone.



- Hydraulically dredged material placed in CDF by pipeline.
- Dewatering by discharge through overflow weir to Lake Erie and seepage through dike
- Effluent treatment by primary settling, oil skimmer, and filtration in dike core
- Water quality monitoring conducted of dredge discharge, overflow weir and four stations outside dikes.
- Post-closure use intended for marina expansion.

BUFFALO HARBOR - DIKE 4
CDF Fact Sheet

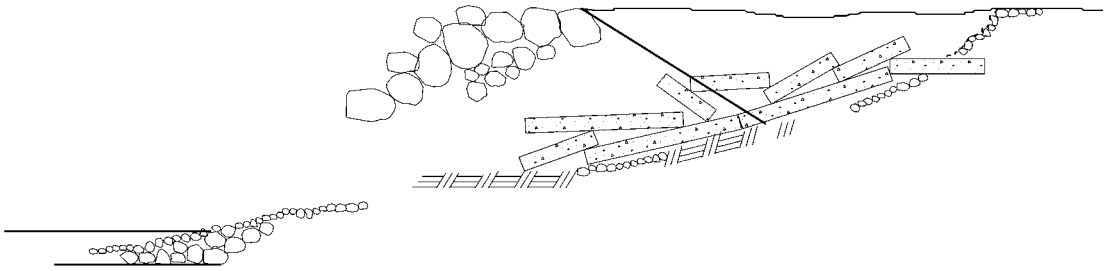
- Buffalo Harbor Dike 4 CDF is an in-water facility in Erie County, New York, located outside the breakwater at the south entrance to Buffalo Harbor (Stony Point) adjacent to Bethlehem Steel property and ties into existing south entrance arm breakwater.
- Navigation project served: Buffalo Harbor and Black Rock Channel and Tonawanda Harbor.
- Local sponsor is Erie County.
- CDF area: 107 acres with a total capacity of 6,900,000 y^3; available capacity is 3,312,000 y^3
- Constructed in 1977 at a cost of $15,400,000.
- EIS completed February 1973: "Diked Disposal Area, Buffalo River, Buffalo Harbor, Black Rock Channel, Tonawanda Harbor, Erie County, New York"
- Dike design is rubblemound with reverse sheet piling, layered stone and slag.



- Material placed in CDF by mechanical and hydraulic methods.
- Drainage by seepage through dike to Lake Erie; overflow weir will be used when CDF is nearly filled.
- Water treatment by primary settling and filtration in dike core.
- Water quality monitoring during disposal includes four wells in CDF dike and at locations outside dike.
- Post-closure use intended for wildlife area.

BUFFALO HARBOR - SMALL BOAT HARBOR
CDF Fact Sheet

- Small Boat Harbor CDF is an in-water facility in Buffalo, New York, located at south end of Buffalo Harbor adjacent to Route 5.
- Navigation project served: Buffalo Harbor and Black Rock Lock and Tonawanda Harbor.
- Local sponsor is the Niagara Frontier Transportation Authority (NFTA).
- CDF area: 33 acres with a total capacity of 1,500,000 y^3; no available capacity.
- EIS completed in 1972: "Operation and Maintenance, Buffalo Harbor, New York."
- Constructed in 1968 at a cost of $500,000. Last disposal operation in 1972.
- Dike design is a prepared limestone rip-rap on an earthen and slag core.



- Material placed in CDF by mechanical and hydraulic dredging
- Dewatered by seepage through dike to Lake Erie.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring during demo program of dredge discharge and stations outside dike.
- Site paved and used as parking lot for small boat harbor.

BUFFALO HARBOR - TIMES BEACH
CDF Fact Sheet

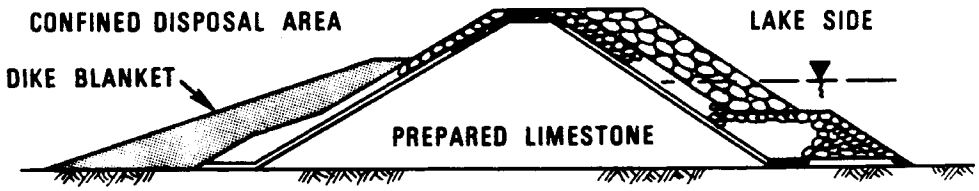
- Times Beach/Buffalo CDF is an in-water facility in Buffalo, New York, located southeast of mouth of the Buffalo River within the outer harbor.
- Navigation project served: Buffalo Harbor and Black Rock Lock and Tonawanda Harbor.
- Local sponsor is the City of Buffalo.
- CDF area: 45 acres with a total capacity of 1,500,000 y^3; available capacity is 1,200,000 y^3
- EIS completed January 1973: "Diked Disposal Area Number 2, Buffalo Outer Harbor, Buffalo, New York"
- Constructed in 1972 at a cost of $500,000. CDF not filled since 1976 in response to the recommendations of local groups to preserve the wildlife habitat provided by the site.
- Dike design is a layered slag and stone rubblemound.

Dike cross section not available

- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatered by seepage through dike to Lake Erie.
- Effluent treatment by primary settling and filtration in dike core.
- No water quality monitoring during disposal operations. Special studies of water quality in pond and groundwater and evaluations of contaminant uptake by plant and animal wildlife within CDF conducted following last disposal operations.
- Facility is an existing wildlife area, and a proposed project would enhance the habitat value of the site.

CALUMET HARBOR - CHICAGO AREA
CDF Fact Sheet

- Chicago Area CDF is an in-water facility in Chicago, Illinois, located in Calumet Harbor adjacent to the Port's Iroquois Landing facility.
- Navigation projects served: Chicago River, Chicago Harbor, Calumet River and Harbor.
- Local sponsors are the Illinois Regional Port District and the Chicago Park District.
- CDF area: 42 Acres; 1.3 million y^3 capacity; 370,000 y^3 capacity available.
- Constructed in 1984 at a cost of $7,800,000.
- Dike design is prepared limestone core with membrane liner and armor stone layer. A sand blanket was later constructed on the inside dike face.



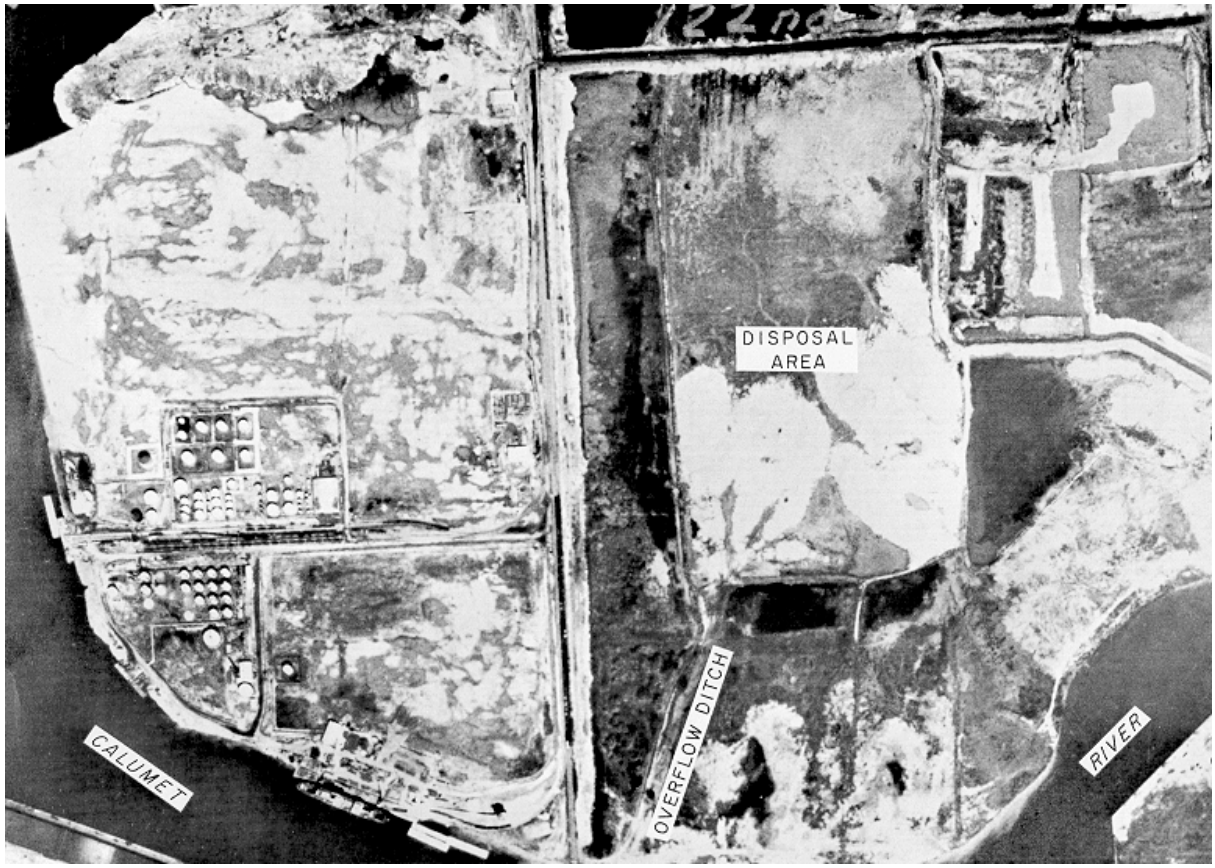
- Dredged material typically discharged mechanically by slide/hopper/sluice
- Water pumped from secondary settling basin through filter cells and discharged to Calumet River.
- Effluent treatment by primary settling and filtration in filter cell (sand/anthracite media).
- Water quality monitoring during disposal operations of dredged discharge, stations inside CDF pond, filter cell influent and effluent, and stations outside dike in Calumet Harbor. Nine wells in CDF dike and on Iroquis Landing monitored quarterly.
- Special studies include dye testing, mass balance modeling, an evaluation of PCB uptake in fish inside and outside the CDF, and a demonstration of innovative dredging equipment (Hayes et al 1988)
- Post-closure uses intended for port and/or park expansion.

CALUMET RIVER
CDF Fact Sheet

- Calumet River CDF is an upland facility in Chicago, Illinois located southeast of Lake Calumet.
- Navigation project served: Calumet River and Harbor.
- Local sponsor is the Metropolitan Water Reclamation District of Greater Chicago.
- CDF area: 91 acres. The total capacity is not available; no capacity remaining.
- EIS for project could not be located.
- Constructed in 1967 as part of pilot program (cost not available). Last disposal operation in 1980.
- Earthen dikes constructed with local material.

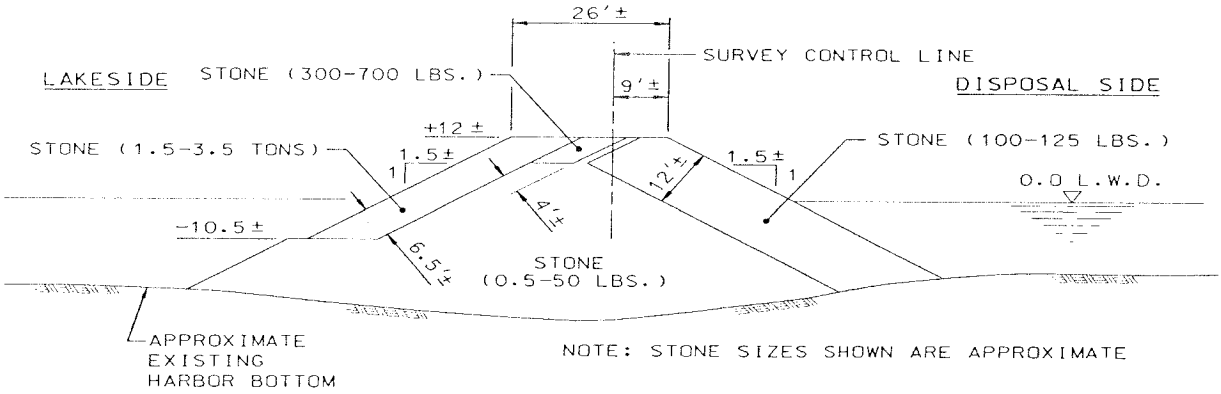
No dike cross section available

- Dredged material placed in CDF by pipeline.
- Dewatered by discharge from overflow weir to the Calumet River
- Effluent treatment by primary settling.
- Water quality monitoring of dredge discharge, weir overflow and mixing zones during pilot program investigations.
- Site subsequently used for disposal of sewage sludge and other materials.



CLEVELAND HARBOR - DIKE 10B
CDF Fact Sheet

- Cleveland Harbor Dike 10B CDF is an in-water facility in Cleveland, Ohio, on the west side of Dike 13 CDF adjacent to the Burke Municipal Airport.
- Navigation project served: Cleveland Harbor.
- Local sponsor: City of Cleveland
- CDF area: 68 acres with a total capacity of 3,840,000 y^3
- EIS completed March 1994: "Confined Disposal Facility Project (Site 10B-15year), Cleveland Harbor, Cuyahoga County, Ohio"
- Constructed in 1998 at a cost of $32,900,000.
- Dike design is a graded stone core with layered coverstone protection.

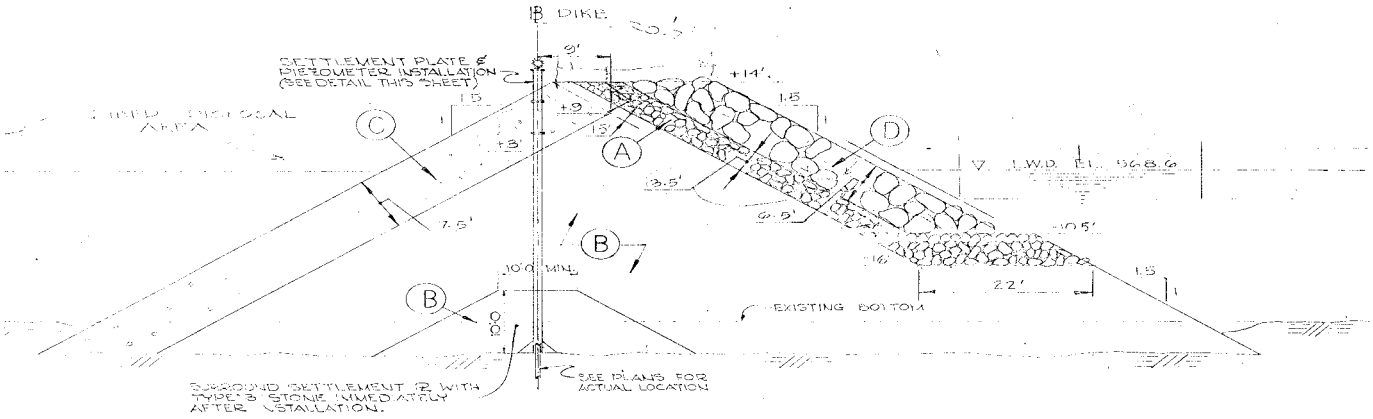


- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatering by seepage through the dikes and discharge through an overflow weir to Lake Erie.
- Effluent treatment by primary settling and filtration through dike core.
- No water quality monitoring is required.
- Post-closure use intended for airport expansion.


artist's rendition

CLEVELAND HARBOR - DIKE 12
CDF Fact Sheet

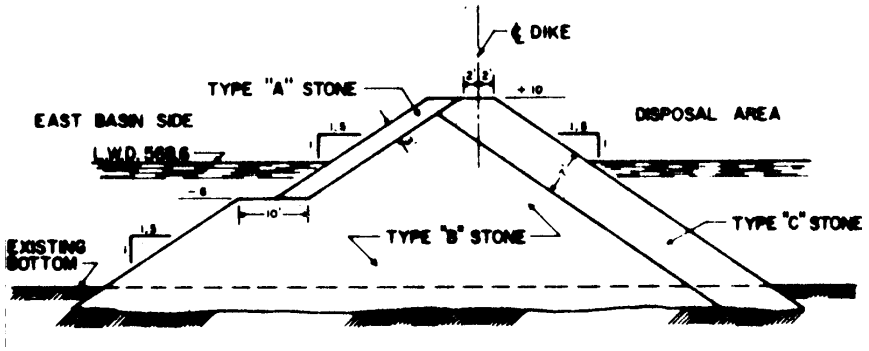
- Cleveland Harbor Dike 12 CDF is an in-water facility in Cleveland, Ohio, located east and north of Dike 13 CDF and adjacent to the Burke Municipal Airport.
- Navigation project served: Cleveland Harbor.
- Local sponsor is the Cleveland-Cuyahoga County Port Authority.
- CDF area: 56 acres with a total capacity of 2,760,000 y^3; no available capacity.
- EIS completed April 1973: "Diked Disposal Area, Site No. 12, Cleveland Harbor, Cleveland, Ohio"
- Constructed in 1974 at a cost of $6,800,000. Last disposal operation in 1979.
- Dike design is rubblemound with armor stone protection.



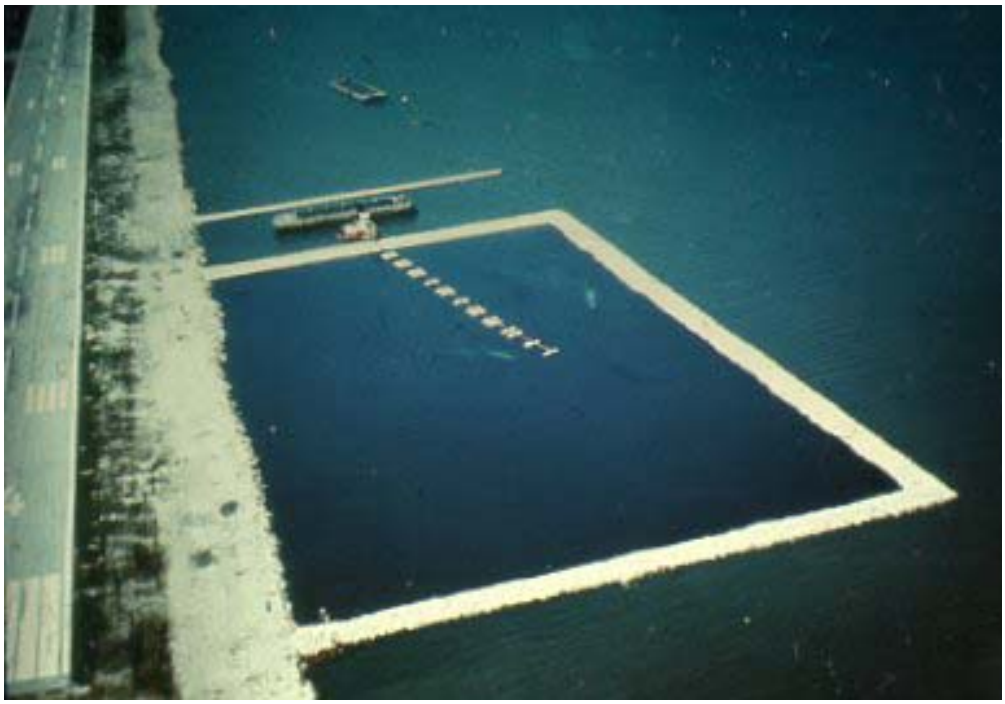
- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatering by seepage through dike and discharge from an overflow weir into Lake Erie.
- Effluent treatment by primary settling and filtration through dike core.
- No water quality monitoring required.
- Post-closure use includes airport related use.

CLEVELAND HARBOR - DIKE 13
CDF Fact Sheet

- Cleveland Harbor Dike 13 CDF is an in-water facility in Cleveland, Ohio, located adjacent to the Burke Municipal Airport.
- Navigation project served: Cleveland Harbor.
- No local sponsor.
- CDF area: 10 acres; total capacity of 375,000 y^3; no available capacity.
- No EIS prepared. Facility filled prior to NEPA authority.
- Constructed in 1967 for pilot program (cost not available); filled in 1968 and 1969.
- Rubblemound dike with limestone core and armor stone.

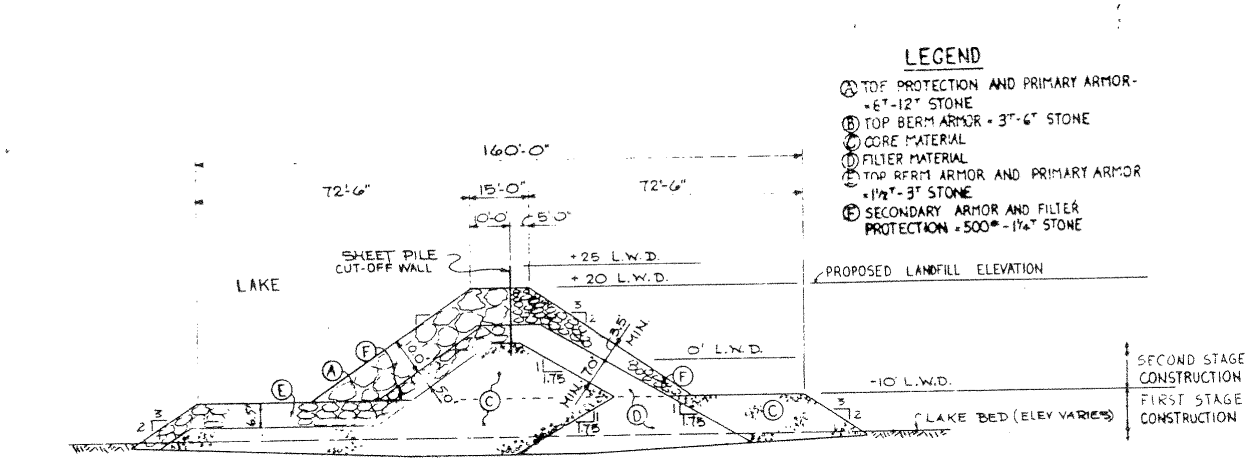


- Mechanically dredged material placed in CDF by pipeline.
- Dewatering by seepage through dike to Lake Erie.
- Water treatment by primary settling and filtration in dike core.
- Mechanically dredged material placed in CDF by pipeline. Extensive monitoring of dredge discharge, CDF pond, and numerous harbor locations as part of 1968 demonstration project (Buffalo District 1969).
- Post-closure use intended for airport expansion.



CLEVELAND HARBOR - DIKE 14
CDF Fact Sheet

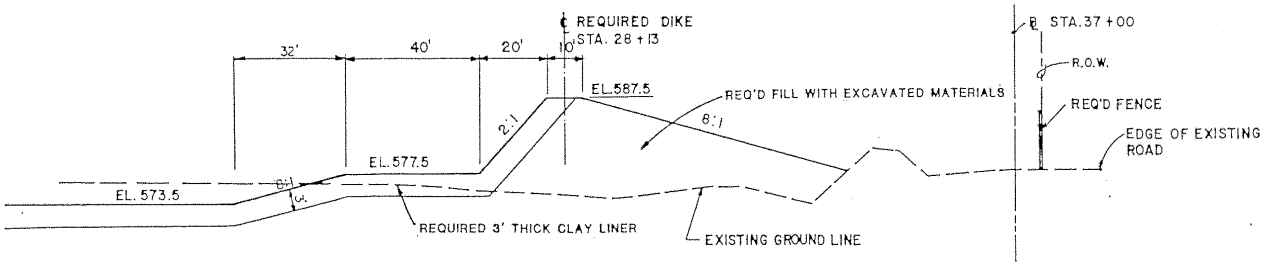
- Cleveland Harbor Dike 14 CDF is an in-water facility in Cleveland, Ohio, located 4.5 miles east of the mouth of the Cuyahoga River, and north of Gordon Park.
- Navigation project served: Cleveland Harbor.
- Local sponsor is the Cleveland – Cuyahoga County Port Authority.
- CDF area: 88 acres with a total capacity of 6,130,000 y^3; no available capacity
- EIS completed February 1976: "Diked Disposal Site No. 14, Lake Erie, Cleveland Harbor, Cleveland, Ohio"
- Constructed in 1979 at a cost of $28,300,000. Last disposal operation in 1999.
- Dike design is a rubblemound with sheet pile cutoff wall.



- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatering by seepage through dike and discharge from overflow weir.
- Effluent treated by primary settling and filtration in dike core.
- Water quality monitoring during disposal operations of stations inside CDF pond and outside dikes.
- Post-closure uses are under consideration at this time.

CLINTON RIVER
CDF Fact Sheet

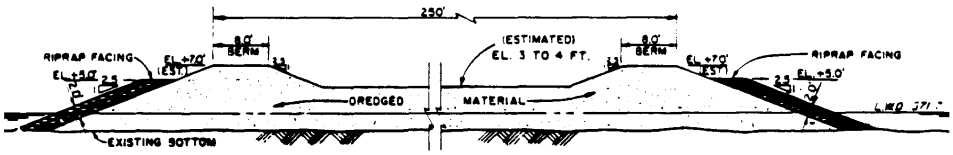
- Clinton River CDF is an upland facility in Mount Clemens, Michigan, located at river mile 3.0, adjacent to the Selfridge Air Force Base.
- Navigation projects served: Clinton River and Channels in Lake St. Clair.
- Local sponsor is the Michigan Department of Natural Resources.
- CDF area: 30 acres with a total capacity of 370,000 y^3; available capacity is 281,200 y^3
- EIS completed July 1976: "CDF for Maintenance Dredging at Clinton River, Michigan"
- Constructed in 1989 at a cost of $2,618,000.
- Earthen dike from previously dredged material with a clay liner.



- Material mechanically dredged and placed in CDF by truck.
- Dewatered by discharge from an overflow weir into the Clinton River.
- Effluent treatment by primary settling
- Water quality monitoring of groundwater wells at the perimeter of the dike.
- Post-closure use intended for a recreational area.

CLINTON RIVER - FISHERIES SITE
CDF Fact Sheet

- Fisheries Site CDF is an in-water facility in Mt. Clemens, Michigan at the mouth of the Clinton River, adjacent to the south breakwater.
- Navigation project served: Clinton River.
- Local sponsor is the Michigan Department of Natural Resources
- CDF area: 4 acres with a total capacity of 21,000 y^3; no available capacity.
- EIS completed January 1976: "Maintenance Dredging of the Federal Navigation Channels at Clinton River, Michigan"
- Constructed in 1971 (cost not available). The CDF was used for two disposal operations, last in 1979.
- Earthen dikes constructed with previously dredged material and armor stone.



TYPICAL SECTION THRU EARTH-FILL

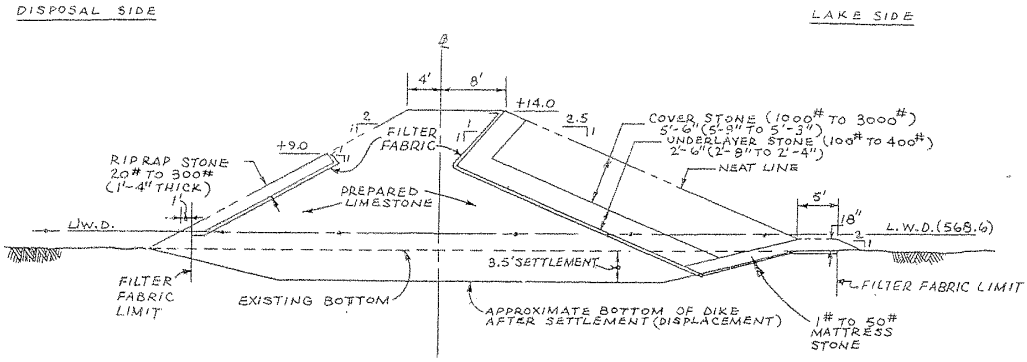
NO SCALE

BUILT-1966

- Mechanically dredged material was pumped into the CDF.
- Dewatered by seepage through the dike and discharge by overflow weir to Lake St. Clair.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring: none
- Post-closure use is a wildlife area.

DETROIT RIVER - POINTE MOUILLEE
CDF Fact Sheet

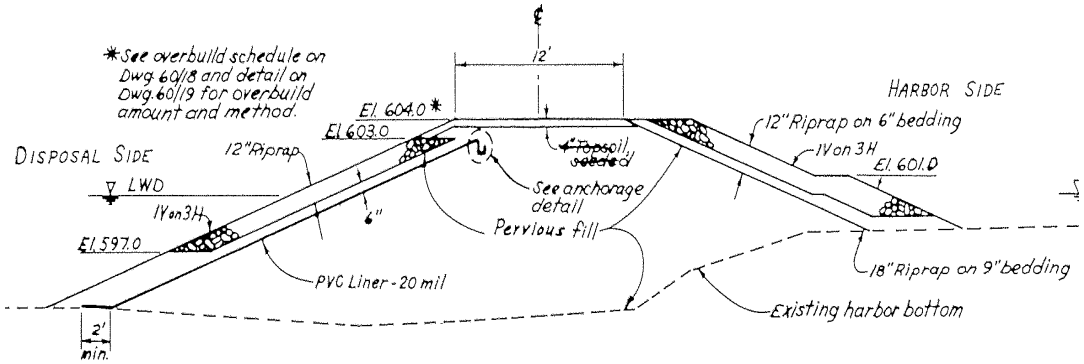
- Pointe Mouillee CDF is an in-water island in Rockwood, Michigan located at mouth of the Huron River at the northwest corner of Lake Erie.
- Navigation projects served: Detroit River and Rouge River.
- Local sponsor is the Michigan Department of Natural Resources
- CDF area: 700 acres with a total capacity of 18,640,000 y^3; available capacity is 9,360,000 y^3
- EIS completed March 1977: "CDF at Pointe Mouillee For Detroit and Rouge River, MI"
- Constructed in 1981 at a cost of $55,856,000.
- Dike design is a prepared limestone and/or clay core and coverstone; facility divided into five cells.



- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatered by seepage through dike and discharge by overflow weir to Lake Erie.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow, mixing zone, and open water site.
- Post-closure use intended for a wildlife area/marsh.

DULUTH-SUPERIOR HARBOR - ERIE PIER
CDF Fact Sheet

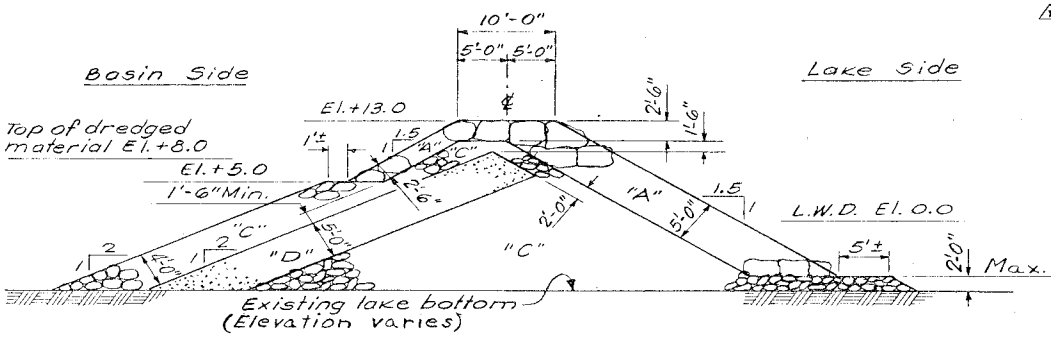
- Erie Pier is an in-water CDF in Duluth, Minnesota, next to a former ore dock on the St. Louis River.
- Navigation project served: Duluth-Superior Harbor
- Local sponsors are the City of Duluth and Seaway Port Authority of Duluth.
- CDF area: 82 acres with a total capacity of 1,000,000 y^3; available capacity 260,000 y^3.
- EIS completed July, 1977: "Duluth-Superior Harbor Operations & Maintenance Diked Dredging Disposal Facilities, Duluth-Superior, MN-WI"
- Constructed in 1979 at a cost of $1,560,000.
- Earthen dike constructed using on site borrow material and dredged material with stone rip-rap with a 300-foot steel bulkhead on the southeast side. Dikes have been raised seven times, a total of 5 feet.



- Mechanically dredged material placed by mechanical and hydraulic means. Sand washed inside CDF and removed for sale by local sponsor.
- Dewatered by seepage through dike to harbor.
- Effluent treatment by filtration in dike core.
- No water quality monitoring required.
- Special studies include demonstrations of soil washing and sediment treatment technologies.
- Post-closure plan is for recreation land use.

ERIE HARBOR
CDF Fact Sheet

- Erie Harbor CDF is an in-water facility in Erie, Pennsylvania, located on the south side of a bay formed by Presque Isle Peninsula
- Navigation project served is Erie Harbor.
- Local sponsor is the Erie-Western/Pennsylvania Port Authority.
- CDF area: 23 Acres; 420,000 y^3 total capacity; available capacity 323,400 y^3.
- EIS dated January 1975 "Diked Disposal Site No. 2, Erie Harbor, Erie County, Pennsylvania"
- Constructed in 1979 at a cost of $400,000.
- Dike is rubble mound with layered stone, sand blanket and rip-rap.

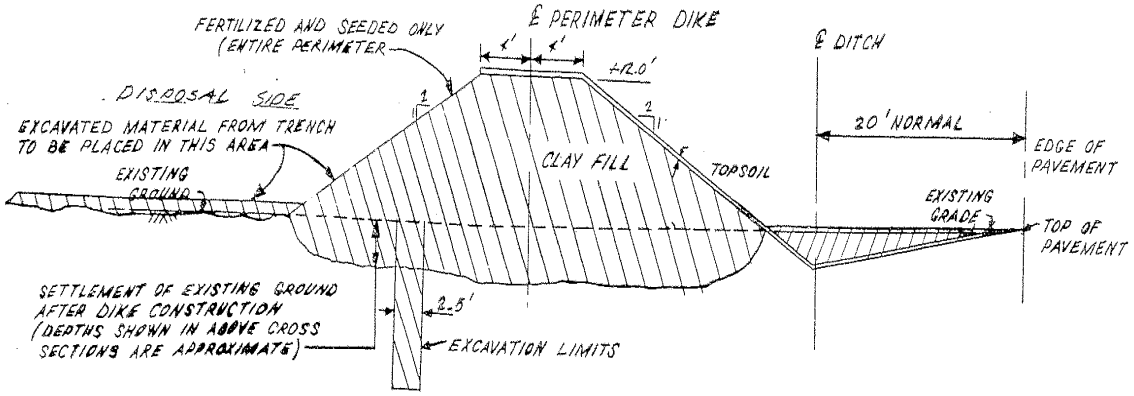


TYPICAL RUBBLEMOUND CROSS SECTION

- Material is placed in the CDF by mechanical and hydraulic dredging.
- Dewatered by seepage through dike and discharge by overflow weir to Lake Erie.
- Effluent treatment by primary settling and filtration in sand blanket.
- No water quality monitoring required to date.
- Post-closure use intended for industrial development.

GRAND HAVEN HARBOR - ISLAND
CDF Fact Sheet

- Harbor Island CDF is an upland facility in Grand Haven, Michigan, located on Harbor Island at river mile 2.5
- Navigation project served: Grand Haven Harbor.
- Local sponsor is the City of Grand Haven
- CDF area: 36 acres with a total capacity of 310,000 y^3; no available capacity.
- EIS completed in December 1975: "Maintenance Dredging of the Federal Navigation Channel in Grand Haven"
- Constructed in 1974 at a cost of $433,000. Last disposal operation in 1995.
- Earthen dikes constructed using on-site clay materials. Dikes raised in 1992 and 1995.



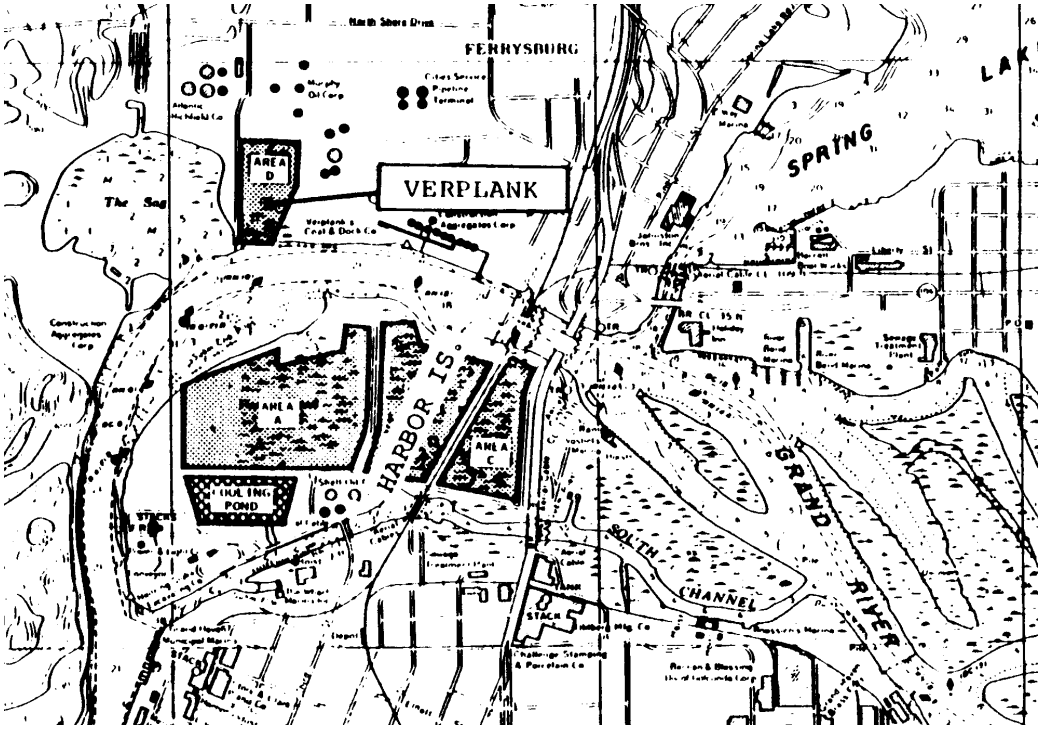
- Material placed in CDF by hydraulic dredging.
- Dewatering by discharge through an overflow weir into Grand River.
- Effluent treatment by primary settling.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow and mixing zone.
- Post-closure use for recreation (festival parking).

GRAND HAVEN HARBOR - VERPLANK SITES
CDF Fact Sheet

- There are two upland facilities constructed on the property of Verplank Coal and Dock Company in Grand Haven, Michigan, located 2 miles upstream of the mouth of the Grand River.
- Navigation project served: Grand Haven Harbor.
- Local sponsor is the Verplank Coal and Dock Company.
- The first CDF has an area of 19 acres with a total capacity of 134,000 y^3; no available capacity. The second facility has an area of 8 acres with a total capacity of 70,000 y^3; no remaining capacity
- EIS for first CDF completed in 1974: "Alternate Disposal Area, Grand Haven Harbor, MI.". EA for second CDF completed in 1998; "Upland Dredged Material Placement Site, Verplank Site, Grand Haven Harbor, MI
- The first CDF was constructed in 1974. Cost data not available. Last disposal operation in 1978. The second facility was built in 1998.
- Both sites have earthen dikes constructed with local materials.

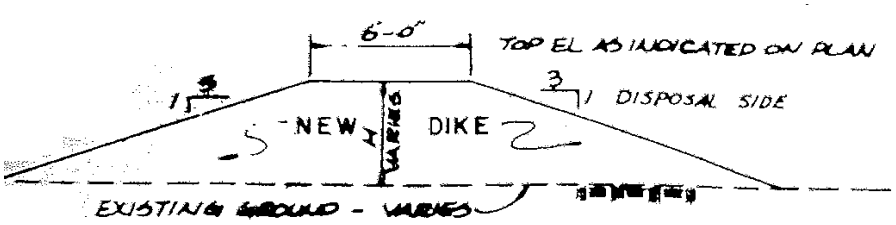
Dike cross section not available

- Material placed in CDF by hydraulic dredging. Dewatered material removed from site and used for fill at various local sites
- Dewatered by discharge through overflow weir into Grand River.
- Effluent treatment by primary settling.
- No water quality monitoring data from first site available. Water quality monitoring of second site during disposal operations of dredge discharge, weir overflow, and stations in River.
- Post-closure use of both sites is for aggregate storage.



GREEN BAY HARBOR - BAYPORT
CDF Fact Sheet

- Bayport CDF is an upland facility in Green Bay, Wisconsin, located west of the mouth of the Fox River and bounded on the southwest by I-43.
- Navigation project served: Green Bay Harbor
- Local sponsor is the City of Green Bay.
- CDF area: 400 acres with an unlimited capacity.
- EA completed July 1985: "Disposal of Contaminated Material from the Fox River into the Bayport Confined Disposal Facility at Green Bay Harbor"
- First used for disposal of new work dredging in 1966; later used for disposal of maintenance dredging.
- Dikes constructed in 1965 from onsite material; dikes raised to 14.5 feet in 1977; facility modified by Brown County in 1998 with new dikes and interior cells to promote dewatering and recycling of dredged material.

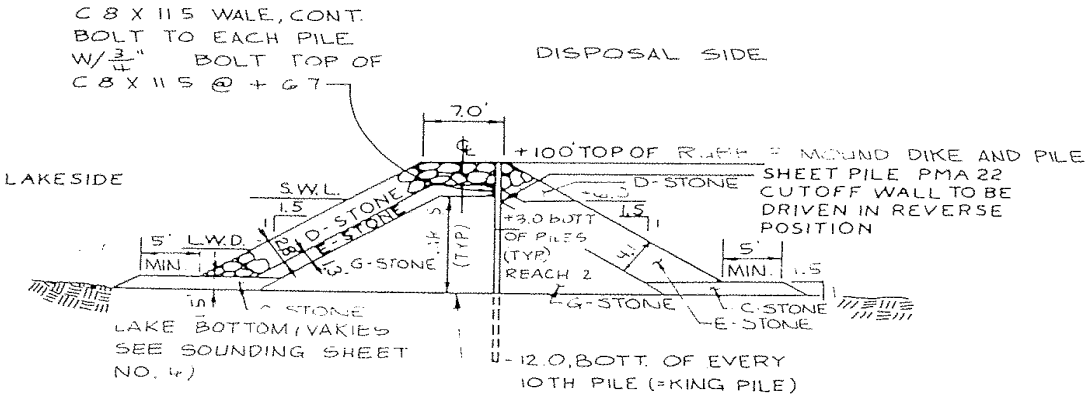


NEW DIKES
TYPICAL SECTION
N.T.S

- Dredged material has been transported to CDF hydraulically (pipeline) and mechanically (by truck).
- Dewatering by discharge at overflow weir and seepage through dike.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring of discharge from overflow weir and mixing zone during disposal operations.
- Post-closure use intended for material recycling.

GREEN BAY HARBOR - RENARD ISLAND
CDF Fact Sheet

- Renard Island (also known as Kidney Island) is an in-water facility in Green Bay, Wisconsin, located south of the mouth of the Fox River.
- Navigation project served: Green Bay Harbor
- CDF area: 60 acres with a total capacity of 1,200,000 y^3; filled to capacity.
- EIS completed November 1977: "Operations & Maintenance Dredged Material Disposal at Green Bay Harbor, Wisconsin"
- Constructed in 1979 at a cost of $5,565,000; last disposal in 1996.
- Dike design is graded stone core with layered stone cover and sheet pile cutoff wall.



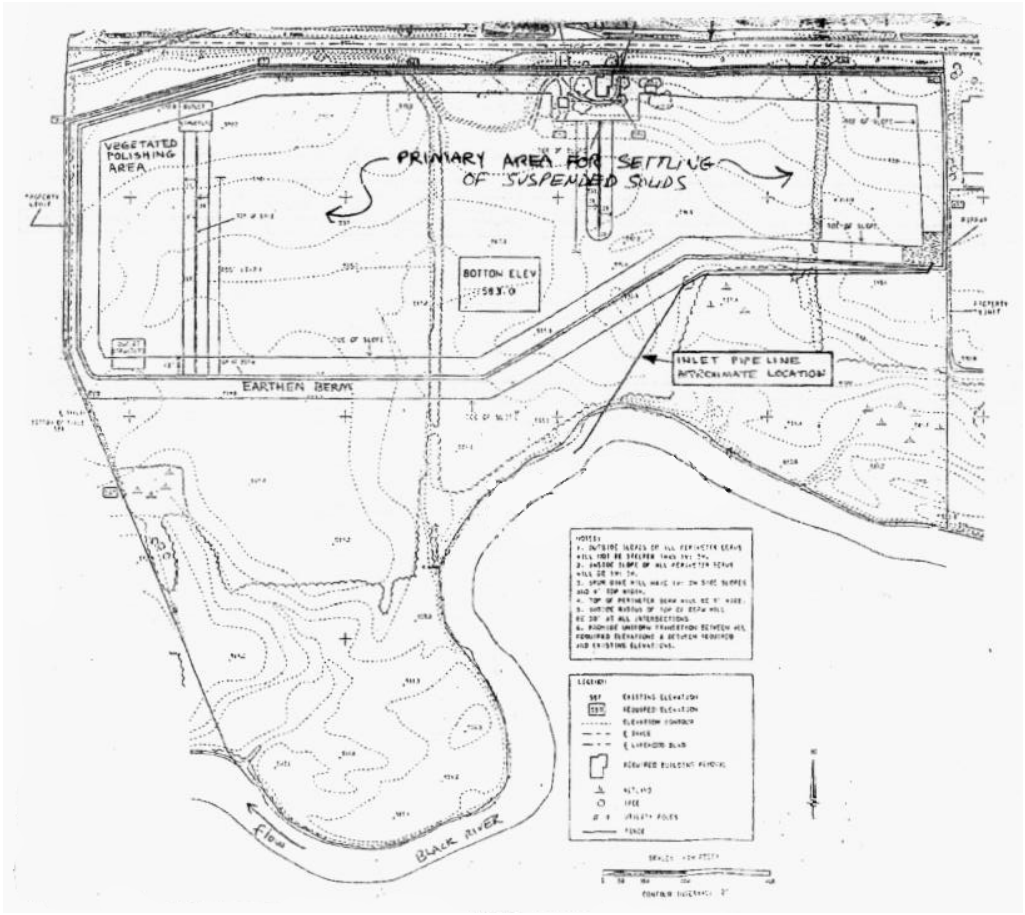
- Material was placed in CDF from hopper dredge by pipeline. After facility became filled, mechanically dredged material was placed by hopper and slide.
- Dewatered by seepage through dikes and discharge through filter cells to Green Bay.
- Effluent treated by filtration in dike core and filter cells.
- Water quality monitoring during disposal operations of dredge discharge, ponded water inside CDF, wells in dike walls, mixing zone, open water sites. Special studies include contaminant effects on birds, a plant survey, and evaluations of composting and beneficial use.
- Post-closure use currently for wildlife access. Additional uses undetermined.

HOLLAND HARBOR – HOLLAND TOWNSHIP SITE
CDF Fact Sheet

- The Holland Township Site is an upland facility in Holland, Michigan, located north of the Black River a Lakewood Avenue and 120th Avenue
- Navigation project served: Holland Harbor
- Local sponsor is the City of Holland
- CDF area: 50 acres with a total capacity of 400,000 y^3
- EA completed August 1995: "Upland Dredged Material Placement Site, Holland Township Site, Holland, Michigan"
- Constructed in 1995-6 as part of a dredging contract. No separate costs for dikes available.
- Earthen dikes constructed with on-site materials.

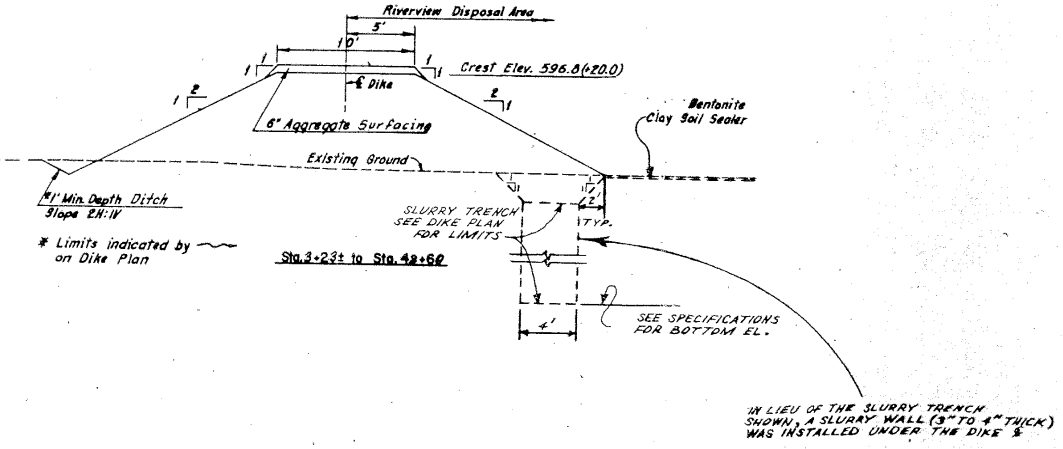
No dike cross section available

- Material placed in CDF hydraulically.
- Dewatered by seepage through dike and discharge from overflow weir to the Black River.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring during disposal of effluent and mixing zone.
- Post-closure use undetermined.



HOLLAND HARBOR - RIVERVIEW SITE
CDF Fact Sheet

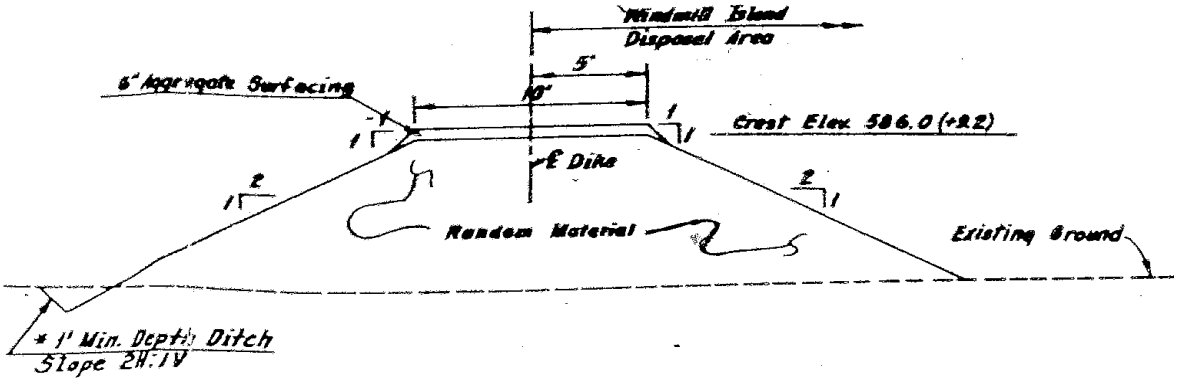
- Riverview Site CDF is an upland facility in Holland, Michigan, located adjacent to the Black River between River Avenue and 3rd Street
- Navigation project served: Holland Harbor.
- Local sponsor is the City of Holland
- CDF area: 11 acres with a total capacity of 120,000 y^3; filled to capacity.
- EIS completed February 1975: "Proposed Dredge Disposal Facilities, Holland Harbor, Michigan"
- Constructed in 1978 at a cost of $1,583,000. Last disposal operation in 1993.
- Earthen clay dike with partial slurry trench. An interior drainage system was installed in 1983.



- Material was placed in CDF by hydraulic dredging.
- Dewatering by discharge from overflow weir to the Black River.
- Effluent treatment by primary settling.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow and mixing zone.
- Post-closure use is industrial.

HOLLAND HARBOR - WINDMILL SITE
CDF Fact Sheet

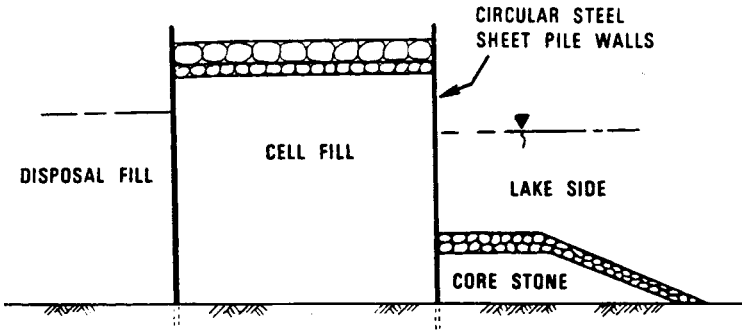
- The Windmill Site is an upland facility in Holland, Michigan, on Windmill Island adjacent to the Black River
- Navigation project served: Holland Harbor.
- Local sponsor is the City of Holland
- CDF area: 17 acres with a total capacity of 160,000 y^3; filled to capacity.
- EIS completed February 1975: "Proposed Dredge Disposal Facilities, Holland Harbor, Michigan"
- Constructed in 1978 at a cost of $1,654,000. Last disposal operation in 1995.
- Dike design of on-site material with rip-rap protection.



- Material placed in CDF by hydraulic dredging.
- Dewatered by discharge through an overflow weir and dike seepage to the Black River
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow and mixing zone.
- Post-closure use is recreation/park.

HURON HARBOR
CDF Fact Sheet

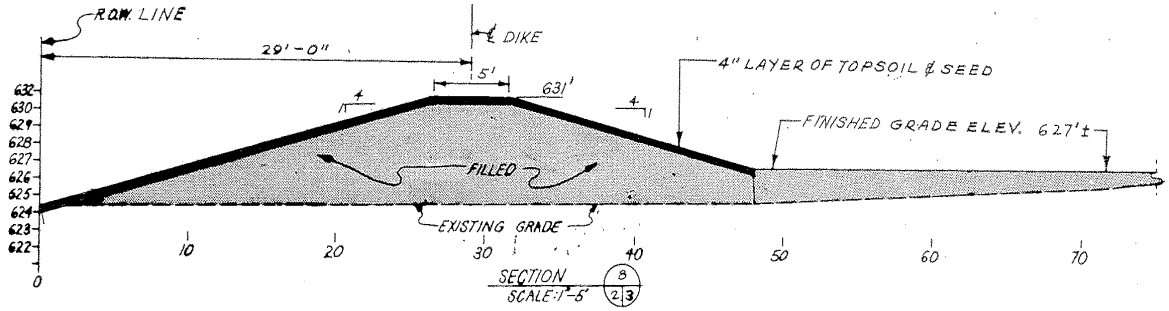
- Huron Harbor CDF is an in-water facility in Huron, Ohio, located adjacent to the west pier at the mouth of the Huron River and Lake Erie.
- Navigation Project Served: Huron Harbor.
- Local sponsor is the City of Huron.
- Size of CDF: 63 acres with a total of capacity of 2,600,000 y^3; 910,000 y^3 available capacity.
- EIS dated March 1973: "Diked Disposal Area, Huron Harbor, Erie County, Huron, Ohio,"
- Constructed in 1975 at a cost of $6,400,000.
- Dike design is cellular sheet piling/rubble mound with plastic filter cloth made with galvanized woven wire backing.



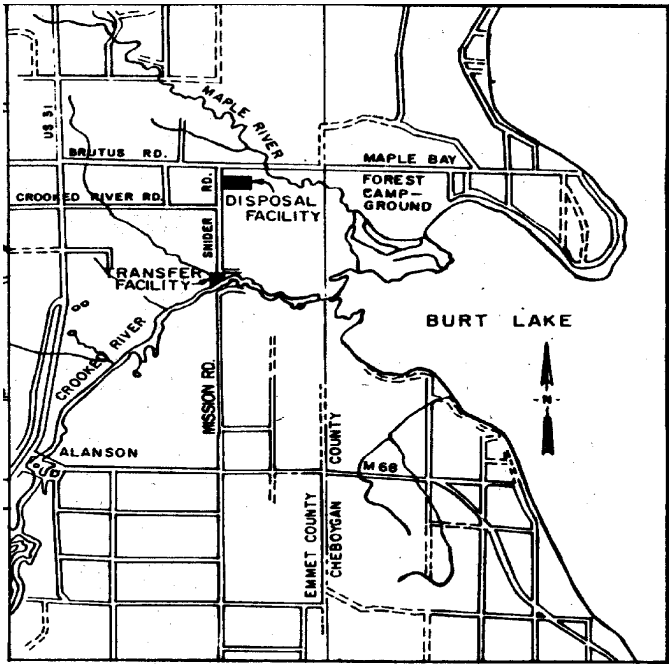
- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatering by seepage through dike and discharge by overflow weir to Lake Erie.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring during disposal operations of the CDF pond, wells in the dike, and stations outside the dikes.
- Intended post-closure use is a small boat harbor.

INLAND ROUTE
CDF Fact Sheet

- Inland Route CDF is an upland facility in Brutus, Michigan, located north of Crooked River near the outlet into Burt Lake.
- Navigation project served: The Inland Route.
- Local sponsor is the State of Michigan
- CDF area: 9 acres with a total capacity of 19,500 y^3; available capacity is 12,090 y^3
- EIS completed January 1990: "Maintenance Dredging & CDF for Crooked River Portion of Inland Route"
- Constructed in 1982 at a cost of $176,000.
- Earthen dike using onsite materials.

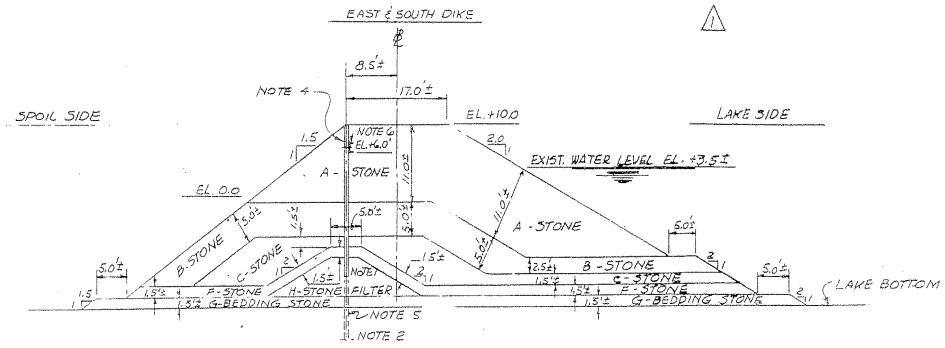


- Mechanically dredged material transported to CDF by truck.
- Dewatered by seepage through dike.
- Effluent treated by filtration in dike core.
- Water quality monitoring: none required.
- Post-closure use intended for a wildlife area.



KENOSHA HARBOR
CDF Fact Sheet

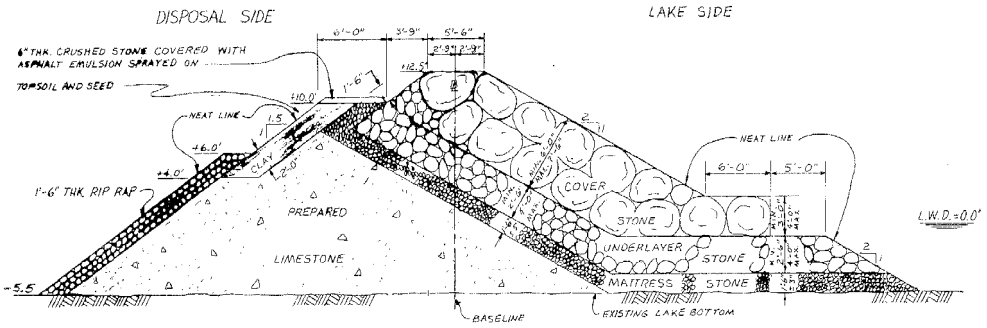
- Kenosha Harbor CDF is an in-water facility in Kenosha, Wisconsin, located in Lake Michigan south of the mouth of Pile Creek.
- Navigation project served: Kenosha Harbor.
- Local sponsor is the City of Kenosha.
- CDF area: 32 acres with a total capacity of 750,000 y^3; no capacity remaining.
- EIS completed March 1974: "Maintenance Dredging & Combined Disposal Area, Kenosha, Wisconsin"
- Constructed in 1975 at a cost of $8,270,000. Last disposal operation in 1987.
- Dike design is rubblemound with sheet pile cutoff wall and graded filter core.



- Dredged material placed in CDF by mechanical means.
- Dewatered by seepage through dikes to Lake Michigan.
- Effluent treated by primary settling and filtration in dike core.
- Water quality monitoring during dredging operations of dredge discharge, ponded water inside CDF, 3 dike wells, mixing zone, and open water site.
- The unfilled facility was transferred to the sponsor, who modified it for use as a marina.

KEWAUNEE HARBOR
CDF Fact Sheet

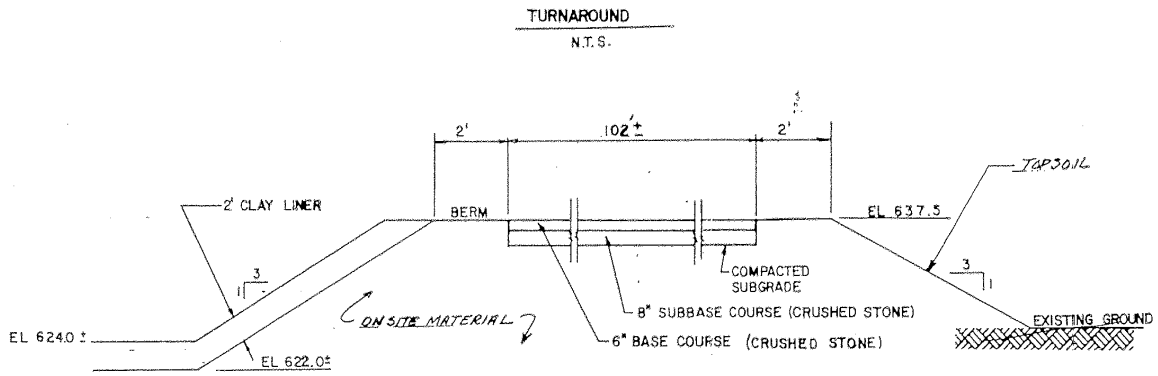
- Kewaunee Harbor CDF is an in-water facility in Kewaunee, Wisconsin, located on Lake Michigan adjacent to the shore and breakwater, north of Kewaunee River.
- Navigation project served: Kewaunee Harbor.
- Local sponsor is the City of Kewaunee.
- CDF area: 28 acres with a total capacity of 500,000 y^3; 130,000 y^3 capacity remaining.
- EIS completed November 1974: "Kewaunee Harbor, Wisconsin – Maintenance Dredging & Confined Disposal Dredge Disposal"
- Constructed in 1982 at a cost of $2,017,000.
- Dike design is a prepared limestone core with coverstone and rip-rap for wave protection. Sand and stone placed at dike areas in 1984 where dye tracer study showed excessive flows.



- Material placed in CDF by mechanical and hydraulic means.
- Dewatered by seepage through dike and discharge through filter cells to Lake Michigan.
- Effluent treated by primary settling and filtration in dike core and filter cells.
- Water quality monitoring during disposal operations of dredged discharge, ponded water inside CDF, 3 wells in dikes, mixing zone, and open water site. Dye tracer study conducted in 1984.
- Post-closure use intended for recreation.

KEWEENAW WATERWAY
CDF Fact Sheet

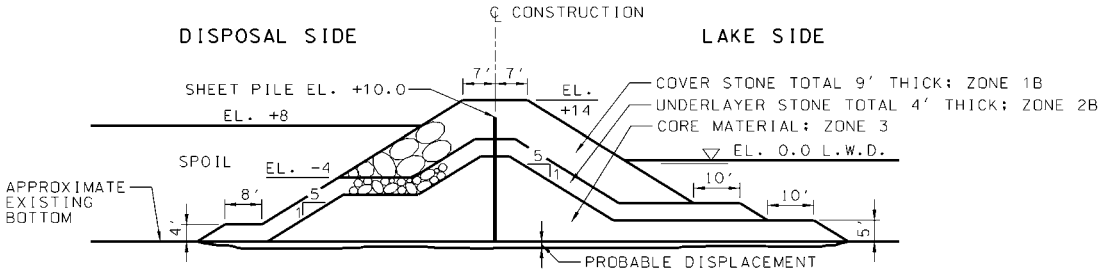
- Keweenaw Waterway CDF is an upland facility in Houghton County, Michigan, located about one mile from the Lake Superior entrance.
- Navigation project served: Keweenaw Waterway.
- CDF area: 21 acres with a total capacity of 308,000 y^3; available capacity is 150,920 y^3
- EIS completed April 1986: "Keweenaw Waterway CDF, Houghton County, Michigan"
- Constructed in 1987 at a cost of $941,000.
- Earthen dike constructed using on-site materials and a clay liner.



- Dredged material has been pumped into the CDF hydraulically.
- Dewatered by discharge through an overflow weir to Portage Canal.
- Effluent treatment by primary settling.
- Water quality monitoring of overflow weir discharge and three stations in the Waterway.
- No post closure use identified

LORAIN HARBOR
CDF Fact Sheet

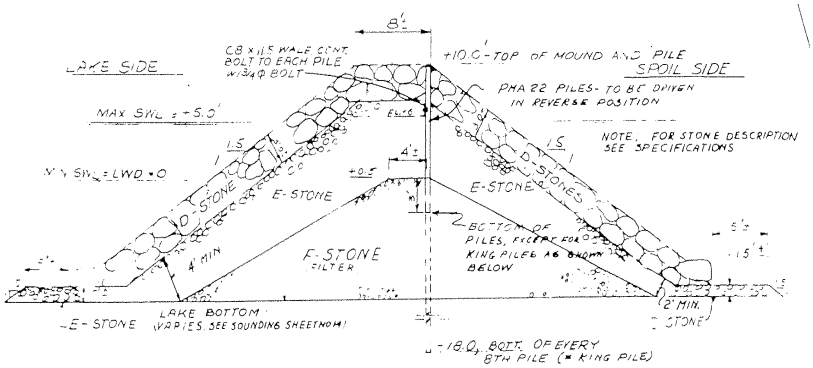
- Lorain Harbor CDF is an in-water facility in Lorain, Ohio on the lake side of the east breakwater shorearm.
- Navigation project served: Lorain Harbor.
- Local sponsor is the City of Lorain.
- CDF area: 58 acres with a total capacity of 1,850,000 y^3; available capacity is 777,000 y^3
- EIS dated March 1975, "Diked Disposal Facility, Site No. 7, Lorain Harbor, Lorain County, Ohio"
- Constructed in 1977 at a cost of $7,900,000.
- Dike design is a combination rubble mound and steel sheet pile.



- Dredged material placed by mechanical and hydraulic means
- Dewatered by seepage through dike into Lake Erie.
- Effluent treated by primary settling and filtration in dike core.
- Water quality monitoring of dike wells conducted occasionally.
- Intended post-closure use is park/recreation.

MANITOWOC HARBOR
CDF Fact Sheet

- Manitowoc Harbor CDF is and in-water facility in Manitowoc, Wisconsin, extending north from the north breakwater at Manitowoc Harbor at the mouth of the Manitowoc River.
- Navigation projects served: Manitowoc Harbor.
- Local sponsor is the City of Manitowoc.
- CDF Area: 24 acres; 800,000 y^3 total capacity; 408,000 y^3 available capacity.
- EIS completed in December 1974: "Maintenance Dredging & Disposal, Manitowoc Harbor, Wisconsin"
- Constructed in 1975 at a cost of $4,147,000 million.
- Dike design is rubble mound with steel sheet pile cutoff wall and filter stone core covered by additional stone layer and armorstone. Sandy dredged material placed at dike areas in where dye tracer study showed excessive flows.

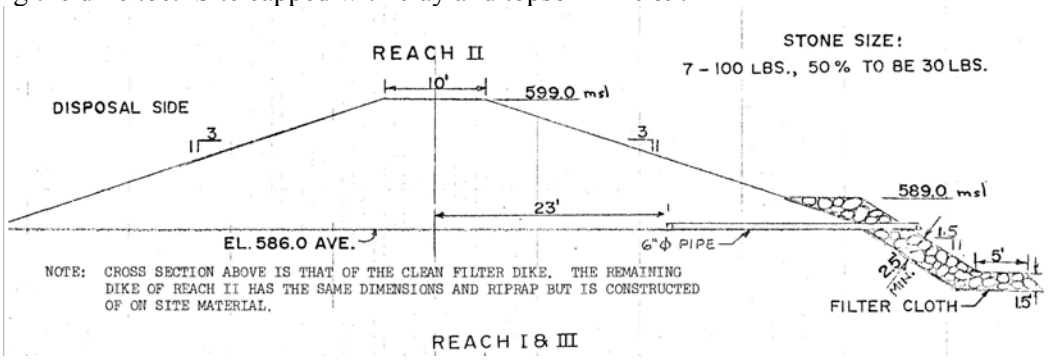


TYPICAL RUBBLE MOUND SECTION A – A

- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatered by seepage through dike and discharge through filter cells to Lake Michigan.
- Effluent treatment by primary settling and filtration in dike core and filter cells.
- Water quality monitoring during disposal operations of dredge discharge, ponded water inside CDF, wells in dike walls, mixing zone, and open water site. Dye tracer test conducted in 1984.
- Post-closure use will be recreation/park.

MICHIGAN CITY HARBOR
CDF Fact Sheet

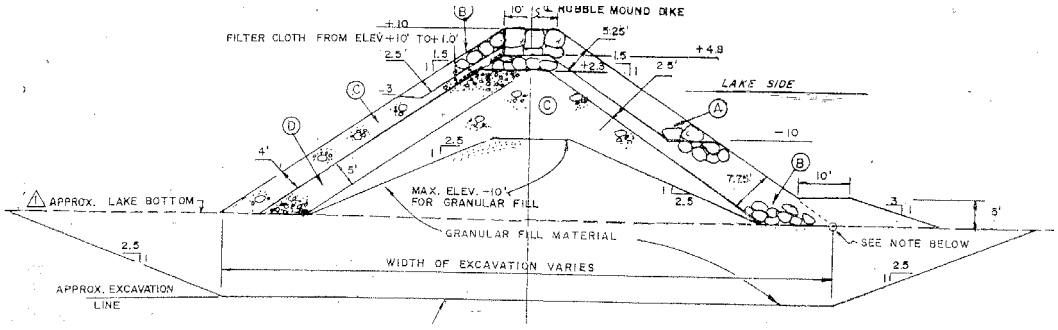
- Michigan City CDF is an upland facility in Michigan City, Indiana, located on the north side of Trail Creek about 1.5 miles upstream of the outlet into Lake Michigan.
- Navigation project served: Michigan City Harbor.
- Local sponsor is the City of Michigan City.
- CDF area: 3 acres with a total capacity of 50,000 y^3; filled to capacity.
- An EA was completed in December 1997 on the CDF construction: "Confined Disposal Area Michigan City Harbor, Indiana" and an EIS was completed in January 1978: "Operation & Maintenance Activities at Michigan City Harbor, Indiana"
- Constructed in 1978 at a cost of $300,000. Last disposal operation in 1986.
- Earthen dike constructed with local materials, a filter section with crushed limestone, and armor stone along the dike toe. Site capped with clay and topsoil in 1989.



- Dredged material placed by hydraulic dredge pipeline and from mechanical dredge by truck.
- Dewatered by seepage through the dike and filter section to Trail Creek.
- Effluent treatment by primary settling and filtration in dike core and filter section.
- Water quality monitoring during disposal operations of discharge from filter section, mixing zone, and groundwater wells.
- Post-closure use intended for recreation/park.

MILWAUKEE HARBOR
CDF Fact Sheet

- Milwaukee Harbor CDF is an in-water facility in Milwaukee, Wisconsin, located at the south end of Milwaukee Harbor.
- Navigation project served: Milwaukee Harbor.
- Local sponsor is the City of Milwaukee.
- CDF area: 44 acres with a total capacity of 1,600,000 y^3; available capacity is 336,000 y^3
- EIS completed April 1972: "Milwaukee Diked Disposal Area, Wisconsin"
- Constructed in 1975 at a cost of $5,963,000.
- Dike design is a graded stone with sand filter and coverstone on granular fill; south dike steel pile bulkhead. Grout mattresses installed against the interior faces of the north and east dikes in 1986.



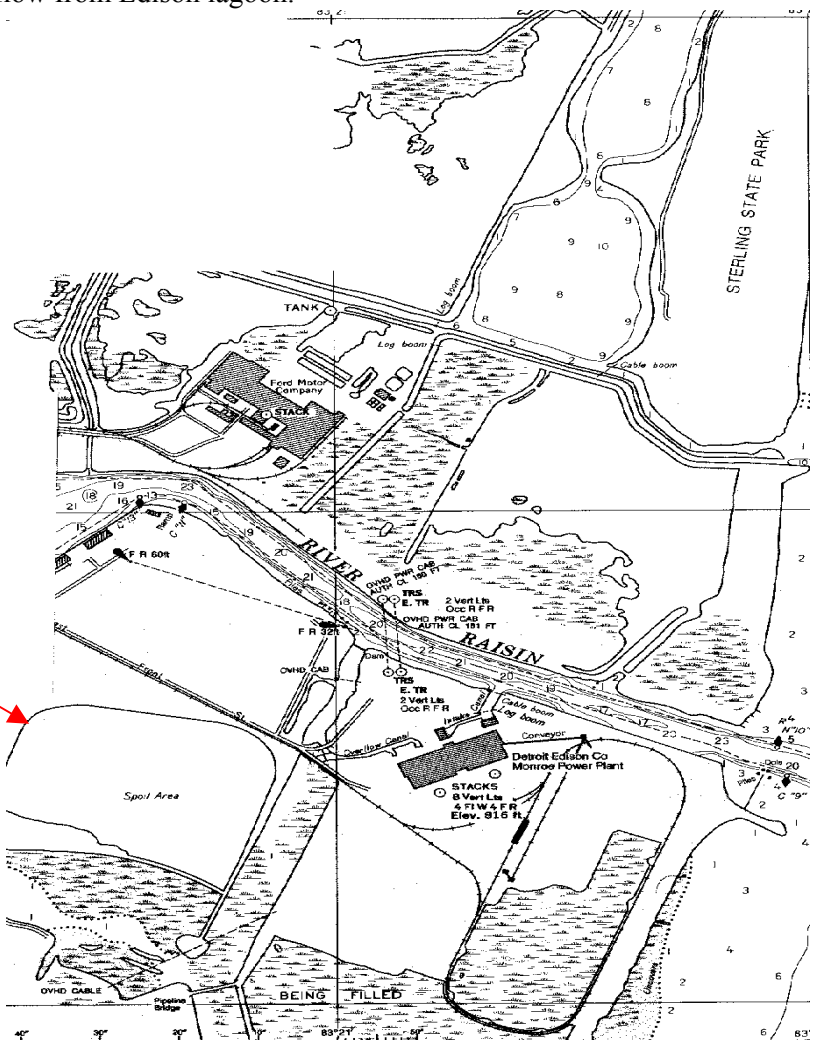
- Material placed in CDF by hydraulic and mechanical dredging.
- Dewatered by seepage through dikes and discharge through filter cells to Lake Michigan.
- Effluent treated by primary settling and filtration in dike core and filter cells.
- Water quality monitoring of wells in dike and filter cell Dye tracer test conducted in 1984.
- Post-closure use intended for ferry dock.

MONROE HARBOR - EDISON
CDF Fact Sheet

- Monroe Edison CDF is an upland facility in Monroe, Michigan located on the property of Detroit Edison on the shore of Lake Erie south of the Raisin River.
- Navigation project served: Monroe Harbor.
- Local sponsor: Monroe Edison
- CDF area: 43 acres with an unknown capacity; no remaining capacity for dredged material.
- EIS completed May 1977: "Environmental Assessment of Alternate Sites, Monroe Diked Disposal Study"
- The pre-existing diked area was provided for use by the sponsor at no cost; last disposal operation in 1982.
- Earthen dikes constructed from local materials.

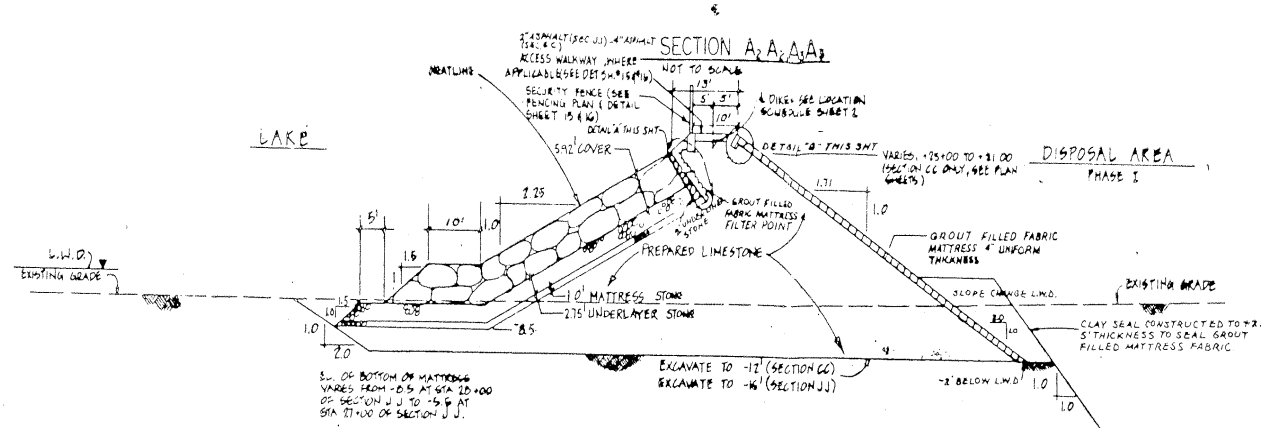
Dike cross section not available

- Material placed in CDF by hydraulic dredging.
- Dewatered by discharge from overflow weir to the Raisin River.
- Effluent treatment by primary settling.
- Water quality monitoring during disposal operations of dredge discharge, CDF weir overflow, four stations in lagoon, and weir overflow from Edison lagoon.
- The site is has no specific post-closure use.



MONROE HARBOR - STERLING STATE PARK
CDF Fact Sheet

- Sterling State Park CDF is an upland facility in Monroe, Michigan, located on north end of Sterling State Park.
- Navigation project served: Monroe Harbor.
- Local sponsor is the Michigan Department of Natural Resources
- CDF area: 89 acres with a total capacity of 4,300,000 y^3; available capacity is 2,193,000 y^3
- EIS completed January 1982: "Diked Disposal Area at Sterling State Park, Michigan"
- Constructed in 1983 at a cost of $38,380,000.
- Dike design is a prepared limestone core with grouted mattress cover on fill site and stone rip-rap on lakeside.



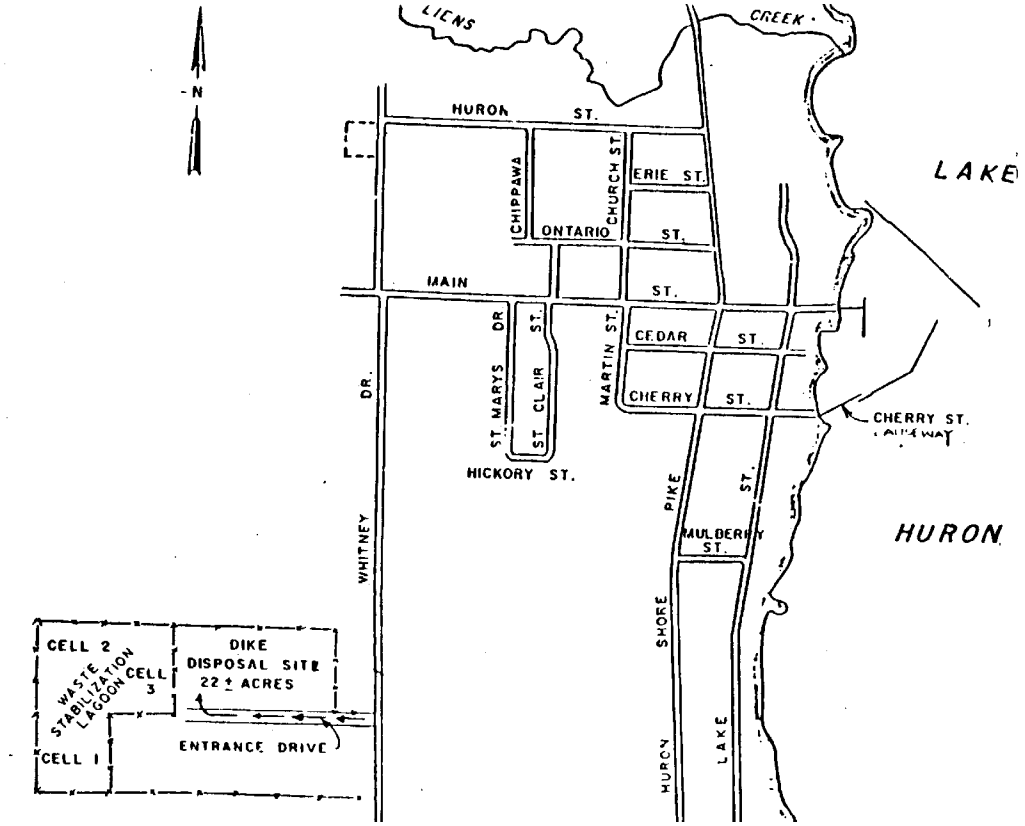
- Material placed in CDF by hydraulic dredging.
- Dewatered by discharge through filter cells to Lake Erie.
- Effluent is treated by primary settling and filtration in filter cells.
- Water quality monitoring of five dike wells. Dye tracer test conducted in 1985.
- Post-closure use intended for park expansion.

PORT SANILAC HARBOR
CDF Fact Sheet

- Port Sanilac CDF is an upland facility in Port Sanilac, Michigan, located adjacent to the Village wastewater treatment facility.
- Navigation project served: Port Sanilac Harbor.
- Local sponsor is the Village of Port Sanilac.
- CDF area: 13 acres with a total capacity of 143,000 y^3; no available capacity.
- EIS completed December 1978: "Maintenance Operations of Federal Navigation Channels and Structures"
- Constructed in 1979 at a cost of $240,865. Facility used only once, in 1979 for disposal of dredged material.
- Earthen dike with clay cover using on-site materials.

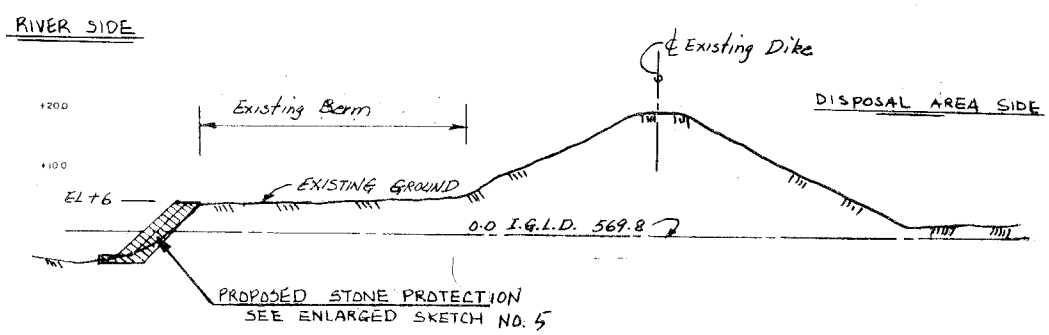
Dike cross section not available

- Material was mechanically dredged and transported to the CDF by truck.
- Dewatered by evaporation, with no discernable discharge.
- Effluent treatment: none
- Water quality monitoring: none
- Post-closure used as a municipal landfill.



ROUGE RIVER – GRASSY ISLAND
CDF Fact Sheet

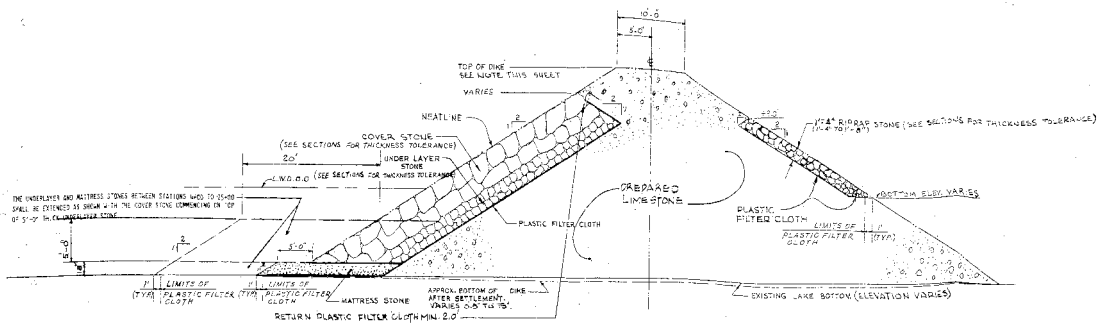
- Grassy Island CDF is an upland facility in Wyandotte, Michigan, located on Grassy Island between the Detroit River and Fighting Island Channel.
- Navigation project served: Rouge River.
- The CDF was constructed without a local sponsor. U.S. Fish and Wildlife Service owns the land where the CDF is located.
- CDF area: 80 acres with a total capacity of 4,320,000 y^3; no available capacity.
- Constructed in 1960 at a cost of $747,150.
- EIS completed January 1976: "Maintenance Dredging of the Rouge River, Michigan"
- Dikes were constructed with material mechanically dredged from the adjacent waters. Materials are sand and clay. Armor stone was placed on the side of the dike facing the navigation channel.



- Material placed in CDF by hydraulic dredging.
- Dewatering by discharge through overflow weir into the Detroit River and dike seepage.
- Effluent treatment by primary settling and filtration in the dike core.
- Water quality monitoring during disposal of dredge discharge, weir overflow and mixing zone. Water quality impacts evaluated during pilot program (Buffalo District 1969).
- Post-closure use as a wildlife area.

SAGINAW BAY
CDF Fact Sheet

- Saginaw Bay CDF is an in-water facility in Saginaw, Michigan, located 1.5 miles northeast from the mouth of Saginaw River.
- Navigation project served: Saginaw River.
- Local sponsor is the Michigan Department of Natural Resources.
- CDF area: 283 acres with a total capacity of 10,000,000 y^3; with 400,000 y^3 capacity remaining.
- EIS completed February 1975: "Saginaw River Dredge Disposal Project at Saginaw Bay, Michigan"
- Constructed in 1978 at a cost of $14,844,000.
- Dike design is a prepared limestone dike with coverstone; facility divided into two cells. Dike raised in 1999; grout mattress installed over sections of interior dike face in 1979-80.



- Material placed in CDF by hydraulic dredging.
- Dewatered by seepage through dike to Lake Huron. Overflow weir not yet used for discharge.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality monitoring every five years during disposal operations of 38 stations. Special studies include mass balance modeling, dye study, and biomonitoring investigations.
- Post-closure use intended for a wildlife area.

SAGINAW RIVER - MIDDLEGROUND ISLAND
CDF Fact Sheet

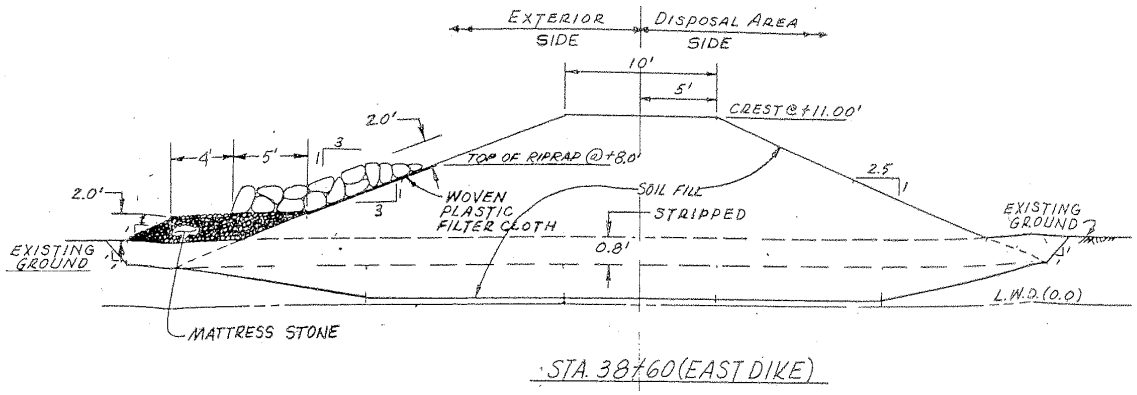
- Middleground Island CDF is an upland facility in Saginaw, Michigan, located at River Mile 6.0 of Saginaw River.
- Navigation project served: Saginaw River.
- Local sponsor is Bay City
- CDF area: 13 acres with a total capacity of 150,000 y^3; no available capacity.
- EIS completed December 1975: "Maintenance Dredging of Saginaw River, Michigan"
- Constructed in 1978, cost not available. Last disposal operation in 1983.
- Earthen dikes constructed with dredged material and local materials.

Dike cross section not available

- Material placed in CDF by hydraulic dredging.
- Dewatered by seepage through the dikes and discharge through an overflow weir into Saginaw River.
- Effluent treated by primary settling and filtration in dike core.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow and mixing zone.
- Dewatered dredged material has been removed from the site and transported to the adjacent Bay City municipal landfill for use as daily cover.

ST. CLAIR RIVER - DICKINSON ISLAND
CDF Fact Sheet

- Dickinson Island CDF is an upland facility in Clay Township, Michigan, located at the north end of Dickinson Island on Lake St. Clair.
- Navigation projects served: St. Clair River and Channels in Lake St. Clair.
- Local sponsor is the Michigan Department of Natural Resources.
- CDF area: 174 acres with a total capacity of 2,000,000 y^3; available capacity is 660,000 y^3
- EIS completed 1973: "Diked Disposal Area on Dickinson Island, Michigan"
- Constructed in 1975 at a cost of $5,072,000.
- Dike design is an earthen dike with plastic filter cloth and armor stone.



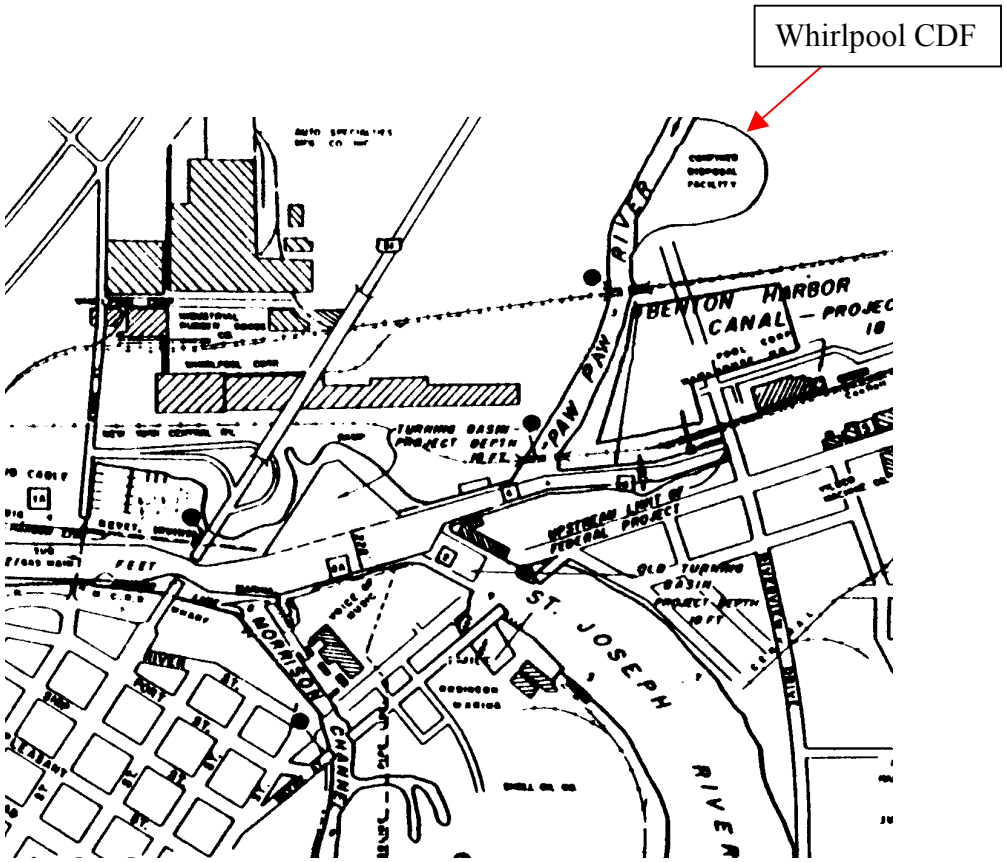
- Dredged material was pumped into the CDF.
- Dewatered by discharge from overflow weir and dike seepage to Lake St. Clair.
- Effluent treated by primary settling and filtration in dike core.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow, mixing zone and wells outside dike.
- Post-closure use intended as a wildlife area.

ST. JOSEPH HARBOR – WHIRLPOOL SITE
CDF Fact Sheet

- Whirlpool Site is an upland facility in Benton Harbor, Michigan, located on Whirlpool Corporation land on the east bank of the Paw Paw River at the juncture with the St. Joseph River.
- Navigation project served: St. Joseph Harbor
- Local sponsor is the City of St. Joseph
- CDF area: 14 acres with a total capacity of 25,000 y^3; no available capacity.
- EIS completed in March 1977 for CDF: "Diked Disposal Area at St. Joseph, Michigan" and in March 1984 for transfer of material to Malleable Site: "Transfer of Dredged Material, Michigan"
- Constructed in 1978 at a cost of $638,076. Last disposal operation in 1999.
- Earthen dikes with clay core and plastic liner.

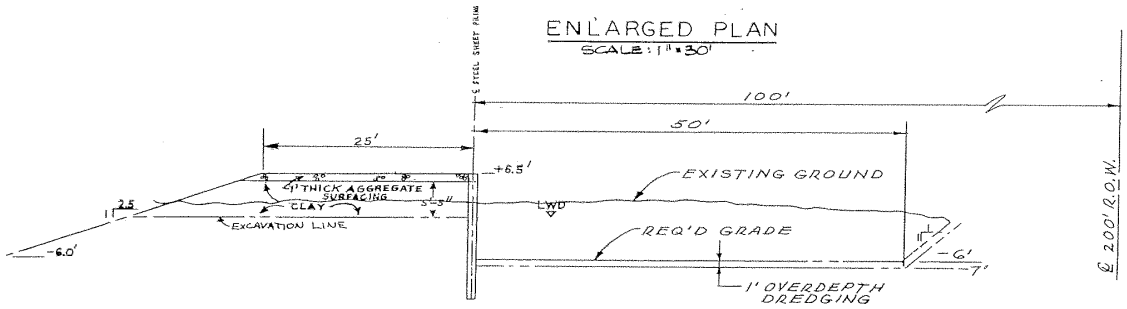
No dike cross section available

- Material placed in CDF by hydraulic dredging.
- Dewatered by discharge through an overflow weir to the Paw Paw River.
- Effluent treatment by primary settling.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow, and mixing zone.
- Between 1984-87, dredged material was removed from site and transported by truck to the Malleable Site and used for construction fill. In 1992, dredged material was transported to the Berrien County Landfill for use as daily cover. Between 1997 and the present, dredged material has been removed and transported to the Southeast Michigan Regional Airport Site and used for construction fill.
- The remaining material and dikes will be removed and the site used for road extension.



SEBEWAING HARBOR
CDF Fact Sheet

- Sebewaing Harbor "Airport" CDF is an upland facility in Sebewaing, Michigan, located adjacent to Sebewaing Airport on eastern edge of Saginaw Bay.
- Navigation project served: Sebewaing Harbor
- Local sponsor is the Michigan Department of Natural Resources
- CDF area: 9 acres with a total capacity of 84,000 y^3; no available capacity.
- EIS completed April 1978: "Operations & Maintenance, CDF and Flood Control Facilities, Sebewaing, Michigan"
- Constructed in 1978 at a cost of $972,000. Last disposal operation in 1988.
- Dike design is a dike with clay core, stone rip-rap over filter cloth, steel sheet piling. The west dike was raised in 1987.



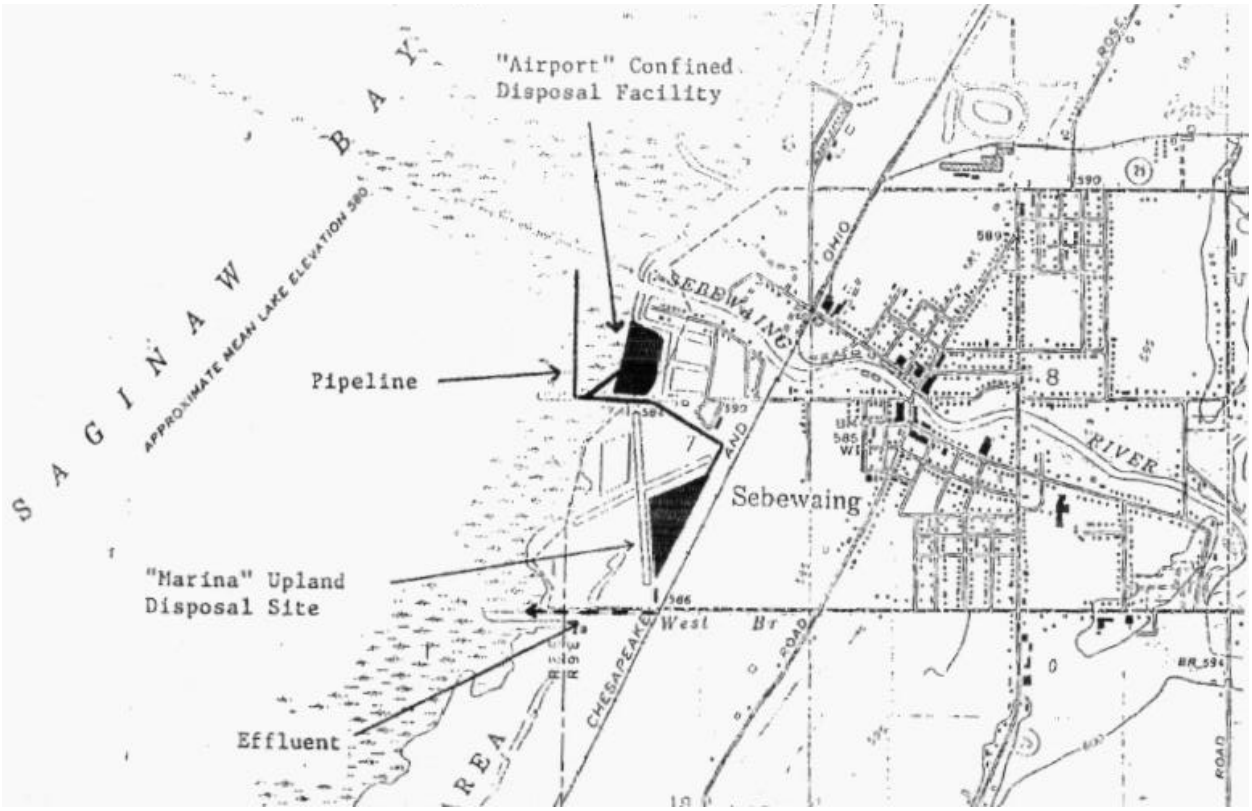
- Material placed in CDF by hydraulic dredging.
- Dewatered through an overflow weir to Lake Huron.
- Effluent treatment by primary settling.
- Water quality monitoring during disposal operations of dredge discharge, weir overflow and four harbor stations outside dikes.
- Site currently used for clarification of effluent from Marina Site CDF and wildlife access. Future use intended for airport extension.

SEBEWAING HARBOR – MARINA SITE
CDF Fact Sheet

- Marina Site is an upland facility in Sebewaing, Michigan, located at the Sebewaing Airport on eastern edge of Saginaw Bay.
- Navigation project served: Sebewaing Harbor.
- Local sponsor is Sebewaing Township
- CDF area: approximately 11 acres, with a total capacity of 80,000 y^3; available capacity undetermined
- EA completed February 1996: "Upland disposal of dredged material, Sebewaing Harbor, Huron County, MI."
- The diked area was provided by the local sponsor at no cost to the Government using materials excavated from a marina construction project.
- Earthen dikes constructed with dredged material.

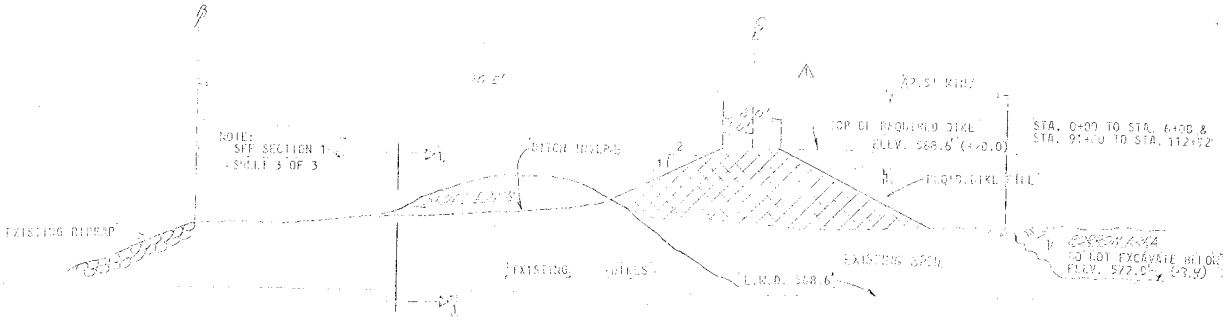
Dike cross section not available

- Material placed in CDF hydraulically.
- Dewatered by pumpage to the Sebewaing CDF.
- Effluent treatment by primary settling.
- Water quality monitoring of dredge discharge, weir overflow and four stations in Bay.
- Post-closure use intended for airport extension.



TOLEDO HARBOR - ISLAND 18
CDF Fact Sheet

- Island 18 (also known as Grassy Island) is an in-water facility in Toledo, Ohio, located in Maumee Bay northwest of the mouth of the Maumee River.
- Navigation project served: Toledo Harbor.
- Local sponsor is the Toledo-Lucas County Port Authority.
- CDF area: 150 acres with a total capacity of 5,000,000 y^3; available capacity is 400,000 y^3; last disposal operation in 1978.
- CDF constructed in 1961-62 as part of new work project (cost not available). Dikes subsequently raised for disposal of maintenance dredgings. New dikes constructed in 1977 on top of existing fill at a cost of $5,000,000.
- Dike design is an earthen dike using new work dredged material and previously maintenance dredgings.



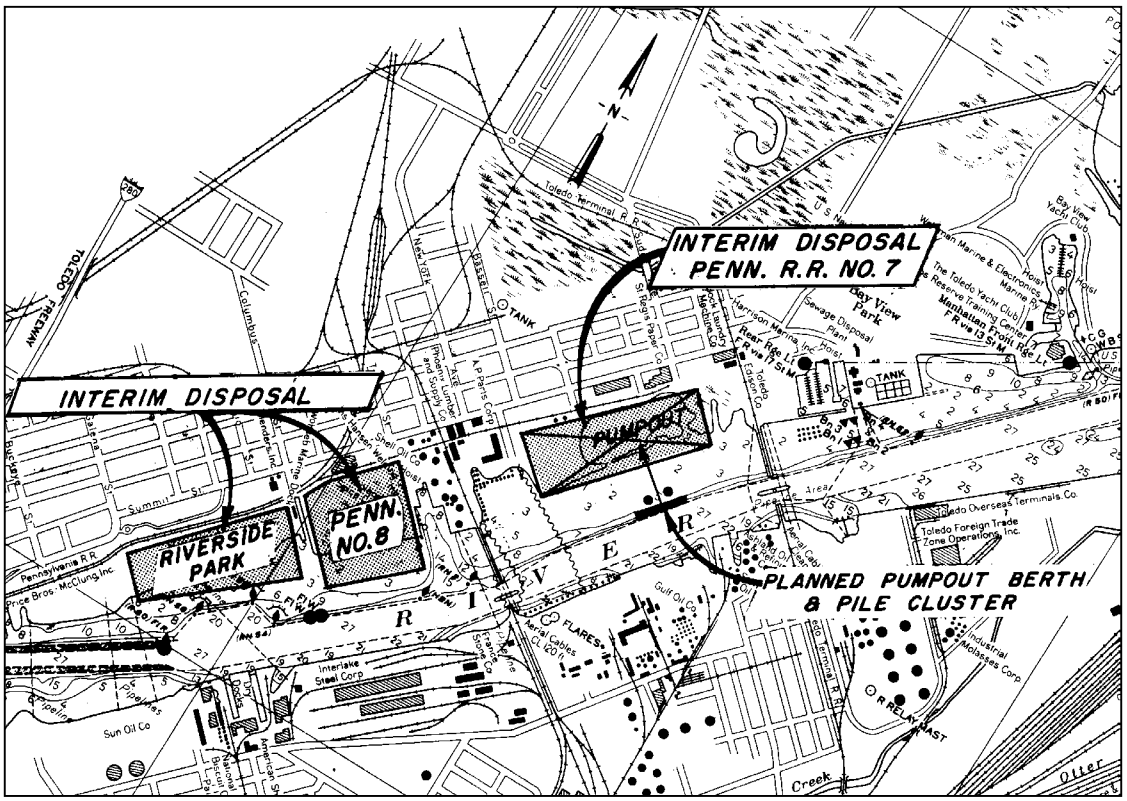
- Material placed in CDF from hopper dredge by pipeline.
- CDF dewatered by discharge from overflow weir and dike seepage to Lake Erie.
- Effluent treatment by primary settling and filtration in dike core.
- Water quality impacts evaluated during pilot program (Buffalo District 1969).
- Local sponsor plans to use site for recycling dredged material.

TOLEDO HARBOR – RIVERSIDE PARK
CDF Fact Sheet

- Riverside Park is an upland facility in Toledo, Ohio, located along the north/west bank of the Maumee River, about 0.5 mile from the mouth.
- Navigation project served: Toledo Harbor.
- The local sponsor was the City of Toledo
- CDF area: 150 acres; capacity unavailable; no capacity remaining; only disposal in 1961.
- Constructed in 1961 by local sponsor (cost not available).
- Dike assumed to be constructed with local earthen materials.

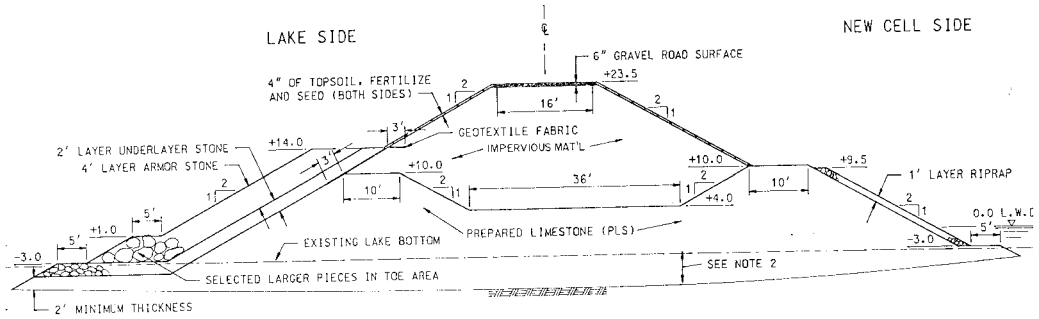
No dike cross section available

- Dredged material was discharged to the facility from hopper dredge by pipeline.
- Dewatering by discharge from overflow weir to Maumee River.
- Effluent treatment by primary settling.
- Water quality monitoring: none
- Post closure use is park/recreation



TOLEDO HARBOR - SITE 3
CDF Fact Sheet

- Site 3 is an in-water facility in Lucas County, Ohio, located in Lake Erie immediately east of the Toledo Edison power plant. An extension to this CDF was later built along the northwest side.
- Navigation project served: Toledo Harbor.
- The project sponsor is the Toledo-Lucas County Port Authority
- CDF area: 397 acres (including the extension) with a total capacity of 16,400,000 y^3; available capacity is 3,205,000 y^3
- EIS completed February 1974: "Confined Disposal Facility for Toledo Harbor, Ohio." The EIS for extension was completed in 1989: "Confined Disposal Facility, Toledo Harbor, Lucas County, Ohio."
- Site 3 was constructed in 1976 at a cost of $18,400,000. Site 3 Extension was built in 1994 at a cost of $4,800,000.
- Dike design is prepared of limestone base with clay core, armor stone, and rip-rap protection. Facility divided into two cells.



- Material placed in CDF by mechanical and hydraulic dredging.
- Dewatered by dike seepage and discharge through an overflow weir into Lake Erie.
- Effluent treated by primary settling and filtration in dike core.
- Water quality monitoring during disposal operations of water in CDF pond, dike wells and harbor stations outside the CDF. Special studies of beneficial use of dredged material including plant growth evaluations.
- Post-closure use intended for a port development and wildlife area.

Summary Table
Great Lakes Confined Disposal Facilities

CDF Name[1]	Navigation Projects Served	State	Type[3]	Year Built	Size (acres)	Initial Design Capacity[4] (cu yd)	Percent filled[5]	Authority[6]	CDF Construction Cost[7]	Existing or Planned Uses After Filling	Status
Bolles Harbor	Bolles Harbor	MI	L	1978	48	335,000	38	Sec 123, PL 91-611	$972,000	marina expansion	active
Buffalo Harbor - Dike 4	Buffalo Harbor, Black Rock Channel and Tonawanda Harbor	NY	L	1977	107	6,900,000	52	Sec 123, PL 91-611	$15,400,000	wildlife area	active
Buffalo Harbor - Small Boat Harbor	Buffalo Harbor	NY	L	1968	33	1,500,000	100	Project specific O&M	$500,000	parking lot of small boat harbor	last used in 1972
Buffalo Harbor - Times Beach	Buffalo Harbor	NY	L	1972	45	1,500,000	20	Project specific O&M	$500,000	wildlife area	last used in 1976
Calumet Harbor - Chicago Area	Chicago River, Chicago Harbor, Calumet River and Harbor	IL	L	1984	42	1,300,000	70	Sec 123, PL 91-611	$7,800,000	port and park expansion	active
Calumet River	Calumet River and Harbor	IL	U	1967	91		100	Project specific O&M		landfill	last used in 1980
Cleveland Harbor - Dike 10B	Cleveland Harbor	OH	L	1998	68	3,840,000	45	Project specific O&M	$32,900,000	airport expansion	active
Cleveland Harbor - Dike 12	Cleveland Harbor	OH	L	1974	56	2,760,000	100	Sec 123, PL 91-611	$6,800,000	airport related use	last used in 1979
Cleveland Harbor - Dike 13	Cuyahoga River	OH	L	1967	10	375,000	100	Project specific O&M		airport expansion	last used in 1968
Cleveland Harbor - Dike 14	Cleveland Harbor	OH	L	1979	88	6,130,000	100	Sec 123, PL 91-611	$28,300,000	under consideration	last used in 1999
Clinton River	Clinton River	MI	U	1989	30	370,000	26	Sec 123, PL 91-611	$2,618,000	recreation	active
Clinton River - Fisheries Site	Clinton River	MI	L	1971	4	21,000	100	Project specific O&M		wildlife area	last used in 1979
Detroit River - Point Mouillee	Detroit River and Rouge River	MI	I	1979	700	18,640,000	45	Sec 123, PL 91-611	$55,856,000	wildlife area	active
Duluth-Superior Harbor - Erie Pier	Duluth-Superior Harbor	MN	L	1979	82	1,000,000	65	Sec 123, PL 91-611	$1,558,000	recreation	active
Erie Harbor	Erie Harbor	PA	L	1979	23	420,000	10	Sec 123, PL 91-611	$2,006,000	recreation	active
Grand Haven Harbor - Harbor Island	Grand Haven Harbor	MI	U	1974	36	310,000	100	Sec 123, PL 91-611	$433,000	recreation	last used in 1995
Grand Haven Harbor - Verplank Site #1	Grand Haven Harbor	MI	U	1974	19	134,000	100	Project specific O&M		aggregate storage	transfer site - material removed by locals
Grand Haven Harbor - Verplank Site #2	Grand Haven Harbor	MI	U				100	Project specific O&M		aggregate storage	transfer site - material removed by locals
Green Bay Harbor - Bayport	Green Bay Harbor	WI	U	1965	380	650,000		Project specific O&M, Sec 123, PL 91-611, and EPA grant	$4,670,000	dewatering/transfer site	site turned over to sponsor who is operating site to recycle dredged material for beneficial use
Green Bay Harbor - Renard Island	Green Bay Harbor	WI	I	1979	60	1,200,000	72	Sec 123, PL 91-611	$5,564,000	recreation	last used in 1996
Holland Harbor - Holland Township Site	Holland Harbor	MI	U					Provided by sponsor			active
Holland Harbor - Riverview Site	Holland Harbor	MI	L	1978	11	120,000	85	Sec 123, PL 91-611	$1,583,000	recreation/park	last used in 1993
Holland Harbor - Windmill Site	Holland Harbor	MI	U	1978	17	160,000	100	Sec 123, PL 91-611	$1,654,000	recreation/park	last used in 1995
Huron Harbor	Huron Harbor	OH	L	1975	63	2,600,000	65	Sec 123, PL 91-611	$6,400,000	small boat harbor	active
Inland Route	Inland Route	MI	U	1982	9	19,500	92	Sec 123, PL 91-611	$176,000	wildlife area	active
Kenosha Harbor	Kenosha Harbor	WI	L	1975	32	750,000	40	Sec 123, PL 91-611	$8,270,000	marina	last used in 1987, partially filled CDF transferred to sponser
Kewaunee Harbor	Kewaunee Harbor	WI	L	1982	28	500,000	74	Sec 123, PL 91-611	$2,017,000	recreation	active
Keweenaw Waterway	Keweenaw Waterway	MI	U	1987	50	308,000	50	Sec 123, PL 91-611	$941,000	recreation	active
Lorain Harbor	Loain Harbor	OH	L	1977	58	1,850,000	56	Sec 123, PL 91-611	$7,900,000	small boat harbor	active
Manitowoc Harbor	Manitowoc Harbor	WI	L	1975	24	800,000	57	Sec 123, PL 91-611	$4,147,000	marina/recreation	active
Michigan City Harbor	Michigan City Harbor	IN	U	1978	3	50,000	100	Sec 123, PL 91-611	$300,000	under consideration	last used in 1988
Milwaukee Harbor	Milwaukee Harbor	WI	L	1975	44	1,600,000	87	Sec 123, PL 91-611	$5,963,000	port expansion	active
Monroe Harbor - Edison	Monroe Harbor	MI	L	1974	43		100	Provided by sponsor		private land	last used in 1984
Monroe Harbor - Sterling State Park	Monroe Harbor	MI	L	1983	89	4,300,000	44	Sec 123, PL 91-611	$38,380,000	state park	active
Port Sanilac Harbor	Port Sanilac Harbor	MI	U	1979	13	143,300	100	Project specific O&M		municipal landfill	Site provided by contractor
Rouge River - Grassy Island	Rouge River	MI	U	1960	80	2,500,000	77	Project specific O&M	$747,000	wildlife area	site last used in 1983
Saginaw River - Saginaw Bay	Saginaw River	MI	I	1978	283	10,000,000	87	Sec 123, PL 91-611	$14,844,000	wildlife area	active
Saginaw River -Middleground Island	Saginaw River	MI	U	1978	13	150,000	100	Project specific O&M	$3,214,000	recreation	last used in 1983; materials removed from site by locals

Summary Table
Great Lakes Confined Disposal Facilities

CDF Name[1]	Navigation Projects Served	State	Type[3]	Year Built	Size (acres)	Initial Design Capacity[4] (cu yd)	Percent filled[5]	Authority[6]	CDF Construction Cost[7]	Existing or Planned Uses After Filling	Status
Sebewaing Harbor	Sebewaing Harbor	MI	U	1979	9	84,000	100	Sec 123, PL 91-611	$1,300,000	airport expansion	last used in 1988
Sebewaing Harbor - Marina Site	Sebewaing Harbor	MI	U		11			Provided by sponsor			active
St, Clair River - Dickinson Island	St. Clair River and Channels in Lake St. Clair	MI	U	1975	174	2,000,000	71	Sec 123, PL 91-611	$5,072,000	wildlife area	active
St. Joseph Harbor - Malleable Site	St. Joseph Harbor	MI	U	1978	15	35,000	100		$173,474	private land	material removed from site
St. Joseph Harbor - Whirlpool Site	St. Joseph Harbor	MI	U	1978	14	25,000	100	Project specific O&M	$638,000	tranfer site	last used in 1999
Toledo Harbor - Island 18	Toledo Harbor	OH	I	1961	150	5,000,000	92	provided by sponsor	$5,000,000	wildlife area	last used in 1978, although capacity still remains
Toledo Harbor - Riverside Park	Toledo Harbor	OH	U	1961	150		100	Project specific O&M			last used in 1961
Toledo Harbor - Site 3	Toledo Harbor	OH	L	1976	242	11,100,000	98	Sec 123, PL 91-611	$18,400,000	wildlife area	active
Toledo Harbor - Site 3 Extension	Toledo Harbor	OH	L	1994	155	5,300,000	0	Project specific O&M	$4,800,000	wildlife area	active
									$297,796,474		
Legend											
1 - CDF name is that most commonly applied, not necessarily a formal title											
2 - Federal navigation project from which material was dredged											
3 - CDF types (L = in-lake site attached to land; I = in-lake island; U = upland site)											
4 - Planned capacity of CDF at time of construction											
5 - Percent filled, based on adjusted capacity estimates											
6 - Authority for CDF construction. Bayport CDF expanded by non-Federal sponsor with local funding and grant from EPA											
7 - Contract cost for CDF construction, not inflated to current value. Does not include planning and design costs. Some early CDFs were developed by non-Federal interests for limited or one-time use, and construction costs are unknown.											