

# **REVIEW PLAN**

## **Green Bay Harbor, Wisconsin Dredged Material Management Plan Study and Environmental Assessment**

**Detroit District**

September 2010  
Amended March 2011



**US Army Corps  
of Engineers®**

**REVIEW PLAN**

**Green Bay Harbor, Wisconsin  
Dredged Material Management Plan Study and Environmental Assessment**

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## 1. PURPOSE AND REQUIREMENTS

**a. Purpose.** This Review Plan defines the scope and level of peer review for the Green Bay, Wisconsin, Dredged Material Management Plan and Environmental Assessment.

**b. References.**

(1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 January 2010 supersedes EC 1105-2-410

(2) EC 1105-2-407, Planning Models Improvement Program: Model Certification, 31 May 2005

(3) Engineering Regulation (ER) 1110-2-12, Quality Management, 30 Sep 2006

**c. Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision documents through independent review. The EC outlines three levels of review: District Quality Control, Agency Technical Review, and Independent External Peer Review. In addition to these three levels of review, decision documents are subject to policy and legal compliance review and, if applicable, safety assurance review and model certification/approval.

(1) District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and the recommendations before approval by the District Commander. The Major Subordinate Command (MSC)/District quality management plans address the conduct and documentation of this fundamental level of review; DQC is not addressed further in this review plan.

(2) Agency Technical Review (ATR). ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of the project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together as a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC.

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(3) Independent External Peer Review (IEPR). IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. IEPR is generally for feasibility and reevaluation studies and modification reports with Environmental Impact Statements (EISs). IEPR is managed by an outside eligible organization (OEO) that is described in Internal Revenue Code Section 501(c) (3), is exempt from Federal tax under section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of review will address all the underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project.

(4) Policy and Legal Compliance Review. Decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100, Planning Guidance Notebook. When policy and/or legal concerns arise during DQC or ATR that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. The home district Office of Counsel is responsible for the legal review of each decision document and signing a certification of legal sufficiency.

(5) Safety Assurance Review. In accordance with Section 2035 of Water Resources Development Act (WRDA) of 2007, EC 1105-2-410 requires that all projects addressing flooding or storm damage reduction undergo a safety assurance review of the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring public health, safety, and welfare. A future circular will provide a more comprehensive Civil Works Review Policy that will address the review process for the entire life cycle of a Civil Works project. That document will address the requirements for a safety assurance review for the Pre-Construction Engineering Phase, the Construction Phase, and the Operations Phase. The decision document phase is the initial design phase; therefore, EC 1165-2-209 requires that safety assurance factors be considered in all reviews for decision document phase studies.

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(6) Model Certification/Approval. EC 1165-2-209 requires certification (for Corps models) or approval (for non-Corps models) of planning models used for all planning activities. The EC defines planning models as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision-making. The EC does not cover engineering models used in planning. Engineering software is being address under the Engineering and Construction (E&C) Science and Engineering Technology (SET) initiative. Until an appropriate process that documents the quality of commonly used engineering software is developed through the SET initiative, engineering activities in support of planning studies shall proceed as in the past. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed.

## **2. STUDY INFORMATION**

### **a. Decision Document.**

The *Phase II Dredged Material Management Plan Study and Environmental Assessment, Green Bay Harbor, Wisconsin* is the title for this work. The decision document shall be the *Green Bay Harbor, Wisconsin, Dredged Material Management Plan Study and Environmental Assessment, Report*. This report shall present measures to manage dredged material within Green Bay Harbor, Wisconsin.

The purpose of this Dredged Material Management Plan (DMMP) document is to: (a) present studies that have been conducted to date; (b) provide an economic assessment of the justification to continue maintenance dredging; (c) discuss potential options that appear viable for disposal of dredged material; and (d) select a Management Plan for Green Bay Harbor dredged material disposal. With regards to meeting NEPA requirements, an Environmental Assessment (EA) will be prepared.

### **b. Level of Review**

A draft Environmental Assessment is to be included with the Draft DMMP. At this time it is anticipated that a request for project authorization from HQUSACE would be involved since the project cost is above \$3,000,000. It is expected that implementation costs will not exceed the \$45 million mandatory trigger for IEPR. For this reason, the DMMP report shall be subjected to Agency Technical Review (ATR). Based on current Headquarters guidance it assumed that an IEPR for this project will be necessary, the District however is currently seeking an exclusion from this requirement (See section 4(b) for more details).

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**c. Study Description.**

Green Bay Harbor is located in the city of Green Bay, between Outagamie and Brown Counties Wisconsin, which is located about 204 miles north of Chicago, Illinois. The harbor is positioned at the southern portion of Green Bay on Lake Michigan's western shore and extends up the Fox River to a location just downstream of DePere lock and dam. The authorized project at Green Bay Harbor has two segments which consist of an outer and inner channel. The authorized outer channel is approximately 11 ¼ miles long, 300 to 500 feet wide and 26 feet deep. From Grassy Island in the Bay to a point about ½-mile upstream from the mouth of the Fox River, the project has an authorized channel depth of 24 feet and 300 feet wide. The inner channel begins at a point ½-mile upstream of the mouth of the Fox River and extends approximately 7 miles upstream to the city of DePere. From the ½-mile point to approximately 3.5 miles upstream (Chicago and North Western Railway Bridge) the channel width varies but the authorized channel depth continues at 24 feet. A turning basin upstream of the Chicago and North Western Railway Bridge has a reduced depth of 20 Feet. Beyond the turning basin the Federal channel continues to be reduced to a depth of 18 feet deep and 75 feet wide that extends to the end of the authorized Federal navigation channel.

At this time, this study will be a single purpose Commercial Navigation project.

The following alternatives will be considered.

**Alternative Plans**

The alternatives presented in the following paragraphs are those that remain as potential options for consideration in handling future maintenance dredging needs of Green Bay Harbor navigation channels. The Green Bay Harbor management plan considers a full range of measures, including: Island Creation, open water placement, continued use of existing CDFs, and beneficial use of the dredged material.

**c.(1) Alternative 1 - No Action.**

This alternative involves no Corps action and would approximate the without project condition listed above. This alternative proposes to continue to use Bayport CDF for the dredged material from the inner and outer Federal channels of Green Bay Harbor under the existing Section 217 WRDA 1996 agreement until the year 2015 when a new facility would be needed. The Corps will also continue to pay a tipping fee for the use of the facility. The future no action condition includes the removal of approximately 400,000 cy by Brown County from the current facility to be used as capping material at the Renard Island CDF. If no action is taken to address this problem, it is anticipated that the backlog of shoal material will continue to increase, suspension of maintenance dredging of the Federal navigation channels would occur, and vessels will continue operate by light loading while risking grounding as long as they can.

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**c.(2) Alternative 2 - Construct a single island (West Island) DMDF, a partial wave barrier and an access road.**

This alternative proposes to construct an in-water DMDF, single island (West Island) and a partial wave barrier located within Green Bay, WI. This in-water DMDF (island) would provide dredged material capacity of approximately 630,000 cy and re-establish a portion of the deteriorated Cat Island Chain and surrounding shallow water habitat. It is one of three islands being considered for construction and it is the most western island, located closest to the northwest shoreline. The size of the proposed island is approximately 74 acres. A temporary access road would be constructed initiating at the shoreline of the mainland and extending into the water approximately 3,600 linear feet to the West Island. A wave barrier (approximately 3,000 linear feet) would be constructed along the northeast side of the West Island to protect the in-water DMDF (island) and the shallow water habitat behind it (Duck Creek delta wetland and Peters Marsh) against wave action from the bay. Construction of the West Island and a partial wave barrier would create a reduction in wave height and restore approximately 420 acres of water habitat and 74 acres of terrestrial habitat for a total restoration of 494 acres.

**c.(3) Alternative 3 - Construct a single island (West Island) DMDF, a complete wave barrier and an access road.**

This alternative also proposes to construct an in-water DMDF, single island (West Island) with a complete wave barrier to extend the length of the original Cat Island Chain located within Green Bay, WI. This alternative would also create a dredged material capacity of approximately 630,000 cy. The size and location of this island and the temporary access road would be the same as Alternative 1 above. A complete wave barrier would be constructed along the northeast side of the West Island and extend approximately 8,600 feet eastward to protect the island and the shallow water habitat behind it (Duck Creek delta wetland and Peters Marsh) against wave action from the bay. Construction of the West Island and a complete wave barrier would create a reduction in wave height and restore approximately 1,423 acres of water habitat and 74 acres of terrestrial habitat for a total restoration of 1,497 acres.

**c.(4) Alternative 4 - Construct a two island (West and Middle Islands) DMDF, a partial wave barrier, and an access road.**

This alternative proposes to sequentially construct an in-water DMDF, two islands (West and Middle Islands) and a partial wave barrier located within Green Bay, WI. This in-water DMDF (two islands) would provide dredged material capacity of approximately 1,350,000 cy and re-establish a portion of the deteriorated Cat Island Chain and surrounding shallow water habitat. The sizes of the two islands are as follows: West Island (approximately 74 acres) and Middle Island (approximately 92 acres). The two islands would encompass a total of approximately 166 acres. The construction of the two islands and partial wave barrier could be phased-in over a period of time as needed. A temporary access road would be constructed initiating at the shoreline of the mainland and extend into the water 3,600 linear feet, connecting

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to the starting point of the wave barrier. The wave barrier would extend 5,400 feet eastward along the northeast side of West and Middle Island to protect the in-water DMDF (two islands) and the shallow water habitat behind it (Duck Creek delta wetland and Peters Marsh) against wave action from the bay. Construction of the West Island and Middle Island and a partial wave barrier would create a reduction in wave height and restore approximately 875 acres of water habitat and 166 acres of terrestrial habitat for a total restoration of 1,041 acres.

**c.(5) Alternative 5 - Construct a two island (West and Middle Islands) DMDF, a complete wave barrier, and an access road.**

This alternative proposes to sequentially construct an in-water DMDF, two islands (West and Middle Islands) and a complete wave barrier located within Green Bay, WI. These islands would be positioned near the deteriorated Cat Island Chain. This alternative would also create a combined dredged material capacity of approximately 1,350,000 cy. The size and location of these islands and the access road are the same as discussed in Alternative 4 above. The difference between this alternative and Alternative 4 above is that the complete wave barrier is constructed prior to the islands versus a partial wave barrier as each island is constructed. A complete wave barrier would extend 8,600 feet eastward along the northeast side of West and Middle Islands to protect the in-water DMDF (islands) and the shallow water habitat behind it (Duck Creek delta wetland and Peters Marsh) against wave action from the bay. Construction of the West Island and Middle Island and a complete wave barrier would create a reduction in wave height and restore approximately 1,331 acres of water habitat and 166 acres of terrestrial habitat for a total restoration of 1,497 acres.

**c.(6) Alternative 6 - Construct a three island (West, Middle and East Islands) DMDF, a partial wave barrier, and an access road.**

This alternative proposes to sequentially construct an in-water DMDF, three islands (West, Middle, and East Islands) and a partial (incrementally constructed) wave barrier located within Green Bay, WI. The three islands are centrally located between the northwest shoreline and the Federal navigation channel. This alternative would create a dredged material capacity of approximately 2,350,000 cy. The sizes of the three islands are as follows: West Island (approximately 74 acres), Middle Island (approximately 92 acres) and East Island (106 acres). The three islands would encompass a total of approximately 272 acres. The construction of the in-water DMDF (three islands and wave barrier) could be phased-in over a period of time as needed. A temporary access road would be constructed initiating at the shoreline of the mainland and extend into the water 3,600 linear feet, connecting to the starting point of the wave barrier. The wave barrier would extend 8,600 feet eastward along the northeast side of the three islands to protect the in-water DMDF (islands) and the shallow water habitat behind it (Duck Creek delta wetland and Peters Marsh) against wave action from the bay. Construction of the West, Middle and East Island and a partial wave barrier would create a reduction in wave height and restore approximately 1,225 acres of water habitat and 272 acres of terrestrial habitat for a total restoration of 1,497 acres.



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**c.(7) Alternative 7 - Construct a three island (West, Middle and East Islands) DMDF, a complete wave barrier, and an access road.**

This alternative proposes to construct an in-water DMDF, three islands (West, Middle, and East Islands) and a complete wave barrier located within Green Bay, WI. This alternative would also create a dredged material capacity of approximately 2,350,000 cy of dredged material. The size and location of these islands and the access road are the same as discussed in Alternative 6 above. The difference between this alternative and Alternative 6 above is that the complete wave barrier and in-water DMDF (islands) will be constructed at once versus a partial wave barrier and each island constructed sequentially. The three islands would encompass a total of approximately 272 acres. The wave barrier would extend 8,600 feet eastward along the northeast side of the three islands to protect the islands and the shallow water habitat behind it (Duck Creek delta wetland and Peters Marsh) against wave action from the bay. Construction of the West, Middle and East Island and a complete wave barrier would create a reduction in wave height and restore approximately 1,225 acres of water habitat and 272 acres of terrestrial habitat for a total restoration of 1,497 acres.

**c.(8) Alternative 8 - Construct a single island (East Island) DMDF, a complete wave barrier, and an access road.**

This alternative proposes to construct an in-water DMDF, single island (East Island) and a complete wave barrier located within Green Bay, WI. This alternative would create a dredged material capacity of approximately 1,000,000 cy of dredged material. It is one of three islands being considered and it is the most easterly island, located closest to the Federal navigation channel. The size and location of this island and the access road are the same as discussed in Alternative 6 above. The major difference between this alternative and similar alternatives above, is that the complete wave barrier is constructed prior to the East island and it is nearest the Federal navigation channel. This island would encompass a total of approximately 106 acres. The wave barrier would extend 8,600 feet eastward along the northeast side of the island to protect the in-water DMDF (island) and the shallow water habitat behind it (Duck Creek delta wetland and Peters Marsh) against wave action from the bay. Construction of the East Island and a complete wave barrier would create a reduction in wave height and restore approximately 1,391 acres of water habitat and 106 acres of terrestrial habitat for a total restoration of 1,497 acres.

**c.(9) Alternative 9 – Open Water Placement.**

This alternative envisions placing dredged material in an open water disposal site, approximately 50 miles from the mouth of the Fox River, in either Lake Michigan via Sturgeon Bay Channel or at a comparable site in mid to northern Green Bay. The character of the dredged

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material from the outer Federal channel (Bay Mile 3 to 11) is classified as suitable for in-water placement.

**c.(10) Alternative 10 – Beach Nourishment.**

This alternative proposes to place dredged material on the beaches within Green Bay shoreline as a beneficial use. Beach nourishment is becoming a more utilized option where local conditions warrant. Beach nourishment is ideal in shoreline areas that are classified as “erosional”, where more material is lost through natural erosion than is deposited via littoral drift. Also, beach nourishment helps to expand recreational beaches at local or state parks, if near by. Lastly, sandy material can be placed on shorelines in preserve areas to enhance shoreline habitat.

**c.(11) Alternative 11 – Brown County Expanded Bayport CDF (Scenario 1- Inner Channel Only).**

This alternative proposes to expand Bayport CDF (construct in yr 2023) for the dredged material from the inner channel of Green Bay, Harbor. Approximately 400,000 cy of dried dredged material will be transferred from the existing Bayport CDF to Renard Island CDF for capping purposes. Based on only the inner harbor demand, and 400,000 cy of dried dredged material being transferred from the existing Bayport CDF to Renard Island CDF, it is anticipated that there are approximately 16 years of remaining capacity. Then, Brown County would need to provide capacity of approximately 800,000 cy (for yrs 2024 thru 2031) to meet the total 20-year dredged material capacity (1,956,000 cy) needs for the inner channel. The expansion would consist of constructing a 36 acre Dredged Material Disposal Facility (DMDF) adjacent to the existing Bayport CDF containing dry cells for stock piling dry dredged material. The existing Bayport CDF will continue to process wet dredged material. The process would consist of the temporary storage of the wet dredged material in designated cells until it is dried, then transferring it to the 36 acre expansion site. Taking into consideration, the 400,000 cy for Renard Island, the proposed 36 acre DMDF will be designed to contain approximately 800,000 cy. This will provide additional placement capacity for years 2020 thru 2031. The Corps will continue to pay a tipping fee for the Operation & Maintenance of the facility.

**c.(12) Alternative 12 – Brown County Expanded Bayport CDF (Scenario 2 -Inner and Outer Channels)**

This alternative proposes to expand Bayport CDF as described in Alternative 11 above and construct an additional Dredged Material Disposal Facility (DMDF), near Holland Twp., WI (construct in yr 2016) to provide dredged material capacity for the inner and outer channels of Green Bay, Harbor. Based on the inner and outer harbor demand, it is anticipated that there are approximately 9 years of remaining capacity. Then, Brown County would need to provide capacity of approximately 3,444,800 cy (for yrs 2019 thru 2031) to meet the total 20-year dredged material capacity (4,300,000 cy) needs for the inner and outer channels. The DMDF

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would consist of constructing a 100 acre DMDF approximately 20 miles from the Bayport CDF, near Holland, WI, containing dry cells for stock piling dry dredged material.

The existing Bayport CDF will continue to process wet dredged material. The process would consist of the temporary storage of the wet dredged material in designated cells until it is dried, then transferring it to the 36 acre expansion site and the 100 acre DMDF. Approximately 400,000 cy of dried dredged material will be transferred from the existing Bayport CDF to Renard Island CDF. Taking into consideration, the 400,000 cy for Renard Island, and the 800,000 cy for the proposed 36 acre expansion site, the 100 acre DMDF will be designed to contain approximately 2,271,200 cy. The Corps will continue to pay a tipping fee for the Operation & Maintenance of the facility.

**c.(13) Alternative 13 – Modify Interior Contours within Renard Island CDF and Transport Dredged Material by Barge.**

This alternative proposes to reshape the islands' (approx. 54 acres) interior contour using dredged material and provide a cover. The sponsor (Brown County) requested the Corps to include a closure plan for Renard Island in this DMMP. They have future plans to convert the island to a recreational park with hiking trails, open spaces and a park shelter. Dredged material from the Federal channel could be pumped from a barge into cells and allowed to dry. Three cells (approx. 10 acres each) would be constructed, so dredged material placement could be alternated between the cells every three years. This would allow a two year drying time. The dried dredged material could then be moved and shaped into hills with various elevations. The cells could be constructed using onsite material to create temporary push up berms. The modifications to the interior could provide a dredged material capacity of approx. 466,362 cy (includes 2.5 feet of cover, Reference, *Closure Plan Renard Island, Brown County Port and Solid Waste Department, Brown County, Wisconsin* Feb 2008, Section 3.3 Final Grading Plan). Dredged material from the inner harbor channel (approx. 288,895 cy) would be used to shape the hills, followed by dredged material from the outer harbor channel (177,467 cy, Reference, *Closure Plan Renard Island, Brown County Port and Solid Waste Department, Brown County, Wisconsin* Feb 2008, Section 3.3 Final Grading Plan) would act as a cover. Nutrients in channel sediments are sufficient to create vegetation quickly and act as topsoil. A perimeter swale would be included to collect surface water run-off. Geotextile fabric would be placed on the inside slope of the existing perimeter dike for seepage protection. Final cover elevations vary from 5 ft to 20 ft above the dikes.

**c.(14) Alternative 14 – Modify Interior Contours within Renard Island CDF, Construct a Causeway and Transport Dredged Material by Truck.**

This alternative also proposes to reshape the islands' (approx. 54 acres) interior contour using dredged material and provide a cover as discussed in alternative 13 above. The main difference from Alternative 13 above is in the transportation. The sponsor is proposing that the

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Corps truck dry dredged material from Bayport CDF and then transport it to Renard Island. A causeway would be constructed allowing trucks access to the island.

**c.(15) Alternative 15 – Combination of Alternative 7 and Alternative 11.**

This alternative proposes to combine *Alternative 7 - Construct a three island (West, Middle and East Islands) DMDF, a complete wave barrier, and an access road with Alternative 11 – Brown County Expanded Bayport CDF (Inner Channel Only)* to address the inner and outer dredged material capacity harbor needs. (See description above).

**c.(16) Alternative 16 – Combination of Alternative 9 and Alternative 11.**

This alternative proposes to combine *Alternative 9 – Open Water Placement with Alternative 11 – Brown County Expanded Bayport CDF (Inner Channel Only)* to address the inner and outer dredged material capacity harbor needs. (See description above).

**c.(17) Alternative 17 – Combination of Alternative 4 and Brown County Expanded Bayport CDF (Scenario 3).**

This alternative proposes to combine *Alternative 4 – Construct a two island (West and Middle Islands) DMDF, a partial wave barrier, and an access road* with expanding Bayport CDF as described in Alternative 11 above and construct an additional Dredged Material Disposal Facility (DMDF), near Holland Twp., WI (construct in yr 2022) to provide dredged material capacity for the inner and outer channels of Green Bay, Harbor. Based on the inner and outer harbor demand, it is anticipated that there are approximately 9 years of remaining capacity. Then, Brown County would need to provide capacity of approximately 3,444,800 cy (for yrs 2019 thru 2031) to meet the total 20-year dredged material capacity (4,300,000 cy) needs for the inner and outer channels.

The 36 acre expanded Bayport CDF (construct in yr 2019) includes the dredged material from the Inner Channel only and would provide dredge material capacity of approximately 800,000 cy (yrs 2024 thru 2031). Approximately 400,000 cy of dried dredged material will be transferred from the existing Bayport CDF to Renard Island CDF, providing capacity for years 2028 thru 2031 for the inner harbor material. The construction of the West and Middle Island will provide dredged material capacity of approximately 1,350,000 cy (yrs 2012 thru 2022). The portion of the outer channel equivalent to the capacity of the East Island (1,000,000 cy) will be placed in the 100 acre DMDF located at Holland Twp., WI, approximately 20 miles from the Bayport CDF.

The existing Bayport CDF will continue to process wet dredged material. The process would consist of the temporary storage of the wet dredged material in designated cells until it is dried, then transferring it to the 36 acre expansion site and the 100 acre DMDF. Taking into consideration, the 400,000 cy for Renard Island, and the 800,000 cy for the proposed 36 acre

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expansion site, the 100 acre DMDF will be designed to contain approximately 1,000,000 cy. The Corps will continue to pay a tipping fee for the Operation & Maintenance of the facility.

The non-Federal Sponsor is Brown County.

**d. Factors Affecting the Scope and Level of Review.**

**• Challenges:**

1) The submerged lands in Green Bay for the proposed in-water Dredged Material Disposal Facility (DMDF) were provided by the Wisconsin State legislature. Any change in the design for the DMDF that impacts the submerged lands would require State legislative action, which is highly unlikely.

2) EPA has indicated that they anticipate providing \$5M (GLRI funding) towards an initial construction of the in-water DMDF, if the Corps awards a contract in FY11.

**• Risks:**

1) The Corps may risk losing EPA funding (\$5M) for construction if a contract is not awarded in FY11.

2) If Congress provides only a portion of the construction funds needed, then only one or two islands may be constructed.

**• Substantive economic, environmental, social effects:**

1) The location for the in-water dredged material disposal facility could protect 1,225 acres of shallow water habitat from wave attack from the Bay and create 272 acres of terrestrial habitat for a total restoration of 1,497 acres.

2) Backlog dredging could be addressed.

3) The Bayport CDF life will be extended.

**• Significant interagency interests:**

1) The Wisconsin Department of Natural Resources is heavily involved with the Environmental Assessment and supports the re-creation of the Cat Island Chain (in water DMDF).

2) The U.S. Fish & Wildlife Service is heavily involved in the design of the in water DMDF (Cat Island Chain) and supports the three island design.

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3) The EPA supports the re-creation of the Cat Island Chain and is willing to provide Great Lakes Restoration Initiative funding (\$5M) for construction.

• **Human Safety:**

1) The Cat Island Chain will be accessible from the water, but it is not anticipated to be a safety issue.

• **Controversial Issues:**

1) This project is not considered controversial. It is supported by U.S. Fish & Wildlife Service, Wisconsin Department of Natural Resources, USEPA and Brown County.

e. **In-Kind Contributions.** The sponsor has indicated an interest in constructing the access road to the in-water DMDF and provide stone, as part of its 35% cost share.

**3. AGENCY TECHNICAL REVIEW (ATR)**

a. **General.** The estimated cost for the ATR and comment resolution is approximately \$55,000. ATR for decision documents covered by EC 1165-2-209 are managed by the appropriate Planning Center of Expertise (PCX) with appropriate consultation with the allied Communities of Practice such as engineering and real estate. The ATR shall ensure that the product is consistent with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and the results in a reasonably clear manner for the public and decision makers. Members of the ATR team will be from outside the home district. The ATR lead will be from outside the home MSC. The leader of the ATR team will participate in milestone conferences and, if required, the Civil Works Review Board (CWRB) to address review concerns.

**b. Products for Review.**

- Draft Dredge Material Management Plan
- Draft Environmental Assessment

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**c. Required ATR Team Expertise.**

| <b>Discipline</b>                       | <b>Recommended Qualifications for ATR</b>  |
|---|--|
| Planner (Regional Technical Specialist) | The team member shall have extensive knowledge of Planning processes, with special emphasis on Navigation and Dredged Material Management Plans.   |
| Environmental Scientist                 | The team member should have extensive knowledge of the integration of environmental evaluation and compliance requirements, pursuant to national environmental statutes (NEPA), applicable executive orders and other Federal planning requirements, into the planning of Civil Works comprehensive plans and implementation projects. |
| Economist                               | The economist must have an understanding of navigation benefits adequate to recognize sufficiency and appropriate utilization in alternative evaluation. It requires an understanding of economic related requirements as depicted in EM 1110-2-1619 and ER1105-2-101. An ability to implement and assess risk evaluation methodology. |
| Civil Design Engineer                   | Team member will be an expert in the art and science of dredged material management projects such as design of channels, dredged material disposal facilities. Should also be a licensed professional engineer.  |
| Cost Engineer                           | Cost Engineer: Team member shall be familiar with estimates for civil works (dredged material disposal facilities, etc.) and dredging operations. The Cost Engineer will be required to perform some quantity checks. Be familiar with the USACE estimating software MII in reviewing cost estimate.                                   |

**d. Documentation of ATR.** Dr Checks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

- (1) The review concern – identify the product’s information deficiency or incorrect application of policy, guidance, or procedures;
- (2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
- (3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components,

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- efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
- (4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in or to then assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical coordination, and lastly the agreed upon resolution. The ATR team will prepare a Review Report which includes a summary of each unresolved issue; each unresolved issue will be raised to the vertical team for resolution. Review Reports will be considered an integral part of the ATR documentation and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to HQUSACE for resolution and the ATR documentation is complete. Certification of ATR should be completed, based on work reviewed to date.

#### **4. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

**a. General.** IEPR is conducted for decision documents if there is a vertical team decision (involving the district, MSC, PCX, and HQUSACE members) that the covered subject matter meets certain criteria (described in EC 1165-2-209) where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside the USACE is warranted. IEPR is coordinated by the appropriate PCX and managed by an Outside Eligible Organization (OEO) external to the USACE. IEPR panels shall evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, the review panels should be given the flexibility to bring important issues to the attention of decision makers; however, review panels should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on a planning or reoperations study. IEPR panels will accomplish a concurrent review that covers the entire decision document and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. Whenever feasible and appropriate, the office producing the document shall make the draft decision document available



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to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. An IEPR panel or OEO representative will participate in the CWRB, if one is required.

**b. Decision on IEPR.**

A total project cost greater than of \$45M requires an IEPR. The construction cost (including dredging) for the proposed project is estimated to be approximately \$113M, therefore in accordance with EC 1105-2-410 an IEPR is required.

**c. Products for Review.**

- Draft Dredge Material Management Plan
- Draft Environmental Assessment

**d. Required IEPR Panel Expertise.**

| Discipline                               | Recommended Qualifications for IEPR  |
|--|--|
| Environmental Specialist                 | The Environmental Specialist Panel Member should be a scientist from academia, a public agency, a non-governmental entity, or an Architect-Engineer or Consulting Firm with expertise in aquatic ecology. The individual should be particularly knowledgeable of Great Lakes coastal and wetland ecosystems. This discipline may require one or two individuals depending upon the availability of individuals with a comprehensive understanding of this discipline.  |
| Civil Design Engineer Panel Member       | The Civil/Structural Engineering Panel Member should be an engineer from academia, a public agency, a non-governmental entity, or an Architect-Engineer or Consulting Firm with experience in construction methods related large civil works navigation projects. The reviewer should have particular knowledge of the Great Lakes, with particular experience in the design and construction of structures on the Great Lakes. This discipline may require one or two individuals depending upon the availability of individuals with a comprehensive understanding of this discipline. |
| Dredging and Dredged Material Management | The Dredging and Dredged Material Management Specialist shall be an individual with experience in dredging operations,   |

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|                    |  |
|--------------------|--|
| Specialist         | dredged material transport and placement. The Dredging and Dredged Material Management Panel Member should be a scientist or an engineer from academia, a public agency, a non-governmental entity, or an Architect-Engineer or Consulting Firm. The reviewer should be familiar with all applicable USACE regulations pertaining to the placement. This discipline may require one or two individuals depending upon the availability of individuals with a comprehensive understanding of this discipline. |
| Planner Specialist | The Planner Panel Member should be a scientist or an engineer from academia, a public agency, a non-governmental entity, or an Architect-Engineer or Consulting Firm. The team member shall have extensive knowledge of Planning processes, with special emphasis on Navigation and Dredged Material Management Plans. This discipline may require one or two individuals depending upon the availability of individuals with a comprehensive understanding of this discipline.                              |

**e. Documentation of IEPR.**

Dr Checks review software will be used to document IEPR comments and aid in the preparation of the Review Report. Comments should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 3. The OEO will be responsible for compiling and entering comments into Dr Checks. The IEPR team will prepare a Review Report that will accompany the publication of the final report for the project and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the IEPR panel no later than 60 days following the close of the public comment period for the draft decision document. The report will be considered and documentation prepared on how issues were resolved or will be resolved by the District Commander before the district report is signed. The recommendations and responses will be presented to the CWRB by the District Commander with an IEPR panel or OEO representative participating, preferable in person.

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## 5. MODEL CERTIFICATION AND APPROVAL

**a. General.** The use of certified or approved models for all planning activities is required by EC 1105-2-412 . This policy is applicable to all planning models currently in use, models under development and new models. The appropriate PCX will be responsible for model certification/approval. The goal of certification/approval is to establish that planning products are theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. The use of a certified or approved model does not constitute technical review of the planning product. Independent review of the selection and application of the model and the input data and results is still required through conduct of DQC, ATR, and, if appropriate, IEPR. Independent review is applicable to all models, not just planning models. Both the planning models (including the certification/approval status of each model) and engineering models used in the development of the decision document are described below:

**b. Planning Models.** The following planning models are anticipated to be used:

| Model Name | Model Type        | Requirement             | Proponent                             | PCX   | Status                                       |
|------------|-------------------|-------------------------|---------------------------------------|-------|--|
| GL-SAND    | Economic Analysis | Corporate Certification | Inland Navigation Center of Expertise | PCXIN | HQ provided a onetime exemption for its use. |

- A computer model, *Great Lakes System Analysis of Navigation Depths* (GL-SAND), was developed to calculate the shipping costs associated with moving commodities on the Great Lakes during one commercial navigation season. The model uses individual vessel movements at the dock level to calculate the amount of time it takes to move commodities from their origin ports to final destination ports. This transit time is then converted to dollars using average shipping costs per hour by vessel class. Once transportation costs associated with existing operating conditions are developed, the model can then be rerun using different channel depth assumptions at the origin port. This results in transportation costs by channel depth for any Great Lakes port that needs to be evaluated.

The programs calculation of transportation costs by channel depths incorporates shoaling rates; variable lake levels; vessel operating characteristics (loading/unloading rates, carrying capacity by commodity, tons per inch immersion factors, vessel speed); vessel operating costs by vessel class; available channel depths at harbors, locks, and connecting channels by month; dock characteristics (depth at docks, dock loading/unloading rates); in harbor maneuvering times and trip distances between ports.

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c. **Engineering Models.** The following engineering models are anticipated to be used:

Not Applicable

## 6. REVIEW SCHEDULES AND COSTS

a. **ATR Schedule and Cost.**

The estimated cost of the ATR is \$55,000.

|  | Description     | Scheduled Date |
|--|-----------------|----------------|
|  | DRAFT DMMP & EA | May 2010       |

This date assume continuous and optimal Federal and Sponsor funding for the study.

b. **IEPR Schedule and Cost.**

|  | Description     | Scheduled Date |
|--|-----------------|----------------|
|  | DRAFT DMMP & EA | April 2011     |

c. **Model Certification/Approval Schedule and Cost.**

TBD

## 7. PUBLIC PARTICIPATION

The draft report and Environmental Assessment (EA) was distributed for public comment on 16 Sept 2010. The EA was made available for a 30 day public comment period. After the public comment period, the Corps responded to 3 letters. The final document will be placed on the District's website for information purposes.

A public meeting was held by Brown County on 13 Oct 2011 with participation from the Detroit District personnel. No changes to the EA or DMMP resulted from the meeting.

## 8. PCX COORDINATION

Review plans for decision documents and supporting analyses outlined in EC 1165-2-209 are typically coordinated with the appropriate Planning Center(s) of Expertise (PCXs) based on the primary purpose of the basic decision document to be reviewed. The lead PCX for this study is Inland Navigation PCX (PCXIN).

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PCXIN Manager is:

502 Eighth Street  
Huntington, WV 25701  
Ph. (304) 399-6955

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## 9. MSC APPROVAL

Great Lakes and Ohio River Division oversees the home district and is responsible for approving the review plan. Approval is provided by the MSC Commander. The commander's approval should reflect vertical team input (involving district, MSC, PCX, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the Project Management Plan, the review plan is a living document and may change as the study progresses. Changes to the review plan should be approved by following the process used for initially approving the plan. In all cases the MSC will review the decision on the level of review and any changes made in updates to the project.

## 10. REVIEW PLAN POINTS OF CONTACT

Questions and/or comments on this review plan can be directed to the following points of contact:

| POC | Title            | Office Phone Number |
|-----|------------------|---------------------|
|     | Project Manager  | 313 226- 6767       |
|     | Planner          | 313 226- 6710       |
|     | Division Liaison | 312 353- 6351       |
|     | PCXIN Manager    | 304 399- 6938       |
|     | DX-PCX Manager   | 509 527- 7083       |

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**ATTACHMENT 1: TEAM ROSTERS**

**Table 1 – Study Project Delivery Team**

| Discipline                           | Name | Office/Agency |
|--------------------------------------|------|---------------|
| Project Manager                      |      | CELRE-PM-C    |
| Lead Planner                         |      | CELRE-PL-P    |
| Environmental Analysis               |      | CELRE-PL-E    |
| Environmental Analysis, Archeologist |      | CELRE-PL-E    |
| Environmental Analysis               |      | CELRE-PL-E    |
| Economic Analysis                    |      | CELRE-PL-P    |
| Real Estate                          |      | CELRE-RE      |
| Civil Design Analysis                |      | CERLE-ED-G    |
| Geotechnical Analysis                |      | CERLE-ED-G    |
| Hydrology and Hydraulic Engineering  |      | CELRE-HH-E    |
| Cost Engineering*                    |      | CELRE-ED-C    |
| Office of Counsel                    |      | CELRE-OC      |

\*: Cost engineering efforts will be coordinated through the Cost Engineering DX at Walla Walla District.

**Table 2 – Major Subordinate Command Planning and Policy Team**

| Discipline                          | Name                     | Office   |
|-------------------------------------|--------------------------|----------|
| Great Lakes and Ohio River Division |                          |          |
|                                     | Chief, Planning & Policy | CELRD-PP |
|                                     | Planning & Policy        | CELRD-GL |
|                                     | Planning & Policy        | CELRD-PP |
|                                     | Planning & Policy        | CELRD-PP |
|                                     | Planning & Policy        | CELRD-PP |
|                                     | PCXIN                    | CELRH-NC |

**Table 3 – Major Subordinate Command Planning and Policy Team**

|                                 |  |
|---------------------------------|--|
| <i>Advisory Groups</i>          |  |
|                                 | Wisconsin Department of Natural Resources (WDNR)       |
| <i>Project Development Team</i> |  |
|                                 | U.S. Army Corps of Engineers, Detroit District (USACE) |
|                                 | U.S. Fish and Wildlife Service (USFWS)                 |
|                                 | U.S. Environmental Protection Agency                   |
| <i>Technical Committees</i>     |  |
|                                 | Membership drawn from agencies and groups listed above |

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**Table 4 – Planning Centers of Expertise Team**

| Discipline                        | Name | Office   |
|-----------------------------------|------|----------|
| Great Lakes & Ohio River Division |      |          |
| PCXIN                             |      | CELRH-NC |

**Table 5 – Agency Technical Review Team**

| Discipline                              | Name | Experience (Yrs). | Office/Agency |
|---|------|-------------------|---------------|
| Planner (Regional Technical Specialist) | TBD  |                   | TBD           |
| Environmental Analysis                  | TBD  |                   | TBD           |
| Economic Analysis                       | TBD  |                   | TBD           |
| Real Estate                             | TBD  |                   | TBD           |
| Civil Design Analysis                   | TBD  |                   | TBD           |
| Cost Engineering                        | TBD  |                   | TBD           |

**Table 6 – Independent External Peer Review Team**

| Discipline  | Name | Office |
|---|------|--------|
| Environmental Specialist                          | TBD  | TBD    |
| Civil Design Engineer Panel Member                | TBD  | TBD    |
| Dredging & Dredged Material Management Specialist | TBD  | TBD    |

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**ATTACHMENT 2: ACRONYMS AND ABBREVIATIONS**

| <b><u>Term</u></b> | <b><u>Definition</u></b>                        | <b><u>Term</u></b> | <b><u>Definition</u></b>                                       |
|--------------------|---|--------------------|--|
| AFB                | Alternative Formulation Briefing                | NED                | National Economic Development                                  |
| ASA(CW)            | Assistant Secretary of the Army for Civil Works | NER                | National Ecosystem Restoration                                 |
| ATR                | Agency Technical Review                         | NEPA               | National Environmental Policy Act                              |
| CSDR               | Coastal Storm Damage Reduction                  | O&M                | Operation and maintenance                                      |
| CWRB               | Civil Works Review Board                        | OMB                | Office and Management and Budget                               |
| DPR                | Detailed Project Report                         | OMRR&R             | Operation, Maintenance, Repair, Replacement and Rehabilitation |
| DQC                | District Quality Control                        | OEO                | Outside Eligible Organization                                  |
| DX                 | Directory of Expertise                          | OSE                | Other Social Effects   |
| EA                 | Environmental Assessment                        | PCX                | Planning Center of Expertise                                   |
| EC                 | Engineer Circular                               | PDT                | Project Delivery Team  |
| EIS                | Environmental Impact Statement                  | PAC                | Post Authorization Change                                      |
| EO                 | Executive Order                                 | PMP                | Project Management Plan  |
| ER                 | Ecosystem Restoration                           | PL                 | Public Law   |
| FDR                | Flood Damage Reduction                          | QMP                | Quality Management Plan  |
| FEMA               | Federal Emergency Management Agency             | QA                 | Quality Assurance  |
| FRM                | Flood Risk Management                           | QC                 | Quality Control  |
| FSM                | Feasibility Scoping Meeting                     | RED                | Regional Economic Development                                  |
| GRR                | General Reevaluation Report                     | RTS                | Regional Technical Specialist                                  |
| HQUSACE            | Headquarters, U.S. Army Corps of Engineers      | USACE              | U.S. Army Corps of Engineers                                   |
| IEPR               | Independent External Peer Review                | WRDA               | Water Resources Development Act                                |
| ITR                | Independent Technical Review                    |                    |  |
| LRR                | Limited Reevaluation Report                     |                    |  |
| MSC                | Major Subordinate Command                       |                    |  |
|                    |   |                    |  |