DEFINITE PROJECT REPORT
WITH INTEGRATED ENVIRONMENTAL ASSESSMENT

SECTION 206
LAKE BELLE VIEW
AQUATIC ECOSYSTEM RESTORATION PROJECT

APPENDIX B
CLEAN WATER ACT
SECTION 404(b)(1) EVALUATION

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I. PROJECT DESCRIPTION

A. Location. Lake Belle View is a shallow, 93-acre millpond located on the Sugar River at Belleville, Wisconsin, approximately 20 miles southwest of Madison. The millpond is located in the upper reaches of the Sugar River and its accompanying watershed, which occurs in south-central Wisconsin.

B. General Description. The Corps of Engineers is proposing to construct a restoration project at Lake Belle View. Potential features evaluated in the feasibility study included sediment removal, river diversion, wetland restoration/enhancement, periodic drawdown, fish passage structures, and rough fish control.

- River Diversion would create separation of the lake and river channel, which would improve water quality and fish passage. For the Selected Plan, a berm would be created to separate the lake and river. The river channel would then be re-created behind this berm, with riffle structures created to drop from the maintained lake elevation to the elevation of the lower river. Directing the river into a channel would allow it to maintain its velocity and not drop sediments and nutrients into the lake. It also would reduce the warming effect that the lake has on the river and potentially extend the cool-water fishery downstream. The reduction of sediment and nutrients entering the lake would have water quality benefits and benefit the warm-water fishery as well.

- Wetland Enhancement would be accomplished by creating topographic diversity through dredged material placement. Enhancement also would include planting desirable emergent vegetation. For the Selected Plan, areas targeted for sloping with dredged material and planting with vegetation would include approximately 22 acres. In addition to direct effects to fish and wildlife, wetlands also have the ability to remove nutrients from the water and thus improve water quality. Creation of wetlands would provide a "filter" for urban runoff entering the lake from the west prior to its entering the lake and river.

- Sediment Removal would increase lake depths and improve water quality by reducing the amount of nutrient-rich sediment within the lake. Dredging would be performed up to a depth of about 8 feet. Alternatives evaluated included dredging areas of 5, 10, and 15 acres to the targeted depth.

- A Periodic Drawdown of 6 inches or more could control submergent and emergent vegetation growth in shallow areas of the lake, which would reduce turbidity, increase aquatic and wetland habitat, and reduce potential algal blooms. Drawdown also may help facilitate rough fish removal (discussed below).

- Fish Passage Structures would facilitate the upstream movement of many fish species. Fish passage alternatives evaluated included river channel restoration, as well as incorporation of some form of rock ramp or bypass channel.

- Rough Fish Control would improve the water quality of the lake by reducing the number of rough fish, such as carp, in the lake.

C. Authority and Purpose. The Lake Belle View Aquatic Ecosystem Restoration Project was authorized under Section 206 of the 1996 Water Resources Development Act, as amended. The purpose of this program is the development of aquatic ecosystem restoration and projection projects that improve the environment, are in the public interest, and are cost effective.[1]

D. Special Project State Legislation. The following legislation has been passed in the state of Wisconsin to authorize this project, as taken from Chapter 30, Navigable Waters, Harbors, and Navigation, amended 01-02.

30.2026 Lake Belle View and Sugar River project.
(1) AUTHORIZATION. (a) Subject to the restrictions under sub. (2), the village of Belleville may place fill on all or part of the portion of the bed of Lake Belle View located in Dane County for any of the following purposes:

1. Improving fish and wildlife habitat.
2. Creating and enhancing wetlands.
3. Improving the water quality of Lake Belle View and the Sugar River.
4. Enhancing the recreational use and aesthetic enjoyment of Lake Belle View and the Sugar River.
5. Separating Lake Belle View from the Sugar River by creating an artificial barrier from lake bottom sediments or by other means.
6. Creating suitable lake bottom depths or contours in Lake Belle View.
7. Promoting the growth of desirable wetland plants.

(b) Any lake bottom sediments that are unsuitable for the creation of an artificial barrier under par. (a) 5. may be placed in any agricultural field that is adjacent to Lake Belle View.

(c) If the village of Belleville creates an artificial barrier from lake bottom sediments under par. (a) 5., the village of Belleville shall also place lake bottom sediments in adjacent areas for the purpose of creating and enhancing wetlands.

(2) REQUIREMENTS. (a) The village of Belleville shall obtain approval from the department for any placement of fill material as authorized under sub. (1).

[1] ER 1105-2-100 Planning Guidance Notebook, Appendix F, PG F-22.

(b) The village of Belleville shall submit to the department any plans or other information that the department considers necessary for it to effectively determine whether to grant approval under
par. (a).

(c) The village of Belleville shall ensure that all of the following apply to any artificial barrier created as authorized under sub. (1).

1. The barrier does not materially obstruct navigation or reduce the effective flood flow capacity of a stream.

2. The barrier is not detrimental to the public interest.

3. The barrier is owned by a public entity and the public is granted free access to the barrier.

4. Access by the public to the barrier is limited to use as open space for recreational purposes.

5. The barrier remains in as natural a condition as is practicable, as determined by the department.

6. No structure, except those necessary in order to effectuate a purpose specified in sub. (1) (a), are placed on the barrier.

(d) The village of Belleville shall create any artificial barrier under this section in compliance with all state laws that relate to navigable bodies of water, except s. 30.12 (1) and (2).

(3) CONDITIONS. (a) The village of Belleville shall maintain any artificial barrier created as authorized under sub. (1). If a landowner of more than 500 feet of Lake Belle View shoreline, a portion of which is located within 1,000 feet of any such artificial barrier, is dissatisfied with the manner in which the village of Belleville is maintaining the barrier, the owner may maintain the barrier in lieu of the village, upon approval of the department. The village or a landowner who maintains the barrier shall comply with all state laws that relate to navigable bodies of water, except s. 30.12 (1) and (2). The department may require the village of Belleville or the landowner to maintain the barrier in a structurally and functionally adequate condition.

(4) COSTS. Any costs incurred by the state to construct, maintain, improve, or remove any artificial barrier created as authorized under sub. (1) shall be paid by the village of Belleville or its successors or assigns.

(5) IMMUNITY. The state and its officers, employees, and agents are immune from liability for acts or omissions that cause damage or injury and that relate to the construction, maintenance, or use of any artificial barrier created as authorized under sub. (1). **History:** 2001 a. 16.

E. General Description of Project Features and Construction.

1. Berm Creation for Lake/River Separation. Under the Selected Plan, a berm would be created to separate the lake from the river, routing river flows along the northern and then the eastern side of the lake. The berm would begin upstream of the immediate lake on the southern, downstream bank. The berm would then extend around the northern and eastern perimeter, and end by tieing into the north side of the peninsula at the southern extent of the lake.

The diversion berm is designed to a height of 50-year (862 ft NGVD) separation between the river and the lake. However, in order to avoid impact to the 100-year flood profiles in the area, a 300-

foot-long overflow spillway would be constructed at the 25-year separation level, 861 feet NGVD. This spillway would be riprapped to avoid erosion. Approximately the first 1,000 feet of the berm at the downstream extent would need to be constructed with a clay core due to the head difference between the lake and river. The material for the core would come from the agricultural field placement site. The remainder of the berm would be constructed of a sand material.

2. River Channel Creation. Under the Selected Plan, a river channel would be created to restore river flows on the eastern side of the lake. As discussed above, a berm would be created to route river flows along the northern and eastern shores, with the river then cutting through the existing park to join the river just upstream of the State Highway 69 bridge. The existing millrace would be removed for river channel creation. River flows would include about 17 acres from where the river enters the lake, around the north shore, and downstream through the park peninsula where flows would rejoin the existing river channel. The river channel would be created along the eastern shore and would consist of dredging and placing three riffle structures. In order to avoid increased sediment load in the Sugar River downstream of Lake Belle View, a channel would be excavated. This channel excavation would have 3:1 (H:V) side slopes, with the exception of the area adjoining the riprap scour protection, where slopes would be 5:1 (H:V) to protect the riprap. Excavation would begin at the peninsula park and end at the upstream riffle structure, a distance of approximately 1,500 feet. It is estimated that 33,212 cubic yards of material would be excavated and placed in the dredged material storage area or the wetland enhancement area.

The upstream most riffle would be located across from 5th Street in Belleville, about one-half of the way between the peninsula and the northern most portion of the lake. The two remaining riffles would be equally spaced between the upstream most riffle and the peninsula. The upstream most riffle structure would be made at an elevation to maintain existing lake levels (857.4 ft MSL). The three riffles would then form grade control to drop river flows from the upper lake elevation to the lower downstream river elevation. The riffle structures would drop the river 3 feet over about a 100-foot-long area. These three riffles would thus drop the river about 10 feet from upstream to downstream. Riprap would be used in order to protect the excavated channel from bankline erosion. It is estimated that 22,300 cubic yards of 400-pound riprap is needed for this feature.

Channel creation would include reconnecting the river through the existing peninsula. To do this, soil would be excavated to create a river channel similar to that adjacent to the Highway 69 bridge. Channel creation also would require extensive riprapping of the bankline to prevent erosion and protect infrastructure such as Highway 69, including the bridge adjacent to where the upper river would be rejoined with the lower river. Riprap would be placed along both sides of the river channel from the upstream most riffle structure, downstream to the junction of the river channels. Heavy riprap would be placed on the opposite bank of the old river channel where the restored channel joins. This would be done to prevent scour and protect the bridge immediately downstream. Riprap also would be placed above the upper most river along the outside bend. This would be done to ensure bank stability and protect residences along the north shore**.** The riprap blanket would consist of 18 inches of 400-pound top weight riprap, taken from local quarries. Six inches of bedding stone would underlie the riprap in areas where a filtering blanket is required.

3. Wetland Creation. Wetland creation would be accomplished by creating topographic diversity through dredged material placement. Dredging associated with channel creation and lake deepening would provide sediments to create topographic diversity within the lake. Fine-grained sediment, taken from the upper 2 to 7 feet of the lake bottom, would be placed in designated wetland areas. A high solids dredging method is recommended for this application.

Traditional hydraulic dredging methods are not recommended for this feature due to the need for a containment berm. The exact elevations and locations would affect species occurrence and would be decided collaboratively among the Corps, the Wisconsin Department of Natural Resources (WDNR), and the project sponsor during development of project plans and specifications. However, they likely would occur in areas ranging from just submerged to areas a few inches above typical lake elevations. Enhancement also would include planting the desirable emergent vegetation identified for given elevations. Areas targeted for sloping with dredged material and planting with vegetation would include between 22 and 23 acres of restored area that currently exists as degraded shallow lake habitat.

4. Description of Dredging and Dredged Material Placement. The selected plan would include dredging to improve lake habitat. Fifteen acres of lake bottom would be dredged to a depth of 8 feet. In addition, side slopes would be dredged to a 3:1 (H:V) slope to discourage bankline sloughing. It is anticipated that approximately 139,000 cubic yards of material would be dredged from Lake Belle View. Of that material, about 44,000 cubic yards would be used for wetland habitat improvement. This improvement would restore about 22 to 23 acres of shallow lake to wetland habitat. The remaining excess material would be stored in a dredged material containment basin outside of the lake. This area would be surrounded by berms for additional volume containment. In addition, a rock weir would be added for drainage.

The primary form of alternative placement for excess dredged material would include confined placement on recently abandoned agricultural land immediately west of the project site. This could impact about 16.8 acres of recently abandoned agricultural land; all of which currently exists as grasses and a few shrubs. Additional information on this placement site can be found in the DPR and integrated EA (see Section 2. Existing Resources; Section 9, Environmental Effects).

F. Description of the Material Placement Methods.

1. Berm Creation. The diversion berm would be created using material excavated from the confined disposal facility. This material has been tested and found to be sound for the purpose of berm construction. To construct this feature, dredging would be performed to the appropriate depth. Then, rock and gravel will be placed on the lake bottom to facilitate construction of the berm with heavy equipment. Clay materials will then be placed over the gravel and rock and shaped with equipment to form the berm.

2. Wetland Creation. Fine dredged material would be used to increase lakebed elevations to promote emergent and/or terrestrial vegetation. Dredging would be performed with a hydraulic dredge. Dredged materials would then be placed in areas targeted for wetland improvement. A silt retention fence would be utilized to confine fine silts to these areas. Following dredging, the lake would be drawn down, and dredged materials would then be shaped and contoured to desired elevations.

3. Excess Material Placement on Adjacent Ag Fields. Dredged material would be used to create new wetlands. However, additional materials would remain for placement. The additional channel dredging would be accomplished using a hydraulic cutterhead dredge with material placement on the ag field. Containment berms would be pushed up around the perimeter of the placement to contain materials. This would allow for material settling and for water to return with relatively low suspended solids.

II. FACTUAL DETERMINATIONS

A. Physical Substrate Determinations.

1. Substrate Elevation and Slope. The dam at Lake Belle View currently has a spillway elevation of 857.4 ft MSL. Lake depths would be referenced from this elevation, with most of the lake currently at a depth of 2 feet or less. Targeted dredging depths within the lake would be for a maximum of 8 feet below the spillway crest. River restoration would be performed to maintain the lake elevation at the dam. Thus, the most upstream riffle would be targeted to maintain this elevation. River restoration would consist of constructing three riffle areas. Riffles would be about 100 feet long, with a drop of about 3 to 4 feet per riffle. This would drop the river from the elevation at the crest spillway to an elevation of about 845 ft MSL at the river channel confluence with the old channel.

2. Sediment Type. The berm creating lake and river separation would be constructed of clay obtained from the placement facility. Riprap would be placed on both sides of the newly created streambed within the project section with riffle structures. Riprap also would be placed on the outside bend upstream of the northern most riffles.

3. Dredged/Fill Material Movement. Dredged lake sediments would be hydraulically placed within other lake areas to create bathymetric and topographic diversity. Such actions should help promote a diversity of aquatic and wetland vegetation. This vegetation would help stabilize the dredged material and help limit movement back into dredge cuts or into the river.

Excess material also would be hydraulically placed on an adjacent abandoned ag field. When hydraulically placing dredged material at this site, return water from this site would flow overland and back into the lake along the adjacent eastern shore. As mentioned above, containment berms would be pushed up around the perimeter of the placement to contain materials. This would allow for material settling and for water to return with relatively low suspended solids. No substantial movement of dredged material would be anticipated from this placement area.

Riprap also would be utilized at key erosion points along the berm and newly created river channel, as well as upstream or riverward of the deflection embankments. The embankments would be revegetated to provide additional stability.

4. Physical Effects on Benthos. Within construction areas, any immobile benthos would be displaced, buried or destroyed by dredging, dredged material placement, rip rapping, draw down, or other construction measures. Following construction, benthic organisms would be expected to repopulate previously disturbed areas.

5. Actions Taken to Minimize Impacts. Construction actions would be planned and coordinated with the WDNR to ensure that any short-term impacts are minimized to the extent possible.

B. Water Circulation, Fluctuation, and Salinity Determinations.

1. Water. The proposed project could improve water quality conditions within both the lake and downstream river. River flows would bypass the lake, resulting in cooler water passing downstream. Flows also could potentially have lower total suspended solids

concentrations. Water quality within the lake would improve through improved clarity and potentially reduced nutrient levels.

2. Current Patterns and Circulation. Construction of the project would greatly change flow patterns at the project site. River flows would be routed through a river channel separated from the main lake. Water would only enter the lake through an inflow structure at the northeast side. This would allow for a fresh inflow of oxygenated water within the lake. Excavated channels would lead from the structures so that oxygenated water would move through the backwater areas.

River flows at the project site would be changed as most of the river flow would move from the existing dam to the rerouted river channel which would join the main river at the southeastern perimeter of the lake. As little as 1 to 2 cfs would pass through the existing dam, downstream to the new river channel. Additional flows may pass over the dam during high flow conditions when the river overtops the lake at the appropriate overtop structure. However, most river flow would be removed from the channel from the existing dam downstream to about the foot bridge (approximately 300 feet).

3. Normal Water Level Fluctuations. Lake level fluctuations may be more dramatic and occur more frequently under the proposed project. Fluctuations would largely be under control of the project for management of vegetation and/or rough fish control. This would be performed as a part of the project for environmental benefits. The project would not increase lake levels above those that already occur under existing conditions

Water levels also would be changed along areas with river channel restoration. Within these areas, average water levels could drop as much as 10 feet. Water fluctuations would be greater as river elevations would change more similarly to a natural river system.

4. Actions That Will Be Taken to Minimize Impacts. Steps would be identified and taken to minimize any potential adverse impacts on the aquatic ecosystem. This identification would be done collaboratively with the WDNR.

C. Suspended Particulate/Turbidity Determinations.

1. Expected Changes in Suspended Particles and Turbidity Levels in Vicinity of Placement Site. Suspended solids and turbidity values in Lake Belle View and the adjacent Sugar River are relatively high in part due to resuspension of bed sediments caused by wind-generated waves. The construction of the project should help to anchor lake sediments through vegetation, break up wind fetch and reduce resuspension of sediments. It also would facilitate a reduction in rough fish populations, which should in turn help to improve water clarity. Long-term results should be a decrease in the turbidity of the protected areas. Suspended solids and turbidity values would increase during dredging and placement in the open water sites. A return to ambient conditions should return shortly after the dredging events, with long-term changes apparent within a year or two following construction.

2. Effects on Chemical and Physical Properties of the Water Column.

a. Light Penetration. The project would have short-term adverse impacts during construction due to turbidity plumes, but long-term beneficial effects would occur from the

reduction in sediments entering the lake and reduction in resuspension of sediments. Increased light penetration would be one of the major improvements expected with the project.

b. Dissolved Oxygen. Limited water quality monitoring at Lake Belle View showed that dissolved oxygen concentrations generally remain above 5 mg/l. Although lower levels could be observed under certain conditions, the lake's shallow depths and direct river inflows probably maintain adequate dissolved oxygen. The proposed project would result in a separation of river flows, increased water depth, and increased biomass within the lake. This could result in an increased biological oxygen demand and reduced dissolved oxygen levels. To maintain adequate dissolved oxygen levels, an inflow structure would be constructed to allow low amounts of river inflow. Monitoring would be performed post-construction to identify appropriate inflow quantities to maintain, to the extent possible, diurnal and seasonal dissolved oxygen levels at or above 5 mg/l.

c. Toxic Metals and Organics. No increase in contaminants in the aquatic environment would result from the open water placement of sand or rock fill. Dredging and placement of fine material is not expected to cause toxic effects to fish, wildlife, or other aquatic organisms.

d. Aesthetics. Temporary increases in suspended sediments would have a temporary, negative impact on aesthetics but would be very short-term. A long-term change in aesthetics would include a change of the viewshed, which would include a berm to separate the lake from river flows, as well as new wetland areas and abundant submergent and emergent vegetation.

3. Effects on Biota. Effects on photosynthesis and sight and filter feeders would be short term and should not result in negative impacts.

D. Contaminant Determinations. A Phase I Hazardous, Toxic, and Radioactive Waste (HTRW) Environmental Site Assessment was performed for the project site in accordance with Engineering Regulation (ER) 1165-2-132, HTRW Guidance for Civil Works Projects, and ER 405-1-12, Real Estate Handbook. The Phase I Environmental Site Assessment was performed in conformance with the scope and limitations of ASTM Standards E 1527-97 and E 1528-98. This assessment did not reveal any evidence of recognized environmental conditions concerning the project sites.

E. Aquatic Ecosystem and Organism Determinations.

1. Effects on Plankton. Because of the eutrophic state of the system, the proposed project could suffer from excessive blooms of blue-green algae. High flushing rates under existing conditions probably limit algal blooms. Separation of the lake from river flows under the proposed project could lead to much more extensive blue-green algae blooms, particularly following disturbance. However, establishment of submergent and emergent vegetation should help limit the frequency and magnitude of such blooms.

2. Effects on Benthos. The project would affect about 133 acres of shallow aquatic and bottomland forest habitat. Within construction areas, any immobile benthos would be displaced, buried or destroyed by dredging, dredged material placement, rip rapping, draw down, or other construction measures. Turbidity plumes resulting from construction may have temporary

adverse impacts to benthos downstream; however, the project would realize long-term benefits to benthic organisms.

The Recommended Plan also would include sections of the existing river that would experience highly reduced flows. Under this alternative, the majority of river base flows would be diverted through the re-created river channel along the eastern edge of the lake. Additional flows may pass over the dam during high flow conditions when the river overtops the lake at the appropriate overtop structure. However, most river flow would be removed from the channel from the existing dam downstream to about the foot bridge (approximately 300 feet). This would eliminate a small amount of existing river habitat and affect associated biota. It also could have an effect during project construction. Many of the fish present would likely vacate the area downstream as flows were diverted. However, immobile invertebrates such as mussels and insect larvae would be impacted through desiccation. It is not believed that these would constitute significant adverse impacts as such biota would recolonize areas of created river channel. Also, it is not believed that any federally listed aquatic species exist within the project area. However, to minimize impacts to mussel resources, areas of desiccated river channel would be observed as flows are reduced and, to the extent possible, mussel species of concern encountered would be relocated to an adjacent downstream area of the river.

3. Effects on Nekton. The proposed project would result in changes to the lake environment which could cause a shift in nekton communities. As discussed above, establishment of blue-green algae could occur, and such establishment is not desirable for zooplankton. However, blue-green algae abundance and frequency should be limited. Thus, it is believed that the proposed project would generally not have an adverse effect on nektonic resources and the overall fishery resource within the lake.

4. Effects on Aquatic Food Web. The proposed project would have no appreciable adverse effects on the aquatic food web.

5. Effects on Special Aquatic Sites.

a. Sanctuaries and Refuges. The project area is not located within any Federal or State refuge areas, sanctuaries, or parks.

b. Wetlands, Mud Flats and Vegetated Shallows. Most, if not all, of the 133-acre area of Lake Belle View and adjacent land would likely be identified as wetlands. An additional 16.8 acres of abandoned agricultural land proposed for dredged material placement could be identified as wetlands. Much of these areas are of relatively low quality for fish and wildlife. However, at least 22 acres of this project site specifically would be targeted for wetland restoration. This would include promoting representative vegetation (e.g., emergent, fresh meadow, wet meadow, persistents). Other aquatic areas of the project would likely be classified as shallow water communities, with the proposed project having an overall positive impact on submergent aquatic vegetation. The overall project would provide benefits to fish and wildlife resources.

6. Threatened and Endangered Species. Four federally listed endangered or threatened species are known from Dane County, Wisconsin: bald eagle, Higgins' eye pearly mussel, prairie bush-clover, and eastern prairie fringed orchid. However, coordination with the U.S. Fish and Wildlife Service identified that the above species would not likely be affected by the proposed project alternatives. The Corps also would continue to coordinate closely with the WDNR to ensure that adverse effects would not be observed for any state-listed species. If any

state or federally listed or proposed species are observed within the project area prior to project construction, the resource agencies will be contacted to identify appropriate actions to ensure appropriate compliance with the Endangered Species Act of 1973, as amended, and corresponding state statutes.

7. Other Wildlife. In addition to providing benefits for aquatic life within both the lake and river, the proposed project also would provide habitat for migrating waterfowl.

F. Proposed Placement Site Determinations.

1. Mixing Zone Determination. Coarse dredged material should settle out near the placement sites. Fine-grained material disturbed during dredging and used for construction of wetlands would result in increases in suspended material. Efforts would be made to minimize the amount of disturbance to avoid downstream impacts to the Sugar River. The long-term benefits of the project should outweigh any short-term increases in suspended solids concentrations.

2. Determination of Compliance with Applicable Water Quality Standards. The Corps will coordinate closely with WDNR to minimize any contaminant levels associated with this project.

3. Potential Effects on Human Use Characteristic. The proposed project would have no adverse effects on municipal and private water supplies. During construction, the project could disturb recreational fisheries at the lake and adjacent Sugar River; water-related recreation; aesthetics; and use of the community park. However, these impacts should be limited to construction (≈1 year). Following construction, the proposed project would improve recreational opportunities and use of the community park.

G. Determinations of Cumulative Effects on the Aquatic Ecosystem. No negative cumulative impacts are anticipated to occur. Habitat modifications should have long-term benefits to the fish and wildlife utilizing this area.

H. Determinations of Secondary Effects on the Aquatic Ecosystem. No significant negative secondary effects should result from the project. Long-term benefits to aquatic vegetation, fish, and wildlife are expected.

III. FINDINGS OF COMPLIANCE OR NON-COMPLIANCE WITH THE RESTRICTIONS ON DISCHARGE

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1. No significant adaptations of these guidelines were made relating to this evaluation.

2. Alternatives that were considered for the proposed actions include:

    - Eastern river diversion with river/lake separation (Alternative 1, 2, and 3);
    - Western river diversion with river/lake separation (Alternative 4);
    - Western diversion without river separation (Alternative 5) and;
    - No Action Alternative.

Eastern River Diversion with River/Lake Separation (Alternatives 1, 2, and 3). These alternatives include constructing a berm to separate the lake and river and recreating a river channel around the north and eastern side of the lake. The Sugar River would avoid passing through the existing dam and would instead join the natural channel just upstream of the Highway 69 bridge. These alternatives included evaluating dredging increments of 5, 10, and 15 surface acres of Lake Belle View to 8 feet of depth and targeting at least 22 acres of lake area for wetland restoration. Alternatives 1, 2, and 3 would maintain existing lake levels through the use of riffle structures. Alternative 1 would include the first, most upstream riffle along the north shore, dropping water levels down to the existing river elevation. Conversely, Alternative 2 would include the first upstream riffle along the eastern shore, thus including a shorter section of restored river channel relative to Alternative 1. Alternative 3 contains no riffle structures. For this project, Alternative 2 is the preferred alternative.

Western River Diversion with River/Lake Separation (Alternative 4). This group of alternatives include constructing a berm to separate the lake and river; however, no river channel would be created. Sugar River flows would pass through a small impounded area and through the existing dam. These alternatives included evaluating dredging increments of 5, 10, and 15 surface acres of Lake Belle View to 8 feet of depth and targeting at least 20 acres of lake area for wetland restoration. Alternatives 4A-C, 4 D-F, and 4G-I utilize different structures to provide downstream fish access to upstream habitats.

Western Diversion without River Separation (Alternative 5). This group of alternatives would not include a berm for separation of the lake and river. No river channel would be created, and Sugar River flows would pass through the entire lake and exit through the existing dam. These alternatives included evaluating dredging increments of 5, 10, and 15 surface acres of Lake Belle View to 8 feet of depth, but would not include areas for wetland restoration. Alternatives 5A-C, 5D-F, and 5G-I utilize different structures to provide downstream fish access to upstream habitats.

These alternatives and their impacts are discussed within the Definite Project Report and corresponding appendices. The preferred alternative best meets the goals and objectives of the project sponsor and the Wisconsin Department of Natural Resources.

3. Special legislation approving this project (including certification) already has been granted by the State of Wisconsin, pending collaboration with and approval from the Wisconsin Department of Natural Resources prior to project construction.

4. The proposed fill activity is in compliance with Applicable Toxic Effluent Standards or Prohibition Under Section 307 of the Clean Water Act.

5. Prior to construction, full compliance with the Endangered Species Act would be documented.

6. The proposed fill activity would not have a significant adverse effect on human health and welfare, municipal and private water supplies, recreation and commercial fisheries, plankton, fish, shellfish, wildlife, or special aquatic sites. No significant adverse effects on life stages of aquatic life and other wildlife dependent on aquatic ecosystems are expected to result. The proposed fill activity would have no significant adverse effects on aquatic ecosystem diversity, productivity, and stability. No significant adverse effects on recreational, aesthetic, and economic values would occur.

7. Steps will be identified and taken to minimize any potential adverse impacts on the aquatic ecosystem. This identification would be done collaboratively with the Wisconsin Department of Natural Resources.

8. No other practical alternatives have been identified. The proposed project is in compliance with the guidelines for Section 404(b)(1) of the Clean Water Act, as amended.

9. On the basis of the guidelines, the proposed placement sites for the discharge of dredged material are specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic environment.

_____
(Date)

William J. Bayles
Colonel, U.S. Army
District Engineer