9. ENVIRONMENTAL EFFECTS

9.1 Summary of Effects

The Recommended Plan would improve natural resource conditions within the project, including improvements in lake, wetland, and river habitat conditions. No species listed or proposed for listing under the Federal Endangered Species Act would be affected. Although small areas of existing wetland would be lost, other project areas would see substantial improvements in wetland habitat, which would more than offset any minor loss.

The Recommended Plan would affect the current viewscape of the project area. Changes would include rerouting the Sugar River around the east side of the lake, as well as increasing submergent and emergent vegetation with areas targeted for wetland restoration. Even for areas not targeted for "wetland restoration," the lake area would likely include abundant submergent vegetation that would grow to the water's surface. It also could include emergent vegetation growing in areas that are currently void of vegetation. These changes in vegetation could become increasingly pronounced as the project ages.

The project would generally benefit the Village of Belleville and the surrounding area. No substantial impacts are expected to cultural or socioeconomic resources.

9.2 Natural Resources

Changes in habitat resulting from the project alternatives, including the Recommended Plan, are described in Appendix C. In general, the proposed project alternatives would result in improved natural resource conditions at the project site. Project alternatives would provide both site-specific benefits, as well as systemic benefits through fish passage.

Long-term changes in the project site would include a deepening of the lake, an increase in submergent and emergent aquatic vegetation, and an improvement in wetland quality. This would result in a more desirable aquatic lake community, relative to existing conditions. It also should improve wetland habitat, thus providing greater habitat for various terrestrial and amphibian species. The project area also may see greater seasonal use of the project site by species such as migrating waterfowl.

The proposed project would continue to include a lake system that would be highly eutrophic. Such a system currently exists, but the separation of lake and river, along with the control of rough fish, would likely promote high levels of submergent and emergent vegetation. Such vegetation would form more useful habitat for fish and wildlife, especially during the early years following construction. These benefits to fisheries resources would be more limited after several years, as excessive vegetation would likely continue to expand. Such expansion of vegetation would be valuable as wetland and corresponding wildlife habitat. It also is possible that blooms of blue-green algae could occur as a result of the project. However, the promotion of vegetation, which is more valuable for fish and wildlife, should help to limit the frequency and magnitude of blue-green algae blooms.

Project alternatives could result in some tree clearing and a small loss of bottomland forest and/or sedge/wet meadow wetland habitat through creation of new river channel, berm placement, and/or placement of other project features. However, any project alternative that would affect various wetland habitats also would include other areas of wetland restoration. For the Recommended Plan, a minimum of 22 acres of lake area would be included for wetland restoration.

The proposed alternatives would result in long-term beneficial changes within the Sugar River both above and below Lake Belle View. Providing fish passage would allow access to upstream habitat that has been isolated since the 1800's. It also would benefit upstream fish communities by providing access to downstream habitats. The majority of alternatives, including the Recommended Plan, would include separation of the lake and river, resulting in improved water quality downstream of the lake. The majority of alternatives, including the Recommended Plan, also would include rough fish control as a part of annual project operation and maintenance. This should lead to reduced population levels of the undesirable common carp within the lake, as well as upstream and downstream in the Sugar River.

Also, the Recommended Plan would include an additional area of about 17 acres that may be affected by dredged material placement. As previously discussed, all project alternatives include varying degrees of dredging to improve lake habitat. Some of this dredged material may be used to create wetlands. However, for the Recommended Plan, additional excess dredged material would likely need to be placed. This placement would occur west of Lake Belle View in an area of abandoned agricultural fields. Due to the high costs associated with moving dredged material, this location is the only feasible alternative for material placement. This placement area is dominated by grass communities and could potentially be delineated as wetlands. However, the Recommended Plan would include creating at least 22 acres of wetland within the existing lake. These areas would be both of greater quantity and quality than any wetlands impacted through material placement and thus would more than offset any wetland loss within the areas affected by dredged material. The wetland creation component of this project would be closely coordinated with the WDNR to create the most desirable form of wetland habitat and ensure that any impacts from wetland loss through dredged material placement would be offset.

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. A small amount of flow would be diverted through the existing dam to maintain water quality within the lake. This amount would be determined during the detailed design phase with careful consideration given to aesthetics. 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 encountered would be relocated to an adjacent downstream area of the river.

Although some river habitat would be lost, additional river habitat also would be created when joining the recreated river channel with the existing channel near the Highway 69 Bridge. This would include an area that currently exists as the Village Park. Moreover, new river habitat would be created in areas that currently exist as marginal to degraded lake habitat. These benefits should more than offset any negative impacts that could occur through removal of flows from a small portion of the existing channel immediately downstream of the dam.

Construction activities could result in short-term impacts such as increased turbidity within Lake Belle View and the downstream Sugar River. The lake also may be drawn down to facilitate aspects of project construction. However, such impacts should be limited to the timeframe for construction, which would occur over a 1- or 2-year period. Drawdown would not significantly affect the already degraded habitat within the lake.

Downstream effects would likely be limited to increased sediment and turbidity levels during construction. To the extent possible, efforts would be made to limit downstream turbidity effects, particularly during the spring and early summer when increased sediment and turbidity could affect fish spawning success. However, riverine species often frequent highly turbid conditions; thus, this would not likely have a significant, long-term adverse effect to downstream aquatic resources. Moreover, resulting conditions following construction should include a long-term improvement in water quality.

9.3 Endangered Species

Early coordination with state and Federal resource agencies (see Section 12) revealed no objections or concerns over potential impacts to any state or Federal threatened or endangered species. Four federally listed endangered or threatened species are known from Dane County, Wisconsin, as detailed in Table 9.1.

Table 9.1. Species listed, or proposed for listing, as threatened or endangered under the Federal Endangered Species Act of 1973 (as amended) that are known to occur within Dane County, Wisconsin.

Common Name	Scientific Name	Status	Habitat
Bald eagle	*Haliaeetus leucocephalus*	Threatened	Wintering along open water
Prairie bush-clover	*Lespedeza leptostachva*	Threatened	Dry to mesic prairies with gravelly soil
Eastern prairie fringed orchid	*Platanthera leucophaea*	Threatened	Wet grasslands
Higgins' eye pearly mussel	*Lampsilis higginsi*	Endangered	Lower Wisconsin River

Coordination with the USFWS 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 would be contacted to identify appropriate actions to ensure compliance with the Endangered Species Act of 1973, as amended, and corresponding state statutes.

9.4 Wetland Resources

Areas adjacent to Lake Belle View include existing terrestrial wetlands. These existing wetlands along riparian zones of the project area largely include floodplain forest habitat, with the area of the peninsula along the west side of the lake existing as sedge meadow/wet prairie (UW 1995). Tree types observed within the floodplain forest include common species such as species of ash (*Fraxinus* spcs.), willow (*Salix* spcs.), and maple (*Aceracea*). Plant types observed within the sedge meadow/wet prairie include species such as sedges (*Carex* spcs), asters (*Aster* spcs), and reed canary grass (*Phalaris arundinacea*). In total, these two wetland areas combine to form about 34 acres of wetland habitat.

In addition to the wetlands discussed above, there is also the abandoned agricultural field that would be utilized for placement of excess dredged material. The area utilized for material placement would be about 17 acres. No formal wetland delineation was performed to determine if this area would be identified as a wetland. However, because of its elevation and proximity to the river, it is possible that some or even all could be delineated as wetland.

The Recommended Plan could impact about 2 acres of the existing wetland areas of Lake Belle View. This would occur primarily through placement of a berm to separate the lake and river. In addition, the plan also could impact up to 17 acres of abandoned agricultural field. However, even if all 17 acres of this agricultural land are identified as wetland, the project would only affect a total of about 19 acres. The recommended alternative would result in the restoration of about 22 acres of wetland within the project area. Thus, any impacts to wetland area would be more than offset through the restoration of a greater area of wetland habitat.

In addition to the wetland concerns addressed above, there is question as to whether the open water area of Lake Belle View could itself be considered a wetland. The area is relatively shallow (average depth less than 2 feet) and could be considered a deep marsh. However, recent observations suggest that aquatic vegetation is extremely limited within the lake. Species observed by UW (1995) include curly-leaved pondweed (*Potamogeton crispus*), Sago pondweed (*Potamogeton pectinatus*), leafy pondweed (*Potamogeton foliosus*), coontail (*Ceratophyllum demersum*), and *Elodea*. However, UW (1995) estimated that only 6% to 7% of the lake bottom was covered with vegetation. Further observations during a summer drawdown in 2001 confirmed almost no submergent or emergent aquatic vegetation within the lake.

As discussed, the Recommended Plan would restore 22 acres of open water area as wetland habitat. However, the plan as a whole also would promote submergent and emergent vegetation in other areas of the lake. These would essentially include all remaining open water areas not proposed for dredging. Thus, wetland benefits would likely go beyond areas proposed for "restoration" activities. The Recommended Plan would include an additional 5 acres of open water area lost for berm placement, as well as about 17 acres of open water converted for the restored river channel along the eastern side of the lake. However, these losses would be more than offset by the dramatic improvement in wetland habitat that would be observed through increased submergent and emergent vegetation, which is currently almost nonexistent.

9.5 Cumulative Impacts

The primary resources to be affected by this proposed activity include Lake Belle View and the Sugar River. Thus, the following discussion is focused on cumulative impacts associated with these resources.

Cumulative ecological effects are caused by the interaction of multiple stressors affecting all or portions of an ecosystem. Several definitions exist for cumulative impacts. One basic definition would be: "*…the changes to the environment caused by an activity in combination with other past, present, and reasonably foreseeable future actions*."

9.5.1 Past Actions. For the Sugar River and Lake Belle View, changes to the environmental condition of the project area likely began with European settlement. With changes in land-use practices during settlement, river conditions within the Sugar River basin likely began to change from a highly stable system, to a more disturbed system. This may have included changes in water quality and in-stream physical habitat conditions. The most significant change to the system occurred with the damming of the Sugar River in the mid 1800's. The current lake was created with a dam completed in 1920. Damming of the river blocked possible fish movement back and forth from main stem river habitats downstream of Belleville to tributary habitats located in the Upper Sugar River watershed. This limited habitat availability for fish populations above and below the dam may have resulted in shifts in fisheries community composition. Creation of the dam at Belleville occurred during a period when low-head dam construction was common throughout the Midwest, with similar dams also built on the Sugar River downstream at both Albany and Brodhead, Wisconsin.

The construction of the dam created Lake Belle View, a reservoir that changed the project area from lotic (free flowing) to lentic (lake-like) habitat. This may have resulted in a short-term boom in aquatic species that flourish in lake-like habitat, including a possible increase in fish species such as largemouth bass, bluegill, and black crappie. However, Lake Belle View quickly began to suffer from sedimentation. Sediments eroding from lands within the upper watershed were carried downstream to the lake. The reduced velocities associated with the lake led to most sediments falling from the water column and accumulating within the artificial impoundment. A lake survey performed by the WDNR in 1969 documented that the lake was already relatively shallow and suffered from sedimentation.

9.5.2 Present. At present, Lake Belle View is a highly degraded impoundment with limited value as aquatic or wetland habitat. The adjacent Sugar River continues to support cold- and cool-water fishery resources above Lake Belle View, with cool- and warm-water communities below. Some habitat improvement activities have occurred within the upper watershed, including bank stabilization and in-stream improvement measures. The Sugar River above the lake also includes river areas and tributaries that are stocked to maintain cold-water trout fisheries. However, river connectivity between the lower river and upper watershed still does not exist. Some observations suggest that upstream fish populations, such as smallmouth bass, may have recently declined compared to historical levels. Low-head dams also continue to exist at both Albany and Brodhead farther downstream.

9.5.3 Future Actions. This planning effort is the main effort to improve aquatic habitat at the project area for the future. With the proposed project, lake habitat would be improved over existing conditions. The lake would have an improved warm-water fishery, as well as improved wetland habitat. This would include increased submergent and emergent aquatic vegetation. The Recommended Plan also would turn a portion of the lake habitat into a free flowing river and reconnect downstream fisheries resources to habitat within the upper watershed for the first time in over 150 years. Likewise, it would provide upstream resources with access to habitat in the lower river.

Without this project, Lake Belle View will likely exist into the foreseeable future. Without any improvements, lake habitat will continue to be degraded. At present, most of the Village still

prefers the existing impoundment to any plans for dam removal and river restoration. Although impossible to predict, the general Village opinion possibly could change over the next 5 to 10 years that would favor dam removal. In addition to current opinion, the Village has recently made improvements to the dam; thus, its stability should remain into the future. Currently, there is no Federal or state regulatory requirement forcing private dam owners to implement fish passage or dam removal. Thus, without the project, it is likely that the dam will continue to limit connectivity for aquatic resources between the lower river and the upper watershed.

Outside the project area, some habitat improvement may continue upstream of the lake. Future work on the upper watershed will continue to be challenged by urban growth from the Madison area. This urban growth could result in changes in both physical stream habitat as well as water quality. However, the resource is generally considered to be of high value, and future efforts will be made at the municipal, county, and state levels to protect the quality of the upper watershed.

9.6 Socioeconomic Resources and Human Use

9.6.1 Economic Cost for Project Sponsor. Total estimated cost for this project, as discussed in Section 8 and Appendix E, is $6.343 million. The project Sponsor's share is about $2.220 million. They will likely have about $437,000 for credit in the form of real estate, $403,000 in estimated land value, and $34,000 in estimated acquisition costs. The Village hopes to receive $250,000 in grants from the State of Wisconsin. This leaves approximately $1.533 million that the Sponsor will need to account for their contribution toward total project cost.

9.6.2 Recreation. Project alternatives would likely augment recreational use of the project area by enhancing opportunities for sport fishing, canoeing, hiking, wildlife viewing, and other leisure activities.

9.6.3 Aesthetics. The opinions of Village residents vary as to the form any environmental restoration. One of the key criteria is that the Village wants to maintain the viewshed of the existing lake. To the extent possible, this was taken into consideration when developing project alternatives. However, the final project would certainly change the viewshed from its current form. For the Recommended Plan, the viewshed would include rerouting of the Sugar River around the east side of the lake. The lake area itself also would be reduced, with at least 22 acres targeted for wetland restoration. Although the exact form of this wetland has yet to be determined, it would likely consist of some combination of shallow marsh and/or fresh meadow vegetation. Even for areas not targeted for "wetland restoration," the lake would likely look different from its current state. Currently, the viewshed consists of large expanses of open water. Under many project alternatives, including the Recommended Plan, the lake area would likely include abundant submergent vegetation that would grow to the water's surface. It also could include emergent vegetation growing in areas that are currently void of vegetation. These changes in vegetation could become increasingly pronounced as the project ages. The viewshed also would be significantly altered by large sections of riprap along the bankline in the project area and by construction of a diversion berm that would rise approximately 6 feet above the water's surface.

The locations of both wetland restoration and dredging activities within the lake would affect where submergent and emergent vegetation would be seen within the viewshed. Many Village residents would likely support a dredge cut location within the middle of the lake, thus saving as much open lake area as possible. However, citizens with lakefront property (along the southeast corner of the lake under the Recommended Plan) would likely prefer dredge cut locations adjacent to their property to maintain the viewshed from their residence. Ultimately, some Village residents may be unhappy with dredge cut locations as dredging cannot be performed in enough places to

preserve all of the existing viewshed. To minimize concerns and impacts to the viewshed, selection of dredging and wetland creation areas would be done carefully to preserve, to the extent practical, desired viewshed conditions. It also is likely that the Village of Belleville would utilize lake drawdown as a technique to control vegetation growth. However, even with careful selection of dredging and wetland areas and careful use of drawdown techniques, the submergent and emergent vegetation growth would likely create a viewshed that is quite different from existing conditions.

The Recommended Plan would route water currently flowing into the lake along the eastern edge of the lake, thus reducing the amount of water that flows along the western bankline and over the dam. This would change the current scene of water flowing over the dam to one exposing more of the dam structure with very little flow. Designs will be considered that may limit the visual impact of this change in water flow by concentrating flows or creating a free-falling water column.

9.6.4 Community and Regional Growth. No adverse impacts to the growth of the community or region would be realized as a direct result of the proposed project. However, Lake Belle View is a central component of the Village of Belleville. Likewise, the Sugar River is a valuable part of southern Dane and Green Counties, including the communities of Belleville, Albany, and Brodhead, Wisconsin. Restoration of Lake Belle View and the Sugar River could indirectly provide for continued growth opportunities in the local communities and the region by improving recreational opportunities in the project area, which would, in turn, draw more visitors to the area.

9.6.5 Community Cohesion. The proposed action should generally have positive social impacts for the Village of Belleville. Lake restoration is an issue the Village has been pursuing since 1982. Lake Belle View and the Sugar River are a central part of the community, and it is not anticipated that implementation of the Recommended Plan would affect overall community cohesion. It is acknowledged that differences exist within the community as to what form environmental restoration should take. Opinions expressed at public meetings held during June 2002 ranged from dam removal and river restoration, to lake restoration, to no action and keeping current conditions. However, steps have been taken, including a public referendum on a desired project, to best obtain the views of the Village residents. In September 2002, the Village of Belleville provided the opportunity for the citizens to vote on their preferred alternative for lake restoration. The final vote was 451 votes for an Eastern Diversion alternative and 313 votes for a Western Diversion alternative.

The landowners adjacent to the lake also have expressed concern as to how any alternative, including the Recommended Plan, would impact land values and property taxes. The views of the affected landowners would be given full consideration when determining the exact location of dredge cuts and wetland creation within the Lake Belle View site.

9.6.6 Displacement of People. The Recommended Plan would not require any residential relocations.

9.6.7 Property Values and Tax Revenues. The Recommended Plan includes the use of about 17 acres of abandoned farm field for dredged material placement. Current informal plans are for this property to be donated to the Village of Belleville for the purpose of lake restoration. The Village would use this property and its subsequent value as a part of the cost share component by the project Sponsor.

As discussed above, the Recommended Plan, as well as most other project alternatives, would likely change the current viewshed of Lake Belle View. Changes in the viewshed and any potential resulting impacts on property values and taxes revenues for property owners adjacent to the lake cannot be determined at this time.

Any increase in recreational visitors to the area would likely mean more dollars spent in local retail establishments, resulting in an increase in tax revenues for the surrounding community.

9.6.8 Life, Health, and Safety. The Recommended Plan would be designed in such a manner as to avoid potential loss of life or personal injury, or property damage. This includes protecting existing residences along the northern shore of the lake and State Highway 69 along the eastern shore. With the Recommended Plan, flood velocities through the excavated channel would be directed at the outer bankline along the toe of the Highway 69 slope. This could undermine the toe of the highway embankment and possibly create safety issues for vehicles using this roadway. Project features would be designed to protect against slope failures.

Under the Recommended Plan, the portion of the proposed diversion berm from the park to the middle riffle structure must be classified as a dam due to its height and the amount of water it impounds. As such, it is subject to standards for stability and must be designed by a licensed Professional Engineer (State of Wisconsin), and the design must be submitted to Wisconsin Dam Safety personnel for review and approval.

Public safety also could be a concern during high water conditions at the location where the diverted river channel meets up with the current channel near the Highway 69 Bridge. During high water conditions, turbulence in this area could present a public safety risk, and actions would need to be taken to discourage access to the area.

An HTRW compliance assessment was conducted. No obvious indications of potential contamination sources or any risk of HTRW contamination within the project area were identified.

9.6.9 Business and Industrial Growth. No business or industrial relocations would be required, and no significant impacts to business or industrial activity would result from the proposed project.

9.6.10 Employment and Labor Force. No long-term impacts on employment or labor force in the project vicinity would result from the proposed project.

9.6.11 Farm Displacement. The Recommended Plan would include the use of about 17 acres of abandoned farmland for dredged material placement. No farms or farmsteads would be displaced.

9.6.12 Noise Levels. Heavy machinery would temporarily increase noise levels during the approximate 2-year construction period and would likely be the most disturbing for residential and retail property owners directly adjacent to the lake. No permanent impacts are evident following project construction.

9.6.13 Public Facilities and Services. The recreational nature of the project area would be enhanced by the proposed project. Boat access to the lake and fishing opportunities, plus educational and passive recreational experiences, would be improved. The Belleville Community Park, located within the project site, would not be open during project construction. The Recommended Plan includes replacing the Bross Circle Bridge, making the park inaccessible.

Following completion, this new public structure would allow for better access to the park by the public as well as emergency and maintenance vehicles.

9.7 Historic Properties and Cultural Resources

To meet compliance promulgated under Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) and its implementing regulations 36 CFR Part 800: "Protection of Historic Resources," the Phase I investigations were conducted in the 169-acre Area of Potential Effect. The Phase I archaeological and architectural survey is documented in the report entitled, *Phase I Archaeological and Historic Architectural Survey for the Lake Belle View Aquatic Ecosystem Restoration Project, Village of Belleville, Dane County, Wisconsin* (Cultural Resources Management Report No. 1151, June 2002). American Resources Group, Ltd, of Carbondale, Illinois, prepared the report under Corps Contract DACW25-98-D-0016, Delivery Order Number 0016.

The report documents survey of 60 acres of land surface within the 169-acre Area of Potential Effect. Two archeological sites, 47-DA-790 and 47-DA-1177, and a residence located at 47 River Street within the Village limits were determined to be ineligible to the National Register of Historic Places due to the lack of integrity. Since no significant historic properties were discovered, a Corps' determination of *No Historic Properties Affected* and the report findings were sent to the State Historical Society of Wisconsin (SHSW) and other designated consulting parties, by letter (January 8, 2002, Appendix A), with a copy of the draft Phase I report. Those on the distribution list received a copy of the Corps letter dated January 8, 2002, documenting the draft report findings and the Corps' determination of *No Historic Properties Affected.*

The SHSW concurred with the Corps' determination of *No Historic Properties Affected* and findings of the draft Phase I archeological and architectural investigations by letter (January 13, 2002, SHSW Compliance Case #00-0778/DA, Appendix A) and recommended that a qualified archeologist monitor all ground disturbing activities within the prehistoric component of Site 47-DA-790. The Corps letter, determination, and draft report findings, dated January 8, 2002, received responses from the Menominee Indian Tribe of Wisconsin, Keshena, Wisconsin (January 29, 2002, Appendix A) and the Sac and Fox NAGPRA Confederacy, Reserve, Kansas (February 7, 2002, Appendix A). The Menominee Indian Tribe of Wisconsin requested a copy of the final report and the Sac and Fox NAGPRA Confederacy deferred response and comment to the Sac and Fox of the Mississippi in Iowa, Tama, Iowa.

Two copies of the final report entitled, *Phase I Archaeological and Historic Architectural Survey for the Lake Belle View Aquatic Ecosystem Restoration Project, Village of Belleville, Dane County, Wisconsin*, have been provided for the permanent files of the SHSW (Cultural Resources Management Report No. 1151, dated June 2002) and were forwarded by letter (January 8, 2002, Appendix A) to the permanent files of the SHSW as evidence of Corps compliance with the NHPA and its implementing regulations. Final Phase I report copies also were sent to the Village of Belleville, Wisconsin; the Sac and Fox of the Mississippi in Iowa, Tama; the Menominee Indian Tribe of Wisconsin, Keshena, Wisconsin; and the Forest County Potawatomi Community, Crandon, Wisconsin.

The Corps sent a letter (January 7, 2003, Appendix A) for SHSW review of the Recommended Plan with an enlargement of the area for the Proposed Excavation Diversion Channel relative to previously disturbed grounds and inundated water within the limits of Site 47-DA-790. The Proposed Excavation Diversion Channel has modified to limited excavations to previously disturbed lands within the prehistoric component of 47-DA-790. The Corps documented within

this correspondence that the Proposed Excavation Diversion Channel will be confined to the existing Lake Belle View bridge and roadway, former mill headraces, and residential and industrial fill. The Corps requested concurrence from the SHSW with the opinion that monitoring is no longer necessary during construction due to the improbability of discovering any human remains in areas of such extensive disturbance during the construction of the Proposed Excavation Diversion Channel. The SHSW concurred by letter (February 2003, SHSW Compliance Case #00-0778/DA, Appendix A) with the Corps' determination that monitoring all ground disturbing activities within the prehistoric component of Site 47-DA-790 by a qualified archeologist is no longer necessary during construction due to the improbability of discovering any human remains in areas of such extensive disturbance during the construction of the proposed excavation of the project diversion channel.

Although the Corps has documented compliance with the NHPA and that the proposed Lake Belle View project will affect no significant historic properties, consulting parties, individuals, organizations, and others parties were afforded an opportunity to provide views on any effects of this undertaking on historic properties, to participate in the review of the site-specific documents, and to be provided with study newsletters, public meeting announcements, special releases, and notifications of the availability of report(s), including all draft agreement documentation, as stipulated by 36 CFR Part 800.14(b)(ii) of the NHPA.

If human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered or collected, the Corps will comply with all provisions outlined in the appropriate state acts, statutes, guidance, provisions, etc., and any decisions regarding the treatment of human remains will be made recognizing the rights of lineal descendants, Tribes, and other Native American Indians and under consultation with the State Historic Preservation Officer/Tribal Historic Preservation Officer(s) and the other consulting parties, designated Tribal Coordinator, and/or other appropriate legal authority for future and expedient disposition or curation. When finds of human remains, funerary objects, sacred objects, or objects of cultural patrimony are encountered or collected from Federal lands or federally recognized tribal lands, the Corps will coordinate with the appropriate federally recognized Native American Tribes, pursuant to the Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. § 3001 *et seq*.) and its implementing regulations (43 CFR Part 10).

The, SHSW, Division of Historic Preservation State, Historic Preservation Office in Madison, Wisconsin, tribes, and interested parties remain on all distribution lists concerning this project and will be contacted as consulting parties with the specifics of the undertaking and final plans for the proposed aquatic ecosystem restoration project in compliance with Section 106 of the National Historic Preservation Act, as amended, and its implementing regulations 36 CFR Part 800: "Protection of Historic Properties" and the National Environmental Policy Act.

9.8 Probable Adverse Environmental Impacts Which Cannot Be Avoided

About 17 acres of abandoned farmland would be affected through dredged material placement. A corridor along the northern island would be cleared of vegetation to construct the berm that would separate the river from Lake Belle View. This would result in clearing of trees, while the berm itself would likely be placed within a wetland area. A small area of wetland also could be affected along the western peninsula. However, any wetland loss within the agricultural field, the area of the berm, or the western peninsula would be more than replaced in quantity and quality through wetland creation as a part of the project.

There would be minor disturbance to fish and wildlife during project construction. Temporary avoidance of the project area by fish and wildlife could result during the 1 to 2 years of construction. There also would be minor impacts to water quality at the project area and downstream within the Sugar River. However, existing conditions at Lake Belle View already affect fish and wildlife resources.

9.9 Compliance with Environmental Quality Statutes

A summation of compliance with environmental statutes and regulations can be found in Table 9.2.

Table 9.2. Applicability and compliance with Federal environmental protection statutes and other environmental requirements affecting the proposed project.

Federal Environmental Protection Statutes and Requirements	Applicability/ Compliance
Archaeological and Historic Preservation Act, 16 U.S.C. 469, et seq.	In compliance
Clean Air Act, as amended, 42 U.S.C. 1857h-7, et seq.	In compliance
Clean Water Act, Sections 404 and 401	In compliance
Endangered Species Act of 1973, as amended, 16 U.S.C. 1531, et seq.	In compliance
Fish and Wildlife Coordination Act, 16 U.S.C. 661, et seq.	In compliance
Flood Plain Management (Executive Order 11988)	In compliance
National Economic Development (NED) Plan	In compliance
National Environmental Policy Act, 42 U.S.C. 4321, et seq.	In compliance
National Historic Preservation Act, 16 U.S.C. 470a, et seq.	In compliance
Protection of Wetlands (Executive Order 11990)	In compliance

9.9.1 Clean Air Act, as amended. No aspect of the proposed project, neither short-term nor long-term, has been identified that would result in violations to air quality standards. The environment would not be exposed to contaminants/pollutants in such quantities and of such duration as maybe or tend to be injurious to human, plant, or animal life, or property, or which unreasonably interferes with the comfortable enjoyment of life, or property, or the conduct of business.

9.9.2 Clean Water Act (Sections 401 and 404), as amended. A Section 404(b)(l) Evaluation was prepared and is included in this report as Appendix B. As previously mentioned, this project has received special legislation by the State of Wisconsin, permitting the project under State of Wisconsin law.

9.9.3 Endangered Species Act of 1973, as amended. As previously discussed, the proposed project would not impact any species listed or proposed for listing under the Federal Endangered Species Act.

9.9.4 Fish and Wildlife Coordination Act. The project has been coordinated with the USFWS (see Section 12). Project plans also have been coordinated closely with the WDNR to ensure that all natural resources concerns associated with this project have been, and will continue to be, taken into consideration. The WDNR will continue to be involved in overseeing project construction and any operation and maintenance action, including the development of any project operation and maintenance guidance. This report will be circulated to these Federal and state resource agencies for their review and comment. Both agencies will continue to be coordinated with and asked for their suggestions and guidance, as appropriate, with any future project implementation.

9.9.5 Flood Plain Management (Executive Order 11988). Implementation of the Recommended Plan would avoid, to the extent possible, long- and short-term adverse impacts associated with the occupancy and modification of the base floodplain. It also would avoid direct and indirect support of development or growth (construction of structures and/or facilities, habitable or otherwise) in the base floodplain wherever there is a practicable alternative. Based on HEC-RAS modeling, the Recommended Plan would not raise the 100-year flood profile (see Appendix H).

9.9.6 National Environmental Policy Act of 1969, as amended. The compilation feasibility report with integrated EA fulfills compliance with NEPA.

9.9.7 National Historic Preservation Act of 1966. The project is in compliance with the National Historic Preservation Act of 1966, amended through 2000 (NHPA, Public Law 89-665; 16 U.S.C. 470 et seq.). NHPA and its implementing regulations 36 CFR Part 800: "Protection of Historic Properties," establishes the primary policy, authority for preservation activities, and compliance procedures. The NHPA ensures early consideration of historic properties preservation in Federal undertakings and the integration of these values into each agency's mission. The Act declares Federal policy to protect historic sites and values in cooperation with other nations, states, and local governments. The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking, take into account the effect of the undertaking of any district, site building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment with regard to such undertaking.

9.9.8 Protection of Wetlands (Executive Order 11990). As previously discussed, the Recommended Plan would include the restoration of at least 22 acres of wetland habitat. This would exceed any wetland loss that may be observed through project construction, including any areas of the abandoned agricultural fields that could be delineated as wetlands. The wetlands that would be created would be of both greater quantity and quality over existing conditions.

9.10 Short-Term vs. Long-Term Productivity

Lake Belle View is a central component of the Village of Belleville. Likewise, the Sugar River is a valuable part of southern Dane and Green Counties, including the communities of Belleville, Albany, and Brodhead, Wisconsin. Lake Belle View and the Sugar River will continue to serve long-term environmental and recreational interests.

9.11 Irreversible Resource Commitments. Fuel consumed, manpower expended, and the commitment of construction materials and equipment is considered irreversible. The loss of agricultural productivity derived from dredged material placement is considered irretrievable and irreversible. No other aspects of the proposed action are considered to be irreversible.

9.12 Relationship of the Proposed Projects to Other Planning Efforts. Efforts within the watershed include streambank fencing and protection projects on Badger Mill Creek and the Upper Sugar River Initiative that include various stakeholders cooperating to address watershed issues. In addition, the Dane County Regional Planning Commission has developed a Water Quality Plan to address many of the problems affecting the county's water resources. The cities of Madison and Verona, Wisconsin, are both conducting stormwater planning and management programs. The northern portion of the watershed was part of a U.S. Soil Conservation Service P.L. 566 watershed plan that began in 1981. The goals of the plan were to provide watershed protection, improve water quality, and enhance fish and wildlife habitat. Efforts to ensure continued erosion and nutrient reduction within watershed will further the benefits within Lake Belle View and the entire watershed. The goals of this project to include fish passage also follow the general movement by the WDNR to recommend or require fish passage components for projects that include modifications of dams.