



Draft Environmental Assessment

# Belle Isle Pump Stations

City of Monona, WI

PDMC-PJ-05-WI-2005-015

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ACM	asbestos-containing material
APE	Area of Potential Effect
BMP	Best Management Practice
BRRTS	Bureau for Remediation and Redevelopment Tracking System
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CF	cubic foot
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
dB	decibel
DHS	Department of Homeland Security
DNL	Day/Night Average Sound Level
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHBM	Flood Hazard Boundary Map
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Policy Protection Act
LBP	lead-based paint
LOP	Letter of Permission
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
mi <sup>2</sup>	square miles
NAAQS	National Ambient Air Quality Standards
NCA	Noise Control Act
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NO <sub>2</sub>	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places

O <sub>3</sub>	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PCBs	polychlorinated biphenyls
PDM-C	Pre-Disaster Mitigation–Competitive
PM <sub>10</sub>	particulate matter of 10 microns or less
RCRA	Resource Conservation and Recovery Act
SHPO	State Historic Preservation Office
SO <sub>2</sub>	sulfur dioxide
SWA	Solid Waste Act
TSCA	Toxic Substances Control Act
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
WDOC	Wisconsin Department of Commerce
WDNR	Wisconsin Department of Natural Resources
WHS	Wisconsin Historical Society
WPDES	Wisconsin Pollutant Discharge Elimination System
WWI	Wisconsin Wetlands Inventory

## **1.1 PROJECT AUTHORITY**

The City of Monona, Wisconsin, applied for Pre-Disaster Mitigation–Competitive (PDM-C) program funding under Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. The Federal Emergency Management Agency (FEMA) grants funds under this program for pre-disaster mitigation activities which reduce overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations.

In accordance with the National Environmental Policy Act (NEPA) of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500 through 1508), and FEMA regulations for NEPA compliance (44 CFR Part 10), FEMA must fully understand and consider the environmental consequences of actions proposed for Federal funding. The purpose of this Environmental Assessment (EA) is to meet FEMA’s responsibilities under NEPA, and to determine whether to prepare a Finding of No Significant Impact (FONSI) or an Environmental Impact Statement (EIS) for the proposed project.

## **1.2 PROJECT LOCATION AND SETTING**

The City of Monona is located in Dane County, in the south-central part of Wisconsin (Figure 1). It is bordered on the west by Lake Monona, and to the north, east, and south by the City of Madison. The City of Monona is 3.26 square miles (mi<sup>2</sup>) in area and has a population of 8,018 (U.S. Census Bureau, 2000).

The project area is a residential neighborhood known as Belle Isle, located on the west side of the City of Monona (see Figure 2 and the project area photographs in Appendix A). Its geographic coordinates are Latitude 43.0558 and Longitude -89.3462. The Belle Isle neighborhood is 32.8 acres in size, and consists of about 105 residential lots and two manmade canals commonly known as Lagoon du Nord and Lagoon du Sud. The project area lies within a General Floodplain District (City of Monona, 1994). The project area includes the roadways of Nishishin Trail, Nishishin Trail Northeast, Pocahontas Drive, and Tecumseh Avenue. The area was first platted in 1928, but increased construction of homes began in the 1950s. The Belle Isle neighborhood is served by the City of Monona wastewater system via pipes. There is sufficient capacity to serve this area. The existing storm sewer system consists primarily of 12- to 24-inch pipes within the roadways, with intermittent outlets along the shoreline of Lake Monona. There are a few intake grates, including one on Pocahontas Drive, leading to 12-inch pipes that drain to the lake.

## **1.3 PURPOSE AND NEED**

The objective of FEMA’s PDM-C program is to reduce overall risks to the population and structures, while also reducing reliance on funding from actual disaster declarations. The City of Monona has requested Federal funding under PDM-C to construct two pumping stations to remove water from the Belle Isle area, protect surrounding homes from flooding, and relieve sanitary sewer backup.

The purpose of the proposed project is to reduce the impacts of future flood events. The need for this project is to protect residents and property from health risks and damages that result from flooding and sanitary sewer backup, as well as protect the associated public infrastructure.

The Belle Isle area of Monona has been flooded an average of once every 4 years for the past 15 years. Flooding in Belle Isle is the result of heavy rains and high lake levels. Belle Isle is the most frequently flooded area in the City and is the first community along the Yahara Chain of Lakes (Lakes Mendota, Monona, Waubesa, and Kegonsa) to experience flooding because its structures and property elevations are the lowest. These high lake levels prevent stormwater discharge from Belle Isle, and lake waters enter Belle Isle over land and through the storm sewer.

The movement of water through the chain of lakes is controlled by three dams at the outlets of Lakes Mendota, Waubesa, and Kegonsa. Dane County is responsible for operating the dams that control the lake levels, so releasing water from Lake Monona is outside of the City's authority. Based on conversations between the City and the Wisconsin Department of Natural Resources (WDNR) during the project development process, releasing water from Lake Monona is also unlikely since it would be a complex process that would involve several municipalities and jurisdictions in the entire Yahara Chain of Lakes and many landowners.

Increased upstream development in the Yahara Lakes watershed (Lakes Mendota and Monona) has aggravated flooding in recent years. The City of Monona is a fully built-out community and has no control over development in other municipalities upstream.

In addition to floodwaters entering homes and sewer system backups, the road surface on Pocahontas Drive and Nishishin Trail Northeast is frequently inundated, undermining the road surface and creating a public-safety hazard by restricting emergency access for police, fire, and ambulance vehicles.

## 2.1 ALTERNATIVE 1 – NO ACTION

Under the No Action Alternative, FEMA funds would not be used to reduce flooding in Belle Isle. Major storm events that lead to consistently high lake levels and subsequent flooding would continue to enable floodwaters to enter homes and cause property damage for Belle Isle residents. With anticipated continued urbanization upstream, and based on reporting levels for each storm, flooding problems would continue to be consistently troublesome and cause some level of property damage. Sanitary sewer backup into homes would continue to cause health and safety risks for area residents. In addition to floodwaters entering homes and causing sewer system backups, the road surface on Pocahontas Drive and Nishishin Trail Northeast would continue to be inundated during flood events, undermining of the road surface.

The Belle Isle area of Monona has been flooded an average of once every 4 years for the past 15 years. Recent flooding occurred in 1993, 1996, 1997, 2000, and 2004 during periods of high lake levels due to heavy rainfall. Following the 1996 event, the City received 69 telephone calls regarding flooding problems and related sanitary sewer backups. This storm was estimated to be a 20-year event. Despite 76 Belle Isle residents sandbagging their homes prior to the 2000 event, 42 homes suffered property damage from flooding and sanitary sewer backup. Floodwaters entered homes, and some residents had 6 to 7 feet of standing water in their basements. Reported property damages totaled over \$400,000 as a result of this flooding. The reported damage estimate is based on property owner responses to a questionnaire, and is most likely low given the 25 percent response rate to the questionnaire.

After the May/early June rains of 2004, the lake levels remained above the summer maximum level through September, a total of 3 months. In 2000 and 2004, City staff provided portable pumps to help remove standing water from Belle Isle. Because of limited staff resources, the City was unable to provide 24-hour fueling and maintenance services to keep the pumps functioning. Residents organized work details to refuel the pumps several times to mitigate flooding. This effort continued for the entire 3 months that the lake level was high.

Flooding in Belle Isle is the result of heavy rains and high lake levels. In general, whenever Lake Monona rises to more than 846.5 feet National Geodetic Vertical Datum (NGVD), the Belle Isle residents are the first along the Yahara Chain of Lakes (Lakes Mendota, Monona, Waubesa, and Kegonsa) to experience flooding because their structures and property elevations are the lowest. At this level, every rainfall that occurs can potentially cause flooding. Over the years, the lake has remained high after the flood for increasingly long periods.

Flooded basements contribute to sanitary sewer problems in Belle Isle as floodwaters enter the separate sanitary sewer system through shower and basement drains. The floodwaters exceed the system capacity, forcing sewage and contaminated waters out into basements. Sanitary sewer pipes in this area are approximately 6 to 8 feet deep. In addition to property damage, raw sewage from sanitary sewer system backups poses a significant and widespread health and safety risk to residents. Although the storm sewer and sanitary sewer are separate systems, the problems of storm sewer and sanitary sewer backup are interrelated.

## 2.2 ALTERNATIVE 2 – INSTALLATION OF TWO PUMP STATIONS (PROPOSED ACTION)

Alternative 2 involves installation of a submerged pump station at two locations in the Belle Isle neighborhood (Figures 3 and 4). The permanent pump stations with automatic switches would serve to discharge stormwater and provide flood protection up to the 25-year flood frequency, or an elevation of 847.1 feet NGVD. Each pump station would discharge at a rate of 400 gallons per minute. With this alternative, sandbagging would continue to be necessary in the Belle Isle area to protect structures from flood events.

Pump Station #1 would be located on the south side of the intersection of Tecumseh Avenue and Pocahontas Drive (T-intersection). The geographic coordinates are Latitude 43.054716 and Longitude -89.346143. An existing storm sewer collects water from this low area and discharges to the lake during normal lake level periods. Construction of this pump station would include installation of a catch basin and an underground pump station. The surface of the catch basin would be a 24-inch metal grated opening in the middle of the Pocahontas Drive/Tecumseh Avenue intersection. The catch basin would empty into a round manhole-type structure that would extend approximately 4 feet below the street surface. The catch basin would be connected via 44 linear feet of 12-inch pipe to an underground pump station that would extend approximately 13 feet below the existing ground surface. About 2 feet of the pump apparatus would extend above the existing ground profile, but a small amount of fill would be placed around the extension and would blend in with the existing ground profile. The pump would be placed lower than the pipe invert and have a discharge pipe leading to an existing outlet to Lake Monona. One existing 12-inch storm sewer pipe would be utilized as potential overflow, while the other will be used to house the pump outlet line. The twin pipes are approximately 130 feet in length and extend through a small grassy area, known as Tecumseh Park, owned by the City. The pipes would end at an existing outlet to Lake Monona.

Pump Station #2 would be located at the south end of Nishishin Trail Northeast, at the dead-end of a small extension of the roadway to the south. The geographic coordinates are Latitude 43.055552 and Longitude -89.344718. Currently, drainage flows toward a timber curb with two 3-inch diameter pipes that drain into a channel connected to Lake Monona. Proposed construction would include installation of an underground pump station and a concrete discharge flume. Drainage would be directed to a new concrete gutter, which would empty into the pump station through a grate. A 3-foot modular block wall would help to direct water to the gutter and keep it from running automatically to the lake channel. The wall would extend 7.5 feet out from each side of the intake grate at the end of Nishishin Trail Northeast. The underground pump station would extend approximately 10 feet below the existing ground surface. About 2 feet of the pump apparatus would extend above the existing ground profile, but a small amount of fill would be placed around the extension and would blend in with the existing ground profile. The existing 3-inch pipes would be removed and replaced with a 4-inch pipe that would discharge from the pump station to a concrete spillway structure on the edge of the channel. The spillway would be constructed by placing 20 inches of medium-sized riprap, or a more natural material, topped by one half of a 4-foot by 6-foot concrete box culvert and a concrete wall and slab installed at a 5:1 slope.

As discussed above, the pump stations would be constructed underground, with approximately 2 feet of apparatus extending above the existing ground profile. The equipment is designed and would be built to operate in a submerged environment and would be completely waterproofed.

As part of construction, all vegetation would be cleared along the utility line and where the pump stations are installed. Installation of the pump station at the Pump Station #1 site would require approximately 750 cubic feet (CF) of excavation, with an additional 700 CF of excavation for the catch basin and storm sewer pipe. Excavation at Pump Station #2 would require approximately 600 CF of excavation, for a total of 2,050 CF for both locations. An approximately 10-foot circular area would be excavated for each pump station, and the post-construction footprint of each pump station would be a 7-foot diameter manhole cover, to provide access for pump station maintenance. Approximately 750 CF of fill would be placed at each pump station site and would blend in with the surrounding area, for a total of 1,500 CF of fill for both locations. Any other disturbed vegetation would be replaced with species similar to existing conditions. Excavation dewatering is planned for this project.

Some street reconstruction would be required in the vicinity of each pump station to provide positive drainage. These areas of reconstruction are shown on Figure 4. Reconstruction would consist of removing asphalt, reshaping the gravel base, and repaving the area to direct drainage to the catch basin near Pump Station #1 and concrete gutter near Pump Station #2. In the vicinity of Pump Station #1, reconstructed Pocahontas Drive would slope 0.82 percent for a distance of 80 feet from the east to the catch basin and would slope 0.56 percent for a distance of 60 feet from the west to the catch basin. In the vicinity of Pump Station #2, the slope on Nishishin Trail Northeast would remain at 2.1 percent.

Soil disposal and storage of construction equipment and materials would take place at the Monona City Garage site, which is located approximately 0.18 mile north-northwest of the Belle Isle neighborhood. When the spoil pile grows large enough, City crews would truck spoil materials to the Dane County Landfill for use as daily cover. Temporary spoil storage at the project site would be limited to existing paved street areas.

During construction, both Pocahontas Drive and Nishishin Trail Northeast would remain open to traffic. At least one lane would remain passable at all times. Construction of the entire project is anticipated to require up to 3 months.

### **2.3 ALTERNATIVE 3 – ELEVATING AND FLOODPROOFING STRUCTURES**

Alternative 3 includes elevating homes in the Belle Isle neighborhood above the 100-year flood level of 848 feet NGVD. This would allow the area to drain naturally, without the need for excess pumping or other operational means of removing water. When a building has been elevated, water flows under the building (if the base of the building is left open), or through the building (if the base is solid but water flow openings are implemented), causing little or no damage to the building or its contents.

The City would implement a systematic elevation plan for the Belle Isle area, requiring residents to raise the first floor of structures to an elevation of 850 feet, which is 2 feet above the 100-year flood level of 848 feet. Homeowners would have three choices for elevating the first floor: 1) extend the walls of the house upward and raise the lowest floor; 2) convert the existing lower

area of the house to a non-habitable space, and build a new second story for living; or 3) lift the entire house, with the floor slab attached, and build a new foundation to elevate the house.

For homes with basements (only nine homes in the Belle Isle area currently have basements), residents may abandon the basement area, or continue to use it for storage, as long as methods of wet floodproofing are employed. Wet floodproofing involves moving or elevating electronic devices and personal items to higher elevations so floodwater does not reach them. For most residents, this would mean permanently moving appliances and other large items to the first floor, or any area above flood levels. If a structure usually experiences only minimal flooding, items could be elevated on blocks or platforms.

There are 105 homes in the Belle Isle neighborhood. Initial elevation efforts would be directed to the two repetitive loss structures in the neighborhood, followed by properties that have experienced substantial damage in previous events.

Minimal disruption of existing residential landscaping would occur, and would be replaced at the discretion of the homeowner.

## **2.4 ALTERNATIVES CONSIDERED BUT DISMISSED**

Construction of an earthen levee surrounding the channels in Belle Isle was also considered as an alternative to this project. However, this alternative was dismissed because it would require significant fill in the floodplain and cause standing water, which would require further drainage improvements. This alternative would also require acquisition of private property and limit access to the canals, which are distinguishing and attractive features of this neighborhood.

The City of Monona also considered removing the homes within the area frequently affected by flooding. However, this alternative was dismissed because it is not acceptable to the community and the citizens who live there. Additionally, acquisition of the 105 homes that comprise the Belle Isle neighborhood would likely not result in a positive cost-benefit ratio, according to Wisconsin Emergency Management.

Releasing water from the lake was also discussed as an alternative; however, this alternative is outside of the City's control. Dane County controls the dams at the outlets of Lakes Mendota, Waubesa, and Kegonsa. Implementation of this alternative would be a complex process that would involve several municipalities and jurisdictions in the entire Yahara Chain of Lakes and many landowners. Conversations between the City and the WDNR during the development of this project indicated that any actions of this nature would be unlikely.

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### **3.1 PHYSICAL ENVIRONMENT**

#### **3.1.1 Geology, Seismicity, and Soils**

The bedrock foundation underlying the Monona area is primarily composed of layers of limestone and sandstone deposited on the floor of a shallow sea, dating to about 500 million years ago. The sandstone is the source of groundwater that supplies water to the greater Madison area, including Monona. Bedrock is overlain by glacial till, some with moraine characteristics (WGNHS, 1995).

The State of Wisconsin as a whole experiences limited seismic activity, with the last event occurring in 1947 and resulting in only minor damages. The seismic hazard in the Madison/Monona area of Wisconsin is located in an area identified as having 4 to 6 percent peak acceleration with 2 percent probability of exceedance in the next 50 years (USGS, 2002).

Soils within the project area consist entirely of Wacousta silty clay loam. The Wacousta series consists of very deep, very poorly drained, moderately permeable soils formed in silty lacustrine sediments. They are typically found in depressional areas within the glacial till plain. Slopes range from 0 to 1 percent (NRCS, 2002).

Soils in the proposed project area are classified as prime farmland (NRCS, 2008a), which is generally subject to the Farmland Protection Policy Act (FPPA). The FPPA states that Federal agencies must “minimize the extent to which federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses...” Activities not subject to the FPPA include projects on land already in urban development or used for water storage. Because the proposed project area is committed to urban development, the FPPA does not apply (NRCS, 2008b).

#### **Alternative 1 – No Action**

The No Action Alternative would not result in any construction impacts to geology, seismicity, or soils. However, sanitary sewer backup would continue to be a problem in the Belle Isle area. Raw sewage could infiltrate the soil and cause contamination. In addition, continued standing water during periods of high water could cause soil erosion.

#### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Alternative 2 would not result in adverse effects to geology or seismicity. Bedrock would not be disturbed, and the seismic hazard in the area is very low compared to the total peak acceleration scale of 0 to 350. In addition, Alternative 2 is not anticipated to result in permanent soil erosion or degradation of soils. The project as proposed should help to alleviate standing water, reducing the possibility of erosion in low-lying areas.

The use of required Best Management Practices (BMPs) during construction would include protecting erodible surfaces, and would follow the provisions of the City’s Erosion and Stormwater Runoff Control Ordinance, and Construction Standards Code (City of Monona, 1994). BMPs to be used during construction of this project include silt fencing and flotation silt curtains. Earthwork would not be allowed during precipitation events. Additionally, exposed soils would be seeded with a species mix comparable to existing vegetation. Construction

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specifications would identify the specific seed mix to be used by the contractor. In addition, compacted soils would be loosened by disking or raking prior to seeding.

### **Alternative 3 – Elevating and Floodproofing Structures**

Alternative 3 would not result in adverse effects to geology or seismicity. Bedrock would not be disturbed, and the seismic hazard in the area is very low compared to the total peak acceleration scale of 0 to 350. In addition, Alternative 3 is not anticipated to result in permanent soil erosion or degradation of soils. The project as proposed should help to alleviate standing water, reducing the possibility of erosion in low-lying areas.

The use of required BMPs during construction would include protecting erodible surfaces, and would follow the provisions of the City's Erosion and Stormwater Runoff Control Ordinance, and Construction Standards Code (City of Monona, 1994). Examples of BMPs to be used include erosion control blankets and silt fences. Earthwork would not be allowed during precipitation events. Additionally, exposed soils would be seeded with a species mix comparable to existing vegetation. Construction specifications would identify the specific seed mix to be used by the contractor. In addition, compacted soils would be loosened by disking or raking prior to seeding.

### **3.1.2 Water Resources and Water Quality**

The Belle Isle neighborhood is served by the municipal water system, which draws groundwater from deep wells. The City operates its own water utility with three municipal wells providing water to the system. Water is stored in both overhead and ground facilities. Groundwater is replenished from naturally occurring precipitation (City of Monona, 2004).

Lake Monona lies within the Yahara River/Lake Monona Watershed, which covers approximately 85 mi<sup>2</sup> within the larger Lower Rock River Basin. It is also part of the greater Milwaukee River Basin, which covers 3,777 mi<sup>2</sup> over 10 southern Wisconsin counties (WDNR, 2001). Lake Monona is one of four lakes known as the Yahara Chain of Lakes, which are all connected by channels of the Yahara River. The Yahara River enters Lake Monona on the northwest lakeshore, and exits on the southeast lakeshore. Murphy Creek (to the southwest) and Starkweather Creek (to the northeast) are also tributaries to the lake. The total drainage area of Lake Monona is 278 mi<sup>2</sup>. It has a surface area of 3,274 acres, with a mean depth of 27 feet (WDNR, 2001). There are three bays on the south end of Lake Monona: Monona Bay, Turville Bay, and Squaw Bay (University of Wisconsin, 2005).

Section 303(d) of the Federal Clean Water Act (CWA) requires each State to periodically submit a list of impaired waters to the Environmental Protection Agency (EPA) for approval. Impaired waters are those that are not meeting the State's water quality standards. States may measure water quality through a number of parameters, including examining fish and wildlife contaminants, water and sediment chemistry, biological integrity/physical habitat, and stream flow. Lake Monona is listed, and is therefore considered an Impaired Water. Primary pollutants include mercury and polychlorinated biphenyls (PCBs), which have resulted in a fish consumption advisory for some fish species in the lake (WDNR, 2004). The *Lower Rock River Water Quality Management Plan* reports that the water quality of Lake Monona is primarily affected by urban polluted runoff, nutrient loading from upstream Lake Mendota, and past sediment fills (WDNR, 2001).

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Potential water quality impacts as a result of any new project construction generally originate from the following:

- Erosion of exposed soils during construction.
- Reduced infiltration and increased runoff from the construction of new impervious surfaces.
- Pollutants from automobiles, such as oil, grease, and metals, which collect on impervious surfaces, and are washed off by stormwater runoff.
- Increased stormwater runoff that overburdens existing drainage systems, causing flooding.
- Fill or construction in floodplains, which affects flood levels in streams and rivers.

Potential sedimentation due to temporary construction impacts from each alternative is discussed below.

### **Alternative 1 – No Action**

Under the No Action Alternative, periodic flooding and sanitary sewer backup during heavy rainfall events would still occur. Residents would continue to be at risk from raw sewage infiltrating the storm sewer and potentially reaching surface waters and drinking water supplies. Sanitary sewer backup into homes would also continue to cause health and safety risks for area residents. Continued flooding would result in increased soil erosion and sedimentation of water bodies. A potential discharge of sewage into the lake during flood events could also result. Additionally, runoff from lawns and streets would continue to enter the lake, providing an additional pollutant load. However, given the small size of the project area relative to the entire lake, these impacts would be minor. Also, these impacts would only occur as a result of flood events.

### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Alternative 2 at proposed Pump Station #2 lies partly within a channel connected to Lake Monona, known as Lagoon du Nord. Stormwater discharged from each of the pump stations will drain into Lake Monona, as it does under existing conditions. To reduce pollution entering the lake through the pump stations, there will be sumps in the pump station structures that will collect sediment prior to discharging collected stormwater into the lake. At the end of the pump discharge lines, the surface will be reinforced with riprap to prevent erosion. Installation of the pump stations would direct stormwater to the lake more quickly, but overall would not impose pollution or long-term sedimentation on Lake Monona. The risk of sedimentation from erosion, and the risk of water pollution from backed up sanitary sewers, would be reduced by this alternative.

Alternative 2 has the potential for minor impacts on water quality as a result of construction grading, which may cause temporary sedimentation of sewer systems due to erosion of bare soils. BMPs for erosion control during construction would be implemented as outlined in stormwater and erosion control plans. To control construction sediment, silt fencing and a

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flotation silt curtain will be used during construction. BMPs would also include protecting erodible surfaces and avoiding construction during precipitation events.

The following ordinances have BMP provisions for protecting water resources and water quality (City of Monona, 1994):

- Erosion and Stormwater Runoff Control Ordinance
- Construction Standards Code
- Floodplain District Ordinance

Each of these ordinances would be adhered to during project construction. A Wisconsin Pollutant Discharge Elimination System (WPDES) permit is not required, as the project would not involve more than 1 acre of grading and would not result in new discharges to Lake Monona.

Both the WDNR Waters Division and the U.S. Army Corps of Engineers (USACE) were sent information in February 2006 describing and illustrating the proposed project. WDNR indicated that a Chapter 30 permit would be required for work in and adjacent to navigable waters, which includes the construction of the concrete spillway at the existing outfall and the replacement of riprap along the shoreline (see WDNR correspondence in Appendix B). Alternative 2 would also require dewatering permits from WDNR. The project would require an authorization from the USACE under Section 404 of the CWA because of work within the discharge areas of Lake Monona and the channel. Along with the WDNR permit, this alternative would be authorized as a non-reporting activity under a Letter of Permission (LOP) (see USACE correspondence in Appendix B). USACE did not voice any concerns about impacts to Lake Monona. Wetlands are addressed in Section 3.2.2.

USACE and the WDNR Waters Division were contacted again in May 2007 to update agency coordination documentation. In response, both reaffirmed their previous comments and stated that they had no further comments at that time (Gruber, personal communication, Appendix B and Peterson, personal communication, Appendix B).

Alternative 2 would not increase the net amount of impervious surface and would help to decrease the overburden on existing drainage systems that currently results in flooding and sewer system backup during storm events. New water storage capacity created within the pump station manholes would be greater than the minimal impervious surface created by construction of the ancillary pump station structures.

Under Alternative 2, erosion of exposed soils would be managed by BMPs as described in Section 3.1.1. Temporary spoil storage at the project site would be limited to existing paved street areas and would be covered to help prevent erosion and fugitive dust.

### **Alternative 3 – Elevating and Floodproofing Structures**

Alternative 3 has the potential for minor impacts on water quality as a result of construction grading, which may cause temporary sedimentation of sewer systems due to erosion of bare soils. BMPs for erosion control during construction would be implemented. A WPDES permit is not required, as the project would not involve more than 1 acre of grading. No work within navigable waters or wetlands is proposed under this alternative, so a WDNR Chapter 30 permit is not required.

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Alternative 3 would also reduce the risk of sedimentation and pollution caused by flooding and sanitary sewer backup.

### **3.1.3 Floodplain Management (Executive Order [EO] 11988)**

Floodplain refers to the 100-year floodplain as defined by FEMA. The 100-year floodplain is shown on Flood Insurance Rate Maps (FIRMs) or Flood Hazard Boundary Maps (FHBMs) for all communities participating in the National Flood Insurance Program (NFIP).

The 100-year floodplain designates the area inundated during a flood that has a 1 percent chance of occurring in any given year. FEMA also identifies the 500-year floodplain, which designates the area inundated during a flood that has a 0.2 percent chance of occurring in any given year.

EO 11988 directs Federal agencies to take action to minimize occupancy of and modification to floodplains. Specifically, EO 11988 prohibits FEMA from funding construction in the floodplain unless there are no practicable alternatives. FEMA regulations for complying with EO 11988 are promulgated in 44 CFR Part 9. FEMA applies the Eight-Step Planning Process as required by regulation to meet the requirements of EO 11988 (see Appendix C).

The Belle Isle area is included in the Dane County FIRM dated June 17, 2003. The 100-year floodplain in Belle Isle is associated with the two canals, Lagoon du Nord and Lagoon du Sud (see Figure 5). The base flood elevation is currently 848 feet NGVD.

#### **Alternative 1 – No Action**

No occupancy or direct modification to the 100-year floodplain would occur under this alternative. This alternative would not affect storage capacity in the floodplain.

#### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Alternative 2 would take place within the 100-year floodplain. This alternative would require 2,050 CF of excavation and 1,500 CF of fill, ensuring that implementation of Alternative 2 would not reduce storage capacity in the floodplain. The proposed pump stations would provide quicker and more efficient discharge of floodwaters into Lake Monona. The project area lies within the Yahara Lakes/Lake Monona Watershed, which is approximately 85 mi<sup>2</sup> (54,400 acres) in size, and is part of the Lower Rock River Basin, which is 3,777 mi<sup>2</sup>, or 2,400,000 acres. The proposed action would not affect the elevation of the 100-year flood of Lake Monona. The small amount of discharge from Belle Isle would be negligible when compared to the vast size of the upstream watershed and Lake Monona.

Both the WDNR Waters Division and USACE were sent information describing and illustrating the proposed action. WDNR did not voice any concerns about impacts to the 100-year floodplain. USACE also reviewed the action and did not voice any concerns about impacts to Lake Monona or the 100-year floodplain (see Appendix B).

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### **Alternative 3 – Elevating and Floodproofing Structures**

Alternative 3 would take place within the 100-year floodplain; however, it would raise structures to be above the existing flood elevation. Depending on the method of elevation, this alternative may add fill to the floodplain.

#### **3.1.4 Air Quality**

The Clean Air Act of 1970 (CAA), as amended, requires EPA to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The CAA establishes two types of national air quality standards: primary and secondary. Primary standards set limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, visibility, and damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards has set NAAQS for six principal pollutants, which are called “criteria” pollutants: sulfur dioxide (SO<sub>2</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), lead (Pb), particulate matter of 10 microns or less (PM<sub>10</sub>), and ozone (O<sub>3</sub>).

EPA has designated specific areas throughout Wisconsin as NAAQS attainment or non-attainment areas. Non-attainment areas are those that either do not meet, or contribute to ambient air quality in a nearby area that does not meet, the national primary or secondary air quality standards for a pollutant. According to EPA, Dane County is in attainment for all six criteria pollutants (EPA, 2005).

### **Alternative 1 – No Action**

No construction activities would take place under this alternative; therefore, there would be no impact to air quality.

### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Implementation of Alternative 2 would involve limited use of heavy construction equipment, such as a backhoe and equipment trucks. The duration of the proposed project activities is anticipated to be approximately 3 months.

Heavy construction equipment is a source of fugitive dust emissions that may have a temporary effect on air quality. Emissions occurring during construction would be associated with earthmoving (grading). Dust emissions can vary from day-to-day, depending on the level of activity, the specific operations, and weather. Emissions from fuel-burning internal combustion engines (heavy equipment and earthmoving machinery) could temporarily increase the levels of volatile organic compounds and some of the priority pollutants, including CO, NO<sub>2</sub>, O<sub>3</sub>, and PM<sub>10</sub>.

To mitigate for potential air quality impacts from equipment emissions and fugitive dust, BMPs would include keeping vehicle engines in good repair, turning off engines when not in use, and watering the project area in dry conditions. Water would be applied at a rate that prevents runoff. The same measures would be taken in the identified construction staging areas.

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### **Alternative 3 – Elevating and Floodproofing Structures**

Implementation of Alternative 3 would involve limited use of heavy construction equipment. The duration of the proposed project activities is likely to be several months to years.

Heavy construction equipment is a source of fugitive dust emissions that may have a temporary effect on air quality. Emissions occurring during construction would be associated with earth moving (grading). Dust emissions can vary from day-to-day, depending on the level of activity, the specific operations, and weather. Emissions from fuel-burning internal combustion engines (heavy equipment and earthmoving machinery) could temporarily increase the levels of volatile organic compounds and some of the priority pollutants, including CO, NO<sub>2</sub>, O<sub>3</sub>, and PM<sub>10</sub>.

To mitigate for potential air quality impacts from equipment emissions and fugitive dust, BMPs would include keeping vehicle engines in good repair, turning off engines when not in use, and watering the project area in dry conditions. Water would be applied at a rate that prevents runoff. The same measures would also be taken in the identified construction staging areas.

## **3.2 BIOLOGICAL ENVIRONMENT**

### **3.2.1 Terrestrial and Aquatic Environment**

#### ***Terrestrial Environment***

URS staff conducted a site visit in October 2005. The project area includes the Belle Isle neighborhood, which consists of 32.8 acres on the west edge of Monona, on a peninsula surrounded by Lake Monona. It includes 105 residential lots, local roads, and parkland largely dominated by turf grass, landscaping, and some small gardens. The area is also moderately wooded with deciduous tree species.

Within the riprap at the edge of Lake Monona, there is limited vegetation consisting of aster (*Aster* spp.), green foxtail (*Setaria viridis*), and waterdock (*Rumex hydrolapatum*). There is a weeping willow (*Salix babylonica*), two green ash (*Fraxinus pennsylvanica*), and one elm (*Ulmus americana*) tree at the edges of the park. No other vegetation was observed at the outlet to Lake Monona.

Wildlife that may use the Belle Isle area include mammals such as white-tailed deer (*Odocoileus virginianus*), Eastern cottontail rabbit (*Sylvilagus floridanus*), gray squirrel (*Sciurus carolinensis*), and raccoon (*Procyon lotor*). Songbirds will move through the area, as the habitat is suitable. Various songbirds and squirrels were the only wildlife observed during the site visit.

All migratory birds are protected under the Migratory Bird Treaty Act (MBTA). This law protects the birds and their eggs, young, and nests. Migratory birds, including neotropical migrants, may use the terrestrial environment as they migrate through the area on their way to and from summer nesting habitats further north. Other species may use the area as nesting habitat, though the urban landscape limits the variety of species that would likely be found. Migratory waterfowl may use the aquatic environment during migration to and from northern summer breeding habitats. The urban landscape and riprap shoreline limit the variety of species that would utilize the site as breeding habitat to the mallard (*Anas platyrhynchos*) and Canada goose (*Branta canadensis*).

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### ***Aquatic Environment***

The project area discharges to Lake Monona. According to WDNR, the most abundant sport fish present within the lake and its connected channels include muskellunge (*Esox masquinongy*), northern pike (*Esox lucius*), walleye (*Sander vitreus vitreus*), largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), bluegill (*Lepomis macrochirus*), channel catfish (*Ictalurus punctatus*), and lake sturgeon (*Acipenser fulvescens*) (WDNR, 2006a). The channels and lakeshore may also provide habitat for species such as amphibians (frogs, toads, and salamanders), reptiles (snakes and turtles), and songbirds.

### **Alternative 1 – No Action**

Under this alternative, no changes to the existing terrestrial environment would occur. The discharge of sewage into the lake during flood events could affect the aquatic environment. Additionally, pollutants from lawns and streets would continue to enter the lake, providing an additional pollutant load. This results in additional nutrients entering the lake and contributes to algal blooms. Algal blooms can negatively affect fish, amphibians, and invertebrates. However, given the small size of the project area relative to the entire lake, these impacts would be minor. Also, these impacts would only occur as a result of flood events.

### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

#### ***Terrestrial Environment***

The effects of Alternative 2 would include temporary disturbances to terrestrial habitat during project implementation. Pump Station #1 would be installed in an existing concrete roadway. The path the proposed pipe would take to Lake Monona is covered with turf grass that is regularly mowed. Existing grass along the route of pipe installation for Pump Station #1 would be removed to complete this alternative. Vegetation would be replaced to the extent that access to the pipe can still be obtained. Existing riprap and plants growing within the riprap in both Pump Station #1 and Pump Station #2 areas would be removed during construction, and the riprap would be reconfigured. Pump Station #2 would also be installed in an existing concrete roadway, and would disturb limited vegetation consisting of turf grass, aster, and waterdock, the latter two within the existing riprap. A small elm tree and some unidentified climbing vines are growing near the existing wooden fence. Existing species are typically weeds and would not be replaced. No mature trees would be disturbed as a result of this alternative. It is not anticipated that any vegetation would be removed from construction staging sites as a result of Alternative 2.

Effects to the terrestrial environment would be temporary, lasting until vegetation becomes reestablished. Heavy construction equipment would compact soils in the project area and potentially in construction staging areas. Soils compacted by construction machinery would be loosened by methods such as disking or raking.

Short term impacts to migratory birds would be minor. Removal of vegetation would be minimal, and therefore, the loss of food and cover for birds would also be minimal. Adequate urban landscape habitat located to the north of the project site would likely compensate for any temporary habitat loss. Long-term impacts are not anticipated. Revegetation of disturbed areas will restore the site to its previous state.

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Construction activities and noise have the potential to disturb nesting migratory birds. If a nest is discovered within the construction work zone, the City and/or its contractor shall make every effort to avoid the nest until the fledglings have left the nesting area. Destruction of nests is a violation under the MBTA. If the nest cannot be avoided until after the birds have fledged and if no practicable or reasonable avoidance alternatives are identified, further coordination with the U.S. Fish and Wildlife Service (USFWS) would be necessary. All efforts should be made in project planning and timing to avoid conditions requiring a depredation permit application.

### ***Aquatic Environment***

Temporary impacts to aquatic habitats would occur. These impacts would last for the duration of construction, and may include sedimentation during the replacement of riprap and construction of the pump stations, which would temporarily disturb fish and other aquatic life. Sedimentation would be controlled using BMPs, such as silt fencing around construction areas and a flotation silt curtain in the channel. Long-term negative impacts on the aquatic environment are not anticipated.

### **Alternative 3 – Elevating and Floodproofing Structures**

#### ***Terrestrial Environment***

The effects of Alternative 3 would include temporary disturbances to terrestrial habitat during project implementation. Existing turf grass and landscaping along the outside of the homes being elevated may be removed to complete this alternative. Vegetation removal from construction staging sites as a result of this alternative is not anticipated. Vegetation would be replaced to existing conditions, and/or completed at the discretion of the homeowner.

Removal of vegetation at house sites under construction could potentially impact migratory birds utilizing the vegetation for food, cover, and nesting habitat. Because construction activity would occur over time, the extent of any impacts at any given time would be limited. Additionally, the time of year that construction occurs would determine the extent of impacts to birds. Impacts to migratory birds are anticipated to be temporary and minimal. Long-term negative impacts on the terrestrial environment are not anticipated.

Heavy construction equipment would compact soils in the project area and potentially in construction staging areas. Soils compacted by construction machinery would be loosened by methods such as disking or raking.

#### ***Aquatic Environment***

Temporary impacts to aquatic habitats would occur. These impacts would last for the duration of construction and may include temporary sedimentation when work occurs near the water, though this alternative would not require work directly in the water. Sedimentation would be controlled by using BMPs. Long-term negative impacts on the aquatic environment are not anticipated.

### **3.2.2 Wetlands (EO 11990)**

A wetland is defined by State and Federal regulations as an area that exhibits three distinct characteristics: 1) hydric soils; 2) inundation or saturation at or near the ground surface for a period of the growing season; and 3) a prevalence of vegetation adapted to wet soil conditions.

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Wetlands are recognized as having important functions, including flood storage, water quality, wildlife and fisheries habitat, vegetation diversity, shoreland protection, aesthetics, and public recreation, resulting in their protection by local, State, and Federal regulations. These regulations require that wetland impacts be avoided or minimized to the extent feasible, with wetland replacement required for unavoidable impacts. Impacts that are unavoidable must be replaced at a ratio of at least 2 acres of wetland creation or restoration for every acre of wetland impact.

Under EO 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands, and preserve and enhance their natural and beneficial values. If a Federal action has the potential to affect jurisdictional waters of the United States, including wetlands, as defined by Section 404 of the Federal CWA, the USACE is contacted for appropriate permitting requirements. Section 404 of the CWA authorizes the USACE to issue permits, after notice and opportunity for public hearings, for the discharge of dredged or fill material into waters of the United States at specified disposal sites. The WDNR has regulatory authority over activities within selected wetlands and waters, as identified on wetland maps published by the WDNR. The City of Monona has regulatory authority for all wetlands within its legal boundary.

FEMA applies the Eight-Step Planning Process, as required by regulation, to meet the requirements of EO 11990. This step-by-step analysis is included in Appendix C of this document.

Wisconsin State wetland policy is set forth in administrative rule NR 103 as a set of water quality standards. Although these are applicable to all WDNR actions, they mostly guide the water quality certification process (NR 299). The standards call for a “sequencing” process similar to that of the Federal Section 404 (b)(1) permit. Only after the NR 103 sequencing steps have been taken (avoid, then minimize) can mitigation be offered as part of an application for activities in wetlands. Mitigation is not required for permitted activities that affect wetlands.

Review of Wisconsin Wetlands Inventory (WWI) maps and field observation revealed no wetlands in the project area. There are no wetland impacts or associated mitigation required by any of the project alternatives.

### **3.2.3 Threatened and Endangered Species**

The Endangered Species Act (ESA) of 1973 requires Federal agencies to determine the effects of their actions on threatened and endangered species of fish, wildlife, and plants, and on their habitats, and to take steps to conserve and protect these species.

The USFWS was sent a letter requesting review of the project for potential impacts to Federal threatened or endangered species. In a letter dated February 17, 2006, the USFWS concurred that no federally listed species or designated critical habitats are present in the project area; therefore, there is no effect on listed species or habitats anticipated as a result of the proposed project (Appendix B). In May 2007, USFWS was contacted again to update agency coordination documentation. In response, USFWS stated the previous concurrence of no effect is still valid (Au, personal communication, Appendix B).

The WDNR was contacted in January 2006 for information regarding known occurrences of State-listed threatened, endangered, or otherwise significant plant and animal species, natural plant communities, and other natural features in the project area. The WDNR concluded that there are four known occurrences of endangered resources within an approximate 2-mile radius

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(plant species) or 5-mile radius (aquatic species) of the project area. These consist of two plant species and two fish species. Based on habitat and spawning information from the WDNR, and field review of the project area, it is not anticipated that these resources are present in the immediate vicinity of the proposed project, nor would they be affected by the proposed project.

The City's Web site lists the presence of an eagles' nest on Belle Isle (City of Monona, 2007). The newsletter of the Yahara Lakes Association reported in Spring 2004 that the nesting eagles on Belle Isle are a pair of bald eagles (*Haliaeetus leucocephalus*) and the nest may be one of three in the area (Yahara Lakes Association, 2004). The City provided information in January 2008 that verified an eagles' nest is still located on Belle Isle near the project site; however, it was unknown if the nest is active.

Wisconsin delisted the bald eagle from the State Endangered and Threatened Species List in 1997 and it is now a State species of special concern. In 2007, the bald eagle was removed from the Federal Endangered and Threatened Species List; however, the bald eagle is still fully protected by the Federal Bald and Golden Eagle Protection Act.

On January 25, 2008, URS sent USFWS and WDNR information with the location of the nest and requested recommendations for measures to protect nesting bald eagles. USFWS responded on February 7, 2008, with a recommendation for a seasonal restriction on project construction from February 1 through May 31, as this time period would encompass the most sensitive period for nesting bald eagles. USFWS added that bald eagles can have multiple nests in an area and will move from one nest to another from year to year. Therefore, if the nest in the vicinity of the project site is not active or has not been occupied by May 1, then the restriction would not apply and project construction could begin after May 1 (Trick, personal communication, Appendix B). The WDNR responded via e-mail on February 11 and 12, 2008 (Appendix B) that they concur with USFWS recommendations and could provide assistance to check for nest activity. If the City wants to begin construction after May 1 and before May 31, the City must contact the WDNR so they can make the determination on nest activity as of May 1.

With observance of a seasonal restriction on project construction, no impacts to threatened and endangered species or species of special concern are anticipated under any of the alternatives.

### **3.3 HAZARDOUS MATERIALS**

The Resource Conservation and Recovery Act (RCRA) defines hazardous wastes as "a solid waste, or combinations of solid wastes, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or (2) pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed." While the definition refers to "solids," it has also been interpreted to include semisolids, liquids, and contained gases (Wentz, 1989).

Hazardous materials and wastes are regulated in Wisconsin through a combination of federally mandated laws and State laws, as enforced by WDNR and the Wisconsin Department of Commerce (WDOC). WDNR is responsible for establishing investigation and remedial action requirements for contamination in the NR 700 series of environmental rules in the Wisconsin Administrative Code, and overseeing cleanups at petroleum tank discharges that include high-

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risk factors as determined by those rules. WDOC is responsible for underground and aboveground tank standards, as well as oversight of cleanups at petroleum tank discharges that do not include high-risk factors as defined by State rules. Federal regulations governing hazardous wastes include RCRA; the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); the Solid Waste Act (SWA); and the Toxic Substances Control Act (TSCA).

To determine the presence and approximate location of known hazardous materials in the vicinity of the project area, a search was conducted of the WDNR Bureau for Remediation and Redevelopment Tracking System (BRRTS) database and the WDOC Petroleum Storage Tank Database (WDNR BRRTS, 2006b and WDOC, 2004). The database searches queried recorded Federal, State, and local hazardous materials and underground storage tank (UST) criteria to identify sites of potential concern.

No sites were located within immediate vicinity of the project area. There are recorded leaking USTs (LUSTs) and sites of soil contamination north of the project area; however, these sites are separated from the Belle Isle neighborhood by a channel of water, so migration of contaminants to the Belle Isle neighborhood from these sites is not likely. The Belle Isle neighborhood does not contain any hazardous waste-generating sites.

No subsurface materials testing was conducted in the project area as part of this analysis. Conclusions are based on database review and review of topographic maps and aerial photographs.

### **Alternative 1 – No Action**

Under the No Action Alternative, no construction would occur. Hazardous wastes and materials that may be present in the project area would not be altered from their present condition.

### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Based upon the information reviewed, no impacts related to hazardous materials or wastes are anticipated under Alternative 2.

Although subsurface hazardous materials are not anticipated to be present in the project area, excavation activities could expose or otherwise affect subsurface hazardous wastes or materials. Any hazardous materials discovered, generated, or used during implementation of the proposed project would be disposed of and handled by the City in accordance with applicable local, State, and Federal regulations.

### **Alternative 3 – Elevating and Floodproofing Structures**

Based upon the information reviewed, no impacts related to hazardous materials or wastes are anticipated under Alternative 3. However, depending on the method of elevation chosen, some hazardous building materials may be encountered when improvements to structures are being made. Lead-based paint (LBP) is assumed to be present in any structure built prior to and during the period between 1970 and 1980. The Occupational Safety and Health Administration (OSHA) did not begin asbestos-containing material (ACM) regulation until 1970. Therefore, given that

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many homes in the Belle Isle area were built in the 1950s, LBP and/or ACM may be encountered during construction (University of Florida, 2002).

Any hazardous materials discovered, generated, or used during implementation of the proposed project would be disposed of and handled by the City in accordance with applicable local, State, and Federal regulations. This would include identification of proper management and disposal alternatives.

### **3.4 SOCIOECONOMICS**

#### **3.4.1 Noise**

Sound is most commonly measured in decibels (dB) on the A-weighted scale, which is the scale most similar to the range of sounds that the human ear can hear. The Day/Night Average Sound Level (DNL) is an average measure of sound. The DNL takes into account the volume of each sound incident, the number of times each incident occurs, and the time of day each incident occurs (nighttime sound is weighted more heavily because it is assumed to be more annoying to the community). The DNL descriptor is accepted by Federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses.

Noise, defined herein as unwanted or unwelcome sound, is regulated by the Federal Noise Control Act (NCA) of 1972. Although the NCA gives EPA authority to prepare guidelines for acceptable ambient noise levels, it only requires those Federal agencies that operate noise-producing facilities or equipment to implement noise standards. EPA guidelines (and those of many Federal agencies) state that outdoor sound levels in excess of 55 dB DNL are “normally unacceptable” for noise-sensitive land uses such as residences, schools, and hospitals. Noise-sensitive receivers in the vicinity of the project area consist of private residences.

City ordinance dictates that construction can only occur between 7:00 a.m. and 7:00 p.m., Monday through Saturday.

#### **Alternative 1 – No Action**

Under the No Action Alternative, no construction would occur, and noise levels would be anticipated to remain at current levels.

#### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Noise associated with Alternative 2 would be limited to temporary construction noise emitted by mechanical equipment, including a backhoe, trucks, and a skid steer. Noise typically associated with this type of construction equipment can measure as much as 80 dB within 50 feet of the source, attenuating at a rate of 6 dB per doubling of distance away from the source.

Noise-sensitive receivers in the project area include private residences. The closest residence is roughly 30 feet away from either of the proposed pumping stations. Construction activities may minimally disturb these receivers. However, noise would not be continuous, and would be restricted to daylight hours. Therefore, the disturbance would be temporary and would not be concentrated in one area for the entire 3-month construction period, and the sensitive noise

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receivers would not all be affected at the same time. Area residents may also experience daily noise from trucks hauling materials to and from the project site and the disposal area. However, this impact would be temporary and would be spaced out over the daily hours of construction.

Operation of the pumping stations may also generate noise due to pump mechanics and water outfalls to the lake, but this would be minimal and comparable to the existing operation of temporary pumps during high water periods and storm events. Pumps would only operate when necessary, which would likely be a few months out of each year at most.

To mitigate for any potential noise impacts, the City would inform residents of the time and duration of project activities. All activities would conform to the set hours of 7:00 a.m. to 7:00 p.m., as dictated by City ordinance. Construction and permanent pumping equipment would be kept in good repair to ensure that proper noise muffling is maintained. Appropriate protective gear would be required to ensure the hearing protection of project workers.

### **Alternative 3 – Elevating and Floodproofing Structures**

Noise associated with Alternative 3 would be limited to construction noise emitted by construction equipment. Because this alternative would occur over several months to years, residents would be subjected construction noise during that period. Construction would also take place close to residences.

Noise-sensitive receivers in the project area include all of the homes in the Belle Isle area. To mitigate for any potential noise impacts, the City would inform residents of the time and duration of project activities. All activities would conform to the set hours of 7:00 a.m. to 7:00 p.m., as dictated by City ordinance. Construction and permanent pumping equipment would be kept in good repair to ensure that proper noise muffling is maintained. Appropriate protective gear would be required to ensure the hearing protection of project workers.

### **3.4.2 Public Services and Utilities**

The project area includes the roadways of Nishishin Trail, Nishishin Trail Northeast, Pocahontas Drive, and Tecumseh Avenue. The Belle Isle area is serviced by 12- to 24-inch storm sewer lines throughout the neighborhood; these lines outlet to Lake Monona in various open locations such as Tecumseh Park. There are currently two 12-inch storm sewer pipes within Tecumseh Park. There are also two 3-inch pipes even with the ground surface that provide drainage from the south dead end of Nishishin Trail Northeast.

In addition, there are sanitary sewer lines in the project area. In the past, sanitary sewer backup has also occurred in conjunction with flooding and high water levels in the Belle Isle area. Flooded basements contribute to sanitary sewer problems by causing inflow and infiltration of stormwater into the sanitary system. Gas, telephone, and water lines are present within area roadways, and overhead electric lines serve the neighborhood.

### **Alternative 1 – No Action**

Under the No Action Alternative, periodic flooding would still occur, potentially affecting residential utilities and access to the Belle Isle neighborhood and associated roadways. Nearby residents would still experience flooding and sewer system backup.

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### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Under Alternative 2, approximately 20 feet of each of the existing 12-inch storm sewer pipes in Tecumseh Park (Pump Station #1), and the existing drainage grate in Pocahontas Drive, would be removed to make way for the catch basin, pump station, and new 12-inch discharge pipe. The existing 3-inch drainage pipes and timber curb at Nishishin Trail Northeast (Pump Station #2) would be removed to make way for the pump station, new drainage pipes, and concrete discharge flume. This would help to decrease the overburden on existing drainage systems and the subsequent infiltration of the sanitary sewer, which currently results in flooding and sewer system backup during significant storm events and periods of high water. No other utilities would be affected by this alternative.

### **Alternative 3 – Elevating and Floodproofing Structures**

Alternative 3 would reduce flooding, helping to decrease the overburden on existing drainage systems and the subsequent infiltration of the sanitary sewer, which currently results in flooding and sewer system backup during significant storm events and periods of high water. Utilities directly serving residences such as water, sewer, telephone, and electricity may also require relocation as a result of this alternative.

#### **3.4.3 Traffic and Circulation**

Pocahontas Drive and Nishishin Trail are parallel east and west routes, and Tecumseh Avenue bisects these two roads, running north and south. All are two-lane local roadways with a gravel base and asphalt overlay. The intersection of Tecumseh Avenue and Pocahontas Drive, and Nishishin Trail Northeast, show obvious signs of distress from periods of standing water (see photographs in Appendix A).

Nishishin Trail and Pocahontas Drive are the only points for motor vehicle access available to Belle Isle residents (except for boats, which use the channels). Tecumseh Avenue crosses the canals and connects the Belle Isle neighborhood to “mainland” Monona.

### **Alternative 1 – No Action**

Under the No Action Alternative, no permanent flood mitigation activities would occur. The roadways would continue to deteriorate as a result of periods of standing water.

### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Under Alternative 2, construction would occur at the Pocahontas Drive/Tecumseh Avenue intersection for up to 15 days during total project construction. This would be necessary to construct the pumping station, and also to reconstruct the roadway to provide positive drainage to the storm sewer inlets that feed into the pump station. This would be achieved by removing the asphalt and reshaping the gravel base. One lane at a time would be closed to ensure that the street can remain open to traffic, and access to all residences would be maintained during construction. In addition, the south end of Nishishin Trail Northeast would also be reconstructed in the same manner described above, to provide positive drainage to Pump Station #2. This is a

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dead end road, and no driveways exist in the area proposed for reconstruction, so access would not be affected by this part of the project and lane closures would not necessary.

### **Alternative 3 – Elevating and Floodproofing Structures**

Existing roadways and traffic circulation would not be affected by Alternative 3. Roadway access would be maintained throughout construction. This alternative does not include roadway improvements, so existing distress would not be mitigated and roadways may continue to flood.

#### **3.4.4 Environmental Justice (EO 12898)**

EO 12898 requires Federal agencies to make environmental justice part of their mission. Agencies are required to identify and correct programs, policies, and activities that have disproportionately high and adverse human health or environmental effects on minority and low-income populations. EO 12898 also tasks Federal agencies with ensuring that public notifications regarding environmental issues are concise, understandable, and readily accessible. Socioeconomic and demographic data were studied to determine if a disproportionate number of minority or low-income populations have the potential to be adversely affected by the alternatives.

According to 2000 Census data, the project area has a minority population of less than 1 percent and a low-income population of 1.3 percent. None of the alternatives would result in a disproportionate effect on minority or low-income populations.

#### **3.4.5 Public Health and Safety**

Safety and security issues considered in this analysis include the health and safety issues of the area residents and the public at-large, and the protection of personnel involved in activities related to the implementation of the proposed project. Existing access for emergency vehicles is provided to the project area via existing roads: Tecumseh Avenue, Nishishin Trail, Nishishin Trail Northeast, and Pocahontas Drive.

EO 13045, Protection of Children, requires Federal agencies to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. Persons of all ages reside in the Belle Isle neighborhood, including 28 children under the age of 17 (U.S. Census Bureau, 2000).

### **Alternative 1 – No Action**

Under the No Action Alternative, the potential for future flooding of basements and backup of sanitary storm sewers would remain. Residents would also be susceptible to injury or negative health impacts due to unsanitary conditions following flooding, including the significant and widespread health and safety risk to residents who experience raw sewage backup into their homes. In addition to floodwaters entering homes and sewer system backups, the road surface on Pocahontas Drive and Nishishin Trail Northeast is frequently inundated, undermining the road surface and creating a public-safety hazard by restricting emergency access for police, fire, and ambulance vehicles.

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Since the No Action Alternative does not involve the employment of personnel to perform the project activities, there would be no potential risks to the personal safety of project workers.

### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Under Alternative 2, all project activities would be performed using qualified personnel trained in the proper use of the appropriate equipment, including safety precautions. In addition, all activities would be conducted in accordance with OSHA regulations.

Additional protection will be ensured at the project construction site by the use of cautionary signage and protective fencing. Implementation of Alternative 2 would increase the capacity of the storm sewer system. This would reduce the risk of injury and negative health impacts to all residents, including children, as a result of flooding and storm sewer backup.

This alternative would also require the reconstruction of portions of Pocahontas Drive/Tecumseh Avenue. During construction, one lane at a time would be closed to ensure that the street would remain open to local traffic and emergency vehicles, and access to all residences would be maintained during construction.

Children would not be disproportionately affected by Alternative 2; therefore, this alternative is in compliance with EO 13045.

### **Alternative 3 – Elevating and Floodproofing Structures**

Under Alternative 3, all project activities would be performed using qualified personnel trained in the proper use of the appropriate equipment, including safety precautions. In addition, all activities would be conducted in accordance with OSHA regulations.

Additional protection will be ensured at the project construction sites by the use of cautionary signage and protective fencing. Implementation of Alternative 3 would increase the capacity of the storm sewer system. This would reduce the risk of injury and negative health impacts to all residents, including children, as a result of flooding and storm sewer backup.

Implementation of Alternative 3 would remove homes from the path of floodwaters, and would protect them from damage. This would reduce the risk of injury and negative health impacts to all residents, including children, as a result of flooding and storm sewer backup.

Children would not be disproportionately affected by Alternative 3; therefore, this alternative is in compliance with EO 13045.

## **3.5 CULTURAL RESOURCES**

In addition to review under NEPA, consideration of impacts to cultural resources is mandated under Section 106 of the National Historic Preservation Act (NHPA), as amended, and implemented by 36 CFR Part 800. Requirements include identification of significant historic properties that may be affected by the proposed project. Historic properties are defined as archaeological sites, standing structures, or other historic resources listed in or eligible for listing in the National Register of Historic Places (NRHP) (36 CFR 60.4).

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As defined in 36 CFR Part 800.16(d), the area of potential effect (APE) “is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if any such properties exist.”

In addition to identifying historic properties that may exist in the APE of the Proposed Action, FEMA must also determine, in consultation with the appropriate State Historic Preservation Office (SHPO), what effect, if any, the action would have on historic properties. Moreover, if the project would have an adverse impact on these properties, FEMA must consult with the SHPO on ways to avoid, minimize, or mitigate the adverse effect.

Consultation with the Wisconsin Historical Society (WHS) was initiated in January 2006. A series of correspondence followed (Appendix B), with WHS requesting an investigation of the land use history of the Belle Isle area to assist in its determination of the potential for encountering archaeological resources in the project area. WHS stated it had no architectural concerns in the Belle Isle area (Banker, personal communication, March 2006, Appendix B).

*Land Use History: Belle Isle Area, Monona, Wisconsin* was prepared by URS on behalf of FEMA in April 2006 (Bradley, 2006). This report was submitted to WHS and also the Ho-Chunk Nation, which was thought to have utilized the Belle Isle area in the past. The report concluded that although the project area was likely utilized, but not occupied by, the Ho-Chunk Nation, the possibility of the proposed project resulting in impact to significant archaeological resources was not likely due to later land disturbances and fill activities, including dredging of the canals. WHS reviewed the report and concurred with the determination that the proposed project would result in no effect to historic properties (Appendix B). The Ho-Chunk Nation did not offer any comments on the report.

### **Alternative 1 – No Action**

Under the No Action Alternative, there would be no effects to cultural resources because no construction would occur.

### **Alternative 2 – Installation of Two Pump Stations (Proposed Action)**

Based on research and the land use history report, it is not anticipated that any NRHP-eligible or listed properties exist within the proposed project area. However, it is always possible that archaeological material will be accidentally discovered during construction. If archaeological material should be discovered, work in the vicinity would be halted, and FEMA and WHS would be contacted. If human bone should be discovered, work would halt, and FEMA, WHS, and the Burial Sites Preservation Office would be immediately contacted.

### **Alternative 3 – Elevating and Floodproofing Structures**

Under Alternative 3, it is not anticipated that any NRHP-eligible or listed properties exist within the project area. However, it is always possible that archaeological material will be accidentally discovered during construction. If archaeological material should be discovered, work in the vicinity would be halted, and FEMA and WHS would be contacted. If human bone should be discovered, work would halt, and FEMA, WHS, and the Burial Sites Preservation Office would be immediately contacted.

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### **3.5.1 Tribal Coordination**

Consultation letters were sent in November 2005 to all federally recognized tribes in the State of Wisconsin (listed in Section 7.1), and follow-up letters were sent in January 2006. As referenced in Section 3.5, the *Land Use History: Belle Isle Area, Monona, Wisconsin* report was also sent directly to the Ho-Chunk Nation in April 2006. The tribe was asked to provide comments by May 24, 2006, or FEMA would assume it had no comment. No comment from the Ho-Chunk Nation has been received to date. No other tribes have provided comment on the proposed project.

Consultation with the SHPO was addressed as discussed above in Section 3.5. The American Indian community will continue to be notified of project progress, and will be notified of EA availability.

### **3.6 IMPACT SUMMARY MATRIX**

This following matrix summarizes potential environmental impacts for each alternative by resource area, including geology, seismicity, and soils; water resources and water quality; floodplain management; air quality; terrestrial and aquatic environment; wetlands; threatened and endangered species; hazardous materials; zoning and land use; visual resources; noise; public services and utilities; traffic and circulation; environmental justice; safety and security; and cultural resources.

**Table 1: Impact Summary Matrix**

	<b>Alternative 1 – No Action</b>	<b>Alternative 2 – Installation of Two Pump Stations</b>	<b>Alternative 3 – Elevating and Floodproofing Structures</b>
<b>Description of Alternative</b>	<ul style="list-style-type: none"> <li>FEMA funds would not be used to reduce flooding and sanitary sewer backup in Belle Isle</li> </ul>	<ul style="list-style-type: none"> <li>Installation of Pump Station #1 4 feet below ground surface, with a 24-inch grated opening</li> <li>Installation of 44 linear feet of 12-inch pipe for Pump Station #1</li> <li>Installation of Pump Station #2 10 feet below ground surface, with a 4-inch discharge pipe</li> <li>Installation of a 3-foot modular block wall at Pump Station #2 that would extend 7.5 feet out from each side of intake grate</li> <li>Installation of a spillway, concrete wall and slab at a 5:1 slope for Pump Station #2. Spillway would be constructed with half of a 4-foot by 6-foot concrete box culvert set on 20 inches of new riprap.</li> <li>Reconstruction of portions of Pocahontas Drive and Nishishin Trail Northeast</li> </ul>	<ul style="list-style-type: none"> <li>Elevation of up to 105 residential structures to 850 feet (above 100-year flood elevation)</li> <li>Continued wet floodproofing, or abandonment of existing basements</li> </ul>
Geology, Seismicity, and Soils	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>Temporary increase in surface soil erosion and compaction during construction</li> <li>Excavation of 2,050 CF of material</li> <li>Fill of 1,500 CF of material</li> </ul>	<ul style="list-style-type: none"> <li>Temporary increase in surface soil erosion and compaction during construction</li> <li>Limited excavation</li> </ul>

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Potential Impacts	No Action (Alternative 1)	Alternative 2 – Installation of Two Pump Stations	Alternative 3 – Elevating and Floodproofing Structures
Water Resources and Water Quality	<ul style="list-style-type: none"> <li>Floodwater would still present potential for water contamination from increased sedimentation and sanitary sewer backup</li> </ul>	<ul style="list-style-type: none"> <li>Minor sedimentation impact as a result of construction grading</li> <li>Risk of sedimentation from erosion, and the risk of water pollution from backed up sanitary sewers would be reduced</li> </ul>	<ul style="list-style-type: none"> <li>Minor sedimentation impact as a result of construction grading</li> </ul>
Floodplain Management	<ul style="list-style-type: none"> <li>No impacts</li> </ul>	<ul style="list-style-type: none"> <li>Pump stations constructed within 100-year floodplain</li> <li>Proposed excavation to exceed fill, so floodplain storage not negatively affected</li> <li>100-year flood elevation of Lake Monona not affected</li> </ul>	<ul style="list-style-type: none"> <li>Structures elevated above 100-year flood elevation</li> </ul>
Air Quality	<ul style="list-style-type: none"> <li>No impacts</li> </ul>	<ul style="list-style-type: none"> <li>Temporary emissions from heavy construction equipment</li> </ul>	<ul style="list-style-type: none"> <li>Temporary emissions from heavy construction equipment</li> </ul>
Terrestrial and Aquatic Environment	<ul style="list-style-type: none"> <li>No immediate impact</li> </ul>	<ul style="list-style-type: none"> <li>Temporary impact during construction due to potential sedimentation with replacement of riprap and construction of pump stations.</li> <li>Temporary minor impact to birds with habitat loss</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> <li>Temporary minor impact to birds with habitat loss</li> </ul>
Wetlands	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>
Threatened and Endangered Species	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>
Hazardous Materials	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>Potential impact from hazardous household and building materials</li> </ul>
Noise	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>Temporary impacts on surrounding residences due to construction noise</li> </ul>	<ul style="list-style-type: none"> <li>Temporary impacts on surrounding residences due to construction noise</li> </ul>
Public Services and Utilities	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>Removal of 20 feet of two stormwater discharge pipes in Tecumseh Park</li> <li>Addition of 12-inch storm sewer pipe from Pump Station #1</li> <li>No impacts to other utilities</li> </ul>	<ul style="list-style-type: none"> <li>Possible relocation of household utilities and hookups due to relocation of first floor</li> </ul>

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Potential Impacts	No Action (Alternative 1)	Alternative 2 – Installation of Two Pump Stations	Alternative 3 – Elevating and Floodproofing Structures
Traffic and Circulation	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>One lane of traffic on Pocahontas Road would be closed for up to 15 days during construction</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>
Environmental Justice	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impact</li> </ul>
Public Health and Safety	<ul style="list-style-type: none"> <li>Future flooding could result in health and safety risks to surrounding residents</li> <li>No potential risks to the personal safety of project workers</li> </ul>	<ul style="list-style-type: none"> <li>Increased pumping capacity would control water and prevent health and safety risks due to flooding and sanitary sewer backup</li> </ul>	<ul style="list-style-type: none"> <li>Some sanitary sewer backup may still occur, though not to the degree of existing occurrences</li> </ul>
Cultural Resources	<ul style="list-style-type: none"> <li>No impact</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to historic structures or archaeological resources are anticipated</li> <li>No concerns raised by American Indians</li> </ul>	<ul style="list-style-type: none"> <li>No impacts to historic structures or archaeological resources are anticipated</li> <li>No concerns raised by American Indians</li> </ul>

Cumulative impacts are those effects on the environment that result from the incremental effect of the action when added to past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time.

Implementing the proposed project is not anticipated to promote floodplain development. The City of Monona has an existing Floodplain District Ordinance that prohibits development within the floodway of Lake Monona. In addition, the City is actively investigating actions to further protect and enhance the floodplain area of Belle Isle and other neighborhoods dealing with similar flood and high water issues. A more controlled and efficient system would also reduce erosion and sedimentation impacts that result from emergency pumping, standing basins of floodwater, and overtopping of roads and basins.

The City currently has a project underway that consists of the construction of a sedimentation basin at the end of a large-diameter storm sewer outfall. This project is located at Lake Edge Park along Monona Drive in the northerly section of the City, approximately 2.5 miles northeast of the Belle Isle neighborhood. This project, in conjunction with the proposed action, would have a positive incremental effect on improving the water quality of Lake Monona.

As part of a future long-term solution, the City has secured a FEMA planning grant through the PDM program. This planning grant will be used to develop a floodproofing alternative analysis for the Belle Isle area. The study will identify the magnitude of potential damage from flooding and will include obtaining a digital terrain model and identifying vulnerable structures, such as those with basements and structures with electrical equipment that would be damaged by floodwaters. The alternative analysis will identify high-risk areas, prioritize floodproofing alternatives, estimate costs, and provide future recommendations (City of Monona, 2008).

The floodproofing alternative analysis is consistent with several of the proposed actions in the Dane County Draft Natural Hazard Mitigation Plan (Dane County, 2004). The following bulleted list summarizes the City's objectives to mitigate flood hazards within its jurisdiction.

- Decrease localized flooding on private property and roads through a coordinated approach of filling/raising of residential lots to minimize adjacent property flooding as a result of filling. Raising roads above the 100-year floodplain elevation and elevating private property to a level that allows drainage to the road.
- Work with agencies to explore opportunities to efficiently move water through Lake Monona by dredging at specific points.
- Minimize sanitary backups during periods of high water.
- Coordinate with local residents to get electrical equipment out of basements and above the 100-year floodplain elevation.
- Work with WDNR to update the 100-year floodplain elevation for Lake Monona based on current land uses.
- Encourage Dane County to conduct a dam-break analysis as part of the planned safety improvements of the Tenney Park Dam.

- Minimize flooding damages caused by high lake levels by lowering the lakes through a modification of Lake Mendota and Monona lake level orders, while balancing navigational and habitat interests.

One known potential project in the Belle Isle area is the channel restoration of the man-made canals (lagoons). The restoration project would entail dredging the canals to remove sediment that has accumulated over time. This restoration project would not address flooding issues in the Belle Isle area, but would increase recreational use of the canals (improved boat access) and would serve as a stormwater feature to add capacity for new sediment to accumulate.

Therefore, the proposed action would not have any significant cumulative impacts considering past, present, and reasonably foreseeable actions in the area.

The Ad Hoc Flood Mitigation Advisory Committee was appointed by the Monona City Council. This is an eight-member committee charged with identifying priorities for flood mitigation projects within the City. Meetings are held approximately every two 2 months, or more regularly as needed. The Committee has met eight times since June 2005, with the last meeting held on April 25, 2006. The proposed project is discussed regularly at these meetings (City of Monona, 2003).

The Belle Isle Neighborhood Association has also been active in development of this project. The association meets sporadically, but maintains a Web site containing links to project information, notices of upcoming meetings, and current news articles relating to the neighborhood or projects involving its surrounding waters (Belle Isle Neighborhood Association, 2005).

The proposed project has also been discussed at the Monona City Council meetings. All City Council meetings are open to the public and are also locally televised. Minutes from meetings are also available on the City of Monona Web site ([www.monona.wi.us](http://www.monona.wi.us)).

A public notice advertising the availability of the draft EA for public review has been prepared and is included in Appendix D. This notice will be provided to a local newspaper, and will also be available for review online at the FEMA Web site: <http://www.fema.gov/plan/ehp/envdocuments/ea-region5.shtm>. The public will be provided 30 days for comment on the draft EA. The FEMA Region V office will collect and compile comments submitted by the public before making a final environmental determination.

The following table summarizes the anticipated permitting and mitigation requirements for the proposed project alternatives.

**Table 2: Permits and Mitigation by Alternative**

Alternatives	Permit/Mitigation Requirements
<b>Alternative 1 – No Action</b>	<ul style="list-style-type: none"> <li>• No permits or mitigation measures are required.</li> </ul>
<b>Alternative 2 – Installation of Two Pump Stations</b>	<ul style="list-style-type: none"> <li>• A seasonal restriction on construction would apply from February 1 through May 31 to protect nesting bald eagles in proximity to the project site. If it is determined by WDNR that the bald eagles’ nest is not active as of May 1, then construction can begin after May 1.</li> <li>• All permits will be complied with and copies of the permits will be submitted to the State with the required quarterly reports.</li> <li>• Work in and adjacent to navigable waters, including structures at the existing outfall and the replacement of riprap, is covered under a WDNR Chapter 30 permit.</li> <li>• USACE non-reporting activity is covered under a LOP.</li> <li>• A dewatering permit would be obtained for proposed project grading.</li> <li>• Erosion would be minimized through the use of BMPs, including protecting erodible surfaces (through mechanisms such as silt fences) and not working during precipitation events.</li> <li>• Exposed soils would be seeded. Native/non-invasive species would be used for re-seeding.</li> <li>• Compacted soils would be loosened by disking or raking.</li> <li>• Vehicle engines would be kept in good repair and turned off while not in use to prevent air emissions.</li> <li>• Any hazardous materials discovered, generated, or used during implementation of the proposed project would be disposed of and handled by the City, in accordance with applicable local, State, and Federal regulations.</li> <li>• Vegetation would be replanted with native species or species comparable to existing vegetation.</li> <li>• To mitigate for any potential noise impacts, the City would inform residents of the time and duration of</li> </ul>

Alternatives	Permit/Mitigation Requirements
	<p>project activities.</p> <ul style="list-style-type: none"> <li>• All activities would conform to the hours of construction set by the City (7:00 a.m. through 7:00 p.m., Monday through Saturday).</li> <li>• Appropriate gear would be required to protect the hearing of project workers.</li> <li>• All project activities would be performed using qualified personnel trained in the proper use of the appropriate equipment, including safety precautions.</li> <li>• All activities would be conducted in accordance with OSHA regulations.</li> <li>• Signing and fencing would be used to caution area residents about construction sites.</li> <li>• If artifacts or human remains are encountered during construction, work in the vicinity would be halted, and FEMA, WHS, and the Burial Sites Preservation Office (as applicable) would be immediately contacted.</li> </ul>
<p><b>Alternative 3 – Elevation and Floodproofing of Structures</b></p>	<ul style="list-style-type: none"> <li>• A seasonal restriction on construction would apply from February 1 through May 31 to protect nesting bald eagles in proximity to the project site. If it is determined by WDNR that the bald eagles’ nest is not active as of May 1, then construction can begin after May 1.</li> <li>• Erosion would be minimized through the use of BMPs, including protecting erodible surfaces (through mechanisms such as silt fences) and not working during precipitation events.</li> <li>• Exposed soils would be seeded.</li> <li>• Compacted soils would be loosened by disking or raking.</li> <li>• Vehicle engines would be kept in good repair and turned off while not in use to prevent air emissions.</li> <li>• Any hazardous materials discovered, generated, or used during implementation of the proposed project would be disposed of and handled by the City, in accordance with applicable local, State, and Federal regulations.</li> <li>• Vegetation would be replanted with native species or species comparable to existing vegetation.</li> </ul>

Alternatives	Permit/Mitigation Requirements
	<ul style="list-style-type: none"> <li>• To mitigate for any potential noise impacts, the City would inform residents of the time and duration of project activities.</li> <li>• All activities would conform to the hours of construction set by the City (7:00 a.m. through 7:00 p.m., Monday through Saturday).</li> <li>• Appropriate gear would be required to protect the hearing of project workers.</li> <li>• All project activities would be performed using qualified personnel trained in the proper use of the appropriate equipment, including safety precautions.</li> <li>• All activities would be conducted in accordance with OSHA regulations.</li> <li>• Signing and fencing would be used to caution area residents about construction sites.</li> <li>• If artifacts or human remains are encountered during construction, work in the vicinity would be halted, and FEMA, WHS, and the Burial Sites Preservation Office (as applicable) would be immediately contacted.</li> </ul>

## 7.1 CONSULTATIONS

### 7.1.1 Agency Coordination

Consultation letters were sent to the following agencies in February 2006:

- WDNR, Bureau of Waters
- WDNR, Bureau of Endangered Resources
- WHS/SHPO
- USACE
- USFWS

Agencies were sent a summary of the project and an update on the NEPA process. Responses are incorporated into the EA and are included in Appendix B.

### 7.1.2 Distribution

The following will be notified of availability of the Draft EA:

#### Federal Agencies

USACE

U.S. Department of the Interior, USFWS

#### Tribes

Bad River Reservation

Forest County Potawatomi Community

Ho Chunk (Winnebago) Reservation

Lac Courte Oreilles Reservation

Lac Du Flambeau Reservation

Menomonee Reservation

Oneida Reservation

Red Cliff Reservation

Sokoagon Chippewa Community

St. Croix Reservation

Stockbridge-Munsee Community

**State, County, and Local Agencies**

Wisconsin Emergency Management

WDNR

WHS

Capitol Area Regional Planning Commission

Dane County

City of Monona

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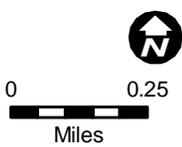
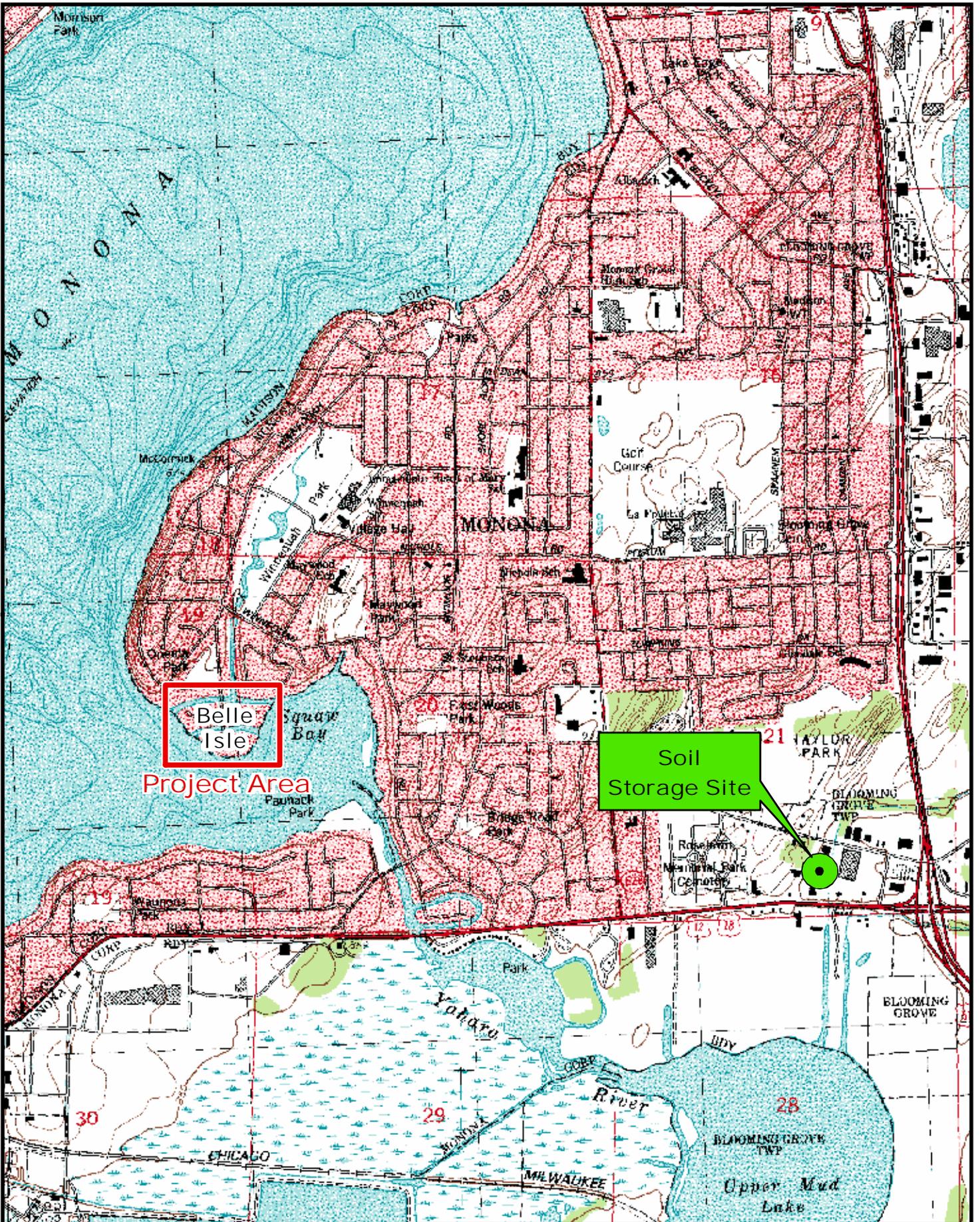
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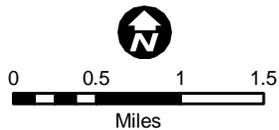
## Figures



Source:  
Wisconsin DNR,  
ESRI Data

Figure 1  
Belle Isle Pump Station  
Monona, Wisconsin  
Regional Location

DRN BY: ES	DATE: 1/12/06	PROJECT NO. 15702306.00100
CHKD BY: XX	DATE: 1/12/06	



Source:  
Wisconsin DNR,  
ESRI Data

Figure 2  
Belle Isle Pump Stations  
Monona, Wisconsin  
Project Location

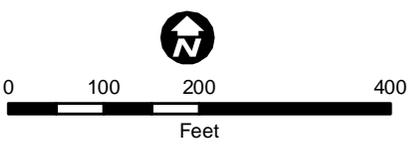
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Proposed Pump Station #1

Proposed Pump Station #2

Street Reconstruction



Source:  
Wisconsin DNR,  
ESRI Data

Figure 3  
Belle Isle Pump Stations  
Monona, Wisconsin  
Pump Station Locations

DRN BY: SB	DATE: 1/12/06	PROJECT NO. 15702306.00100
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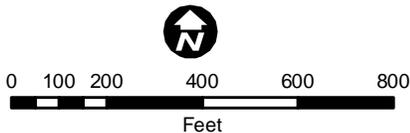
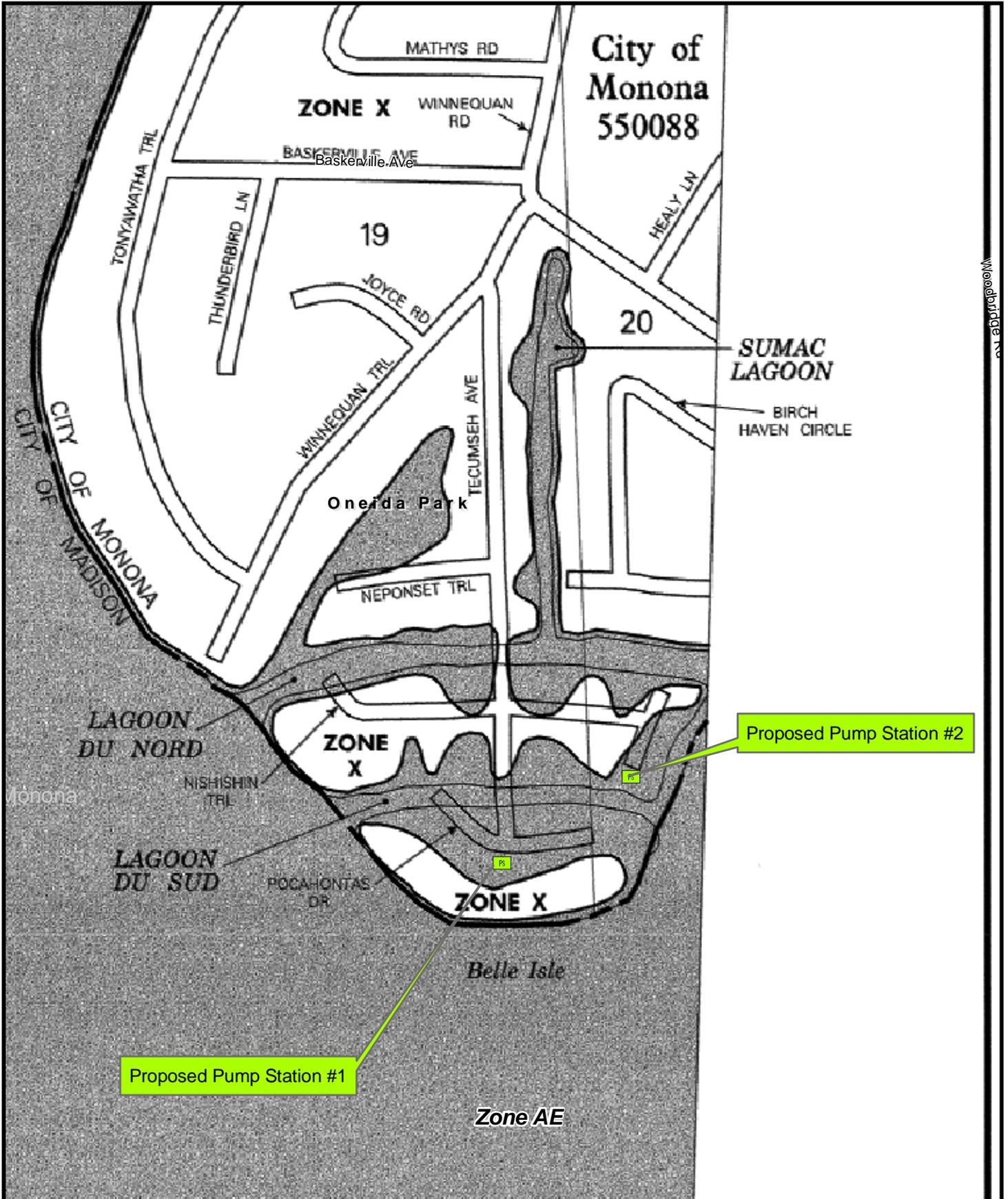
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Source:  
Wisconsin DNR,  
ESRI Data

Figure 4  
Belle Isle  
Pump Stations  
Monona, Wisconsin  
Proposed Alternative

DRN BY: SB	DATE: 10/16/07	PROJECT NO. 15702306.00100	FIG. NO.
CHKD BY: XX	DATE: 10/25/07		



Source:  
Wisconsin DNR,  
ESRI Data, FEMA

Figure 5  
Belle Isle Pump Stations  
Monona, Wisconsin  
100-year Floodplain

DRN BY: ES	DATE: 7/7/06	PROJECT NO. 15702306.00100
CHKD BY: JL	DATE: 7/7/06	