



CITY OF SHEBOYGAN
SPECIAL USE AND SITE PLAN REVIEW
APPLICATION

Fee: **\$100**

Review Date: _____

Read all instructions before completing. If additional space is needed, attach additional pages.

SECTION 1: Applicant/ Permittee Information

Name (Ind., Org. or Entity) Wisconsin Power and Light Company	Authorized Representative Rick Zimmerman - Alliant Energy	Title Manager - Resource Development	
Mailing Address 4902 N. Biltmore Ln	City Madison	State WI	ZIP Code 53718
Email Address richardzimmerman@alliantenergy.com		Phone Number (incl. area code) (608) 458-3226	

SECTION 2: Landowner Information (complete these fields when project site owner is different than applicant)

Name (Ind., Org. or Entity) NA	Contact Person	Title	
Mailing Address	City	State	ZIP Code
Email Address		Phone Number (incl. area code)	

SECTION 3: Architect Information

Name NA			
Mailing Address	City	State	Zip
Email Address		Phone Number (incl. area code)	

SECTION 4: Contractor Information

Name NA			
Mailing Address	City	State	Zip
Email Address		Phone Number (incl. area code)	

SECTION 5: Certification and Permission

Certification: I hereby certify that I am the owner or authorized representative of the owner of the property which is the subject of this Site Plan Review Application. I certify that the information contained in this form and attachments are true and accurate. I certify that the project will be in compliance with all conditions. I understand that failure to comply with any or all of the provisions of the permit may result in permit revocation and a fine and/or forfeiture under the provisions of applicable laws.

Permission: I hereby give the City permission to enter and inspect the property at reasonable times, to evaluate this notice and application, and to determine compliance with any resulting permit coverage.

Name of Owner/Authorized Representative (please print) Rick Zimmerman	Title Mgr - Resource Development	Phone Number 608-458-3226
Signature of Applicant 		Date Signed 9/6/2023

Complete application is to be filed with the Department of City Development, 828 Center Avenue, Suite 208. To be placed on the agenda of the City Plan Commission, application must be filed three weeks prior to date of meeting – check with City Development on application submittal deadline date. Applications will not be processed if all required attachments and filing fee of \$100 (payable to the City of Sheboygan) are not submitted along with a complete and legible application. Application filing fee is non-refundable.

SECTION 6: Description of the Subject Site/Proposed Project

Parcel No. 59281321485, 59281321460, 59281321170, 59281321160	Zoning Classification UI - Urban Industrial
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Name of Proposed/Existing Business:	Edgewater BESS
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Address of Property Affected:	near 739 Washington Ave, Sheboygan WI 53081
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New Building: <input type="checkbox"/>	Addition: <input type="checkbox"/>	Remodeling: <input type="checkbox"/>
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SECTION 7: Brief Description of Type of Structure

(See attached narrative)

SECTION 8: Description of EXISTING Operation or Use

(See attached narrative)

SECTION 9: Description of the PROPOSED Operation or Use

(See attached narrative)

Office Use Only

ACTION BY CITY PLAN COMMISSION

DATE OF MEETING: _____

APPROVED: _____ CONDITIONALLY APPROVED: _____ DENIED: _____

CONDITIONS

[illegible]

SIGNATURE: _____

Director or Representative
Department of City Development

DATE: _____

NOTES

Permit may be revoked without notice if misrepresentation of any of the above information or attachments is found to exist.

Permit shall expire within six (6) months from date of approval unless substantial work has commenced.

Permit is null and void if issued in error. It is understood that any permit issued on this application will not grant any right or privilege to erect any structure or to use any permits for any purpose that is prohibited by the City Zoning Ordinance or any other state or local laws.

Changes in the plans or specifications submitted in the original application shall not be made without prior written approval of the City Plan Commission.

Check sidewalk grades from City Engineering Department with finished site grade.

A. Name of project/development

Wisconsin Power and Light Company (WPL) plans to construct, own, and operate a 99 MW_{ac} alternating current ("AC"), 4-hour battery energy storage system ("BESS") at the site of WPL's Edgewater Generating Station ("Edgewater BESS" or the "BESS Project") in the City of Sheboygan, Sheboygan County, Wisconsin. Appendix A includes several figures representing the BESS Project area and existing land use:

- **Figure 4.1.1 General Project Area**Figure E-1. Conceptual BESS Layout
- **Figure 4.1.3. Topographic Map**
- **Figure 8.3.2. Wetland and Waterway Crossings**
- **Figure 4.1.7.4. Land Cover**
- **Figure 4.1.7.5. Flood Insurance Rate Map**
- **Figure 4.1.8.1. Zoning Map**

B. Summary of general operation and proposed use:

- Description of existing use

The entirety of the 9.4-acre BESS Project Area is currently developed or was previously graded, graveled, and used for material storage and laydown yards for the adjacent Edgewater Generating Station. The BESS Project Area contains 7.3 acres of naturalized grassy fields dominated by smooth brome and reed canary grass, approximately 0.4 acres of upland forest, 0.1 acre of non-forested wetland, 0.1 acre of open water, and 1.5 acres of developed non-residential land. Despite some of the soils being classified as Prime Farmland if drained within the BESS Project Area, existing and previous land uses will not result in loss of prime farmland.

A macro-corridor is shown in this application which represents the area where a collector line will be placed to connect the proposed BESS system with the existing Edgewater Substation. The macro-corridor is comprised of 13.3 acres of developed land associated with the Edgewater Generating Station. There is no grassland or upland forest present within the macro-corridor, however, based on aerial imagery, there appears to be two non-forested wetland areas, totaling 0.5 acres associated with stormwater/surface water run-off from the surrounding industrially developed land.

Because the Edgewater Generating Station has already developed much of the Project Area, the BESS Project will not significantly alter the land cover impacts from the development of the Edgewater Generating Station.

- Description of proposed use (indoor, outdoor, etc.), why was this site selected?
 - Description of proposed use:

The BESS Project will consist of battery cabinets connected to pad-mount inverter/transformer skids, which would then connect to switchgear, next to a common bus, which will finally connect with the existing Edgewater Generating Station substation located to the east of the Project Area. Additions to the existing substation will be needed to enable the connection of the 34.5kV battery to the 345kV substation. In addition to these physical components, the BESS Project will use intelligent battery software and computerized control systems to help determine when to store energy to provide reserves or to release it to the grid.

- Why was this site selected?

This BESS Project is planned in coordination with the Edgewater Generation Plant retirement. Siting Edgewater BESS at WPL's existing generation facilities allows WPL to accelerate the addition of resources by taking advantage of available land and substation infrastructure. WPL has designed Edgewater BESS to allow it to be charged and discharged directly to and from the grid. This provides WPL the flexibility to operate Edgewater BESS to maximize capacity accreditation, particularly in the forthcoming winter seasons, while providing energy arbitrage and ancillary service market opportunities when the BESS Project is not needed for capacity accreditation.

In addition, WPL chose the Edgewater Generating Station site to minimize costs by maximizing economies of scale and by taking advantage of enhanced customer benefits available in the recently enacted Inflation Reduction Act ("IRA" or "the Act"). Under the IRA, WPL's customers will be able to receive investment tax credits ("ITCs") for Edgewater BESS including a ten-percentage point ITC "add-on" due to that project being in an "energy community" as defined by the Act.

- All services, products, etc. to be provided

Edgewater BESS will provide solar power generation, battery storage, and connect to the existing Edgewater Generating Station,

- Projected number of residents, employees, and/or daily customers

There will be no permanent, on-site employees once construction and installation has been completed. Alliant Energy employees will then visit approximately two times per month. Construction will require managers, heavy equipment operators, licensed journeymen electricians, and laborers, and WPL expects to use in-state union labor to the extent possible to construct and install the BESS Project. WPL estimates that, during peak construction periods, approximately 20 to 40 workers will be needed to construct the BESS Project. Laborers that install battery containers and power conversion systems will constitute most of the personnel required to construct the BESS Project. Another large group of workers will be electricians installing underground conduits and installing and terminating cables. The BESS will be monitored remotely, and staff will be dispatched for scheduled and unscheduled maintenance.

- Proposed number of dwelling units, floor area, landscape area, and parking area expressed in square feet and acreage to the nearest one-hundredth of an acre

The BESS Project Area is located on approximately 23.3 acres. This acreage includes a macro corridor located on the east side of Lakeshore Drive to be used for a collector line which connects the BESS to the Edgewater Generating Station substation. The BESS Project Area is comprised of a northern battery placement and southern battery placement separated by a railway corridor, which WPL may connect with an access road.

- Description of proposed building and all new site improvements (square footage of new and existing structure(s), traffic, ingress/egress, parking, sidewalk, retaining walls, storm drainage, landscaping, lighting, dumpster enclosure, screening of mechanicals, etc.)

The BESS Project takes advantage of the existing parking area at the adjacent substation, and the Project Area will include roughly 4.3 acres of impervious surface. This additional impervious surface will require the construction of two stormwater management ponds located adjacent to the BESS Project and will be approximately 0.5 acres (21,800 ft²) in total size and contain both an inlet and outlet at set elevations. Stormwater run-off from the impervious surfaces will flow to a pond via swales and grading. A proposed stormwater pond has been preliminarily sized to cumulatively store approximately two acre-feet of water. The stormwater pond will be designed to mitigate adverse impacts of the BESS Project in terms of water quality and peak run-off rate. Further details on stormwater management, including but not limited to the type of stormwater management pond employed for the BESS Project (wet versus dry detention, infiltration basin, etc.) will be completed during the detailed civil engineering design process. Additional landscaping will consist of re-vegetation of grasses. Existing berms partially block views of the facility and project lighting at night is not anticipated.

- A written description of the proposed general orientation, design, arrangement, texture, material and color of the building or structure and how it is compatible with the development and redevelopment in and around the area

WPL examined available BESS technologies and determined that its needs could be met through the following equipment:

- SYL/Risen Golden Sigma 340 kWh rated modular Lithium-Iron Phosphate energy storage in a compact outdoor-rated enclosure; and
- Power Electronics Freemaq PCSM power conversion systems ("PCS").

BESS technology is continually advancing in both manufacturing and efficiency. Accordingly, WPL will determine the exact make and model of the BESS at the time of ordering. For purposes of this application, WPL conducted its preliminary engineering using the equipment identified above.

The SYL/Risen Golden Sigma energy storage enclosure includes a preinstalled thermal management solution, battery modules, and fire suppression system. The BESS will require approximately eight utility scale medium voltage PCS.

The size of the energy storage enclosures (or cabinets) used for preliminary engineering are 4.9 feet wide, 7.6 feet tall, and 4.5 feet deep. The inverters, which are part of the PCS, are 21.3 feet wide, 7.2 feet tall, and 6.6 feet deep. The enclosures that house the battery components and auxiliary systems are not designed for personnel entry.

The PCS consists of an inverter with an integral medium voltage transformer. The transformers would connect to switchgear, then to a common bus, which will finally connect directly to the Edgewater Generating Station collector substation. Equipment and structures would be mounted on concrete slab or pier foundations.

All of the BESS equipment is built to withstand typical weather events such as high winds, hail, and snow that is common to the Project Area. The selected equipment is designed with a minimum operating ambient temperature range of minus 30 to 55°C (minus 22 to 133°F) and thus is rated for the Project Area environment. The BESS Project is bordered by the existing Edgewater Generating Station to the east, the Sheboygan Regional Wastewater Treatment Facility to the northeast, VPI Corporation and Watry Industries, LLC to the north, and residential homes to the west. The generating station, treatment facility, and industrial businesses have a long-standing presence in this community; therefore, the BESS Project will be compatible with surrounding infrastructure.

An explanation of any interior and/or exterior renovations

Interior and/or exterior renovations are not a component of this project.

- Is access appropriate and is there sufficient customers/resident off-street parking?

Access to the Project Area is appropriate, and customer/resident off-street parking is not necessary. Driveway permits will be applied to gain access to the Project Area from both Washington Avenue and CTH EE.

- Proposed signage

To identify the site, a sign with the address will be installed.

- Project timeline and estimated value of project

Site work could begin as early as the second quarter of 2024, but the start date will be contingent on receipt of regulatory approvals and local permitting approvals. An estimated construction schedule is provided in Table 1 below; however, a more refined schedule will be prepared as the permitting and engineering processes proceed.

Table 1: Estimated Project Construction Schedule

Activity	Start	End
Start of Construction	Q3 2024	
Site Preparation (Erosion Control and Tracking Pads)	Q3 2024	Q4 2024
Vegetation Removal	Q3 2024	Q3 2024
Access Roads	Q3 2024	Q4 2024

Install BESS Foundation	Q3 2024	Q4 2024
Install Battery Containers and Power Conversion System	Q1 2025	Q1 2025
BESS Electrical	Q1 2025	Q2 2025
Commissioning	Q1 2025	Q3 2025
In-Service Date		Q3 2025

The BESS Project is expected to operate for approximately twenty years based on current forecasts for available equipment. At the end of the BESS Project's useful life, WPL will assess whether to cease operations and decommission the project or to augment/replace equipment to extend the life of the project, and continue the beneficial use of the existing GIA, substation equipment, roads, and siting studies, which will have already been paid for.

- Compatibility of the proposed use and design with adjacent and other properties in the area.

The BESS Project Area is located within the City of Sheboygan and are zoned as Urban Industrial ("UI"). The UI District promotes both large and small scale industrial and office development. The primary feature of this district is that it is geared to indoor industrial activities that are not typically associated with high levels of noise, soot, odors, or other potential nuisances to adjoining properties. All areas adjacent to the Project Area are also zoned as UI. Additionally, no development within the district shall have direct access to a local residential street or residential collector street to minimize disruption to residential areas.

- How will you ensure that the business will not become a nuisance to adjacent properties (i.e. parking, noise, smells, hours of operations, etc.)
 - Visual:

The BESS Project will not significantly alter the visual impacts of the Edgewater Generating Station. The BESS Project Area is located approximately 500 feet from the nearest residences or public-access areas, and setbacks and tree screen buffers, combined with the generally industrial landscape of the Project Area, will reduce the visual impacts of the BESS Project. The BESS Project will be configured as a collection of steel shipping containers or other modular battery enclosures, which will be located adjacent to Lakeshore Drive. Visual simulations of the BESS area (Figures 1.1, 1.2, 2.1, 2.2, 2.3, 3.1, 3.2, 4.1, 4.2) are provided with this application.

- Noise:

WPL completed a pre-construction ambient sound survey and operational predictive assessment for the BESS Project. Predictive modeling analyses were completed to assess the sound expected from operation of the BESS Project. The sound signatures of the equipment were based on information for equipment similar to what is expected to be installed for the BESS Project.

As currently proposed, the BESS Project includes 64 blocks of BESS units with integrated HVAC equipment. The nearest residence (SR-151) to the BESS facility is approximately 577 feet west of

the current project design. The analyses demonstrate that the maximum expected daytime sound from project operation is 44.0 dBA at nearby residences. Nighttime noise is anticipated to be consistent with daytime noise levels due to the BESS operating during both daytime and nighttime hours.

The noise limit criteria for a wind energy system (adopted for this analysis) are outlined in Wisconsin Administrative Code chapter PSC 128. Under this regulation, the energy system must be operated in a manner that does not exceed 50 dBA during daytime hours and 45 dBA during seasonal nighttime hours (April 1 through September 30). A sound study was completed for the BESS Project which demonstrates that the sound expected at nearby residences, due to operation of the BESS facility, complies with this state standard, and will not exceed the 50 dBA daytime or 45 dBA nighttime limits as described in PSC128.

- Electromagnetic Field:

WPL did not conduct a study of the magnetic field strength of the underground collection lines for the BESS Project because of the project's proximity to the Edgewater Generating Station and the existing substation within this facility. However, the proposed underground collector system for the project is designed to be rated at 34.5 kV and will have a maximum of three feeders routed in parallel trenches, each 36 inches apart. The shielding by the metallic screen on the underground cables cancels out any electric field intensity that would be generated. Therefore, the addition of the three underground collection lines for the BESS Project are not expected to contribute to or increase the existing conditions within the area or result in adverse human effects. If it is determined during final engineering that overhead collector circuits will be required for the BESS Project, WPL will provide the locations for these facilities to the City of Sheboygan.

C. Submit TWO (2) copies of a property site plan drawing, which includes:

- A certified survey map showing existing property boundaries and improvements
- A map providing the following information:
 - The map and all its parts shall be clearly reproducible with a photocopier at a size of 11" X 17" and map scale not less than 1' = 600' with lot dimensions of the subject property provided and a graphic scale and north arrow
 - All lands for which the conditional use is proposed
 - All other lands within 100 feet of the boundaries of the subject property
 - The current zoning of the subject property and its environs (200 feet)
- A site plan (conforming to the requirements of Section 15.908(3) of the subject property as proposed for development):
 - Submit TWO (2) hardcopies of the site plan and ONE (1) 11" X 17" reduction of the site plan
 - Submit digital plans and drawings of the project by email, flash drive, etc.
 - Title block that provides all contact information for the petitioner and/or owner, if different
 - Full name and contact information of petitioner's engineers/surveyors/architects, or other design professionals used in the plan preparation
 - The date of the original plan and latest date of revision to the plan
 - A north arrow and graphic scale. Said scale is not to be smaller than one-inch equals 100 feet

- All property lines & existing/proposed right-of-way lines with bearings & dimensions clearly labeled
- Existing /proposed easement lines and dimensions with an explanation of ownership and purpose
- All required building setback lines
- Existing and proposed buildings, structures and paved areas, including building entrances, walks, drives, decks, patios, fences, utility poles, drainage facilities and walls
- Location and dimension of all curb cuts and throat widths of all access points onto public streets or alleys
- The location and dimension of all on-site parking including a summary of the number of parking stalls provided versus the requirements of the ordinance
- The location and dimension of all loading and service areas on subject property
- The location of all outdoor storage areas and the design of all screening devices
- Location of all outdoor storage and refuse disposal areas and the design and materials used for construction and operation
- The location, type, height, size and lighting of all signage
- Location, height, design, illumination power and orientation of all exterior lighting on the property including a photometrics plan
- Location of all exterior mechanical equipment and utilities and elevations of proposed screening devices where applicable (i.e. visible from a public street or residential use or district). Mechanical equipment includes, but is not limited to; HVAC equipment, electrical transformers and boxes, exhaust flues, plumbing vents, gas regulators, generator
- Location of all existing and proposed landscape areas, storm water areas, etc.

Maps/figures can be found in Attachment A.

D. Building elevations and perspectives.

Site elevation is approximately 605 to 615 feet above sea level. Battery cabinets will be 7.6 feet tall, and inverters will be 7.2 feet tall.





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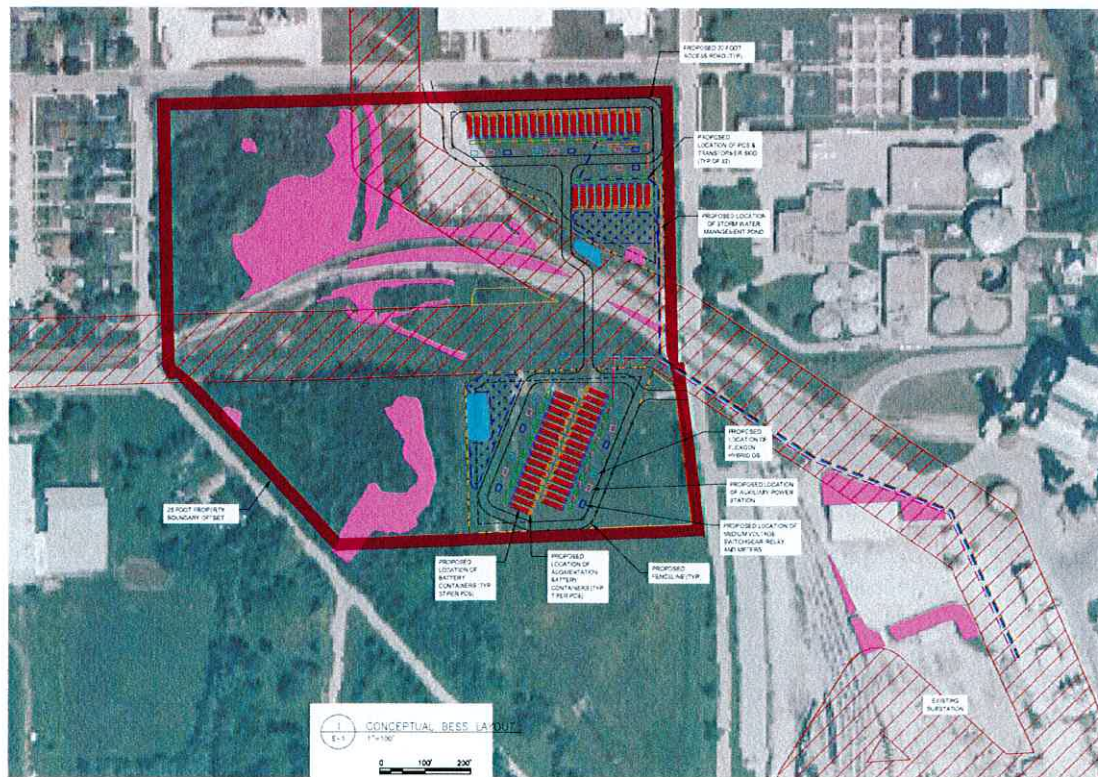
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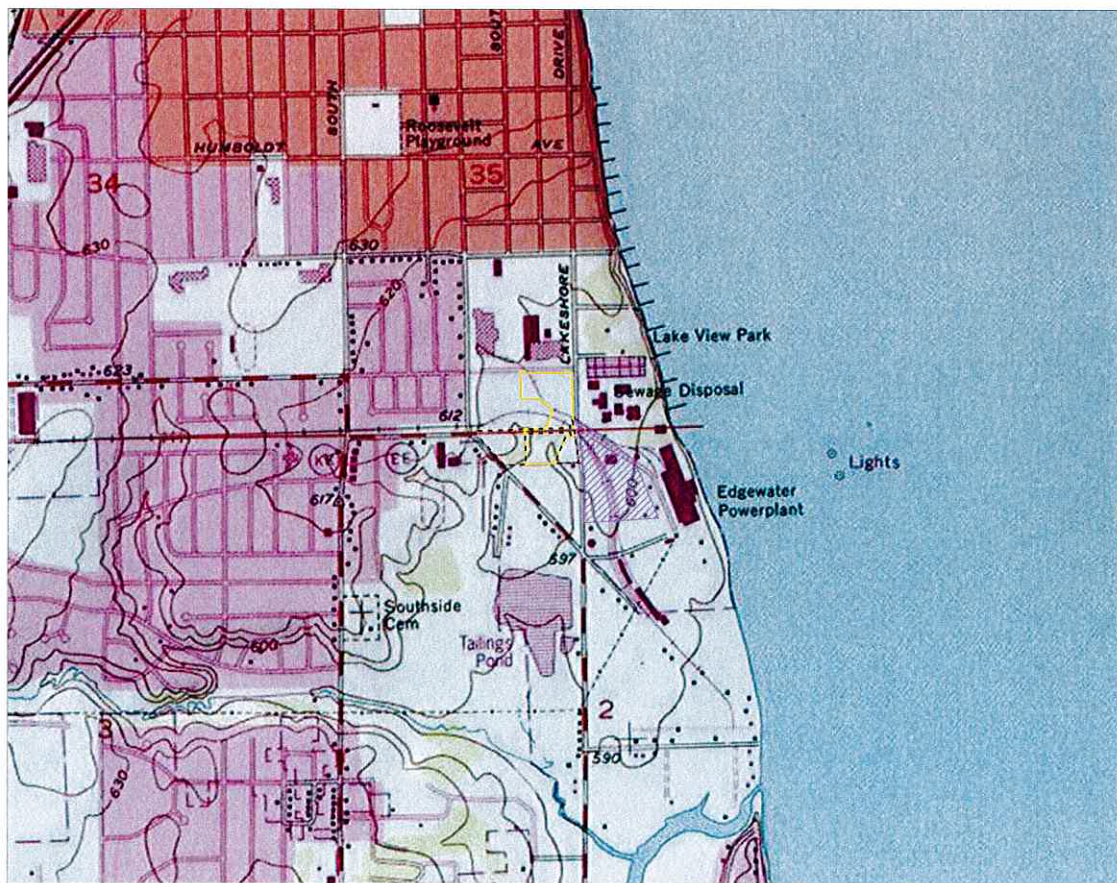


Figure No.

4.1.3

Title

Topographic Map

Client/Project

Wisconsin Power and Light Company
Edgewater BESS Project

Project Location

Edgewater
Winnebago County, WI

Project by G.A.M. 12/2/12

10/15/12 or 10/15/12

10/15/12 or 10/15/12



0 500 1000
Feet
(Original document scale of 1"=100')
1:12,500

Legend

- Proposed BESS Project Area
- Aesthetic BESS Project Area
- Macro Corridor for Collector Line Connection (Common to Proposed and Aesthetic)



Notes

1. Contours by spot heights where shown.
2. Data source: National Map Accuracy Act, 1967.
3. Background: USGS 1:25,000 Topographic Series.



Stantec

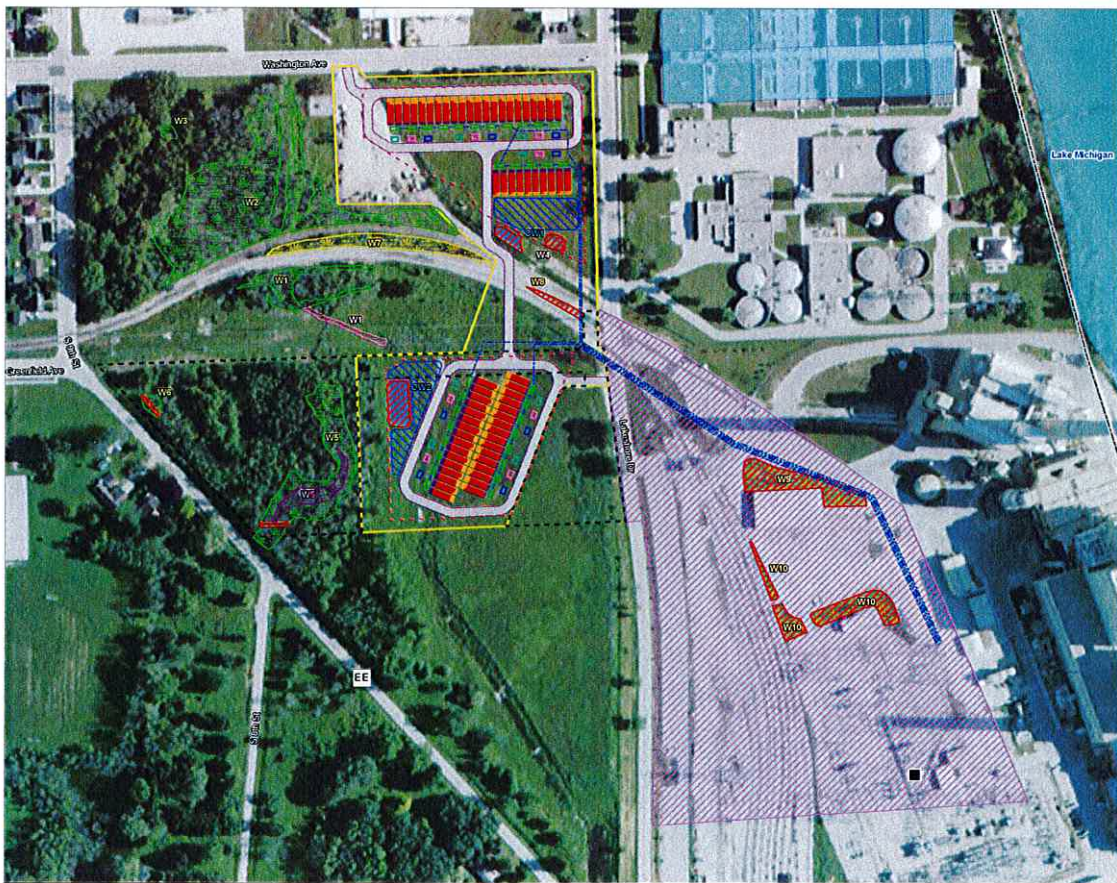


Figure 8.3.2

Wetland and Waterway Crossings

Client/Project
Wisconsin Power and Light Company
Edgewater BESS Project

Project Location
Edgewater, WI
Prepared by: LCA on 10/17/17
Revised: MPR on 10/17/17
Revised: MPR on 10/17/17



Legend

- Proposed BESS Project Area
- Accessory BESS Project Area
- Water Corridor for Collection Line Connection (Common to Proposed and Accessory)
- WV BESS Collection Header Run (Construction Method to be Determined)**
- BESS Access Road**
- BESS Boundary Fence
- Augmentation Battery Container
- Auxiliary Power Station
- Battery Container
- Battery Control Panel
- Large Hybrid OS
- Medium Voltage Switchgear, Relay and Wires
- PCS and Transformer Skid
- BESS Stormwater Basin
- Existing Substation
- Wetland Impact Area***
- Field Determined Open Water
- Aerially Identified Wetland
- Hardwood Swamp
- Wet Meadow
- Field Determined Wetland
- Hardwood Swamp
- Sedge Meadow
- Wet Meadow
- UW-12a Hydrography
- Perennial Stream**
- Intermittent Stream**
- Waterbody

**No features within data frame
***A system for coded on features runs and access roads is depicted on this map are preliminary in nature
****Impacts shown in W5 and W6 are assumed for perimeter fence crossing
*****Accessory BESS Project Area is selected



Notes:
1. Wisconsin State System (WSS) 1000-1000-1000-1000
2. Large Swamp: Swamp, 1000-1000-1000-1000
3. Swamp: Swamp, 1000-1000-1000-1000

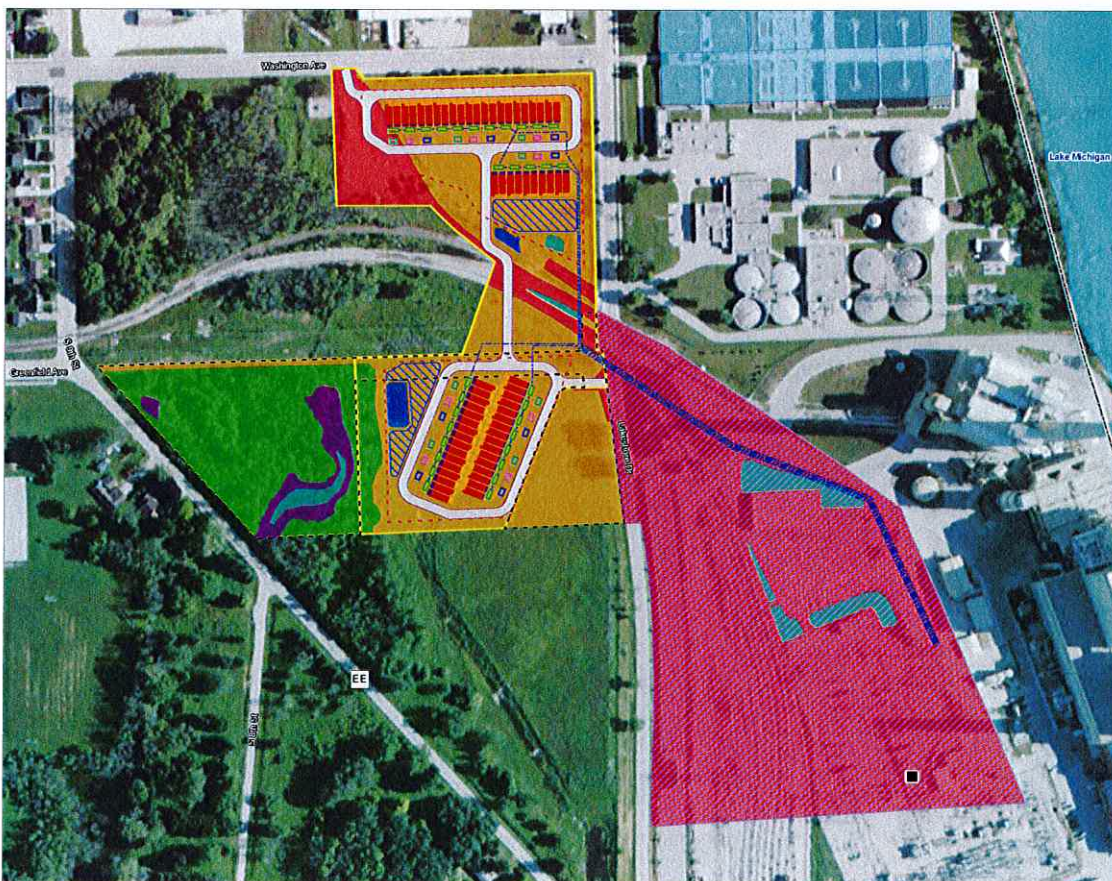


Figure No.

4.1.7.4

Title

Land Cover

Client/Project
Wisconsin Power and Light Company
Edgewater BESS Project

Project Location
Edgewater, WI
Drawing Scale: 1" = 400'

Prepared by: C. Baker (2/28/17)
Reviewed by: M. J. (2/28/17)
Approved by: M. J. (2/28/17)



0 100 200 Feet
(At original document size of 11x17)
1:2,400

Legend

- | | |
|--|--|
| <ul style="list-style-type: none"> Proposed BESS Project Area Alternate BESS Project Area Macro Corridor for Collector Line Connection (Common to Proposed and Alternate) VV BESS Collection Feeder Run** BESS Access Road** BESS Boundary Fence Augmentation Battery Container Auxiliary Power Station Battery Container Battery Control Panel Foreign Hybrid OS Medium Voltage Switchgear, Relay and Meters PCS and Transformer Skid BESS Stormwater Basin Existing Substation | <ul style="list-style-type: none"> Land Cover Grassland Upland Woodland Forested Wetland Non-Forested Wetland Open Water Developed (Non-Residential) DNR 24x Hydrography Perennial Stream* Intermittent Stream* Wetland |
|--|--|

*No features within data frame

**As driveways for collection on feeder runs and access roads are depicted on this map are preliminary in nature



Notes
1. Coordinates System: NAD 1983 - NAD 1983 Wisconsin 1M
2. Data Source: Wisconsin DNR, Wisconsin DNR
3. Background: 2017 Data

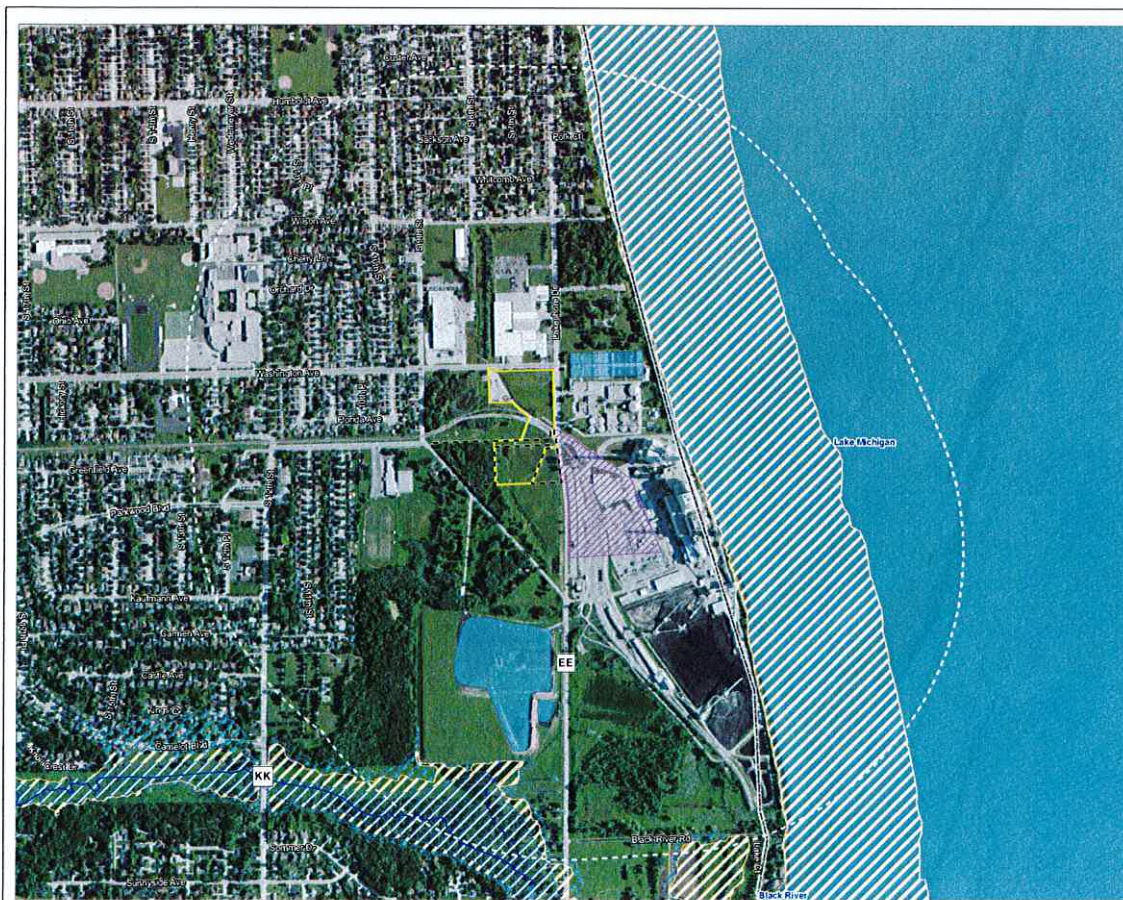


Figure No.
4.1.7.5

Flood Insurance Rate Map

Client/Project
Wisconsin Power and Light Company
Edgewater BESS Project

Project Location
Edgewater, WI
Shoshone County, WI
Threatened CA in 2022 12 17
No CA in 2022 12 17
No CA in 2022 12 17



0 400 800 Feet
(All graphic dimensions are at 11x17, 1:6,000)

Legend

- Proposed BESS Project Area
- Alternate BESS Project Area
- Macro Corridor for Collector Line Connect on (Common to Proposed and Alternate)

Proposed BESS Project Area 0.5 Mile Buffer

FEMA Special Flood Hazard Area

100 Year Floodplain

500 Year Floodplain

Floodway

DNR 24x Hydrography

Perennial Stream

Intermittent Stream

Waterbody



Notes
1. Coordinate System: NAD 1983-DAWG Wisconsin TM
2. Data Source: ESRI, FEMA, NDOT, NOAA, etc.
3. Background: 2021 Map



Figure 1.1: View to the west from KOP 1, along Lakeshore Drive



Figure 1.2: View to the west from KOP 1 with the Project simulated.



Figure 2.1: View to the south-southwest from KOP 2 along Lakeshore Drive.



Figure 2.2: View to the south-southwest from KOP 2 with the Project simulated.



Figure 2.3: View to the south-southwest from KOP 2 with the Project simulated. This simulation highlights proposed Project components obscured by the existing earth berm.



Figure 3.1: View to the southeast along Washington Avenue from KOP 3.



Figure 3.2: View to the southeast from KOP 3 with the Project simulated.



Figure 4.1: View to the east along South 9th Street from KOP 4.



Figure 4.2: View to the east from KOP 4 with the Project simulated.