KENOSHA COUNTY

Shelly Billingsley, Director
Department of Public Works &
Development Services

Andy M. Buehler, Director
Division of Planning & Development

KENOSHA COUNTY DEVELOPMENT APPLICATION

* If you would rather apply for your project online and pay fees online without having to travel to and from this office to submit hardcopy documentation and physical payment, you can do so by visiting the Planning & Development Online Portal at the web address shown below, creating login credentials and logging in under said credentials in order to apply for your project. If you submit via the portal, you still need to complete this application, and upload it to the portal.

https://permitting.kenoshacounty.org/eTrakit/

1. Select all application types that apply:

- ✔ Comprehensive Land Use Plan Map Amendment Application (COMP)
- ✔ Rezoning Application (REZO)
- ✔ Conditional Use Permit Application (CUP)
- Affidavit of Correction (AFFC)

Land Division Applications

- ✔ Certified Survey Map (CSM)
- Preliminary Plat Application (PLAT)
- Final Plat Application (PLAT)

2. Enter all contact information:

Property Owner Contact Information (1)
Company Name: KERKMAN IRREVOCABLE INCOME ONL
Individual's Name: Randy Kerman
Mailing Address: 8126 203TH Ave. Bristol WI 53104
Phone Number: 262-857-2368
Email Address: boovarandy@gmail.com

Property Owner Contact Information (2)
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Property Owner Contact Information (3)
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Property Owner Contact Information (4)
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Architect Contact Information
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Engineer Contact Information
Company Name: Westwood
Individual's Name: Brendan Miller, P.E.
Mailing Address: 10170 Church Ranch Way, Suite 201, We
Phone Number: (720) 531-8355
Email Address: brendan.miller@westwoodps.com

Surveyor Contact Information
Company Name: Westwood
Individual's Name: Ben Lawrence
Mailing Address: 12701 Whitewater Drive, Suite #300, Minne
Phone Number: (952) 937-5150
Email Address: Ben.Lawrence@westwoodps.com

Master Plumber/Soil Tester Contact Information
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

KENOSHA COUNTY

Shelly Billingsley, Director
Department of Public Works &
Development Services

Andy M. Buehler, Director
Division of Planning & Development

KENOSHA COUNTY DEVELOPMENT APPLICATION

* If you would rather apply for your project online and pay fees online without having to travel to and from this office to submit hardcopy documentation and physical payment, you can do so by visiting the Planning & Development Online Portal at the web address shown below, creating login credentials and logging in under said credentials in order to apply for your project. If you submit via the portal, you still need to complete this application, and upload it to the portal.

https://permitting.kenoshacounty.org/eTrakit/

1. Select all application types that apply:

- ✔ Comprehensive Land Use Plan Map Amendment Application (COMP)
- ✔ Rezoning Application (REZO)
- ✔ Conditional Use Permit Application (CUP)
- Affidavit of Correction (AFFC)

Land Division Applications

- ✔ Certified Survey Map (CSM)
- Preliminary Plat Application (PLAT)
- Final Plat Application (PLAT)

2. Enter all contact information:

Property Owner Contact Information (1)
Company Name: KERKMAN IRREVOCABLE INCOME ONL
Individual's Name: Randy Kerman
Mailing Address: 8126 203TH Ave, Bristol WI 53104
Phone Number: 262-857-2368
Email Address: boovarandy@gmail.com

Property Owner Contact Information (2)
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Property Owner Contact Information (3)
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Property Owner Contact Information (4)
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Architect Contact Information
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

Engineer Contact Information
Company Name: Westwood
Individual's Name: Brendan Miller, P.E.
Mailing Address: 10170 Church Ranch Way, Suite 201, We
Phone Number: (720) 531-8355
Email Address: brendan.miller@westwoodps.com

Surveyor Contact Information
Company Name: Westwood
Individual's Name: Ben Lawrence
Mailing Address: 12701 Whitewater Drive, Suite #300, Minne
Phone Number: (952) 937-5150
Email Address: Ben.Lawrence@westwoodps.com

Master Plumber/Soil Tester Contact Information
Company Name:
Individual's Name:
Mailing Address:
Phone Number:
Email Address:

3. List all subject properties by property address and/or tax key parcel number. If a full property address is not available including a house number, provide the tax key parcel number:

	Tax Key Parcel Number	Full Property Address
1.	95-4-219-323-0225	
2.		
3.		
4.		

For Office Use Only: Applicants can track status on https://permitting.kenoshacounty.org/eTrakit/

Project Number(s):

4. Provide a written summary of your proposed project and reasons for pursuing said project:

   Please see the Application Transmittal Letter attached to this Application form.

5. If you are submitting a Comprehensive Land Use Plan Map Amendment Application (COMP), work with Planning & Development staff to prepare and attach a map of the subject area showing current land use plan map designations and a map of the subject area showing proposed land use plan map designations. Note that Wis. Stat. 66.1001(3) requires that ordinances (including rezoning applications) must be consistent with the adopted comprehensive land use plan map. If you are submitting for comprehensive land use plan map amendment simultaneous to other development applications and the comprehensive land use plan map amendment is denied, it may cause the subsequent applications (i.e. rezoning application, conditional use permit application) and the intended land use to be moot and not able to be entertained). It is recommended comprehensive land use plan map amendments be applied for individually so that it can be heard and acted on prior to investing in and making the additional development applications associated with your project.

6. If you are submitting a Rezoning Application (REZO), work with Planning & Development staff to prepare and attach a map of the subject area showing current zoning map classifications and a map of the subject area showing proposed zoning map classifications.

   Note: Agricultural Use Conversion Charge

   The use value assessment system values agricultural land based on the income that would be generated from its rental for agricultural use rather than its fair market value. When a person converts agricultural land to a non-agricultural use (e.g. residential or commercial development), that person may owe a conversion charge. To obtain more information about the use value law or conversion charge, contact the Wisconsin Department of Revenue's Equalization Section at 608-266-2149 or visit https://www.revenue.wi.gov/Pages/SLF/useval-uvindx.aspx or https://www.revenue.wi.gov/Pages/FAQS/slf-usevalue.aspx.

   Note that the act of rezoning property from an agricultural zoning district to a non-agricultural zoning district does not necessarily trigger the agricultural use conversion charge. It is when the use of the property changes from agricultural that the conversion charge is assessed.

7. If you are submitting a Conditional use Permit Application (CUP), work with Planning & Development staff to prepare and attach a code excerpt from Section 12.29-8 of the Kenosha County General Zoning & Shoreland/Floodplain Zoning Ordinance regarding applicable standards to your proposed use. Any conditional use permit application is subject to formal site plan review pursuant to Section 12.08-2 of the Kenosha County General Zoning & Shoreland/Floodplain Ordinance.
   a. Proposed Use: Battery Energy Storage System.
   b. Hours of Operation: See CUP Narrative Attached as Attachment D.
   c. Number of employees currently onsite during the largest work shift: See CUP Narrative Attached as Attachment D.
   d. Number of employees that will be onsite during the largest work shift: See CUP Narrative Attached as Attachment D.
   e. Will there be outside entertainment? N/A If so, draw and label total horizontal and vertical extent of proposed outside entertainment on site plan.
   f. Will there be outside storage? N/A If so, draw and label total horizontal and vertical extend of proposed outside storage on site plan.
   g. Attach professionally drawn to-scale plan sheets for each of the following as applicable:
      i. Building Plan (include floor plans and elevation drawings)
      ii. Site Plan (Section 12.05-1(h)3 of zoning ordinance)
      iii. Traffic, Parking and Access Plan (Section 12.13 of zoning ordinance)
      iv. Landscape Plan (Section 12.16 of zoning ordinance)
      v. Lighting Plan (including photometrics) (Section 12.15 of zoning ordinance)
      vi. Storm Water Management Plan (Division II of stormwater ordinance)

vii. Utility Plan
viii. Traffic Impact Analysis (TIA) Plan
ix. Natural Resources Protection Plan
x. Signage Plan (Section 12.14 of zoning ordinance)

8. If you are submitting an Affidavit of Correction (AFFC), attach the draft affidavit of correction document prepared by your hired professional surveyor.

9. If you are submitting a Certified Survey Map Application, Preliminary Plat Application or Final Plat Application, submit the draft certified survey map document, draft preliminary plat document or draft final plat document prepared by your hired professional surveyor. Draft certified survey map, preliminary plat and/or final plat should be prepared compliant with applicable requirements stated in the Kenosha County Land Division Ordinance.

10. If you are submitting a Comprehensive Land Use Plan Map Amendment (COMP), Rezoning Application (REZO), Land Division Application (CSM or PLAT) or a Conditional Use Permit Application (CUP) your project may be subject to sections of the Kenosha County Sanitary Code and Private Sewage System Ordinance that require a professional evaluation of existing private on-site wastewater treatment system(s) (POWTS) by a hired master plumber and/or professional soil borings by a hired professional soil tester in order to confirm the status of existing POWTS and/or confirm site suitability for a future planned POWTS. Depending on the results of these required hired professional evaluations, existing non-compliant POWTS on the subject property may be required to be replaced or proposed lots may be deemed unbuildable and therefore not be able to be created as part of your land division application. When the sanitary permit is issued the replacement POWTS must be installed and completed one year from the sanitary permit issuance date.

    Any required POWTS evaluations or required soil borings must be submitted to this office prior to or with the formal submittal of this application document. If an existing non-compliant POWTS must be replaced, then this application document will not be accepted until the required sanitary permit and associated application fees for said sanitary permit acknowledging the replacement of said POWTs system are submitted to this office.

    a. Number of lots/parcels being created (Do not include outlots or the remnant parcel unless it is 35 acres or less)

        No proposed POWTS.

    b. Review Fee = Number from above x $75

        N/A.

    c. Does the original parcel have any existing dwellings or buildings served by private on-site wastewater treatment (septic) systems?

        No.

    d. Are these systems older than July 1, 1980?

        N/A.

    e. If you answered yes to question c, this existing septic system must go through an evaluation to determine compliance with SPS 383.32 of the Wisconsin Administrative Code or may need to replace the existing system with a code compliant one as part of this land division procedure. The Sanitary Permit for the replacement system must be issued prior to applying for approval of the land division with the Division of Planning & Development.

    f. Certified Survey Maps (CSMs) must have complete soil and site evaluations for all proposed lots including any remnant parcel 35 acres or less. For CSMs involving structures served by private sewage systems the existing system and all treatment tanks shall be located and shown on the survey and must be evaluated for compliance with SPS 383.32, Wisconsin Administrative Code. Existing systems older than July 1, 1980 and in suitable soils shall be required to have a soil and site evaluation conducted to establish a replacement area for a future private sewage system. This area designated for a future system shall be shown on the survey and must meet all setback requirements and be within the boundaries of the newly proposed parcel.

    g. Preliminary plats must follow the soil and site evaluation requirements as stated in Chapter 15.07 of the Kenosha County Sanitary Code and Private Sewage System Ordinance. Final plats on clayey glacial till soils will be required to have complete soil tests conducted and have the soil boring locations on the plat. 8. For further information and details of these procedures you may contact a sanitarian in the Division of Health Services or at 262/857-1910.

11. Application fees will be assessed at time of submittal. See Fee Schedule.

Development Disclosure

It is the property owner and applicant's responsibility to determine if additional permits from other agencies will be required, including but not limited to: Wisconsin State Building Codes, Wisconsin State Department of Natural Resources, FEMA, U.S. Army Corps of Engineers, Wisconsin State Department of Transportation and U.S. Fish and Wildlife. If additional permits are required, it is the responsibility of the property owner/applicant to obtain such permits and comply with their conditions of approval.

The applicant acknowledges that the County of Kenosha could incur substantial costs throughout the review process and that it is appropriate for the applicant to be financially responsible for costs related to the development process rather than the County residents. Thus the applicant agrees to pay to the County of Kenosha all reasonable costs for engineering, planning, legal and administrative expenses incurred by the County of Kenosha as a result of this application.

Both parties acknowledge that the payment of funds and executing this application does not imply any particular outcome or decision by the staff of the County of Kenosha, the Planning, Development & Extension Education Committee and/or the County Board.

It is the property owner/applicant's responsibility to provide the County of Kenosha all necessary legal documentation related to the property, including but not limited to: proof of ownership, receipts, surveys, deed restrictions, vacation records, easement records, etc.

I acknowledge, understand, and agree, that all relevant documentation will be provided to Kenosha County, and that all required permits and consent will be obtained prior to the start of construction, with all conditions of approval adhered to.

SIGNATURE OF ALL SUBJECT PROPERTY OWNERS (attach separate agent letter if necessary)

Signature	Date	Print Name
Randall Kerkman	10/6/25	Kerkman Irrevocable Income Only Trust Catherine

SIGNATURE OF APPLICANT

Signature	Date	Print Name
DocuSigned by: Onur Usmen 79588D9EBDAE44F...		Onur Usmen, Robin Energy Storage, LLC
Mailing Address		**E-mail Address**
200 S. Wacker Drive, Suite 1600 Chicago, IL 60606		robin_bess@cip-tt.com

IMPORTANT TELEPHONE NUMBERS

Kenosha County Center
Department of Public Works & Development Services
19600 - 75th Street, Suite 185-3
Bristol, Wisconsin 53104

Division of Planning and Development (including Sanitation & Land Conservation) ..... (262) 857-1895
Facsimile #..... (262) 857-1920

Public Works Division of Highways ..... (262) 857-1870

Kenosha County Administration Building
Register of Deeds ..... (262) 653-2444
Division of Land Information..... (262) 653-2622

Wisconsin Department of Transportation, Southeast Region ..... (262) 548-5902
141 NW Barstow St.
Waukesha WI 53187-0798

Wisconsin Department of Natural Resources - Sturtevant Office ..... (262) 884-2300
9531 Rayne Rd.. Suite 4
Sturtevant WI 53177

Brighton, Town of ..... (262) 878-2218
Paris, Town of..... (262) 859-3006
Randall, Town of..... (262) 877-2165
Somers Village/Town of..... (262) 859-2822
Wheatland, Town of..... (262) 537-4340
City of Kenosha Planning & Development..... (262) 653-4030
City of Kenosha Water Utility ..... (262) 653-4300
City of Kenosha Airport..... (262) 653-4160

APPENDIX A

MULTI-JURISDICTIONAL COMPREHENSIVE PLAN AMENDMENT APPLICATION

Robin Energy Storage

Appendix A – COMP Plan Amendment Application Narrative

OVERVIEW

The Robin Energy Storage Project (Project) is a 200-megawatt (MW), 800 megawatt-hour (MWh) Battery Energy Storage System (BESS) located within the Town of Wheatland (Town), Kenosha County (County) Wisconsin. The Project is owned by Robin Energy Storage, LLC (Robin Energy Storage). The Project will be located on approximately 12 acres within an approximately 19-acre tract of land situated east of 392nd Avenue and north of Highway 50 (the Project Site). The Project Site is part of a larger existing parcel of land known as Parcel Number 95-4-219-323-0205 (the Parcel) containing approximately 59 total acres. The Town's Generalized Land Use Plan designates the Parcel as "Existing or Planned Urban Development",[1] and the County's Multi-Jurisdictional Comprehensive Plan (Multi-Jurisdictional Plan) currently designates the Project Site suburban-density residential. As part of this application package, Robin Energy Storage seeks to amend the County's zoning classification for the Project Site from A-1 Agricultural Preservation to I-1 Institutional. To ensure this new zoning classification is consistent with the Multi-Jurisdictional Plan as required by state law,[2] Robin Energy Storage respectfully requests the County and Town amend the Project Site's future land use designation to Governmental and Institutional.

The Project provides the Town and County with the opportunity to advance the elements of their comprehensive planning process as outlined in Wis. Stat. § 66.1001. By utilizing land with existing utility infrastructure and roads, the Project promotes efficient redevelopment while minimizing new municipal costs. Its siting and design protect surrounding natural resources, including wetlands and groundwater. The Project supports resilient neighborhood design by enhancing electric reliability and contributes to the stability of the Town and County's economic base through job creation, Joint Development Agreement (JDA) payments to the Town,[3] and long-term investment. The Project is designed to minimize impacts on surrounding landowners, and Robin Energy Storage has worked with the community to conform the Project with orderly and sensible land use planning. The Project's design fits with a forward-looking land use strategy that preserves the character of the community while ensuring adequate infrastructure and energy capacity to meet future power needs. Most importantly, the Project balances the individual property rights of the landowner to develop the land and the planning needs of the community.

---

[1] *See* Comprehensive Plan for the Town of Wheatland, Map 15, P. 66 (PDF Page 113).
[2] *See* Wis. Stat. § 66.1001(3)(j), (L).
[3] Exhibit A of the Conditional Use Permit application, which is Appendix D to this the Robin Energy Storage application package, describes of the status of the Town's execution of the draft JDA with Robin Energy Storage.

The Project will not adversely impact agriculture in the County or Town. The Project Site is only 0.05% percent of the County land designated for future agricultural use, and approximately 0.28% of the Town land designated for future agricultural use.[4] The rest of the Parcel will remain in agricultural production, at the participating landowner's discretion. The Project has a much smaller land use impact than other types of energy infrastructure, such as solar generation or electric transmission lines. The Project will have a *de minimis* impact on agriculture in the County and will not adversely impact the community's rural character.

Maps with the current and proposed land use changes are attached to this application as **Exhibit A** and **Exhibit B**, respectively. Additionally, to assist the Town in reviewing the application and in compliance with the Town's Comprehensive Plan, Robin Energy Storage provides narrative answers to thirteen questions posed by the Town's Comprehensive Plan amendment procedure below.[5]

RESPONSE TO COMPREHENSIVE PLAN AMENDMENT QUESTIONS

Question 1: Is the proposed land use plan amendment or rezoning, when proposed to accommodate new urban development, located within the Phase 2 line? Is it contiguous (next to, or separated by a road) to existing urban development? That is, will the proposed development create "spot zoning," or will it foster a logical, compact development pattern in the Town?

Answer: Yes. The Project is located within the Phase 2 line. It is contiguous with existing urban development and similar land-use designations. To the west, across 392nd Avenue, is a Commercial designation. Contiguous to the southwest is a recently approved industrial designation. Contiguous to the south and across State Highway 50 are a Commercial designation and a Government and Institutional designation. To the east is another Government and Institutional designation, which is a utility substation. Siting utility infrastructure adjacent to other utility infrastructure is not spot zoning and will foster a logical, compact development pattern in the Town.

Question 2: Is the proposed land use plan amendment, when proposed to accommodate new R-1 development outside the Phase 2 line, contiguous (next to, or separated by a street) to existing R-1 development?

Answer: Not applicable**.**

---

[4] Kenosha County's Multi-Jurisdictional Plan identifies 48,664 acres as Farmland Protection, General Agricultural and Open Land, Agricultural and Rural-Density Residential respectfully in 2035. The Town of Wheatland's Comprehensive plan identifies 4,207 acres as Farmland Protection, General Agricultural and Open Lands.

[5] *A Comprehensive Plan for the Town of Wheatland*, Southeastern Wisconsin Regional Planning Commission, May 2010, p. 193-194.

Question 3: Will the development resulting from the land use plan amendment assist in preserving the character of the Town of Wheatland and the area in which the development is proposed?

Answer: Yes**.** The character of this area, defined as the area surrounding the intersection of 392nd Avenue and State Highway 50, can be described as non-residential urban use. Changing the designation to Governmental and Institutional for the Project is consistent with this usage pattern. Siting utility infrastructure adjacent to other utility infrastructure promotes logical and compact development.

Question 4: Has a substantial public benefit to the Town been demonstrated by the proposed land use plan amendment?

Answer: Yes. As outlined in greater detail in Appendix D (the Conditional Use Permit Application), the Project will supply additional electric capacity to support our aging power grid, help prevent blackouts, and deliver other essential services to the transmission system. This is a significant benefit for the Town because blackouts are expensive for businesses and put people's lives at risk during extreme weather. The Project will also create jobs and generate financial benefits for the Town. A reliable, well-designed utility system is a cornerstone of comprehensive planning in Wisconsin and represents a substantial benefit to the community. *See* Wis. Stat. § 66.1001(d).

Question 5: Is the proposed land use plan amendment, if granted, likely to contribute to land use balance in the Town?

Answer: Yes. A BESS is an efficient land use to deliver electric capacity and other services to the power grid. Compare a BESS to a long overhead power line or solar project, which either require significantly more land and/or cross many more parcels. The Project provides the Town with substantial utility benefits for a very small land-use investment.

Question 6: Is the proposed land use plan amendment, if granted, likely to contribute to an improved quality of life in the Town?

Answer: Yes. The Project will create jobs, provide revenue to the Town and County, improve energy security, and is in-line with already-existing land-usage. As described further in Appendix D, the Project either does not change or will benefit the surrounding environment.

Question 7: Is there a strong market demand for the use requested by the land use plan amendment and has that demand been demonstrated with evidence provided by the applicant?

Answer: Yes. As described in Appendix D, there is strong demand for additional energy capacity across the United States, including the County. Retirement of aging electric infrastructure, aging and old powerlines and substations, the addition of new generation resources like solar, wind, and natural gas plants, as well as load growth from increased electricity usage in homes, businesses, and industry, has resulted in an increased demand for electric capacity. The

Midcontinent Independent System Operator, the region's transmission grid operator, saw record electric capacity auction prices clear in 2025, nearly 10 times the amount for 2024.[6]

Question 8: Are public roads and utilities available, or planned to be available in the near future, to serve the proposed development?

Answer: Yes. The necessary public roads and utilities are available to support the Project.

Question 9: If existing or planned public roads are to be available, is there adequate capacity to accommodate the proposed development?

Answer: Yes. The Project, once operational, is not expected to contribute a significant amount of traffic to the area. During construction, State Highway 50 has sufficient capacity for construction traffic.

Question 10: If public roads are available, or planned to be available, is it a logical extension of those roads to serve the proposed development?

Answer: Not applicable, as the current public roads have the necessary capacity.

Question 11: If public roads are to be extended to accommodate the area of the proposed land use plan amendment, is there a plan and funding available to extend those roads?

Answer: Not applicable, as the current public roads have the necessary capacity.

Question 12: Will the development resulting from the land use plan amendment create more taxable value than the services or facilities the development will need? Has the applicant quantified this information and submitted it to the Town for review and consideration?

Answer: Yes**.** In addition to the Project's job creation and benefits to the residential, commercial and industrial users of the power grid, Robin Energy Storage has offered the Town significant additional revenue through a Joint Development Agreement (JDA), worth $8,600,000.00 across the 20-year life of the Project. The Town's current annual budgeted income for 2025 is $1,411,914; the proposed first-year JDA payment ($1 million) would increase that number by 70%. The JDA proposed Support Payments will likely have a significant impact in helping the Town address its budget and levy shortfalls from prior years—in 2024, the Town had a shortfall of almost $240,000 and is predicting a shortfall of ~$260,000 in 2025. In addition to the JDA, the Town Fire Department has already been engaged during Project planning, and will receive training, emergency response plans, and ongoing coordination from Robin Energy Storage.

[6] *See e.g.* https://www.utilitydive.com/news/miso-capacity-auction/746576/.

Question 13: How will the Town ultimately benefit from the proposed land use plan amendment?

Answer: The Project is a well-designed, safe, and proven technology which will promote reliable electric service in the Town and surrounding area. Additionally, the Project provides:

- Power grid reliability benefits to Southeastern Wisconsin,
- Clean operation, with no emissions during regular operations,
- Professional engineering and environmental design, avoiding wetlands, a vegetative barrier (including trees) to screen the Project, and advanced stormwater management,
- Decommissioning bonding of 7 million dollars,
- 24/7 facility monitoring during operation,
- Fire safety training and response, including NFPA 855 national fire safety standards and training,
- JDA Payments, pending Town approval.

As demonstrated above, the Project meets the County and Town's Comprehensive planning standards and fits seamlessly within the Multi-Jurisdictional Plan.

APPENDIX A

Exhibit A

Current Land Use

KENOSHA COUNTY
INTERACTIVE MAPPING

CURRENT LAND USE PLAN MAP DESIGNATIONS

N
S

1:6,000
1" = 500'

Date Printed: 11/3/2025

APPENDIX A

Exhibit B

Proposed Land Use

KENOSHA COUNTY
INTERACTIVE MAPPING

PROPOSED LAND USE PLAN MAP DESIGNATIONS

N
S

1:6,000
1" = 500'

Date Printed: 11/3/2025

APPENDIX B

COUNTY REZONING APPLICATION

Robin Energy Storage

Appendix B – Rezoning Amendment Application Narrative

OVERVIEW

The Robin Energy Storage Project (Project) is a 200-megawatt (MW), 800 megawatt-hour (MWh) Battery Energy Storage System (BESS) located within the Town of Wheatland (Town), Kenosha County (County) Wisconsin. The Project is being developed by Robin Energy Storage, LLC (Robin Energy Storage). The Project will be located on approximately 12 acres within an approximately 19-acre tract of land situated east of 392nd Avenue and north of Highway 50 (the Project Site). The Project Site is part of a larger existing parcel of land known as Parcel Number 95-4-219-323-0205 (the Parcel) containing approximately 59 total acres. As part of this application package, Robin Energy Storage seeks to subdivide the Parcel into three separate lots (including the Project Site) as documented in the Certified Survey Map (CSM) attached to this Application as Appendix C. Robin Energy Storage respectfully requests the County amend the Project Site's zoning classification from A-1, Agricultural Preservation, to I-1, Institutional.[1] The Project Site will host the Project, sits between the northern and southern portions of the subdivided Parcel, and is referred to as Lot 2 in the CSM. Robin Energy Storage respectfully requests the County to amend the zoning designation for the other subdivided lots from A-1 to A-2, General Agricultural District. Because the newly subdivided lots will be less than 50 acres, County staff advised they no longer qualify for A-1 designation and therefore must be changed to A-2.

Rezoning Standard

As state law and principles of land use and local planning explain, zoning is "by no means static"[2] — instead, zoning provides for orderly and reasonable land use planning in tandem with individual property owners' rights to use their property. The County's General Zoning and Shoreland/Floodplain Ordinance (Zoning Ordinance) makes this clear with its statement of purpose: "It is the intent of this section to recognize that changed or changing conditions call for changed plans…".[3] This is consistent with state law, which grants the County zoning authority and requires that authority be exercised subject to certain conditions, including public notice and hearing.[4] To begin a rezoning application, subsection 12.58.030 of the Zoning Ordinance requires (1) a petition, (2) by the landowner or his agent, and (3) a pre-application meeting with Planning and Development staff.

---

[1] Robin Energy Storage has submitted a request to amend the County and Town Comprehensive Plan to be consistent with this use; appended to this Application as Appendix A.
[2] Kenosha County Ordinances, Chapter 12, Section 12.58.010.
[3] *Id.*
[4] *See* Wis. Stat. § 59.69.

This Appendix B is the petition; the request is made by Robin Energy Storage, as agent for the parcel landowner, and follows a pre-application conference hosted on September 12, 2025.

Section 12.58.040 of the Zoning Ordinance requires that the petition contain the following information for County review:

(a) Petitioner's name, address, phone number and interest in property. (Owner, broker, etc.)

Petitioner is Robin Energy Storage, LLC, represented by agent Jan Porvaznik. Mr. Porvaznik can be contacted via email at robin_bess@cip-tt.com or via phone at 415-596-9537. Robin Energy Storage, LLC owns an option to purchase the Project Site and plans to exercise that option to develop the Project.

(b) Existing zoning district

The Parcel is currently zoned A-1; see the map attached as Exhibit A.

(c) Proposed zoning district

As discussed above, the Parcel is proposed to be subdivided into three lots as shown in Appendix C, the CSM. The Project Site (Lot 2) is to be zoned I-1, Institutional, and other lots derived from the Parcel will be zoned A-2, General Agricultural. The maps attached as Exhibit A show the current and proposed zoning designations for the Parcel.

(d) Proposed use (a statement of the type, extent, area, etc. of any development project)

As described further in Appendix D, the CUP application, the Project will store electricity from the grid when demand for electricity is low, and it will discharge electricity as necessary to maintain grid stability, meet the needs of residential and industrial electricity users, and extend the life of aging grid infrastructure. The Project will interconnect to the grid through the existing substation sited directly east of the Parcel. The Project will have associated infrastructure on the Project Site such as fencing, vegetative screening, access roads, water storage tanks, and a retention pond.

(e) Compatibility with County plans (a statement of conditions warranting a change in zoning)

BESS are used by electric utilities to maintain grid reliability, extend transmission equipment life, and flexibly manage changing electricity needs. Much like power lines or substations, BESS are important for providing affordable and reliable electricity. Understanding the importance of BESS, the County amended Chapter 12 of its Zoning Ordinance to include BESS as a conditional use in the I-1, Institutional district. As explained in Appendix A, the Comprehensive Plan Amendment application, the Project fits within the County's future development plans for the area. It is within the County's Phase 2 line and will ensure efficient, reliable, and affordable utility service consistent with County and Town goals. As discussed below as an answer to subsection (f), the Project is compatible with adjacent land uses.

(f) Compatibility with adjacent lands (a statement of land uses and impact of zoning change)

Directly to the east of the Project is its grid interconnection point, an existing substation, on land zoned I-1 Institutional. The Project Site is efficient because only a short, unobtrusive transmission line is required to connect the BESS facility to its neighboring interconnection point. The Project is compatible with the adjacent utility substation, which is similar in character to the Project. The Project will be sited adjacent to other compatible industrial and commercial uses, such as a proposed concrete manufacturing plant that will be located directly west of the Parcel and an RV dealership across 392nd Avenue.

(g) Legal description of property to be rezoned

See the CSM attached as Appendix C to this application package.

(h) Plot plan or survey plat of property to be rezoned (showing location, dimensions, zoning of adjacent properties, existing uses and buildings of adjacent properties--drawn to scale)

See the CSM attached as Appendix C to this application package.

(i) The exact language of any proposed change in the text of this ordinance.

Not applicable.

(j) A map plan, when necessary, which accurately locates or describes the proposal with respect to the floodways and floodplains and which provides all pertinent information such as the fill dimensions and elevations, building floor elevations and floodproofing data.

See Exhibit B, Map of Floodways and Floodplains. See also Exhibit C, a hydrology report for the Project.

(k) All computations which are required to show the effect of the proposal on flood heights, velocities and floodplain storage for all subdivision proposals and all other proposals if the area affected exceeds five acres or the estimated cost of the proposal exceeds $75,000, which information shall be transmitted to the Department of Natural Resources for review.

No waterways exist onsite and accordingly there are no mapped floodways or floodplains onsite, as illustrated in Exhibit B, Map of Floodways and Floodplains.

(l) Additional information as may be requested by the Kenosha County Department of Planning and Development.

Robin Energy Storage has provided all the information it believes was requested by the County Department of Planning and Development; however, if more information is requested, Robin Energy Storage is willing to provide it as reasonably necessary.

(m) The name of the County Supervisor of the district wherein the property is located

County Supervisor Erin Decker.

(n) Any information required by section 12.05.010 of this ordinance.

See Appendix D, the CUP application, providing additional information relating to BESS as required by ordinance.

(o) The fee specified in section 12.05.080 of this ordinance.

Fees are provided with this application package.

Agricultural Preservation Narrative

To rezone a parcel out of A-1 Agricultural Preservation, the County must consider whether the land to be rezoned is:

(a) Better suited for a use not allowed in the current zoning,
(b) Consistent with the Comprehensive Plan,
(c) Substantially Consistent with the County Farmland Preservation Plan,
(d) Will not substantially impair current or future agricultural use of surrounding parcels.[5]

This rezone meets these standards. As described above, the Project Site is well suited for a BESS. The Project will be in close vicinity to the existing utility substation, which avoids the need for longer powerlines interconnecting the Project to the grid. The Project is also compatible with neighboring land uses. The adjacent substation and the Project are similar utility infrastructure. The Project will also be adjacent to other industrial and commercial uses, such as a proposed concrete manufacturing facility and an RV dealership. The Project will be compatible with the industrial nature of the immediate area.

The I-1 zoning designation proposed for the Project Site is consistent with the County's Multi-Jurisdictional Comprehensive Plan, as amended pursuant to Appendix A of this application package. Robin Energy Storage requests to amend the zoning designation of these lots from A-1 to A-2 only because the lots will no longer meet the minimum acreage requirements of the A-1 district.

The Project is consistent with the County's farmland preservation plan (FPP). The Parcel is not a designated Farmland Preservation Area in the Town's FPP map (FPP-Map-5-7). Therefore, the

[5] *See* Wis. Stat. § 91.48(1)(a)-(d); Kenosha County Ordinances, Chapter 12, Section 12.31.010(i).

County and Town have not identified the Parcel as an area to be preserved for future agricultural use.[6]

Finally, the Project will not impair surrounding agricultural uses. The agricultural uses neighboring the Project Site and within the Parcel are being rezoned to an agricultural district (i.e., A-2) consistent with their size, and appropriate access will be provided to each lot as discussed with the current agricultural user.

Conclusion

Robin Energy Storage has met all the requirements for a rezone as required by Wisconsin Statute and the Zoning Code. The Project is an efficient, safe, and orderly use of land directly adjacent to a utility substation and will assist in providing reliable electric service to the area. The County should grant the rezone as requested in this application.

[6] *See* Kenosha County Farmland Preservation Plan PDF Pg. 17, https://www.kenoshacountywi.gov/DocumentCenter/View/2542/A_FARMLAND_PRESERVATION_PLAN_FOR_KENOSHA_COUNTY_2ND-EDITION_JULY_2013?bidId=.

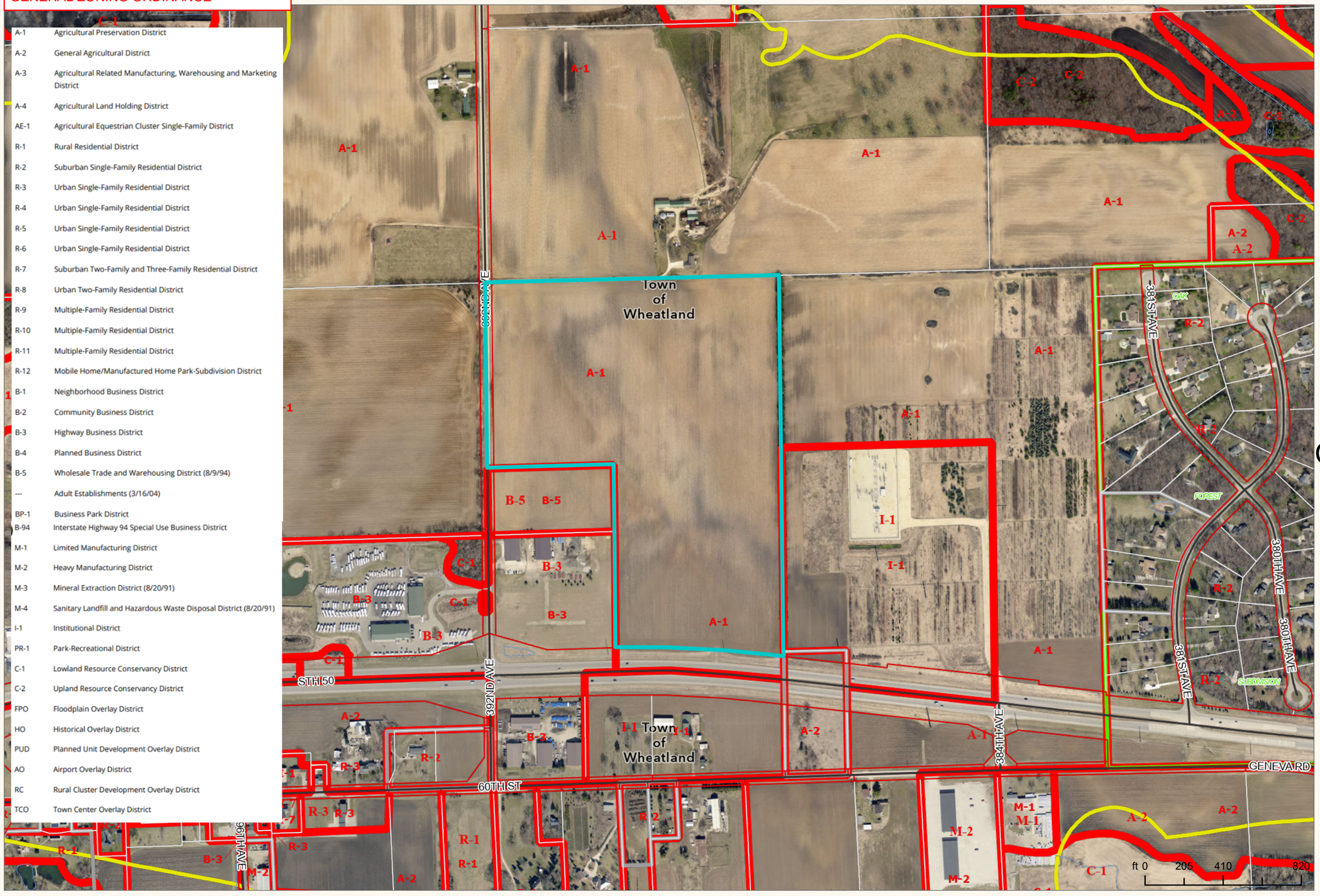
APPENDIX B

Exhibit A

Current and Proposed Zoning Maps

ZONING CATEGORIES BELOW ARE FROM CHAPTER 12 KENOSHA COUNTY GENERAL ZONING ORDINANCE

A-1	Agricultural Preservation District
A-2	General Agricultural District
A-3	Agricultural Related Manufacturing, Warehousing and Marketing District
A-4	Agricultural Land Holding District
AE-1	Agricultural Equestrian Cluster Single-Family District
R-1	Rural Residential District
R-2	Suburban Single-Family Residential District
R-3	Urban Single-Family Residential District
R-4	Urban Single-Family Residential District
R-5	Urban Single-Family Residential District
R-6	Urban Single-Family Residential District
R-7	Suburban Two-Family and Three-Family Residential District
R-8	Urban Two-Family Residential District
R-9	Multiple-Family Residential District
R-10	Multiple-Family Residential District
R-11	Multiple-Family Residential District
R-12	Mobile Home/Manufactured Home Park-Subdivision District
B-1	Neighborhood Business District
B-2	Community Business District
B-3	Highway Business District
B-4	Planned Business District
B-5	Wholesale Trade and Warehousing District (8/9/94)
---	Adult Establishments (3/16/04)
BP-1	Business Park District
B-94	Interstate Highway 94 Special Use Business District
M-1	Limited Manufacturing District
M-2	Heavy Manufacturing District
M-3	Mineral Extraction District (8/20/91)
M-4	Sanitary Landfill and Hazardous Waste Disposal District (8/20/91)
I-1	Institutional District
PR-1	Park-Recreational District
C-1	Lowland Resource Conservancy District
C-2	Upland Resource Conservancy District
FPO	Floodplain Overlay District
HO	Historical Overlay District
PUD	Planned Unit Development Overlay District
AO	Airport Overlay District
RC	Rural Cluster Development Overlay District
TCO	Town Center Overlay District



KENOSHA COUNTY INTERACTIVE MAPPING

CURRENT ZONING MAP CLASSIFICATIONS

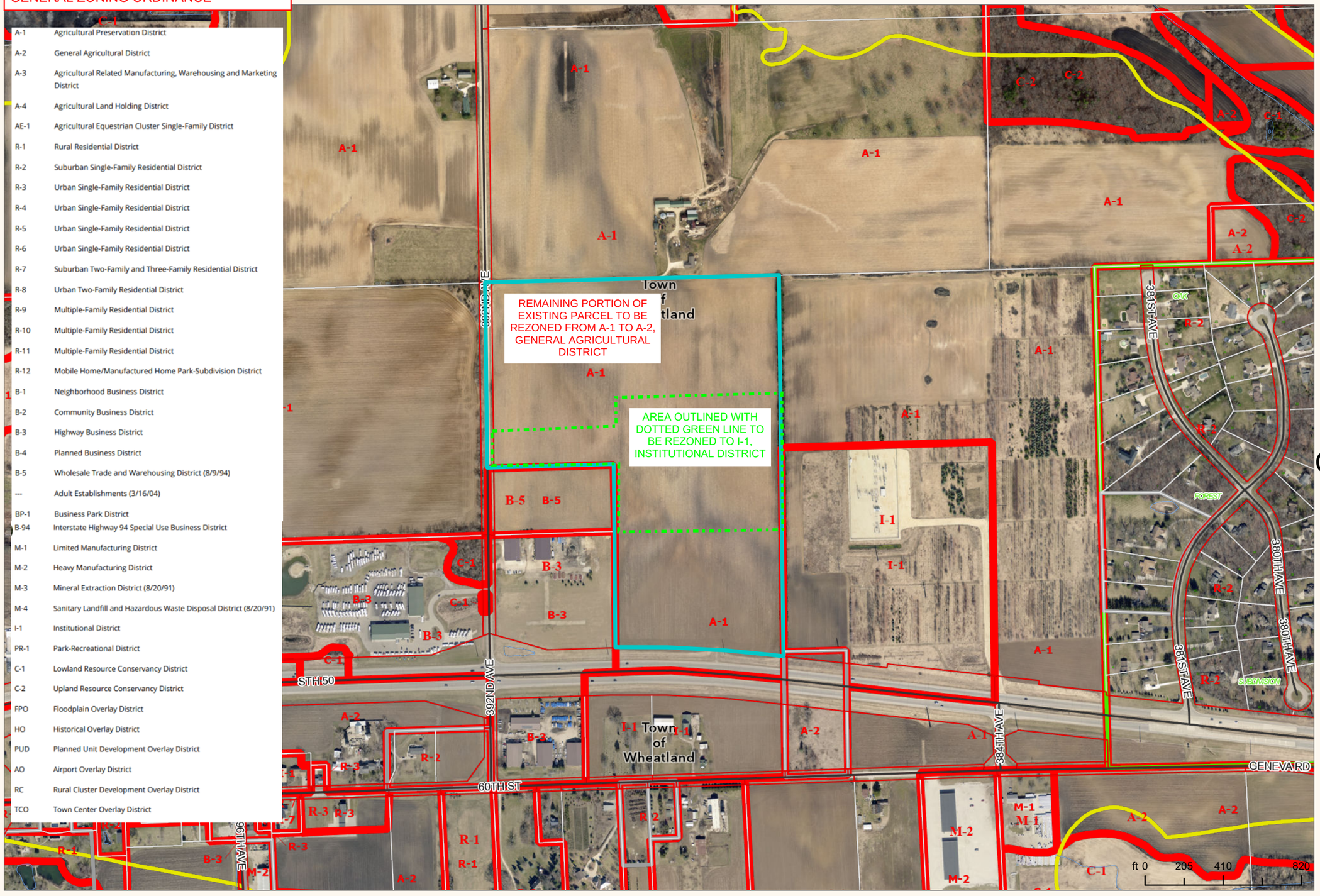
N S

1:6,000
1" = 500'

Date Printed: 11/3/2025

ZONING CATEGORIES BELOW ARE FROM CHAPTER 12 KENOSHA COUNTY GENERAL ZONING ORDINANCE

A-1	Agricultural Preservation District
A-2	General Agricultural District
A-3	Agricultural Related Manufacturing, Warehousing and Marketing District
A-4	Agricultural Land Holding District
AE-1	Agricultural Equestrian Cluster Single-Family District
R-1	Rural Residential District
R-2	Suburban Single-Family Residential District
R-3	Urban Single-Family Residential District
R-4	Urban Single-Family Residential District
R-5	Urban Single-Family Residential District
R-6	Urban Single-Family Residential District
R-7	Suburban Two-Family and Three-Family Residential District
R-8	Urban Two-Family Residential District
R-9	Multiple-Family Residential District
R-10	Multiple-Family Residential District
R-11	Multiple-Family Residential District
R-12	Mobile Home/Manufactured Home Park-Subdivision District
B-1	Neighborhood Business District
B-2	Community Business District
B-3	Highway Business District
B-4	Planned Business District
B-5	Wholesale Trade and Warehousing District (8/9/94)
---	Adult Establishments (3/16/04)
BP-1	Business Park District
B-94	Interstate Highway 94 Special Use Business District
M-1	Limited Manufacturing District
M-2	Heavy Manufacturing District
M-3	Mineral Extraction District (8/20/91)
M-4	Sanitary Landfill and Hazardous Waste Disposal District (8/20/91)
I-1	Institutional District
PR-1	Park-Recreational District
C-1	Lowland Resource Conservancy District
C-2	Upland Resource Conservancy District
FPO	Floodplain Overlay District
HO	Historical Overlay District
PUD	Planned Unit Development Overlay District
AO	Airport Overlay District
RC	Rural Cluster Development Overlay District
TCO	Town Center Overlay District



KENOSHA COUNTY INTERACTIVE MAPPING

PROPOSED ZONING MAP CLASSIFICATIONS

N S

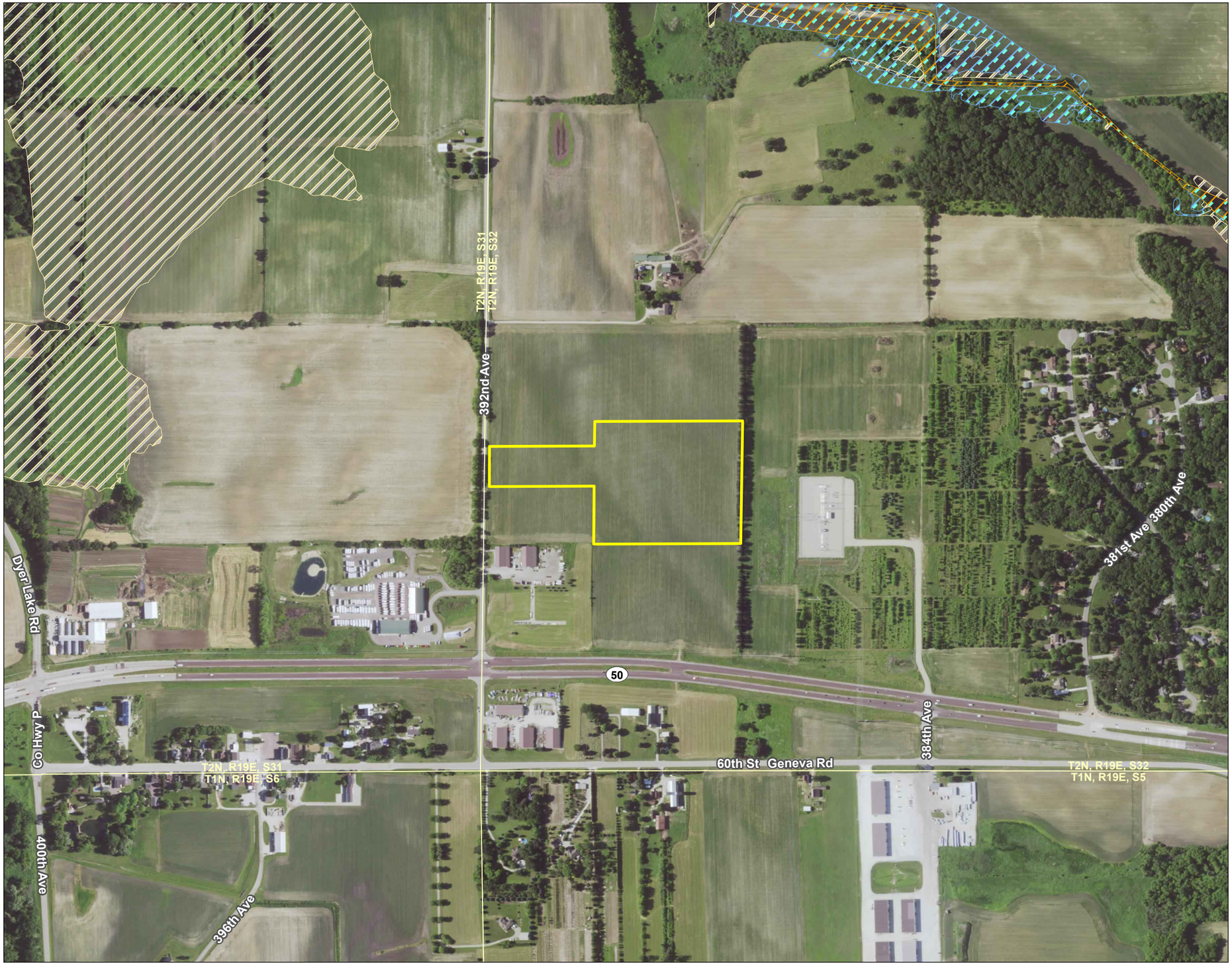
1:6,000
1" = 500'

Date Printed: 11/3/2025

APPENDIX B

Exhibit B

Floodway and Floodplain Map



Exhibit

B

Title

Map of Floodways and Floodplains

Client/Project 193711447

Storage Portfolio, LLC
Robin BESS, Kenosha County

Project Location
T2N, R19E, S32
T. of Wheatland, Kenosha Co., WI

Prepared by MNK on 2025-11-05
TR by AJC on 2025-11-05

N

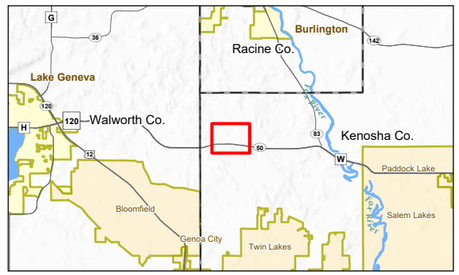
0 300 600 Feet
(At original document size of 11x17)
1:7,200

Legend

- Project Area

Flood Hazard Zones

- Regulatory Floodway
- 100-year Floodplain
- 500-year Floodplain



Notes

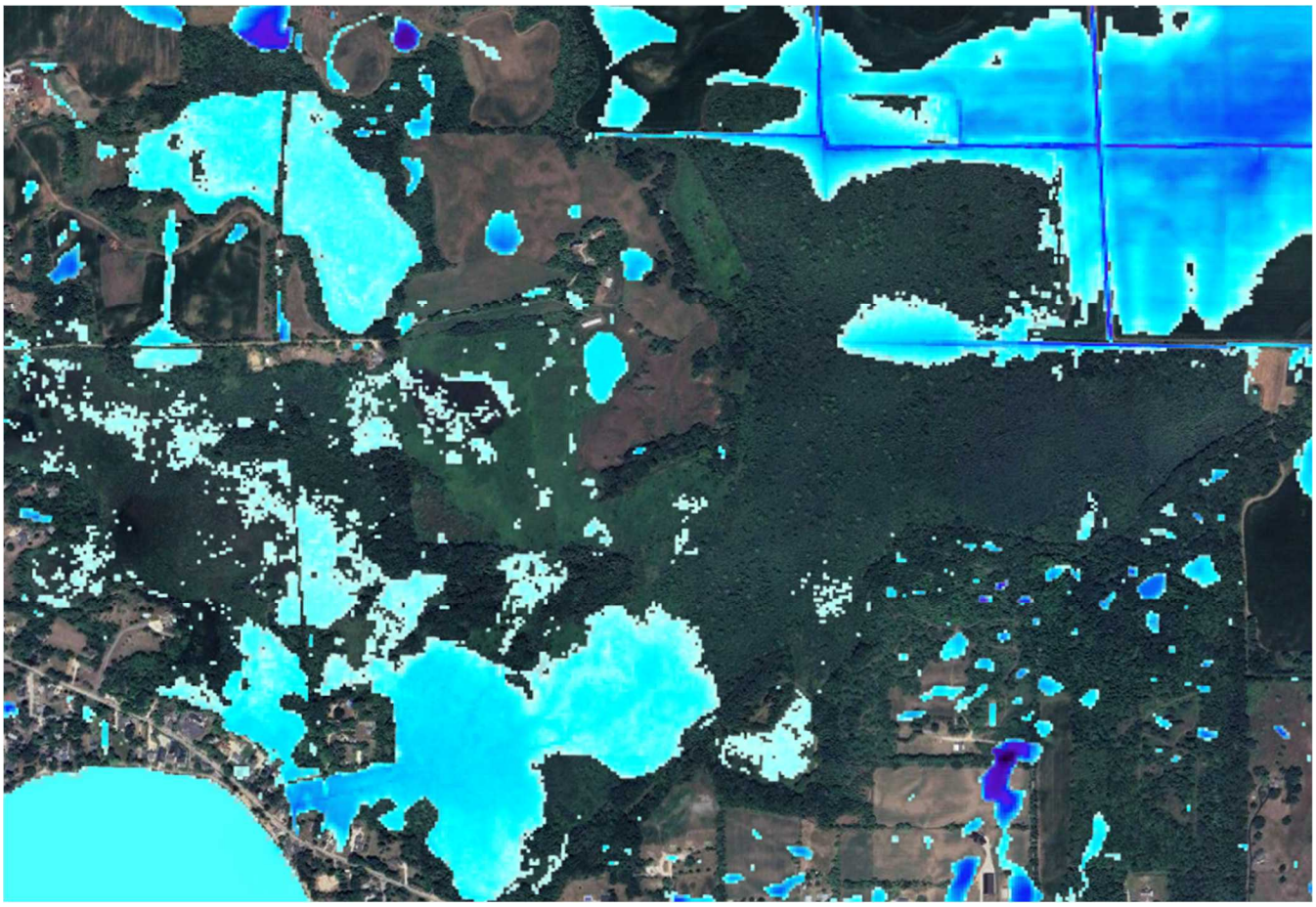
1. Coordinate System: NAD 1983 HARN WISCRS Kenosha County Feet
2. Data Sources: Stantec, Esri, Storage Portfolio LLC, FEMA, USCB, USGS
3. Background: NAIP 2022

Stantec

APPENDIX B

Exhibit C

Hydrology Report



PRELIMINARY HYDROLOGY STUDY

Robin BESS Project

Kenosha County, Wisconsin

OCTOBER 2025

PREPARED FOR:

CIP
COPENHAGEN INFRASTRUCTURE PARTNERS

PREPARED BY:

Westwood

Westwood

Preliminary Hydrology Study

Robin BESS Project

Kenosha County, Wisconsin

Prepared For:

Copenhagen Infrastructure Partners
412 West 15th Street, 15th Floor
New York, New York 10011

Prepared By:

Westwood Professional Services, Inc.
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: R0052120.01
Date: October 27, 2025

Westwood

Table of Contents

Tables

Exhibits

Appendices

Executive Summary

The purpose of this study is to analyze and review the existing hydrology of the Robin BESS Project (Project or Site) and any impacts that the hydrology may play in the design of the proposed battery energy storage system (BESS) site. This report was prepared to be used by the Project Team in the design and layout of the Project and not intended for submittal to reviewing agencies for stormwater permitting.

The Project Site is proposed on approximately 19 acres and is located within Kenosha County, Wisconsin, approximately 5 miles south of Burlington, Wisconsin. The Site is located on relatively flat land that generally drains to multiple low points within and adjacent to the site. The modeled watershed area encompasses approximately 13 square miles and is characterized by many constructed ditches which drain the modeled area in multiple directions.

The analysis shows low to moderate water depths and low velocities (Exhibits 8 through 7A) across the majority of the Site. Low-lying areas on site show localized ponding. Minimal velocities and scour are expected on site due to the flat terrain.

Based on experience with similar projects, the majority of the Site is suitable for the planned development by avoiding or designing to areas of high flood depths.

1.0 Data Sources

Table 1 – Data Sources

Task	Format	Source	Use
Elevation	1m DEM Survey	USGS The National Map Westwood PS	FLO-2D Model Elevations
Crop Data	Shapefile	USDA 2021 Cropland Data Layer	Landcover
Soils	Shapefile	USGS SSURGO Dataset	Curve Numbers
Precipitation	PDF File	NOAA Atlas 14	Design Storms
HUC-12 Drainage Boundary	Shapefile	USGS	Define Model Extents
Site Boundary	CAD Linework Updated October 2025	Copenhagen Infrastructure Partners	Define Model Extents
2014 Aerial Photography	ArcGIS Map Service	USDA FSA	Reference
FEMA Flood Zones	PDF; Shapefile	FEMA	Reference
Culvert Locating and Sizing	Aerial Imagery	Google Earth	Culvert Modeling

2.0 Coordinate System

Table 2 – Coordinate System Used

Projection	State Plane Coordinate System
Zone	Wisconsin South (FIPS 4803)
Datum	NAD83
Planar Units	Feet (U.S. Survey)

3.0 Existing Conditions

3.1 Project Location

The Project Site covers approximately 19 acres and is located within Kenosha County, Wisconsin (Exhibit 1). The Project Site is approximately 35 miles southwest of Milwaukee, Wisconsin, and is located near Burlington, Wisconsin, which is 5 miles north of the Project Area (Exhibit 1).

3.2 Watershed Hydrology

The modeled watershed area encompasses approximately 13 square miles that generally drains east. The watershed is dominated by wetlands and low-lying crop land, which is drained via ditches. The majority of the watershed drains to New Munster Creek, which flows east out of the modeled watershed. The west of the watershed drains north towards Dyer Lake and south towards Powers Lake, also via drainage ditches.

3.3 Onsite Conditions

The Project is located on flat land characterized by multiple low points. The majority of the site drains south toward State Highway 50, with some portions of the site draining north towards a low-lying area north of the project. Low areas are visible on site where drainage will likely pond. The rest of the site drains towards Wisconsin Highway 50 south of the site. In general the Site has slopes of less than 2%.

US Fish and Wildlife Service National Wetlands Inventory (NWI Wetlands) provides information on the distribution of US wetlands and are shown in Exhibit 2. The NWI Wetlands dataset is not all-inclusive and other wetlands not shown may exist. The landcover on the Project area is primarily row crop (Exhibit 4) and soils onsite primarily belonging to Hydrologic Soil Groups (HSG) B and D (Exhibit 3). Typically, B soils are Silty Sands and D soils are Clays. Soils belonging to Hydrologic Soil Group D exhibit very low infiltration rates; therefore, standing water will be slow to infiltrate during and after storm events when compared to soils belonging to Hydrologic Soil Groups A or B.

The main potential hydrologic issue on Site is flooding from localized ponding.

3.4 FEMA Flood Zones

FEMA has completed a study to determine flood hazards for the selected location; the project area is covered by FIRM panels 55059C0110E and 55059C0109E (Appendix C). The Project does not contain any areas of FEMA Flood Zone A or AE (Exhibits 2 and 6). No preliminary or pending FEMA changes are proposed within the project area.

4.0 Proposed Conditions

4.1 Proposed Conditions

The proposed use of the site will be a battery energy storage system (BESS) facility. The Project landcover will primarily be gravel, although the Project will also consist of access roads and other energy storage infrastructure surrounded by a security fence. The Project should be designed to minimize grading and maintain existing drainage patterns. A flood analysis of pre-development and post development depths may need to be completed once civil design is finalized for permitting purposes.

4.2 Post-Construction Stormwater Management

Please refer to the Stormwater Management Plan being prepared for the Project for onsite stormwater management practices.

5.0 FLO-2D Modeling

5.1 FLO-2D Modeling Overview

FLO-2D is a physical process model that routes rainfall runoff and flood hydrographs over flow surfaces or in channels using the dynamic wave approximation to the momentum equation. FLO-2D offers advantages over 1-D models and unit hydrograph methods by allowing for breakout flows and visualization of flows across a potential site. The primary inputs are a DTM (elevation data), curve numbers, and precipitation. Culverts able to be easily identified and directly impacting the Site were included in the model based off of aerial imagery provided by Google Earth (Exhibits 6-8). Culvert sizes and invert elevations may vary from field conditions.

A FLO-2D model with 20-foot grid cells was utilized to model the watershed within and directly impacting the Project Site.

5.2 Elevation Data

The elevation data input into the FLO-2D model was a blend of 1m DEM data from USGS The National Map and survey data collected by Westwood PS, dated 02/07/2024 (Exhibit 5). The 1m DEM data was used for topographic coverage of the offsite area, and survey data was used for topographic coverage of the project area (Exhibit 5). This data was exported as a single digital terrain model (DTM), which is read directly into FLO-2D.

5.3 Watershed Soils and Land Cover

USDA-NRCS SSURGO soil data provides soil types within the Project boundary and full coverage of the contributing watershed. Soils are primarily classified as

Hydrologic Soil Groups (HSG) B and D within the Project boundary (Exhibit 3). Land cover was obtained from the USDA 2021 Cropland Data Layer. Exhibit 4 displays the land cover classes for the entire watershed. Curve numbers were applied to each grid cell in the FLO-2D model based on intersecting the grid with the curve numbers (Exhibit 5).

5.4 Precipitation

Precipitation data was downloaded from NOAA Atlas 14 and used for the FLO-2D analysis for the 100-year, 24-hour storm event. This storm event has a rainfall depth of 6.1 inches. Modeling the 100-year, 24-hour storm event for this location allows for the best initial analysis in order to determine the worst areas of flooding and erosion. Kenosha County requests that the MSE-3 rainfall distribution be used in the peak-runoff analyses, in order to align with the Stormwater Management Plan being prepared for the Project the MSE-3 rainfall distribution was used in this study. The MSE-3 distribution was also found to be a more conservative model; when compared to the results generated from the Atlas-14 provided rainfall distribution, the MSE-3 distribution resulted in slightly larger flood depths onsite.

6.0 Flood Analysis Results

6.1 Existing Conditions Flood Analysis

The analysis shows low to moderate water depths and low velocities (Exhibits 6 through 7A) across the majority of the Site. During a 100-year storm, the flood depths across the majority of the Project Area are less than 0.5 feet with velocities less than 1 foot/second, with the exception of the low lying areas onsite. The deepest flood depth onsite is approximately 1.5 feet, located in the depression area in the north end of the site. See Table 3 below for a breakdown of flood depths within the Project Site.

FEMA extents and elevations differ from results of this analysis throughout the modeled watershed. This is mainly due to how depression storage is factored into the modeling techniques used in this analysis versus those used by FEMA. The modeling techniques used by FEMA in this area, according to the FIS report for Kenosha County, are 1-dimensional, using HEC-HMS and HEC-RAS-4.1 software, which can only approximate depression storage. The 2-Dimentional modeling used in this analysis can better factor in depression storage since the watershed terrain is a model input.

Table 3 – 100 Year Flood Depths Onsite

Peak Flow Depth (ft)	Percentage of Project Area Covered by Peak Flow Depths
0.00 - 0.49	87.3%
0.50 - 1.00	9.6%
1.01 - 1.50	3.0%
1.51 - 2.00	0.1%
2.01 - 2.50	<0.1%
2.51 - 3.00	<0.1%
3.01 - 4.00	<0.1%
4.01 - 6.00	<0.1%
6.01+	<0.1%

See Exhibits 6 through 7A for areas within the Project with higher flood depths and velocities.

6.2 Scour

Minimal scour is expected onsite (Exhibit 8). The scour depths calculated for this Project are based on HEC-18 Pier Scour Equations of a 6-inch-wide pile perpendicular to flow. Scour calculations consist of local scour only with unarmored soils and pile bases to provide the conservative local scour results. This scour calculation assumes site infrastructure being elevated on piers or piles, and therefore only applies to the scour of these piers. These scour results do not account for general, rill, or gully scour.

7.0 Recommendations

Based on experience on similar projects, the Site is suitable for the planned development and hydrologic concerns can be addressed by either avoiding areas of high flood depths or through detailed engineering design.

8.0 Next Steps

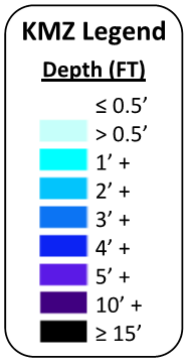
1. Final engineering design should account for the flood depths and velocities presented in Exhibits 6-7A.
2. Facilities to be elevated 1' above the 100-year, 24-hour peak flood elevations.
3. Stormwater management should be revisited to ensure the final design meets the local and state requirements.

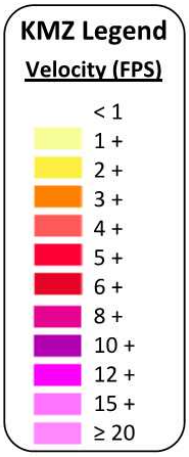
9.0 Included Output Files

1. Shapefile of 100-year, 24-hour Rain Event Flow Depth
   2025-06-09_Robin_PrelimFlowDepthAtCell_100yr24hr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Flow Depth (Feet)

2. Shapefile of 100-year, 24-hour Rain Event Velocity
   2025-06-09_Robin_PrelimVelocityAtCell_100yr24hr.shp
   Attribute "ID" = Grid Cell Number
   Attribute "VAR" = Max Velocity (Feet/Second)

3. KMZ of FLO-2D Results
   2025-06-09_Robin_PrelimFLO-2D.kmz
   Overlay in Google Earth for graphical representation.





10.0 References Cited

National Engineering Handbook, Part 630 Hydrology. Chapter 9 Hydrologic Soil-Cover Complexes. USDA. NRCS. 210-VI-NEH, July 2004

The National Map, 1-meter DEM, Elevation data. Retrieved June 2025, from https://viewer.nationalmap.gov/basic/

Web soil survey. Retrieved June 2025, from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

NOAA Atlas 14 Point Precipitation Frequency Estimates. Retrieved June 2025, from https://hdsc.nws.noaa.gov/hdsc/pfds/

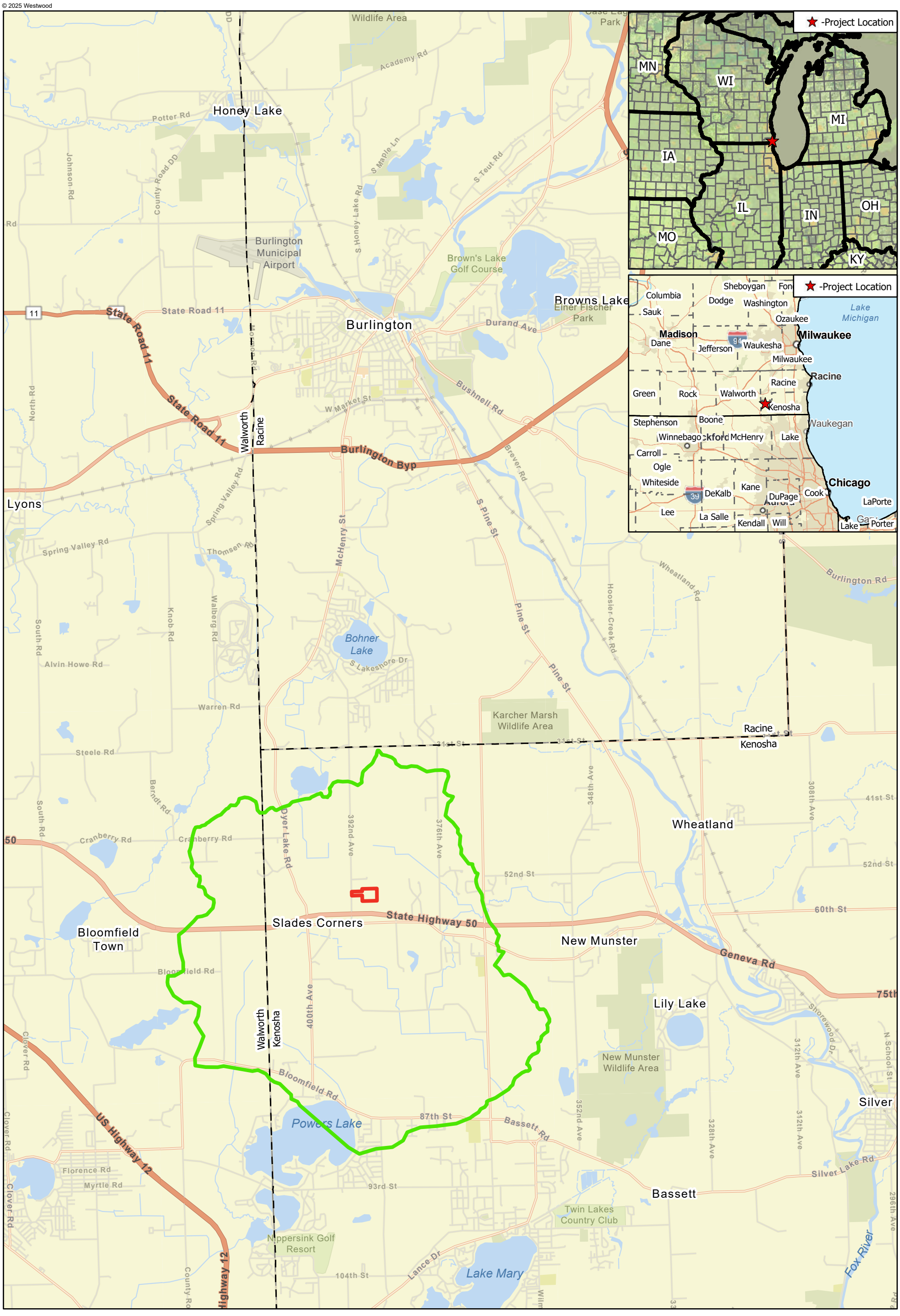
USGS. USGS water resources: About USGS water resources. Retrieved June 2025, from https://water.usgs.gov/GIS/huc.html

USDA 2021 Cropland Data Layer, Landcover data. Retrieved June 2025, from https://www.nass.usda.gov/Research_and_Science/Cropland/Release/

FEMA Flood Insurance Rate Maps. Retrieved June 2025, from https://msc.fema.gov/portal/advanceSearch#searchresultsanchor

Exhibits

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
01-Location Map - Location Map | 10/22/2025 10:31 AM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary

Westwood
Toll Free (888) 937-5150 westwoodps.com

N

0 1 Miles

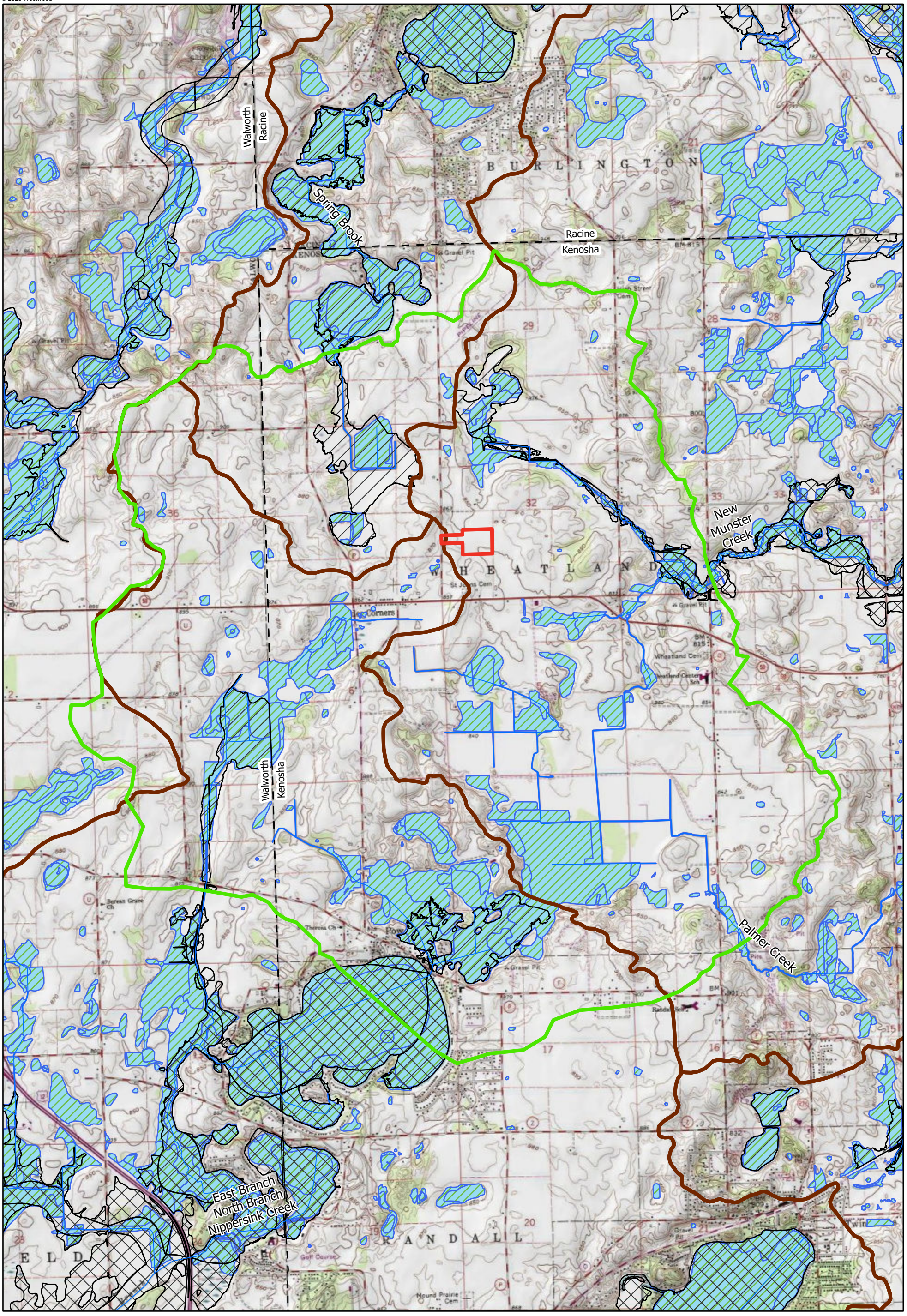
Robin BESS Project

Kenosha County, WI

Exhibit 1: Location Map

October 27, 2025

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
02-Base Hydrologic Map - USGS, FEMA, and NWI Wetlands Map | 10/22/2025 10:31 AM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- HUC-12 Boundary
- County Boundary
- FEMA Zone A
- FEMA Zone AE
- NWI Wetlands
- NHD Flowlines

N

0 0.5 Miles

Robin BESS Project

Kenosha County, WI

Exhibit 2: Base Hydrologic Map

October 27, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
05-CN And Topo Sources - CN and Topo Sources | 10/22/2025 10:40 AM | ACarpenter

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- 1m Public Topography
- Client Topography
- County Boundary

Curve Number

- 40 - 49
- 50 - 59
- 60 - 69
- 70 - 79
- 80 - 89
- 90 - 99

N

0 0.5 Miles

Robin BESS Project

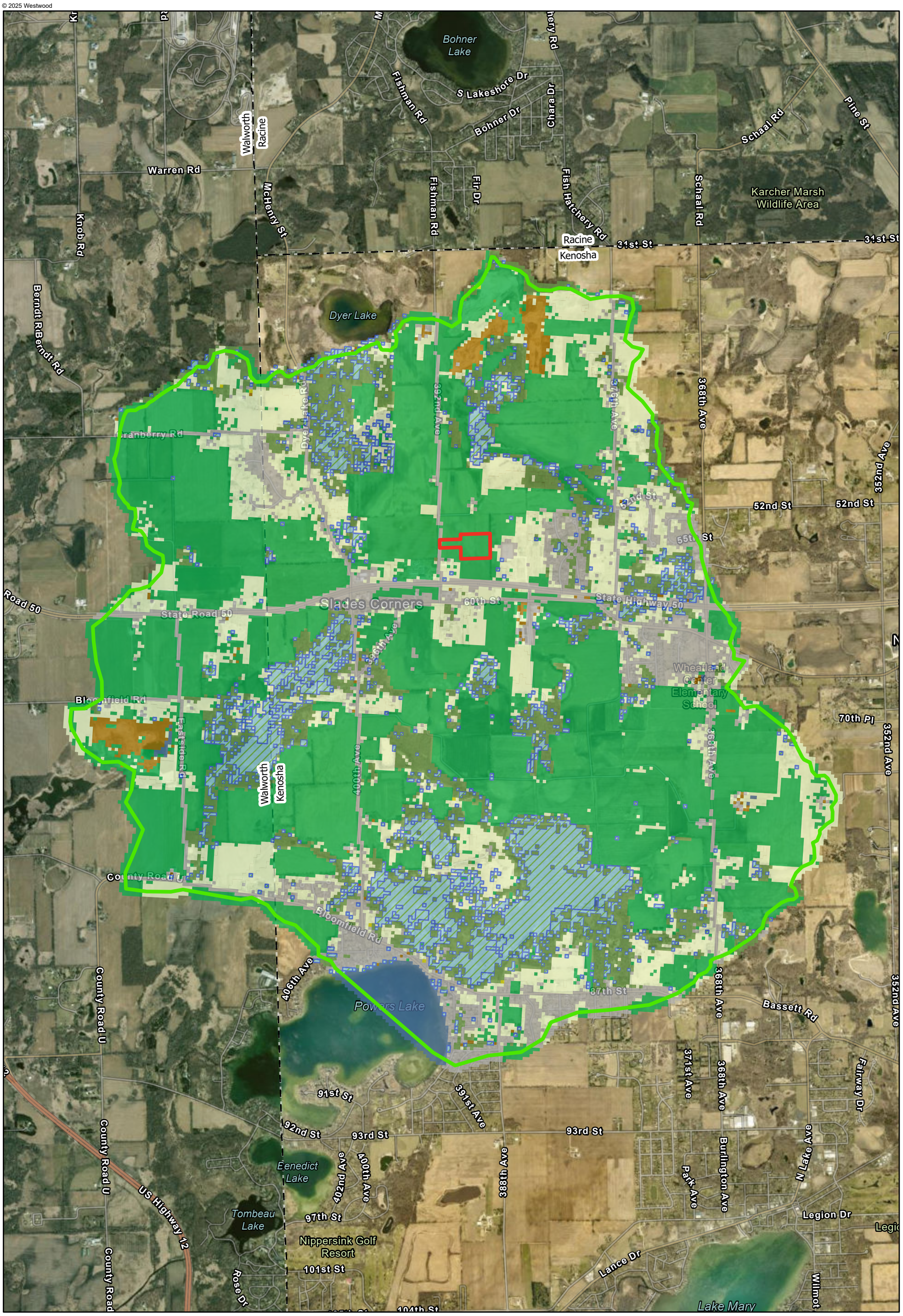
Kenosha County, WI

Exhibit 5: Curve Number and Topographic Source Map

October 27, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
04-Landcover Map - Landcover | 10/22/2025 10:40 AM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary
- Barren
- Cultivated
- Developed
- Shrubland
- Water
- Pastureland
- Wetlands
- Woods

Westwood
Toll Free (888) 937-5150 westwoodps.com

N

0 0.5 Miles

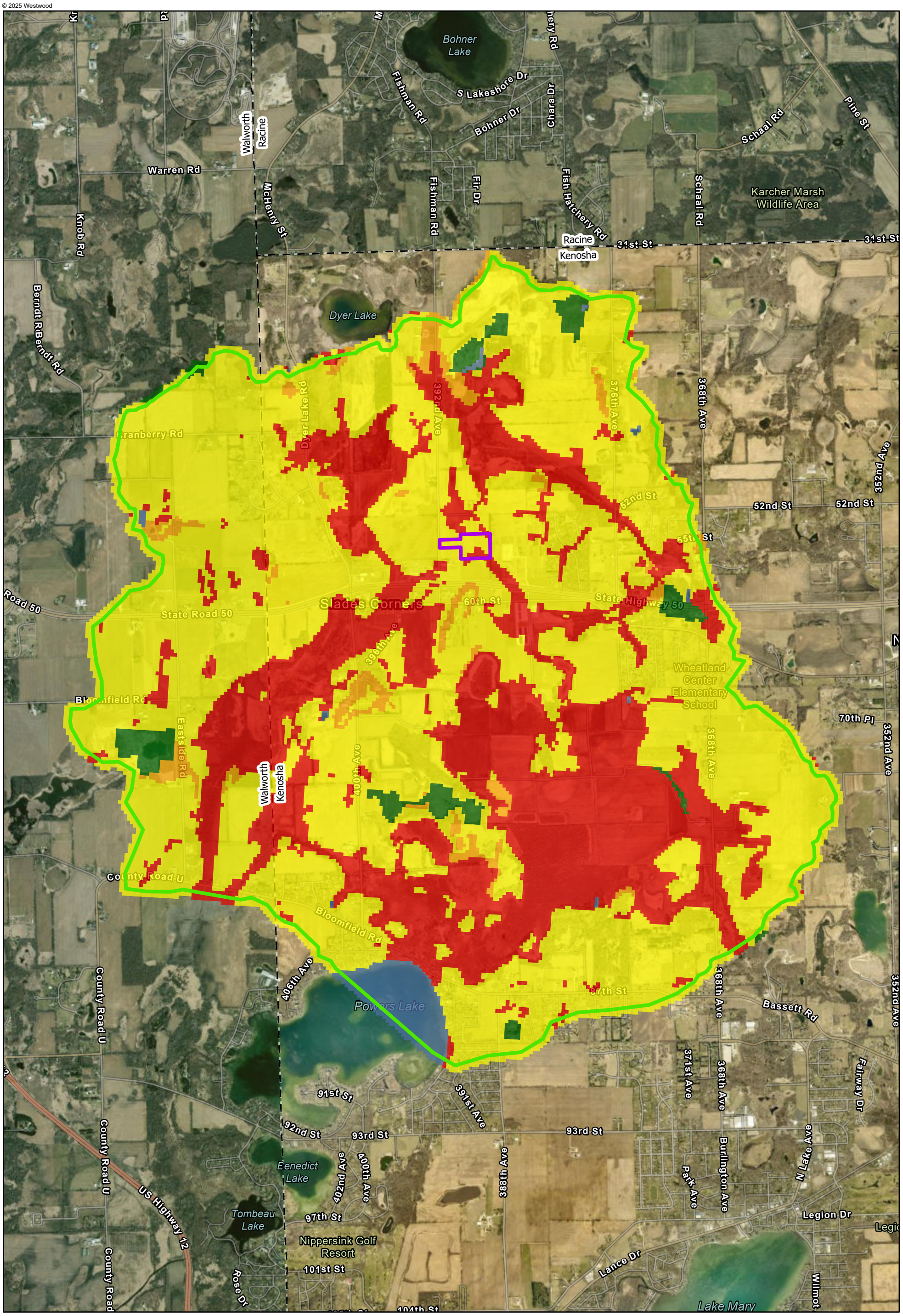
Robin BESS Project

Kenosha County, WI

Exhibit 4: Landcover Map

October 27, 2025

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
03-Soils Map - Soils Map | 10/22/2025 10:30 AM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary

Hydrologic Soil Group

- A
- B
- C
- D
- Water

N

0 0.5 Miles

Robin BESS Project

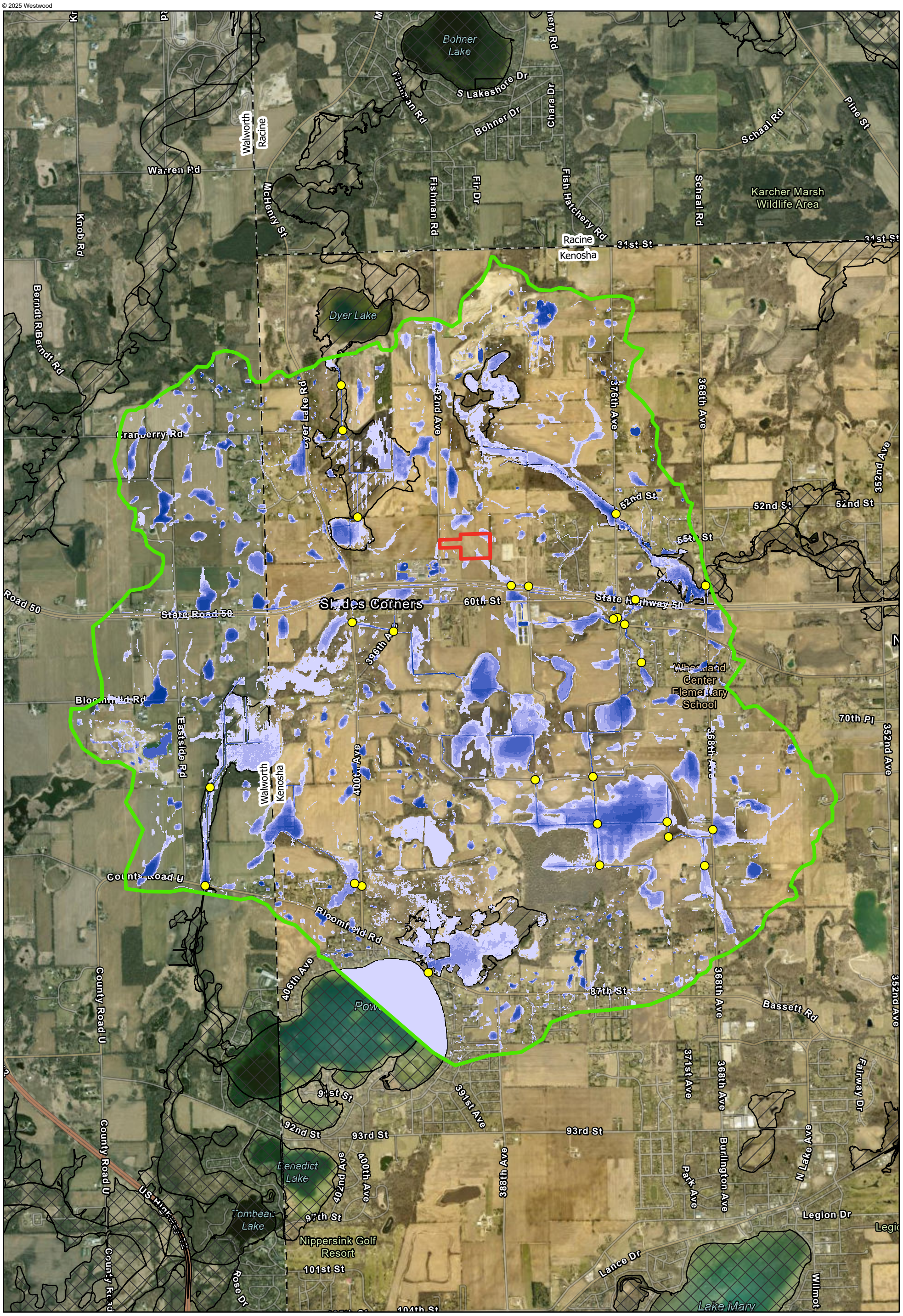
Kenosha County, WI

Exhibit 3: Soils Map

October 27, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
06-100 Yr Max Water Depth Map - 100 Yr Max Water Depth | 10/22/2025 10:30 AM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary
- FEMA Zone A
- FEMA Zone AE
- FLO-2D Culvert Inputs

Max Water Depth (ft)

- 0.50 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 - 6.00
- 6.01 +

N

0 0.5 Miles

Robin BESS Project

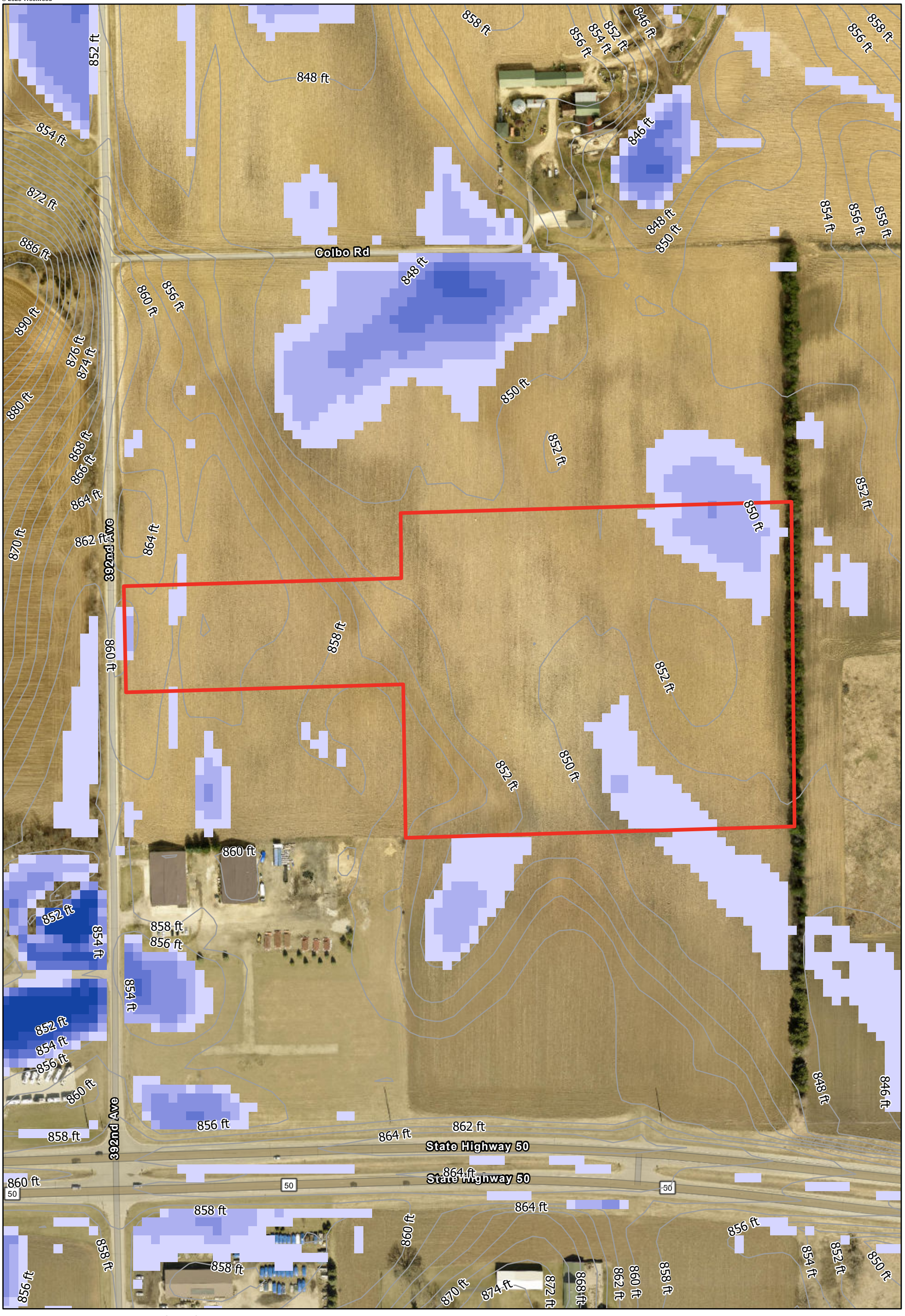
Kenosha County, WI

Exhibit 6: 100-Year Max Water Depth Map

October 27, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
06A-100 Yr Max Water Depth Project Area Map - 100 Yr Max Water Depth Project Area | 10/22/2025 10:28 AM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary
- FEMA Zone A
- FEMA Zone AE
- XX' Contours

Max Water Depth (ft)

- 0.50 - 1.00
- 1.01 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 - 6.00
- 6.01 +

Westwood
Toll Free (888) 937-5150 westwoodps.com

N

0 200 Feet

Robin BESS Project

Kenosha County, WI

Exhibit 6A: 100-Year Max Water Depth Project Area Map

October 27, 2025

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
07-100 Yr Peak Velocity Map - 100 Yr Peak Velocity | 10/22/2025 10:30 AM | ACarpenter

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary
- FLO-2D Culvert Inputs

Peak Velocity (fps)

- 1.00 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 +

N

0 0.5 Miles

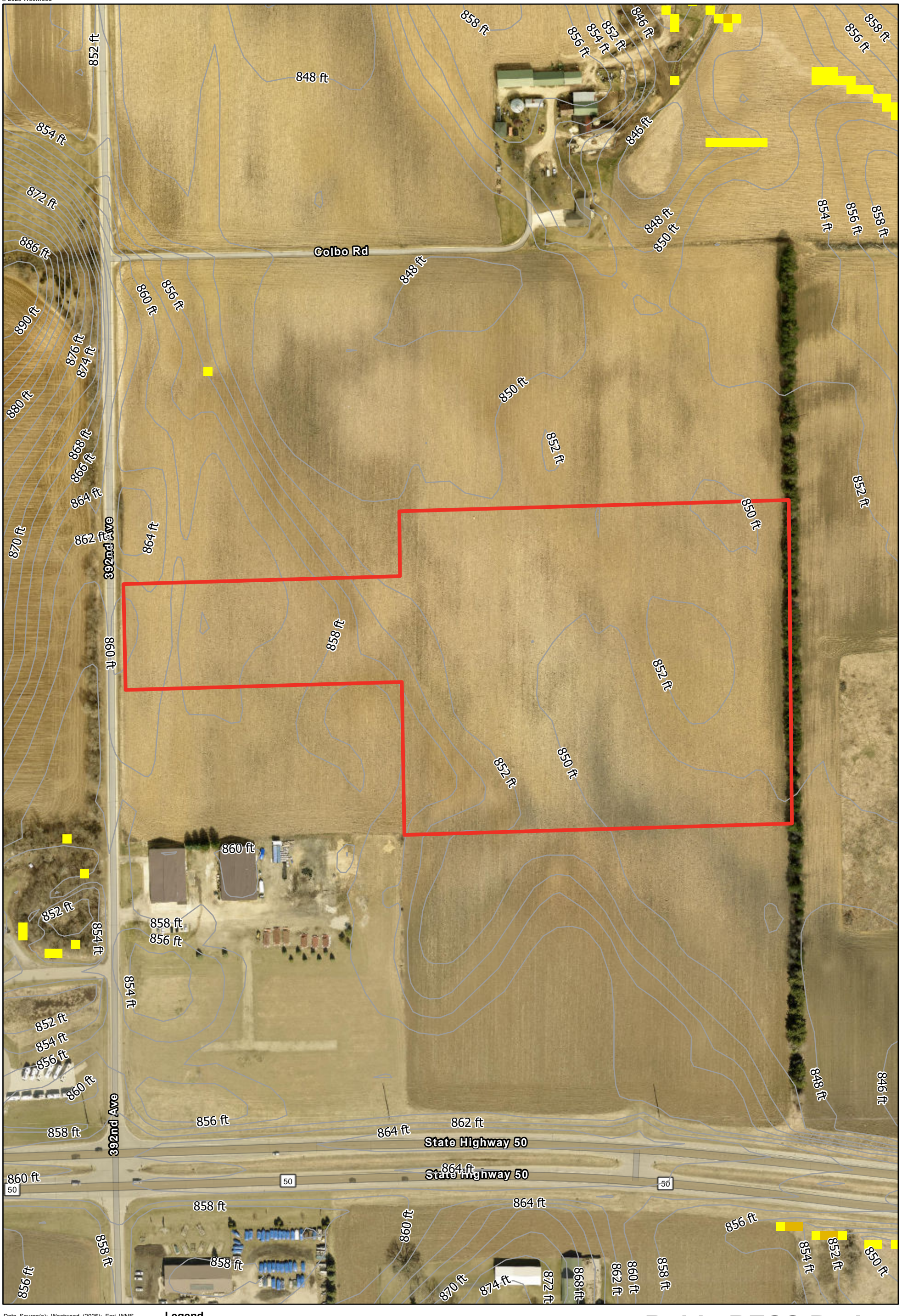
Robin BESS Project

Kenosha County, WI

Exhibit 7: 100-Year Peak Velocity Map

October 27, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary
- XX' Contours

Peak Velocity (fps)

- 1.00 - 1.50
- 1.51 - 2.00
- 2.01 - 2.50
- 2.51 - 3.00
- 3.01 - 4.00
- 4.01 +

N

0 200 Feet

Robin BESS Project

Kenosha County, WI

Exhibit 7A: 100-Year Peak Velocity Project Area Map

October 27, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com

N:\0052120.01_GIS_hydroexhibits\RobinBESSHydroExhibits\RobinBESSHydroExhibits.aprx
08-100 Yr Scour Map - 100 Yr Scour | 10/22/2025 10:30 AM | ACarpenter

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- FLO-2D Boundary
- County Boundary
- XX' Contours
- Scour (ft)
  - 1.00 - 1.50
  - 1.51 - 2.00
  - 2.01 +

N

0 200 Feet

Robin BESS Project

Kenosha County, WI

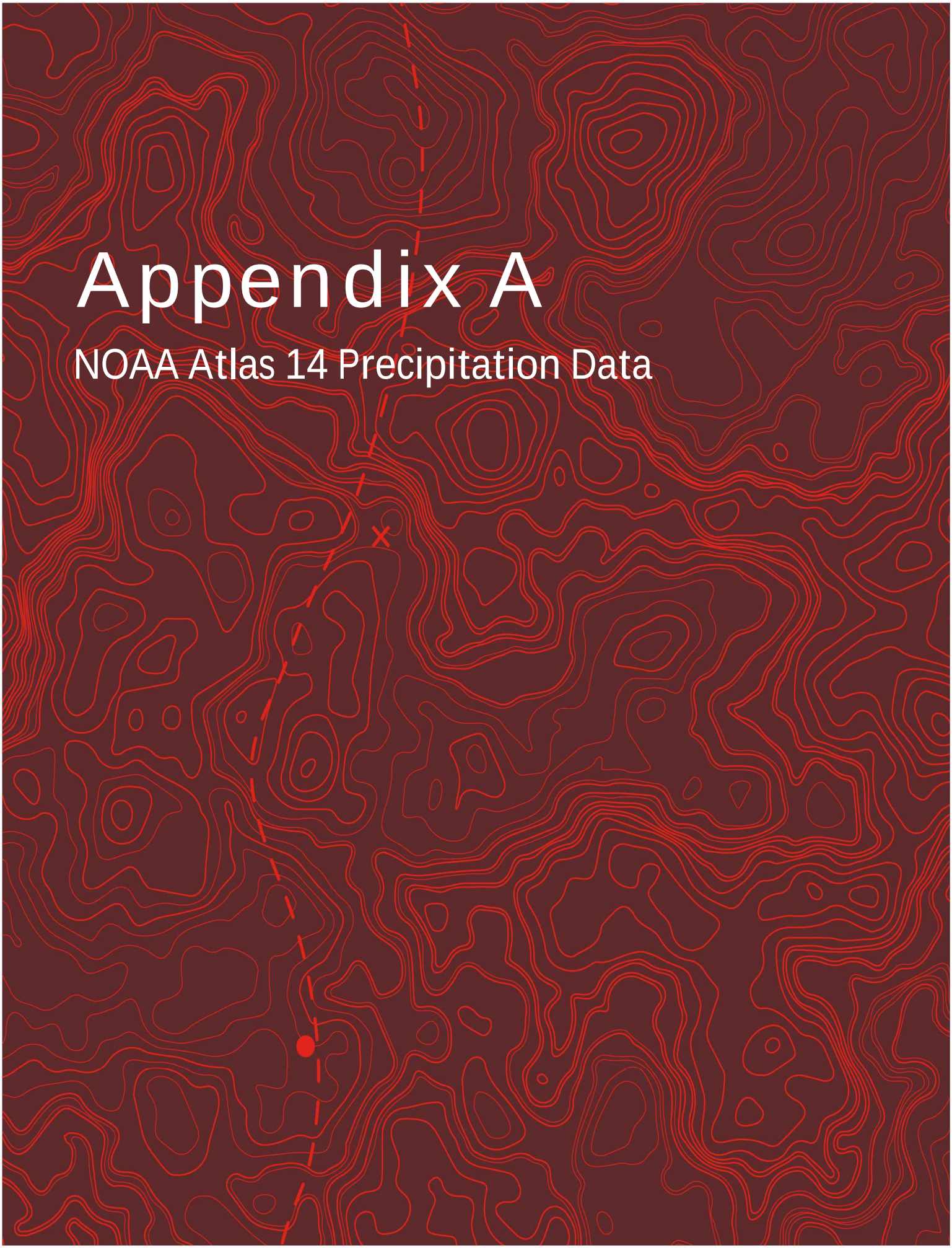
Exhibit 8: 100-Year Scour Map

October 27, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com

Appendix A

NOAA Atlas 14 Precipitation Data



NOAA Atlas 14, Volume 8, Version 2
Location name: Burlington, Wisconsin, USA*
Latitude: 42.5878°, Longitude: -88.2815°
Elevation: 850 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.346** (0.272-0.434)	**0.403** (0.316-0.505)	**0.498** (0.390-0.626)	**0.579** (0.452-0.730)	**0.694** (0.526-0.898)	**0.786** (0.583-1.02)	**0.880** (0.632-1.17)	**0.978** (0.677-1.32)	**1.11** (0.741-1.53)	**1.21** (0.791-1.68)
10-min	**0.506** (0.398-0.635)	**0.589** (0.463-0.740)	**0.729** (0.571-0.916)	**0.848** (0.661-1.07)	**1.02** (0.771-1.32)	**1.15** (0.853-1.50)	**1.29** (0.926-1.71)	**1.43** (0.991-1.93)	**1.63** (1.09-2.24)	**1.78** (1.16-2.46)
15-min	**0.617** (0.486-0.775)	**0.719** (0.565-0.902)	**0.889** (0.697-1.12)	**1.03** (0.806-1.30)	**1.24** (0.940-1.60)	**1.40** (1.04-1.83)	**1.57** (1.13-2.08)	**1.75** (1.21-2.36)	**1.98** (1.32-2.73)	**2.17** (1.41-3.01)
30-min	**0.865** (0.680-1.08)	**1.01** (0.791-1.26)	**1.25** (0.977-1.57)	**1.45** (1.13-1.83)	**1.75** (1.32-2.26)	**1.98** (1.47-2.58)	**2.22** (1.60-2.95)	**2.48** (1.72-3.34)	**2.82** (1.89-3.88)	**3.09** (2.02-4.29)
60-min	**1.09** (0.860-1.37)	**1.29** (1.02-1.62)	**1.63** (1.28-2.05)	**1.92** (1.50-2.43)	**2.35** (1.78-3.04)	**2.69** (1.99-3.51)	**3.04** (2.18-4.03)	**3.41** (2.36-4.61)	**3.92** (2.62-5.39)	**4.32** (2.81-5.99)
2-hr	**1.32** (1.05-1.64)	**1.58** (1.26-1.96)	**2.02** (1.60-2.51)	**2.40** (1.89-2.99)	**2.95** (2.27-3.78)	**3.39** (2.55-4.38)	**3.85** (2.81-5.06)	**4.34** (3.05-5.80)	**5.01** (3.40-6.82)	**5.54** (3.66-7.60)
3-hr	**1.45** (1.16-1.79)	**1.75** (1.40-2.16)	**2.26** (1.80-2.78)	**2.70** (2.14-3.34)	**3.34** (2.59-4.26)	**3.86** (2.93-4.96)	**4.40** (3.24-5.75)	**4.98** (3.52-6.62)	**5.77** (3.95-7.81)	**6.40** (4.26-8.72)
6-hr	**1.72** (1.40-2.10)	**2.06** (1.67-2.51)	**2.64** (2.13-3.22)	**3.15** (2.54-3.86)	**3.90** (3.07-4.93)	**4.51** (3.47-5.74)	**5.16** (3.85-6.67)	**5.84** (4.20-7.69)	**6.80** (4.72-9.11)	**7.55** (5.11-10.2)
12-hr	**2.06** (1.69-2.47)	**2.39** (1.96-2.88)	**2.98** (2.44-3.60)	**3.51** (2.86-4.24)	**4.28** (3.42-5.35)	**4.92** (3.84-6.20)	**5.60** (4.24-7.16)	**6.33** (4.62-8.24)	**7.35** (5.19-9.74)	**8.17** (5.61-10.9)
24-hr	**2.38** (1.99-2.84)	**2.74** (2.28-3.26)	**3.37** (2.79-4.02)	**3.92** (3.24-4.69)	**4.73** (3.82-5.84)	**5.40** (4.27-6.71)	**6.10** (4.68-7.70)	**6.85** (5.08-8.81)	**7.90** (5.66-10.3)	**8.73** (6.10-11.5)
2-day	**2.70** (2.28-3.17)	**3.13** (2.64-3.68)	**3.87** (3.25-4.55)	**4.50** (3.77-5.32)	**5.42** (4.43-6.58)	**6.16** (4.93-7.54)	**6.93** (5.38-8.62)	**7.74** (5.81-9.80)	**8.84** (6.42-11.4)	**9.72** (6.89-12.6)
3-day	**2.98** (2.53-3.48)	**3.42** (2.91-4.00)	**4.18** (3.54-4.89)	**4.85** (4.09-5.69)	**5.81** (4.79-7.01)	**6.59** (5.32-8.01)	**7.40** (5.80-9.15)	**8.25** (6.25-10.4)	**9.44** (6.92-12.1)	**10.4** (7.42-13.4)
4-day	**3.22** (2.76-3.74)	**3.67** (3.13-4.26)	**4.44** (3.78-5.16)	**5.11** (4.33-5.96)	**6.09** (5.05-7.32)	**6.90** (5.60-8.35)	**7.74** (6.11-9.52)	**8.63** (6.58-10.8)	**9.86** (7.28-12.6)	**10.8** (7.82-14.0)
7-day	**3.82** (3.30-4.39)	**4.28** (3.70-4.92)	**5.08** (4.38-5.86)	**5.79** (4.96-6.70)	**6.83** (5.73-8.13)	**7.68** (6.32-9.21)	**8.58** (6.86-10.5)	**9.53** (7.36-11.8)	**10.9** (8.12-13.7)	**11.9** (8.70-15.2)
10-day	**4.35** (3.78-4.97)	**4.85** (4.22-5.54)	**5.72** (4.95-6.54)	**6.47** (5.58-7.43)	**7.57** (6.39-8.93)	**8.46** (7.00-10.1)	**9.39** (7.56-11.4)	**10.4** (8.07-12.8)	**11.7** (8.85-14.7)	**12.8** (9.43-16.2)
20-day	**5.96** (5.25-6.72)	**6.63** (5.84-7.48)	**7.73** (6.79-8.74)	**8.65** (7.57-9.81)	**9.94** (8.47-11.5)	**10.9** (9.15-12.8)	**11.9** (9.72-14.2)	**13.0** (10.2-15.7)	**14.3** (11.0-17.7)	**15.4** (11.5-19.2)
30-day	**7.39** (6.56-8.27)	**8.21** (7.29-9.20)	**9.53** (8.44-10.7)	**10.6** (9.34-11.9)	**12.0** (10.3-13.8)	**13.1** (11.0-15.1)	**14.1** (11.6-16.6)	**15.2** (12.0-18.2)	**16.5** (12.7-20.2)	**17.5** (13.2-21.7)
45-day	**9.28** (8.31-10.3)	**10.3** (9.22-11.5)	**11.9** (10.6-13.2)	**13.1** (11.7-14.7)	**14.7** (12.7-16.7)	**15.9** (13.5-18.2)	**17.0** (14.0-19.7)	**18.0** (14.4-21.3)	**19.2** (14.9-23.2)	**20.0** (15.3-24.7)
60-day	**10.9** (9.86-12.1)	**12.1** (10.9-13.4)	**13.9** (12.5-15.5)	**15.3** (13.7-17.0)	**17.1** (14.8-19.2)	**18.3** (15.6-20.7)	**19.4** (16.1-22.3)	**20.3** (16.3-23.9)	**21.4** (16.7-25.7)	**22.1** (17.0-27.1)

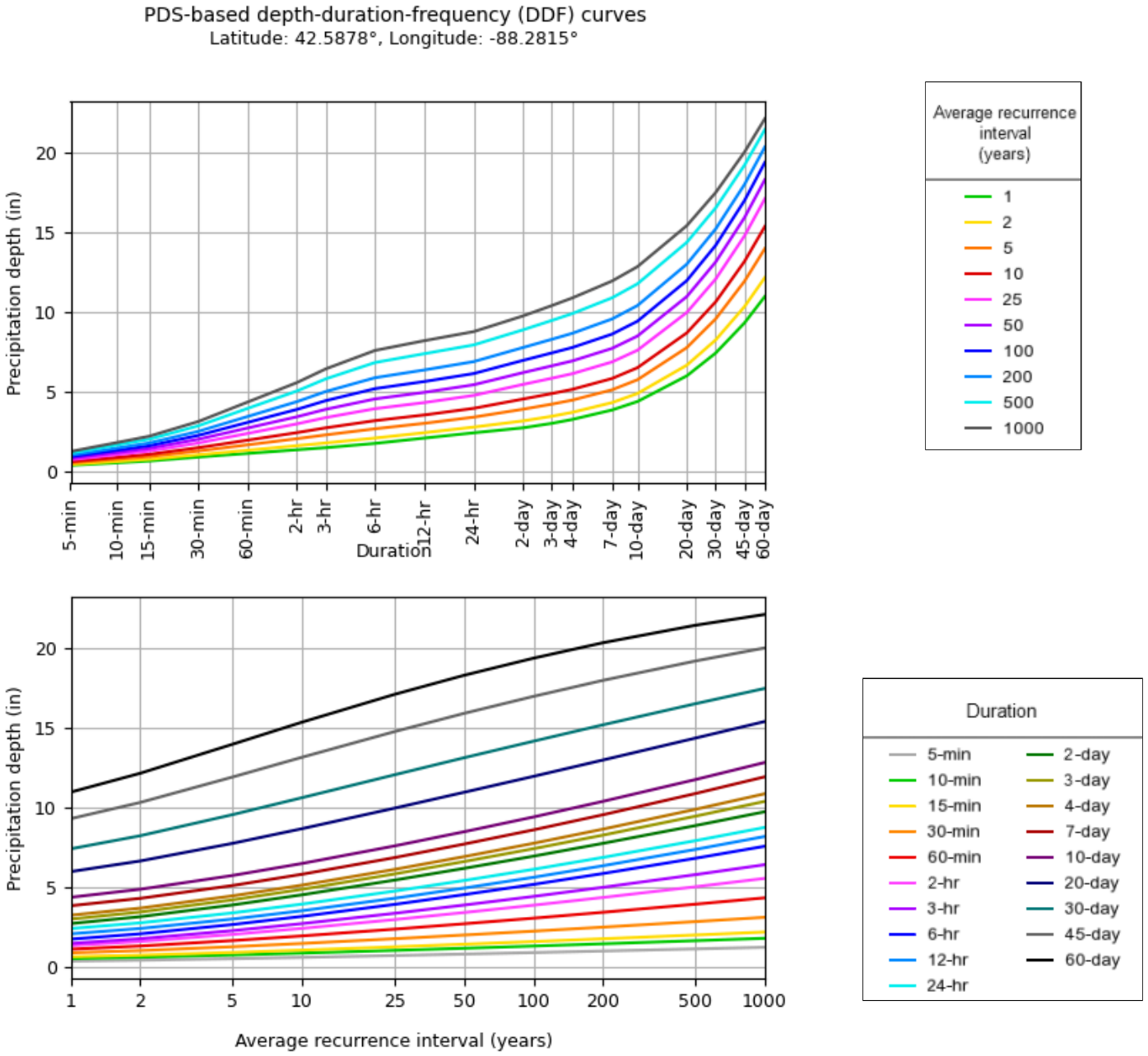
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



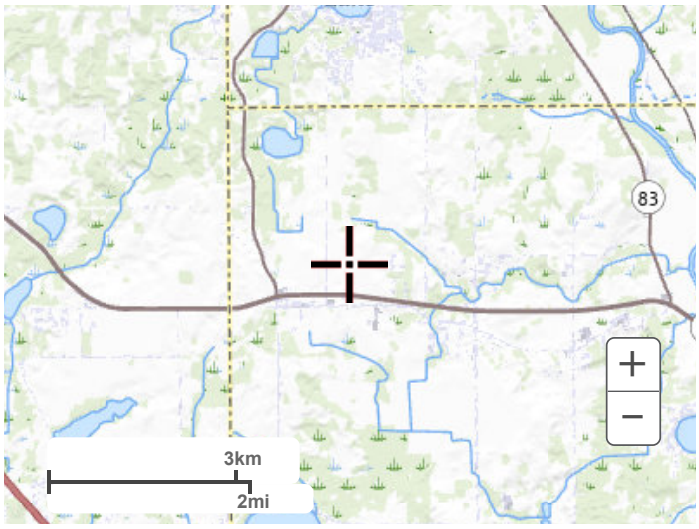
NOAA Atlas 14, Volume 8, Version 2

Created (GMT): Tue May 20 20:18:17 2025

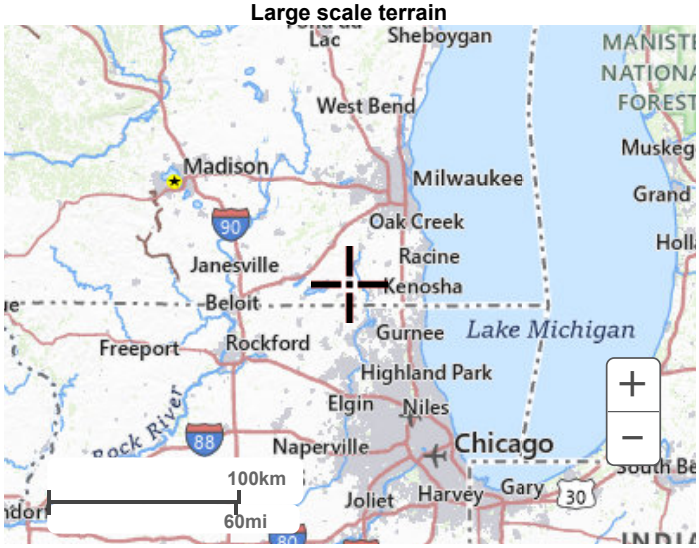
Back to Top

Maps & aerials

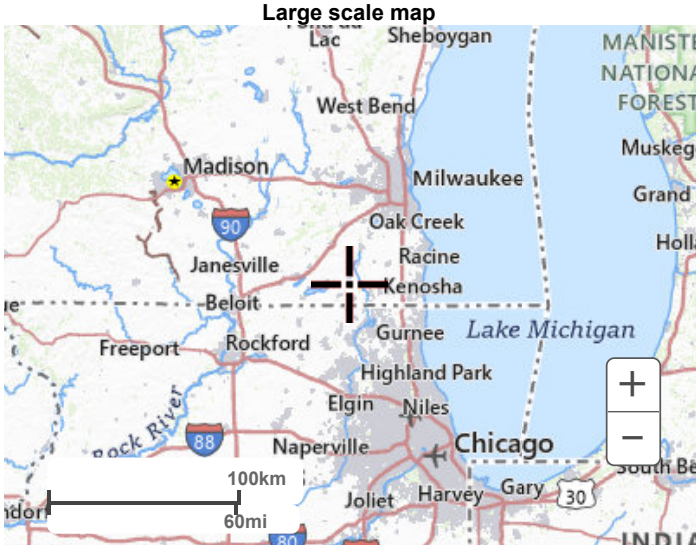
Small scale terrain



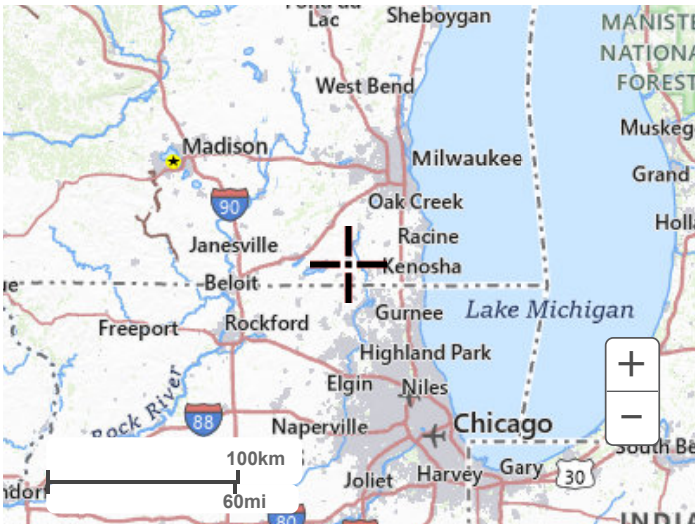
Large scale terrain



Large scale map



Large scale aerial



Back to Top

US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Appendix B

Curve Number Table

Table 1. Standard Curve Numbers

Class	Value	Classification Description [NLCD 2006]	Curve Number				
			Soil Type*				
			A	B	C	D	W
Water	11	Open Water - areas of open water, generally with less than 25% cover of vegetation or soil.	98	98	98	98	100
	12	Perennial Ice/Snow - areas characterized by a perennial cover of ice and/or snow, generally greater than 25% of total cover.	98	98	98	98	100
Developed	21	Developed, Open Space - areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	46	65	77	82	100
	22	Developed, Low Intensity - areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.	61	75	83	87	100
	23	Developed, Medium Intensity – areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.	77	85	90	95	100
	24	Developed High Intensity -highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.	89	92	94	95	100
Barren	31	Barren Land (Rock/Sand/Clay) - areas of bedrock, desert pavement, scarps, talus, slides, volcanic material, glacial debris, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.	77	86	91	94	100
Forest	41	Deciduous Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species shed foliage simultaneously in response to seasonal change.	43	55	70	77	100
	42	Evergreen Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. More than 75% of the tree species maintain their leaves all year. Canopy is never without green foliage.	43	55	70	77	100
	43	Mixed Forest - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover. Neither deciduous nor evergreen species are greater than 75% of total tree cover.	43	55	70	77	100
Shrubland	51	Dwarf Scrub - Alaska only areas dominated by shrubs less than 20 centimeters tall with shrub canopy typically greater than 20% of total vegetation. This type is often co-associated with grasses, sedges, herbs, and non-vascular vegetation.	43	48	65	73	100
	52	Shrub/Scrub - areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions.	43	48	65	73	100
Herbaceous	71	Grassland/Herbaceous - areas dominated by gramanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.	43	58	71	78	100
	72	Sedge/Herbaceous - Alaska only areas dominated by sedges and forbs, generally greater than 80% of total vegetation. This type can occur with significant other grasses or other grass like plants, and includes sedge tundra, and sedge tussock tundra.	43	58	71	78	100
	73	Lichens - Alaska only areas dominated by fruticose or foliose lichens generally greater than 80% of total vegetation.	43	48	65	73	100
	74	Moss - Alaska only areas dominated by mosses, generally greater than 80% of total vegetation.	43	48	65	73	100
Planted/Cultivated	81	Pasture/Hay – areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20% of total vegetation.	43	58	71	78	100
	82	Cultivated Crops – areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20% of total vegetation. This class also includes all land being actively tilled.	67	78	85	89	100
	83	Small Grains	63	75	83	87	100
Wetlands	91	Woody Wetlands - areas where forest or shrubland vegetation accounts for greater than 20% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	45	66	77	83	100
	92	Emergent Herbaceous Wetlands - Areas where perennial herbaceous vegetation accounts for greater than 80% of vegetative cover and the soil or substrate is periodically saturated with or covered with water.	45	66	77	83	100

*A/D, B/D and C/D soils lumped as D soils, W denotes water

**Curve Numbers for NLCD Codes 41-81 have been increased from 30 to 43 as many of these areas are partially grazed Woods-grass combination.

Appendix C

FEMA Flood Insurance Rate Map (FIRM)

88°16'0"W

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- (B) 20.2 / 17.5 — Cross Sections with 1% Annual Chance Water Surface Elevation
- (8) Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available effective flood hazard information for your community, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Mapping and Insurance Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be downloaded from the website. Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be acquired directly from the Flood Map Service Center at the website listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

Note: Some Special Flood Hazard Areas with elevations may not appear with elevation labels if the Base Flood Elevation or Cross-section line which communicates the elevation for the location appears on the adjacent panel. Please see the Panel Locator Diagram on this map panel to determine the adjacent panel and find the elevation feature there, or alternatively use the Flood Insurance Study report for detailed elevations by flood source.

SCALE

1 inch = 500 feet 1:6,000

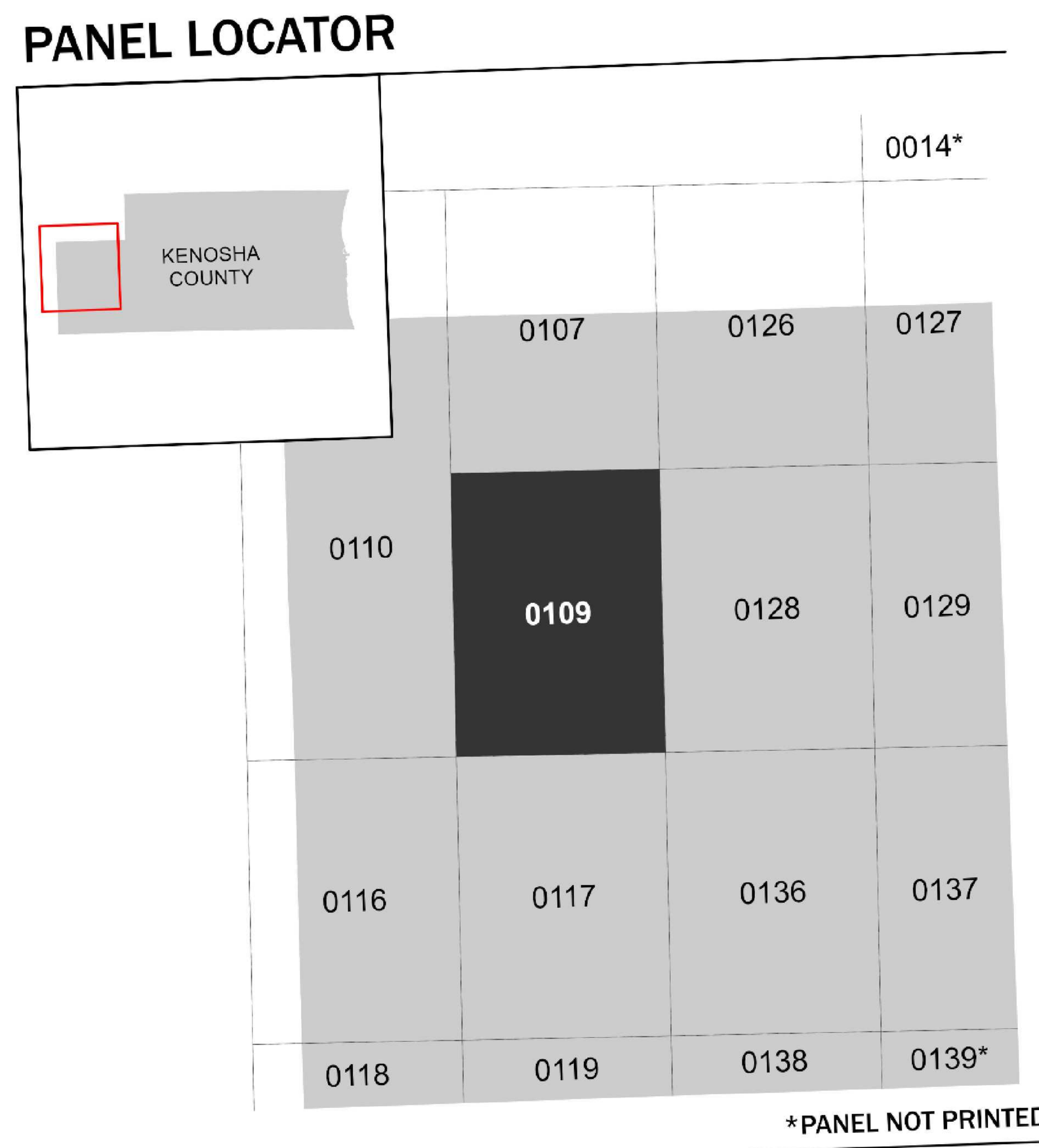
0 250 500 1,000 1,500 2,000 feet

0 50 100 200 300 400 meters

Map Projection:
NAD 1983 HARN UTM Zone 16N

Vertical Datum: NAVD88

PANEL LOCATOR



*PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

KENOSHA COUNTY WISCONSIN AND INCORPORATED AREAS

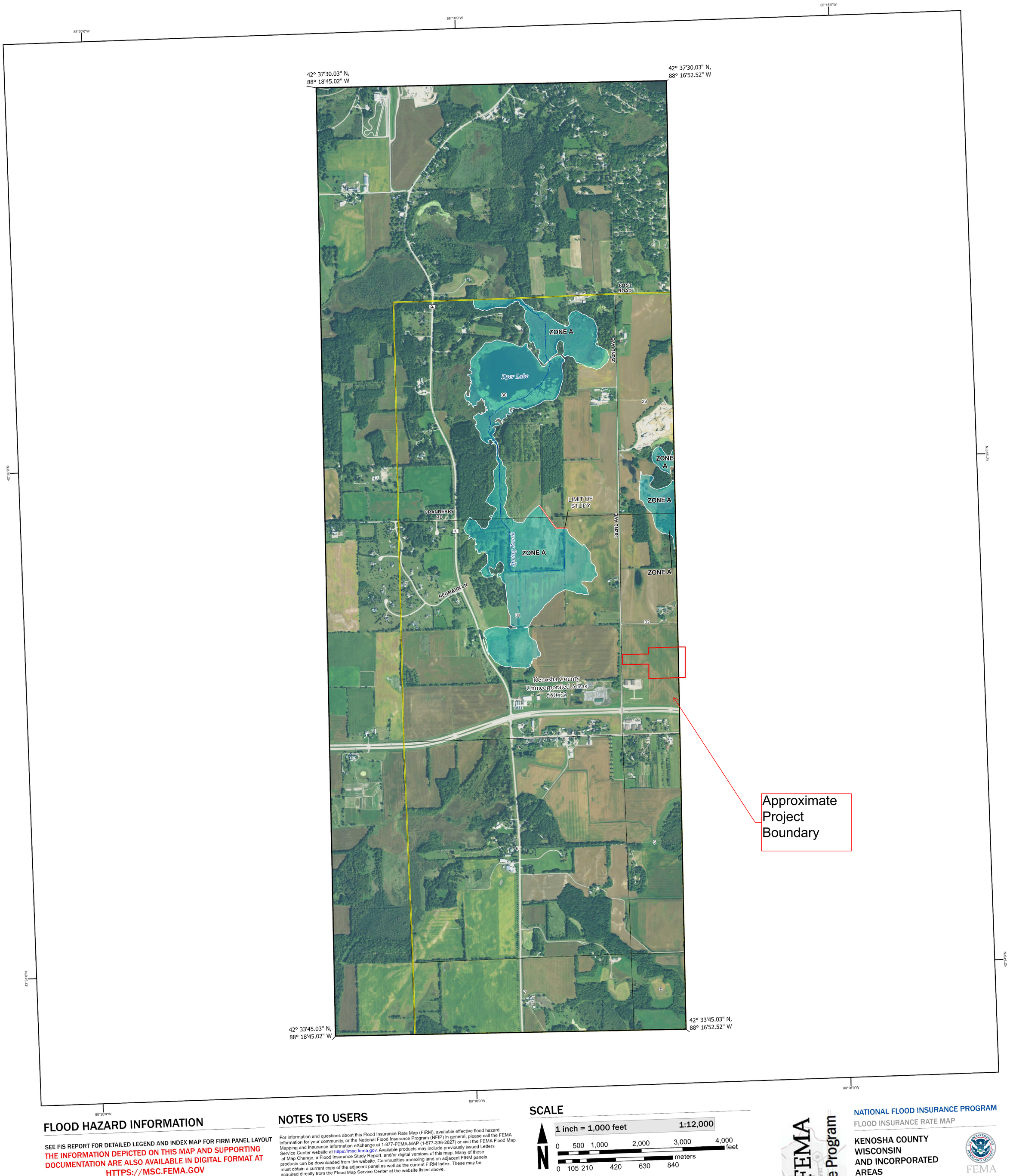
FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
KENOSHA COUNTY UNINCORPORATED AREAS	550523	0109	E

MAP NUMBER
55059C0109E
EFFECTIVE DATE
April 11, 2024

250 ft 750 ft 1250 ft 1750 ft



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

- 20.2 — Cross Sections with 1% Annual Chance
- 17.5 — Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 — Base Flood Elevation Line (BFE)

OTHER FEATURES
- Limit of Study
- Jurisdiction Boundary

0 ft 500 ft 1500 ft 2500 ft 3500 ft

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available effective flood hazard information for your community, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Mapping and Insurance Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be downloaded from the website. Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM index. These may be acquired directly from the Flood Map Service Center at the website listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

Note: Some Special Flood Hazard Areas with elevations may not appear with elevation labels if the Base Flood Elevation or Cross-section line which communicates the elevation for the location appears on the adjacent panel. Please see the Panel Locator Diagram on this map panel to determine the adjacent panel and find the elevation feature there, or alternatively use the Flood Insurance Study report for detailed elevations by flood source.

SCALE

N

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 3,000 4,000 feet

0 105 210 420 630 840 meters

Map Projection:
NAD 1983 HARN UTM Zone 16N
Vertical Datum: NAVD88

PANEL LOCATOR

*PANEL NOT PRINTED

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

KENOSHA COUNTY WISCONSIN AND INCORPORATED AREAS

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
KENOSHA COUNTY UNINCORPORATED AREAS	550523	0110	E

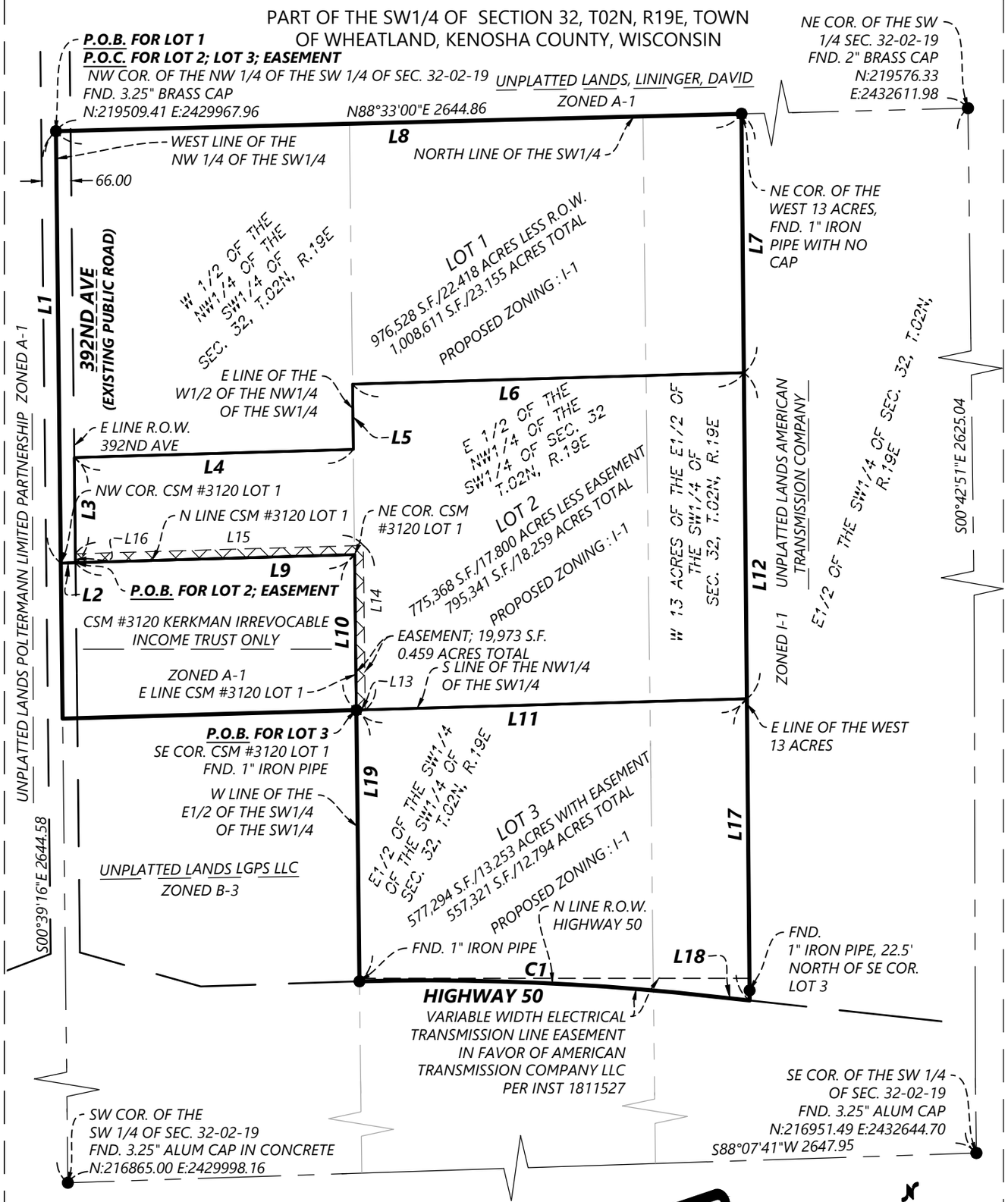
MAP NUMBER
55059C0110E
EFFECTIVE DATE
April 11, 2024

APPENDIX C

CERTIFIED SURVEY MAP APPLICATION

CERTIFIED SURVEY MAP NO. ____

PART OF THE SW1/4 OF SECTION 32, T02N, R19E, TOWN OF WHEATLAND, KENOSHA COUNTY, WISCONSIN



LEGEND:

- ● FND. MONUMENT (SEE LABEL)
- P.O.C. POINT OF COMMENCEMENT
- P.O.B. POINT OF BEGINNING

0' 300' 600' 900'

DRAFT

THE WEST LINE OF THE SW1/4 OF SECTION 32 BEARS S00°39'16"E AS REFERENCED TO GRID NORTH NAD83 (2011 ADJ.) WISCONSIN STATE PLANES, SOUTH ZONE, US FOOT. DISTANCES ARE GRID. TO CONVERT TO GROUND MULTIPLY BY 1.00000338

Westwood

Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150
12701 Whitewater Drive, Suite #300
Minnetonka, MN 55343
westwoodps.com

Westwood Professional Services, Inc.

CERTIFIED SURVEY MAP NO. ____

PART OF THE SW1/4 OF SECTION 32, T02N, R19E, TOWN
OF WHEATLAND, KENOSHA COUNTY, WISCONSIN

Line Table		
Line #	Direction	Length
L1	S00°39'16"E	972.29
L2	N88°20'20"E	33.01
L3	N00°39'16"W	236.72
L4	N88°20'20"E	628.54
L5	N00°40'37"W	147.05
L6	N88°20'20"E	881.61
L7	N00°32'07"W	582.85

Line Table		
Line #	Direction	Length
L8	S88°33'00"W	1544.22
L9	N88°20'20"E	628.63
L10	S00°40'37"E	350.00
L11	N88°20'20"E	879.80
L12	N00°32'07"W	733.81
L13	N88°20'20"E	20.00
L14	N00°40'37"W	370.00

Line Table		
Line #	Direction	Length
L15	S88°20'20"W	648.63
L16	S00°39'16"E	20.00
L17	S00°32'07"E	679.22
L18	N83°47'54"W	89.02
L19	N00°39'41"W	610.62

Curve Table					
Curve #	Length	Radius	Delta	Chord Distance	Chord Bearing
C1	791.56	5729.58	007°54'56"	790.93	N 87°34'22" W

SURVEYOR'S CERTIFICATE

I, BENJAMIN LAWRENCE, PROFESSIONAL LAND SURVEYOR, HEREBY CERTIFY:

THAT I HAVE SURVEYED, DIVIDED AND MAPPED A PART OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER, THE EAST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, AND A STRIP OF LAND CONTAINING 13 ACRES, MORE OR LESS, OFF THE WEST SIDE OF THE EAST HALF OF THE SOUTHWEST QUARTER, ALL IN SECTION 32, TOWNSHIP 2 NORTH, RANGE 19 EAST OF THE FOURTH PRINCIPAL MERIDIAN, TOWN OF WHEATLAND, KENOSHA COUNTY, WISCONSIN BOUNDED AND DESCRIBED AS FOLLOWS:
TBPLS FIRM NO. 10074302

PARENT TRACT LEGAL DESCRIPTION:

THE EAST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER, THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER, AND A STRIP OF LAND CONTAINING 13 ACRES, MORE OR LESS, OFF THE WEST SIDE OF THE EAST HALF OF THE SOUTHWEST QUARTER, ALL IN SECTION 32, TOWNSHIP 2 NORTH, RANGE 19 EAST OF THE FOURTH PRINCIPAL MERIDIAN. EXCEPTING THEREFROM ALL LANDS LYING SOUTH OF THE RELOCATION OF HIGHWAY 50. SAID LAND BEING IN THE TOWN OF WHEATLAND, KENOSHA COUNTY, WISCONSIN.
PARCEL ID: 95-4-219-323-0205

LOT ONE LEGAL DESCRIPTION:

BEGINNING AT THE NORTHWEST CORNER OF SAID NORTHWEST QUARTER OF THE SOUTHWEST QUARTER;THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG THE WEST LINE OF SAID NORTHWEST QUARTER OF THE SOUTHWEST QUARTER, A DISTANCE OF 972.29 FEET, TO THE NORTHWEST CORNER OF LOT 1 AS SHOWN IN THE CERTIFIED SURVEY MAP NUMBER 3120, RECORDED AS DOCUMENT NO. 1984778 WITH THE COUNTY OF KENOSHA; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST ALONG THE NORTH LINE OF SAID LOT 1, A DISTANCE OF 33.01 FEET, TO THE EAST RIGHT OF WAY LINE FOR 392ND AVENUE; THENCE NORTH 00 DEGREES 39 MINUTES 16 SECONDS WEST, ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 236.72 FEET; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, A DISTANCE OF 628.54 FEET, TO THE EAST LINE OF THE WEST HALF OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE NORTH 00 DEGREES 40 MINUTES 37 SECONDS WEST, ALONG SAID EAST LINE, A DISTANCE OF 147.05 FEET; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, A DISTANCE OF 881.61 FEET, TO THE EAST LINE OF SAID WEST 13 ACRES; THENCE NORTH 00 DEGREES 32 MINUTES 07 SECONDS WEST, ALONG THE EAST LINE OF SAID WEST 13 ACRES, A DISTANCE OF 582.85 FEET TO THE NORTHEAST CORNER OF SAID WEST 13 ACRES; THENCE SOUTH 88 DEGREES 33 MINUTES 00 SECONDS WEST, ALONG THE NORTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 1544.22 FEET TO THE POINT OF BEGINNING.

SAID LOT CONTAINS 1,008,611 SQUARE FEET OR 23.155 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS, RESTRICTIONS, AND RESERVATIONS OF RECORD, IF ANY.

Westwood

Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150

12701 Whitewater Drive, Suite #300
Minnetonka, MN 55343
westwoodps.com

Westwood Professional Services, Inc.

CERTIFIED SURVEY MAP NO. ____

PART OF THE SW1/4 OF SECTION 32, T02N, R19E, TOWN
OF WHEATLAND, KENOSHA COUNTY, WISCONSIN

SURVEYOR'S CERTIFICATE

LOT TWO LEGAL DESCRIPTION:

COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG THE WEST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 972.29 FEET, TO THE NORTHWEST CORNER OF LOT 1 AS SHOWN IN THE CERTIFIED SURVEY MAP NUMBER 3120 RECORDED AS DOCUMENT NO. 1984778 WITH THE COUNTY OF KENOSHA; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, ALONG THE NORTH LINE OF SAID LOT 1, A DISTANCE OF 33.01 FEET, TO THE POINT OF BEGINNING; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 628.63 FEET, TO THE NORTHEAST CORNER OF LOT 1 AS SHOWN IN AFOREMENTIONED CERTIFIED SURVEY MAP NUMBER 3120; THENCE SOUTH 00 DEGREES 40 MINUTES 37 SECONDS EAST, ALONG THE EAST LINE OF SAID LOT 1, A DISTANCE OF 350.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 1; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, A DISTANCE OF 879.80 FEET, TO THE EAST LINE OF THE SAID WEST 13 ACRES; THENCE NORTH 00 DEGREES 32 MINUTES 07 SECONDS WEST, ALONG SAID EAST LINE OF THE WEST 13 ACRES, A DISTANCE OF 733.81 FEET; THENCE SOUTH 88 DEGREES 20 MINUTES 20 SECONDS WEST, A DISTANCE OF 881.61 FEET, TO THE EAST LINE OF THE WEST HALF OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE SOUTH 00 DEGREES 40 MINUTES 37 SECONDS EAST, ALONG SAID EAST LINE, A DISTANCE OF 147.05 FEET; THENCE SOUTH 88 DEGREES 20 MINUTES 20 SECONDS WEST, A DISTANCE OF 628.54 FEET TO THE EASTERLY RIGHT OF WAY LINE FOR 392ND AVENUE; THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 236.72 FEET TO THE POINT OF BEGINNING.

SAID LOT CONTAINS 795,341 SQUARE FEET OR 18.259 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS, RESTRICTIONS, AND RESERVATIONS OF RECORD, IF ANY.

SUBJECT TO AN EASEMENT AREA, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG THE WEST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 972.29 FEET, TO THE NORTHWEST CORNER OF LOT 1 AS SHOWN IN THE CERTIFIED SURVEY MAP NUMBER 3120 RECORDED AS DOCUMENT NO. 1984778 WITH THE COUNTY OF KENOSHA; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, ALONG SAID NORTH LINE, A DISTANCE OF 33.01 FEET, TO THE POINT OF BEGINNING; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 628.63 FEET, TO THE NORTHEAST CORNER OF LOT 1 AS SHOWN IN AFOREMENTIONED CERTIFIED SURVEY MAP NUMBER 3120; THENCE SOUTH 00 DEGREES 40 MINUTES 37 SECONDS EAST, ALONG THE EAST LINE OF SAID LOT 1, A DISTANCE OF 350.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 1; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST , ALONG THE SOUTH LINE OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION, A DISTANCE OF 20.00 FEET; THENCE NORTH 00 DEGREES 40 MINUTES 37 WEST, A DISTANCE OF 370.00 FEET; THENCE SOUTH 88 DEGREES 20 MINUTES 20 SECONDS WEST, A DISTANCE OF 648.63 FEET, TO THE EASTERLY RIGHT OF WAY LINE FOR 392ND AVENUE; THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 20.00 FEET, TO THE POINT OF BEGINNING.

SAID EASEMENT CONTAINS 19,973 SQUARE FEET OR 0.459 ACRES, MORE OR LESS.

LOT THREE LEGAL DESCRIPTION:

COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG THE WEST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 972.29 FEET, TO THE NORTHWEST CORNER OF LOT 1 AS SHOWN IN THE CERTIFIED SURVEY MAP NUMBER 3120 RECORDED AS DOCUMENT NO. 1984778 WITH THE COUNTY OF KENOSHA; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, ALONG SAID NORTH LINE, A DISTANCE OF 661.64 FEET, TO THE NORTHEAST CORNER OF SAID LOT 1; THENCE SOUTH 00 DEGREES 40 MINUTES 37 SECONDS EAST, ALONG THE EAST LINE OF SAID LOT 1, A DISTANCE OF 350.00 FEET TO THE POINT OF BEGINNING; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, A DISTANCE OF 879.80 FEET, TO THE SAID EAST LINE OF THE WEST 13 ACRES; THEN SOUTH 00 DEGREES 32 MINUTES 07 SECONDS EAST, ALONG SAID EAST LINE OF THE WEST 13 ACRES, A DISTANCE OF 679.22 FEET, TO THE NORTH RIGHT OF WAY LINE OF HIGHWAY 50; THENCE NORTH 83 DEGREES 47 MINUTES 54 SECONDS WEST, ALONG SAID NORTH RIGHT OF WAY LINE, A DISTANCE OF 89.02 FEET, TO THE BEGINNING OF A NON-TANGENTIAL CURVE; THENCE ALONG A CURVE, WHICH FOLLOWS THE SAID NORTH RIGHT OF WAY LINE, WITH A RADIUS OF 5729.58 FEET, A CHORD BEARING OF NORTH 87 DEGREES 34 MINUTES 22 SECONDS WEST, A CHORD LENGTH OF 790.93 FEET, AN INTERIOR ANGLE OF 7 DEGREES 54 MINUTES 56 SECONDS, AND AN ARC LENGTH OF 791.56 FEET, TO THE WEST LINE OF THE EAST HALF OF THE SOUTHWEST QUARTER OF THE SOUTHWEST QUARTER OF SAID SECTION 32; THENCE NORTH 00 DEGREES 39 MINUTES 41 SECONDS WEST, ALONG SAID WEST LINE, BEING NON-TANGENTIAL TO THE PREVIOUSLY DESCRIBED CURVE, A DISTANCE OF 610.62 FEET, TO THE POINT OF BEGINNING.

SAID LOT CONTAINS 557,321 SQUARE FEET OR 12.794 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS, RESTRICTIONS, AND RESERVATIONS OF RECORD, IF ANY.

TOGETHER WITH THE ABOVE DESCRIBED EASEMENT AREA

THAT I HAVE MADE SUCH SURVEY, LAND DIVISION, AND MAP BY THE DIRECTION OF CATHERINE H. KERKMAN, OWNER OF SAID LAND.

THAT SUCH MAP IS A CORRECT REPRESENTATION OF THE EXTERIOR BOUNDARIES OF THE LAND SURVEYED AND THE DIVISION THEREOF.

THAT I HAVE FULLY COMPLIED WITH THE PROVISIONS OF S. 236.34 OF THE WISCONSIN STATUTES AND THE SUBDIVISION REGULATIONS OF THE TOWN OF WHEATLAND AND KENOSHA COUNTY IN SURVEYING, DIVIDING AND MAPPING THE SAME.

_____ *DATED THIS _____ DAY OF _____ , 2025*

BENJAMIN LAWRENCE PLS S-3275-8

DRAFT

Westwood

Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150

12701 Whitewater Drive, Suite #300
Minnetonka, MN 55343
westwoodps.com

Westwood Professional Services, Inc.

CERTIFIED SURVEY MAP NO. ____

PART OF THE SW1/4 OF SECTION 32, T02N, R19E, TOWN
OF WHEATLAND, KENOSHA COUNTY, WISCONSIN

OWNER'S CERTIFICATE OF DEDICATION

I, Catherine H. Kerkman, owner, do hereby certify that I caused the land described to be surveyed, divided, mapped and dedicated as represented on this map. I also certify that this map is required to be submitted to the Town of Wheatland, and the Kenosha County Planning Agency for approval.

_____ *Dated this _____day of _____, 2024*
Catherine H. Kerkman

STATE OF WISCONSIN)
KENOSHA COUNTY) SS

Personally came before me this _____ day of _____, 2024, the above named _____ to me known to be the same person who executed the foregoing instrument and acknowledged the same.

_____ *Notary Public, _____, WI*
My Commission Expires _____

TOWN OF WHEATLAND CERTIFICATE

STATE OF WISCONSIN)
KENOSHA COUNTY) SS

I certify that this Certified Survey Map, Catherine H. Kerkman, owner, was approved by the Town Board of the Town of Wheatland on the _____ day of _____, 2024.

_____ _____
Town Chairman *Town Clerk*

KENOSHA COUNTY PLANNING AGENCY

STATE OF WISCONSIN)
KENOSHA COUNTY) SS

Approved in accordance with the Kenosha County Subdivision Control Ordinance this _____ day of _____, 2024.

_____
County Planner

DRAFT

Westwood

Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150
12701 Whitewater Drive, Suite #300
Minnetonka, MN 55343
westwoodps.com

Westwood Professional Services, Inc.

APPENDIX D

CONDITIONAL USE PERMIT APPLICATION

Robin Energy Storage

Appendix D – CUP Application Narrative

PROJECT OVERVIEW

Demand for electricity is increasing in the United States for many reasons, including the development of artificial intelligence and cryptocurrency data centers, growth in advanced manufacturing, and electrification of vehicles and home appliances.[1] Concurrently, utilities across Wisconsin and the country are retiring on-demand[2] electric generation and replacing it with cheaper intermittent renewable energy resources, like wind and solar.[3] Older grid technology, like powerlines, transformers, and substations, are facing additional stress from increased electricity usage.

Recent nationwide research analyzing approximately 179 million power outage records from 2014-2023 found that power system vulnerability has consistently increased over the past decade, with the most pronounced spike occurring between 2022 and 2023. The study identified the Great Lakes megalopolis, which includes southeastern Wisconsin, as experiencing significantly higher power system vulnerability compared to many other regions. Additionally, the research found that urban counties with higher development density show substantially elevated vulnerability levels.[4]

These national trends are happening locally, with data center proposals arising in Kenosha County[5] and with utilities planning to retire coal plants throughout the state.[6] As a result, there is a local need for resources that can store energy when its abundant (*e.g.,* during times of high wind and solar output) and inject that electricity back into the grid when needed most.

---

[1] *See e.g., 2024 State of the Market Report for the MISO Electricity Market*, POTOMAC ECONOMICS, June 2025, at 17 (explaining that in the transmission system operated by the Midcontinent Independent System Operator, Inc. (MISO), which includes Wisconsin, "expected load growth is now significantly higher than even last year's forecast, given the substantial penetration of new data centers supporting AI and cryptocurrency mining, as well as increased electric vehicle demand.").

[2] On-demand resources are referred to as "Dispatchable," meaning an electricity resource that has a power supply that can be turned on and off to meet demand in real time.

[3] *See e.g., supra* note 1, at 17 ("In recent years, wind and solar penetration in MISO has consistently increased as baseload coal resources have retired.").

[4] Junwei Ma, Bo Li, Olufemi A. Omitaomu, Ali Mostafavi: Establishing nationwide power system vulnerability index across US counties using interpretable machine learning, Applied Energy, Volume 397, 2025

[5] Nick Rommel, *New Data Centers Planned for Kenosha, Wisconsin Rapids*, WIS. PUB. RADIO (Jan. 28, 2025, 10:14 AM), ahttps://www.wpr.org/news/new-data-center-kenosha-wisconsin-rapids.

[6] *See, e.g.,* Press Release, We Energies, We Energies announces updated timeline for Oak Creek Plant retirements (June 25, 2025); *Joe Schulz*, Wisconsin is making progress closing coal plants. What's next for those sites?, WISC. PUB. RADIO (Apr. 4, 2024, 9:36 AM), https://www.wpr.org/news/new-data-center-kenosha-wisconsin-rapids.

The Robin Energy Storage Project (Project) helps meet this need. The Project is a 200-megawatt (MW), 800 megawatt-hour (MWh) Battery Energy Storage System (BESS) located within the Town of Wheatland (Town), Kenosha County (County) Wisconsin. The Project's ability to charge and discharge electricity on a moment's notice will provide power grid services that prevent blackouts and complement the substantial amount of wind and solar energy in-service and under development in Wisconsin. Energy storage resources like the Project help aging technology respond to changing grid conditions. With the capacity to serve about 15% of average daily power consumption in Kenosha County,[7] the Project will help to reliably meet the electric needs of southeastern Wisconsin now and in the future. The Project will provide businesses and families in Kenosha County access to cleaner and more reliable power for years to come, and the County should therefore grant a conditional use permit (CUP) to Robin Energy Storage for construction and operation of the Project.

PROJECT ENTITY, OWNER, & DEVELOPER

The Project will be owned and operated by Robin Energy Storage LLC (Robin Energy Storage), a wholly owned subsidiary of Copenhagen Infrastructure Partners (CIP).

CIP is an infrastructure investment firm specializing in renewable energy and other essential infrastructure projects. They are known for their expertise in developing, financing, and managing critical infrastructure, particularly in the field of renewable energy.

CIP has a strong track record of successfully developing and operating renewable energy projects globally. They have been involved in various phases of renewable energy projects, including project development, financing, construction, and long-term operation. Currently, CIP has approximately $20 billion of assets under management, including various BESS facilities under development throughout the United States and Midwest. CIP currently owns 3.6 gigawatts of BESS facilities in construction or in service globally, with over 500 MW in the United States.

PROJECT SITE AND ZONING

The Project will be located on approximately 12 acres within an approximately 19-acre tract of land situated east of 392nd Avenue and north of Highway 50 (the Project Site). The Project Site is shown as Lot 2 on the Certified Survey Map (CSM) application included as Appendix C to this application package and is part of a larger existing parcel of land known as Parcel Number 95-4-219-323-0205 (the Parcel) containing approximately 59 total acres. Project owner Robin Energy Storage has a Purchase Option Agreement in place to purchase the Project Site. A site location map and site plan sheet showing the Project Site and the Parcel, and the location of the Project thereon, are attached to this letter as **Exhibits B** and **C**, respectively.

The Parcel is currently zoned A-1 Agricultural Preservation, a zoning classification that is inconsistent with a utility-scale BESS like the Project. As such, in conjunction with this CUP application, Robin Energy Storage is applying to rezone the Project Site to I-1 Institutional, a zoning classification in which a utility-scale BESS like the Project is a conditional use under the

[7] Based on EIA Energy Atlas's 2023 estimate that Kenosha County, WI consumes 1.98GWh / year.

County's BESS ordinance.[8] Robin Energy Storage is likewise proposing that the remainder of the Parcel (i.e. the portion other than the Project Site) be rezoned to A-2 General Agricultural District to comply with the minimum acreage requirements contained in the zoning code.

PROJECT DESCRIPTION

The Project will be able to store up to 800 MWh of electricity at a given time, with a maximum injection capacity of 200 MW into the electric transmission grid. The Project's infrastructure (excluding the gen-tie line and collector substation) will reach a maximum height of approximately 12 feet. The Project includes an approximately 600 foot-long, 138-kilovolt (kV) generation tie (gen-tie) line that will interconnect at the ATC Balsam Substation to the east of the Project Site. Because the Project is located directly adjacent to its point of interconnection, only minimal overhead transmission line will be necessary to connect the Project with the substation.

PROJECT COMPONENTS

The main components of the Project include:

- **Battery Storage Enclosures** – Battery components will be housed in purpose-built enclosures that will be placed on concrete, pier, or other foundation that follows the site-specific geotechnical recommendations. Each battery enclosure will be approximately 10 feet tall, 30 feet wide, and 8 feet deep. Lithium-ion battery cells will be configured in modules, which will be arranged in racks, which will be housed in battery enclosures. HVAC and temperature control systems will be incorporated into the enclosure design. The enclosures will also house a battery management system that will monitor the batteries and ensure their performance is safe and efficient. To ensure that the Project will be able to maintain its energy capacity, space will be reserved on site for future power augmentation, i.e., the modification or addition of batteries and related facilities. That augmentation is accounted for in the current site plan, including the layout of the augmentation battery enclosures.

- **Inverters** – Inverters will be used in charging to convert incoming electricity from alternating current (AC) to direct current (DC), and vice versa upon battery discharge.

- **Transformers** – Transformers will be used to step down the voltage of incoming electricity to enable storage and will be used to step up the voltage to enable transmission back to the grid.

[8] **Exhibit A** attached to this letter contains a line-by-line explanation of the Project's compliance with the County's BESS ordinance. Robin Energy Storage has committed to obtaining all insurance coverage required by the County's BESS ordinance in **Exhibit A** attached to this letter. Robin Energy Storage will ensure that any EPC contractor selected to construct the Project obtains the insurance coverage required by Section M(b) of the County's BESS ordinance.

- **Collector Substation** – A collector substation will be constructed on the Project Site that will include the Project's electrical transmission equipment such as breakers and main power transformer. The collector substation will have an approximately 1.3-acre footprint within the Project Site.

- **Gen-Tie Line** – The Project will interconnect to the electric transmission grid via a short (600-foot) 138 kV gen-tie line.

- **Operations and Maintenance (O&M) Building** – A potential on-site facility for personnel, equipment storage, and standard utility maintenance operations. If constructed, Robin Energy Storage anticipates the O&M building would be a single-story structure of approximately 900-1,500 square feet. The O&M building would contain a housing control room equipment, spare parts inventory, maintenance tools, employee workstations, and a small meeting/break area. The O&M building would be constructed with standard commercial materials and designed to blend with the surrounding area, with a maximum height of approximately 15-20 feet.

- **Energy Management System (EMS)** – The Project will be run by an onsite EMS. This system will control the charging and discharging of the batteries.

- **Battery Management System (BMS)** – The Project will be monitored 24/7 by the BMS. This includes extensive monitoring of the battery's temperature, voltage, amperage, and off-gassing. The BMS ensures that the Project is operating within normal parameters, and it immediately halts operation should it detect anomalous operation.

- **Access/Security** – The Project Site will be fully enclosed by a seven-foot security fence with three-strand barbed wire and NEC-compliant warning signage. The main gate will be lockable and include a Knox Box for emergency responder access, along with signage displaying a 24-hour emergency contact number and site identification. Perimeter lighting and surveillance cameras will provide security monitoring, and an internal access road will provide circulation throughout the facility for maintenance and emergency vehicle access.

- **Lighting** – Robin Energy Storage will maintain adequate lighting on the Project Site to prevent unsafe conditions at night in and around the Project facilities. Dark sky-friendly lighting will be located around the Project's collector substation. Battery area lighting shall be manually operated and only utilized when needed for maintenance activities after dark. A lighting plan sheet for the proposed Project is attached as **Exhibit G**.

- **Water Storage Tanks** – Robin Energy Storage will maintain two 30,000-gallon capacity water storage tanks on the Project Site to ensure there is a water source onsite for firefighting.

CONSTRUCTION TIMELINE

Robin Energy Storage intends to commence Project construction by mobilization in Q1 2027, pending receipt of all required permits and approvals, and subject to availability of key components of the Project. Construction of the Project is expected to take approximately 18 months. The commercial operation of the Project is intended for Q4 2028. The following is a tentative schedule for the Project's construction:

Timeline	Construction Activities
Q1 2027	Site mobilization, clearing, and grading; installation of perimeter fencing and access roads
Q2 2027	Civil works including foundation installation and drainage systems; delivery of initial equipment
Q3 2027	Installation of BESS containers and inverter/transformer systems; electrical infrastructure buildout
Q4 2027	Medium-voltage electrical system installation; gen-tie line construction
Q1 2028	Fire suppression and HVAC systems installation; control systems integration
Q2 2028	Substation interconnection work; system commissioning and testing begins
Q3 2028	Final commissioning, performance testing, and safety inspections
Q4 2028	Commercial operation date (COD) and energization

PLAN OF OPERATION

The Project will charge its batteries with energy from the electric transmission grid, store that energy on site, and later deliver that energy back onto the transmission grid through the same point of interconnection. During operation, the Project will be monitored and operational 24 hours a day and 365 days a year.

While the operation of the Project will be performed remotely, site maintenance and periodic security patrols are anticipated to produce one to two full-time equivalent (FTE) positions. During construction, the Project is expected to produce about 75 construction jobs.

The Project will meet the stormwater discharge requirements outlined in Chapter 17 of the Kenosha County Municipal Code and applicable Wisconsin Department of Natural Resources requirements. A preliminary Stormwater Management Plan detailing the Project's compliance with applicable requirements is attached as **Exhibit D**.

When the Project reaches the end of its useful life, it will be decommissioned, all infrastructure will be removed, and the Project Site will be restored to as close to its pre-construction condition as practicable. Further details on Robin Energy Storage's decommissioning plan and financial assurance commitments for the Project can be found in **Exhibit H**.

PUBLIC SAFETY

Robin Energy Storage is committed to using Tier 1 battery energy storage products which are preferentially differentiated from other products based on the supplier's experience, financial wherewithal, and product quality. The Project will be designed and operated in accordance with the National Fire Protection Association (NFPA) 855 Standard on the Installation of Energy Storage Systems as well as other applicable industry codes and standards. NFPA 855 is considered the gold-standard for battery energy storage fire safety and includes requirements for the design, construction, installation, commissioning, operation, maintenance, and decommissioning of stationary energy storage systems.

Robin Energy Storage has created a draft location and technology-specific Hazard Mitigation Analysis (HMA) that is attached as **Exhibit E**. This analysis includes detailed information about the BESS technology and any potential emissions that can be expected if a failure occurs on-site. The HMA discusses a Plume Analysis performed by LG Energy Solution for its JF2 battery containers and a site-specific dispersion analysis which concluded that "under a worst-case thermal runaway scenario, toxic gas and smoke concentrations remain within site boundaries and do not exceed [Immediately Dangerous to Life or Health] levels or impact off-site receptors." Informed by the HMA, Robin Energy Storage created a draft Emergency Response Plan (ERP), attached as **Exhibit F**, to inform any first-responder response to an on-site safety incident. Robin Energy Storage will share the HMA and ERP with local first responders prior to the start of construction.

NOISE AND SENSORY IMPACT

The Project's design will limit offsite noise caused by the operation of the Project, with minimal levels of noise generated by the Project's HVAC components and inverters. The Project will comply with all local sound ordinances. Robin Energy Storage will conduct a pre-construction and post-construction noise study to ensure compliance with local sound ordinances.

The Project will not produce glare or odor while operating. The Project stores and discharges electricity without releasing emissions, pollutants, or effluents. Robin Energy Storage will maintain

Project equipment and fencing to industry standards to ensure the Project remains a good neighbor. Robin Energy Storage will not display advertising material or signage other than warning, equipment identification, or ownership information within the Project area. Any reasonable complaints related to Project appearance or aesthetics will be reviewed and promptly resolved.

TRAFFIC IMPACT

Robin Energy Storage plans to use the following roads during Project construction: Highway 50, 392nd Avenue, County Highway P (Dyer Lake Road), Interstate 94, County Highway JI (312th Ave), and other local roadways as necessary for equipment delivery and worker access. The Project is not expected to significantly impact traffic during construction or operation. Construction traffic will primarily consist of delivery vehicles for BESS equipment, transformers, and construction materials during the 18-month construction period, with peak activity occurring during equipment installation phases. Robin Energy Storage will create sufficient on-site access and parking to prevent Project construction from disturbing local traffic patterns. A Haul Route Map is attached to this letter as **Exhibit I** and details the proposed access route to the Project site.

ECONOMIC IMPACT

As noted above, the Project will create approximately 75 construction jobs during construction and one to two FTE jobs during operation. The Project will also produce tax revenue for the County during its operation, which is expected to be 20-30 years.

Robin Energy Storage has offered a Joint Development Agreement (JDA) with the Town, attached as **Exhibit J**,[9] through which the Town will benefit substantially. The draft JDA would cause Robin Energy Storage to pay the Town $1,000,000 during the Project's first year of commercial operation and $400,000 thereafter annually for 19 additional years. The Town expects to receive $1,411,914 in budgeted revenue in 2025.[10] The JDA payments will be a large portion of the Town's annual revenue, and the Town has discretion to use the funds for any legal purpose. The JDA would be assignable to any future Project owners and therefore will continue to benefit the Town if CIP transfers the Project to a new owner.

The Project additionally offers a critical benefit to local communities by helping bring emission-free firm energy resources to the electric grid. As more companies look to meet sustainability goals, the Project may help attract private business to the Town and County. Further, the Project will support grid stability and reliability, responding quickly to sharp changes in demand for power. Without energy storage resources, black outs and brown outs are more likely, which cost businesses and families significant losses each year. The Project will help ensure that power is available when it is needed.

[9] **Exhibit A**, responses to the County's BESS ordinance provisions, explains in more detail the Town's evaluation and execution of the draft JDA.
[10] See Town of Wheatland Annual Budget for 2025 Tax Levy.

ENVIRONMENTAL IMPACT

As part of the Project development, Robin Energy Storage reviewed the following environmental issues:

- Wetland and Waterways
- State and/or Federally Listed Threatened and Endangered Species
- Cultural Resources
- Potential Presence of Onsite Contaminants

Several wetlands are present at the Project Site, totaling approximately 2.06 acres in size. Robin Energy Storage avoided wetlands as much as possible in Project design, with proposed wetland impacts totaling approximately 0.68 acres. Wetlands are anticipated to be federally isolated, and, therefore, are only subject to Wisconsin Department of Natural Resources (WDNR) jurisdiction. Robin Energy Storage will obtain a WDNR permit, as well as any required mitigation for wetland impacts that are unavoidable. No waterways are present on site.

Because the Project wetland impacts are minimal and proposed within agricultural wetlands, the impacts qualify for the State Non-Federal Wetland Exemption Request, with mitigation. Coordination with Ms. Chelsey Lundeen, WDNR Wetland Mitigation Coordinator, provided the following wetland mitigation guidance: “WDNR has determined that mitigation for the…wetland impacts will be accomplished through the purchase of Wetland Mitigation Bank Credits.” Brooks Road Mitigation Bank was recommended to satisfy the WDNR wetland mitigation requirement. Once WDNR issues their draft permit for the Project, Robin Energy Storage will purchase the required mitigation credits and provide an affidavit to WDNR such that the final permit approval can be issued.

Although there are several federally-listed threatened species with the potential to be present onsite, there is no suitable habitat at the Project Site because the property is currently in agricultural use. There are no state-listed species for this property.

A desktop cultural review was completed in 2024 for the Project Site. No archaeological sites, cemeteries, historic structures, or National Registry of Historic Places listed sites were found to be present onsite. In addition, no previous archaeological surveys were conducted within the Project Site.

A Phase I Environmental Site Assessment (ESA) was completed in May 2024, and no recorded Environmental Concerns were identified as part of that review. Pesticide and herbicide residues are potentially present onsite due to current and historic agricultural and silvicultural use.

CONCLUSION

For the foregoing reasons, the County should grant a CUP to Robin Energy Storage for construction and operation of the Project.

APPENDIX D

Exhibit A

Responses to BESS Ordinance Provisions

12.40.080(b) CONDITIONAL USE

Battery Energy Storage System (BESS) – Utility Scale in the I-1 Districts

A. Minimum lot size: 10 acres.

> *The lot size will exceed 10 acres. The proposed lot size will be approximately 18.32 acres. (reference App 1 Site Plan).*

B. Minimum setbacks, as measured from BESS equipment (excluding any perimeter fencing and sound barrier), to the property line shall be 25 feet from any agricultural, commercial, industrial, government and institutional land use and 100 feet from any residential land use.

> *The project will comply with all setback requirements by ensuring that all BESS equipment, excluding any perimeter fencing and sound barriers, is located at least 25 feet from property lines adjacent to agricultural, commercial, industrial, government, and institutional land uses, and at least 100 feet from property lines adjacent to residential land uses. Please see the site plan included as Exhibit C for more information.*

C. Shall not be located within the 100-year floodplain.

> *The Project is not located within a 100-year floodplain. Please see the site plan included as Exhibit C for more information.*

D. Shall not be located within a designated wetland.

> *The Project is located within a designated farmed wetland and wetland impacts will be necessary. However, wetlands have been avoided as much as possible, while still meeting necessary setbacks. The wetland proposed to be impacted is anticipated to qualify as a non-federal isolated wetland. Therefore, only state permitting will be necessary. Appropriate wetland permits will be obtained from Wisconsin Department of Natural Resources (WDNR), including mitigation, as required.*

E. Lighting of the BESS shall comply with NFPA 855 and the requirements of Section 12.15 of this ordinance so long as they do not conflict with NFPA 855.

> *The Project's lighting will comply with NFPA 855 and Section 12.15 of the ordinance. Please see the lighting plan sheet included as Exhibit G for more information.*

F. Security fencing shall enclose the BESS area with a minimum of a seven (7) foot high fence consistent with requirements established in NFPA 70, but no higher than ten (10) feet according to Section 12.19.

> *Security fencing will enclose the BESS area with a minimum height of seven (7) feet, consistent with NFPA 70 requirements, and will not exceed ten (10) feet in height as specified in Section 12.19. Please see the site plan included as Exhibit C for more information.*

G. Signage shall meet the requirements of Section 12.14

> *The Project's signage will comply with the requirements of Section 12.14. Please see the site plan included as Exhibit C for more information.*

H. Screening/Landscaping shall meet the requirements of Section 12.16.

Screening and landscaping will comply with the requirements of Section 12.16. Please see the site plan included as Exhibit C for more information.

I. Stormwater Management and Erosion Control shall meet the requirements of Chapter 17, Municipal Code of Kenosha County and requirements imposed by the Wisconsin Department of Natural Resources (WDNR) including but limited to fire suppression runoff.

Stormwater management and erosion control measures will comply with Chapter 17 of the Kenosha County Municipal Code and the Wisconsin Department of Natural Resources (WDNR) requirements, including provisions for managing fire suppression runoff. This includes adherence to best management practices (BMPs) as outlined in the Wisconsin Pollutant Discharge Elimination System (WPDES) program under NR 216, which mandates stormwater and erosion control plans, regular inspections, and pollution prevention measures. Please see the stormwater management plan included as Exhibit D for more information.

J. On-site power and communications lines between BESS units shall be placed underground to the extent feasible and as permitted by the serving utility. The main service connection at the utility company right-of-way, and any new interconnection equipment, may be located above ground.

On-site power and communications lines between BESS units will be placed underground to the extent feasible and as permitted by the serving utility. The main service connection at the utility right-of-way and any new interconnection equipment may be located above ground.

K. Submit a Joint Development Agreement (JDA) to cover the absence of any Utility Tax collected by the State.

Robin Energy Storage has been negotiating a Joint Development Agreement with the Town of Wheatland since 2024. As a result of those negotiations, Robin Energy Storage has offered the Town a generous agreement that would require Robin Energy Storage to pay the Town $1 million during the Project's first year of operation and a total of $8.6 million over the Project's first twenty years of operation. Robin Energy Storage believes the draft JDA, included as Exhibit J to the CUP application, is in final form and that the Town Board will consider it for execution at the same open meeting it considers this application package.

L. Replacement of Lost Property Tax Revenue.

If county and local municipal tax revenues are anticipated to decrease, as mutually agreed upon by developer, the county, and local municipality, then developer and/or party responsible for performance of obligations (for example: Developer, Owner, Operator, or other) agrees to replace such lost tax revenues in a manner and timing similar to that in place in the absence of the project. The developer's obligation to make such payments shall be suspended if the State adopts or implements a mechanism to replace the lost taxes, to the extent that the State payment system provides payments equal or greater than the payments provided herein. In such case of suspension of payments, the owner's payment obligations as set forth herein will only be reinstated if such new payment system from the State is eliminated by the Legislature. Nothing in this section precludes a developer from providing additional monies voluntarily to the county, local municipalities, and/or local school districts.

Robin Energy Storage, LLC (Robin Energy Storage) does not anticipate county or local municipal tax revenues to decrease because of the Project. This provision is therefore not applicable to the Project.

M. Insurance

a. Owner

1. At all times during construction and operation owner shall maintain commercial general liability – $1,000,000 per occurrence; $2,000,000 general aggregate; $1,000,000 personal and advertising injury; $2,000,000 products-completed operations aggregate; $10,000 medical expense.

Robin Energy Storage will maintain commercial general liability insurance with limits of $1,000,000 per occurrence, $2,000,000 general aggregate, $1,000,000 personal and advertising injury, $2,000,000 products-completed operations aggregate, and $10,000 medical expense.

2. Coverage shall include Kenosha County as additional insured.

The insurance coverage will include Kenosha County as an additional insured.

3. Coverage shall be primary and noncontributory to the insurance of Kenosha County.

The coverage will be primary and noncontributory to Kenosha County's insurance.

4. Coverage shall provide a waiver of subrogation in favor of Kenosha County.

The policy will include a waiver of subrogation in favor of Kenosha County.

5. Umbrella/Excess Liability – $10,000,000 each occurrence; $10,000,000 annual aggregate; $10,000,000 completed operations aggregate.

Robin Energy Storage will maintain umbrella/excess liability coverage with limits of $10,000,000 each occurrence, $10,000,000 annual aggregate, and $10,000,000 completed operations aggregate.

6. The policy shall follow form to the commercial general liability policy.

The umbrella/excess policy will follow form to the commercial general liability policy.

7. Limits of insurance can be met by any combination of primary and excess liability coverage.

b. Contractor

1. At all times during construction and/or the general contractor and any subcontractor shall maintain insurance policies with the following listed minimum insurance coverages and minimum limits of liability from insurers licensed to do business in the State of Wisconsin and having at least an A.M. Best rating of A-.

Robin Energy Storage will ensure that the general contractor and/or its subcontractors maintain insurance policies with at least the minimum coverages and limits specified, issued by insurers licensed to operate in the State of Wisconsin and rated no less than A- by A.M. Best.

2. Any subcontractor is required to provide insurance with limits in accordance with the subcontractor's usual practice with insurance carriers authorized to do business in the state where the project is located.

Robin Energy Storage will ensure that all subcontractors carry insurance in accordance with their standard practices, using insurance carriers authorized to do business in Wisconsin.

3. Commercial General Liability– $1,000,000 per occurrence; $2,000,000 general aggregate (on a per project basis); $1,000,000 personal and advertising injury; $2,000,000 products-completed operations aggregate; $10,000 medical expense.

Robin Energy Storage will ensure that the general contractor and/or its subcontractors maintain Commercial General Liability insurance with limits of $1,000,000 per occurrence, $2,000,000 general aggregate on a per-project basis, $1,000,000 for personal and advertising injury, $2,000,000 for products-completed operations aggregate, and $10,000 for medical expenses.

4. Coverage shall include the owner and Kenosha County as additional insureds.

Coverage will include the owner and Kenosha County as additional insureds.

5. Coverage shall be primary and noncontributory to the insurance of owner and Kenosha County.

Coverage will be primary and noncontributory to any insurance held by the owner and Kenosha County.

6. Coverage shall provide a waiver of subrogation in favor of owner and Kenosha County.

A waiver of subrogation in favor of the owner and Kenosha County will be included in the coverage.

7. The products-completed operations coverage shall be maintained for the combined period of the limitation and repose statutes of the State of Wisconsin.

Products-completed operations coverage will be maintained for the full duration of the applicable limitation and repose statutes in the State of Wisconsin.

8. Automobile Liability – $1,000,000 combined single limit.

Robin Energy Storage will ensure that the general contractor and/or its subcontractors maintain Automobile Liability insurance maintained with a combined single limit of $1,000,000.

9. Coverage shall include the owner and Kenosha County as additional insureds.

Coverage will include the owner and Kenosha County as additional insureds.

10. Workers' Compensation and Employers Liability. Workers' compensation as required and amended from time to time by the Wisconsin statutes (Chapter 102 Wisconsin Statutes). $1,000,000 employers liability for each bodily injury by accident, bodily injury by disease and annual aggregate.

Robin Energy Storage will ensure that the general contractor and/or its subcontractors maintain Workers' Compensation insurance as required by Chapter 102 of the Wisconsin Statutes, along with Employers Liability coverage of $1,000,000 for each bodily injury by accident, each bodily injury by disease, and annual aggregate.

11. Coverage shall provide a waiver of subrogation in favor of owner and Kenosha County.

A waiver of subrogation in favor of the owner and Kenosha County will be included in the coverage.

12. Umbrella/Excess Liability – $10,000,000 each occurrence; $10,000,000 annual aggregate; $10,000,000 completed operations aggregate.

Robin Energy Storage will ensure that the general contractor and/or its subcontractors maintain Umbrella/Excess Liability insurance with limits of $10,000,000 per occurrence, $10,000,000 annual aggregate, and $10,000,000 for completed operations aggregate.

13. The policy shall follow form to the employer's liability, commercial general liability and commercial auto liability policies.

The Umbrella/Excess Liability policy will follow form to the Employers Liability, Commercial General Liability, and Commercial Auto Liability policies.

14. Pollution Liability – $2,000,000 per claim and $2,000,000 annual aggregate.

Robin Energy Storage will ensure that the general contractor and/or its subcontractors maintain Pollution Liability insurance will be maintained with limits of $2,000,000 per claim and $2,000,000 annual aggregate.

15. Coverage shall include the owner and Kenosha County as additional insureds.

Coverage will include the owner and Kenosha County as additional insureds.

16. Coverage shall provide a waiver of subrogation in favor of owner and Kenosha County.

A waiver of subrogation in favor of the owner and Kenosha County will be included in the coverage.

17. Professional Liability. If architectural or engineering services are being performed by contractor or subcontractor coverage shall include limits of at least $2,000,000 per claim and $2,000,000 annual aggregate.

If architectural or engineering services are performed by the contractor or any subcontractor, Professional Liability insurance will be maintained with limits of at least $2,000,000 per claim and $2,000,000 annual aggregate.

18. Unmanned Aircraft/Drone Liability. If drone is used with respect to construction and/or of the system coverage shall include a limit of at least $1,000,000.

If drones are used in connection with the construction or system work, Unmanned Aircraft/Drone Liability insurance will be maintained with a limit of at least $1,000,000.

19. Coverage shall include owner and Kenosha County as additional insured.

Coverage will include the owner and Kenosha County as additional insureds.

N. Safety

a. A Hazard Mitigation Analysis (HMA) shall be completed, approved and shared by the local fire department, Kenosha County Sheriff Department, and all local emergency responders prior to the issuance of zoning/construction permit.

A draft Hazard Mitigation Analysis (HMA) has been completed and filed as Exhibit E of the CUP application. Robin Energy Storage will share the final HMA with the local fire department, Kenosha County Sheriff's Department, and all local emergency responders prior to construction. The final HMA will be subject to the Fire Chief's review and approval.

b. An Emergency Response Plan (ERP) is to be prepared and approved by the local Fire Chief and Kenosha County Sheriff Emergency Management Team prior to the issuance of a zoning/construction permit. This shall include but not be limited to an evacuation plan, firefighting techniques, and responsibility assignments for each scenario in the ERP.

A draft Emergency Response Plan (ERP) has been completed and filed as Exhibit F of the CUP application. The final ERP will be provided to the local Fire Chief and the Kenosha County Sheriff Emergency Management Team prior to construction. The final ERP will be subject to the Fire Chief's review and approval.

c. Local first responders are to be trained and equipped to the extent current equipment is insufficient to respond appropriately to the selected battery technology for the BESS project, at the Developer's commercially reasonable expense, prior to the commencement of operation. Refresher training to local first responders shall be required, at the Developer's commercially reasonable expense, at reasonable intervals, at least annually or as requested by the jurisdictionally proper Fire Chief, Kenosha County and Kenosha County Sheriff's Department throughout the life of the project.

Local first responders will be trained to address the specific battery technology used in the Project. This training will be completed prior to the start operations. Please see the ERP included in Exhibit F for more information.

d. The ERP shall be reviewed annually by local emergency responders throughout the project's lifespan and modified for best safety practices if necessary.

The ERP will be reviewed annually by local emergency responders and updated as needed to reflect best safety practices.

e. Developer shall be responsible for the commercially reasonable costs of local first responders for any emergency event at the facility.

Robin Energy Storage will reimburse the commercially reasonable costs incurred by local first responders in the event of any emergency at the Project facility.

f. The facility is to be designed, constructed, operated, maintained and decommissioned to meet NFPA 855. NFPA 855 are National Fire Protection Association standards for installation of Stationary Energy Storage Systems. They are designed to mitigate hazards associated with energy storage systems.

The Project will be designed, constructed, operated, maintained, and decommissioned in compliance with NFPA 855 standards.

g. The facility is to be designed to meet local, Wisconsin and/or national construction industry standards.

The Project will be designed to meet all applicable local, Wisconsin state, and national construction industry standards.

h. All batteries integrated within the shall be listed under UL 1973. The BESS shall be listed in accordance with UL 9540 (certification by a Nationally Recognized Testing Laboratory to meet safety requirements outlined in UL 9540).

Robin Energy Storage will select UL 1973 batteries for use in the Project. Additionally, the Project's batteries will be certified in accordance with UL 9540 by a Nationally Recognized Testing Laboratory, ensuring compliance with all relevant safety requirements.

i. Confirmation that there will be remote monitoring of the BESS 24 hours daily, 7 days a week.

The Project will be remotely monitored 24 hours a day, 7 days a week.

O. Noise

a. A noise study is to be conducted pre and post construction to verify the BESS is in compliance with the County noise ordinance.

A noise study will be conducted both prior to and following construction to verify that the Project complies with the County's noise ordinance.

P. Operation and Maintenance

a. The project shall be constructed, operated and maintained in compliance with standard industry utility practice. The County will have a third party-reviewer to assist with the review of BESS design (see condition r).

The Project will be constructed, operated, and maintained in accordance with standard industry utility practices. A third-party reviewer, as designated by the County, will assist in reviewing the BESS design to ensure it meets all applicable standards and requirements, as referenced in Section R of this ordinance.

b. Routine maintenance shall be performed on the BESS equipment by the party responsible for performance obligations (Developer, Owner and/or Operator) to ensure proper performance of the technology. The County and local emergency responders are to be contacted if there are concerns of failure to meet any ERP standards in the BESS performance.

Routine maintenance of the BESS equipment will be performed to ensure the continued proper performance of the technology. In the event of any concerns regarding failure to meet ERP standards, the County and local emergency responders will be notified.

Q. Decommissioning

a. The Developer is responsible for the removal of the Project at the end of its useful life. The site is to be restored to its pre-construction condition to the maximum extent possible, within 12 months of ceasing operations.

Robin Energy Storage will decommission the Project at the end of its useful life pursuant to the decommissioning plan provided in Exhibit H. The site will be restored to its pre-construction environmental and physical condition to the maximum extent possible, within 12 months of the cessation of operations.

b. A decommissioning plan must be developed, submitted, and approved by the County prior to the issuance of the zoning/construction permit. The County shall not unreasonably withhold, delay, or condition such approval. In summary the decommissioning plan is to identify:

i. Steps for restoring the site of the project to pre-construction environmental and physical condition to the maximum extent possible;

ii. Estimated cost for restoration less the project's estimated salvage value ("Net Cost for Restoration");

iii. The decommissioning plan is to be reviewed every 5 years for the purpose of updating the costs for decommissioning and, if applicable, updating the financial agreement identified in condition q. Such updates shall be subject to approval by the County. The County shall not unreasonably withhold, delay, or condition such approval.

The Project's decommissioning plan is included in Appendix H.

R. Third Party Reviewer

a. The County (noting ultimate reimbursement in c. below) will be seeking the services of a third-party reviewer with expertise in the BESS technology field to assist with the following services (if the CUP is approved by the County Board)

i. Review of the site and architectural plan, battery technology compliance with NFPA 855 and with other applicable regulatory standards and codes not specifically identified;

ii. Assist with review of the ERP, completed noise study, decommissioning plan and review of decommission financial security agreement.

iii. Other items the County deems necessary related to BESS technology and project-related questions.

iv. Project inspection for compliance with applicable codes and standards.

v. Review of decommissioning plan updates.

b. In the event that the Developer and the County disagree on any estimate produced for the "Net Cost for Restoration", and cannot resolve such disagreement, then the Developer and County agree that the updated "Net Cost for Restoration" will be the mean of the estimate produced by the Developer's third party consultant and the estimate produced by County's third party consultant.

Robin Energy Storage consents to Section R(a)-(b) of the ordinance.

c. Developer shall be responsible for reimbursing the County for its reasonable costs incurred for the services of said Third Party Reviewer, that is commercially reasonable that must be mutually agreed upon by the County and Applicant prior to the County's commencement of plan review for the building permit. The County shall make best effort that the Third Party review does not unreasonably delay the project's permitting or construction process.

Robin Energy Storage shall reimburse the County for its reasonable costs incurred for the services of the Third-Party Reviewer.

S. Following initial completion of the project and the project being put into operation, Developer shall notify the County, in writing, of any battery enclosures being removed or installed at the project. Such notification shall be at least 30 days in advance of the removal or installation, except in cases of emergency, when Developer shall notify the County as soon as practicable. No batteries shall be stored on the premises outside of battery enclosures, with the exception of batteries stored for future use. Any batteries on the premises stored for future use shall be stored to NFPA 855 standards.

Except in cases of emergencies, Robin Energy Storage will provide 30 days advanced written notice to the County before removing or installing battery enclosures at the Project site after the Project reaches commercial operation. Robin Energy Storage will not store batteries outside of the Project's battery enclosures, unless the batteries are being stored for future use at the Project site, in which case Robin Energy Storage will store the batteries in compliance with NFPA 855 standards.

T. It is the responsibility of the applicant to assure and guarantee that the above conditions are fully complied with. This includes, but is not necessarily limited to, meeting conditions established herein, providing any applicable letters of credit, providing and following approved plans, obtaining permits prior to construction, making improvements, participating in coordination meetings with governmental officials, following established time frames, meeting deadlines, and providing additional information where deemed necessary. Any unauthorized deviation from the approved plans and conditions shall result in the issuance of a citation and/or applicable stop work order by the Town, County or other applicable agencies until the conditional use permit is brought back into compliance. Continued violation of the conditions as set forth herein shall result in a recommendation for revocation of the Conditional Use Permit.

Robin Energy Storage consents to Section T of the ordinance.

U. Any substantial change or expansion of the submitted plan of operation, change in use, and/or proposed addition(s) to any existing principal building(s) or proposed new principal building(s), other than battery augmentation, shall require the property owner and/or tenant to reapply for a Conditional Use Permit for its review and approval.

Robin Energy Storage consents to Section U of the ordinance.

V. If property ownership and/or tenant change then such new owner/tenant shall agree in writing to accept and to conform to all provisions of this Conditional Use Permit issued pursuant to this ordinance. Prior notice to the County of the intent to sell or transfer ownership shall be done in a timely manner. Further any new owner and/or tenant must contact the Planning and Development to discuss use and obtain a certificate of compliance.

Robin Energy Storage consents to Section V of the ordinance.

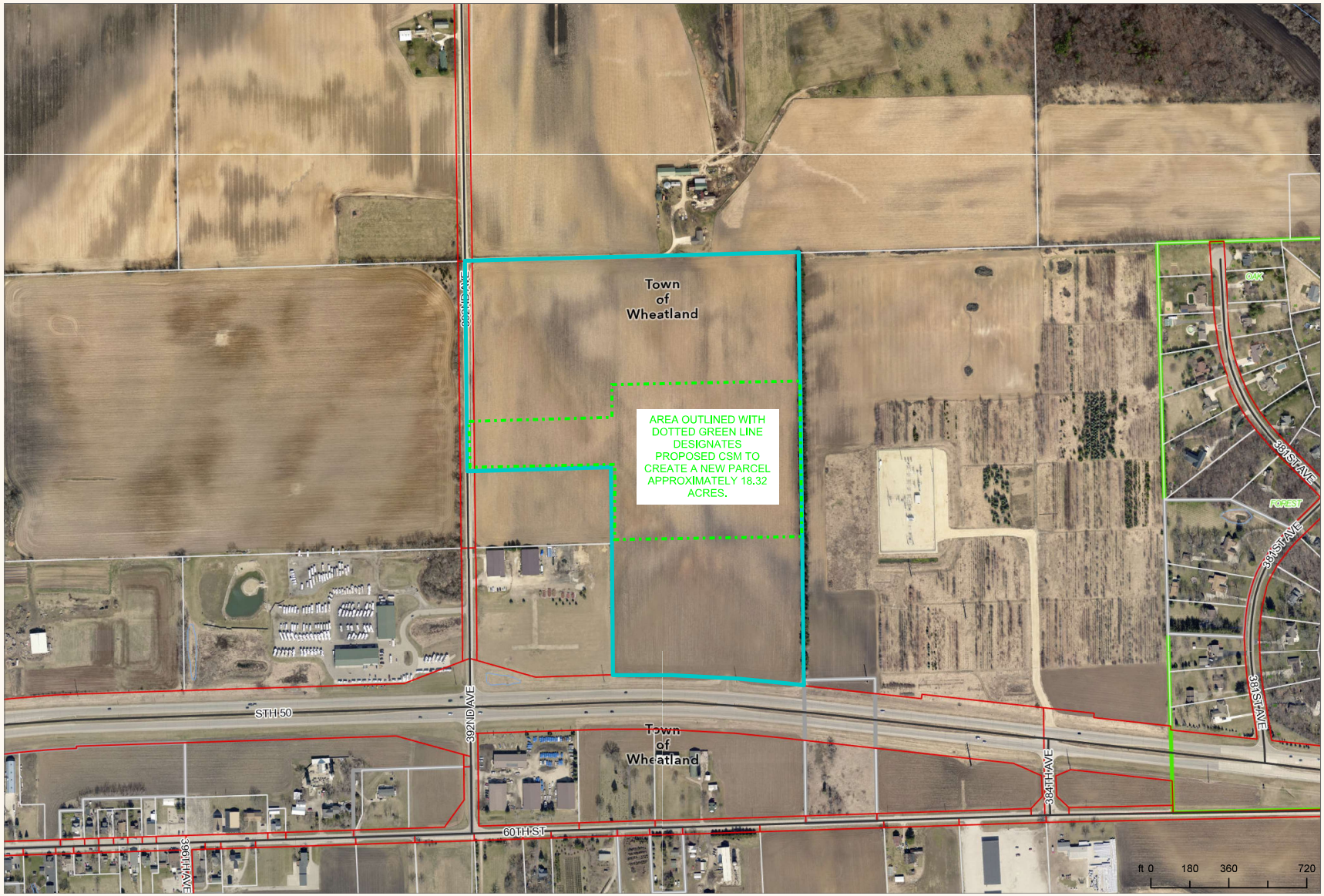
W. Any subcontractor working with/for the property owner shall be properly certified/registered per applicable Federal, State of Wisconsin, and local requirements to operate or work on the property. Subcontractors are also bound by the Ordinance requirements. Proof of certification/registration shall be provided to the County and applicable municipality before subcontracting/work begins.

Robin Energy Storage shall ensure any subcontractor working for it on the Project is properly certified/registered per applicable Federal, State of Wisconsin, and local requirements.

APPENDIX D

Exhibit B

Site Map Location



KENOSHA COUNTY
INTERACTIVE MAPPING

SUBJECT PROPERTY

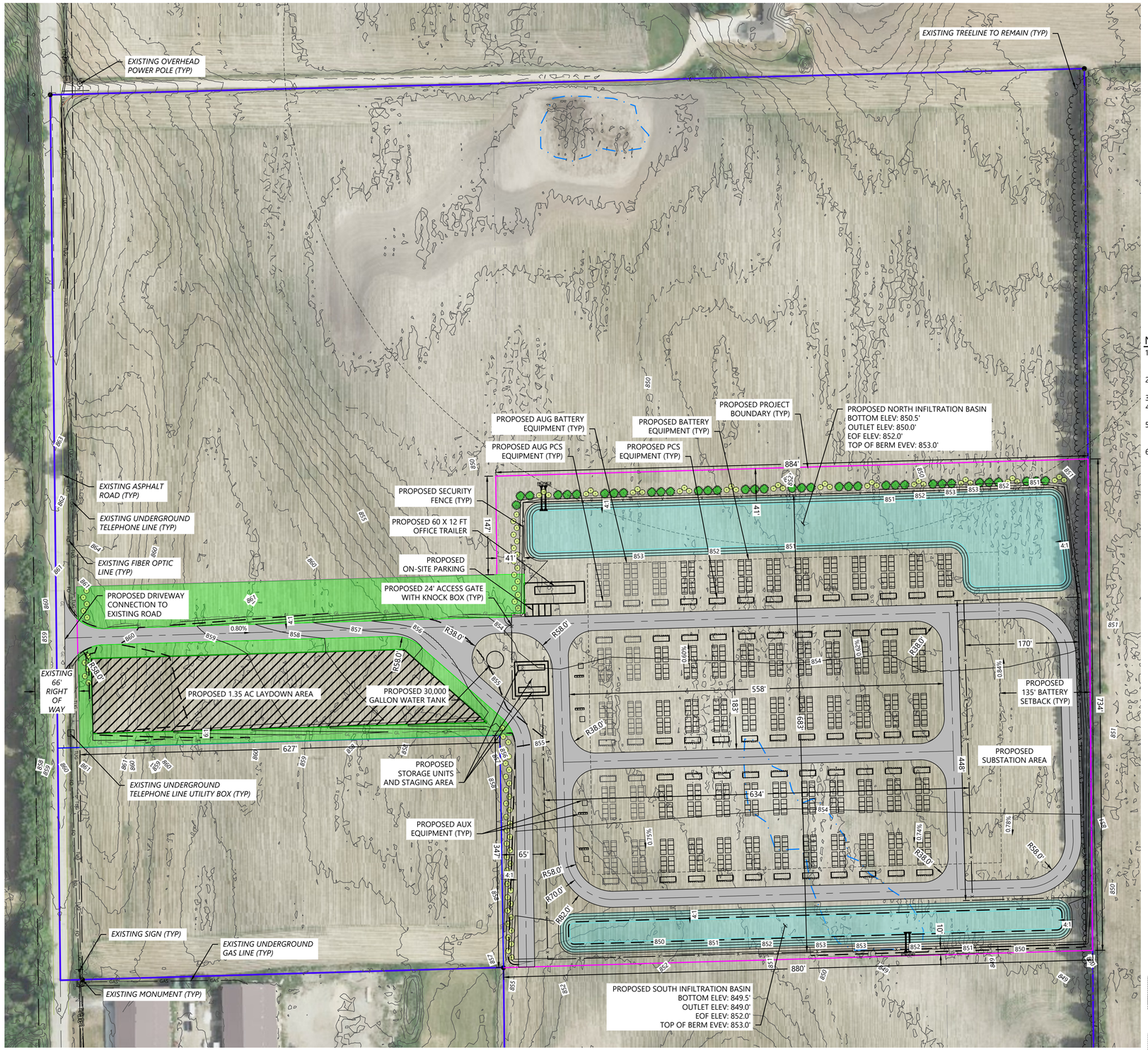
1:5,306
1" = 442'

Date Printed: 11/3/2025

APPENDIX D

Exhibit C

Site Plan Sheet



LEGEND:

- PROPERTY LINE
- PROJECT BOUNDARY
- SECTION LINES
- RIGHT-OF-WAY LINES
- EASEMENT LINES
- 900 EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- EX. DELINEATED WETLAND
- EX. TREELINE
- EX. PAVED ROAD
- EX. OVERHEAD POWER POLE
- FO EX. FIBER OPTIC LINE
- GAS EX. GAS PIPELINE
- TUG EX. TELEPHONE LINE
- PROPOSED BATTERY SETBACK
- X PROPOSED SECURITY FENCE
- PROPOSED LAYDOWN YARD
- PROPOSED DRAINAGE BASIN
- PROPOSED CULVERT
- 900 PROPOSED INDEX CONTOUR
- 901 PROPOSED INTERVAL CONTOUR
- GL PROPOSED GRADING LIMITS
- PROPOSED OPEN YARD AREA
- PROPOSED LANDSCAPE SCREENING BUFFER
- PROPOSED RIPRAP

NOTES:

1. SURVEY PROVIDED BY WESTWOOD ON 03/18/2024. CONTRACTOR TO FIELD VERIFY AND WALK THE SITE PRIOR TO CONSTRUCTION TO CONFIRM SITE CONDITIONS. NOTIFY ENGINEER OF MAJOR DISCREPANCIES.
2. FURTHER SITE DESIGN DETAILS ARE SUBJECT TO KENOSHA COUNTY AND WISCONSIN STATE REQUIREMENTS.
3. PROPOSED PROJECT IS NOT WITHIN A FEMA FLOODPLAIN AREA.
4. ALL BESS EQUIPMENT TO BE A MINIMUM OF 1 FT ABOVE 100 YR 24 HR STORM HIGH WATER FLOOD LEVEL.
5. THIS PLAN IS PRELIMINARY AND SUBJECT TO CHANGE. ITEMS TO BE DETERMINED DURING DETAILED ENGINEERING INCLUDE, BUT ARE NOT LIMITED TO; DRAINAGE MITIGATION MEASURES & SIZING, PARKING AREAS, O&M, ACCESS, SIGNAGE, STAGING AREA, AND GRADING AND EROSION CONTROL.
6. BOL (BEGINNING OF LIFE) EQUIPMENT REPRESENTS EQUIPMENT TO BE BUILT DURING INITIAL CONSTRUCTION. AUGMENTATION EQUIPMENT REPRESENTS EQUIPMENT THAT WILL BE INCREMENTALLY ADDED THROUGHOUT THE PROJECT OPERATIONS UNDER SEPARATE BUILDING PERMITS AT THE TIME OF EACH ADDITION..

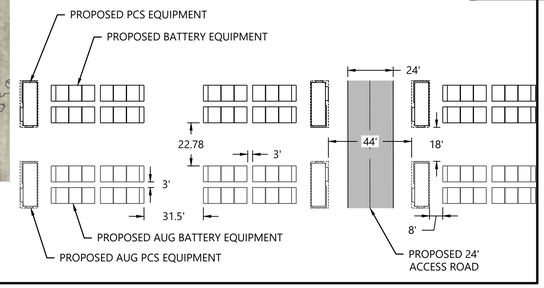
BESS SYSTEM SPECIFICATIONS	
SYSTEM SIZE	200 MW / 800 MWh
BOL BATTERY + PCS COUNT	200 BATTERIES + 50 PCS
EOL BATTERY + PCS COUNT	244 BATTERIES + 61 PCS
BATTERY SETBACK	135 FT FROM PROPERTY LINE (BASED ON PLUME STUDY)

PROJECT SPECIFICATIONS	
PROPERTY AREA	18.32 AC
FENCED AREA	12.78 AC
SUBSTATION AREA	1.75 AC
WETLAND IMPACT	0.68 AC
PRESENT ZONING	A-1 AGRICULTURAL PRESERVATION DISTRICT
PROPOSED ZONING	I-1 INSTITUTIONAL DISTRICT

EARTHWORK VOLUMES	
CUT (CUBIC YARDS)	8,850
FILL (CUBIC YARDS)	52,100
NET (CUBIC YARDS)	43,250 (FILL)

TYPICAL EQUIPMENT LAYOUT:

SCALE: 1" = 40'



NON-EXHAUSTIVE LIST OF APPLICABLE DESIGN CODES AND STANDARDS:

- 2021 INTERNATIONAL BUILDING CODE (IBC)
- 2021 INTERNATIONAL FIRE CODE (IFC)
- 2023 NATIONAL ELECTRIC CODE (NEC/NFPA 70)

NOTE: WHERE MORE STRICT THAN THE CURRENTLY ADOPTED CODE, THE PROJECT DESIGN IS UTILIZING 2024 IFC AND 2023 NFPA 855 REQUIREMENTS.

Westwood

Phone (720) 531-8350
Toll Free (888) 937-5150
10170 Church Ranch Way, Suite #201
Westminster, CO 80021
westwoodps.com

Westwood Professional Services, Inc.

PREPARED FOR:

CIP
Copenhagen Infrastructure Partners
412 West 15th Street 15th Floor
New York, NY 10011 US

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	05/16/2025	ISSUED FOR REVIEW	MB	MW	BM
B	06/02/2025	ISSUED FOR REVIEW	MB	MW	BM
C	08/15/2025	ISSUED FOR REVIEW	MB	MW	BM
D	11/05/2025	ISSUED FOR REVIEW	MB	MW	BM

0' 80' 160' 240'

Robin BESS

Kenosha County, Wisconsin

Preliminary BESS Layout

NOT FOR CONSTRUCTION

DATE: 11/05/2025

SHEET: C100 REV: C

APPENDIX D

Exhibit D

Stormwater Management Plan

PRELIMINARY STORMWATER MANAGEMENT REPORT

Robin BESS Project

Kenosha County, Wisconsin

NOVEMBER 2025

PREPARED FOR:

CIP
COPENHAGEN INFRASTRUCTURE PARTNERS

PREPARED BY:

Westwood

Preliminary Stormwater Management Report

Robin BESS Project

Kenosha County, Wisconsin

Prepared For:

Copenhagen Infrastructure Partners
412 West 15th Street, 15th Floor
New York, New York 10011

Prepared By:

Westwood Professional Services, Inc.
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: R0052120.01
Date: November 5, 2025

Westwood

Table of Contents

Tables

Exhibits

Appendices

Introduction

The purpose of this report is to summarize the proposed stormwater management for the Robin BESS Project ("the project"). This report was prepared to meet stormwater management requirements of Kenosha County, and the State of Wisconsin, and is intended for submittal to these agencies for permitting review and approval.

The project site is proposed within an 18 acre property and development will encompass approximately 14 acres. The Project Site is approximately 35 miles southwest of Milwaukee, Wisconsin, and is located near Burlington, Wisconsin, which is 5 miles north of the Project Area. The site's current use is agricultural row crop.

The proposed use of the site will be a 200 MW x 4 hour Battery Energy Storage System (BESS) consisting of approximately 14 acres of the new impervious surface including BESS equipment pad, gravel access roads, laydown yard, and other associated infrastructure. The remainder of disturbed area on site will be restored to meadow grass cover.

Stormwater management practices include two infiltration basins on the north and south sides of the Project. Pretreatment will be provided by sediment forebays. Each will be designed to Wisconsin DNR Technical Standards in order to meet the infiltration, water quality, and rate control requirements of Kenosha County and the State of Wisconsin.

Data Sources

TABLE 1: DATA SOURCES

Task	Format	Source	Use
Elevation	1m DEM	USGS The National Map	Offsite Model Elevations
Landcover	Shapefile	USDA 2021 Crop Data Layer	Existing Landcover
Soils	Shapefile	USGS SSURGO Dataset	Curve Numbers
Curve Numbers	PDF	Kenosha County Code of Ordinances Chapter 17	Curve Numbers
Precipitation	PDF	Kenosha County Code of Ordinances Chapter 17	Design Storm Depth and Distribution
Site Boundary	CAD Linework Updated October 2025	Copenhagen Infrastructure Partners	Define Model Extents
2014 Aerial Photography	ArcGIS Map Service	USDA FSA	Reference

Site Conditions

Site Location

The project site is proposed within an 18 acre property and development will encompass approximately 14 acres. The Project Site is approximately 35 miles southwest of Milwaukee, Wisconsin, and is located near Burlington, Wisconsin, which is 5 miles north of the Project Area. See Exhibit 1 for a map of the project location.

Topography Description

The existing topographic information used in this analysis was obtained from publicly available USGS 1m DEM elevation data downloaded from The National Map May 2025. The site is generally flat with slopes less than 2%.

Drainage Patterns

No significant offsite drainage enters the site. Onsite runoff is split into 2 drainage areas, one draining towards a low lying area on the north of the site, the other draining to the south of the site. Drainage naturally ponds in low-lying, closed contour areas adjacent to the site. Drainage areas and discharge locations are shown in Exhibits 5 & 6.

Soils

Soils data was obtained from publicly available SSURGO soils information and Kenosha County provides Curve Numbers for local land covers.

The site consists primarily of Hydrologic Soil Group (HSG) B and B/D. Type B soils have moderate runoff potential and infiltration rates. Type B/D soils have high runoff potential and low infiltration rates when not drained. Low infiltration rates can cause localized flooding in low areas for extended periods on site. See Exhibit 3 for the soils distribution throughout the site.

Landcover

A review of aerial photographs and the USDA 2021 Crop Data Layer shows that the site is currently used and has historically been used for agricultural row crops. See Exhibit 4 for a map of the landcover throughout the site.

Infiltration

Infiltration testing is recommended and will be required by Kenosha County if infiltration is used to meet local requirements.

Seasonal High Water Table

Knowledge of the water table depth will also be necessary if infiltration is used to meet local requirements. Westwood recommends water table observations be a part of any planned site investigations.

Requirements

State and County requirements have been reviewed for the project. All requirements determined to be relevant to the project are summarized below.

Construction Stormwater Requirements

Construction stormwater management for the project falls under the jurisdiction of the Wisconsin Department of Natural Resources' (WDNR) Wisconsin Construction General Permit.

The project should comply with any erosion and sediment control required therein, and any discharge from the site during construction should be in accordance with regulations found in WDNR NR151.

Stormwater Management Requirements

The following requirements need to be met for the project.

TABLE 2: STORMWATER MANAGEMENT REQUIREMENTS

Agency	Location of Requirements	Rate Contol Requirement	Water Quality Requirement	Infiltration Requirements
Kenosha County	Municipal Code of Ordinances, Chapter 17	Pre > Post for 1- 2- 10- and 100-year 24-hour storm	Achieve 80% reduction in Total Suspended Solids Load (TSS)	Post Development infiltration volume shall be at least 60% of Pre Development, no more than 2% of the site is required as an effective infiltration area
Wisconsin DNR	Chapter NR 151	Pre > Post for 1- and 2- year 24-hour storm	Achieve 80% reduction in Total Suspended Solids Load (TSS)	Post Development infiltration volume shall be at least 60% of Pre Development, no more than 2% of the site is required as an effective infiltration area

Drainage Improvements

Proposed drainage improvements will be sized per Table 3 below.

TABLE 3: DRAINAGE IMPROVEMENT SIZING REQUIREMENTS

Drainage Improvement	Regulating Agency	Requirement
Entrance Culverts	County Ordinances, sec. 17.09.030.f	10-year 24-hour
Internal Culverts	County Ordinances, sec. 17.09.030.f	10-year 24-hour
Internal Swales	County Ordinances, sec. 17.09.030.f	10-year 24-hour

Methodology

Existing and proposed conditions are modeled in HydroCAD software. HydroCAD is a widely accepted hydrologic and hydraulic modeling package based on National Engineering Handbook (NEH) Part 630. It models stormwater runoff discharge rates and velocities from ponds, culverts, outlet control structures, and stream reaches.

Hydrology

Curve Number Methodology, based on NEH Part 630 Chapter 9, was used in the modeling for predicting direct runoff. Curve numbers were assigned by reviewing the soil and landcover for each drainage area.

Times of concentration were calculated for each drainage area in HydroCAD using methods described in Chapter 15 of NEH Part 630.

Kenosha County provided rainfall depths and MSE3 rainfall distribution were used in this study, per Chapter 17 of the Kenosha County Ordinances, section 17.11.010. See Table 4 for a summary of rainfall depths used. See Appendix A for the MSE3 rainfall distribution curve available in HydroCAD.

TABLE 4: RAINFALL TABLE

Storm Event	1-year 24-hour	2-year 24-hour	10-year 24-hour	100-year 24-hour
Rainfall (in)	2.39	2.72	3.83	5.95

P8 Urban Catchment Model

Program for Predicting Polluting Particle Passage Thru Pits, Puddles, and Ponds (P8) is a model that simulates the generation and transport of stormwater runoff pollutants in urban watershed areas. It models and evaluates the effectiveness of runoff treatment measures including detention ponds, infiltration basins, swales, and vegetated buffers. Runoff calculations are based off the SCS curve number method, and evapotranspiration and mass balance equations. Local precipitation and air temperature files are used as input for the analysis. Per Chapter 17 of the Kenosha County Ordinances, section 17.11.010, rainfall data from the Milwaukee area between March 28 and December 6, 1969, shall be used.

Post-Construction Stormwater Management Approach

The use of the site will be a 200 MW x 4 hour BESS project. The site will consist of BESS equipment pad, gravel access roads, and other associated infrastructure. The BESS pads and access roads will consist of compacted native soil or fill topped with crushed rock.

The proposed BESS will be a raised pad and runoff from this area will sheet flow north and south to the proposed infiltration basins on the north and south of the site. Pre-treatment for the infiltration basins will be provided by the permanent wet pool of each pond.

Infiltration basins are proposed to provide rate control, water quality treatment, and required infiltration volume per the requirements of Kenosha County and Wisconsin DNR. The outlet structures shall be designed to control release rates to achieve rate control requirements of the site. 80% TSS removal shall be achieved by sediment forebays. Infiltration requirements shall be achieved by the infiltration cells. Infiltration basins shall be designed in accordance with Wisconsin DNR Technical Standard 1003 (Appendix D).

As design progresses, geotechnical investigation and infiltration testing will be necessary to confirm the feasibility of infiltration basins. Should onsite infiltration rate prove insufficient or other constraining factors prevent infiltration, an exemption through Kenosha County and the Wisconsin DNR should be applied for and alternate water quality BMPs (such as bio-retention or wet-detention basins) should be employed.

Construction Stormwater Management Approach

As the site is generally flat with no existing concentrated discharge locations, no temporary sediment basins or traps are proposed. However, all necessary erosion and sediment controls to comply with the WDNR Wisconsin Construction General Permit shall be properly installed and functioning throughout the construction phase.

Modeling

The site is modeled in existing and proposed conditions in order to complete the rate control analysis.

Existing Conditions

The existing site consists of row crops. Curve numbers were assigned based on the landcover and soil types according to maximum curve numbers provided by Kenosha County (Appendix A), see Table 5 for a summary of existing conditions.

TABLE 5: EXISTING CONDITIONS COVER

Cover	CN	Area (ac)
Row Crops, HSG B	69	18.3
Total	69	18.3

Proposed Conditions

The use of the site will be a BESS facility. The BESS site and associated roads are considered impervious area for the purpose of this study. Any remaining area is assumed meadow grass cover, see Appendix A for Kenosha County maximum curve numbers. See Table 6 below for a summary of proposed conditions.

TABLE 6: PROPOSED CONDITIONS COVER

Cover	CN	Area (ac)
BESS Site - Impervious	98	13.8
Meadow Grass – HGS B	61	4.5
Total	89	18.3

Results

Rate Control Analysis

Runoff rates for the site in existing and proposed conditions were prepared using HydroCAD. Stormwater detention is provided in the proposed infiltration basins. The proposed site meets the rate control requirements of Kenosha County. Table 7 shows a summary of the runoff rates for the required storm events at each site discharge locations. Calculations are included in Appendices B & C.

TABLE 7: RUNOFF RATE SUMMARY

Location	1-year Runoff (cfs)		2-year Runoff (cfs)		10-year Runoff (cfs)		100-year Runoff (cfs)	
	Existing	Proposed	Existing	Proposed	Existing	Proposed	Existing	Proposed
1	2.97	1.71	4.61	2.96	11.64	8.11	28.36	14.13
2	2.72	0.00	4.28	0.00	10.75	1.97	26.05	17.47

Stormwater Management Practices

Infiltration and Water Quality

Treatment of the stormwater quality volume for the site will be provided for each discharge location with proposed infiltration basins. The basins will be designed according to Wisconsin DNR Technical Standard 1003 (Appendix D).

The proposed infiltration basins shall achieve 80% TSS reduction using sediment forebays. Forebays are to be at least 5' deep to account for sediment storage and prevent resuspension and is expected to constitute 5-15% of the basin area.

Design of the infiltration area is highly dependent on the results of field infiltration tests. As a conservative estimate at this stage of design, the entire basin footprints (excluding forebay) is dedicated to infiltration cells (roughly 8% of the project area) and 1' infiltration cell depth is provided.

Infiltration tests will be required by Kenosha County and Wisconsin DNR. According to Wisconsin DNR Technical Standard 1002, if two thirds of the required tests show a measured infiltration rate of less than 0.6 in/hr, the site may be exempt from infiltration requirements. In such an event, water quality requirements will still have to be met using alternative BMP's (such as bio-retention or wet-detention basins)

Basin Design

Table 8 summarizes the proposed basins on site. HydroCAD models of each basin can be found in Appendix C. See site plan for basin locations.

TABLE 8: PROPOSED BASIN GEOMETRY

Basin ID	Forebay Bottom Elevation (ft)	Infiltration Cell Elevation (ft)	Infiltration Overflow Weir Invert (ft)	Outlet Size	Emergency Overflow Elevation (ft)	Top Of Berm Elevation (ft)	100yr HWL (ft)
B01	844.5	849.5	850.5	1x 24"	852.0	853.0	851.9
B02	845.5	850.5	851.5	1 x24"	852.0	853.0	852.0

Conclusion

The proposed site was designed to meet the stormwater management requirements of Kenosha County and the State of Wisconsin. Runoff rates for the proposed site are reduced to below existing conditions by the detention storage provided in the proposed infiltration basins. 80% reduction in TSS load and required infiltration volume will be met by the proposed infiltration cells designed in accordance with Wisconsin DNR Technical Standard 1003.

As design progresses, geotechnical investigation and infiltration testing will be necessary to confirm the feasibility of infiltration. Should onsite infiltration rate prove insufficient or other constraining factors prevent infiltration, an exemption through Kenosha County and Wisconsin DNR should be applied for and alternate water quality BMPs (such as bio-retention or wet-detention basins) should be employed.

References Cited

National Engineering Handbook, Part 630 Hydrology. Chapter 9 Hydrologic Soil-Cover Complexes. USDA. NRCS. 210-VI-NEH, July 2004

USGS The National Map, 1-meter DEM, Elevation data, Accessed May 2025, https://apps.nationalmap.gov/downloader/

USDA 2021 Crop Data Layer, Landcover data, retrieved May 2025, from https://www.nass.usda.gov/Research_and_Science/Cropland/SARS1a.php

USGS Web Soil Survey. Retrieved May 2025, from https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

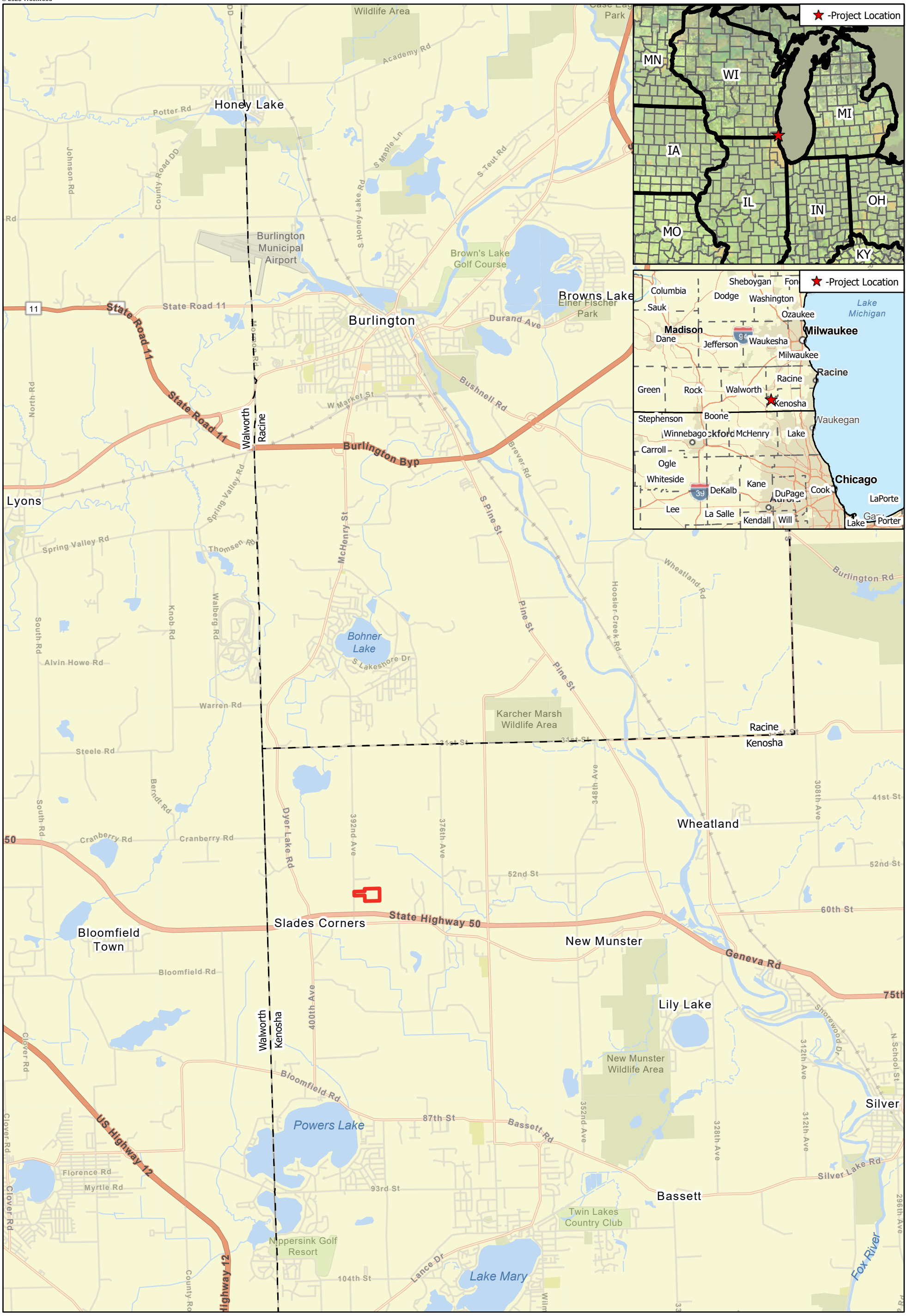
USGS Water Resources: About USGS Water Resources. Retrieved March 2024, from https://water.usgs.gov/GIS/huc.html

Federal Highway Administration, Hydraulic Engineering Circular No. 14, Third Edition. Hydraulic Design for Culverts and Channels, Pg 202 – 206. July 2006

Municipal Code of Kenosha County, Chapter 17 Stormwater management, Erosion Control, And Illicit Discharge Ordinance, retrieved May 2025

Exhibits

N:\0052120.01_GIS_hydroexhibits\RobinBESSSWMPExhibits\RobinBESSHydroExhibits.aprx
01-Location Map - Location Map | 11/3/2025 3:40 PM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- County Boundary

Westwood
Toll Free (888) 937-5150 westwoodps.com

N

0 1 Miles

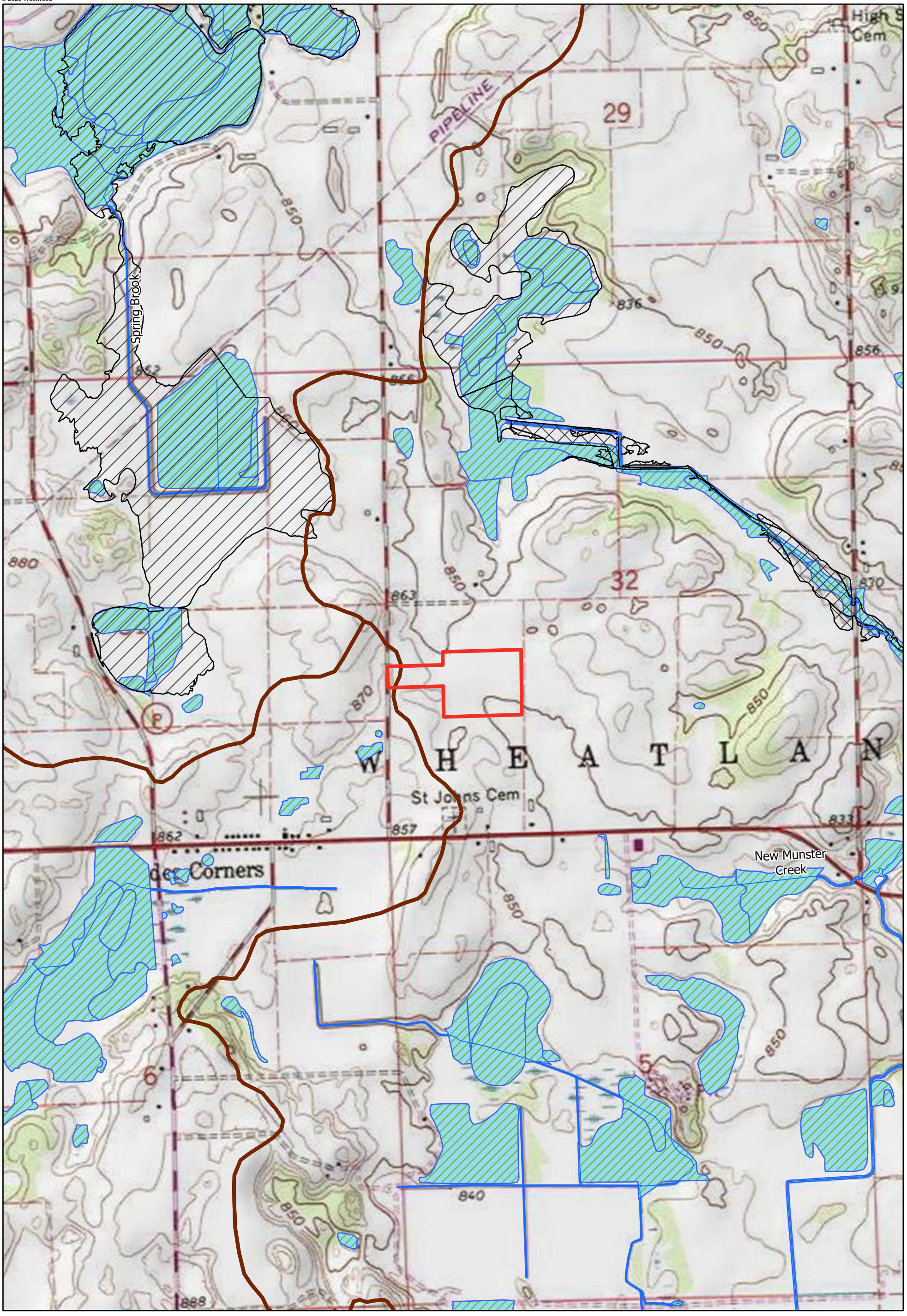
Robin BESS Project

Kenosha County, WI

Exhibit 1: Location Map

November 5, 2025

N:\0052120.01_GIS_hydroexhibits\RobinBESSSWMPExhibits\RobinBESSHydroExhibits.aprx
02-Base Hydrologic Map - USGS, FEMA, and NWI Wetlands Map | 11/3/2025 3:41 PM | ACarpenter



Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Legend

- Project Area
- HUC-12 Boundary
- County Boundary
- FEMA Zone A
- FEMA Zone AE
- NWI Wetlands
- NHD Flowlines

N

0 1,000 Feet

Robin BESS Project

Kenosha County, WI

Exhibit 2: Base Hydrologic Map

November 5, 2025

Westwood
Toll Free (888) 937-5150 westwoodps.com

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Westwood
Toll Free (888) 937-5150 westwoodps.com

Legend

- Project Area
- County Boundary

Hydrologic Soil Group

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Water

N

0 200 Feet

Robin BESS Project

Kenosha County, WI

Exhibit 3: Soils Map

November 5, 2025

N:\0052120.01_GIS_hydroexhibits\RobinBESSSWMPExhibits\RobinBESSHydroExhibits.aprx
04-Landcover Map - Landcover | 11/3/2025 3:41 PM | ACarpenter

Data Source(s): Westwood (2025); Esri WMS Basemap Imagery (Accessed 2025); USGS (2025); FEMA (2025); USDA (2025)

Westwood
Toll Free (888) 937-5150 westwoodps.com

Legend

- Project Area
- County Boundary
- Barren
- Cultivated
- Developed
- Pastureland
- Wetlands
- Woods

N

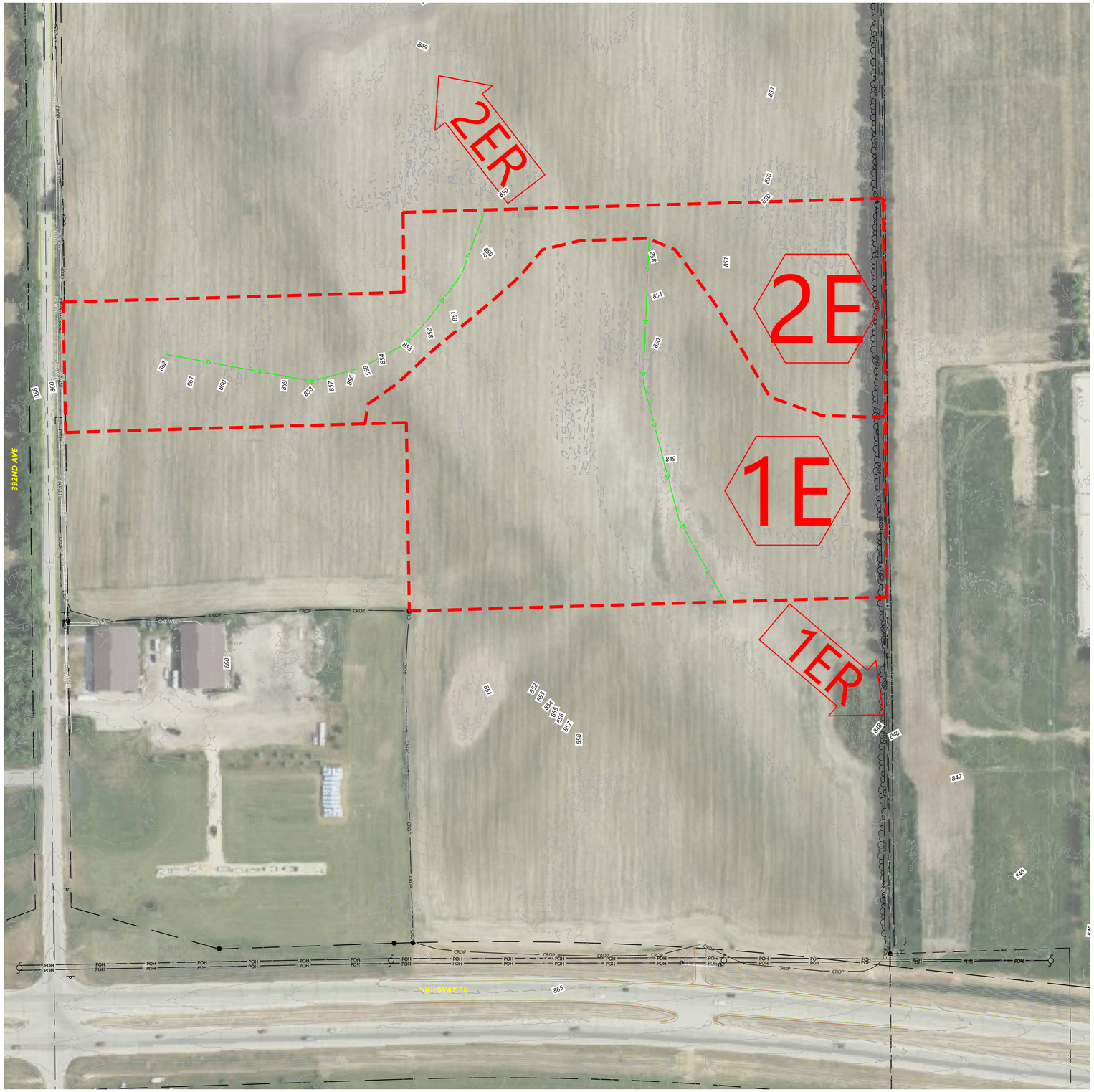
0 200 Feet

Robin BESS Project

Kenosha County, WI

Exhibit 4: Landcover Map

November 5, 2025



LEGEND:

- PROJECT BOUNDARY
- EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- EX. TREELINE
- EX. PAVED ROAD
- EX. ONSITE DRAINAGE AREA BOUNDARY
- EX. OFFSITE DRAINAGE AREA BOUNDARY
- EX. TIME OF CONCENTRATION LINE
- EX. OFFSITE TIME OF CONCENTRATION LINE
- DISCHARGE LOCATION
- 1 — DRAINAGE AREA LABEL
- 1ER — DISCHARGE AREA LABEL

Westwood

Phone (720) 531-8350
Toll Free (888) 937-5150
10170 Church Ranch Way, Suite #201
Westminster, CO 80021
westwoodps.com

Westwood Professional Services, Inc.

PREPARED FOR:

CIP
Copenhagen Infrastructure Partners
412 West 15th Street 15th Floor
New York, NY 10011 US

REVISIONS:

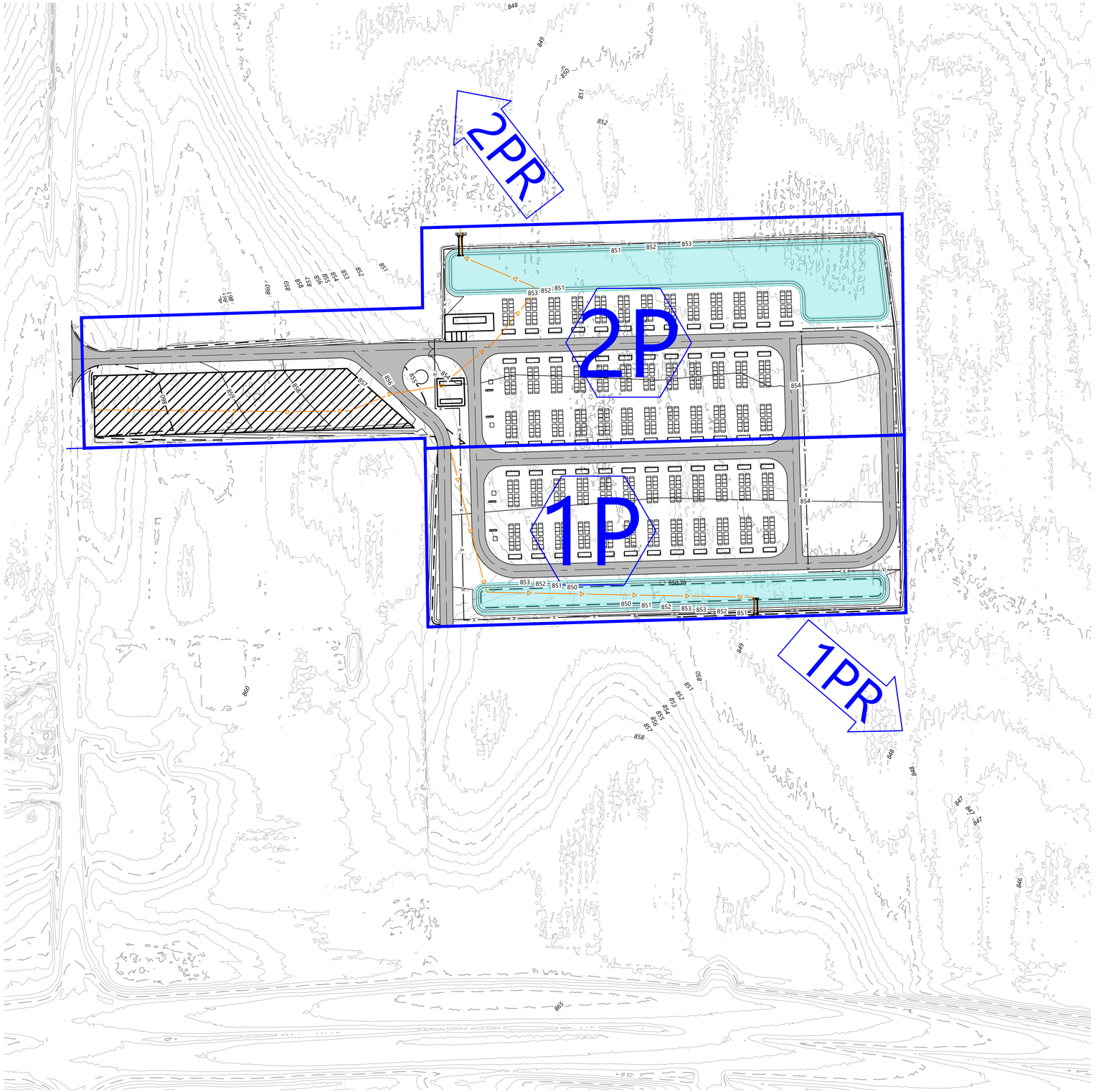
#	DATE	COMMENT	BY	CHK	APR

0' 100' 200' 300'

Robin BESS
Kenosha County, Wisconsin

Overall Existing Drainage Map

DATE: **11/05/2025**
REV:
SHEET: 5



LEGEND:

- PROJECT BOUNDARY
- EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- PROPOSED ACCESS ROAD
- PROPOSED SECURITY FENCE
- PROPOSED ELECTRICAL EQUIPMENT
- PROPOSED LAYDOWN YARD
- PROPOSED INDEX CONTOUR
- PROPOSED INTERVAL CONTOUR
- PROPOSED BASIN
- PROPOSED EMERGENCY OVERFLOW OUTLET
- PROPOSED CULVERT
- PROPOSED ONSITE DRAINAGE AREA BOUNDARY
- PROPOSED TIME OF CONCENTRATION LINE
- DISCHARGE LOCATION
- 1 — DRAINAGE AREA LABEL
- 1PR — DISCHARGE AREA LABEL

Westwood

Phone (720) 531-8350
Toll Free (888) 937-5150
10170 Church Ranch Way, Suite #201
Westminster, CO 80021
westwoodps.com

Westwood Professional Services, Inc.

PREPARED FOR:

CIP
Copenhagen Infrastructure Partners
412 West 15th Street 15th Floor
New York, NY 10011 US

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR

0' 100' 200' 300'

Robin BESS
Kenosha County, Wisconsin

Overall Proposed Drainage Map

DATE: **11/05/2025**
REV:
SHEET: 6

N:\005\3100.01_CAD_Water Resources\005\3100.01-CAP-01.dwg, 11/5/2025 3:39 PM, Alex Carpenter

Appendix A

County Provided Precipitation Data

Westwood

Downloaded May 2025:

Chapter 17
STORMWATER MANAGEMENT, EROSION CONTROL, AND ILLICIT DISCHARGE ORDINANCE

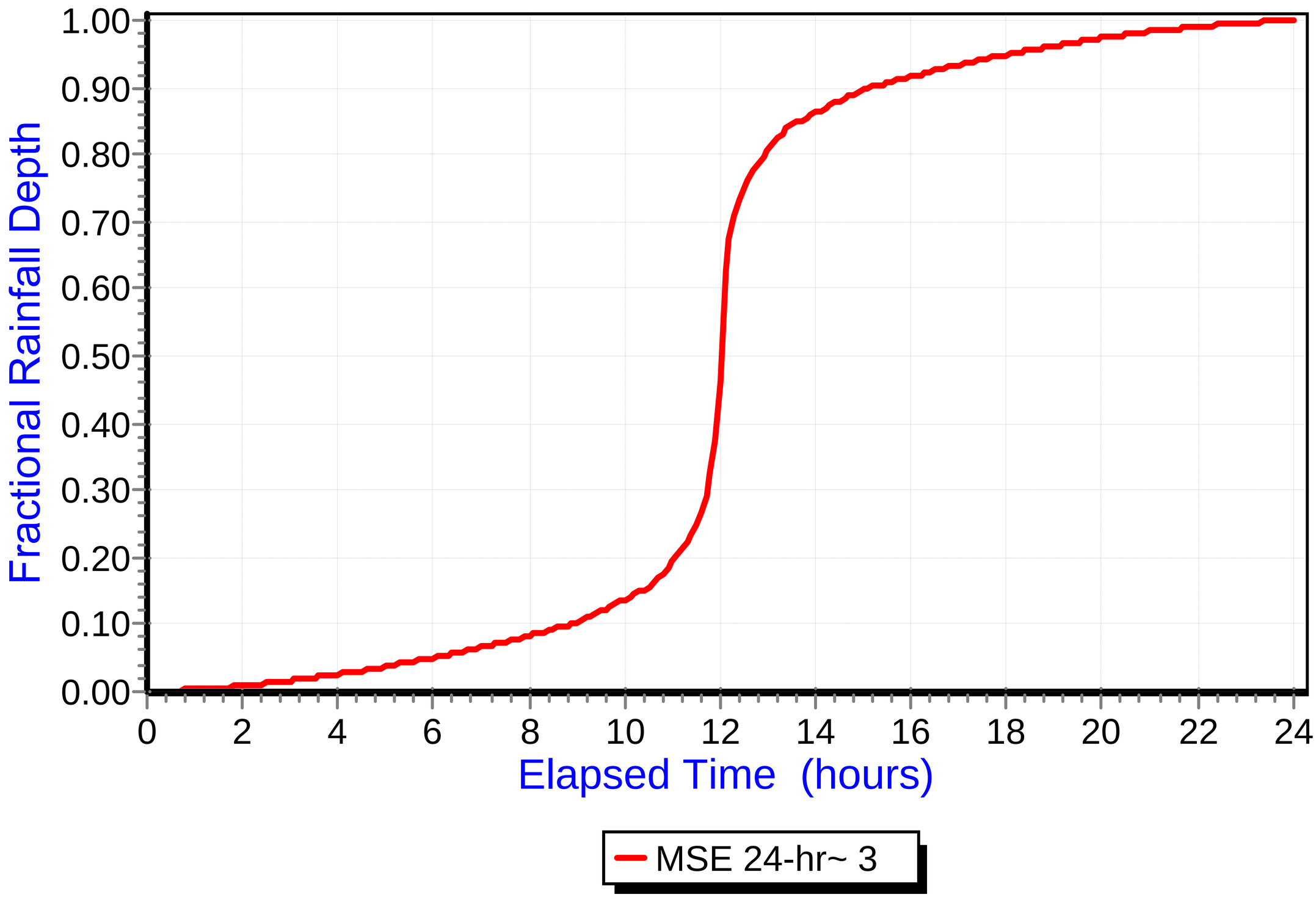
Section 17.11.010:

Predevelopment Land Use	Hydrologic Soil Group (letter) / Maximum Runoff Curve Number (#)			
	A	B	C	D
Woodland	30	55	70	77
Grassland/Meadow	39	61	71	78

Predevelopment Land Use	Hydrologic Soil Group (letter) / Maximum Runoff Curve Number (#)			
	A	B	C	D
Cropland	55	69	78	83

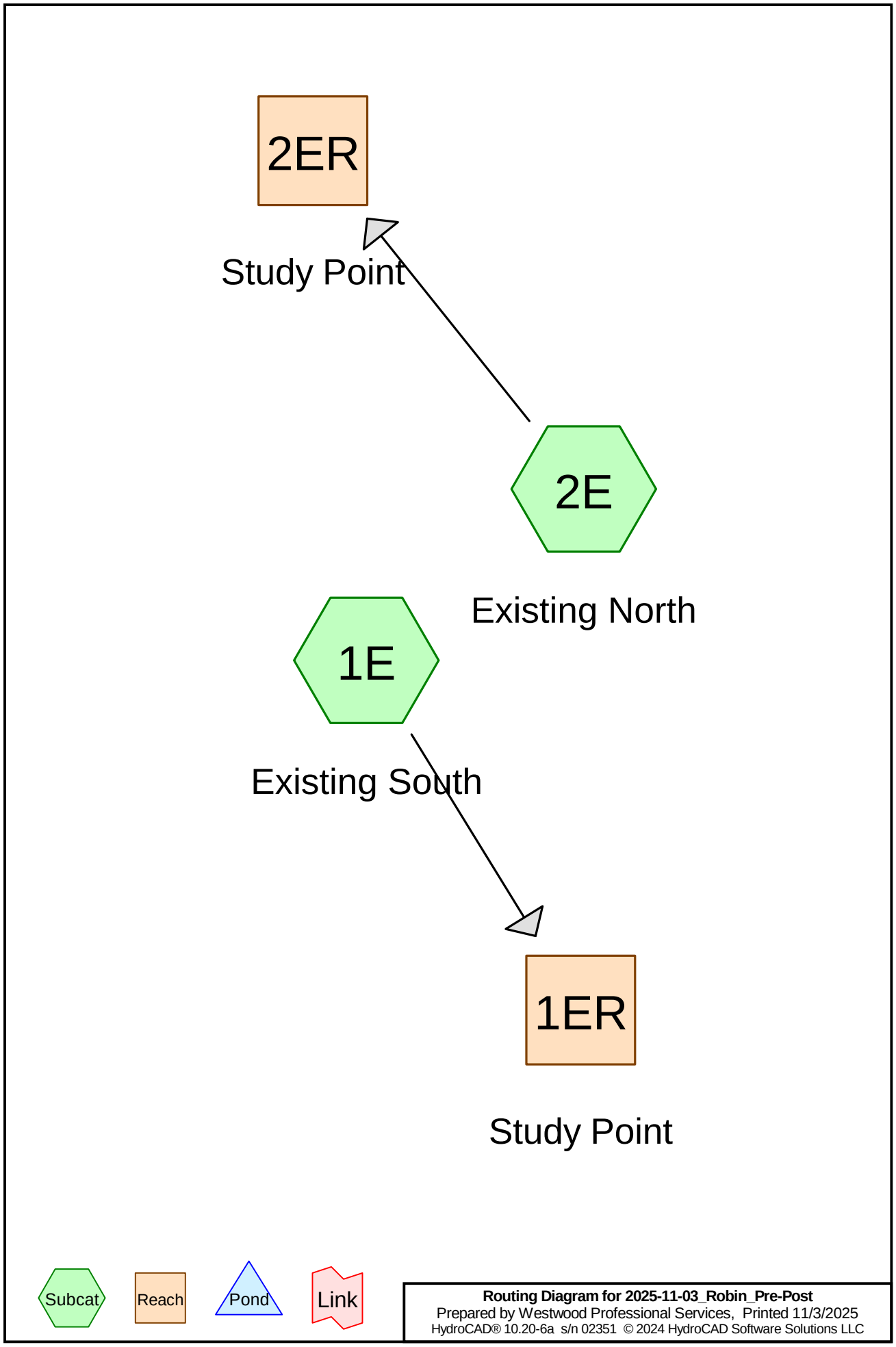
Storm Distribution Report

Rainfall Depth vs. Time



Appendix B

Existing HydroCAD Results



Routing Diagram for 2025-11-03_Robin_Pre-Post
Prepared by Westwood Professional Services, Printed 11/3/2025

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1yr	MSE 24-hr	3	Default	24.00	1	2.39	2
2	2yr	MSE 24-hr	3	Default	24.00	1	2.72	2
3	10yr	MSE 24-hr	3	Default	24.00	1	3.83	2
4	100yr	MSE 24-hr	3	Default	24.00	1	5.95	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
18.300	69	Cropland Kenosha County (1E, 2E)
18.300	**69**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
18.300	Other	1E, 2E
18.300		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.000	18.300	18.300	Cropland Kenosha County	1E, 2E
0.000	**0.000**	**0.000**	**0.000**	**18.300**	**18.300**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1E: Existing South Runoff Area=10.700 ac 0.00% Impervious Runoff Depth=0.37"
Flow Length=700' Slope=0.0050 '/' Tc=24.6 min CN=69 Runoff=2.97 cfs 0.331 af

Reach 1ER: Study Point Inflow=2.97 cfs 0.331 af
Outflow=2.97 cfs 0.331 af

Subcatchment 2E: Existing North Runoff Area=7.600 ac 0.00% Impervious Runoff Depth=0.37"
Flow Length=750' Slope=0.0160 '/' Tc=15.1 min CN=69 Runoff=2.72 cfs 0.235 af

Reach 2ER: Study Point Inflow=2.72 cfs 0.235 af
Outflow=2.72 cfs 0.235 af

Total Runoff Area = 18.300 ac Runoff Volume = 0.567 af Average Runoff Depth = 0.37"
100.00% Pervious = 18.300 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1E: Existing South

Runoff = 2.97 cfs @ 12.44 hrs, Volume= 0.331 af, Depth= 0.37"
Routed to Reach 1ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1yr Rainfall=2.39"

Area (ac)	CN	Description
* 10.700	69	Cropland Kenosha County
10.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0050	0.19		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
15.7	600	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
24.6	700	Total			

Summary for Reach 1ER: Study Point

Inflow Area = 10.700 ac, 0.00% Impervious, Inflow Depth = 0.37" for 1yr event
Inflow = 2.97 cfs @ 12.44 hrs, Volume= 0.331 af
Outflow = 2.97 cfs @ 12.44 hrs, Volume= 0.331 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2E: Existing North

Runoff = 2.72 cfs @ 12.28 hrs, Volume= 0.235 af, Depth= 0.37"
Routed to Reach 2ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1yr Rainfall=2.39"

Area (ac)	CN	Description
* 7.600	69	Cropland Kenosha County
7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0160	0.30		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
9.5	650	0.0160	1.14		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
15.1	750	Total			

Summary for Reach 2ER: Study Point

Inflow Area = 7.600 ac, 0.00% Impervious, Inflow Depth = 0.37" for 1yr event
Inflow = 2.72 cfs @ 12.28 hrs, Volume= 0.235 af
Outflow = 2.72 cfs @ 12.28 hrs, Volume= 0.235 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1E: Existing South Runoff Area=10.700 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=700' Slope=0.0050 '/' Tc=24.6 min CN=69 Runoff=4.61 cfs 0.469 af

Reach 1ER: Study Point Inflow=4.61 cfs 0.469 af
Outflow=4.61 cfs 0.469 af

Subcatchment 2E: Existing North Runoff Area=7.600 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=750' Slope=0.0160 '/' Tc=15.1 min CN=69 Runoff=4.28 cfs 0.333 af

Reach 2ER: Study Point Inflow=4.28 cfs 0.333 af
Outflow=4.28 cfs 0.333 af

Total Runoff Area = 18.300 ac Runoff Volume = 0.801 af Average Runoff Depth = 0.53"
100.00% Pervious = 18.300 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1E: Existing South

Runoff = 4.61 cfs @ 12.41 hrs, Volume= 0.469 af, Depth= 0.53"
Routed to Reach 1ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2yr Rainfall=2.72"

Area (ac)	CN	Description
* 10.700	69	Cropland Kenosha County
10.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0050	0.19		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
15.7	600	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
24.6	700	Total			

Summary for Reach 1ER: Study Point

Inflow Area = 10.700 ac, 0.00% Impervious, Inflow Depth = 0.53" for 2yr event
Inflow = 4.61 cfs @ 12.41 hrs, Volume= 0.469 af
Outflow = 4.61 cfs @ 12.41 hrs, Volume= 0.469 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2E: Existing North

Runoff = 4.28 cfs @ 12.27 hrs, Volume= 0.333 af, Depth= 0.53"
Routed to Reach 2ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2yr Rainfall=2.72"

Area (ac)	CN	Description
* 7.600	69	Cropland Kenosha County
7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0160	0.30		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
9.5	650	0.0160	1.14		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
15.1	750	Total			

Summary for Reach 2ER: Study Point

Inflow Area = 7.600 ac, 0.00% Impervious, Inflow Depth = 0.53" for 2yr event
Inflow = 4.28 cfs @ 12.27 hrs, Volume= 0.333 af
Outflow = 4.28 cfs @ 12.27 hrs, Volume= 0.333 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1E: Existing South Runoff Area=10.700 ac 0.00% Impervious Runoff Depth=1.16"
Flow Length=700' Slope=0.0050 '/' Tc=24.6 min CN=69 Runoff=11.64 cfs 1.032 af

Reach 1ER: Study Point Inflow=11.64 cfs 1.032 af
Outflow=11.64 cfs 1.032 af

Subcatchment 2E: Existing North Runoff Area=7.600 ac 0.00% Impervious Runoff Depth=1.16"
Flow Length=750' Slope=0.0160 '/' Tc=15.1 min CN=69 Runoff=10.75 cfs 0.733 af

Reach 2ER: Study Point Inflow=10.75 cfs 0.733 af
Outflow=10.75 cfs 0.733 af

Total Runoff Area = 18.300 ac Runoff Volume = 1.765 af Average Runoff Depth = 1.16"
100.00% Pervious = 18.300 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1E: Existing South

Runoff = 11.64 cfs @ 12.38 hrs, Volume= 1.032 af, Depth= 1.16"
Routed to Reach 1ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10yr Rainfall=3.83"

Area (ac)	CN	Description
* 10.700	69	Cropland Kenosha County
10.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0050	0.19		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
15.7	600	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
24.6	700	Total			

Summary for Reach 1ER: Study Point

Inflow Area = 10.700 ac, 0.00% Impervious, Inflow Depth = 1.16" for 10yr event
Inflow = 11.64 cfs @ 12.38 hrs, Volume= 1.032 af
Outflow = 11.64 cfs @ 12.38 hrs, Volume= 1.032 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2E: Existing North

Runoff = 10.75 cfs @ 12.25 hrs, Volume= 0.733 af, Depth= 1.16"
Routed to Reach 2ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10yr Rainfall=3.83"

Area (ac)	CN	Description
* 7.600	69	Cropland Kenosha County
7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0160	0.30		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
9.5	650	0.0160	1.14		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
15.1	750	Total			

Summary for Reach 2ER: Study Point

Inflow Area = 7.600 ac, 0.00% Impervious, Inflow Depth = 1.16" for 10yr event
Inflow = 10.75 cfs @ 12.25 hrs, Volume= 0.733 af
Outflow = 10.75 cfs @ 12.25 hrs, Volume= 0.733 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1E: Existing South Runoff Area=10.700 ac 0.00% Impervious Runoff Depth=2.67"
Flow Length=700' Slope=0.0050 '/' Tc=24.6 min CN=69 Runoff=28.36 cfs 2.384 af

Reach 1ER: Study Point Inflow=28.36 cfs 2.384 af
Outflow=28.36 cfs 2.384 af

Subcatchment 2E: Existing North Runoff Area=7.600 ac 0.00% Impervious Runoff Depth=2.67"
Flow Length=750' Slope=0.0160 '/' Tc=15.1 min CN=69 Runoff=26.05 cfs 1.693 af

Reach 2ER: Study Point Inflow=26.05 cfs 1.693 af
Outflow=26.05 cfs 1.693 af

Total Runoff Area = 18.300 ac Runoff Volume = 4.077 af Average Runoff Depth = 2.67"
100.00% Pervious = 18.300 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 1E: Existing South

Runoff = 28.36 cfs @ 12.38 hrs, Volume= 2.384 af, Depth= 2.67"
Routed to Reach 1ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100yr Rainfall=5.95"

	Area (ac)	CN	Description
*	10.700	69	Cropland Kenosha County
	10.700		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	100	0.0050	0.19		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
15.7	600	0.0050	0.64		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
24.6	700	Total			

Summary for Reach 1ER: Study Point

Inflow Area = 10.700 ac, 0.00% Impervious, Inflow Depth = 2.67" for 100yr event
Inflow = 28.36 cfs @ 12.38 hrs, Volume= 2.384 af
Outflow = 28.36 cfs @ 12.38 hrs, Volume= 2.384 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2E: Existing North

Runoff = 26.05 cfs @ 12.24 hrs, Volume= 1.693 af, Depth= 2.67"
Routed to Reach 2ER : Study Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100yr Rainfall=5.95"

	Area (ac)	CN	Description
*	7.600	69	Cropland Kenosha County
	7.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.6	100	0.0160	0.30		**Sheet Flow,** Cultivated: Residue<=20% n= 0.060 P2= 2.72"
9.5	650	0.0160	1.14		**Shallow Concentrated Flow,** Cultivated Straight Rows Kv= 9.0 fps
15.1	750	Total			

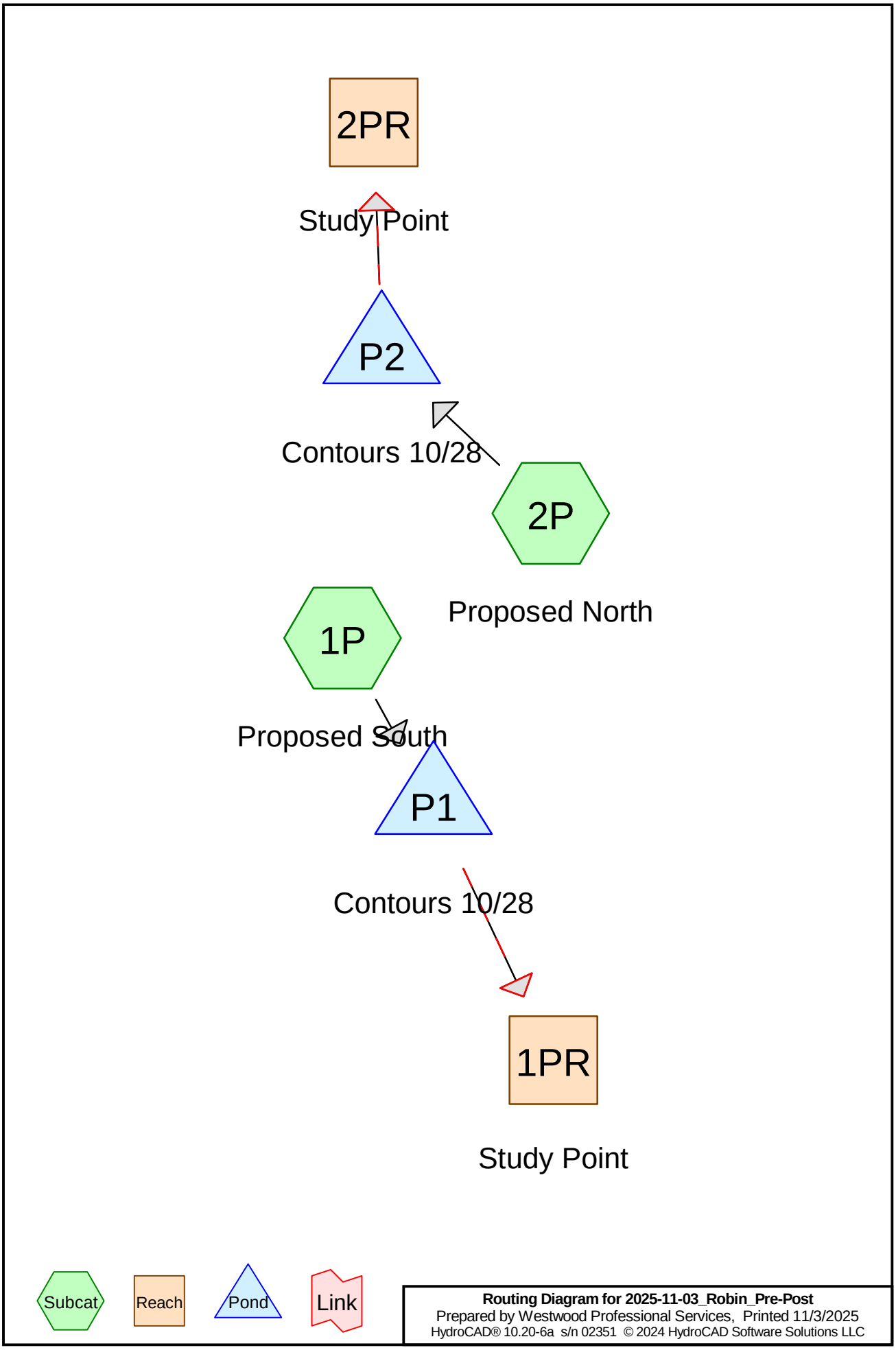
Summary for Reach 2ER: Study Point

Inflow Area = 7.600 ac, 0.00% Impervious, Inflow Depth = 2.67" for 100yr event
Inflow = 26.05 cfs @ 12.24 hrs, Volume= 1.693 af
Outflow = 26.05 cfs @ 12.24 hrs, Volume= 1.693 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Appendix C

Proposed HydroCAD Results



Routing Diagram for 2025-11-03_Robin_Pre-Post
Prepared by Westwood Professional Services, Printed 11/3/2025

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1yr	MSE 24-hr	3	Default	24.00	1	2.39	2
2	2yr	MSE 24-hr	3	Default	24.00	1	2.72	2
3	10yr	MSE 24-hr	3	Default	24.00	1	3.83	2
4	100yr	MSE 24-hr	3	Default	24.00	1	5.95	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
4.500	61	Grassland/Meadow Kenosha County (1P, 2P)
13.800	98	Impervious (1P, 2P)
18.300	**89**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
0.000	HSG D	
18.300	Other	1P, 2P
18.300		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchme Numbers
0.000	0.000	0.000	0.000	4.500	4.500	Grassland/Meadow Kenosha County	
0.000	0.000	0.000	0.000	13.800	13.800	Impervious	
0.000	**0.000**	**0.000**	**0.000**	**18.300**	**18.300**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1P: Proposed South Runoff Area=6.600 ac 93.94% Impervious Runoff Depth=1.95"
Flow Length=800' Slope=0.0070 '/' Tc=10.7 min CN=96 Runoff=18.28 cfs 1.075 af

Reach 1PR: Study Point Inflow=1.71 cfs 0.516 af
Outflow=1.71 cfs 0.516 af

Subcatchment 2P: Proposed North Runoff Area=11.700 ac 64.96% Impervious Runoff Depth=1.09"
Flow Length=1,000' Slope=0.0100 '/' Tc=11.0 min CN=85 Runoff=19.19 cfs 1.064 af

Reach 2PR: Study Point Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond P1: Contours 10/28 Peak Elev=850.76' Storage=0.727 af Inflow=18.28 cfs 1.075 af
Primary=1.71 cfs 0.516 af Secondary=0.00 cfs 0.000 af Outflow=1.71 cfs 0.516 af

Pond P2: Contours 10/28 Peak Elev=851.26' Storage=46,356 cf Inflow=19.19 cfs 1.064 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 18.300 ac Runoff Volume = 2.139 af Average Runoff Depth = 1.40"
24.59% Pervious = 4.500 ac 75.41% Impervious = 13.800 ac

Summary for Subcatchment 1P: Proposed South

Runoff = 18.28 cfs @ 12.18 hrs, Volume= 1.075 af, Depth= 1.95"
Routed to Pond P1 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1yr Rainfall=2.39"

	Area (ac)	CN	Description
*	6.200	98	Impervious
*	0.400	61	Grassland/Meadow Kenosha County
	6.600	96	Weighted Average
	0.400		6.06% Pervious Area
	6.200		93.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0070	0.83		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
8.7	700	0.0070	1.35		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
10.7	800	Total			

Summary for Reach 1PR: Study Point

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth > 0.94" for 1yr event
Inflow = 1.71 cfs @ 12.91 hrs, Volume= 0.516 af
Outflow = 1.71 cfs @ 12.91 hrs, Volume= 0.516 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2P: Proposed North

Runoff = 19.19 cfs @ 12.19 hrs, Volume= 1.064 af, Depth= 1.09"
Routed to Pond P2 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 1yr Rainfall=2.39"

	Area (ac)	CN	Description
*	7.600	98	Impervious
*	4.100	61	Grassland/Meadow Kenosha County
	11.700	85	Weighted Average
	4.100		35.04% Pervious Area
	7.600		64.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
9.3	900	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.0	1,000	Total			

Summary for Reach 2PR: Study Point

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 0.00" for 1yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond P1: Contours 10/28

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth = 1.95" for 1yr event
Inflow = 18.28 cfs @ 12.18 hrs, Volume= 1.075 af
Outflow = 1.71 cfs @ 12.91 hrs, Volume= 0.516 af, Atten= 91%, Lag= 43.9 min
Primary = 1.71 cfs @ 12.91 hrs, Volume= 0.516 af
Routed to Reach 1PR : Study Point
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 850.76' @ 12.91 hrs Surf.Area= 0.666 ac Storage= 0.727 af

Plug-Flow detention time= 273.2 min calculated for 0.516 af (48% of inflow)
Center-of-Mass det. time= 189.7 min (965.8 - 776.1)

Volume	Invert	Avail.Storage	Storage Description
#1	849.50'	2.578 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
849.50	0.488	0.000	0.000
850.00	0.558	0.262	0.262
851.00	0.699	0.629	0.890
852.00	0.843	0.771	1.662
853.00	0.989	0.916	2.578

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	849.50'	**24.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 849.50' / 849.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	850.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=1.71 cfs @ 12.91 hrs HW=850.76' (Free Discharge)
↑—**2=Culvert** (Passes 1.71 cfs of 6.29 cfs potential flow)
↑—**3=Sharp-Crested Rectangular Weir** (Weir Controls 1.71 cfs @ 1.67 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=849.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P2: Contours 10/28

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 1.09" for 1yr event
Inflow = 19.19 cfs @ 12.19 hrs, Volume= 1.064 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2PR : Study Point
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 851.26' @ 24.63 hrs Surf.Area= 63,943 sf Storage= 46,356 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	850.50'	168,911 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
850.50	58,443	0	0
851.00	62,060	30,126	30,126
852.00	69,368	65,714	95,840
853.00	76,775	73,072	168,911

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	850.50'	**24.0" Round Culvert X 4.00** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 850.50' / 850.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	851.50'	**4.0' long Sharp-Crested Rectangular Weir X 3.00** 2 End Contraction(s)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=850.50' (Free Discharge)
2=Culvert (Controls 0.00 cfs)
3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=850.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1P: Proposed South Runoff Area=6.600 ac 93.94% Impervious Runoff Depth=2.28"
Flow Length=800' Slope=0.0070 '/' Tc=10.7 min CN=96 Runoff=21.11 cfs 1.252 af

Reach 1PR: Study Point Inflow=2.96 cfs 0.694 af
Outflow=2.96 cfs 0.694 af

Subcatchment 2P: Proposed North Runoff Area=11.700 ac 64.96% Impervious Runoff Depth=1.36"
Flow Length=1,000' Slope=0.0100 '/' Tc=11.0 min CN=85 Runoff=23.88 cfs 1.322 af

Reach 2PR: Study Point Inflow=0.00 cfs 0.000 af
Outflow=0.00 cfs 0.000 af

Pond P1: Contours 10/28 Peak Elev=850.88' Storage=0.805 af Inflow=21.11 cfs 1.252 af
Primary=2.96 cfs 0.694 af Secondary=0.00 cfs 0.000 af Outflow=2.96 cfs 0.694 af

Pond P2: Contours 10/28 Peak Elev=851.43' Storage=57,593 cf Inflow=23.88 cfs 1.322 af
Primary=0.00 cfs 0.000 af Secondary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af

Total Runoff Area = 18.300 ac Runoff Volume = 2.574 af Average Runoff Depth = 1.69"
24.59% Pervious = 4.500 ac 75.41% Impervious = 13.800 ac

Summary for Subcatchment 1P: Proposed South

Runoff = 21.11 cfs @ 12.18 hrs, Volume= 1.252 af, Depth= 2.28"
Routed to Pond P1 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2yr Rainfall=2.72"

	Area (ac)	CN	Description
*	6.200	98	Impervious
*	0.400	61	Grassland/Meadow Kenosha County
	6.600	96	Weighted Average
	0.400		6.06% Pervious Area
	6.200		93.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0070	0.83		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
8.7	700	0.0070	1.35		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
10.7	800	Total			

Summary for Reach 1PR: Study Point

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth > 1.26" for 2yr event
Inflow = 2.96 cfs @ 12.65 hrs, Volume= 0.694 af
Outflow = 2.96 cfs @ 12.65 hrs, Volume= 0.694 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2P: Proposed North

Runoff = 23.88 cfs @ 12.19 hrs, Volume= 1.322 af, Depth= 1.36"
Routed to Pond P2 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 2yr Rainfall=2.72"

	Area (ac)	CN	Description
*	7.600	98	Impervious
*	4.100	61	Grassland/Meadow Kenosha County
	11.700	85	Weighted Average
	4.100		35.04% Pervious Area
	7.600		64.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
9.3	900	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.0	1,000	Total			

Summary for Reach 2PR: Study Point

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 0.00" for 2yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond P1: Contours 10/28

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth = 2.28" for 2yr event
Inflow = 21.11 cfs @ 12.18 hrs, Volume= 1.252 af
Outflow = 2.96 cfs @ 12.65 hrs, Volume= 0.694 af, Atten= 86%, Lag= 28.1 min
Primary = 2.96 cfs @ 12.65 hrs, Volume= 0.694 af
Routed to Reach 1PR : Study Point
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 850.88' @ 12.65 hrs Surf.Area= 0.682 ac Storage= 0.805 af

Plug-Flow detention time= 239.5 min calculated for 0.694 af (55% of inflow)
Center-of-Mass det. time= 161.6 min (934.9 - 773.2)

Volume	Invert	Avail.Storage	Storage Description
#1	849.50'	2.578 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
849.50	0.488	0.000	0.000
850.00	0.558	0.262	0.262
851.00	0.699	0.629	0.890
852.00	0.843	0.771	1.662
853.00	0.989	0.916	2.578

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	849.50'	**24.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 849.50' / 849.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	850.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=2.96 cfs @ 12.65 hrs HW=850.88' (Free Discharge)
↑—**2=Culvert** (Passes 2.96 cfs of 7.27 cfs potential flow)
↑—**3=Sharp-Crested Rectangular Weir** (Weir Controls 2.96 cfs @ 2.00 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=849.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P2: Contours 10/28

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 1.36" for 2yr event
Inflow = 23.88 cfs @ 12.19 hrs, Volume= 1.322 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2PR : Study Point
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 851.43' @ 24.63 hrs Surf.Area= 65,214 sf Storage= 57,593 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	850.50'	168,911 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
850.50	58,443	0	0
851.00	62,060	30,126	30,126
852.00	69,368	65,714	95,840
853.00	76,775	73,072	168,911

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	850.50'	**24.0" Round Culvert X 4.00** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 850.50' / 850.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	851.50'	**4.0' long Sharp-Crested Rectangular Weir X 3.00** 2 End Contraction(s)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=850.50' (Free Discharge)
2=Culvert (Controls 0.00 cfs)
3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=850.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1P: Proposed South Runoff Area=6.600 ac 93.94% Impervious Runoff Depth=3.37"
Flow Length=800' Slope=0.0070 '/' Tc=10.7 min CN=96 Runoff=30.54 cfs 1.854 af

Reach 1PR: Study Point Inflow=8.11 cfs 1.296 af
Outflow=8.11 cfs 1.296 af

Subcatchment 2P: Proposed North Runoff Area=11.700 ac 64.96% Impervious Runoff Depth=2.31"
Flow Length=1,000' Slope=0.0100 '/' Tc=11.0 min CN=85 Runoff=40.35 cfs 2.249 af

Reach 2PR: Study Point Inflow=1.97 cfs 0.824 af
Outflow=1.97 cfs 0.824 af

Pond P1: Contours 10/28 Peak Elev=851.25' Storage=1.067 af Inflow=30.54 cfs 1.854 af
Primary=8.11 cfs 1.296 af Secondary=0.00 cfs 0.000 af Outflow=8.11 cfs 1.296 af

Pond P2: Contours 10/28 Peak Elev=851.64' Storage=71,101 cf Inflow=40.35 cfs 2.249 af
Primary=1.97 cfs 0.824 af Secondary=0.00 cfs 0.000 af Outflow=1.97 cfs 0.824 af

Total Runoff Area = 18.300 ac Runoff Volume = 4.103 af Average Runoff Depth = 2.69"
24.59% Pervious = 4.500 ac 75.41% Impervious = 13.800 ac

Summary for Subcatchment 1P: Proposed South

Runoff = 30.54 cfs @ 12.18 hrs, Volume= 1.854 af, Depth= 3.37"
Routed to Pond P1 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10yr Rainfall=3.83"

	Area (ac)	CN	Description
*	6.200	98	Impervious
*	0.400	61	Grassland/Meadow Kenosha County
	6.600	96	Weighted Average
	0.400		6.06% Pervious Area
	6.200		93.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0070	0.83		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
8.7	700	0.0070	1.35		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
10.7	800	Total			

Summary for Reach 1PR: Study Point

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth = 2.36" for 10yr event
Inflow = 8.11 cfs @ 12.46 hrs, Volume= 1.296 af
Outflow = 8.11 cfs @ 12.46 hrs, Volume= 1.296 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2P: Proposed North

Runoff = 40.35 cfs @ 12.19 hrs, Volume= 2.249 af, Depth= 2.31"
Routed to Pond P2 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 10yr Rainfall=3.83"

	Area (ac)	CN	Description
*	7.600	98	Impervious
*	4.100	61	Grassland/Meadow Kenosha County
	11.700	85	Weighted Average
	4.100		35.04% Pervious Area
	7.600		64.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
9.3	900	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.0	1,000	Total			

Summary for Reach 2PR: Study Point

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 0.84" for 10yr event
Inflow = 1.97 cfs @ 13.64 hrs, Volume= 0.824 af
Outflow = 1.97 cfs @ 13.64 hrs, Volume= 0.824 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond P1: Contours 10/28

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth = 3.37" for 10yr event
Inflow = 30.54 cfs @ 12.18 hrs, Volume= 1.854 af
Outflow = 8.11 cfs @ 12.46 hrs, Volume= 1.296 af, Atten= 73%, Lag= 17.0 min
Primary = 8.11 cfs @ 12.46 hrs, Volume= 1.296 af
Routed to Reach 1PR : Study Point
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 851.25' @ 12.46 hrs Surf.Area= 0.735 ac Storage= 1.067 af

Plug-Flow detention time= 189.0 min calculated for 1.296 af (70% of inflow)
Center-of-Mass det. time= 121.4 min (887.3 - 766.0)

Volume	Invert	Avail.Storage	Storage Description
#1	849.50'	2.578 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
849.50	0.488	0.000	0.000
850.00	0.558	0.262	0.262
851.00	0.699	0.629	0.890
852.00	0.843	0.771	1.662
853.00	0.989	0.916	2.578

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	849.50'	**24.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 849.50' / 849.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	850.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=8.11 cfs @ 12.46 hrs HW=851.25' (Free Discharge)
↑—**2=Culvert** (Passes 8.11 cfs of 10.33 cfs potential flow)
↑—**3=Sharp-Crested Rectangular Weir** (Weir Controls 8.11 cfs @ 2.82 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=849.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P2: Contours 10/28

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 2.31" for 10yr event
Inflow = 40.35 cfs @ 12.19 hrs, Volume= 2.249 af
Outflow = 1.97 cfs @ 13.64 hrs, Volume= 0.824 af, Atten= 95%, Lag= 87.5 min
Primary = 1.97 cfs @ 13.64 hrs, Volume= 0.824 af
Routed to Reach 2PR : Study Point
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 2PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 851.64' @ 13.64 hrs Surf.Area= 66,711 sf Storage= 71,101 cf

Plug-Flow detention time= 324.6 min calculated for 0.824 af (37% of inflow)
Center-of-Mass det. time= 235.3 min (1,037.0 - 801.7)

Volume	Invert	Avail.Storage	Storage Description
#1	850.50'	168,911 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
850.50	58,443	0	0
851.00	62,060	30,126	30,126
852.00	69,368	65,714	95,840
853.00	76,775	73,072	168,911

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	850.50'	**24.0" Round Culvert X 4.00** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 850.50' / 850.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	851.50'	**4.0' long Sharp-Crested Rectangular Weir X 3.00** 2 End Contraction(s)

Primary OutFlow Max=1.96 cfs @ 13.64 hrs HW=851.64' (Free Discharge)
2=Culvert (Passes 1.96 cfs of 21.12 cfs potential flow)
3=Sharp-Crested Rectangular Weir (Weir Controls 1.96 cfs @ 1.21 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=850.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1P: Proposed South Runoff Area=6.600 ac 93.94% Impervious Runoff Depth=5.48"
Flow Length=800' Slope=0.0070 '/' Tc=10.7 min CN=96 Runoff=48.33 cfs 3.013 af

Reach 1PR: Study Point Inflow=14.13 cfs 2.454 af
Outflow=14.13 cfs 2.454 af

Subcatchment 2P: Proposed North Runoff Area=11.700 ac 64.96% Impervious Runoff Depth=4.26"
Flow Length=1,000' Slope=0.0100 '/' Tc=11.0 min CN=85 Runoff=72.74 cfs 4.149 af

Reach 2PR: Study Point Inflow=17.47 cfs 2.724 af
Outflow=17.47 cfs 2.724 af

Pond P1: Contours 10/28 Peak Elev=851.90' Storage=1.579 af Inflow=48.33 cfs 3.013 af
Primary=14.13 cfs 2.454 af Secondary=0.00 cfs 0.000 af Outflow=14.13 cfs 2.454 af

Pond P2: Contours 10/28 Peak Elev=852.06' Storage=100,179 cf Inflow=72.74 cfs 4.149 af
Primary=16.09 cfs 2.696 af Secondary=1.38 cfs 0.028 af Outflow=17.47 cfs 2.724 af

Total Runoff Area = 18.300 ac Runoff Volume = 7.162 af Average Runoff Depth = 4.70"
24.59% Pervious = 4.500 ac 75.41% Impervious = 13.800 ac

Summary for Subcatchment 1P: Proposed South

Runoff = 48.33 cfs @ 12.18 hrs, Volume= 3.013 af, Depth= 5.48"
Routed to Pond P1 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100yr Rainfall=5.95"

	Area (ac)	CN	Description
*	6.200	98	Impervious
*	0.400	61	Grassland/Meadow Kenosha County
	6.600	96	Weighted Average
	0.400		6.06% Pervious Area
	6.200		93.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0	100	0.0070	0.83		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
8.7	700	0.0070	1.35		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
10.7	800	Total			

Summary for Reach 1PR: Study Point

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth = 4.46" for 100yr event
Inflow = 14.13 cfs @ 12.44 hrs, Volume= 2.454 af
Outflow = 14.13 cfs @ 12.44 hrs, Volume= 2.454 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Subcatchment 2P: Proposed North

Runoff = 72.74 cfs @ 12.18 hrs, Volume= 4.149 af, Depth= 4.26"
Routed to Pond P2 : Contours 10/28

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
MSE 24-hr 3 100yr Rainfall=5.95"

	Area (ac)	CN	Description
*	7.600	98	Impervious
*	4.100	61	Grassland/Meadow Kenosha County
	11.700	85	Weighted Average
	4.100		35.04% Pervious Area
	7.600		64.96% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	100	0.0100	0.96		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.72"
9.3	900	0.0100	1.61		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
11.0	1,000	Total			

Summary for Reach 2PR: Study Point

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 2.79" for 100yr event
Inflow = 17.47 cfs @ 12.51 hrs, Volume= 2.724 af
Outflow = 17.47 cfs @ 12.51 hrs, Volume= 2.724 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Summary for Pond P1: Contours 10/28

Inflow Area = 6.600 ac, 93.94% Impervious, Inflow Depth = 5.48" for 100yr event
Inflow = 48.33 cfs @ 12.18 hrs, Volume= 3.013 af
Outflow = 14.13 cfs @ 12.44 hrs, Volume= 2.454 af, Atten= 71%, Lag= 15.4 min
Primary = 14.13 cfs @ 12.44 hrs, Volume= 2.454 af
Routed to Reach 1PR : Study Point
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Reach 1PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 851.90' @ 12.44 hrs Surf.Area= 0.829 ac Storage= 1.579 af

Plug-Flow detention time= 158.2 min calculated for 2.454 af (81% of inflow)
Center-of-Mass det. time= 101.4 min (859.2 - 757.8)

Volume	Invert	Avail.Storage	Storage Description
#1	849.50'	2.578 af	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Inc.Store (acre-feet)	Cum.Store (acre-feet)
849.50	0.488	0.000	0.000
850.00	0.558	0.262	0.262
851.00	0.699	0.629	0.890
852.00	0.843	0.771	1.662
853.00	0.989	0.916	2.578

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	849.50'	**24.0" Round Culvert** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 849.50' / 849.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	850.50'	**4.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=14.13 cfs @ 12.44 hrs HW=851.90' (Free Discharge)
↑—**2=Culvert** (Inlet Controls 14.13 cfs @ 4.50 fps)
↑—**3=Sharp-Crested Rectangular Weir** (Passes 14.13 cfs of 20.17 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=849.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P2: Contours 10/28

Inflow Area = 11.700 ac, 64.96% Impervious, Inflow Depth = 4.26" for 100yr event
Inflow = 72.74 cfs @ 12.18 hrs, Volume= 4.149 af
Outflow = 17.47 cfs @ 12.51 hrs, Volume= 2.724 af, Atten= 76%, Lag= 19.6 min
Primary = 16.09 cfs @ 12.51 hrs, Volume= 2.696 af
Routed to Reach 2PR : Study Point
Secondary = 1.38 cfs @ 12.51 hrs, Volume= 0.028 af
Routed to Reach 2PR : Study Point

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 852.06' @ 12.51 hrs Surf.Area= 69,830 sf Storage= 100,179 cf

Plug-Flow detention time= 183.2 min calculated for 2.724 af (66% of inflow)
Center-of-Mass det. time= 110.8 min (900.3 - 789.5)

Volume	Invert	Avail.Storage	Storage Description
#1	850.50'	168,911 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
850.50	58,443	0	0
851.00	62,060	30,126	30,126
852.00	69,368	65,714	95,840
853.00	76,775	73,072	168,911

Device	Routing	Invert	Outlet Devices
#1	Secondary	852.00'	**30.0' long (Profile 1) Broad-Crested Rectangular Weir** Head (feet) 0.49 0.98 1.48 Coef. (English) 2.92 3.37 3.59
#2	Primary	850.50'	**24.0" Round Culvert X 4.00** L= 30.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 850.50' / 850.00' S= 0.0167 '/' Cc= 0.900 n= 0.010 PVC, smooth interior, Flow Area= 3.14 sf
#3	Device 2	851.50'	**4.0' long Sharp-Crested Rectangular Weir X 3.00** 2 End Contraction(s)

Primary OutFlow Max=16.08 cfs @ 12.51 hrs HW=852.06' (Free Discharge)
2=Culvert (Passes 16.08 cfs of 35.38 cfs potential flow)
3=Sharp-Crested Rectangular Weir (Weir Controls 16.08 cfs @ 2.45 fps)

Secondary OutFlow Max=1.36 cfs @ 12.51 hrs HW=852.06' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.36 cfs @ 0.73 fps)

Appendix D

Wisconsin DNR Technical Standard 1003

Infiltration Basin

(Acre-Feet)
(1003)

Wisconsin Department of Natural Resources
Technical Standard

I. Definition

An infiltration basin is defined as an open impoundment (greater than 15 feet wide in its minimum dimension) created either by excavation or embankment with a flat, densely vegetated floor dedicated to the infiltration of runoff through the ground surface.

II. Purpose

The practice may be applied as part of a structural stormwater management practice system to support one or more of the following purposes:

- Reduce stormwater pollutants
- Increase discharge to groundwater
- Decrease runoff peak flow rates and volumes
- Preserve base flow in streams
- Reduce temperature impacts of runoff.

III. Conditions Where Practice Applies

The infiltration basin practice applies to urban areas where increased pollutant loadings, thermal impacts, or increased runoff volumes are a concern and the area is suitable for infiltration. (See NR 151.12(5) (c) 5 and 6 and WDNR Technical Standard Site Evaluation for Stormwater Infiltration (1002).)

IV. Federal, State and Local Laws

Users of this standard shall be aware of applicable federal, state and local laws, rules, regulations or permit requirements governing infiltration basins. This standard does not contain the text of federal, state or local laws.

V. Criteria

A. Screening criteria located in the WDNR Technical Standard Site Evaluation for Stormwater Infiltration (1002) shall be followed. In addition, the following site location criteria shall be met.

1. Building location – The basin shall not be *hydraulically connected*[1] to foundations or pavements, or cause negative impacts to structures. These negative impacts could include: water in basements and foundation instability.

2. 20% Slopes - Infiltration shall not cause seepage, contribute to hill slope failure or increase erosion on down gradient slopes. A minimum horizontal setback distance of 200 feet shall be maintained from down gradient slopes greater than 20% unless slope stability calculations demonstrate that the slope is stable under saturated conditions at a shorter distance from the practice. Note: Berms constructed as part of the practice are not included in this separation distance.

B. Design

1. Bypass/Dewatering – The basin shall be designed with a maintenance draw down capability. An example of this device is shown on Figure #3.

   When infiltration cells are used, a *draw down device* shall be provided for each cell.

2. Pretreatment Practices – Space must be allotted for pretreatment prior to infiltration to remove the following percentage of total suspended solids, on an average annual basis, based on the following land uses.

   a. 60% for residential (and associated roads)

[1] Words in the standard that are shown in italics are described in X. Definitions. The words are italicized the first time they are used in the text.

b. 80% for commercial, industrial, institutional (and associated roads)

3. Infiltration Rates - See WDNR Technical Standard Site Evaluation for Stormwater Infiltration (1002) for design infiltration rates.

4. Dimensions

   a. Depth – Depth is a function of the maximum draw down time of 24 hours (for the infiltration portion of the practice only), using the design infiltration rate, with a not to exceed depth of 24 inches.

      The maximum depth of 24 inches applies to all infiltration cells within the practice.

   b. *Target Stay-on Depth* – The target stay-on depth shall meet the requirements of NR 151. (See Consideration L.)

   c. *Effective Infiltration Area* – The maximum depth along with the storage volume of water to be infiltrated can be used to determine the preliminary effective infiltration area necessary for the infiltration basin. (See Consideration L.)

   d. Slopes

      1. Longitudinal Slope – If used, the longitudinal slope shall not exceed 1% (0% longitudinal slope is recommended). If any longitudinal slope is specified, "infiltration cells" as described in V.B.4.f. shall be required.

      2. Lateral Slopes in the effective infiltration area shall be 0%.

Example: (This example is a continuation of the 20 acre mixed land use example presented in "Technical Note for Sizing Infiltration Basins and Bioretention Devices to Meet State of Wisconsin Stormwater Infiltration Performance Standards." See Consideration L. for reference.)

This example assumed an average pre-development curve number of 75 for the pre-development soil condition in the drainage basin, sandy loam soils at the infiltration site and a post-development curve number of 70 for the pervious areas in the drainage basin. From that example, the preliminary effective infiltration area is 8,930 square feet or 0.2 acres. Therefore, the storage volume (SV) at a one-foot maximum depth (MD) is 0.2 acre-ft or 8,930 cu. ft.

Calculate the dimensions of the basin. Assume a rectangular basin with a length to width ratio of 3:1
$SV=MD * L * W$ substitute $L=3W$
$SV=MD * 3W^2$.
Solve for W:
$8{,}930 \text{ cu. ft.} = 1 \text{ X } 3W^2 \quad 2{,}977 = W^2$
$W = 55$ ft
$L = 3W$ so $L = 164$ ft

If using a longitudinal slope, it is still required that the maximum depth, at any point in the basin, not exceed 24 inches (or in this case 12 inches due to the soil type). This slope results in a 3D triangle of infiltration volume versus the cubic volume created by a basin with a flat floor.

To correct for this and to provide the required infiltration volume, the preliminary effective infiltration area originally calculated must be divided by 0.5. This will correct for the triangle of lost volume created by the sloped floor of the basin, the maximum depth and the water surface.

8,930 sq. ft. / 0.5 = 17,860 sq. ft.
The new W and L are now W = 77ft. and L = 3W = 231ft.

Note: The surface area calculated is the minimum effective infiltration area and does not include slopes or setbacks. Additional site area will be needed to account for berms and slopes.

e. Side Slopes – All side slopes for interior and exterior berms shall have a 4:1 slope (horizontal: vertical) or flatter.

f. Infiltration Cells – To maximize the effective infiltration area utilized and to prevent channelized flow, the effective infiltration area shall be subdivided into multiple smaller "cells" using *level spreaders* (example shown in Figure 1 & 2). These "cells" shall be used if a longitudinal slope is specified or if the length of the flow path exceeds 300 linear feet.

The effective infiltration area shall be divided such that as a downstream cell reaches the depth of its level spreader, the elevation of the water in that cell does not exceed the downstream toe of slope from the next upstream level spreader. The height of any level spreader shall not exceed the maximum ponding depth.

Example (continued)

Given: MD = 12 inches, SA = 17, 860 sq. ft., longitudinal slope = 1%. W = 77 ft. L = 231 ft.

With a length of 231 feet and a slope of 1% we know the basin rises 2.3 feet along its length from the outlet to the toe of the pre-treatment area. Given a 12-inch maximum depth of water in the practice for infiltration, the basin needs to be divided into multiple cells with each cell a maximum 300 feet length or a maximum of 12 inches of depth in each cell.

As this example has a longitudinal slope of 1% the maximum cell is 100 feet in length (100 * 1% = 1 feet which is the maximum depth). Had this basin had no longitudinal slope on the floor, a cell up to 300 feet long could have been utilized.

The first level spreader should be located 100 feet upstream from the outlet structure. This leaves us with 131 feet to the pretreatment area. At 1% slope, the height of the level spreader should be 1.3 feet, which is greater than allowed. So the second level spreader should be 1 foot in height, with the third being 100 more feet upstream with a height of 0.43 feet.

Note: To improve the aesthetics of the basin, the second and third cells may be evened out to two cells of 66 feet each and level spreader heights of 0.66 feet.

5. Basin Inlets and Cell Dividers / Level Spreader – The design shall evenly spread the outflow from the pretreatment device or between cells across the width of the basin. The pretreatment discharge pipes and stone trench shown in Figures 1 & 2 (plan and profile view) provide an example of level spreaders.

6. Basin Outlets – The infiltration basin outlet shall safely convey stormwater

from the basin through all of the following mechanisms. An example of outlet pipes is shown in Figures 3 & 4 (front and side view)

a. Draw Down Device – A means shall be provided to quickly remove standing water from the basins for maintenance and winter diversion.

b. Emergency Spillway – A means shall be provided to release discharge in excess of the infiltration volume safely into the downstream stormwater conveyance system. The spillway shall be designed for a 100 year 24-hour storm event.

c. Freeboard – One foot of freeboard above the flow depth in the spillway shall be provided.

7. Maintenance Access – Provide a 12 foot wide access route, with a 6:1 slope, to the floor of the basin for sediment and debris removal.

8. Embankment Construction – Embankments shall conform with WDNR Technical Standard Wet Detention Basin (1001). A basin embankment may be regulated as a dam under ch. 31 Stats., and further restricted under ch. NR 333, Wis. Adm. Code, which includes regulations for embankment heights and storage capacities.

C. Construction

1. Construction shall be suspended during periods of rainfall or snowmelt. Construction shall remain suspended if ponded water is present or if residual soil moisture contributes significantly to the potential for soil smearing, clumping or other forms of compaction.

2. An assessment of the active erosion in the drainage area to the infiltration basin shall be performed to determine when to bring the infiltration basin on-line. The basin shall be brought on-line when the area draining to the basin has achieved 90% build out of all lots in any of the first 3 years or 75% build out in any subsequent year. By 5 years from the start of construction in the drainage area, all infiltration basins shall be brought on-line. Build out means that the lot has been fully developed and stabilized from erosion. If the infiltration basin area is to also provide peak flow control for the fully built out 5-year, 24-hour event or greater, then a bypass device to divert those flows into the practice will be allowed until the infiltration basin is brought fully on-line. Erosion and sediment control practices shall be implemented for the remaining 10-25% of the undeveloped lots with the goal of preventing any sediment from reaching the infiltration basin.

3. During construction one of the following methods shall be used:

a. No disturbance – The infiltration area shall be fenced off to prevent heavy equipment access during development.

b. Compaction Mitigation – If the active infiltration area is graded the effects of compaction shall be mitigated using the following methods:

(1) Incorporate soil additives consisting of two inches of compost mixed into two inches of topsoil.

(2) The soil mix (V.C.3.b.1) shall be incorporated into the existing soil using a chisel plow or rotary device with the capability of reaching to 12 inches below the existing surface.

(3) The compost component shall meet the following WDNR Specification S100 Compost.

4. The basin shall be constructed to the grades, elevations, and specifications in the plan. After grading and top soiling, the elevation of the basin shall be surveyed for conformance to design specifications.

D. Vegetation Cover

1. Establishment – Cover crops need to be applied in conjunction with the initial seeding of permanent vegetation. When establishing turf type grass, use the criteria contained in the DNR Technical Standard Seeding for Construction Site Erosion Control (1059). Sod shall not be used.

   If turf grass is utilized, the basin cannot be used for recreational purposes due to compaction concerns.

2. Native Seeding – Native vegetation shall be established in conformance with recommendations from a qualified native nursery in the area. If trees are to be used, species shall be selected that will not interfere with the function of the basin, or cause maintenance problems. Section IX References, lists sources that provide suggested seed mixtures.

   Native (prairie) seeding shall be completed in the fall (as dormant seeding prior to first snowfall) or in the spring (between May 1 and June 20), or plugs shall be used.

3. Fertilizer – Soil testing shall be used to determine proper applications for nutrients and liming. Fertilizer application shall conform to the criteria located in NRCS Conservation Practice Standard, Critical Area Planting (342) or WDNR Technical Standard Seeding for Construction Site Erosion Control (1059).

4. Mulch – Mulch shall conform to the criteria located in WDNR Technical Standard Mulching for Construction Sites (1058).

VI. Considerations

A. Pretreatment Options - See WDNR Technical Standards Wet Detention Basin (1001), Ditch Check (1062), and Vegetated Infiltration Swale (1005) for guidance. Estimates of pollutant reduction by proprietary devices should be based on monitoring using the EPA Environmental Testing Verification protocol.

B. Well Locations - If well locations in relation to the basin are a concern, the site should be evaluated for the direction of ground water flow.

C. Multiple Uses - Basins can be used for both infiltration and peak shaving as shown on Figure 1 and 2. However, another option is to include a *flow splitter* or diversion prior to pretreatment. By limiting the inflow into a BMP, a flow splitter can enhance the longevity of the BMP by reducing the volumetric rate of treatment, erosion or scour, and vegetation damage. Flow splitters need to be designed to address site conditions and flows.

D. Drainage Area Size – The drainage area should be between 5 and 50 acres. If the drainage area is more than 50 acres, multiple basins should be provided.

E. Regulatory Caps - Ch. NR 151 provides for a maximum area to be dedicated for infiltration depending upon land use. This cap can be voluntarily exceeded.

F. Native Vegetation - The use of prairie grass or other deep-rooted plants is encouraged because these plants can increase the infiltration capacity of the basin. Dense vegetation will also reduce soil erosion on the basin floor.

G. Level Spreader - Since it is often difficult to construct a level spreader, a combination of a berm and stone trench is recommended. Other methods to disperse flows include irrigation practices such as ridge and furrow irrigation systems. Refer to American Society of Agricultural Engineering Standards for guidelines on construction of irrigation dispersal systems.

H. Tracked vehicles should be used during construction to lessen compaction.

I. The final grading should be conducted by the landscape contractor so that the drainage area can be stabilized first.

J. Snow should not be placed in the effective infiltration area. It may be placed on the

pretreatment area or areas draining into the pretreatment area.

K. Internally Drained Watersheds – There are unique considerations for watersheds that are closed basins which are internally drained. Infiltration basins constructed in internally drained watersheds shall meet the requirements of NR 151 and this standard. Storms with a recurrence interval greater than a 2-year 24-hour storm must also be considered in the design and engineering judgment may determine that criteria such as draw down time and maximum depth may be exceeded for these larger storms. Infiltration basins in internally drained watershed may have different needs for plants, pretreatment, safety, maintenance or other characteristic that must be considered during design and construction.

L. The DNR has created a technical note that may be used to size infiltration basins. The "Technical Note for Sizing Infiltration Basins and Bioretention Devices To Meet State Of Wisconsin Stormwater Infiltration Performance Standards" contains an approved method to determine the target stay-on depth and 12 design charts that can be used to size these basins for a variety of conditions. In addition, the technical note contains a reference to an approved infiltration model (RECARGA) that can also be used to determine effective infiltration area requirements. Other models may be used if approved. The Technical Note can be accessed at: http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm#Post

VII. Plans and Specifications

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended use. Plans shall specify the materials, construction processes, location, size and elevations of all components of the practice to allow for certification of construction upon completion.

VIII. Operations and Maintenance

An operation and maintenance plan shall be developed that is consistent with the purposes of this practice, intended life of the components, safety requirements, and the criteria for the design. There may be state and local laws that require adequate O&M of public and private facilities and the identification of responsible parties. At a minimum, the plan shall include:

A. Inspection Intervals – At minimum, quarterly inspections shall occur. Inspection shall include spreader and overflow spillway for indication of failure. Note the condition of vegetation as part of inspection. If standing water is observed over 50% of the basin floor 3 days after rainfall, the basin is clogged and measures should be undertaken to unclog it. (See section VIII.C).

B. Native Vegetation - Maintenance of Native Vegetation – Mowing (cutting) or burning shall be used to maintain the vegetation.

1. Establishment - The first mowing of newly planted seed shall occur once it reaches a height of 10 to 12 inches.
2. Mowing
   a. Mowing shall reduce the height of plants to 5 to 6 inches.
   b. After establishment, if burning cannot be accommodated, mowing shall occur once in the fall (after November 1). The area shall be mowed to a height of 5 to 6 inches.
3. Burning
   a. Routine Maintenance - Beginning the second year, burning shall occur in the early spring (prior to May 1st) or in the late fall (after November 1st)
   b. Burning shall be done two consecutive years and then up to three years can pass before the next burning.
   c. Under no circumstances shall burning occur every other year.

C. Restoration Procedures – these include removing the top 2 to 3 inches, chisel plowing and adding topsoil and compost. If deep tilling is used, the basin shall be drained and the soils dried to a depth of 8 inches. If the basin was planted in turf grass and clogging again occurs after these restoration procedures have been used, the owner /operator shall replant with prairie

style vegetation using the soil preparation method recommended by the native nursery in the area.

D. Trash shall be removed as quickly as possible once observed.

E. Pretreatment – If wet detention is used, see WDNR Technical Standard Wet Detention Basin (1001) for operations and maintenance requirements.

F. Winter Maintenance – All draw down devices in the pond shall be opened during winter months to discourage infiltration of runoff water containing high levels of chlorides. If this practice is an enclosed basin, the use of chloride deicers shall be limited in the area draining to the basin to reduce the chance of exceeding the limits in ch. NR 140.

IX. References

Metropolitan Council, 2003. Urban Small Sites Best Management Practice Manual, Chapter 3, Vegetative Methods 3-85 – 3-91. Minneapolis.

United States Department of Agriculture – Natural Resources Conservation Service. Engineering Field Handbook, Chapters 16 and 18.

UWEX Publication A3434 Lawn and Establishment & Renovation.

WisDOT, 2003. State of Wisconsin Standard Specifications for Highway and Structure Construction. Section 630, Seeding.

X. Definitions

Draw down device (V.B.1): A draw down device can consist of any device that allows for the dewatering of the infiltration basin or the infiltration cells down to the ground elevation. Examples include removable weir plates (shown in Figure 3), pipes with valves, weirs with removable stop logs.

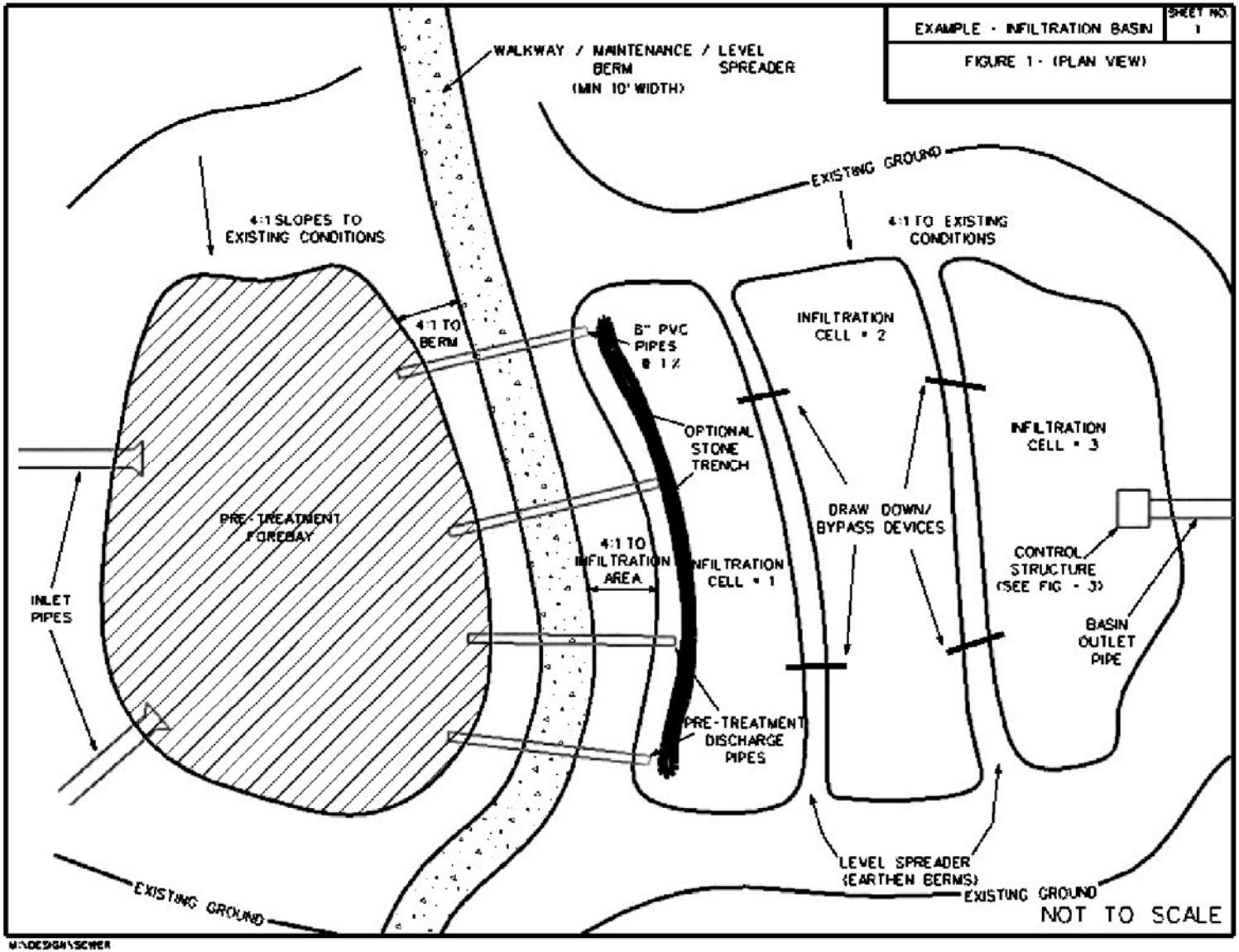
Effective infiltration area (V.B.4.c.): An effective infiltration area means the area of the infiltration system that is used to infiltrate runoff and does not include the area used for site access, berms or pretreatment.

Flow Splitter (VI.C): A flow splitter is a device used to direct a fraction of runoff into the BMP facility while bypassing excess flows from larger storm events.

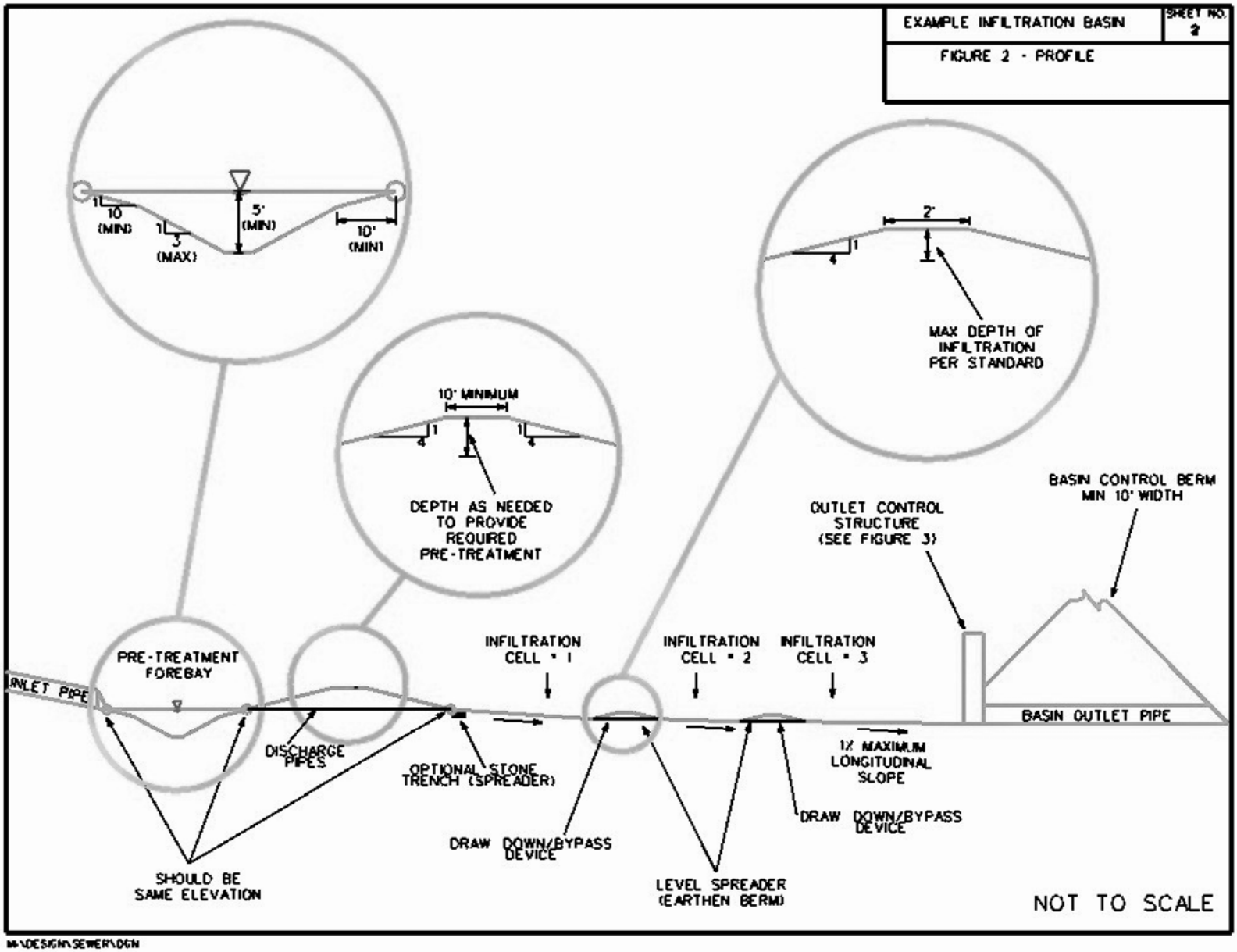
Hydraulically connected (V.A.1.): Two entities are said to be hydraulically connected if a surface or subsurface conduit exists between the two such that water is transmitted from one entity to the other.

Level spreader (V.B.4.f): A level spreader is a device used to disperse concentrated flows back over a wide area, dissipating the energy of the runoff and promoting sheet flow. Common types of level spreaders include vegetated, earthen or stone berms, weirs and stone trenches.

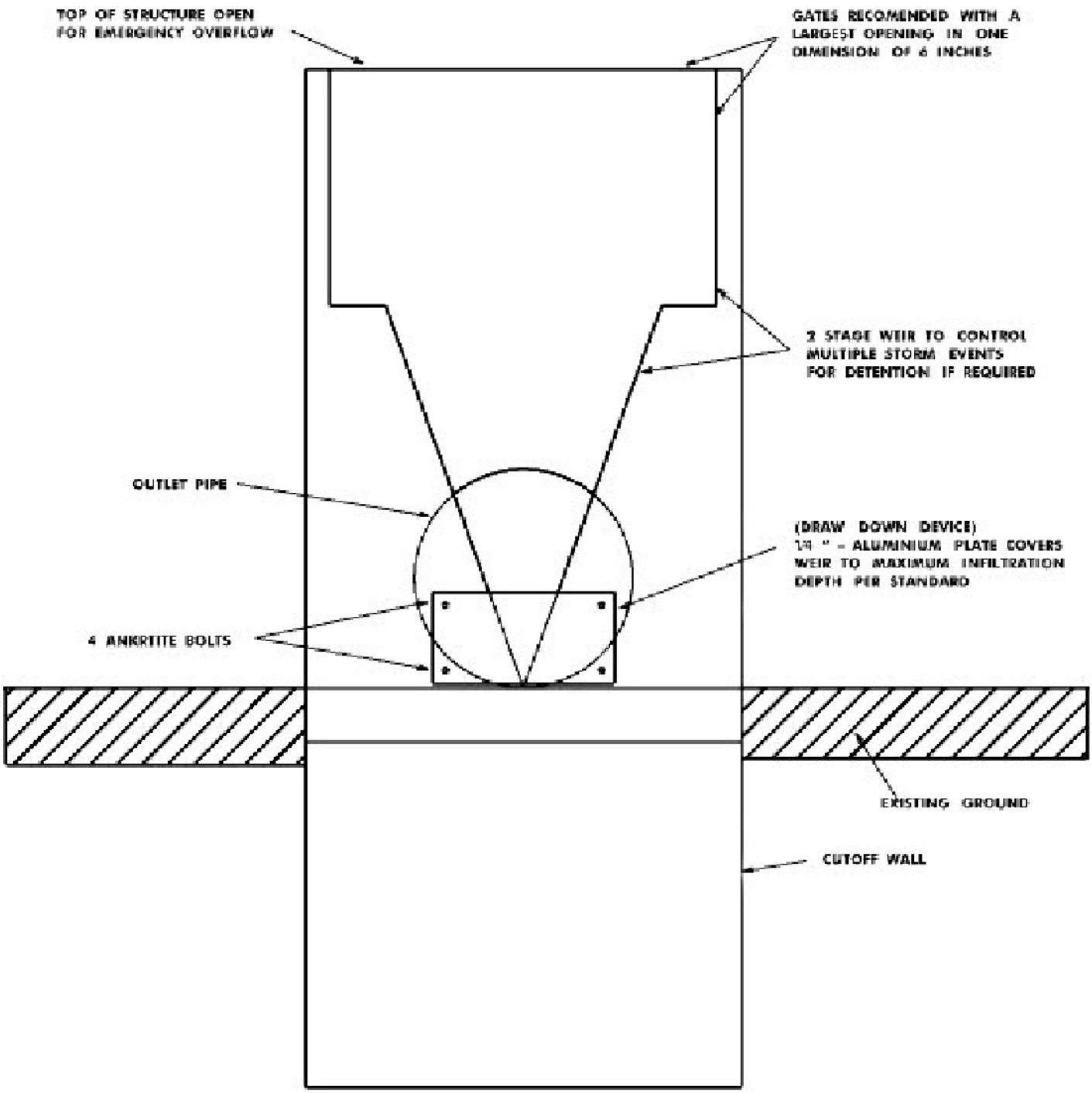
Target Stay-on Depth (IV.B.4.b.): The amount of infiltration required on an average annual basis. It is the portion of the annual rainfall (inches) on the development site that must be infiltrated on an annual basis to meet the infiltration goal.



M:\DESIGN\SCHEER


EXAMPLE INFILTRATION BASIN
SHEET NO. 2
FIGURE 2 - PROFILE
10' (MIN)
3 (MAX)
5' (MIN)
10' (MIN)
2'
MAX DEPTH OF INFILTRATION PER STANDARD
10' MINIMUM
DEPTH AS NEEDED TO PROVIDE REQUIRED PRE-TREATMENT
BASIN CONTROL BERM MIN 10' WIDTH
OUTLET CONTROL STRUCTURE (SEE FIGURE 3)
PRE-TREATMENT FOREBAY
INLET PIPE
INFILTRATION CELL # 1
INFILTRATION CELL # 2
INFILTRATION CELL # 3
BASIN OUTLET PIPE
DISCHARGE PIPES
OPTIONAL STONE TRENCH (SPREADER)
1% MAXIMUM LONGITUDINAL SLOPE
DRAW DOWN/BYPASS DEVICE
DRAW DOWN/BYPASS DEVICE
SHOULD BE SAME ELEVATION
LEVEL SPREADER (EARTHEN BERM)
NOT TO SCALE
M:\DESIGN\SEWER\DGN

EXAMPLE INFILTRATION BASIN OUTLET STRUCTURE	SHEET NO 3
FIGURE 3 - FRONT VEIW	



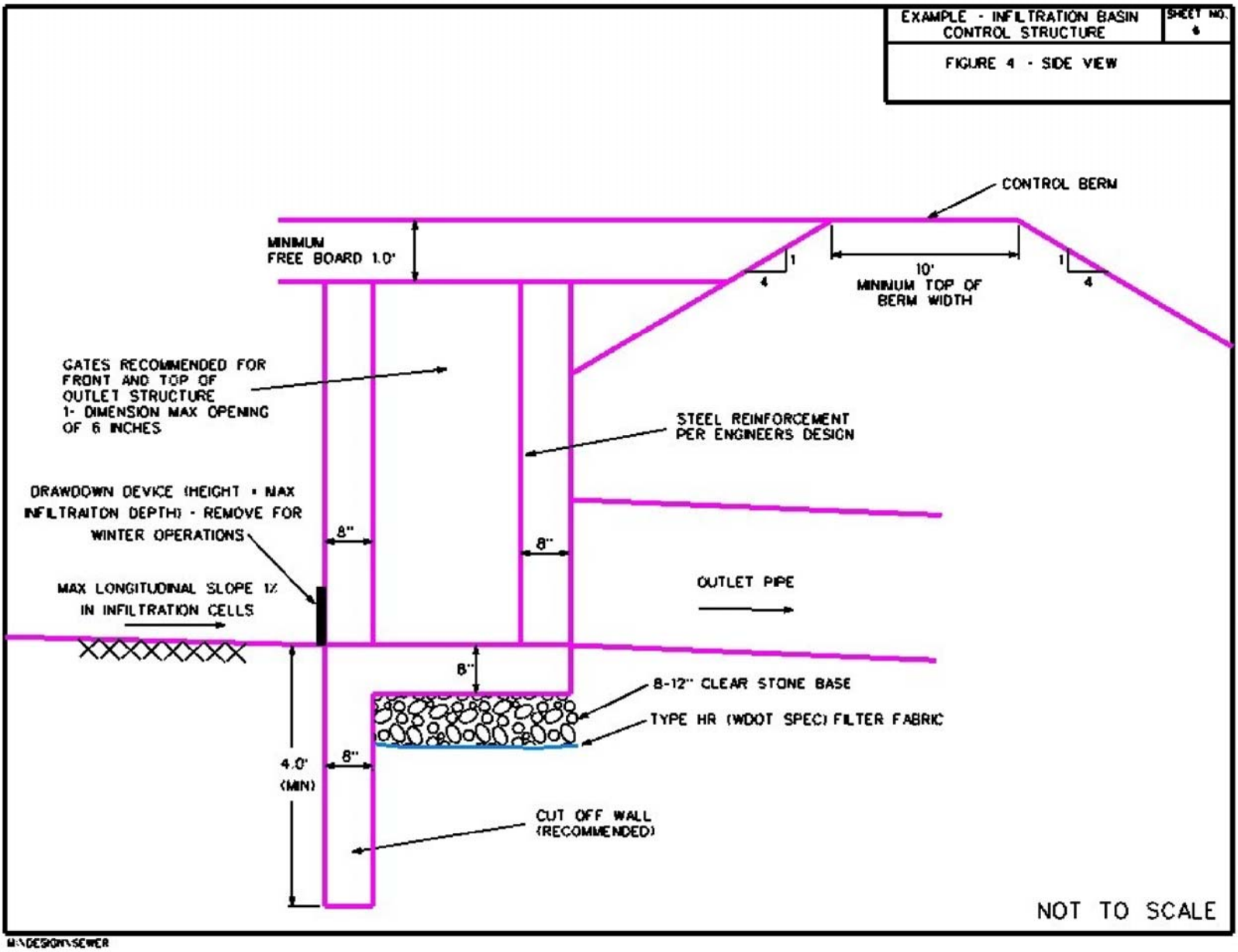
NOT TO SCALE

M:\DESIGN\SEWER

EXAMPLE - INFILTRATION BASIN CONTROL STRUCTURE

SHEET NO. 6

FIGURE 4 - SIDE VIEW



M:\DESIGN\SEWER

APPENDIX D

Exhibit E

Hazard Mitigation Analysis

REPORT

1MDT25007 – CIP ROBIN BATTERY ENERGY STORAGE SYSTEM

Hazard Mitigation Analysis

PREPARED FOR

Jan Porvaznik
Project Development
Copenhagen Infrastructure Partners
200 S. Wacker Drive, Suite 1600
Chicago, IL 60606
+1 415-596-9537
japv@cisc.dk

Project #: 1MDT25007-RPT-001
Revision #: Rev 2
Date: September 9, 2025

PREPARED BY

Samuel Flibbert
Manager/Lead Engineer
254 W 31st Street, Floor 8,
New York, NY 10001

+1 212-695-6670
sflibbert@jensenhughes.com

JENSEN HUGHES

Preparers:	Samuel Flibbert
Reviewers:	Jihan El Ouaragli

Revision Record Summary

Revision	*Revision Summary*	*Date*
Rev 0	Draft for Client Review	June 2, 2025
Rev 1	Final Report Issued	June 30, 2025
Rev 2	Updated site layout and clearances	September 9, 2025

Table of Contents

List of Tables

List of Figures

Acronyms and Abbreviations

Acronyms & Abbreviations	*Full Name*
AHJ	Authority Having Jurisdiction
BESS	Battery Energy Storage System
BMS	Battery Management System
PBMS	Pack Battery Management System
RBMS	Rack Battery Management System
ESMS	Energy Storage Management System
ERP / ERG	Emergency Response Plan / Emergency Response Guide
FACP	Fire Alarm Control Panel
HVAC	Heating, Ventilating, and Air Conditioning
IDLH	Immediately Dangerous to Life or Health
IFC	International Fire Code
LFL	Lower Flammability Limit
NFPA	National Fire Protection Association
PCS	Power Conversion System
Wh	Watt-hours

Executive Summary

Jensen Hughes has completed a site-level Hazard Mitigation Analysis (HMA) of the 200 MW / 800 MWh Battery Energy Storage System (BESS) project at the Robin Battery Energy Storage site (Robin) on behalf of Copenhagen Infrastructure Partners (CIP). The Robin BESS project is located in Wheatland, Kenosha County, Wisconsin, and utilizes the LG Energy Solution (LGES) JF2 DC LINK BESS enclosure (JF2 BESS), Model 5.1.

The state of Wisconsin has currently adopted the 2015 International Fire Code (IFC) with amendments. However, IFC 2015 did not have any regulations or code implications regarding the Battery Energy Storage System (BESS). To be consistent with the industry's best practices, this report is prepared based on recommendations from the 2021 Edition of the International Fire Code (IFC) and the 2023 Edition of NFPA 855, Standard for the Installation of Stationary Energy Storage Systems.

The HMA was conducted in accordance with Chapter 12 Section 1207 of the 2021 IFC and Section 4.4.1 of NFPA 855 2023 edition. The HMA resulted in safety recommendations, summarized in **Section 4.1** of this report, to address aspects of the documentation and installation of the LGES JF2 BESS enclosures as part of the Robin BESS project for safe operation.

This report serves as a site-level HMA. The Robin BESS installation and its associated components were analyzed based on site plans and product-related documentation provided by CIP. A product-level HMA of the LGES JF2 BESS has been conducted by Jensen Hughes and is referenced in this report. The full HMA review requires both reports. All identified non-compliance items are noted in this report.

This report was based solely upon and limited to the available information provided by CIP. Information not provided by CIP was not considered part of this analysis.

1.0 Introduction

This report provides a site-level Hazard Mitigation Analysis (HMA) of the 200 MW / 800 MWh Robin Battery Energy Storage System (BESS) project in Wheatland, Kenosha County, Wisconsin. The Robin BESS project utilizes LG Energy Solution (LGES) JF2 DC LINK BESS enclosures (JF2 BESS), Model 5.1. The HMA was conducted in accordance with Chapter 12, Section 1207 of the 2021 International Fire Code (IFC) and the 2023 Edition of NFPA 855, Standard for the Installation of Stationary Energy Storage Systems.

The HMA evaluates the consequences of defined BESS failure modes, as per 2021 IFC Section 1207.1.4.1 and 2023 NFPA 855 Section 4.4.2.1, to identify safeguards that either prevent or mitigate these consequences. Where existing safeguards do not adequately prevent or mitigate consequences, recommendations were made.

This report references the product-level HMA **[2]**, and thus a complete description of the BESS, related testing data, and product-level hazards and recommendations is not provided here. This report presents the analysis and recommendations pertaining to the site and equipment, which is not part of the product-level analysis.

This report serves as a site-level review based on documentation provided by CIP. Any non-compliance findings and recommendations are documented in this report. The main sections of the report and a description of the content are provided in Table 1-1.

Table 1-1: HMA Report Content.

Section	*Description*
1 – Introduction	Presents the scope and outline of the report.
2 – Site and BESS Description	Provides an overview of the facility site and BESS installation. Describes site-level components of the system and identifies applicable certifications and safety features.
3 – Hazard Mitigation Analysis	Evaluation of the consequences of the required failure modes per 2021 IFC Section 1207.1.4.1 and 2023 NFPA 855 Section 4.4.2.1. Assessment of existing safeguards against potential failure modes and recommendations for additional safeguards based on the current design.
4 – Conclusion and Recommendations	Summary of the HMA and recommended actions.
5 – References	Lists references used in developing and completing the HMA.

2.0 Site and BESS Description

2.1 GENERAL PROJECT INFORMATION

CIP is developing a 200 MW / 800 MWh BESS installation for the Robin BESS project in Wheatland, Wisconsin. The project site is located on the east side of 392nd Avenue and north of Wisconsin Route 50 in Wheatland, as

shown in the site plans. The site is approximately 1,000 feet east of the proposed new entrance off of 392nd Avenue, at geographical coordinates 42°35'20.56"N, 88°17'10.50"W **[3]**.

The BESS installation utilizes LGES JF2 DC LINK BESS containerized enclosures, Model 5.1. Each enclosure consists of three (3) battery enclosures (M-LINKs) along with one (1) panel interface cabinet (E-PANEL). Each M-LINK contains two (2) battery racks/units (Model NR27N414L_P15190NB3) wired in parallel in a 6.8 x 8.4 x 9 feet enclosure. Each rack/unit contains fourteen (14) battery packs/modules (Model EP096636PFB1) wired in series, one (1) Battery Protection Unit (BPU) located at the bottom of the rack, Rack-level Battery Management System (RBMS), liquid cooling system, chiller, HVAC system, and ventilation doors **[4]**. Each battery module/pack contains 120 cells arranged in a 30S4P configuration (30 cells in series, four groups in parallel) and a Pack-level Battery Management System (PBMS). The cells used in the battery packs/modules are 159 Ah lithium-iron-phosphate (LFP) pouch cells (Model JF2). This results in a total nominal energy capacity of 61.13 kWh per module/pack, 855 kWh per rack, and 1.7 MWh per M-LINK. Therefore, the total nominal energy capacity is approximately 5.112 MWh for Model 5.1 (with three M-LINKs) **[4]**.

General project information is provided Table 2-1 **[3]**.

Table 2-1: General Project Information.

Item	*Description*
Facility Name	Robin Battery Energy Storage
Facility Owner	Robin Battery Energy Storage, LLC
Facility Address	392nd Avenue, Wheatland, Kenosha, WI 53105
BESS Product Name	LGES JF2 DC LINK – 5.1 MWh configuration
BESS Product Capacity	5.1 MWh per enclosure
Design Basis BESS Capacity	BOL: 800 MWh (200 MW × 4 hours) at Point of Interconnection (POI) EOL: 800 MWh (200 MW × 4 hours) at Point of Interconnection (POI)
BESS Product Count	BOL: 200 enclosures (@5.1 MWh each) EOL: 244 enclosures (@5.1 MWh each)
PCS Product Count	BOL: 50 Skids EOL: 61 Skids (Each skid supports 4 × 5.1 MWh enclosures)
Actual BESS Capacity	BOL: (200 × 5.1) = 1020 MWh EOL: (244 × 5.1) = 1,224.4 MWh
BESS Installation Function	Utility grid-scale energy storage
BESS Installation Type	Outdoor, ground-mounted, remote installation

2.2 SITE OVERVIEW AND NEARBY EXPOSURES

2.2.1 Location and Nearby Exposures

The project site is highlighted with a red clouded boundary, and the Robin BESS project area is shaded in blue in Figure 2-1. The overall property spans approximately 18.3 fenced acres and features a single primary access point located on the east side of 392nd Avenue. The entrance drive extends approximately 650 feet to the access gate for the fenced BESS yard. The facility includes an approximately 1.8-acre substation, located in the southeast corner of the project site.

The Robin BESS facility consists of two (2) BESS yards that house the BESS enclosures, Power Conversion System (PCS) skids, and auxiliary equipment pads, as described in subsequent sections of this report.

In addition to the BESS area, the overall facility includes three (3) laydown areas, a substation area, an on-site parking area, an office trailer, a storage unit and staging area, one (1) 30,000-gallon water tank, and two (2) drainage or infiltration basins (North and South). At full buildout, the substation will be equipped with oil-filled transformers and an unmanned control building. The substation and BESS yards are enclosed by 6-foot chain-link fencing with a barbed wire top guard. The BESS yards and access drives consist of stone paving.

Farmfield adjoins the facility to the north, south, and west. A tree farm abuts the facility to the east, along with an approximately 3 acre transmission substation which serves as the point of connection for this facility.. A farmhouse is located on the adjacent property to the north. This structure is more than 750 feet from the nearest battery enclosure. Two commercial buildings are situated on the adjacent property to the south. Both structures are more than 500 feet from the nearest battery enclosure.

Refer to Figure 2-2 for the overall project site layout and Figure 2-3 a close-up on the Robin BESS facility layout and supporting infrastructure, respectively.

Figure 2-1: Google Earth View of the Robin Project Site. Adapted from [1].

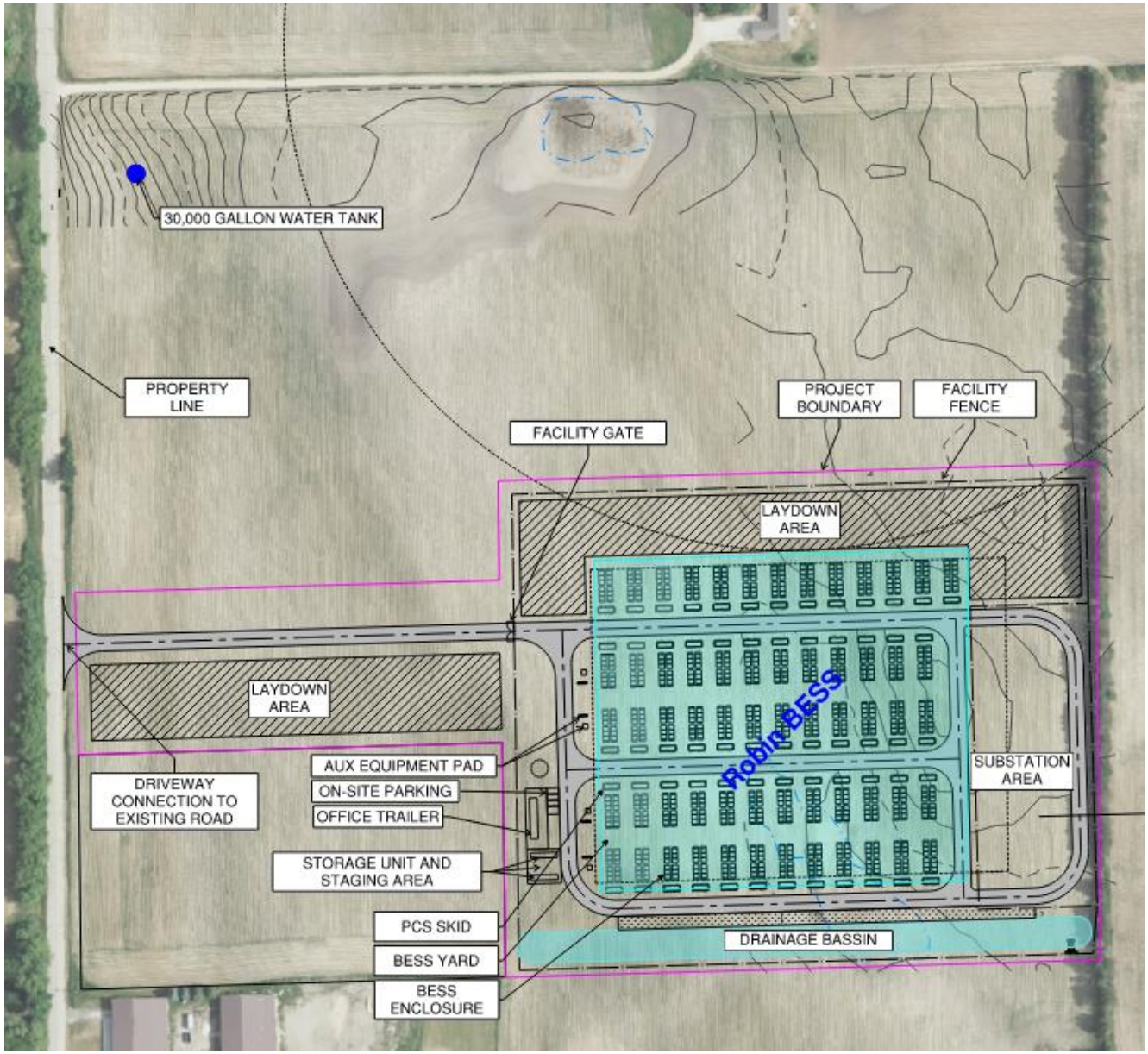


Figure 2-2: Overall Plan for the Robin Project Site. Adapted from [3].

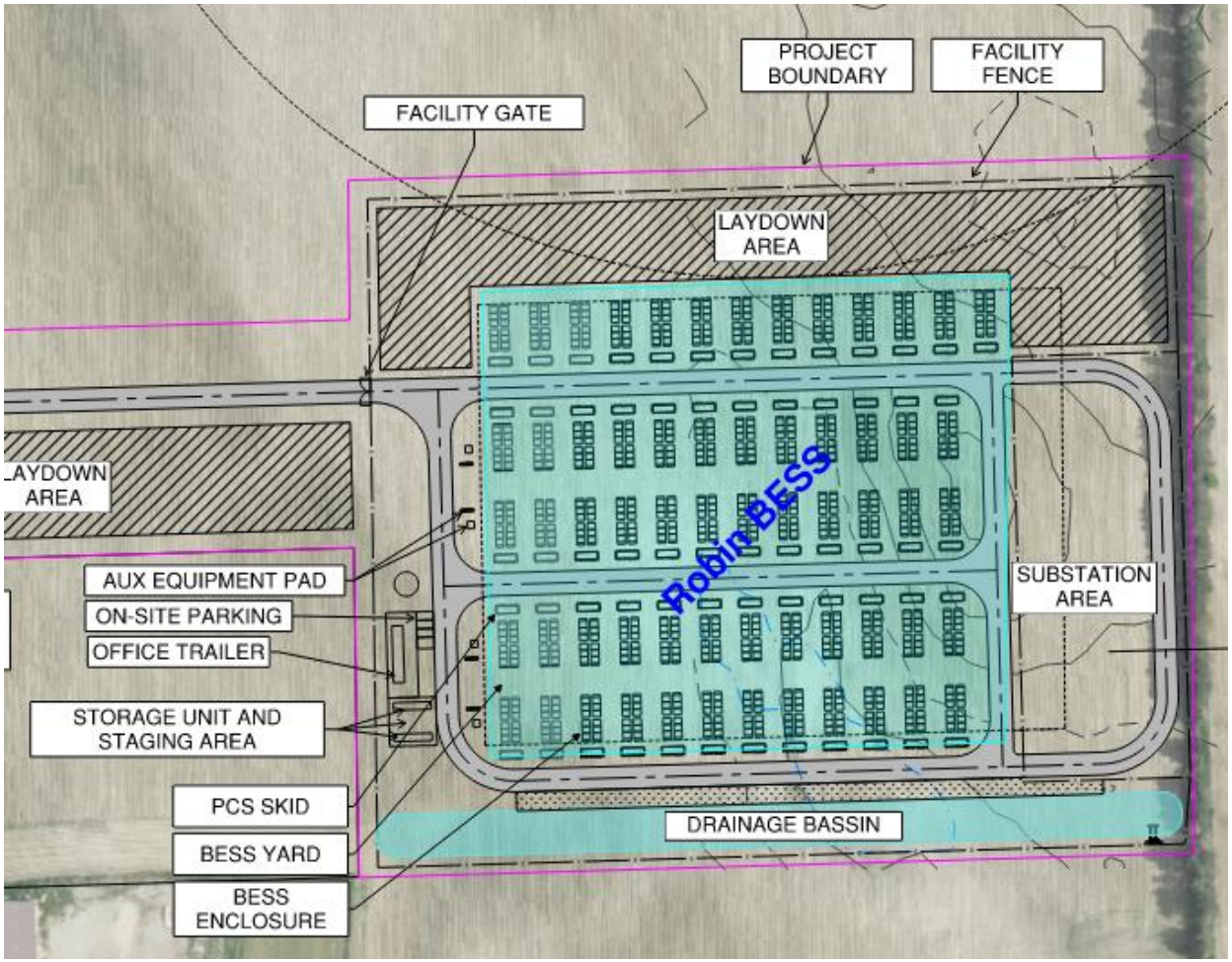


Figure 2-3: Close-up Plan for the Robin BESS Facility. Adapted from [3].

2.2.2 BESS Installation Layout and Clearances

Figure 2-4 illustrates the dimensions and equipment arrangements within the Robin BESS yard.

The Robin BESS facility features containerized BESS enclosures arranged in standardized 2x2 groups, each referred to as a BESS group. Each BESS group consists of four (4) JF2 5.1 BESS units, supported by a dedicated PCS (inverter) skid.

Within each BESS group, the spacing between BESS enclosures is 3 feet side-to-side and 3 feet rear-to-rear. The spacing between BESS groups is 22.8 feet front-to-front and 25 feet side-to-side.

Each BESS group is spaced approximately 7 feet from the corresponding nearby PCS skids. The PCS skids themselves are spaced approximately 18 feet apart from side-to-side.

A 20-foot-wide perimeter access road runs around and between the BESS yards. A 10-foot setback separates the PCS skids from the road. A minimum 20-foot shoulder lies between the access road and the site fence. The outermost BESS groups are located over 100 feet from the fence line and 30 feet from the support areas. A 10-foot vegetated buffer strip runs along the western and southern edges of the BESS yard, while on the eastern boundary, an existing treeline is located approximately 100 feet from the nearest BESS group.

The nearest BESS group is located approximately 107 feet from the property line/project boundary. The closest onsite structure is the control building in the substation area, which is typically unoccupied and located over 100 feet from the nearest BESS yard. The BESS groups are also located approximately 50 feet from the onsite office trailer and storage area. Auxiliary equipment is provided on separate pads within the BESS yards and are separated from the PCS and BESS enclosures by a minimum of 22’. These pads support critical auxiliary systems, including oil-filled transformers, Uninterruptible Power Supply (UPS) units, and protection panels. Additionally, the Operation & Maintenance area at the northwest corner of the site contains two (2) Connex containers within the storage unit and staging area, as well as an office trailer, located approximately 50 feet from the nearest BESS group.

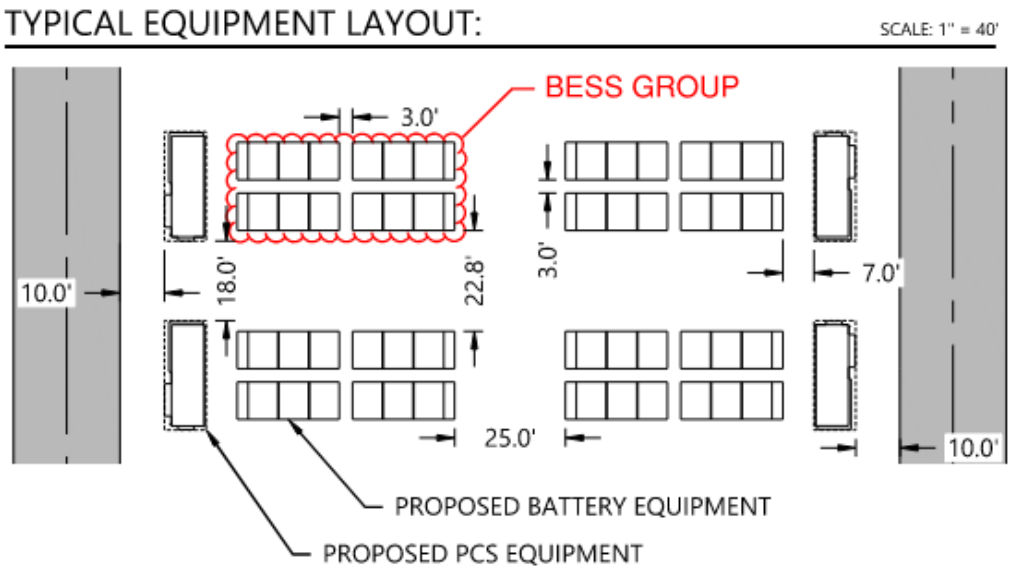


Figure 2-4: Dimensions and Equipment within the BESS yards of the Robin Facility. Adapted from [3].

Figure 2-5 shows the LGES-recommended minimum installation clearances around and between JF2 BESS enclosures. Key features of the layout include:

- 10-foot front-to-front clearance between BESS enclosures
- 3-foot rear-to-rear clearance between opposing BESS enclosures
- 3-foot side-to-side clearance between adjacent BESS enclosures
- 10-foot clearance from the front of BESS enclosures to fences, walls, or barriers
- 5-foot clearance from the sides of the BESS enclosures to fences, walls, or barriers
- 5-foot clearance between adjacent E-PANELs

Per installation manual of the selected PCS in Section 2.3.2, a minimum of 13 feet is required **[17]**:

- Between the left/right sides of adjacent PCS units
- Between the DC end of one PCS and the MV transformer of the adjacent PCS system

The current installation layout in Figure 2-4 meets or exceeds these manufacturer-recommended clearances. Both the final construction site plans and the as-built installation should be reviewed to confirm they reflect this layout prior to commissioning.

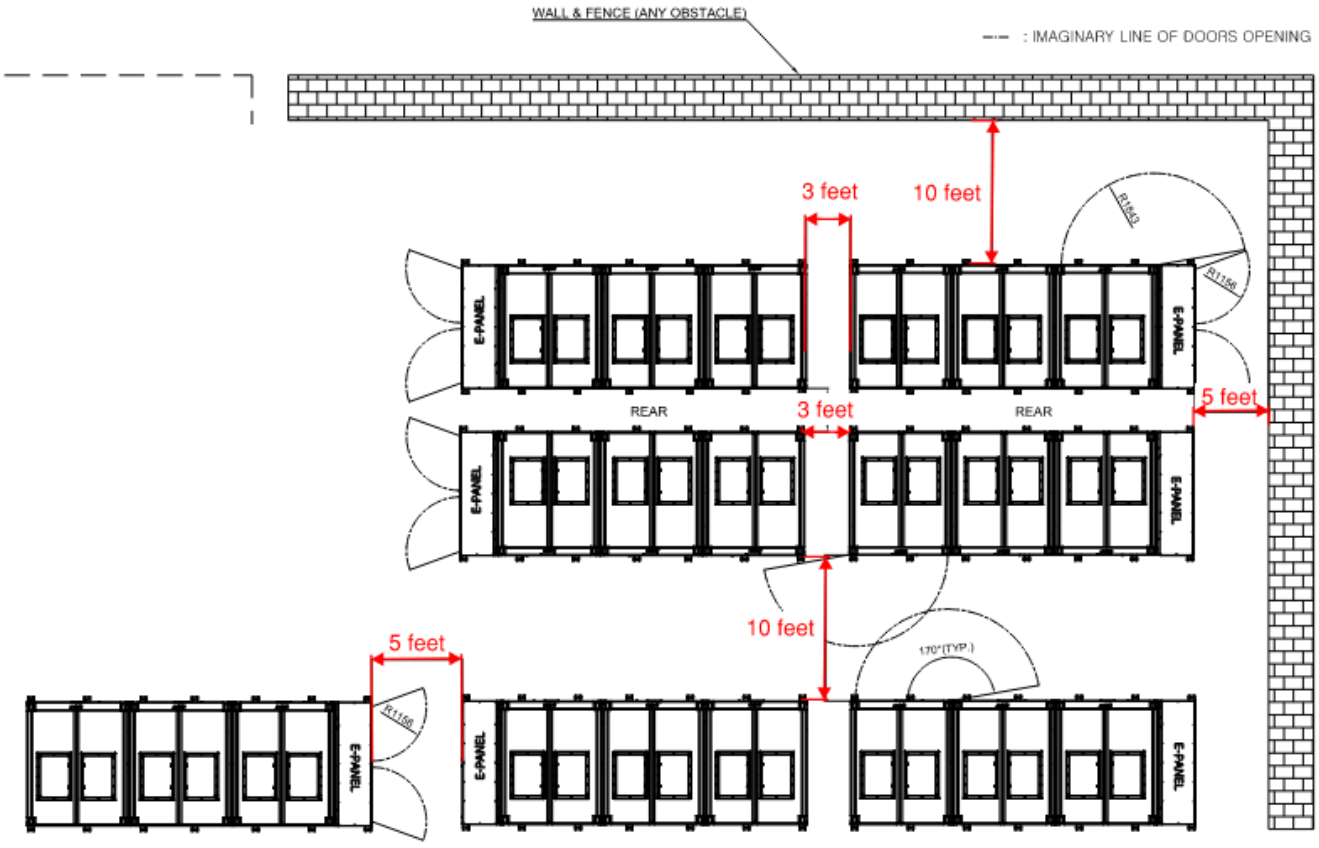


Figure 2-5: Manufacturer-Recommended BESS Layout with Minimum Clearances. Reproduced from [5].

2.2.3 Fire Department Access and Support

Fire department access roads are planned for the Robin BESS site. These roads must comply with the spatial criteria set forth in Section 503 of the 2021 edition of the IFC, as noted below:

- A minimum unobstructed width of 20 feet, exclusive of shoulders. (Section 503.2.1)
- A minimum unobstructed vertical clearance of 13 feet 6 inches. (Section 503.2.1)
- Dead-end access roads exceeding 150 feet in length must be provided with an approved turnaround area suitable for fire apparatus operations (Section 503.2.5)

As detailed in Section 2.2.2 of this report, the BESS yard layout includes a 20-foot-wide perimeter access road that runs around and through the BESS yard. Adjacent to the access road, a (minimum) 20-foot-wide shoulder is provided between the road and the site fence. This access road is designed to meet the minimum spatial criteria outlined above, and based on the current layout, it appears to align with fire department access requirements. Final compliance should be confirmed during detailed design to verify vertical clearance, all-weather surfacing, and the absence of dead-end segments exceeding 150 feet.

The Robin BESS project site is located approximately 4.0 miles (or about a 5-minute drive) from the Wheatland Fire Department, situated at 34011 Geneva Road, Burlington, WI 53105. Emergency responders will access the site via the designated service and perimeter roads.

In the event of a thermal runaway incident leading to a fire within the BESS, no automatic or manual fire suppression systems will be deployed. The fire protection strategy for the Robin site follows a controlled self-extinguishment approach, whereby fire is allowed to burn out naturally under supervision, with cooling applied if necessary to protect surrounding exposures. To support this approach, two (2) 30,000-gallon water tanks are planned for installation on the site. No other sources of water are currently planned for the site.

2.3 BESS INSTALLATION DESCRIPTION

2.3.1 BESS Enclosure

The JF2 DC LINK BESS is comprised of three (3) battery enclosures (M-LINKs) and one (1) panel interface cabinet (E-PANEL). Each M-LINK contains two (2) battery racks/units wired in parallel in a 6.8 x 8.4 x 9 feet enclosure. Each rack/unit contains fourteen (14) battery packs/modules wired in series, one (1) Battery Protection Unit (BPU) located at the bottom of the rack, Rack-level Battery Management Systems (RBMS), liquid cooling system, chiller, HVAC system, and ventilation door.

Each battery module/pack contains 120 cells arranged in a 30S4P configuration (30 cells in series, four groups in parallel) and a Pack-level Battery Management System (PBMS). The cells used in the battery packs/modules are 159 Ah lithium-iron-phosphate (LFP) pouch cells (Model JF2). This results in a total nominal energy capacity of 61.13 kWh per module/pack, 855 kWh per rack, and 1.7 MWh per M-LINK.

The M-LINK enclosure features a concentration-reduction-based explosion prevention system (per NFPA 69), with panels opening to allow active ventilation based on gas detection of hydrogen (H_2) or smoke within the enclosure. Each M-LINK enclosure may be equipped with an optional open sprinkler at the top of the battery racks with a dry pipe connection and with water being provided from outside with a fire department connection located on-site, however, this feature will not be implemented at this project site.

The JF2 DC LINK BESS also features an E-PANEL cabinet that contains a disconnect means for the AC/DC distribution board, a Fire Alarm Control Panel (FACP) with a backup battery, distinct horns & strobes for gas and smoke detection in M-LINKs. The E-PANEL is an interface between the battery side and the grid and power conversion system (PCS) sides to effectively manage the functions and the necessary safety features of the M-LINK enclosures. Further descriptions of the battery system and safety systems for the LGES JF2 DC LINK BESS are provided in the product-level HMA **[2]**.

Each M-LINK is equipped with integrated smoke and gas detectors, which are continuously monitored by the site's Energy Storage Management System (ESMS). The Rack-level Battery Management System (RBMS) communicates with the ESMS via Modbus TCP/IP, allowing for real-time monitoring of thermal, electrical, and environmental conditions. If an abnormal condition or alarm state is detected within a BESS container, the ESMS automatically initiates shutdown of the affected unit. In addition, the ESMS transmits system status and alarms to a 24/7 remote operations control center, which qualifies as a proprietary supervising station. The ESMS is also capable of communicating with the inverters via Modbus to manage system-level operation, including lineup-level control (e.g., determining which components are discharging to the grid or load).

Figure 2-5 shows the JF2 DC LINK BESS components and fire safety design as discussed above.

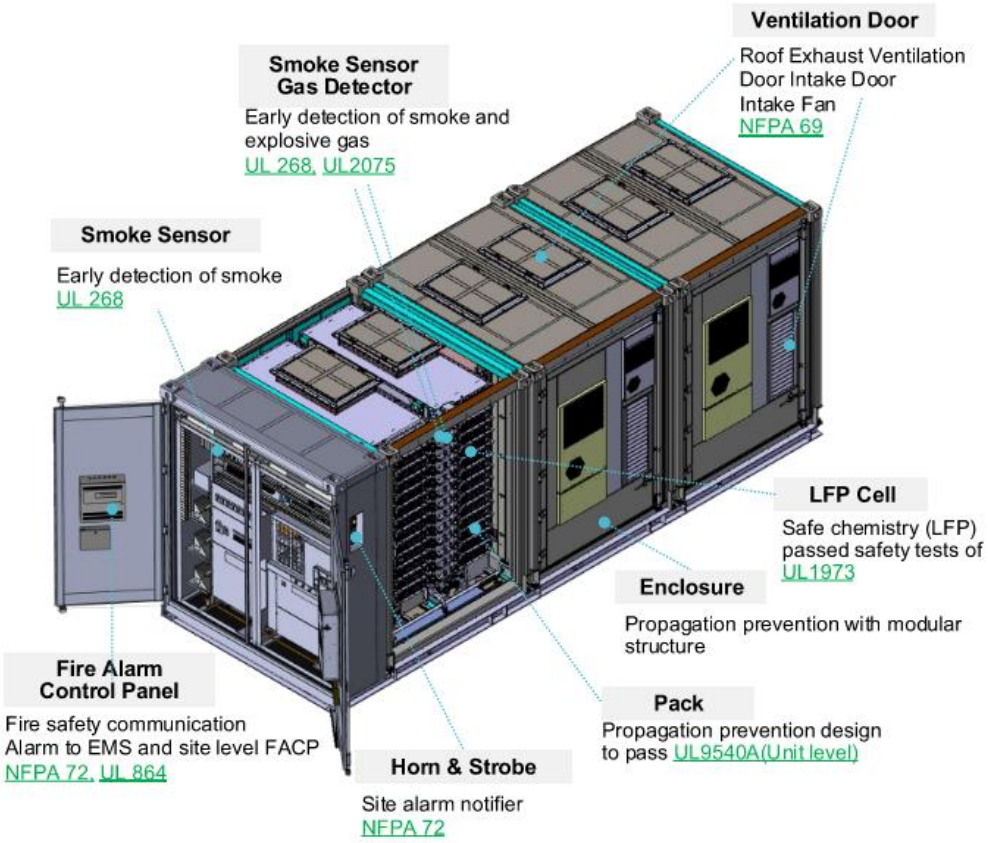


Figure 2-6: JF2 DC LINK BESS Fire Safety Design. Reproduced from [5].

2.3.2 Power Conversion System (PCS)

Table 2-2 summarizes the key information on the Power Conversion System (PCS) (or inverter) used for the Robin BESS site with the JF2 BESS installation **[16]** .

Table 2-2: Power Conversion System Information

Parameter	*Description*
Appearance	
Model	EPC Power M10 Skid System
Components	Max of Ten (10) modular M Inverter units
Function	Contains up to four (4) DC inputs that convert DC and AC power between the BESS enclosures and the grid side, respectively. Low voltage generated by the inverter is transformed by a medium voltage (MV) transformer to a higher voltage level and fed into the power grid
Certifications	UL 1741 ; IEEE 1547 ; C22.2 No. 107.1-16 ; IEC/EN 62477; IEC/EN 62109
Support of Safe Operation	Medium Voltage (MV) switchgear, AC/DC switch disconnectors, AC/ DC contractors, Insulation monitoring, surge protection, IP54 / Nema 3R enclosure, Ground fault detection, over/undervoltage, overcurrent, thermal protection, humidity and condensation protection, surge protection, seismic-rated
Known Hazards During Normal Operations	Electrical shock

2.3.3 Energy Storage Management System (ESMS)

Table 2-3 provides the key information on the ESMS for the BESS installation used for the Robin BESS site, with the JF2 BESS installation.

Table 2-3: ESMS or EMS Specifications

Parameter	Description
Appearance	TBD
Model	TBD
Components	TBD
Function	Executes all control functions for the project site, executes site level protection mechanisms, provides third party supervisory, control, and data acquisition (SCADA) interfaces, and performs local data storage
Emergency Function	Real time monitoring of over current, over voltage, temperature, FACP trouble, faults, etc. Transmitting signals and alarms to a remote operation control center. Shutdown of any container if abnormal condition is detected.
Certification	TBD
Known Hazards During Normal Operations	Electrical shock

3.0 Hazard Mitigation Analysis

This section details the site-specific HMA that was performed on the Robin BESS installation. The following sub-sections provide an overview of the applicable codes for this site and the analysis of the failure modes that are prescribed by the applicable codes and standards.

3.1 APPLICABLE CODES AND STANDARDS

Table 3-1 provides an overview of the codes and standards used for this evaluation and their relationship to other codes and standards requirements. Specifically, failure modes identified in the 2021 IFC were considered in the analysis. Fire protection requirements for lithium-ion BESS, as per the 2021 IFC, were used to inform the evaluation of the Robin BESS.

Table 3-1: Applicable Codes and Standards

Code/Standard	Commentary/Compliance
International Fire Code IFC (2021)	IFC Section 1207.1.4 lists the requirements for the HMA
NFPA 855 – Standard for the Installation of Stationary Energy Storage Systems (2023)	NFPA 855 Section 4.4 lists the requirements for the HMA

Code/Standard	Commentary/Compliance
UL 9540 – Standard for Safety, Energy Storage Systems and Equipment (2020)	IFC Section 1207.3.1 and NFPA 855 Section 4.6.1 require that BESS shall be listed in accordance with UL 9540. **The JF2 DC LINK BESS is listed to UL 9540 [14]** UL 9540 requires PCS that is part of a BESS installation to be listed to *UL 1741 - Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, or equivalent.*

3.2 FAILURE MODES AND EFFECT ANALYSIS

The HMA aids in identifying and mitigating hazards stemming from the BESS technology. This section addresses the failure modes identified in 2021 IFC Section 1207.1.4.1 and 2023 NFPA 855 Section 4.4.2 applicable to lithium-ion batteries, which are in general agreement with industry's best practices:

(1) A thermal runaway condition in a single BESS rack, module, or unit, addressed in Section 3.2.1.

(2) Failure of any battery (energy) storage management system, addressed in Section 3.2.2;

(3) Failure of any required ventilation or exhaust system, addressed in Section 3.2.3;

(4) Voltage surges on the primary electric supply, addressed in Section 3.2.2;

(5) Short circuits on the load side of the BESS, addressed in Section 3.2.2;

(6) Failure of the smoke detection, fire detection, fire suppression, or gas detection system, addressed in Section 3.2.3;

(7) While not explicitly required by the 2021 IFC nor NFPA 855 as one of the failure modes, failure of firefighting response is also evaluated and addressed in Section 3.2.4.

Only single failure modes were considered for each scenario. The evaluation includes a written description of the failure mode, the safeguards in place to prevent the event, and the consequences of the event. This written evaluation is analogous to a generic bowtie evaluation. It should be noted that this is a consequence-based analysis, meaning that the likelihood of the event is not taken into account.

3.2.1 Thermal Runaway Condition in a Single BESS Rack, Module, or Unit

3.2.1.1 Description

Thermal runaway is the condition when an electrochemical cell increases its temperature through self-heating in an uncontrollable fashion and progresses when the cell’s heat generation is at a higher rate than it can dissipate. This leads to the release of flammable gas, which can result in a fire or explosion.

Section 4.2 of the JF2 BESS product level HMA **[2]** details the characteristics of thermal runaway at the cell, module, and unit levels. At the site level, unchecked thermal runaway within a container may lead to a container burning or result in a deflagration. A fire involving the container can release toxic gases into the environment. Fire in one container may spread to adjacent containers.

3.2.1.2 Safeguards

Mitigation strategies are put in place to help prevent batteries from entering thermal runaway, cope with the byproducts of thermal runaway, and slow the propagation of thermal runaway to other cells within a module and/or a rack.

The product level safeguards are listed in Section 4.3.1 of the JF2 product level HMA **[2]**. At the site level, the PCS contains current interrupt devices, breakers, fuses, and other passive surge-arresting elements that may open the circuit in the event of failure. If potentially hazardous temperatures or other hazardous conditions are detected, the BESS components or containers will be electrically isolated by operators monitoring the signals transmitted to the remote operations control center, which qualifies as a proprietary supervising station.

Each grouping of four (4) JF2 BESS containers, 5.1 MWh each, is spaced approximately 7 feet from adjacent PCS skids, and 22.8 to 25 feet from other BESS groups. Containers are arranged with 22.8-foot front-to-front, 3-foot rear-to-rear, and 3-foot side-to-side clearances. The site is enclosed by a 20-foot-wide perimeter access road, which provides emergency vehicle access and added separation in the event of thermal runaway involving multiple units. This spacing strategy reduces the risk of container-to-container fire propagation.

3.2.1.3 Consequences

The consequences of a thermal runaway event occurring in the JF2 BESS container are discussed in Section 4.3.2 of the JF2 BESS product-level HMA **[2]**. To summarize, failure of the safety systems to mitigate a thermal runaway event could cause a large-scale fire or explosion. In the event of a large-scale fire, multiple containers may become involved, although the separation distance between containers reduces the likelihood of this scenario. The Robin BESS site is considered remote; a large fire is not expected to impact critical infrastructure, and the site is typically unoccupied. A large fire may produce significant smoke, which can pose health risks to surrounding populations. In the incident literature, smoke plumes from BESS fires have not been observed to pose greater health risks than conventional fires, although this is still an ongoing research topic.

Spacing between BESS containers can reduce the risk of fire spread from one container to another. The separation distance is at least 3 feet for the JF2 BESS containers at the Robin site, consistent with manufacturer-recommended clearances. There are no size and separation requirements applicable to the Robin site, as it is classified as a remote installation per 2021 IFC Section 1207.8. The consequence of a fire involving multiple containers has a low risk to life safety, as the sites are normally unoccupied. For property protection, spacing recommendations from large-scale fire testing of the JF2 BESS **[12]**, which demonstrated no propagation at 3 feet spacing, can be used to inform separation strategies and justify site-specific risk mitigation.

At a BESS site in Geelong, Australia, using Tesla Powerpacks, a container fire spread from one container to another, across a separation of approximately 6 inches, but did not progress to adjacent containers 8 feet from the two affected containers. It was determined **[9]** that heat transfer from container to container was not the root cause of the spread to the second container; rather, flames from the top of the initiating container, blown by 20-30 knot winds, ignited the second container's ceiling-mounted overpressure vents. The overpressure vents provided a direct path for flames and hot gas to enter the second container's battery bay.

The JF2 BESS containers have normally closed dampers on all air inlets/outlets, along with a controlled exhaust venting system designed to comply with NFPA 69 to limit internal gas accumulation and external flame exposure. This design, as demonstrated in the large-scale fire testing **[4][12]**, may reduce the likelihood of flame ingress and fire propagation between adjacent containers.

The Robin emergency response plan **[6]** prescribes a defensive approach to active firefighting, and first responders are instructed to set a perimeter and let any event self-terminate. The facility personnel are responsible for providing guidance on the status of electrical hazards and will perform cleanup operations. The emergency response plan addresses one recommendation from the JF2 BESS product-level HMA **[6]**. Active thermal management (i.e. enclosure suppression or internal water application) will not be performed for the Robin BESS site. However, coordination and training of the local fire department are necessary to ensure the safety of first responders.

Toxic gases released are typically not an issue for remote sites like the Robin BESS site, which are separated by at least 100 feet from buildings, lot lines, public ways, stored combustible materials, hazardous materials, high-piled stock, and other exposure hazards not associated with electrical grid infrastructure. The site is not typically manned and is surrounded by a fence (typically 100 feet away from the closest BESS) to keep out trespassers and is at least 100 feet away from the closest building.

3.2.1.4 Recommendations

See Section 4.3.3 of the JF2 BESS product-level HMA **[2]** for product-level recommendations to mitigate the thermal runaway hazard. As noted in the prior section, the recommendation (1) is partially addressed by the template emergency response plan **[6]**. In addition to the product-level HMA recommendations,

1. Coordinate with the local fire departments to ensure firefighters are familiar with the specific hazards and proper mitigation of an event.

3.2.2 Failure of the Energy Storage Management System (ESMS)

3.2.2.1 Description

The Energy Storage Management System (ESMS) is defined in 2021 IFC Section 1202 as *"a system that protects energy storage systems from operating outside their safe operating parameters and disconnects electrical power to the BESS or places it in a safe condition if potentially hazardous temperatures or other conditions are detected."* This definition implies that the ESMS encompasses the combined performance of the PCS, the site-level ESMS, and the container-level ESMS. This section addresses potential failures in these subsystems. A discussion of the container-level ESMS components (i.e., the pack-level and rack-level BMS, PBMS, and RBMS) can be found in the JF2 BESS product-level HMA **[2]**.

Each failure can be addressed based on overall function expectations. Each PCS skid is connected to up to four JF2 DC LINK BESS containers and converts the low-voltage DC power from the BESS to high-voltage AC power that can feed the power grid. The site-level ESMS transmits signals and alarms to the remote operations control center, which qualifies as a proprietary supervising station and can trigger container shutdown if an abnormal condition is detected.

- 2021 IFC Section 1207.3.4 requires the ESMS to disconnect electrical connections to the BESS or otherwise place it in a safe condition if potentially hazardous temperatures or other conditions, such as short circuits, overvoltage, or undervoltage, are detected. The PCS may fail to monitor a ground fault, improper wire insulation, or surges in current. This can result in an inability to shut down, report adverse conditions, properly monitor, balance, and protect the system resulting in failure of other components in the BESS.
- The site-level ESMS may fail to report abnormal conditions to the remote operations control center, resulting in a delayed or prolonged response from the remote operations control center to notify the local fire

department. Failure to shut down the BESS under abnormal conditions can result in further damage to BESS components.

3.2.2.2 Safeguards

While specific PCS and ESMS models for the Robin BESS site are to be determined, the following safeguards against failure are expected based on manufacturer design practices and typical PCS/ ESMS configurations:

- Motorized No-Load DC Disconnection
- Motorized DC disconnects for isolating BESS inputs
- Motorized AC circuit breakers for isolating grid-side output
- AC and DC fuses for overcurrent protection
- AC and DC surge protection devices
- Ground Fault Detection Interruption System
- Insulation Monitoring Devices (IMD) to detect faults to ground
- ESMS and PCS certifications to appropriate listings.

3.2.2.3 Consequences

Failure to shut down the system given potentially hazardous temperatures or other conditions such as short circuits or voltage surges may result in damage to the battery cells. This damage could ultimately lead to a thermal runaway event. The consequences of a thermal runaway event are described in Section 4.3.2 of the JF2 BESS product-level HMA **[2]**.

3.2.2.4 Recommendations

It is recommended that:

2. Selection ESMS components with third-party certifications and protective features required by the 2021 IFC should be performed. Functionality should be confirmed during the final design and commissioning stages.
3. All manual and automatic system functions, alarms, and interlocks should be tested during site/system commissioning.
4. Periodic inspection, testing, and maintenance should be performed on all equipment and instrumentation tied to the PCS in accordance with manufacturer recommendations and industry standard practices.

In the event of a PCS or ESMS failure, the worst-case consequence is a thermal runaway. Therefore, the same recommendations as provided in Section 4.3.3 of the JF2 BESS product-level HMA **[2]**.

3.2.3 Failure of a Required Protection System, including, but not limited to, Ventilation, Exhaust Ventilation, Smoke Detection, Fire Detection, Fire Suppression, or Gas Detection

The site does not have any protection systems in addition to what is already provided in the JF2 BESS container. For a discussion of the product-level protection systems, see Section 4.5 and Section 4.8 of the JF2 BESS product-level HMA **[2]**.

3.2.4 Failure of Firefighting Response

3.2.4.1 Description

Manual firefighting response by the local fire department is going to be a “defensive approach” and will be outlined in the Robin emergency response plan **[6]**. This plan will need to be finalized in coordination with the responding local fire department. The plan should be prepared during the permitting stage and finalized after project completion.

Activation of the smoke or gas detection systems will send an alarm signal from the FACP to the control supervising station, which notifies the local fire department. On-site, the responding fire department is expected to establish a safe perimeter to monitor the fire and allow it to burn out. The control station shall isolate the affected feeder, communicate any known hazards, and provide safety data sheets to emergency responders.

Two (2) 30,000-gallon water tanks are located near the facility gate, just outside the fenced boundary of the BESS yard. These tanks are not intended for suppression of BESS container fires but may be used by the local fire department for defensive cooling of nearby equipment such as PCS skids and transformers during a large-scale fire event.

3.2.4.2 Safeguards

The Robin emergency response plan **[6]** calls for safety training of the Robin facility personnel and emergency responders annually, when the plan is in effect, and when the plan changes. Protocols are in place for alarm signal transmission, feeder isolation, hazard notification, and the use of available emergency cooling resources in coordination with CIP procedures

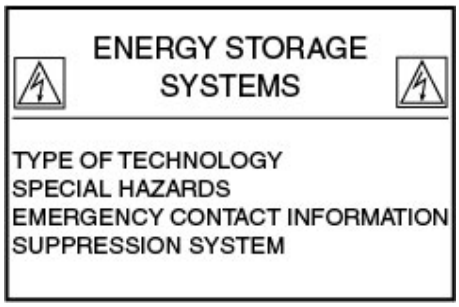
3.2.4.3 Consequences

Lack of an adequate response plan, training, and/or site familiarity may result in harm to emergency responders. In the absence of a functional water supply for emergency cooling, fire may spread to adjacent electrical equipment, resulting in additional property damage or system failure beyond the affected BESS container.

3.2.4.4 Recommendations

It is recommended to:

5. Finalize and coordinate the Robin emergency response plan with the local fire department. Host site familiarization and training sessions annually and when there are appropriate site changes to ensure the first responders maintain a safe perimeter and monitor the events without opening any container doors or using water on any battery containers. Include information on the explosion hazard from the container and a brief description of the deflagration vent system in the fire department training. 7. Include the use of the water tanks in the emergency response plan and provide procedures for their use in cooling adjacent equipment during a fire event. Ensure access, functionality, and coordination with emergency personnel.
6. Develop or provide a set of drawings detailing the design and placement of all signage installed on the site, including BESS disconnecting means, per 2021 IFC Section 1207.4.8. Refer below for signage examples from NFPA 855:



4.0 Conclusions

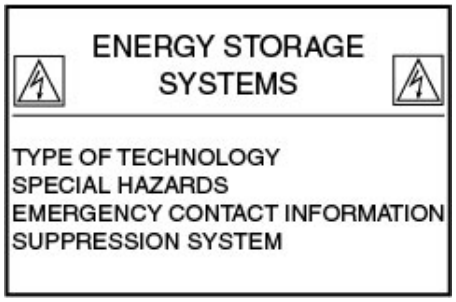
A site-specific hazard mitigation analysis (HMA) was performed for the JF2 BESS system installed at the Robin BESS facility. The failure modes provided in 2021 IFC Section 1207.1.4.1 were used to conduct a consequence-based analysis, which determined how well the provided safeguards would reduce the severity of the hazard. The likelihood of events was not assessed, and only single failure modes were considered. Where existing safeguards do not adequately prevent or mitigate consequences, recommendations were made.

4.1 RECOMMENDATIONS

The HMA resulted in the recommendations presented in Table 4-1 below.

Table 4-1: Site-Level HMA Recommendations

No.	*Category*	*Description*
1	Fire Department Coordination	Coordinate with the local fire departments to ensure firefighters are familiar with the specific hazards and the proper mitigation of an event.
2	ESMS Selection	Selection of ESMS components with third-party certifications and protective features required by the 2021 IFC should be performed. Functionality should be confirmed during final design and commissioning.
3	Testing During Commissioning	All manual and automatic system functions, alarms, and interlocks should be tested during site/system commissioning.
4	Periodic Inspection, Testing, and Maintenance of PCS	Periodic inspection, testing, and maintenance should be performed on all equipment and instrumentation tied to the PCS in accordance with manufacturer recommendations and industry standard practices.

No.	Category	Description
5	Emergency Response Planning and Training	Finalize and coordinate the Robin emergency response plan with the local fire department. Host site familiarization and training sessions annually and when there are appropriate site changes to ensure the first responders maintain a safe perimeter and monitor the events without opening any container doors or using water on any battery containers. Include information on the explosion hazard from the container and a brief description of the deflagration vent system in the fire department training. 7. Include the use of the water tanks in the emergency response plan and provide procedures for their use in cooling adjacent equipment during a fire event. Ensure access, functionality, and coordination with emergency personnel.
6	Develop Signage Layout Plans	Develop or provide a set of drawings detailing the design and placement of all signage installed on the site, including BESS disconnecting means, per 2021 IFC Section 1207.4.8. Refer below for signage examples from NFPA 855: 

4.2 HMA APPROVAL

The local AHJ may approve the HMA provided that the conditions stated in 2021 IFC Section 1207.1.4.2 are demonstrated. These conditions are summarized in **Table 4-2**.

Table 4-2: Approval of HMA

Conditions Demonstrated	(Y/N)	Comment
1. Fires will be contained within unoccupied BESS rooms or areas for the minimum duration of the fire-resistance-rated separations identified in IFC Section 1207.7.4, which states that *rooms or spaces containing BESS shall be separated from other areas of the building by fire barriers with a minimum 2-hour fire resistance rating and horizontal assemblies with a minimum 2-hour fire resistance rating, constructed in accordance with the IBC*.	N/A	The site is an outdoor remote location, and no BESS container is occupied. Fire resistance rating of BESS containers not provided.
2. Fires in occupied work centers will be detected in time to allow occupants within the room or area to safely evacuate.	N/A	The site is normally unoccupied and is in a remote location.
3. Toxic and highly toxic gases released during fires will not reach concentrations in excess of the IDLH level in the building or adjacent means of egress routes during the time deemed necessary to evacuate occupants from any affected area.	Y	The site is normally unoccupied and is a remote location. A product-level toxic plume analysis was performed by LGES for the JF2 DC LINK BESS **[13]**; in addition, a site-specific dispersion analysis is available **[15]**. It concluded that, under a worst-case thermal runaway scenario, toxic gas and smoke concentrations remain within site boundaries and do not exceed IDLH levels or impact off-site receptors.
4. Flammable gases released from the BESS during charging, discharging, and normal operation will not exceed 25 percent of their lower flammability limit (LFL).	Y	The BESS uses lithium-ion batteries, which do not release toxic gases during normal charging, discharging, and operation. Gases are only vented from the batteries during abnormal conditions.
5. Flammable gases released from BESS during fire, overcharging, and other abnormal conditions will be controlled through the use of ventilation of the gases, preventing accumulation, or by deflagration venting.	Y	The BESS uses an explosion prevention system complying with NFPA 69, composed of ventilation doors (2 roof exhaust vents, 2 door intake dampers, and 1 intake fan) to ventilate inside gas, and a gas detector (H_2 sensor) to detect flammable gas is installed **[11]**.

This report was based solely upon and limited to the available information provided and/or presented. Details and/or information not presented or provided on the documentation provided by the Client are not considered a part of this analysis. This report is not intended to verify or guarantee that the installation complies with the provisions of any local codes and is not meant to cover specific installations.

If you have any questions about this report, please do not hesitate to contact us.

Sincerely,

Jensen Hughes, Inc.

Prepared By

Samuel Flibbert

Manager, Lead Engineer
sflibbert@jensenhughes.com

Reviewed By

Jihan El Ouaragli, PhD

Staff Engineer
jihan.ouaragli@jensenhughes.com

Michael Townsend, CSP, SMS, CFPS

Senior Consultant
mtownsend@jensenhughes.com

5.0 References

The following references were used in the development of this report:

[1]. Google Earth. “Robin BESS Project Site.” Imagery © 2025 Maxar Technologies, U.S. Geological Survey, Available from: https://earth.google.com/web/. Accessed September 2025.

[2]. Jensen Hughes Inc., 2025, "F2X4-5.1US-CC02_AC&DC LINK Hazard Mitigation Analysis (HMA)_V4.0".

[3]. Westwood Professional Services Inc., 2025, "2025-09-04 Robin BESS Prelim Revised Boundary Layout".

[4]. Jensen Hughes Inc., 2025, "F2X4-5.1US-CC01_AC&DC LINK Compliance Report(Fire Safety Code)_V1.0".

[5]. LG Energy Solution, 2025, "F2D4-5.1US-MC02 JF2 DC LINK 5.1 Dimensions & Separation".

[6]. Jensen Hughes Inc., 2025, "Robin Energy Emergency Response Guide".

[7]. International Code Council, International Fire Code (IFC), 2021 Edition.

[8]. National Fire Protection Association, NFPA 855, Standard for the Installation of Stationary Energy Storage Systems, 2023 Edition.

[9]. Blum, A. 2022 “*Victorian Big Battery Fire: July 30, 2021”* Fisher Engineering, Inc

[10]. EPRI contributors, 2022, “BESS Failure Event Database.”

[11]. LG Energy Solution, 2025, "F2X4-5.1US-FS06_DC LINK Explosion Control CFD Analysis_V2.0".

[12]. LG Energy Solution, 2025, "F2X4-5.1US-FS08_AC&DC LINK Large Fire Test Report_V1.0".

[13]. LG Energy Solution, 2025, “LGES JF2 DC LINK: F2X4-5.1US-RP10_AC&DC LINK Plume Analysis Report_V1.0”

[14]. UL Solutions, 2025, "F2D4-5.1US-CC15_DC LINK UL9540_V1.0".

[15]. MRS Environmental, 2025, "Robin Dispersion Analysis 250529"

[16]. EPC Power, 2025, "M System Feb 2025"

[17]. EPC Power, 2025, "[70-100090] M System Installation Manual_Rev0.01"

APPENDIX D

Exhibit F

Emergency Response Plan

Copenhagen Infrastructure Partners

JF2 DC LINK
Battery Energy Storage System
at Robin BESS Facility

This plan has been developed to assist the local emergency responders with important safety and emergency response information concerning JF2 DC LINK BESS Installation.

This document and supporting layout plans should be consulted prior to any fire service personnel entering the site.

Emergency Response Guide

[Date]
Rev. 0

Approved by:

Document No. [Plan ID]

Copenhagen Infrastructure Partners

Date

Table of Contents

Section 1 – General Information

1. FACILITY NAME – **Robin Battery Energy Storage System (BESS)**
2. TYPE OF BATTERY SYSTEM – **JF2 DC LINK 5.1 Enclosures**
3. LOCATION OF FACILITY:

   XXXX 392nd Avenue, Burlington, WI (Approx. 2,000' north of Highway 50)
   (Entrance Drive @ 42°35'20.56"N, 88°17'10.50"W)

4. OWNER/OPERATOR

   Site Owner

   Copenhagen Infrastructure Partners (CIP)

   Operator

   [TBD]

   Battery Energy Storage System Manufacturer:

   LG Energy Solution

5. EMERGENCY CONTACT NUMBERS:

Emergency Contact Number	Main	Alternate
CIP Emergency Contact	[XXX-XXX-XXXX]	[XXX-XXX-XXXX]
Operator Emergency Contact	[XXX-XXX-XXXX]	[XXX-XXX-XXXX]
BESS Emergency Support	[XXX-XXX-XXXX]	[XXX-XXX-XXXX]

6. FACILITY DESCRIPTION:

The Robin BESS facility is situated on a 18.3 acre site with a single access on the east side of 392nd Avenue. The entrance drive extends approximately 650' to the access gate for the fenced BESS yard. The facility includes a ≈1.8 acre substation, located in the southeast corner of the project site. This Pre-Incident Planning / Emergency Response Guide focuses only on the BESS portion of the facility.

In addition to the BESS yard and substation, the facility includes operation and maintenance areas and two stormwater management basins. The substation will be equipped with X oil-filled transformers and an unmanned XXX ft^2 control building. The substation and BESS yard are enclosed with security fencing, and the yards and access drives consist of stone paving. There is one 30,000 gallon water supply tank at the facility. This tank serves as the fire protection water supply.

Robin BESS will consist of 200 JF2 DC LINK 5.1 BESS enclosures (not including future augmentation). The enclosures consist of three M-LINK cabinets and a control panel (E-Panel. Each M-LINK cabinet contains two racks which each hold 14 battery packs. Each battery pack contains 120 battery cells. The battery chemistry is lithium iron phosphate technology. One Power Conversion System (PCS) enclosure dedicated to every four BESS enclosures.

Farmfield adjoins the facility to the north, south and west. A tree farm abuts the facility to the east, along with an approximately 3 acre transmission substation which serves as the point of connection for this facility. A farmhouse is located on the adjacent property to the north. This structure is more than 750' from the nearest battery enclosure. Two commercial buildings are situated on the adjacent property to the south. Both structures are more than 500' from the nearest battery enclosure.

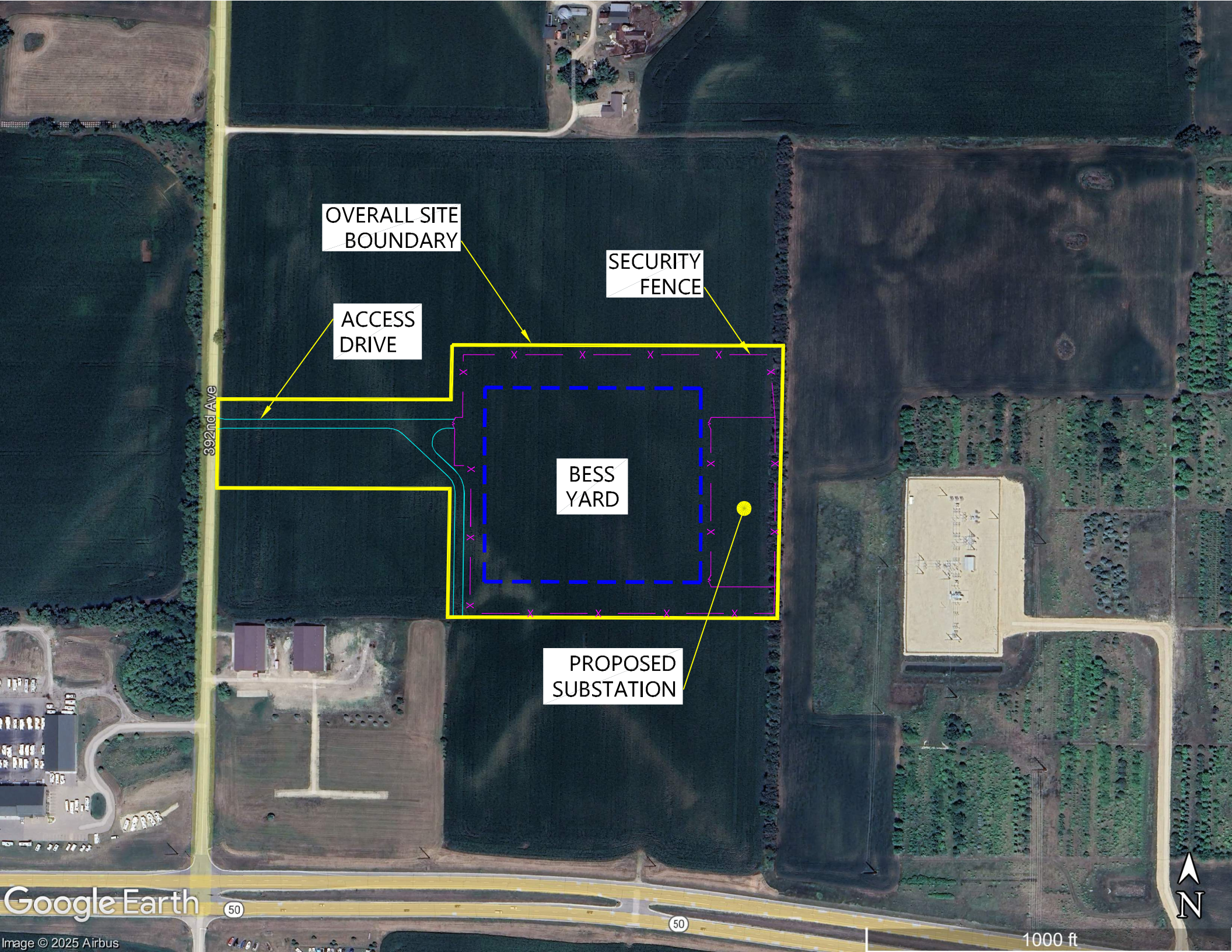
Refer to Section 2 for site location and yard equipment layouts.

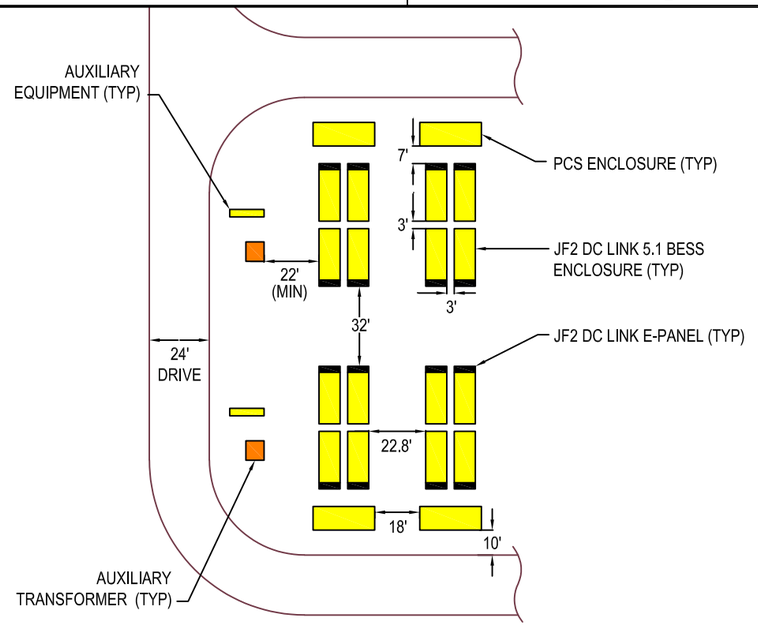
Additional information on the equipment located on-site is provided in the following sections.

Section 2 – Site Plans and Layout Drawings

This section contains the following information:

- ***Aerial View***
- ***BESS Site Plan and Equipment Arrangement Plan***


OVERALL SITE BOUNDARY
SECURITY FENCE
ACCESS DRIVE
392nd Ave
BESS YARD
PROPOSED SUBSTATION
50
50
Google Earth
Image © 2025 Airbus
1000 ft
N



BESS EQUIPMENT ARRANGEMENT DETAIL
NTS

JENSEN HUGHES
10 Wacker Drive
Suite 1300
Chicago, IL 60606
O: 312-869-8500
www.jensenhughes.com

NO.	REVISION	DATE

NORTH ARROW

NORTH

SEAL

PROJECT
ROBIN BESS FACILITY

ADDRESS
392nd AVENUE
BURLINGTON, WI 53105

PROJECT NO
1MDT25007

DATE
NOVEMBER 2025

DESIGN	DRAWN BY	CHECKED BY
N/A	BMC	AJW

SCALE
NOT TO SCALE

TITLE
BATTERY ENERGY STORAGE SYSTEM
SITE PLAN & EQUIPMENT ARRANGEMENT PLAN

NUMBER

SHEET
1 of 1

Section 3 –Battery System Precautions / Hazards

NO ACCESS SHOULD BE MADE INTO THE BATTERY ENCLOSURE OR SURROUNDING AREA WITHOUT CIP AUTHORIZATION AND VERIFICATION THAT CONDITIONS ARE SAFE FOR ACCESS.

- ***Lithium-Ion Battery Energy Storage System (BESS)***

Energized lithium-ion batteries (lithium iron phosphate cell chemistry) are located within the JF2 BESS enclosures. Batteries present an electrical, thermal, and corrosive hazard, and are not de-energized when the unit is disconnected from the generating station or power grid. It is extremely unlikely that the system will be fully de-energized during an event and should be assumed to contain hazardous energy at all times. No access should be made into the BESS enclosure.

- ***Lithium-Ion Batteries - Thermal Runaway***

Thermal runaway is the uncontrolled build-up of heat within a lithium-ion (Li-Ion) battery. Battery damage, exposure to heat, electrical malfunction or defects can cause a breakdown in the separator barrier between the cathode and anode, causing uninhibited energy transfer through the electrolyte. This causes heat generation which reduces electrolyte resistance, allowing the energy transfer rate to further increase, creating a self-sustaining reaction. Thermal runaway results in a condition that requires copious amounts of water to extinguish. Even after appearing to be extinguished, batteries may still be undergoing thermal runaway and reignite, so continued monitoring is required. Smoke from thermal runaway is extremely toxic and should be avoided. Hydrogen off-gassing will also occur (see “Deflagration/Explosion Potential”).

- ***Potential Toxic Gas Emission***

When Li-Ion batteries experience a thermal runaway failure, they can rupture and produce a toxic gas mixture that can include hydrogen fluoride and carbon monoxide. The likelihood of a toxic gas mixture being produced is actually greater if the batteries do not catch fire. Exercise caution and always wear SCBA when operating near a battery enclosure that has experienced a failure.

- ***Deflagration/Explosion Potential***

Hydrogen and other flammable gases are released from Li-Ion batteries during thermal runaway. These gases may build up within the BESS enclosure. Without proper ventilation, this creates an explosive atmosphere. Introduction of oxygen into the container while an explosive atmosphere is present can lead to a deflagration or explosion.

The M-LINK battery enclosures have built in vents/dampers to remove flammable gases and smoke. However, it should always be assumed that an explosive mixture could be present until proven otherwise.

- ***BESS Enclosures – Liquid Cooling System***

The batteries within each enclosure are cooled using a liquid heat exchanger system that utilizes a 50% ethylene glycol / 50% water mixture. Ethylene glycol is a combustible liquid that, if released from the cooling system, could exacerbate and/or spread any fire conditions. Additionally, if the liquid is released from the system and comes into contact with energized equipment, additional arcing or thermal runaway events could occur. The cooling system also contains R513A refrigerant. Leaked refrigerant does not pose fire spread or arcing hazards.

- ***Electrical Hazard***

Most electrical components are contained within the BESS and PCS enclosures. However, some connections and circuits may not be protected and could expose firefighters to an electrical hazard.

CONSIDER all equipment ENERGIZED until CONFIRMED DE-ENERGIZED, GROUNDED and safe by QUALIFIED CIP personnel.

The batteries in a BESS are NEVER FULLY DISCHARGED. Even when a BESS is shut down, the batteries still contain stored energy corresponding to the state of charge at the time it was shut down. Consult with CIP personnel before applying water on BESS equipment.

Use of Firefighting Water on Energized Electrical Equipment Could Be Hazardous to Firefighters. Utilization of installed systems is preferred (see Section 5). Exercise caution when putting handlines in service.

DO NOT USE metal ladders or other metal firefighting tools (pike poles, axes, halligans, etc.) around high voltage equipment as they can be CONDUCTIVE.

- ***Oil-Filled Transformers***

The BESS yard includes oil-filled transformers containing XXX gallons of insulating oil. (The adjacent substation contains X transformers containing XXX gallons of insulating oil.) This presents a significant fire load at the facility. Once de-energized, fire in a transformer container may be considered an enclosed container fire. The process of de-energizing the transformer must be completed in its entirety before commencing fireground operations. In order to de-energize, power must be isolated on both the high side and the low side of the transformer. Because determining the location of the fault is not possible, both the high side and the low side must be grounded. Isolate station DC power used in monitoring the unit.

- ***Adjacent Exposures / Hazards***

The primary exposure concerns for a BESS enclosure fire are the adjacent enclosures and other equipment within the BESS yard itself. Additionally, there is vulnerable substation equipment that is within 100’ of BESS containers. This includes oil-filled transformers, circuit breakers and the XXX ft^2 control house.

A farmhouse north of the site is more than 750’ from the closest battery enclosure. A commercial stru cture southwest of the BESS yard is more than 500’ from the closest battery enclosure. A transmission substation is located approximately 350’ east of the project site. Any vulnerable equipment at this substation is more than 600’ from any battery enclosure.

The equipment arrangement in the BESS yards consists of groups of four JF2 DC LINK 5.1 enclosures. A back-to-back and side-to-side separation of 3’ is provided between the enclosures within their groups. The front-to-front separation between groups of enclosures is 22.8’. The separation between the PCS enclosures and the BESS enclosures is 7’. Auxiliary equipment is provided on separate pads within the BESS yards and are separated from the PCS and BESS enclosures by a minimum of 22’. This equipment includes oil-filled transformers, UPS and/or panel/protection devices. The operation and maintenance areas at the northwest corner of the BESS yard contain two 8’ x 40’ Connex containers and a 12’ x 60’ office trailer.

Refer to Section 2 for site location and yard equipment layouts.

Section 4 – Fire Response Guidelines and Precautions

Section 4.1 – Lithium-Ion BESS Specific Guidelines and Precautions

Lithium-ion battery fires are extremely difficult to extinguish due to the self-sustaining reaction and large quantity of energy. Additionally, Li-Ion battery failures can produce flammable and/or toxic gases and can be extremely volatile and unpredictable. Due to the nature of their failure and inherent energy, response to a Li-Ion battery event should be **DEFENSIVE** in nature.

The preferred response to a battery enclosure on fire is to contain and protect exposures. That is to say, suppression efforts should not be directed at the failed unit(s) and should instead be focused on ensuring that other units do not fail. A fire condition in a BESS enclosure can actually be beneficial, as the fire consumes many of the toxic gases that can be produced by a thermal runaway event.

A JF2 DC LINK BESS is comprised of one or more M-LINK enclosures and an E-Panel. The M-LINK enclosures house the batteries. The E-Panel contains the FACP, battery system control, communications, dry-type transformers and other power components and electronics.

The E-Panel is attached to the M-LINK enclosures but is isolated. A fire in the E-Panel should remain isolated from the M-LINK battery enclosures.

A personnel standoff distance of 300 feet is advised. Some monitoring activities or protection of exposures may require personnel to operate within this "warm zone." Do not operate within the standoff distance, or downwind from the enclosure, without the use of SCBA, as toxic gases may be present in the gas plume.

Each M-LINK enclosure is equipped with two roof exhaust vents and two door intake dampers with an intake fan. The vents/dampers open automatically and intake fan operates upon detection of smoke or hydrogen and evacuates heat and toxic/flammable gases from the enclosure. Manual ventilation (opening the enclosure front door) should not be needed and is unadvised.

If the automatic ventilation fails and BSC remote monitoring is available, monitor the temperature and flammable gas concentration within the enclosure. Manual gas monitoring can also be performed downwind and at a distance (such as at the fenceline) to determine if toxic gases are present and if evacuations or shelter in place orders are needed. In the event internal atmospheric conditions of the enclosure cannot be determined, no manual ventilation or access should be attempted.

The use of thermal imagers can be used to monitor the surface temperature of equipment adjacent to the failed unit. Coordinate with Operator and/or CIP personnel to determine if water should be applied to the exposure units to prevent cascading failures. Any firefighting water applied to electrical equipment via handlines should be done with a minimum 30 degree fog pattern from a minimum of 30 feet away from the enclosure. Be aware of any standing water that may accumulate.

DO NOT OPEN AN ENCLOSURE UNTIL ELECTRICAL FAILURE EVENT IS VERIFIED BY QUALIFIED CIP PERSONNEL TO BE COMPLETE AND THE ABOVE GUIDELINES HAVE BEEN CONSIDERED

If neither installed nor handheld gas monitoring of the enclosure is available, manual ventilation of the enclosure should NOT be performed.

Due to the volatile nature of Li-Ion batteries after failure, it is possible for the batteries to reignite, even after the event appears to be concluded. Batteries can continue to hold electricity (called "stranded energy"). Internal damage to the battery may result in a continued reaction even after the initial event concludes. Additionally, any mechanical agitation to the battery could result in a stopped reaction restarting.

Never assume that a battery enclosure is safe after suppression.

Section 4.2 – Fire Response Guidelines

NOTE: These guidelines are meant to assist first responders in safely responding to a fire or thermal runaway incident involving A BESS Enclosure. These guidelines are not meant to supersede existing Standard Operating Procedures/Guidelines established by the first responders' organization.

1. When responding to a fire involving an JF2 DC LINK System Enclosure, **DO NOT** cut any perimeter gate locks, approach the enclosure or associated equipment, or force entry into the enclosure. **WAIT** outside the perimeter fence or at a safe distance (at least 300 feet) until CIP personnel arrive on scene to provide assistance. If CIP personnel are not present, **CALL** the emergency contact number listed in Section 1 of this plan or request that the Local 911 Center Fire Communications call CIP using CIP Emergency Number].
2. Once CIP personnel arrive(s), make contact and establish a continuous point of contact (POC) for the incident and establish a unified command with CIP POC. For your safety, while you are on the premises, qualified CIP personnel **MUST** be present and **REMAIN** with the incident commander.
3. Firefighter **ACCOUNTABILITY** within the facility is the responsibility of the Fire Department. **USE** SCBA when entering smoke environment. The combustion gases given off may be toxic and/or corrosive.
4. At the request of the Fire Department, and as safe and practical to do so, CIP will **DE-ENERGIZE** required equipment and circuits. Please note that this may take a considerable amount of time. This will be a prolonged evolution.
5. If not already active, consider manually activating the door intake dampers and roof exhaust vents via the electrical control panel. ,However, extreme caution should be exercised if employing this option. The ventilation cannot be activated remotely.
6. If available (and conditions warrant), utilize gas meters downwind from the failed unit to determine if significant quantities of toxic gases (such as Carbon Monoxide or Hydrogen Fluoride) are present. When performing gas samples, maintain as much distance as possible and never

approach any of the enclosure doors head-on. Sampling at the fenceline will provide a good metric for the amount of gases escaping to the public. Based on gas sampling and wind direction, consideration should be given to shelter-in-place or evacuation orders for surrounding exposures.

7. If fire condition is present, monitor surface temperature of exposures using a thermal imaging camera, if available. Discuss whether water-based suppression should be used on the burning equipment. If there are no immediate exposures and no immediate danger to the public, letting the enclosure burn may be the best and safest approach. If the fire presents an immediate hazard to exposures or the public, connection to the water supply tank(s) and bringing handlines into the yard should be considered.
8. If water-based suppression is to be utilized to protect exposures, CIP personnel will determine when equipment is electrically **SAFE** to fight a fire (especially in applying water on or near electrical equipment). **CAUTION -** adjacent electrical equipment not involved in the fire may still be energized.
9. Handlines should only be used on energized or potentially energized equipment in extreme situations. Only with proper training and approval by CIP should firefighters consider using water on electrical equipment. Equipment and application factors affecting the safe use of water on potentially energized electrical components:

    - Proper nozzle and proper nozzle pressure
    - Proper patterns used (at least 30 degrees - never a straight or solid stream)
    - Proper distance from the component (at least 30 ft)

    Other factors that affect safety are:

    - Impact of overspray on energized electrical components
    - Water runoff or pooling that may become energized
    - Impact of water runoff and pool on other components in the area
    - Weather conditions; wind, rain and humidity

    Follow your fire department's SOPs and consult CIP prior to using water on Class "C" or Class "D" fires.

Section 5 – Fire/Explosion Protection Systems

- ***Fire Alarm and Detection System(s)***

  Each M-LINK enclosure is provided with an automatic smoke detection system. One smoke detector and one hydrogen detector are located within each battery compartment. One smoke detector is located within the E-Panel. The detectors communicate to the fire alarm control panel (FACP) located in the E-Panel electrical enclosure. The FACP is monitored by the BESS Energy Management System (EMS) and remotely by CIP.

  Activation of either detector within the M-LINK enclosure will initiate an alarm condition, activate horn & strobe notification, and shut down the HVAC system within the M-LINK enclosure.

  Activation of the E-Panel detector will initiate an alarm condition and activate horn & strobe notification.

- ***Explosion/Deflagration Prevention***

  Each M-LINK enclosure uses a combination of hydrogen detection and ventilation to prevent explosions/deflagrations within the enclosure.

  - ***Hydrogen Detection System***

    Each M-LINK battery enclosure is provided with a hydrogen detection system. One hydrogen detector is located with the smoke detector in the battery compartment and are monitored by the FACP. The hydrogen detectors will alarm at 0.4% hydrogen by volume.

  - ***Flammable Gas Ventilation System***

    The M-LINK battery enclosure is outfitted with a flammable gas ventilation system. Two roof exhaust vents are located on the enclosure roof and the intake dampers are provided on the front door. An intake fan is provided for the door openings. These vents/dampers may be capable of being operated remotely.

  - ***Explosion/Deflagration System Operation***
    - Activation of the smoke detector or the hydrogen detector within an M-LINK enclosure will initiate the system operation.
    - Once the alarm is received, FACP in the E-Panel controls the opening of the ventilation openings and intake fan.

- ***Water Supply***

  - ***30,000 Gallon Water Tank***

    See Section 2 for location of the tank. The tank is located just inside the fence, on the west side of the BESS yard. There are no alternative water sources identified.

Section 6 – Site Photos

Photo 1

JF2 DC Link BESS Enclosure

The Robin BESS has 200 battery enclosures installed in groups of four. Each contains 6 racks with 14 battery modules/rack. These batteries can never be fully discharged or de-energized. See Section 4.1 for information regarding Thermal Runaway. **DO NOT** attempt fire suppression until all power sources have been **DE-ENERGIZED** and **GROUNDED**.

Photo 2

JF2 DC Link BESS Enclosure Internal View

This is a front view of the enclosure with the panels removed.

This enclosure is an **ELECTROCUTION HAZARD** if not **DE-ENERGIZED** and **GROUNDED**.

Photo 3

JF2 DC Link BESS Enclosure E-Panel

This is the panel located at the end of each BESS enclosure. It contains the FACP, battery system control, communications, dry-type transformers and other power components and electronics.

This enclosure is an **ELECTROCUTION HAZARD** if not **DE-ENERGIZED** and **GROUNDED**.

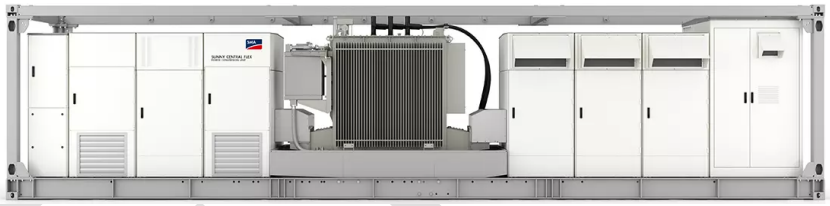


Photo 4

Power Conversion System (PCS) Enclosure

The BESS has 50 PCS enclosures. Each contains an MV transformer and switchgear,… [TBD].
This enclosure is an **ELECTROCUTION HAZARD** if not **DE-ENERGIZED** and **GROUNDED**.

Photo 5

Oil-Filled Transformer

The facility is equipped with oil-filled transformers [TBD]. The transformers contains XXX gallons of mineral oil (combustible liquid). They are in close proximity to other BESS equipment.
DO NOT attempt fire suppression until all power sources have been **DE-ENERGIZED** and **GROUNDED**. Follow your department procedures for a Class "B" fire.

Photo 6

[Equipment TBD]

[Write-up]

Section 7 –Safety Data Sheets (SDS)

SDS for Materials within the facility:

- **Lithium-Ion Batteries**
- **Mineral Oil**
- **Liquid Coolant**
- **Refrigerant**

Lithium-Ion Battery

Mineral Oil

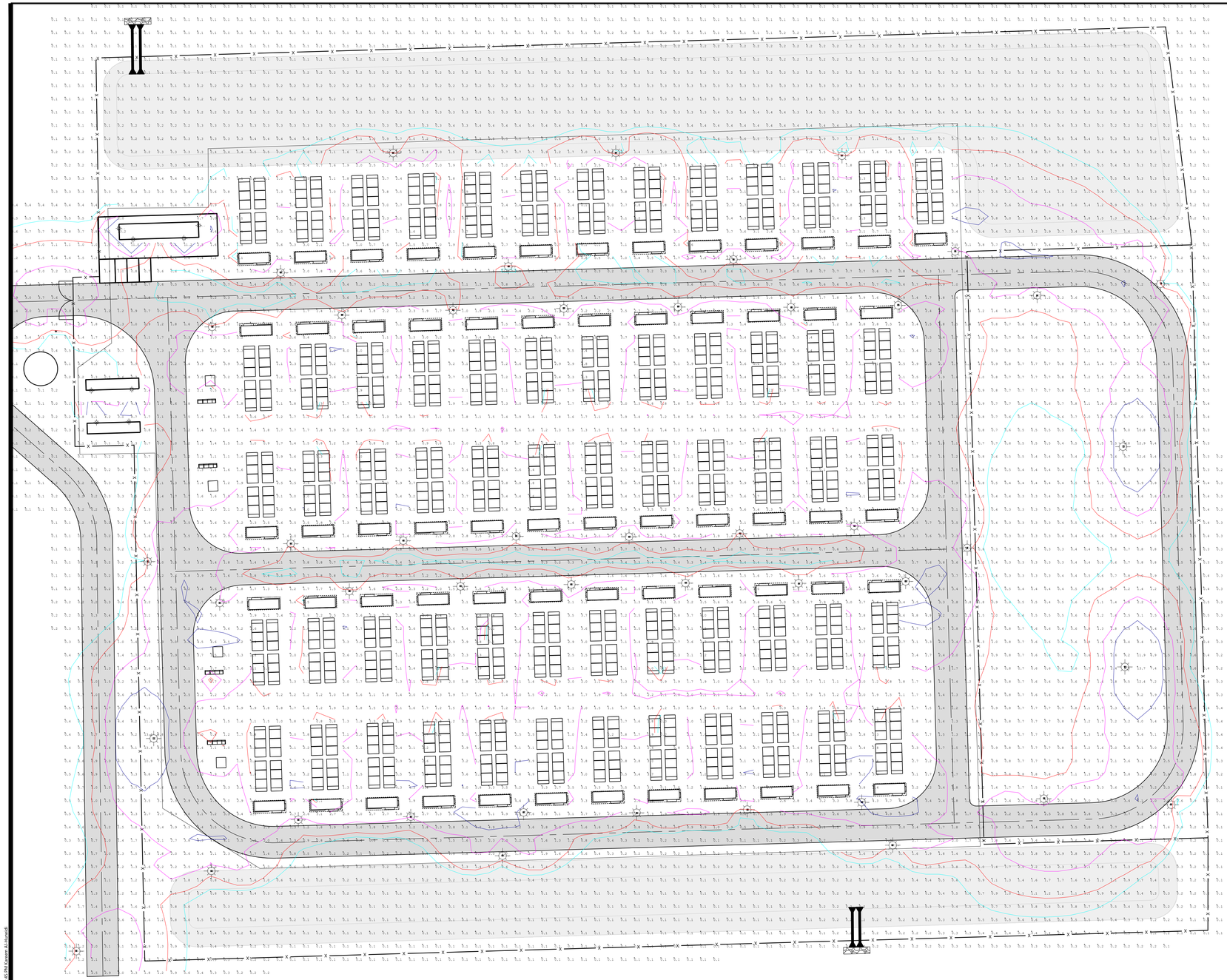
Liquid Coolant

Refrigerant

APPENDIX D

Exhibit G

Lighting Plan Sheet



NOTES

1. LUMINAIRES ARE NOT SHOWN TO SCALE
2. ONSITE PERSONNEL SHALL HAVE PORTABLE LIGHTING AVAILABLE WHERE QUANTITY OF FOOT CANDLES FALLS BELOW 2FC NEAR EQUIPMENT AND 0.2FC ELSEWHERE.

LIGHTING INFORMATION

BESS YARD

ILLUMINANCE (FC)
AVERAGE = 1.82
MAXIMUM = 13.2
MINIMUM = 0.1
AVG/MIN RATIO = 18.20
MAX/MIN RATIO = 132.00

ISOLINE KEY

- 0.6 FOOT CANDLES (FC)
- 1.0 FOOT CANDLES (FC)
- 2.0 FOOT CANDLES (FC)
- 4.0 FOOT CANDLES (FC)

LUMINAIRE SPECIFICATIONS

SYMBOL	QTY	CATALOG NUMBER	DESCRIPTION	LAMP	LUMENS	LLF	WATTAGE	VOLTAGE	MOUNTING HEIGHT
OR	46	EALP03-L2-AN-7-30-X-A-S1-BLCK-F	GE EVOLVE LED AREA LIGHTING LIGHT POLE FIXTURE	LED	33300lm	0.9	263W	120-277V (UNV)	30'-0"
	8	SLIM-12-Y	RAB LED AREA LIGHTING WALL LIGHT FIXTURE	LED	2070lm	0.9	12W	120-277V (UNV)	8'-0"

LIGHT POLE SPECIFICATIONS

ITEM	QTY	CATALOG NUMBER	DESCRIPTION	MOUNTING HEIGHT
LIGHT POLE	46	TBD	TBD	30'

Westwood

Phone (214) 473-4640
Toll Free (888) 937-5150
2901 Dallas Parkway, Suite 400
Plano, TX 75093
westwoodps.com

Westwood Professional Services, Inc.

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

P.E

DATE: Date LICENSE NO. License

PREPARED FOR:

CIP
Copenhagen Infrastructure Partners
412 West 15th Street 15th Floor
New York, NY 10011 US

REVISIONS:

#	DATE	COMMENT	BY	CHK	APR
A	06/25/2025	ISSUED FOR REVIEW	BM	KAH	MW
B	10/17/2025	ISSUED FOR REVIEW	BM	KAH	DM
C	11/04/2025	ISSUED FOR REVIEW	BM	KAH	DM

0' 40' 80' 120'

Robin BESS

Kenosha County, Wisconsin

Photometric Plan

NOT FOR CONSTRUCTION

DATE: 11/04/2025

SHEET: E1010 REV: C

APPENDIX D

Exhibit H

Decommissioning Plan

A DECOMMISSIONING PLAN FOR

Robin BESS Project

Kenosha County, Wisconsin

NOVEMBER 5, 2025

PREPARED FOR:

CIP
Copenhagen Infrastructure Partners

PREPARED BY:

Westwood

Westwood

Decommissioning Plan

Robin BESS Project

Kenosha County, Wisconsin

Prepared for:

Copenhagen Infrastructure Partners
412 West 15th Street, 15th Floor
New York, NY 10011

Prepared by:

Westwood Professional Services
12701 Whitewater Drive, Suite 300
Minnetonka, MN 55343
(952) 937-5150

Project Number: 0052120.01

Date: November 5, 2025

Table of Contents

Attachments

1.0 Introduction / Project Description

This Decommissioning Plan ("Plan") has been prepared for the Robin Battery Energy Storage (BESS) Project in accordance with Wisconsin's Public Service Commission's (PSC) Certificate of Public Convenience and Necessity (CPCN) requirements outlined in Section 13, Statute 66.0401 (7) of the 2025 Assembly Bill 174. The purpose of the Plan is to describe the means and methods that can be used to remove all structures, foundations, underground cables, and equipment and to reclaim and restore the land altered during the construction and operation of the battery energy storage system ("BESS") to its predevelopment condition to the extent feasible.

The Robin BESS Project ("Project") is a BESS proposed by Copenhagen Infrastructure Partners ("Applicant") in Kenosha County, Wisconsin. The Project will have a capacity of 200-megawatt (MW)/800-megawatt hours (MWh) with a storage duration of four hours. Upon completion, the Project will comprise of battery storage containers, medium voltage power stations containing inverters and transformers, underground and overhead collection lines, a substation, access roads, and fencing. The Project will be built within a general Project Area of approximately 18 acres.

The useful life a BESS is generally considered to be 20 years. At that time, the Project will either be decommissioned or repowered with newer technology. The Plan identifies components which may be removed and areas that may be restored once the Project has not operated for six consecutive months, or when the Project has surpassed the useful lifespan of the batteries and facilities.

2.0 Proposed Future Land Use

Prior to the development of the Project, the land use of the Project Area was primarily agricultural production. After all equipment and infrastructure is removed during decommissioning, any holes or voids created by poles, concrete pads, and other equipment will be filled in with native soil to the surrounding grade, and the site will be restored to pre-construction conditions to the extent practicable. Access roads and other areas compacted by equipment may be decompacted to a depth necessary to ensure drainage of the soil and root penetration prior to fine grading and tilling to a farmable condition. Please refer to Section 3.2 for a detailed description of reclamation activities.

3.0 Decommissioning Activities

Decommissioning of the Project will include removing the battery containers, inverter transformer power stations, overhead and underground cables and lines, equipment pads and foundations, equipment cabinets, and ancillary equipment. Some Project facilities, such as the collector substation, may remain in use or be repurposed after the end of the useful life of the BESS. Project facilities that remain in use or can be repurposed will not be removed during decommissioning. The civil facilities, access roads, security fencing, and drainage structures and sedimentation basins are included in the scope. Standard decommissioning practices will be utilized, including dismantling and repurposing, salvaging/recycling, or disposing of the battery energy storage improvements.

During decommissioning, the landowners will be consulted to identify the extent and type of work to be completed. Some Project infrastructure, such as the access roads, and fencing, may be removed at the

discretion of the landowner(s). Underground utility lines, if deeper than three feet below ground surface elevation, may be left in place to minimize land disturbance and associated impacts to future land use.

Decommissioning will include the removal and transportation of all Project components from the Project site. All dismantling, removal, recycling, and disposal of materials generated during decommissioning will comply with rules, regulations, and prevailing Federal, State, and local laws at the time decommissioning is initiated and will use approved local or regional disposal or recycling sites as available. Recyclable materials will be recycled to the furthest extent practicable. Non-recyclable materials will be disposed of in accordance with State and Federal law.

3.1 Decommissioning of Project Components

3.1.1 Steel Foundation Posts

Structural foundation steel posts will be pulled out to full depth, removed, processed to appropriate size, and shipped to a recycling facility. The posts can be removed using back hoes or similar equipment. During decommissioning, the area around the foundation posts may be compacted by equipment and, if compacted, the area will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density consistent for vegetation.

3.1.2 Overhead and Underground Cables and Lines

All underground cables and conduits will be removed to a depth of three feet. Topsoil will be segregated and stockpiled for later use prior to any excavation and the subsurface soils will be staged next to the excavation. The subgrade will be compacted per standards. Topsoil will be redistributed across the disturbed area.

3.1.3 Inverters, Transformers, and Ancillary Equipment

All electrical equipment will be disconnected and disassembled. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards.

3.1.4 Equipment Foundations and Ancillary Foundations

The ancillary foundations are pile foundations for the equipment pads. As with the other structural steel foundation posts, the foundation piles will be pulled out completely. Duct banks will be excavated to full depth. All unexcavated areas compacted by equipment used in decommissioning will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a density similar to the surrounding soils. All materials will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards.

3.1.5 Fence

Fence parts and foundations, if necessary, will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards. The surrounding areas will be restored to pre-BESS conditions to the extent feasible.

3.1.6 Access Roads

Project access roads will be used for decommissioning purposes, after which removal of roads will be discussed with the landowner and one of the following options will be pursued:

1. After final clean-up, roads may be left intact through mutual agreement of the landowner and the Applicant unless otherwise restricted by federal, state, or local regulations.
2. If a road is to be removed, aggregate will be removed and shipped from the site to be reused, sold, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards. Clean aggregate can often be used as "daily cover" at landfills for no disposal cost. Internal service roads are constructed with geotextile fabric and eight inches of aggregate over compacted subgrade. Any ditch crossing connecting access roads to public roads will be removed unless the landowner requests it remains. The subgrade will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a reintroduction of farming. Topsoil that was stockpiled during the original construction will be distributed across the open area. Finally, the access road corridors will tilled to an agricultural condition.

3.1.7 Substation

Decommissioning of the collector substation will be performed with the rest of the Project. All steel, conductors, switches, transformers, and other components of the substation will be disassembled and taken off-site to be recycled or reused. Foundations and underground components will be removed to a depth of three feet. The rock base will be removed using bulldozers and backhoes or front loaders. The material will be hauled from the site using dump trucks to be recycled or disposed at on off-site facility. Additionally, any permanent stormwater treatment facilities (e.g., infiltration ponds and engineered drainage swales) will be removed. Topsoil will be reapplied to match surrounding grade to preserve existing drainage patterns. Topsoil and subsoil will be decompacted in a manner to adequately restore the topsoil and sub-grade material to a reintroduction of farming.

3.1.8 Battery Energy Storage Systems (BESS)

Prior to commencing decommissioning of the BESS, all personnel on-site during the decommissioning process will receive a site-specific safety briefing and will be made aware of all electrical shock and arc flash risks when working within the battery containers. Hazmat training will also be conducted for all personnel handling lithium-ion batteries during the process.

The battery facility will be fully discharged to the minimum state of charge required for removal and safe transportation as per battery manufacturer specifications. The battery modules will be removed from their racks, repackaged on-site, and shipped intact to a regional recycling hub within 500 miles of the Project site. No disassembly of battery modules will be required on-site, and the battery terminals will be taped off to avoid any potential for a short to occur. In the event of any breakage or damage to individual battery modules, such modules will be placed in individual, non-metallic inner packaging that completely encloses the cell.

The refrigerant/coolant from HVAC units will be collected into separate containers on-site as per the code and industry standard practice. The coolant can be reused after processing. The HVAC units will be sent to the metal recyclers along with other recycling material. Similarly, all fire suppression units will be

cleared of the suppression fluids and sent to the suppliers for reuse following the industry standard practice. All electrical equipment will be disconnected and disassembled. All parts will be removed from the site and reconditioned and reused, sold as scrap, recycled, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards.

Finally, aggregate ground cover will be removed and shipped from the Project site to be reused, sold, or disposed of appropriately, at the Applicant's sole discretion, consistent with applicable regulations and industry standards. Clean aggregate can often be used as "daily cover" at landfills for no disposal cost. All internal service roads are constructed with geotextile fabric and eight inches of aggregate over compacted subgrade. All pile foundations will be pulled out completely. Underground cables and duct banks will be removed to a depth of three feet. Topsoil will be reapplied to the disturbed area. Soil and topsoil will be de-compacted, and the site will be restored to the pre-construction condition and re-vegetated in accordance with PSC's Drainage Plan.

In all cases, the Applicant, or their subcontractor as applicable, shall ensure all applicable OSHA, security, safety and health requirements are complied with during the removal and decommissioning of the BESS and its related equipment.

The United States Environmental Protection Agency ("U.S. EPA") has guidelines for responsible disposal and recycling of lithium-ion batteries that have reached end of life (Title 40 Code of Federal Regulations Part 273: Standards for Universal Waste Management). Additionally, lithium-ion batteries are classified by the US Department of Transportation (DOT) as Class 9 hazardous materials. All applicable requirements related to the packaging, labelling, transportation, and disposal or recycling of the lithium-ion batteries contained in the Code of Federal Regulations, Title 49, Subchapter C, Parts 171-180, will be followed.

3.2 Reclamation

The Applicant will restore and reclaim the site to the pre-BESS condition consistent with the site lease agreement. The Applicant assumes that most of the site will be returned to farmland after decommissioning through implementation of appropriate measures to facilitate such uses. If no specific use is identified, the Applicant will vegetate the site with a seed mix approved by the local soil and water conservation district or similar agency. The goal of restoration will be to restore natural hydrology and plant communities to the greatest extent practicable while minimizing new disturbance and removal of native vegetation. In addition to the reclamation activities described above for each decommissioning activity, all unexcavated areas compacted by equipment and activity during the decommissioning will be decompacted as needed to ensure proper density of topsoil consistent and compatible with the surrounding area and associated land use. All materials and debris associated with Project decommissioning will be removed and properly recycled or disposed of at off-site facilities.

4.0 Best Management Practices (BMPs)

4.1 Construction Stormwater Practices

During decommissioning, erosion and sediment control BMPs will be implemented to minimize potential for erosion of site soils and sedimentation of surface waters and waters of the state. Because

decommissioning will entail disturbance of more than one acre of soil, the Applicant will prepare a Stormwater Management Plan (SWMP) and Drainage Plan and also obtain coverage with the PSC under the Section 13, Statue 66.0401(11) of the 2025 Assembly Bill 174 prior to initiating soil disturbing activities. Potential BMPs to be implemented during decommissioning activities are described below and will be subject to refinement in the Drainage Plan and SWMP. The decommissioning team will review the permitting requirements at the time of decommissioning and obtain any other necessary permits, which may include a US Army Corps of Engineers (USACE) Section 404 Permit to Discharge Dredged or Fill Material.

4.1.1 Erosion Control

Erosion control measures will be refined based on the standard of practice current at the time the SWMP is developed for decommissioning. All disturbed areas without permanent impermeable or gravel surfaces, or planned for use as crop land, will be vegetated for final stabilization. All slopes steeper than 4:1 should be protected with erosion control blankets. Restoration should include seed application prior to application of the blanket. All slopes 4:1 or flatter should be restored with seed and mulch, which will be disc anchored.

4.1.2 Sediment Control

Sediment controls, such as silt fences, fiber logs, dewatering practices, construction entrances, and sedimentation traps and/or basins will be implemented during construction to prevent the transport of sediment off-site during decommissioning activities. Street sweeping/scraping will also be implemented to mitigate potential tracking of sediment onto public roadways.

4.1.3 Controlling Stormwater Flowing onto and Through the Project

Given the low gradient of the slopes in the Project Area, controlling stormwater flow that enters the Project Area will likely require minimal effort during decommissioning activities. Only newly disturbed areas may require new, temporary stormwater control. If necessary, water may be diverted around the Project site using diversion berms.

4.2 Permitting

All decommissioning and reclamation activities will comply with Federal and State permit requirements. Decommissioning activities that will disturb more than one acre of soil will require coverage under the Wisconsin Pollutant Discharge Elimination System (WPDES) for construction stormwater. The permits will be applied for and received prior to decommissioning construction activities commencing. A SWMP will be developed prior to filing for construction stormwater permit coverage.

If necessary for decommissioning activities, wetlands and waters permits will be obtained from the USACE or the Wisconsin Department of Natural Resources (DNR). A Spill Prevention, Control, and Countermeasure (SPCC) Plan for decommissioning will likely also be required for decommissioning work.

4.3 Health and Safety Standards

Work will be conducted in strict accordance with the Applicant's health and safety plan. The construction contractor hired to perform the decommissioning will also be required to prepare a site-specific health and safety plan. All site workers, including subcontractors, will be required to read,

understand, and abide by the plans. A site safety officer will be designated by the construction contractor to ensure compliance. This official will have stop-work authority over all activities on the site should unsafe conditions or lapses in the safety plan be observed.

5.0 Timeline

Decommissioning of the Project will be initiated if the Project has not produced electricity for a period of up to six months. It is anticipated that the decommissioning activities for the Project can be completed in a 15-week period. The estimated costs for decommissioning are tied to assumptions about the amount of equipment mobilized, the crew sizes, weather and climate conditions, and the productivity of the equipment and crews.

6.0 Decommissioning Costs

The decommissioning costs are calculated using current pricing. In keeping with the requirements of the PSC, the estimate of net costs should be updated periodically to recognize price trends for both decommissioning costs and the salvage and resale values of the components.

There are currently active markets for scrap steel, aluminum, and copper, and used transformers and electrical equipment. Scrap metal prices have been discounted from posted spot prices found on www.scrapmonster.com.

The total estimated cost of decommissioning the Robin BESS Project is approximately $6,585,554 ($32,928 per MW). Estimated salvage/scrap value of the battery storage containers, inverter transformer power stations, and other materials is approximately $826,117. The net decommissioning costs after accounting for resale and salvage values is approximately $5,759,438, or $28,797 per MW.

7.0 Financial Assurance

According to Section 13, Statue 66.0401(7), a financial assurance obligation in an amount equal to the estimated cost of decommissioning a large BESS less the salvage value of the components, as calculated by a 3rd-party licensed engineer. This amount shall be provided in a surety bond, irrevocable line of credit, or parent company guarantee and shall be posted within 15 years of the start of operations of the BESS.

Attachment A

Decommissioning Cost Estimate

Robin BESS Project

	Quantity	Unit	Unit Cost	Total Cost
Mobilization/Demobilization	1	Lump Sum	$421,500.00	$421,500
Mobilization was estimated to be approximately 7% of total cost of other items.				
Permitting				
County Permits	1	Lump Sum	$10,000.00	$10,000
State Permits	1	Lump Sum	$20,000.00	$20,000
Subtotal Permitting				**$30,000**
Decommissioning will require SWPPP and SPCC Plans. Cost is an estimate of the permit preparation cost.				
Battery Energy Storage System (BESS)				
Train Crew in Safety and Hazmat	1	LS	$5,000.00	$5,000
Disconnect Battery Storage Containers	200	Each	$1,571.20	$314,240
Remove and Pack Batteries from Containers for Recycling	200	Each	$2,420.39	$484,078
Recycle Li-Ion Batteries (Includes Hauling)	11,640,310	lbs	$0.30	$3,492,093
Haul Storage Containers to Metal Recycler (City, St)	200	Each	$222.94	$44,589
Remove HVAC system/Auxiliary Equipment	200	Each	$196.40	$39,280
Haul Auxiliary Equipment/Racking to Metal Recycler (City, St)	2,646	Tons	$10.67	$28,233
Remove Equipment Skids	50	Each	$1,210.20	$60,510
Haul Inverters/Transformers to Transformer Disposal	50	Each	$73.25	$3,663
Remove Steel Foundation Posts (Storage Containers and Skids)	2,000	Each	$16.90	$33,800
Haul Steel Posts to Metal Recycler (City, ST)	180	Tons	$10.67	$1,921
Removal of DC Collector System Cables (copper)	2,000	LF	$2.29	$4,580
Removal of Underground AC Collector Cables (aluminum)	2,280	LF	$2.29	$5,221
Load and Haul Cables for Recycling	4.9	Tons	$12.27	$60
Decompact BESS Site	3.8	Acres	$249.40	$948
Grade BESS Site	165,842	SF	$0.07	$11,609
Subtotal BESS				**$4,529,824**
Civil Infrastructure				
Remove Gravel Surfacing from Road	2,708	Cubic Yards (BV)	$3.00	$8,124
Haul Gravel Removed from Road to Landfill (Bristol, WI)	3,385	Cubic Yards (LV)	$16.62	$56,259
Dispose of Gravel Removed from Road (Landfill uses as Daily Cover)	4,387	Tons	$81.00	$355,347
Remove Geotextile Fabric from Beneath Access Roads	14,216	Square Yards	$1.40	$19,902
Haul Geotech Fabric to Landfill (Bristol, WI)	3.9	Tons	$12.19	$48
Dispose of Geotech Fabric	3.9	Tons	$81.00	$316
Grade Road Corridor (Re-spread Topsoil)	4,569	Linear Feet	$2.27	$10,372
Decompact Road Area	2.9	Acres	$249.40	$723
Remove and Load Gravel Surfacing from BESS Site (Excluding Roads)	4,095	Cubic Yard (BV)	$3.00	$12,285
Haul Gravel Removed from BESS Site	5,119	Cubic Yard (LV)	$16.62	$85,078
Dispose of Gravel from BESS Site (Use as Daily Cover)	7,679	Tons	$81.00	$621,999
Remove Chainlink Fence	3,927	Linear Feet	$7.52	$29,531
Haul Chainlink Fence to Metal Recycling (Burlington, WI)	21	Tons	$10.67	$224
Remove/Haul/Dispose Structures from Stormwater Basins	1	Each	$5,000.00	$5,000
Process to Size, Load, and Haul Steel Water Tank for Recycling	2	Each	$2,010.00	$4,020
Grade Basin Areas	1	LS	$7,092.15	$7,092
Clear and Grub Vegetative Buffer	0.8	Acres	$5,768.78	$4,615
Haul Cleared Vegetation to Landfill (Bristol, WI)	20	Tons	$12.19	$244
Dispose of Cleared Vegetation	20	Tons	$81.00	$1,620
Subtotal Civil Infrastructure				**$1,222,798**
Civil removal costs are a combination of MNDOT unit costs where applicable, RSMeans cost for Kenosha, WI, and industry standards provided to Westwood.				

Substation				
Disassemble and Remove Main Power Transformer(s)	1	Each	$4,500.00	$4,500
Haul Transformer(s) Offsite	1	Each	$293.01	$293
Haul Transformer Oil Offsite	12,830	Gallons	$0.06	$752
Excavate Around Transformer Foundation(s)	1	Each	$1,884.17	$1,884
Remove Complete Transformer Foundation(s)	83	Cubic Yards	$154.82	$12,850
Backfill Excavation Area from Transformer Foundation Removal	168	Cubic Yards	$43.01	$7,226
Haul Concrete (Foundations Transformer, Switch Gear, etc.)	168	Tons	$9.10	$1,529
Demolish Substation Site Improvements (fences, etc)	1	LS	$3,500.00	$3,500
Demolish Control Building and Foundation	1	LS	$12,000.00	$12,000
Remove Medium/High Voltage Equipment	1	LS	$3,500.00	$3,500
Remove Structural Steel Substation Frame	1	LS	$3,500.00	$3,500
Remove Copper Ground Grid	1	LS	$5,123.35	$5,123
Load Copper Wire	20,000	Feet	$0.72	$14,400
Haul Copper Wire to Recycling	6.5	Tons	$10.67	$69
Haul - Demolition Materials, Removed Equipment & Structural Steel	10	Tons	$10.67	$107
Dispose of Demolition Materials & Removed Equipment	10	Tons	$81.00	$810
Remove and Load Gravel Surfacing from Substation Site	1,119	Cubic Yards (BV)	$3.00	$3,357
Haul Gravel Removed from Substation Site	1,399	Cubic Yards (LV)	$16.62	$23,251
Dispose of Gravel from Substation Site (Use as Daily Cover)	1,813	Tons	$81.00	$146,853
Grade Substation Site	1	LS	$5,123.35	$5,123
Erosion and Sediment Control at Substation Site	518	LF	$3.97	$2,056
Decompact Substation Site (Subsoiling)	1.4	Acres	$249.40	$349
Till Substation to Agricultural Condition	1.4	Acres	$216.22	$303
Subtotal Substation				**$253,336**
Site Restoration				
Stabilized Construction Entrance	1	Each	$2,000.00	$2,000
Perimeter Controls (Erosion and Sediment Control)	1,964	Linear Feet	$3.97	$7,797
Permanent Seeding on Roadway Areas	2.9	Acres	$1,419.73	$4,117
Till BESS Site to Agricultural Condition	6.3	Acres	$216.22	$1,368
Subtotal Site Restoration				**$15,282**
Project Management				
Project Manager	15	Weeks	$3,749.00	$56,235
Superintendent (half-time)	15	Weeks	$1,762.50	$26,438
Field Engineer (half-time)	15	Weeks	$1,634.50	$24,518
Clerk (half-time)	15	Weeks	$375.00	$5,625
Subtotal Project Management				**$112,815**
Standard industry weekly rates from RSMeans.				
Subtotal Demolition/Removals				**$6,585,554**
Salvage				
Fencing (Chain Link)	21	Tons	$217.72	$4,572
Steel Posts	180	Tons	$217.72	$39,190
Transformers and Inverters	450,000	Pounds	$0.40	$180,000
Substation Transformers (Core and Coils)	327,162	Pounds	$0.40	$130,865
Substation Transformers (Tanks and Fittings)	110	Tons	$217.72	$23,949
Transformers (Oil)	53,830	Gallons	$0.70	$37,681
Substation Ground Grid (Copper)	13,000	Pounds	$3.85	$50,050
BESS Containers	1,587	Tons	$217.72	$345,590
DC Collection Lines (Copper)	4,000	Pounds	$1.70	$6,800
AC Collection Lines (Aluminum)	5,700	Pounds	$0.87	$4,959
Ground Conductor Lines (Copper)	1,448	Pounds	$1.70	$2,461
Subtotal Salvage				**$826,117**
Salvage values are a combination of the following factors; current market metal salvage prices, current secondary market for solar panel				
Total Demolition Minus Salvage				**$5,759,438**

Notes:

1. Prices used in analysis are estimated based on research of current average costs and salvage values.
2. Prices provided are estimates and may fluctuate over the life of the project.
3. Contractor means and methods may vary and price will be affected by these.

Cost Estimate Assumptions

To develop a cost estimate for the decommissioning of the Robin BESS Project, Westwood engineers made the following assumptions and used the following pricing references. Costs were estimated based on current pricing, technology, and regulatory requirements. The assumptions are listed in order from top to bottom of the estimate spreadsheet. When publicly available bid prices or Wisconsin Department of Transportation bid summaries were not available for particular work items, we developed time- and material-based estimates considering composition of work crews and equipment and material required. While materials may have a salvage value at the end of the Project life, the construction activity costs and the hauling/freight costs are separated from the disposal costs or salvage value to make revisions to salvage values more transparent.

1. Project quantities are based on Robin BESS Preliminary BESS Layout dated October 2025.
2. A project of this size and complexity requires a full-time project manager with part-time support staff.
3. RS Means pricing was used for the Kenosha, Wisconsin region for the 3rd quarter of 2025.
4. Common labor will be used for the majority of tasks, supplemented by electricians, steel workers, and equipment operators where labor rules may require. The labor rates reflect union labor rates.
5. Mobilization was estimated at approximately 7% of total cost of other items.
6. Permit applications will require the preparation of a SWPPP and an SPCC Plan.
7. Gravel removal was estimated on a time and material basis. Since the material will not remain on-site, a hauling cost is added to the removal cost. Clean aggregate can typically be used as “daily cover” at landfills without incurring a disposal cost. The road gravel may also be used to fortify local driveways and roads, lowering hauling costs but incurring placing and compaction costs. The hauling costs to a landfill represents an upper limit to costs for disposal of the road gravel.
8. The selected disposal facility (WM – Pheasant Run Security Landfill) is located in Bristol, Wisconsin, approximately 14.5 miles from the Project site. Hauling costs to the landfill are estimated to be $12.19 per ton.
9. Erosion and sediment control along road reflects the cost of silt fence on the downgradient side of the proposed roads. As such, the length of controls has been estimated to be approximately 50% of the road length.
10. Topsoil is required to be stockpiled on-site during construction, so no topsoil replacement is expected to replace the road aggregate. Subsoiling cost to decompact roadway areas is estimated as $249.40 per acre, and tilling to an agriculture-ready condition is estimated as $216.22 per acre.
11. The selected metal recycling facility (Redmer & Sons Recycling) is located in Burlington, Wisconsin, approximately 7.3 miles from the Project site. Hauling costs to the recycling facility are approximately $240.02 per ton mile, or $10.67 per ton.
12. The transformers contain copper windings that have significant salvage value. They are typically oil filled, but most transformer recyclers will accept the transformers with oil. The estimated costs include removal of metal frame and conduits feeding the equipment.
13. Medium voltage (MV) equipment and SCADA equipment are mounted on the same equipment skids as the inverters and transformers, and they are enclosed in weatherproof cabinets. Their size requires light equipment to remove them. The costs for the removal of the pile foundations are included in the “Remove Steel Foundation Posts” estimate.

14. The underground collector system cables are placed in trenches with a minimum of 18 inches of cover. Several cables/circuits are placed side by side in each trench. The conduits and cables can be removed by trenching.
15. Perimeter control pricing is based on silt fence installation around downgradient sides of the project perimeter.
16. Metal salvage prices (steel, aluminum, copper) are based on June 2025 quotes from www.scrapmonster.com for the Midwest Region. Posted prices are three months old. These prices are based on delivery to the recycling facility with the material prepared to meet size, thickness, cleanliness, and other specifications.
17. A reduction of 25% has been taken from all pricing obtained from www.scrapmonster.com to reflect the processing by the contractor to meet the specifications.
18. The salvage value for steel uses pricing from the Midwest Region of the United States at $320 per metric ton, or $290.30 for U.S. ton.
19. There is an active market for reselling and recycling electrical transformers and inverters with several national companies specializing in recycling. However, we have assumed that the electrical equipment will be obsolete at the time of decommissioning, so we have based the pricing on a percentage of the weight that reflects the copper windings that can be salvaged. Pricing was used for Copper Transformer Scrap for the Midwest Region of the United States, at $0.53 per pound.
20. The collection lines are priced assuming copper conductor wire for the direct current circuits and aluminum wire for the alternating current circuits. The prices reflect a reduced yield of copper or aluminum resulting from the stripping of insulation and other materials from the wire prior to recycling. The estimate uses the Midwest prices of #2 insulated copper wire with a 50% recovery rate ($2.26 /pound) and E.C. Aluminum Wire ($1.16/pound).
21. Care to prevent damage and breakage of equipment, PV modules, inverters, capacitors, and SCADA must be exercised, but removal assumes unskilled common labor under supervision.

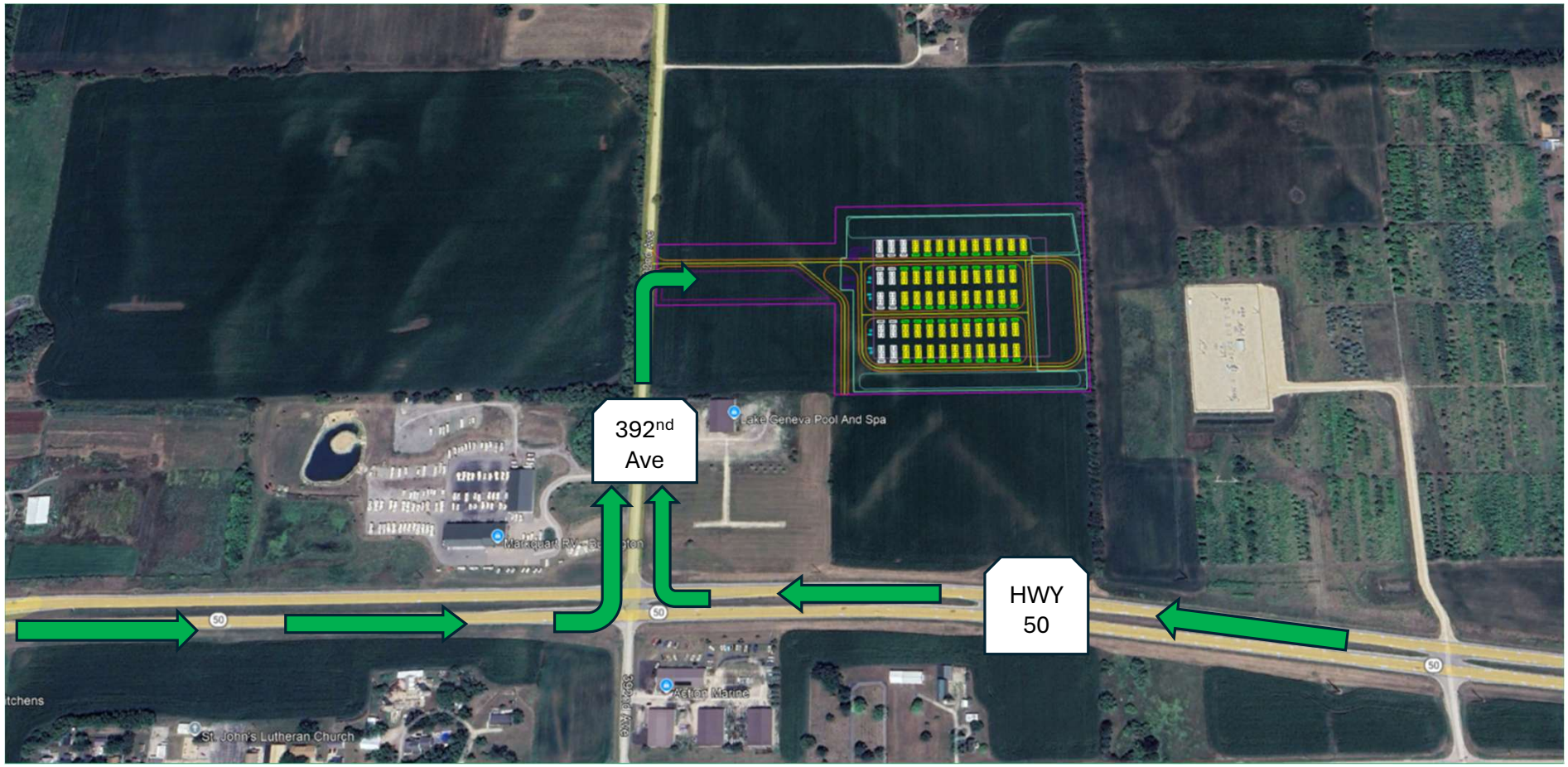
APPENDIX D

Exhibit I

Haul Route Map

Haul Route Plan

All construction deliveries will arrive from either the East or West on Highway 50, turn North onto 392nd Ave, and then enter the site.



APPENDIX D

Exhibit J

Joint Development Agreement

JOINT DEVELOPMENT AGREEMENT

(Robin Battery Energy Storage System)

This Joint Development Agreement ("Agreement") is made by and between Robin Energy Storage LLC, a Delaware limited liability company, ("Robin BESS") and the Town of Wheatland in Kenosha County, Wisconsin ("Town") (collectively, the "Parties"), as of the ___ day of _____, 2025.

RECITALS

WHEREAS, Robin BESS holds an option to purchase the real property legally described on **Exhibit A** (the "Property"); and

WHEREAS, Robin BESS intends to develop, construct and operate a Battery Energy Storage System ("BESS") project to be known as the Robin BESS Project ("Project") on all or a portion of the Property, such portion of Property actually acquired by Robin BESS for the Project to be known as the "Project Property"; and

WHEREAS, Robin BESS desires to support the valuable government services and benefits that will be provided to it by the Town, which services and benefits directly or indirectly relate to the public health, safety, and welfare, and which include, but are not limited to: police and fire protection, paved roads, and other benefits associated with living in an organized community; and

WHEREAS, Robin BESS desires to agree for itself and on behalf of its successors to make certain support payments ("Support Payments") to the Town in recognition of the services and benefits referred to herein, subject to certain exceptions described below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

1. TOWN OBLIGATIONS.

A. Services Furnished to Project.

The Town shall furnish governmental services and benefits to the Project Property and the Project of the same type, and to the same extent, as are furnished from time to time, without cost or charge (except by means of property tax and authorized fees and charges), to other similarly situated commercial buildings and projects in the Town. Nothing in this Agreement shall be construed to give Robin BESS or its successors and assigns a contractual right to specific governmental services, or to impose upon the Town any additional duties, it being the Parties' intent that the Town provide public services to the Project and the Project Property subject to the same terms and conditions as apply to other properties owned by citizens or the public generally. Such services and benefits include, but are not limited by specific enumeration herein, those typically covered by the property tax such as police protection, and on public rights-of-way, snow removal. The Town will not have breached its obligations hereunder if it is prevented from providing benefits and/or services to the Project or the Project Property because of typical *force majeure* reasons (e.g. war, flood, fire, labor dispute, supply shortage, act of God, natural disaster, etc.), because of budgetary constraints, or because any person or entity asserts a right which prevents delivery of such benefits and/or services.

B. Good Faith Review.

The Town acknowledges the benefits of the Project and agrees that it will review and process in a good faith, timely, and impartial manner applications by Robin BESS to Kenosha County, Wisconsin ("County") and/or the Town for permits or approvals necessary to construct

and operate the Project. These permits and approvals include, but are not limited to, a certified survey map of the Project Property, an amendment to the zoning district classification for the Project Property, a conditional use permit for the Project, and a revision to the Town and County comprehensive plans (collectively, the "Local Approvals"). Not later than fifteen (15) days before the Town comments on or participates in the County's review of any Local Approval application, including but not limited to the Town's participation in a public hearing on a Local Approval application, the Town shall provide Robin BESS a written description of any conditions of approval and/or restrictions on the Project that the Town will recommend to the County on such Local Approval application.

2. SUPPORT PAYMENTS.

A. Amount of Support Payments.

Beginning in the calendar year starting after the Project commences commercial operations on the Project Property and for any calendar year during the Term (hereafter defined), Robin BESS shall make Support Payments to the Town in the amounts described on **Exhibit B**. Robin BESS shall provide the Town written notice of the date the Project commences commercial operation no later than sixty (60) days after that date.

B. Adjustments to Support Payments.

If, during any calendar year of the Term, Robin BESS causes a shared utility revenue payment to be made from the State of Wisconsin to the Town under Wisconsin statute Chapter 79 or similar state or local laws ("Shared Revenue Payment"), Robin BESS shall reduce its Support Payment to the Town by the value of the Shared Revenue Payment made to the Town during that calendar year.

C. Payment Due Date.

Robin BESS shall pay Support Payments to the Town, for each calendar year in which Support Payments are due herein, on or before April 15th of the year following the calendar year for which the Support Payment was calculated.

D. Use.

The Town may use and expend Support Payments hereunder for any legal purpose that the Town chooses.

3. SUSPENSION OF SUPPORT PAYMENTS.

Notwithstanding anything to the contrary in this Agreement, Robin BESS is not required to make a Support Payment to the Town for any calendar year during which any of the following apply:

A. No Project operations are conducted by Robin BESS or any successor owner or operator of the Project on the Project Property;

B. With the exception of the year the Project reaches commercial operation, no electrical power is commercially discharged by the Project for 180 days of the calendar year or more;

C. With the exception of the year the Project reaches commercial operation, the Project's maximum electric storage or grid injection capacity has been reduced to below 100 megawatts for 180 days of the calendar year or more;

D. No contract for the sale of electrical power from the Project has been fully executed and remains in full force and effect; or

E. The Project was damaged or destroyed and was not restored to its original electric storage or injection capacity for 180 days of the calendar year or more.

4. DESIGN REQUIREMENTS.

Robin BESS shall include, as part of the Project, two 30,000-gallon water storage tanks and an underground pipe to disperse water from such storage tanks. The Town may propose additional reasonable design requirements to Robin BESS for the Project, so long as such design requirements do not interfere with the commercial viability or technical feasibility of the Project. Robin BESS shall work in good faith to incorporate reasonable design requirements requested by the Town, to the extent practicable.

5. AMENDMENT.

This Agreement may be modified and amended from time to time as the Town and Robin BESS mutually agree in writing.

6. SEVERABILITY; GOVERNING LAW.

If any provision hereof is duly held by a court of competent jurisdiction to be invalid with respect to any circumstance or otherwise, the remainder of this Agreement and/or the application of this Agreement to any other circumstance, shall not be affected thereby. The laws of the State of Wisconsin shall be the governing law with respect to this Agreement.

7. BINDING EFFECT/NOTICE.

This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their successors and assigns. Neither Robin BESS nor its successors or assigns shall have any liability for obligations accruing under this Agreement with respect to any portions of the Project Property for any period other than during their ownership and/or occupancy.

8. ASSIGNMENT.

Robin BESS may assign its rights, obligations, and interests pursuant to this Agreement without the Town's consent upon written notice to the Town. Upon such assignment by Robin

BESS, the Town agrees to look solely to each such assignee with respect to the payment of such assignee's Support Payments, and shall release the assignor of any other rights, obligations, and interests from any and all liability with respect to Support Payments. To the extent of an occurrence and continuance of a default caused by the assignee under this Agreement, the Town acknowledges and agrees that the Town shall have the right to exercise its remedies under this Agreement with respect only to that assignee of the Project under which a default has occurred and is continuing, and the non-defaulting assignor shall not be subject to any such remedies and this Agreement with respect to such non-defaulting assignor shall remain in full force and effect.

9. COUNTY AND TOWN ZONING REGULATIONS AND COUNTY LAWS.

In the event that the County or the Town modifies or supplements existing ordinances, or enact new ordinances, that prohibit, limit, provide infeasible standards for, or otherwise materially burden the commercially reasonable development, construction, or operation of the Project; including, without limitation, any such Town or County Zoning Regulations or other ordinances requiring supplemental or additional building permits for construction of BESS facilities, electronic collection lines, access roads, temporary construction areas, operations and maintenance facilities, and other infrastructures relating to any and all phases of the Project; then, no further Support Payments shall be due hereunder and Robin BESS shall have the right to terminate this Agreement upon thirty (30) days written notice to the Town.

10. TOWN ANNEXATION.

In the event that the Project Property is annexed into a different municipality and is no longer within the Town's municipal boundaries; then, no further Support Payments shall be due hereunder and Robin BESS shall have the right to terminate this Agreement upon thirty (30) days written notice to the Town.

11. TERM.

This Agreement shall terminate twenty (20) years after the Project commences operations on the Project Property (the "Term"), but until then, be binding on Robin BESS and all its successors and assigns.

12. AUTHORITY.

Robin BESS represents and warrants to the Town that its agents executing this Agreement have been duly authorized to so execute and to cause Robin BESS to enter this Agreement, and that Robin BESS has obtained all requisite consents and approvals concerning the same. The Town represents and warrants to Robin BESS that its agents executing this Agreement have been duly authorized to so execute and to cause the Town to enter this Agreement, that the Town has obtained all requisite consents and approvals concerning the same, and that the Town's execution of this agreement will not violate any municipal, state, or federal law or regulation, or any judicial interpretation or decision.

13. COUNTERPARTS.

This Agreement may be signed in counterparts. Facsimile or email signatures shall be accepted as originals.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by duly authorized representatives as of the date and year first written above.

TOWN OF WHEATLAND

_____

_____

ROBIN ENERGY STORAGE LLC

By: _____

Name: _____

Its: _____

EXHIBIT A

Legal Description of the Property

COMMENCING AT THE NORTHWEST CORNER OF SAID NORTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG THE WEST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 972.29 FEET, TO THE NORTHWEST CORNER OF LOT 1 AS SHOWN IN THE CERTIFIED SURVEY MAP NUMBER 3120 RECORDED AS DOCUMENT NO. 1984778 WITH THE COUNTY OF KENOSHA; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, ALONG THE NORTH LINE OF SAID LOT 1, A DISTANCE OF 33.01 FEET, TO THE POINT OF BEGINNING; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, CONTINUING ALONG SAID NORTH LINE, A DISTANCE OF 628.63 FEET, TO THE NORTHEAST CORNER OF LOT 1 AS SHOWN IN AFOREMENTIONED CERTIFIED SURVEY MAP NUMBER 3120; THENCE SOUTH 00 DEGREES 40 MINUTES 37 SECONDS EAST, ALONG THE EAST LINE OF SAID LOT 1, A DISTANCE OF 350.00 FEET TO THE SOUTHEAST CORNER OF SAID LOT 1; THENCE NORTH 88 DEGREES 20 MINUTES 20 SECONDS EAST, A DISTANCE OF 879.80 FEET, TO THE EAST LINE OF THE SAID WEST 13 ACRES; THENCE NORTH 00 DEGREES 32 MINUTES 07 SECONDS WEST, ALONG SAID EAST LINE OF THE WEST 13 ACRES, A DISTANCE OF 733.81 FEET; THENCE SOUTH 88 DEGREES 20 MINUTES 20 SECONDS WEST, A DISTANCE OF 881.61 FEET, TO THE EAST LINE OF THE WEST HALF OF THE NORTHWEST QUARTER OF THE SOUTHWEST QUARTER; THENCE SOUTH 00 DEGREES 40 MINUTES 37 SECONDS EAST, ALONG SAID EAST LINE, A DISTANCE OF 147.05 FEET; THENCE SOUTH 88 DEGREES 20 MINUTES 20 SECONDS WEST, A DISTANCE OF 628.54 FEET TO THE EASTERLY RIGHT OF WAY LINE FOR 392ND AVENUE; THENCE SOUTH 00 DEGREES 39 MINUTES 16 SECONDS EAST, ALONG SAID EAST RIGHT OF WAY LINE, A DISTANCE OF 236.72 FEET TO THE POINT OF BEGINNING. SAID LOT CONTAINS 795,341 SQUARE FEET OR 18.259 ACRES, MORE OR LESS, AND IS SUBJECT TO ALL EASEMENTS, RESTRICTIONS, AND RESERVATIONS OF RECORD, IF ANY.

EXHIBIT B

Table of Support Payments

Project Operation Year	Projected Payment
1.	$1,000,000
2.	$400,000
3.	$400,000
4.	$400,000
5.	$400,000
6.	$400,000
7.	$400,000
8.	$400,000
9.	$400,000
10.	$400,000
11.	$400,000
12.	$400,000
13.	$400,000
14.	$400,000
15.	$400,000
16.	$400,000
17.	$400,000
18.	$400,000
19.	$400,000
20.	$400,000