

KCE MI 4 Project

Blendon Township Planning Commission Meeting

December 1, 2025



Introduction

Agenda

Key Capture Energy

- Team Introduction
- Key Capture Energy Introduction
- Project Timeline
- Site Plan Overview
- Energy Storage 10
- Overview of Key Public Concerns

Fire & Risk Alliance

- Public Health and Safety Expert Presentation

ERM

- Groundwater Expert Presentation

Team

Developer - Key Capture Energy

- Joel Vyduna / Executive Vice President - Commercial & Technology
- Brian Madigan / Lead Project Developer
- Ben Gorman / Project Developer
- Matthew Ragsdale / Associate Developer

BESS Fire Safety Expert - Fire and Risk Alliance

- Andy Blum, Principal Fire Protection Engineer

Civil, Groundwater, & Sound Engineering Expert - ERM

- Wayne Sicora, P.E., Principal Engineer
- Tony Agresti, Principal Consultant

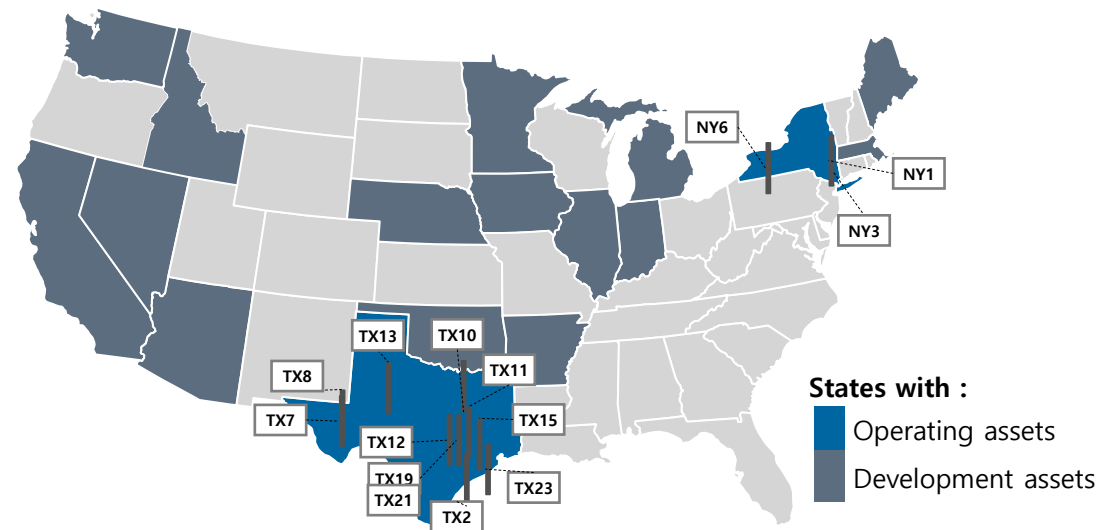
Local Counsel - Dickinson Wright

- Michael Vogt, Zoning Attorney

KCE is one of the oldest and most experienced BESS developers and owners

Founded 2016	Albany & Houston Offices	~85 Employees
14 Operating Projects	18 State Footprint	Top 5 Stand- Alone BESS Operator

— KCE operating and development assets —



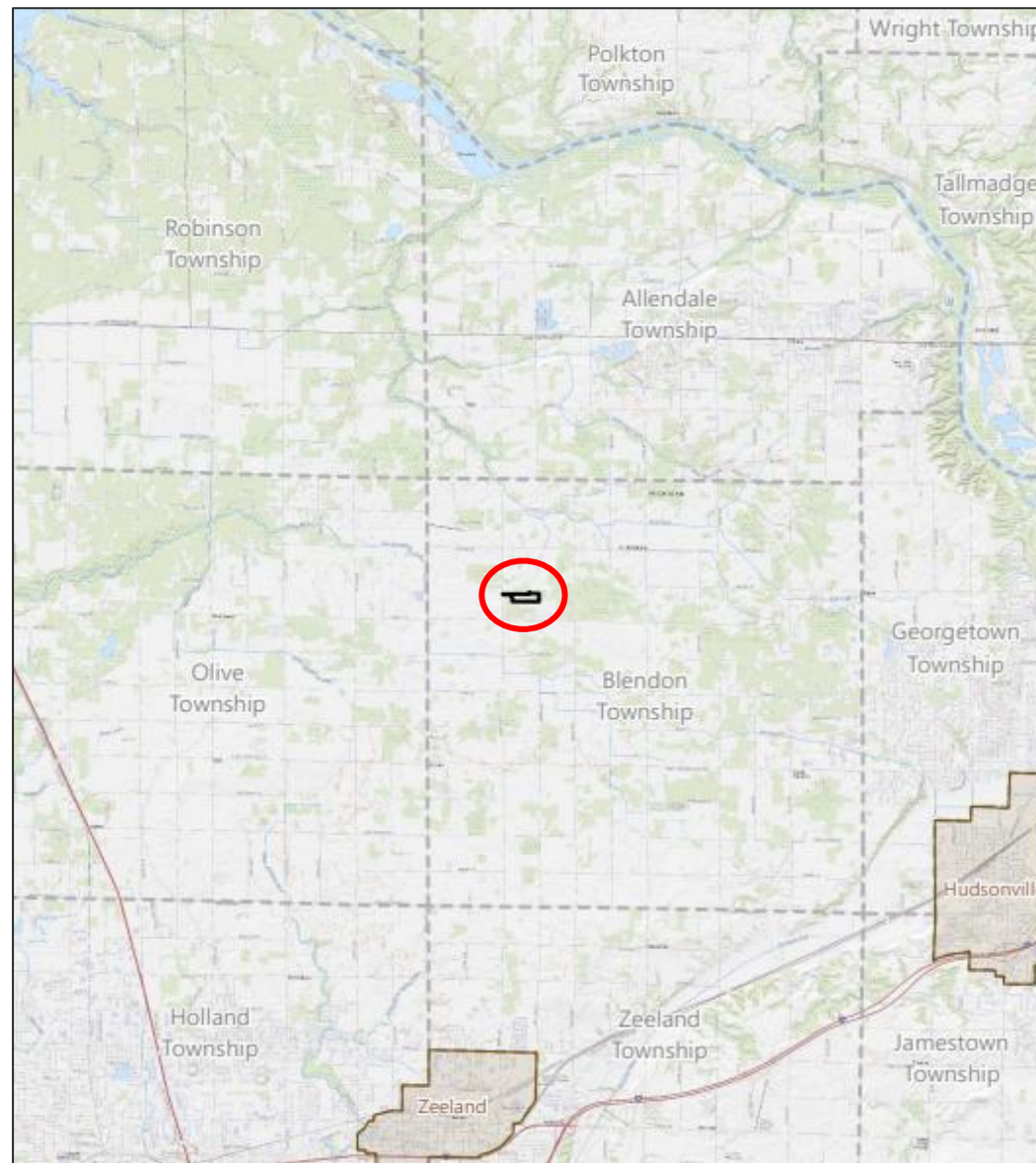
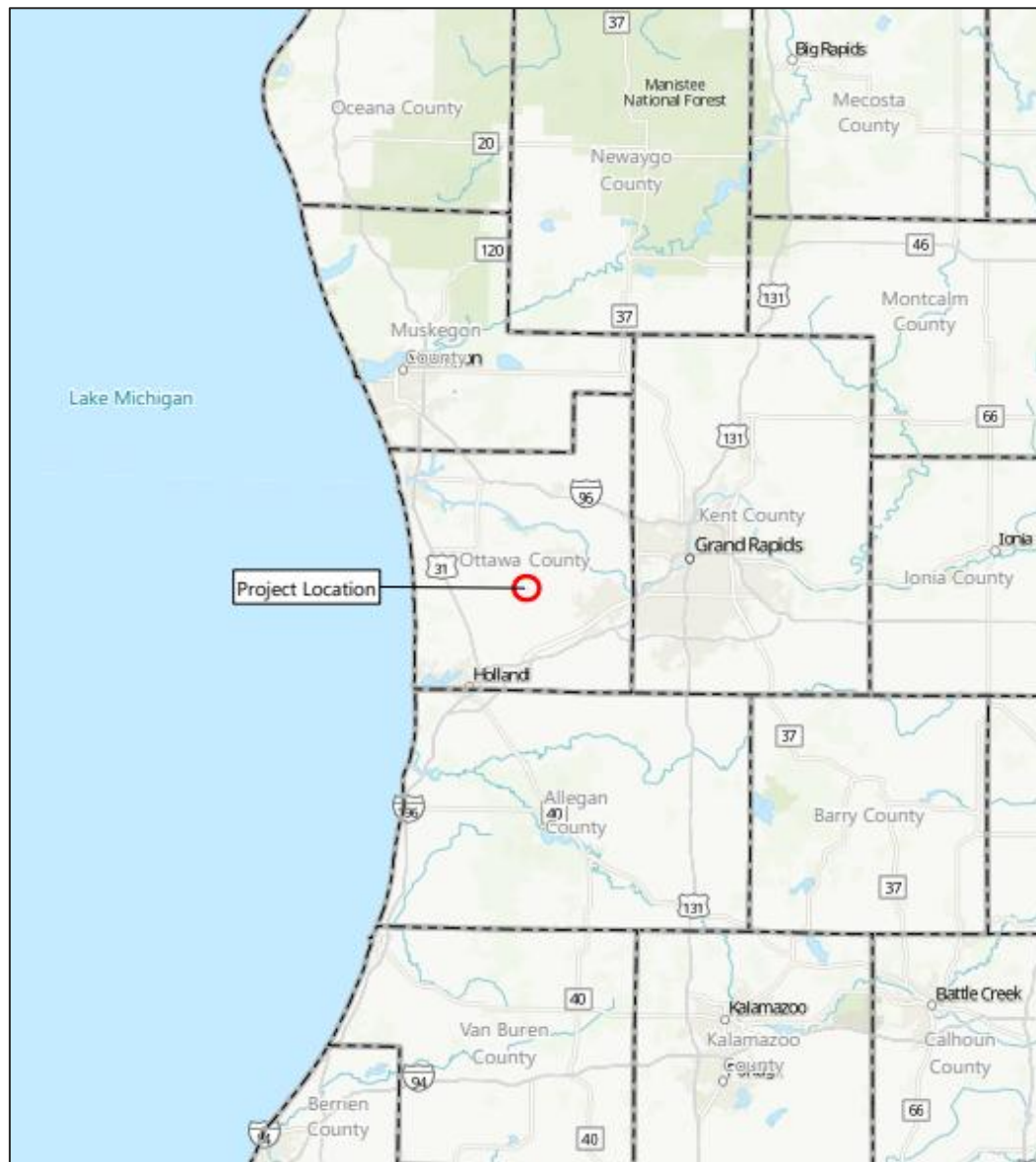
KCE MI 4 Project Timeline

A Timeline of Key Meetings and Milestones:

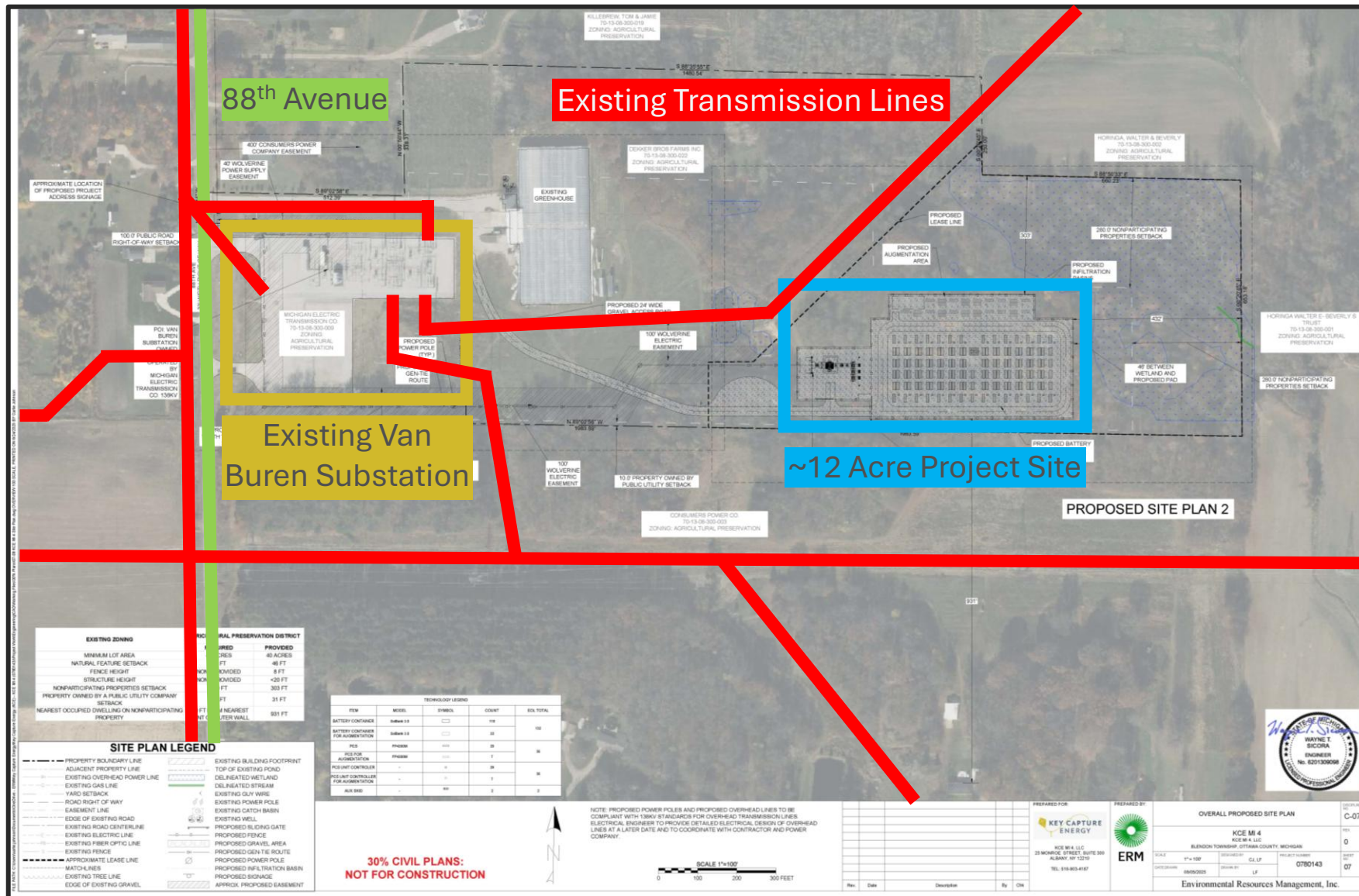
- 08/01/22: Lease Signed
- 09/12/22: Electrical Interconnection Request filed
- 05/07/25: Pre-Application Conference with Township for CUP Submittal
- 06/18/25: Meeting with Township Fire Department
- 07/29/25: KCE Hosted Open House
- 08/05/25: Meeting with Ottawa County Office of Emergency Management
- 08/12/25: KCE shares Project FAQ and Response to Open House
- 08/28/25: CUP Application submitted
- 09/04/25: Meeting with Ottawa County Office of Emergency Management
- 09/15/25: Meeting with Ottawa County Drain Commission, County Commissioners, and Blendon Township
- 09/16/25: KCE Office Hours / Community Drop-In for Q&A
- 10/23/25: KCE submitted Community Risk Assessment / Plume Study
- 11/05/25: Blendon Township Planning Commission Meeting

Site Plan Overview

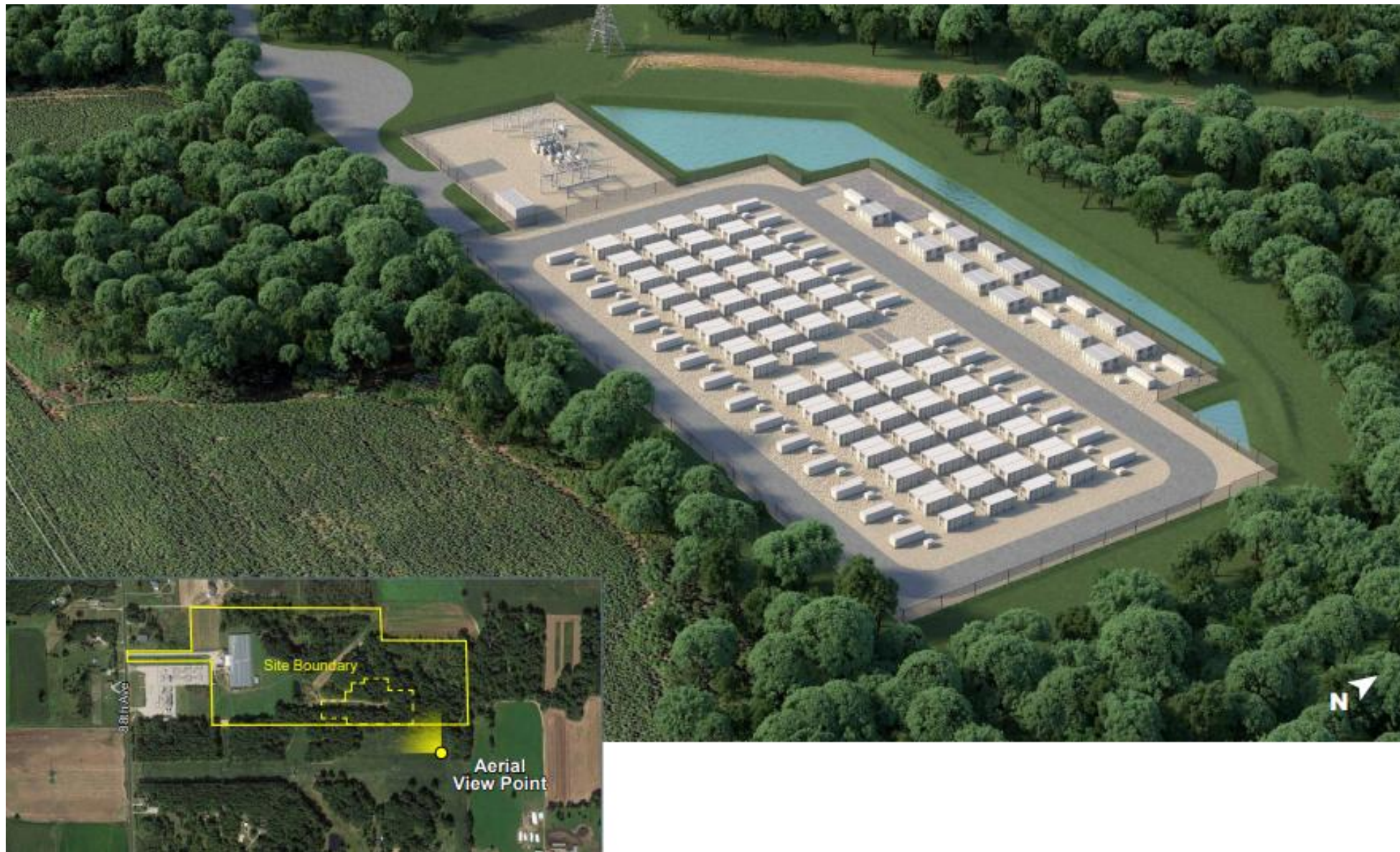
Regional Project Location



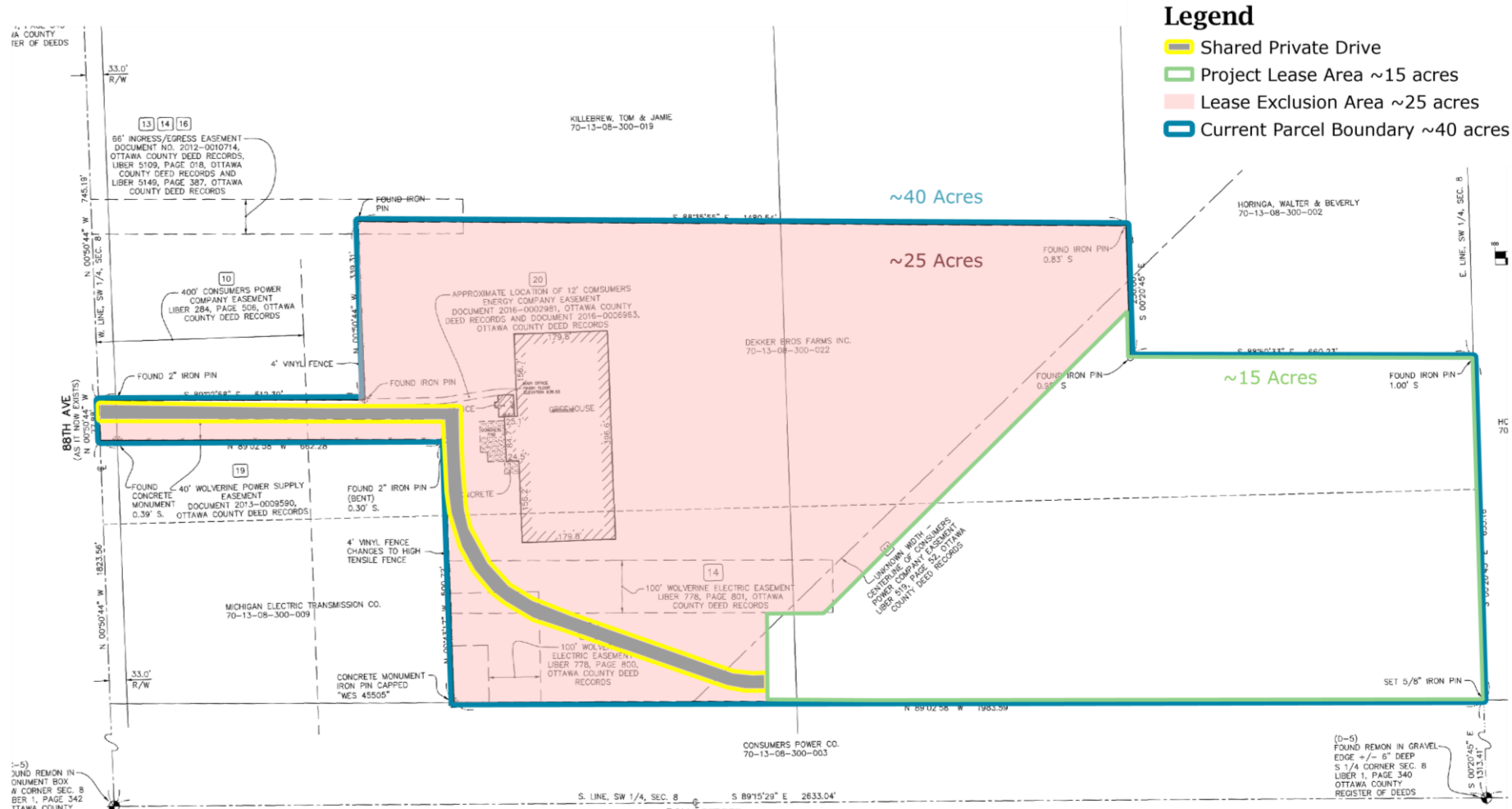
Project Site Plan



Project Aerial View



Approximate Depiction of Future Parcels After Land Division



LEGEND

- FOUND SECTION CORNER
- SET 5/8" X 30" CAPPED IRON BEAD STAMPED "PC 57609"

PARCEL AREA:

GROSS 1,740,908 SQ. FT. OR 39,966 AC.±
 R.O.W. 1,248 SQ. FT. OR 0.029 AC.±
 1,742,153 SQ. FT. OR 40,000 AC.±

I HEREBY CERTIFY THAT THE INFORMATION SHOWN HEREON IS THE RESULT OF A TRUE AND ACCURATE BOUNDARY SURVEY PERFORMED UNDER MY SUPERVISION DURING DECEMBER 2020 AND MEETS THE REQUIREMENTS OF P.A.

Garcia Surveyors, Inc.

JOB NAME:
8284 88TH AVE



Energy Storage System Basics

Lithium-Ion BESS is a widely-deployed and proven technology

- 1976** Invented by Exxon
- 1991** Commercialized by Sony for consumer electronics
- 2000s** Early small-scale BESS built by telecom companies
- 2009** First large-scale BESS built by the utility AES
- 2013** Beginning of rapid deployment worldwide
- 2025** ~6,000 utility-scale systems worldwide (~1,000 in the US)

Components of a modern BESS using LFP chemistry

Materials → Cells → Modules → Racks → Blocks → Systems

- Aluminum
- Copper
- Iron
- Carbon
- Plastic
- Phosphate
- Lithium Salts
- Solvents



No Heavy Metals

No Rare Earths

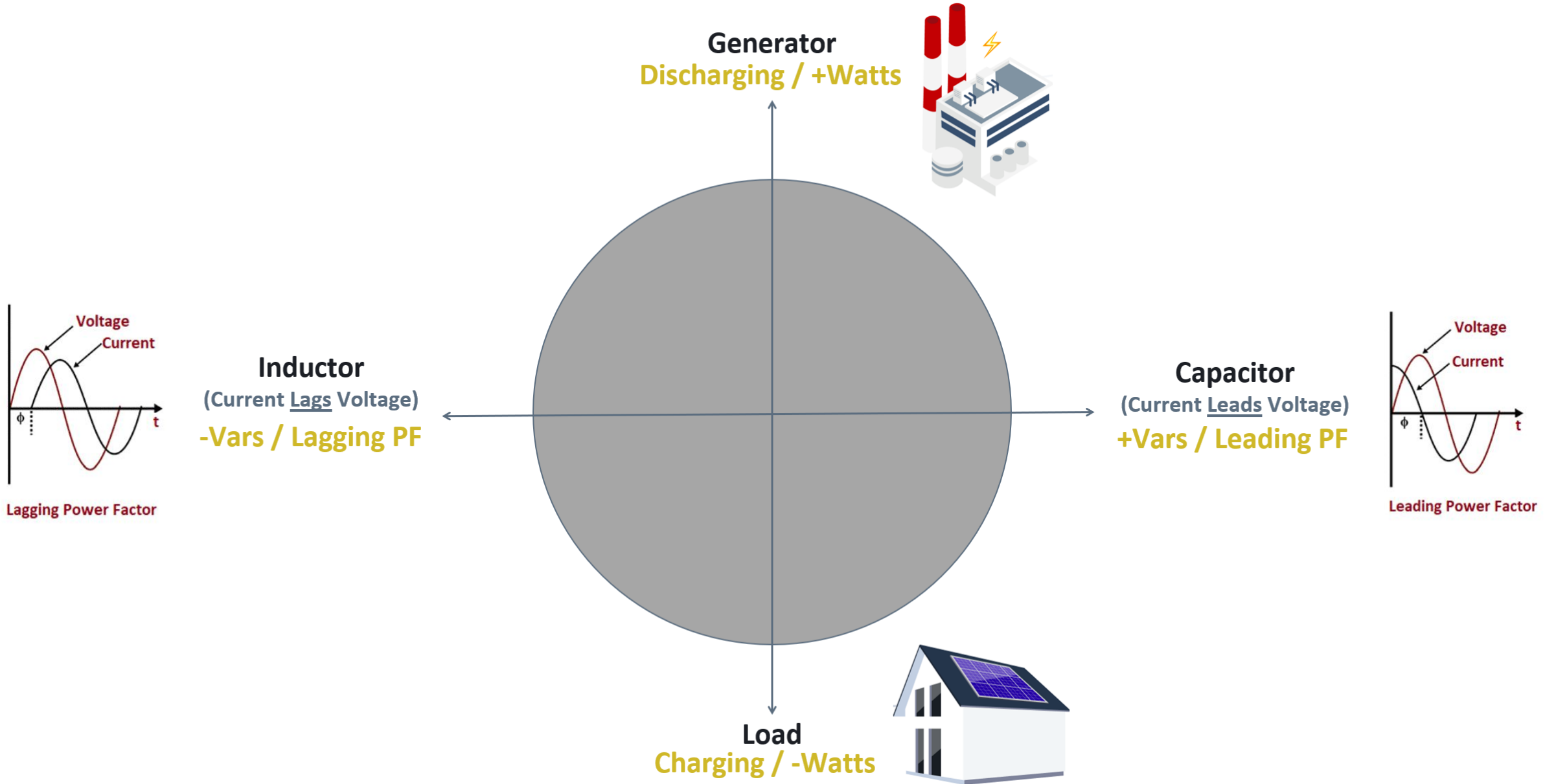
What does energy storage do?

Every industry / system needs a buffer in the form of storage

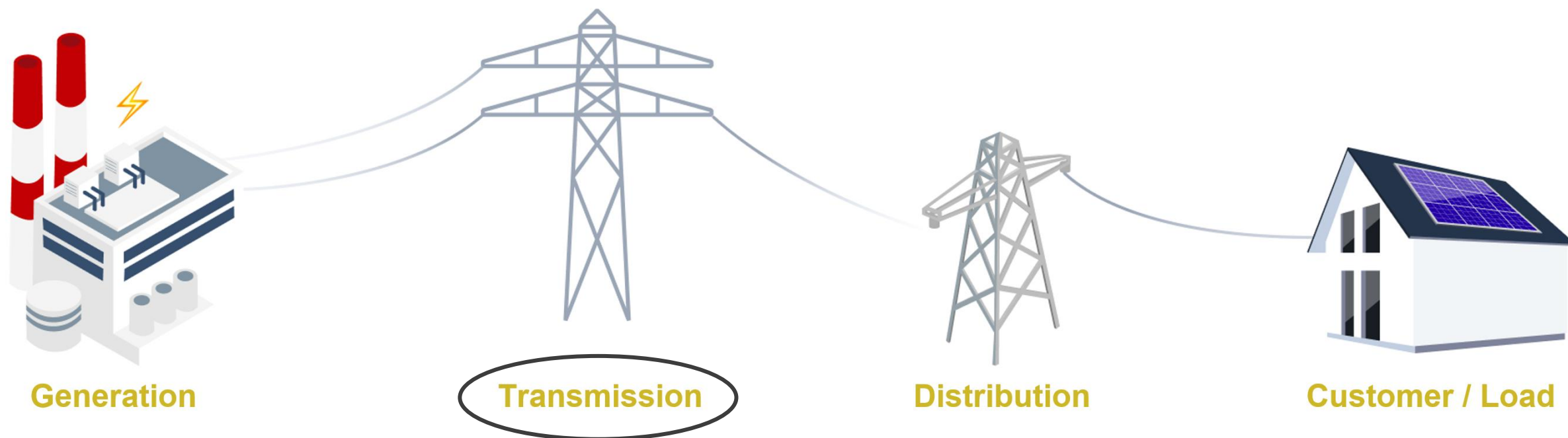
- Meijer needs warehouses
- Stormwater needs retention ponds
- Computers need hard drives
- Coal power plants need coal piles
- Cars need parking lots
- Grain needs silos
- Communities need water towers

Up until the mid 2010s, the electric power grid was the only industry / system that had to balance supply and demand on an instantaneous basis. Energy storage fixes this.

A BESS can do useful things that no other electricity resource can do

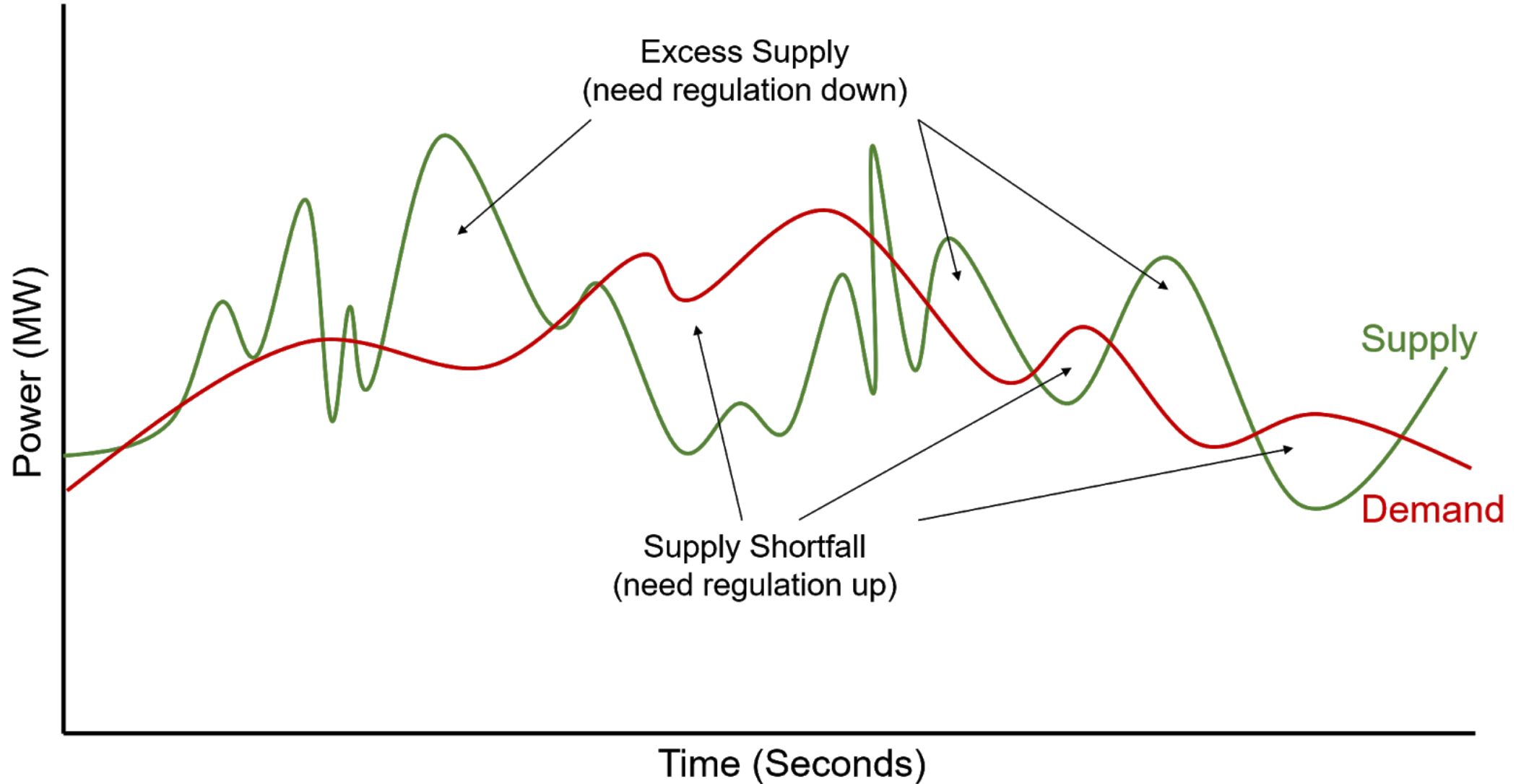


A BESS can be located anywhere on the power grid, but is most useful and economical on the transmission system close to customers

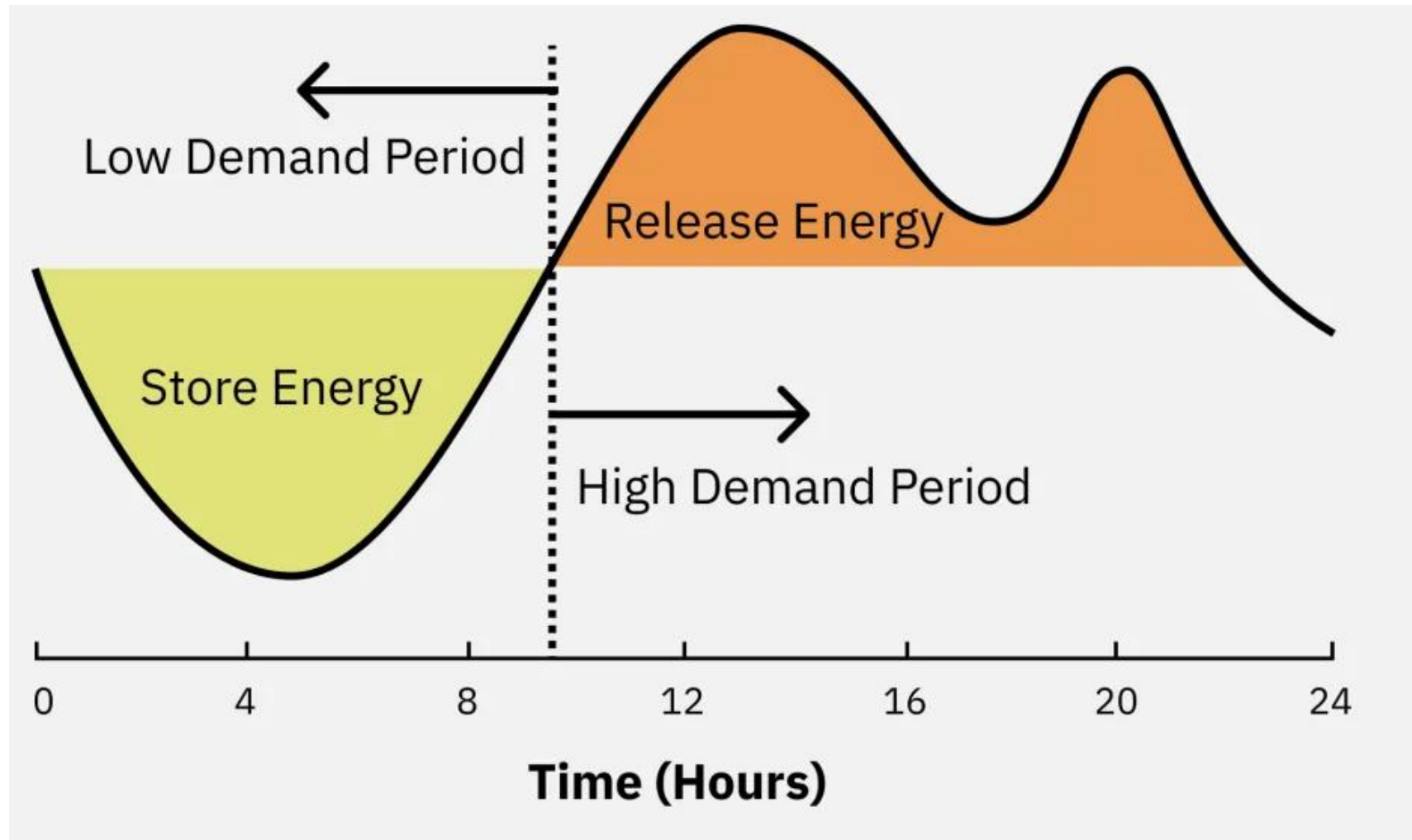


The project was sited in its current location due to congestion at the existing Van Buren Substation (among other factors)

A BESS increases grid reliability by smoothing out momentary imbalances between electricity supply and demand faster than any other technology



A BESS also charges when electricity is plentiful and discharges when it's scarce to maximize use of the cheapest electricity, lowering energy costs

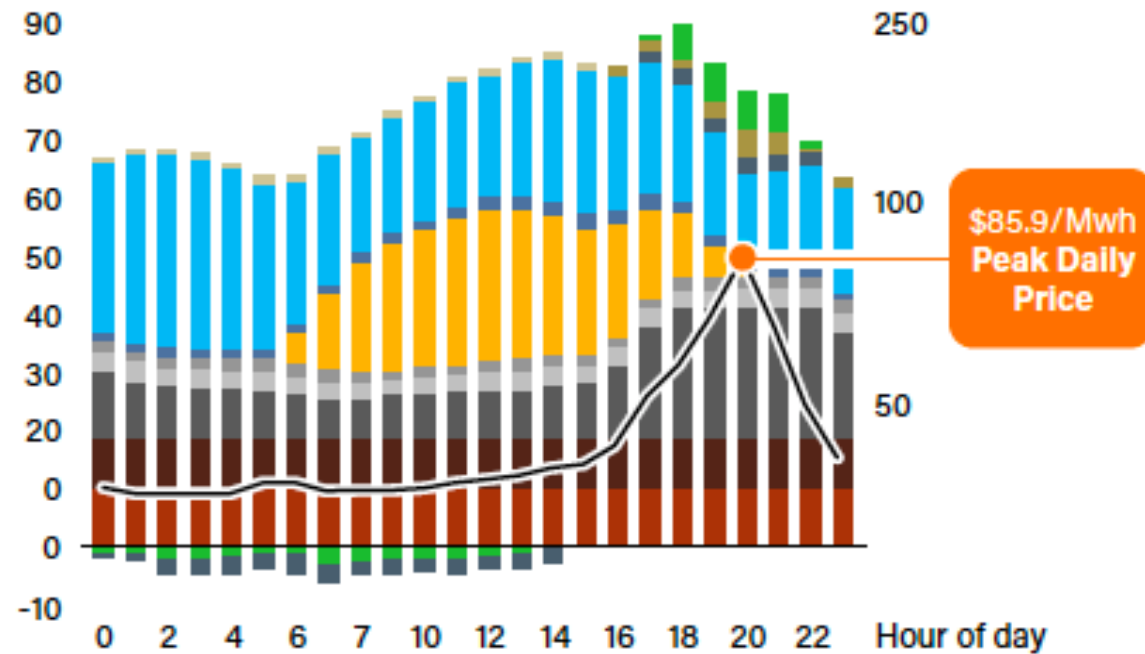


4-hr duration (at full power) batteries are the ideal size to shift energy from low demand to high demand periods.

Independent grid modeling shows that the Midwest's power grid will have significantly cheaper electricity with energy storage versus without

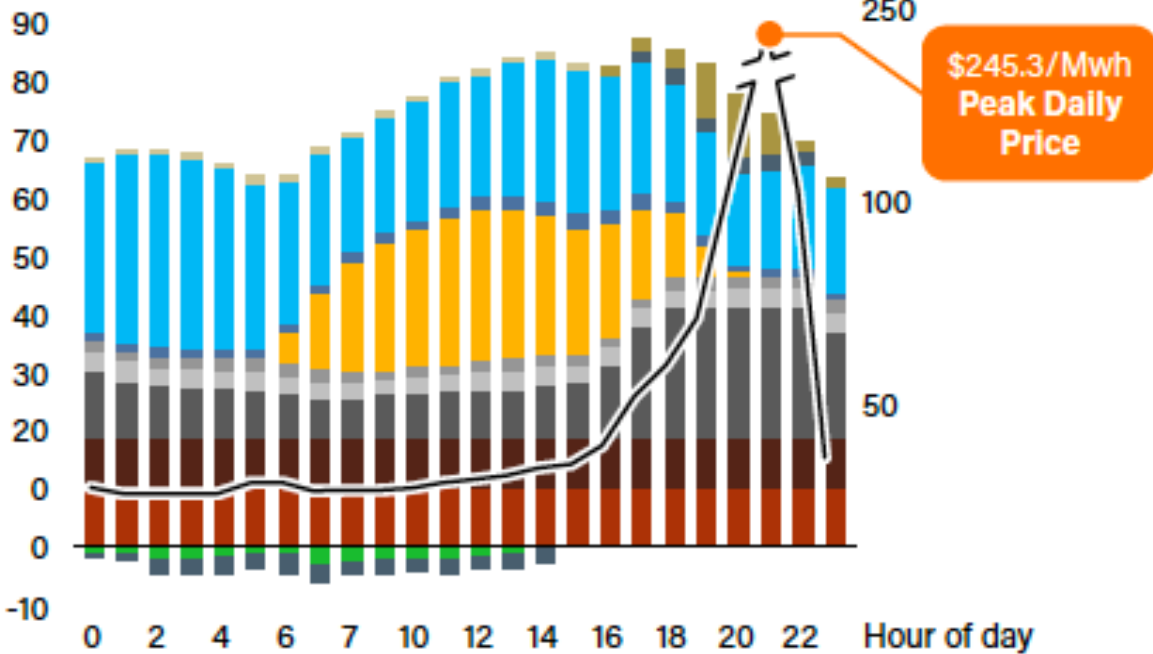
With Batteries

Average hourly net generation and prices, Central, May 25th, 2035
 GW (left): \$/MWh (real 2023) (right)



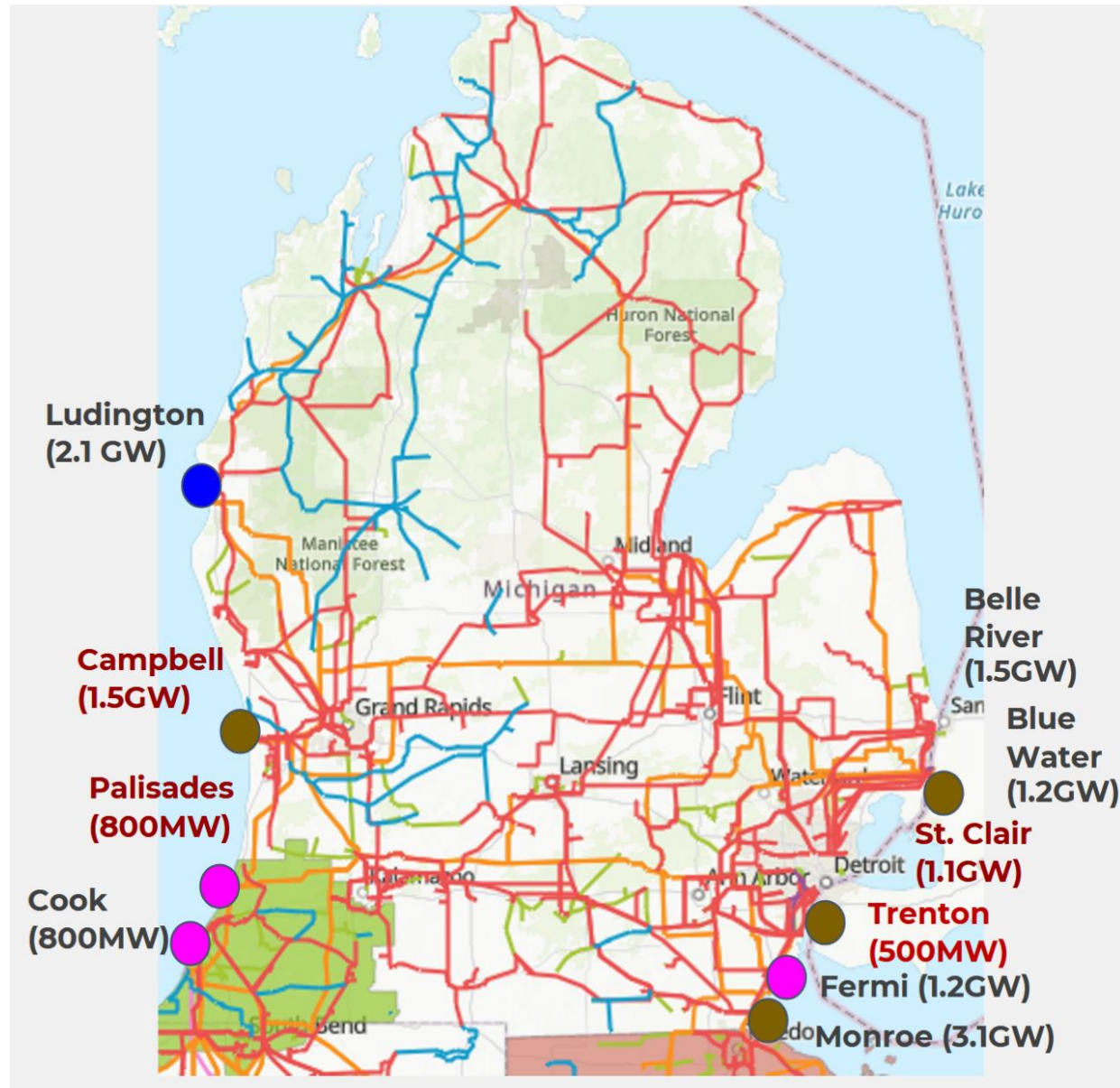
Without Batteries

Average hourly net generation and prices, No Battery, May 25th, 2035
 GW (left): \$/MWh (real 2023) (right)



- Nuclear
- Gas CCGT
- Other thermal
- Hydro
- Pumped storage
- Battery storage
- Coal
- Gas CCS
- Solar
- Onshore wind
- Gas/oil peaker
- DA Price

Michigan has particular need for energy storage as an electrical peninsula



Overview of Key Concerns

KCE has collected a list of key public concerns from prior public meetings, info sessions, news articles, and social media. The following issues will be addressed:

1. Fire, smoke, and gasses
2. Emergency response & evacuation
3. Groundwater contamination
4. Noise
5. Bovine concerns
6. Severe storms
7. Raw materials / equipment supply
8. Jobs
9. Property values and Insurance
10. Decommissioning
11. PA 233

Key Concerns

Key Concerns

1. **Fire, smoke, and gasses**
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BESS Safety History

- BESS is one of the safest technologies available today.
- ~25 utility-scale incidents across ~6,000 utility-scale systems.
- ~95 total incidents across 10s of thousands of commercial, industrial, and utility-scale systems.
- Since 2018, failure rates have plummeted by ~98% with the mass adoption of BESS codes/standards like NFPA 855 and UL 9540 (around 2020).
- The vast majority of events have occurred at projects deployed before 2020 (few codes/standards), using cobalt-based chemistries (more volatile), with custom designs (no track record), with short discharge durations (more heat & mechanical stress), and outside of the US (weak/no codes).

Battery Safety

Various incident and accident rates

Accident / incident rate per 100,000 operating hours



Source: Federal Railroad Administration, National Transportation Safety Board, National Association of City Transportation Officials, BESS Failure Incident Database

BESS Safety – Then vs. Now

- **No/Few Codes → Robust Codes in the US** (NFPA 855, UL 9540, and 100s of sub-codes)
- **NMC → LFP** (lower thermal runaway temperature, wider operating range, safer materials)
- **<2-hr → ≥4-hr Duration** (less heat, fewer cycles, less mechanical stress)
- **Buildings / Enclosures → Un-Occupiable Containers** (no entrapment, less gas buildup)
- **Custom Designs → Standard Designs** (iterative learning, proven products)
- **Field Constructed → Manufactured** (inexperienced laborers vs. trained factory workers)
- **No Guidance → Standard Spacing/Setbacks** (informed by incidents and lab testing)
- **Cheap Consumer Batteries → Utility-Grade Batteries** (much better quality)
- **No Training → Mandatory Training** (required by codes/standards, performed regularly)

Recent EPA BESS Guidance Issued July 2025¹

Guidance highlights the value that BESS provides to ensure grid reliability:

“Battery energy storage systems (BESS) stabilize the electrical grid, ensuring a steady flow of power to homes and businesses regardless of fluctuations from varied energy sources or other disruptions”

Acknowledges the rareness of incidents and that most incidents are from early systems:

“...improvements in BESS quality and design have led to a decrease in the number of failure incidents...Since 2020, BESS failure incidents have decreased...”

Discusses facts about the world’s largest battery fire at Moss Landing:

“Air quality monitoring and sampling occurred during & after the fire and found no risks to public health.”

Provides various additional guidance on permitting, training, firefighter PPE/gear, installation, incident response, and decommissioning...

The Project is fully compliant with all guidance in the EPA document.

¹https://www.epa.gov/system/files/documents/2025-08/battery_energy_storage_systems_fact_sheet.pdf

LFP BESS Incident Sequence of Events

1. Upset Condition

- Often an electrical short.
- Very rare in modern systems with robust water ingress protection & redundant fusing.
- Most incidents stop here.

2. Off-Gassing

- Cells heat up and off-gas at $\sim 280^{\circ}$ F.
- Gas is vaporized liquid electrolyte and primarily consist of CO, CO₂, H₂, and various hydrocarbons.
- The gas detection and evacuation system detects the gas and removes it, never exceeding 25% of the Lower Flammability Limit (LFL), so it can't ignite.
- Many incidents never proceed beyond a single-cell off-gas event.

3. Single-Cell Flaming & Smoking

- At $\sim 575^{\circ}$ F, the cell will enter thermal runaway, flame, and smoke.
- Modern systems include cell-to-cell and module-to-module insulation that limit adjacent cells from ever exceeding $\sim 100^{\circ}$ F to prevent them from gassing/flaming.
- The smoke is toxic, like all smoke.
- In modern systems, the incident will often be contained to a single cell.

4. Propagation (worst case scenario)

- If the insulation fails, the incident may spread to adjacent cells/modules/racks.
- An incident has never spread beyond a single container (which is why we no longer use large containers/buildings).

BESS Safety Summary

- BESS incidents are very rare and becoming rarer.
- The incidents that have occurred are overwhelmingly old systems with outdated chemistry, design, and safety features.
- There are robust codes, standards, and guidelines for modern BESS systems.
- There are layers of safety built into modern BESS systems such that most incidents are small.
- Large incidents (like the burning buildings you've see in the news) have never happened in modern modular systems that are properly spaced.
- Gasses and smoke may occur, like all fires.

***A detailed presentation will be given on this later on by
Andy Blum, one of the world's foremost experts in BESS fire safety.***

Key Concerns

1. Fire, smoke, and gasses
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3. Groundwater contamination
4. Noise
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What happens in the event of an emergency? (1)

Before Operations Commence:

- The codes & standards that govern BESS require we prepare specific risk assessments and emergency response plans, all reviewed and approved by the AHJ (municipal engineer and fire department). KCE is in communication with Ottawa County Emergency Management and Blendon Township Fire Department and will continue to be for the life of the project.
- Plans must include emergency contact information for all key stakeholders.
- The fire department must be trained before the project can operate. Only normal turnout gear and equipment is required. KCE is in discussions with Blendon Township FD on tanker needs.

If An Event Occurs:

- The project is equipped with sensors that detect upset conditions like smoke/gasses & faults.
- If there's an issue, the project is automatically shutdown, and automatic notifications go to the remote operations center, the BESS vendor, and the fire department.
- An emergency operations plan will then be initiated whereby local first responders & local O&M personnel are immediately dispatched to the scene and follow the emergency response plan.
- Support personnel from the owner/operator, utility, equipment manufacturer, and BESS fire experts are immediately available by phone and will dispatch to the project.

What happens in the event of an emergency? (2)

During An Event:

- The universally-recognized fire service response is to: 1) Not enter the project (except for rescue); 2) Establish a 150' perimeter (per NFPA) to 330' (per EPA) and evacuation zone (the closest residence is 930' away); 3) Notify the community; and 4) Take a defensive posture, let the fire burn out, and apply water (as necessary) to secondary fires or for cooling of adjacent exposures.
- Weather and air quality will be monitored.
- The fire department Incident Commander will adjust the plan as necessary.
- In modern modular systems, the event will typically be over in 3-24 hours.

After An Event:

- Ongoing monitoring (e.g., for re-ignition and air quality) and site security.
- Investigation by multiple stakeholders.
- Salvage and decommissioning.

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BESS liquids consist of electrolytes and coolant; leaks are not a material risk

- LFP batteries are not “flooded” like car batteries and do not leak.
 - The electrolyte is a high-vapor-pressure solvent that is “wetted” onto the plastic anode/cathode separator.
 - If a LFP battery is damaged/punctured, there is no liquid leakage due to surface tension, and exposed electrolyte evaporates quickly due to its high vapor pressure.
- BESS systems are typically liquid cooled using a system similar to a car engine:
 - A glycol/water mixture is circulated in a closed loop between the heat sources and a radiator.
 - The radiator cools the glycol/water mixture down for re-use.
 - There’s ~53 gallons of coolant in the system, and the coolant is dispersed throughout dozens of capillary tubes and isolation valves that run to the batteries; there are no large tanks.
 - If a leak were to occur, it would likely be less than 1 gallon since most of the liquid is in capillary tubes and not open tanks.
 - The system has a secondary containment of 13 gallons.
 - No BESS has ever leaked a large amount of coolant requiring emergency response.

BESS firewater is well understood

- **Reminder:** NFPA guidance is that firewater should not be applied to the BESS itself.
- If water is applied to a burning BESS, the constituents of the fire water are well understood:
 - Studies of fire water from actual BESS events and lab tests show that the fire water runoff is very similar to that of a structure fire.
 - No special handling is required versus normal fire water runoff.
- The most-cited analysis is from a BESS fire in Escondido, CA, which involved NMC batteries (a chemistry containing heavy metals that won't be used at the Project). Its key finding was as follows:

Samples of runoff water were assessed for the presence of 17 toxic metals. The analysis detected some level of six of the 17 metals, but the report notes that the concentrations were well below EPA drinking water standards and the runoff “poses minimal risk to both human health and the environment.”¹

¹<https://storagealliance.org/news/air-and-water-quality-data-from-escondido-fire>

Stormwater / Groundwater

- Despite the minimal risk of leaks and well-understood nature of BESS firewater, we recognize there's been several questions on stormwater and groundwater.
- We've retained an expert on these matters, ERM, to speak to the issues in depth.
- Key topics to be covered include:
 - Ottawa County design standards
 - The Project's stormwater management plan
 - Groundwater implications

Key Take-Aways:

- The Project's stormwater management design follows engineering best practices and has been designed to Ottawa County standards.
- The Project poses a low risk to groundwater quality.

ERM will provide a detailed presentation on stormwater and groundwater later on.

Key Concerns

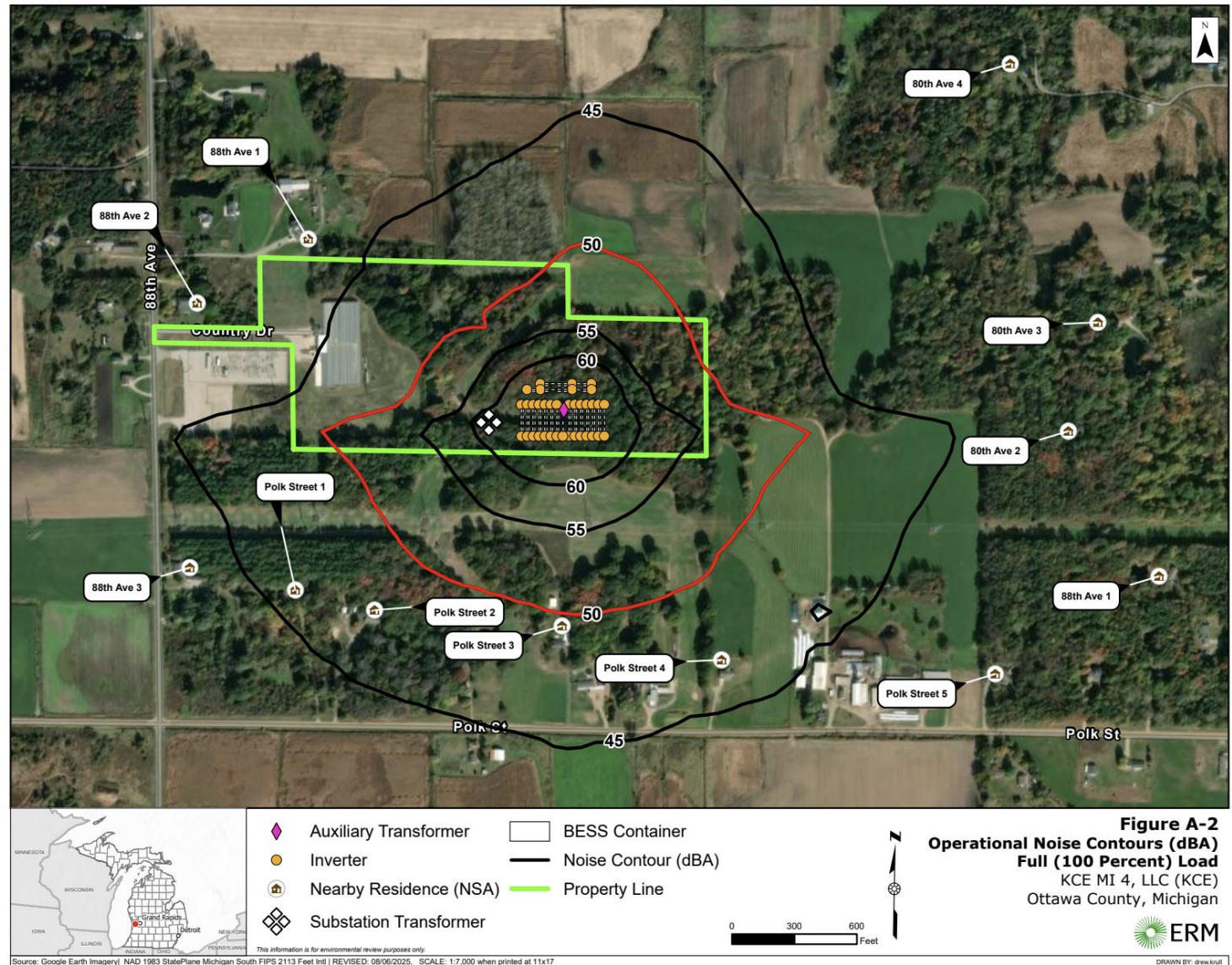
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Sound Study Summary

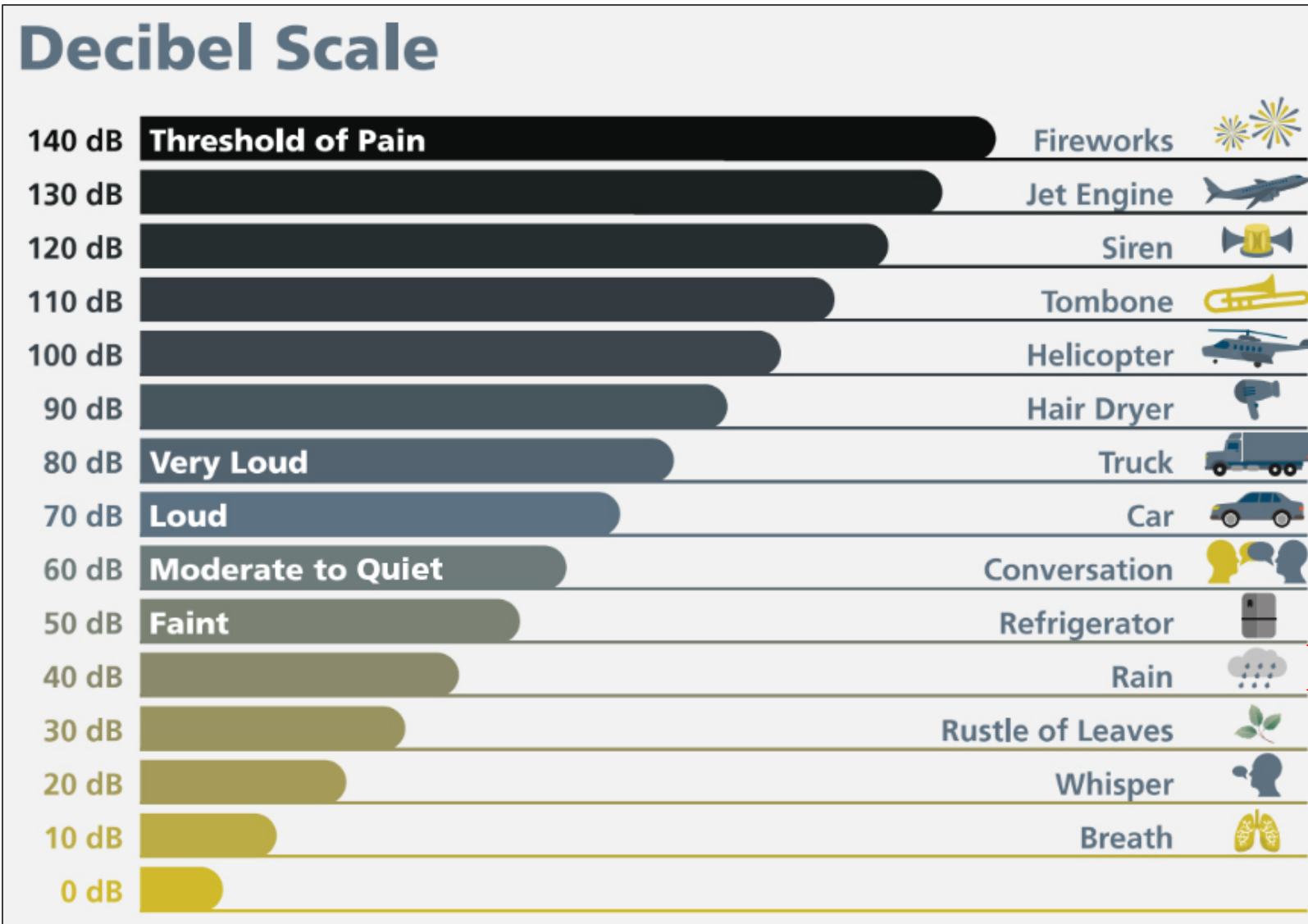
- Blendon Township requires a maximum of 50 dBA at the nearest non-participating dwelling, a strict standard vs. most municipalities.
- ERM modeled the project's sound using industry-recognized software to the ISO 9613-2 international standard, with a focus on the nearest dwelling (930' south).
- Modeling was conservative in nature, not taking vegetation into account despite the Project being surrounded by trees.
- The analysis also conservatively assumed the Project operates at 100% and 60% duty cycles, higher than the project's average expected duty cycle of ~35% (based on Midwest BESS operating norms).
- ERM's findings at 100% and 60% duty cycles yielded <49 dBA and <41 dBA, respectively. The Project would be significantly quieter at the average expected duty cycle of ~35%.
- The Decibel Scale is logarithmic such that every 3 dB is a doubling of sound power - meaning that even a 1 dBA reduction is meaningful.

Practical Sound Study Interpretation (1)

- The **red** line shows where Blendon Township's 50 dBA limit is achieved at 100% duty cycle.
- No dwellings are within the 50 dBA perimeter.



Practical Sound Study Interpretation (2)



100% Duty Cycle (<49 dBA)
 60% Duty Cycle (<41 dBA)
 0%-35% Typical Duty Cycle (Not Modeled)

Pitch and Tone Are Important Considerations

- While the focus of noise ordinances and sound modeling is on loudness (Decibels), pitch (frequency) and tone (quality) is an important factor when it comes to “annoyance”.
- High-frequency noises (like a whistle or alarm) invoke a stress reaction and are annoying.
- Low-frequency noises (like a subwoofer or machinery) vibrate, permeate surfaces, and can be felt.
- The primary noise from BESS comes from cooling fans on the BESS units. If you stand next to an operating project, it sounds like air conditioners running. The pitch and tone of this noise are not felt by the human body and are not perceived as annoying to the human ear.
- The most annoying sound nearby is the buzzing from the existing Van Buren Substation and its connected 138-kV transmission lines.

Our sound scientist is here if there are any additional questions.

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Bovine Concerns

Questions have been raised about the impact of gasses/smoke on beef/dairy cattle, impacts on meat/milk, evacuation plans, etc. (as well as chickens, turkeys, deer, elk, etc.).

- **There are multiple studies addressing animal smoke inhalation and evacuation questions:**
 - *“Effects of smoke inhalation on beef cattle”* – Alberta Beef Producers
 - *“How smoke and ash from wildfire may impact food production”* – University of California
 - *“The influence of prescribed fire on wild turkey in the Southeastern United States: A review and analysis”* – Forest Ecology and Management
 - *“Emergency Planning is Essential for the Home, Farm or Ranch”* – University of Nebraska
- **Key Take-Aways:**
 - All smoke is bad, and results of exposure by an animal is very similar to that of a human.
 - FRA’s plume study shows no Immediate Danger to Life and Health >42’ from the Project.
 - If the worst-case battery fire is not IDLH to humans, it will not be IDLH to animals at these distances.
 - Farms of any size/type should have an Emergency Action Plan for fires of any kind (among other risks).

KCE is happy to consult with farmers on their Emergency Action Plans.

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Is the Project at risk of damage from natural disasters?

Key Design Criteria:

- BESS projects consist of heavy equipment secured to foundations (>90,000 lbs).
- The enclosures are modified steel ISO shipping containers designed for the ocean and can withstand hail, wind loads, and snow loads far exceeding what is required.
- The BESS can operate between -30° and 130° F. It can sit idle without danger above and below these temperatures.
- The equipment is designed for high-seismicity areas.
- Foundations are designed to keep equipment above 100-yr floodplain events

Insurance Underwriting:

- Insurance underwriters and actuaries are acutely aware of the risk-of-loss for all types of electricity industry equipment. The cost of insurance reflects this.
- BESS projects enjoy favorable insurance premiums because their risk-of-loss is very low (whether for fire, severe convective storms, earthquakes, etc.)

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Planned Key Equipment Suppliers

Canadian Solar (BESS)

- Canadian Company
- Widely deployed, including in Michigan
- Compliant with all relevant local, federal, and international codes/standards.



Power Electronics (Inverter)

- Spanish Company
- Widely deployed, including in Michigan
- Compliant with all relevant local, federal, and international codes/standards.



Where does this equipment and materials come from?

Tariffs have shifted the global supply chain significantly, but most equipment & materials for the electric power industry (and most others) do not come from the US.

Equipment (based on Canadian Solar e-Storage SolBank 3.0):

- **Inverters:**
 - Made by Power Electronics, a Spanish Company
 - Manufacturing in Spain or Texas
- **Batteries:**
 - Made by Canadian Solar, a Canadian Company
 - Manufacturing in Thailand or Kentucky

Raw Materials:

- They come from all over the world.
- This is the case for most materials that go into modern life (cars, ag equipment, phones, etc.)
- You cannot legislate materials into the ground that don't exist in economical quantities.

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Will the project create jobs?

- During construction, the Project will create 30 to 50 temporary union construction jobs (paying prevailing wage) for 1-2 years (depending on trade). The bulk of the work is primarily performed by the IBEW (electricians) with assistance from IUOE (operators), LIUNA (laborers), UBC (carpenters), and IAW (ironworkers).
- During operation, as un-manned facilities, there is very little permanent local job creation with a small handful of technicians visiting the site periodically.

12/1/25 Meeting Starting Point

Key Concerns

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Property Values

Project-Specific Study:

KCE engaged Cohn Reznick to complete a Project-specific property value impact study pursuant to the industry-standard Uniform Standards of Professional Appraisal Practice (USPAP) and interviewed multiple real estate brokers and parties to real estate transactions near other, similar BESS.

“...the data indicates there is no trend of negative impact on adjacent property values, based on their location near battery energy storage systems”

University of Pennsylvania BESS Study¹:

“Across 178 utility-scale BESS projects...houses near an operational utility-scale BESS project do not experience significant price changes compared to houses farther from the same project”

Right of Way Magazine Transmission Line Study²:

“The results indicate both practically and statistically significant effects from 138kV...lines.”

Effects range from -1.1% at 300 meters to -5.1% at 50 meters.

Overall Conclusion: *Utility-scale BESS projects do not reduce property values, especially when sited at an existing substation. The preexisting Van Buren Substation and 138-kV transmission lines (circa 1981) that exist adjacent to the site have likely already adversely impacted the adjacent property values.*

¹Y. Gwee, B. Keys (2025) “The Impact of Utility-scale Battery Energy Storage System Projects on Values in California, Massachusetts, and New York.” *Wharton Research Scholars*, University of Pennsylvania

²T. Tatos, L. Troy, SR/WA, MAI, and M. Glick. (2016) “A Closer Look at Proximity Damages: When a Percentage Point Can Represent Millions of Dollars, Yielding Credible Results Is in Everyone’s Best Interest.” *Right of Way Magazine*

Homeowners insurance is underwritten based on 3 main categories:

- **Homeowner Claims History**
 - Based on Comprehensive Loss Underwriting Exchange (“CLUE”) report
 - CLUE is similar to a credit report for insurance and includes your claims history
- **On-Premises Factors**
 - House Age, Size, & Construction Type
 - Safety Features (e.g., alarm systems, deadbolts)
 - Special Risk Factors (e.g., swimming pools, trampolines)
 - Use (e.g., as a residence vs. residence/business)
- **Geographic Areas (usually by zip codes)**
 - Crime
 - Natural Disasters
 - Typical Reconstruction Costs

Specific neighbors to your or within your zip code are not included in the underwriting basis.

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Project End-of-Life Considerations / Decommissioning

- The codes and standards that govern modern BESS require KCE prepare a Decommissioning Plan, which is reviewed by the Township.
- The useful life of modern LFP batteries is 25 years at 1 “cycle” per day (one full charge/discharge).
- At the end of the Project’s life, we’ll remove the Project’s equipment, recycle concrete and metals, and ship the batteries to a lithium-ion battery recycling facility.
- Similar to lead-acid vehicle batteries, there is a robust lithium-ion recycling industry because the materials have inherent value.
- Top players include Glencore / Li-Cycle (NY), LG (NC), Ecobat (TX), Redwood Materials (CA/NV), Cirba Solutions (OH), and American Battery Technology Company (NV).

What if KCE abandons the project?

Blendon Township has addressed this in Section 13.05.35(17) of their ordinance.

Requirements Include:

- KCE must prepare a decommissioning plan that ensures the return of the to a useful condition similar to that which existed before construction.
- KCE must obtain Financial Assurance suitable to the Township (a decommissioning bond, an irrevocable letter of credit, or parent guarantee) sized in accordance with the net decommissioning costs studied in the decommissioning plan.
- This is good public policy, and while it's very expensive, KCE will fully comply with the requirements.

Key Concerns

1. Fire, smoke, and gasses
2. Emergency response & evacuation
3. Groundwater contamination
4. Noise
5. Bovine concerns
6. Severe storms
7. Raw materials / equipment supply
8. Jobs
9. Property values and insurance
10. Decommissioning
- 11. PA 233**

PA 233 – We want to be transparent on what we'll do.

- We recognize that PA 233, or any similar legislation that usurps local control, is unpopular.
- We all react to our incentives...if the Planning Commission does not approve our application, we will seek approval from the State under PA 233.
- If we proceed with PA 233, the Township loses control over the process, including the ability to enforce its ordinance and impose conditions of approval that would benefit the community.
- We would much rather build this Project the way the Township wants us to do it versus the State.

Open Discussion - Potential Topics

Fire & Smoke	Emergency Response	Groundwater	Noise	Local Entitlement
Animals	Severe Storms	Raw Materials	Equipment	Jobs
Property Values	Insurance	End of Life	PA 233	Tax/Carbon Credits
Alternative Tech	Onsite Gen for Cooling	Moss Landing Soil	Loss of Data Connection	Project Economics
Spacing & Setbacks	Alternative Sites	Brownouts & Blackouts	“Chicago & Detroit”	BESS Not “Green”
Electricity Bills	Security / Terrorism	Visual Impact	Economic Benefit	Construction Process

Thank You

Contact Information:

brian.madigan@keycaptureenergy.com

ben.gorman@keycaptureenergy.com

chris.linsmayer@keycaptureenergy.com



KEY CAPTURE
ENERGY

Appendix

Fire & Risk Alliance Public Health and Safety Presentation

Battery Energy Storage Systems

Public Health & Safety

Key Capture Energy

Blendon Township, Michigan

November 5, 2025





BESS Installations





Overhead Transmission –
Grid Interconnection



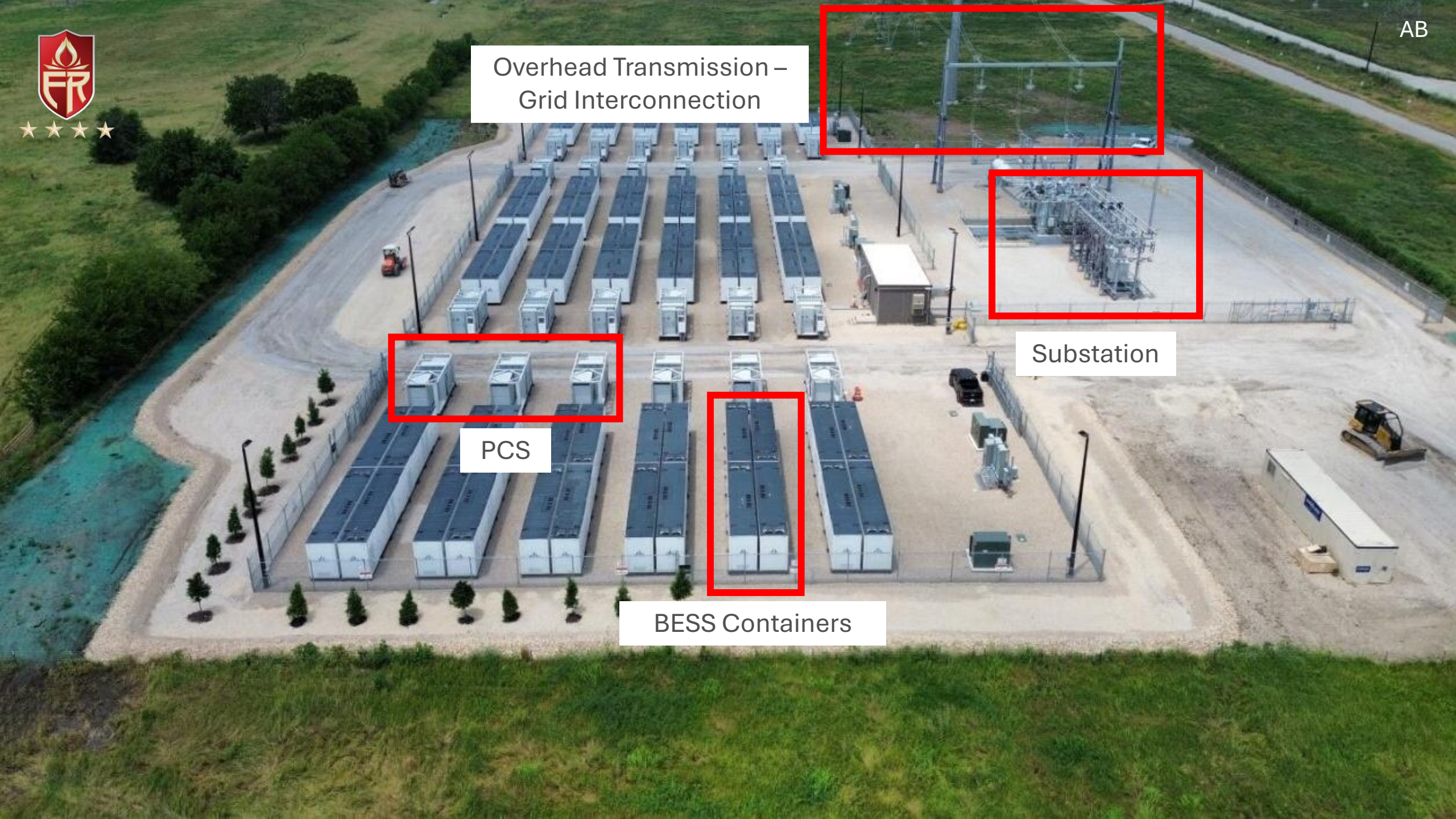
Substation



PCS



BESS Containers

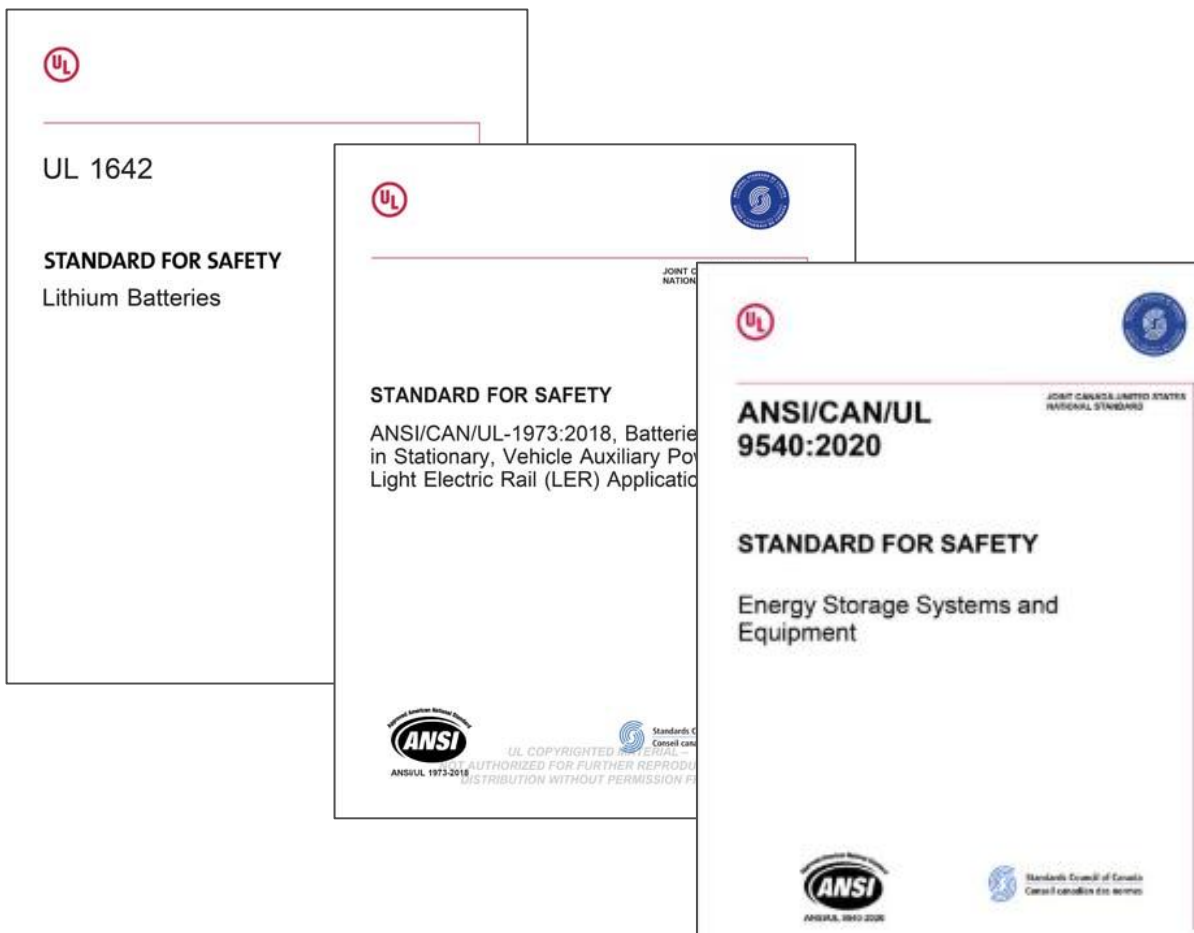




BESS Listings



BESS Listings



Cell certified to IEC 62619 (UL 1642)

Cell and Module Certified to UL 1973

Rack Certified to UL 1973

BMS Certified to IEC 61508

System Certified to UL 9540



BESS Tests





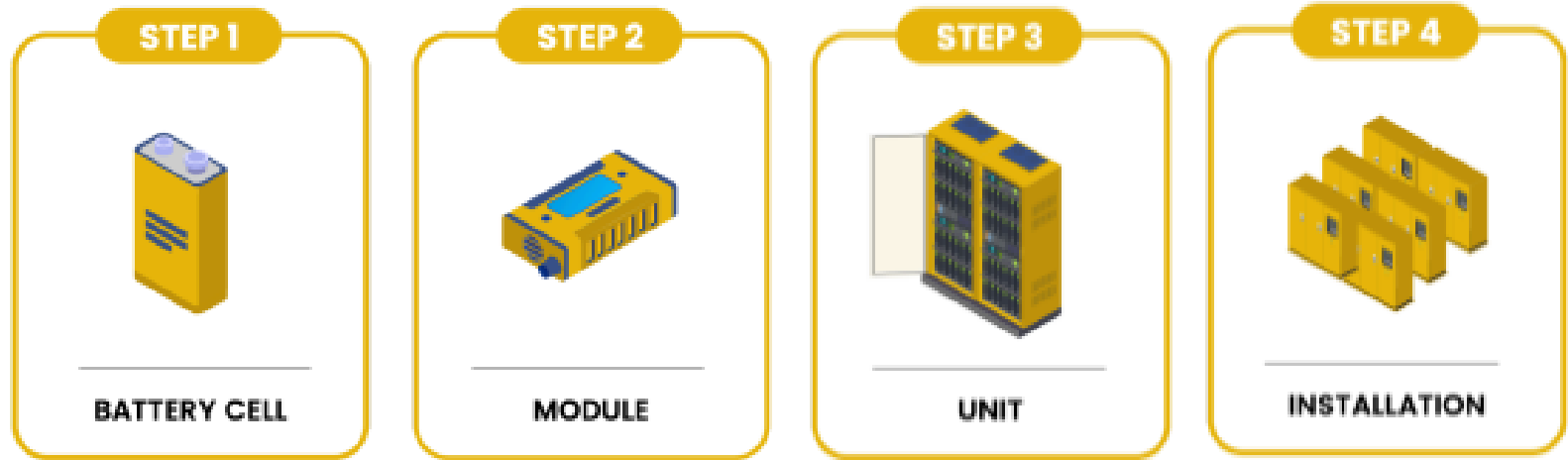
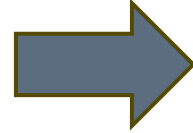
BESS Tests

UL logo and logo of the Standards Council of Canada are visible at the top of the document cover.

ANSI/CAN/UL 9540A:2019
JOINT CANADA-UNITED STATES NATIONAL STANDARD

STANDARD FOR SAFETY
Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems

ANSI logo and Standards Council of Canada logo are visible at the bottom of the document cover.





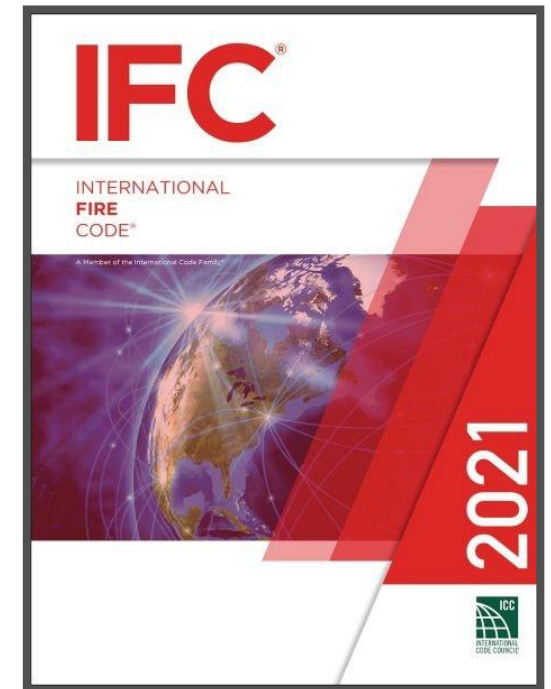
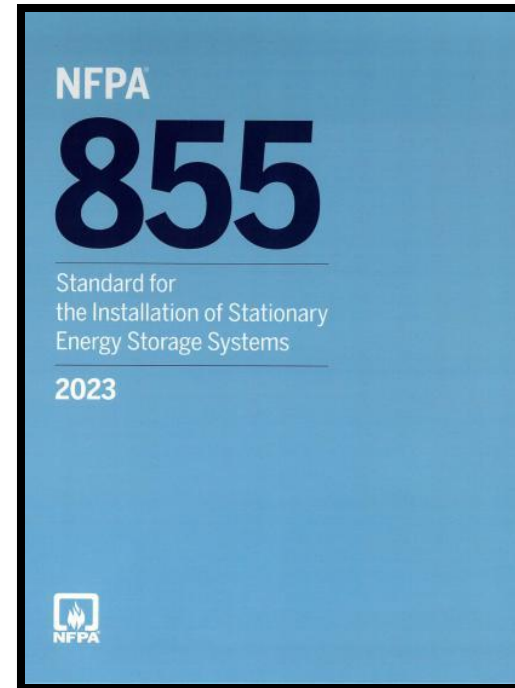
BESS Installation Codes



BESS Installations

These cover site level requirements, including:

- Design/Listing (UL9540)
- Large-scale Fire Testing
- Site Design and Installation
- Hazard Mitigation Analysis
- Commissioning & Maintenance
- Explosion Control/FPE systems
- Emergency Preparation/Training
- Decommissioning





Emergency Response





Battery Energy Storage System (BESS) Fire

- BESS must always be considered energized. Firefighters should exercise extreme caution when dealing with BESS and all energized electrical equipment.
- Request utility company to respond.
- Do not make entry or approach BESS building or compartment. Introducing fresh air may result in a deflagration.
- Isolate the area. Recommended initial evacuation distance is 150 feet. Do not enter the fenced area. The exception to this is a savable life/known rescue.
- Be aware of explosion potential and off-gassing of hazardous materials. White colored smoke is a good indication of hazardous off-gassing.
- Place apparatus in a safe location away from BESS and overhead power lines.
- DEFENSIVE FIREFIGHTING, water streams are the preferred agent for response to lithium-ion battery fires (lithium-ion is not water reactive).



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Battery Energy Storage System (BESS) Fire

- If a fire has not developed and only smoke is visible, take a defensive stance toward the system and be prepared to apply water spray to exposures.
- If a fire develops, take a defensive stance toward the burning unit and apply water to neighboring battery enclosures and exposures.
- Maintain a safe distance from the unit involved (large commercial systems, at least 150').
- Response crews should allow the battery to burn out. Water should be applied to adjacent battery enclosures and exposures.
- The Incident Commander will make the ultimate determination regarding hazard mitigation. The hazard mitigation plan should be developed in partnership with the utility representative and/or responsible party.
- Firefighters must wear full personal protective equipment, including SCBA with facepiece.



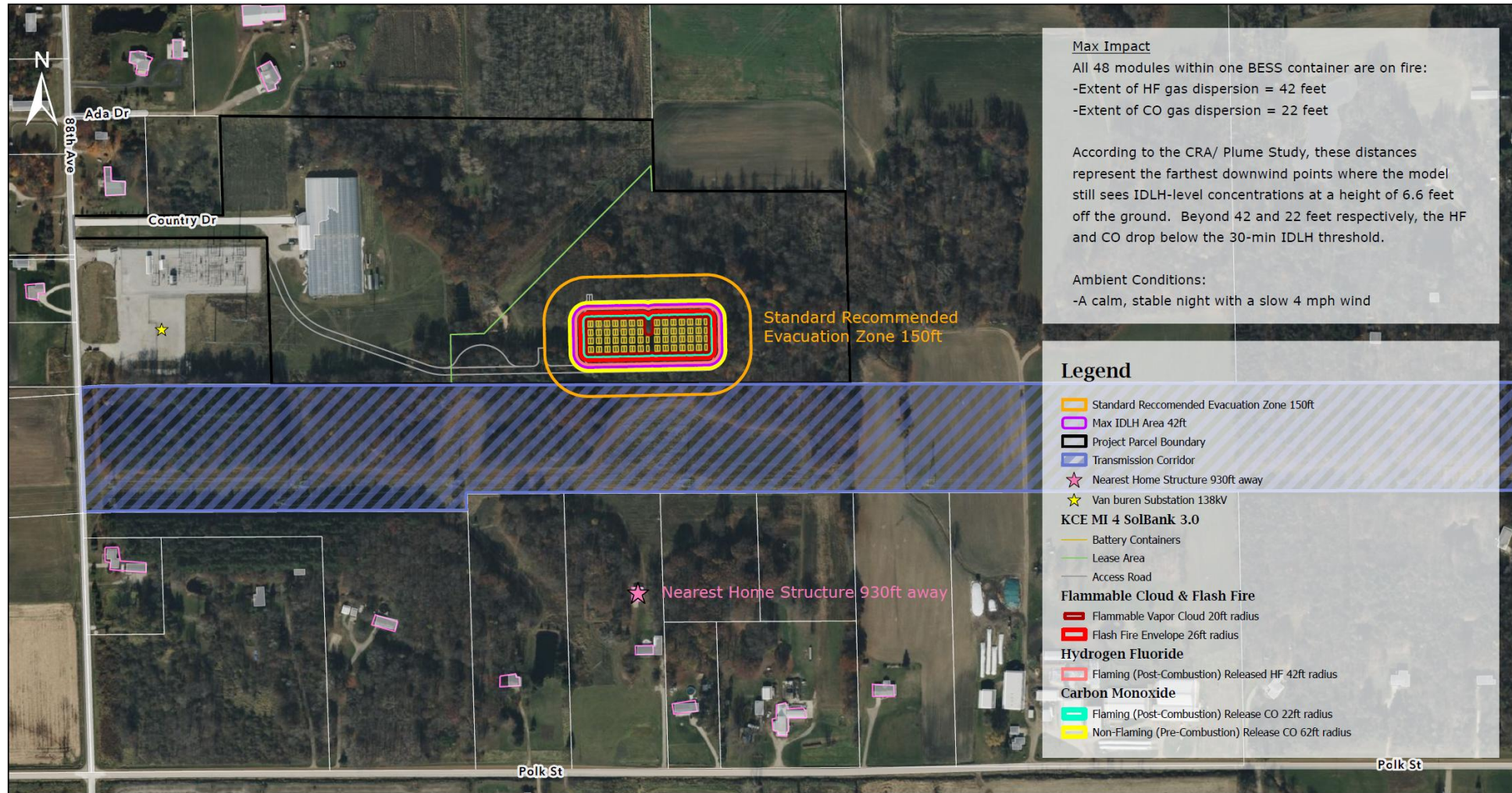
Battery Energy Storage System (BESS) Fire

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KCE MI4: Plume Study

- Several scenarios were evaluated to understand how gases behave during different types of battery events.
- the most severe (worst-case) scenario, all 48 battery modules within a single BESS container were assumed to be on fire at once. The study modeled the spread of two main gases from that fire:
 - Hydrogen fluoride (HF) – a toxic combustion byproduct
 - Carbon monoxide (CO) – a flammable gas formed during burning
- Results show the maximum downwind reach of these gases at health-based safety limits (IDLH levels):
 - HF: up to 42 feet
 - CO: up to 22 feet
- These distances represent the farthest points where short-term (30-minute) exposure could reach IDLH levels, measured about 6.6 feet above ground—roughly at breathing height.
- Beyond 42 ft (HF) and 22 ft (CO), concentrations drop below health concern thresholds.
- These zones remain well within site boundaries and do not extend off-site.

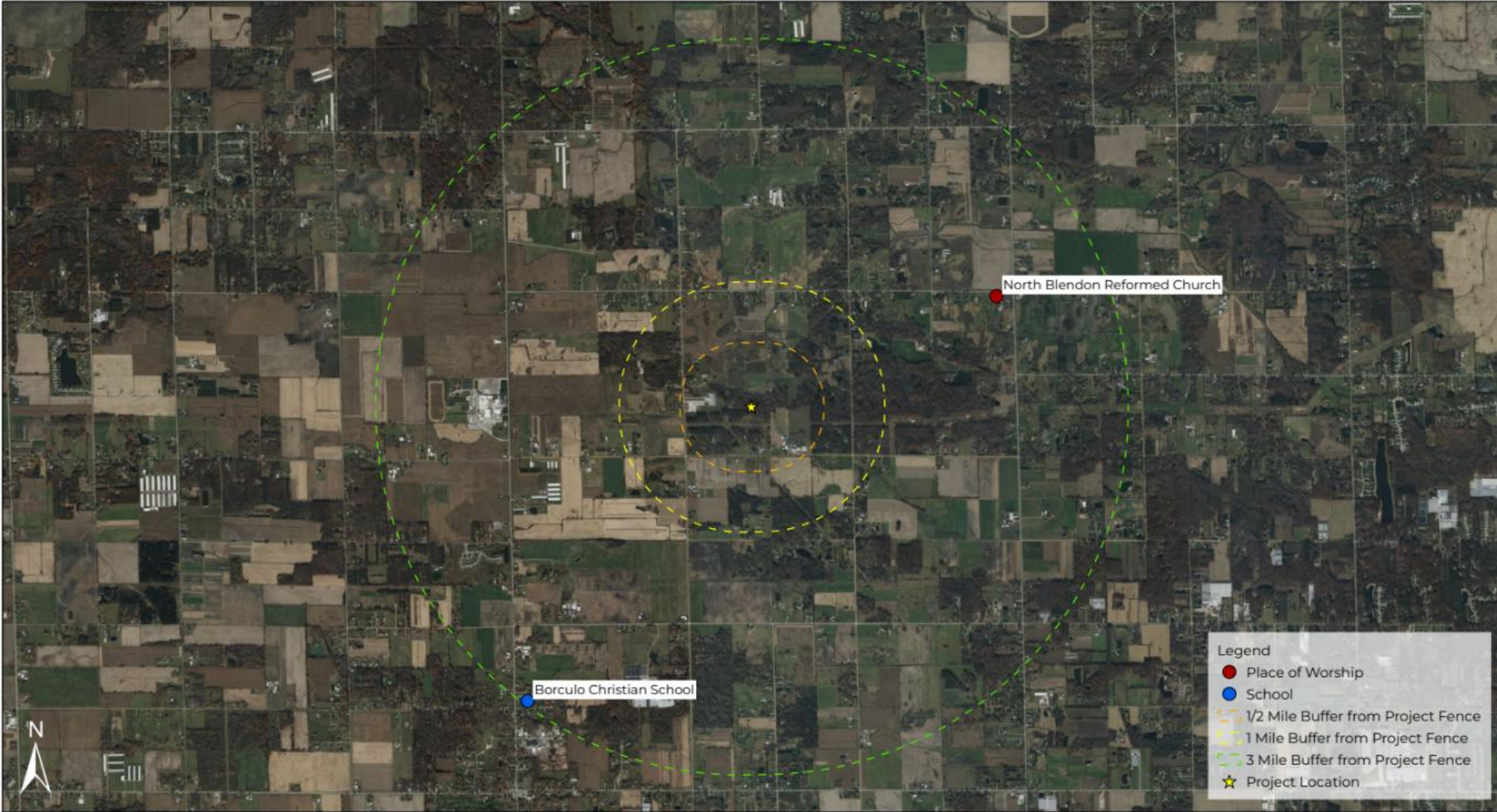
KCE MI4: Plume Study



0 450 900 1,800 US Feet

Scenario	Toxicant	Max Horizontal Plume Extent	Max Vertical Plume Height	Offsite Impact
Non-Flaming (CO)	CO	62 ft	26 ft	None
Flaming (HF)	HF	42 ft	20 ft	None
Flammable Cloud		20 ft		None
Flash Fire Envelope		26 ft		None

KCE MI4: Plume Study



Buffer Zone

0 0.75 1.5 3 Miles



Summary

- A fire has never spread outside a BESS site
- Toxic gases have never been identified at dangerous levels outside a BESS site during a fire event
- Contamination of water has never been detected at dangerous levels during a fire event
- No public injuries have occurred on or outside a BESS site during a fire event

Thank You!

Andy Blum, P.E.

Director of ESS

ablum@fireriskalliance.com



FIRE & RISK
★ ★ ALLIANCE ★ ★

Atlanta – California – Chicago – DC – NY – Texas

ERM Groundwater Presentation

Stormwater Overview

- **Stormwater Standards and Design**

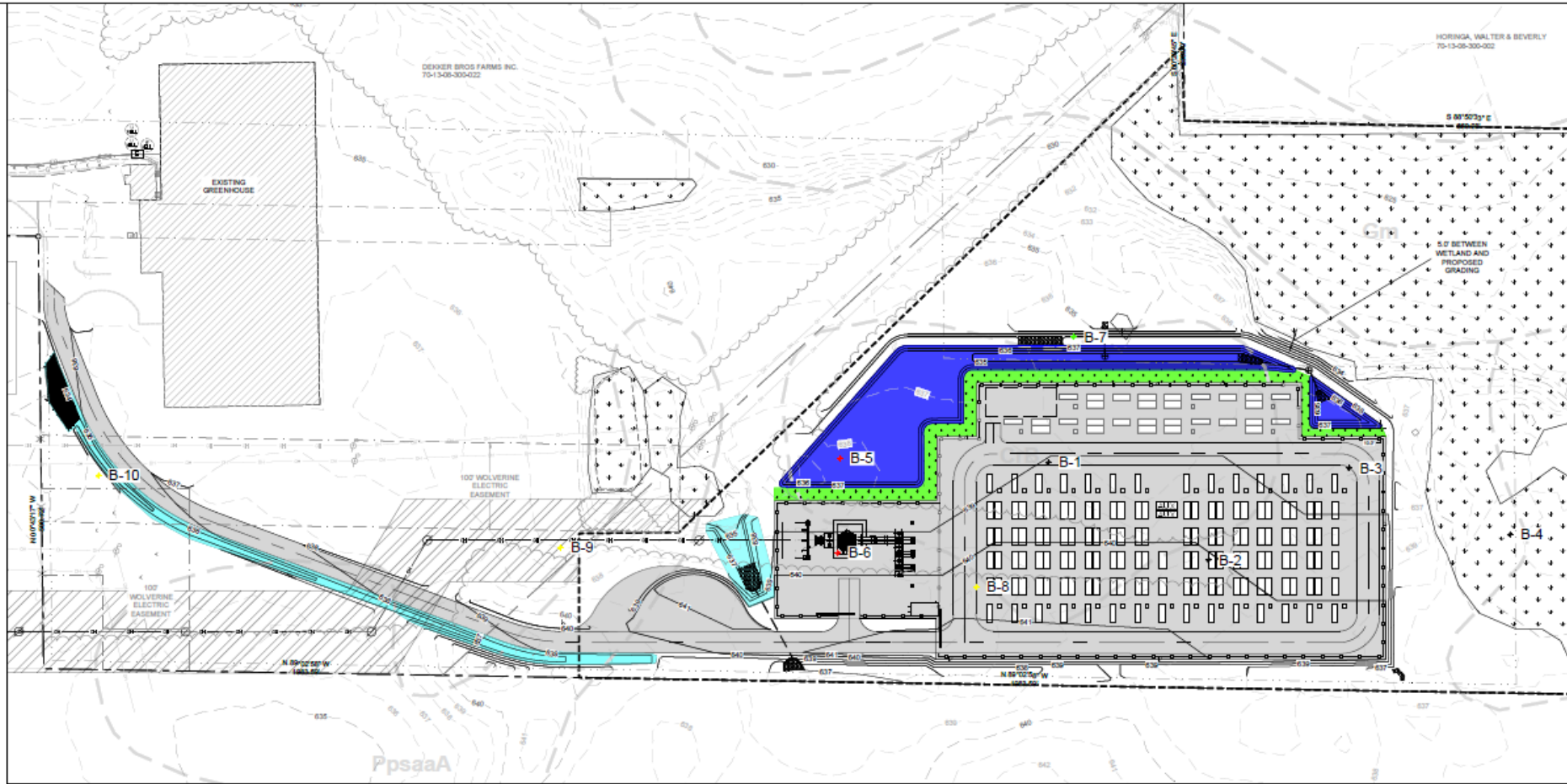
- **Design Standards**

- **Ottawa County Water Resources Commissioner Site Development Rules Procedures and Design Standards for Stormwater Management**

- Water Quality “first flush”: Treat the runoff generated from 1 inch of rain over the project site.
- Channel Protection: Reduce the post-development peak rate and volume to below pre-development peak rate and volume for the 2-year, 24-hour storm.
- Flood control criteria limiting the release rate for the 100-year, 24-hour storm to 0.13 cfs/acre.

- **Stormwater Management Plan**

- Pretreatment Filter Strip (15-feet)
- Vegetative Swale along Access Road
- Two interconnected Infiltration Basins



COLOR

- VEGETATED SWALE
- INFILTRATION BASIN
- VEGETATED FILTER STRIP
- GRAVEL

GEOTECHNICAL BORINGS

- 10' BORING
- 15' BORING
- 30' BORING
- 50' BORING

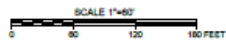
GRADING AND DRAINAGE PLAN LEGEND

- | | | | |
|--|------------------------------|--|---------------------------------|
| | PROPERTY BOUNDARY LINE | | EXISTING BUILDING FOOTPRINT |
| | ADJACENT PROPERTY LINE | | TOP OF EXISTING POND |
| | EXISTING OVERHEAD POWER LINE | | DELINEATED WETLAND |
| | EXISTING GAS LINE | | DELINEATED STREAM |
| | YARD SETBACK | | DELINEATED GULLY |
| | ROAD RIGHT OF WAY | | EXISTING POWER POLE |
| | EASEMENT LINE | | EXISTING CATCH BASIN |
| | EDGE OF EXISTING ROAD | | EXISTING WELL |
| | EXISTING ROAD CENTERLINE | | PROPOSED SLIDING GATE |
| | SOIL BOUNDARY LINE | | PROPOSED FENCE |
| | EXISTING ELECTRIC LINE | | PROPOSED GRAVEL AREA |
| | EXISTING FIBER OPTIC LINE | | PROPOSED GEN-TIE ROUTE |
| | EXISTING FENCE | | PROPOSED POWER POLE |
| | APPROXIMATE LEASE LINE | | PROPOSED CONTOURS |
| | MATCHLINES | | PROPOSED STORM PIPING |
| | EXISTING TREE LINE | | PROPOSED VEGETATED FILTER STRIP |
| | EDGE OF EXISTING GRAVEL | | PROPOSED H2O/W FLOW ARROW |

- HYDROLOGIC SOIL GROUP:**
- Ams (A/C)
 - CamsA (A/C)
 - C1B (A)
 - C1m (A/C)
 - Ppsaa (A)
 - PpsaaA (A/C)

**30% CIVIL PLANS:
NOT FOR CONSTRUCTION**

NOTE: DESIGN INFILTRATION RATE WAS ASSUMED TO BE 3.0 IN/HR BASED ON EXISTING SOILS ON-SITE. INFILTRATION TESTING IN ACCORDANCE WITH THE OTTAWA COUNTY WATER RESOURCE COMMISSIONER SITE DEVELOPMENT RULES MANUAL, SHALL BE PERFORMED PRIOR TO FINAL DESIGN.



BORING LOCATION	EXISTING ELEVATION	PROPOSED ELEVATION	GROUNDWATER ELEVATION	PROPOSED GROUNDWATER SEPARATION
B-1	636.00	639.05	630.00	9.05
B-2	637.00	640.08	631.00	9.08
B-3	636.00	638.47	621.00	17.47
B-4*	636.00	636.00	630.00	6.00
B-5	638.00	636.00	633.00	3.00
B-6	638.00	639.50	632.00	7.50
B-7	635.00	637.97	631.50	6.47
B-8	638.00	640.59	634.50	6.09
B-9*	636.00	636.00	632.50	3.50
B-10*	635.00	635.00	629.00	6.00

* NO PROPOSED GRADING AT THESE BORING LOCATIONS

REV	DATE	DESCRIPTION	BY	CHK



PROPOSED GRADING WITH BORINGS EXHIBIT				SCALE	DATE
KCE MI 4				1" = 40'	07/15/24
KOR MI 4, LLC				DRAWN BY	07/15/24
BLANDON TOWNSHIP, OTTAWA COUNTY, MICHIGAN				CHECKED BY	07/15/24
PROJECT NUMBER				DATE	07/15/24
0780143				SCALE	EX
Environmental Resources Management, Inc.					

Groundwater Overview

- **Groundwater Impact Assessment**
 - Phase I Environmental Site Assessment
 - Geotechnical Engineering Report
 - Wetland and Streams Delineation Report
 - Critical Issues Analysis
 - Site Constraints Analysis

Groundwater Summary

- **Groundwater Impact Assessment**

- The site is 835-feet from the nearest private well. Not located within a wellhead protection area.
- USDA Web Soil Survey (WSS) identify a Hydrologic Soil Group (HSG) A
- Drains to the north and northeast towards the large wetland area Subsurface geology is sand and clay layers.
- Groundwater encountered 3.5 to 18.5 ft bgs
- "Perched" aquifers located above fine-grained silt and clay layers that have minimal interaction with the main aquifer in this area.
- Trapped or "perched" water is present in sands and gravels above lower permeability silt layers. There is minimal interaction with the main aquifer in this area.
- Circuitous movement all over the place
- Residence time of a water molecule in clay is high
- Polluted water migrates slower through clay soils which tend to encapsulate and hold particles.

FIGURE 1 SITE AND GEOTECHNICAL BORING LOCATIONS

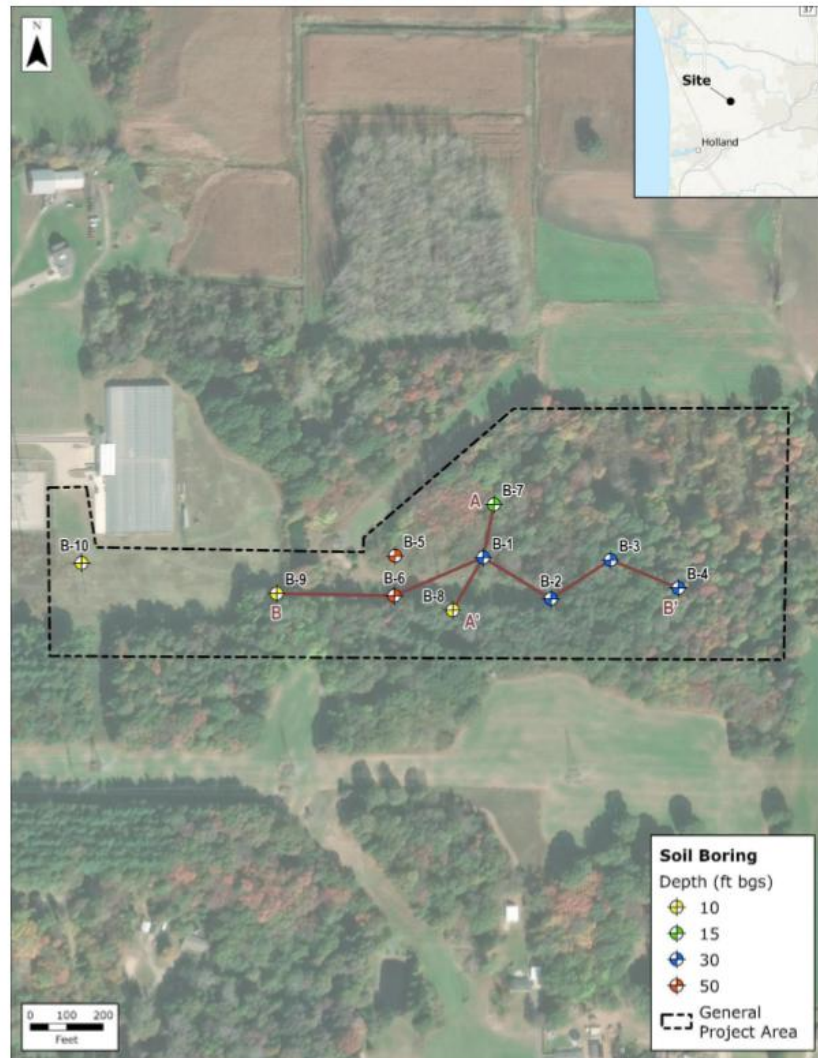
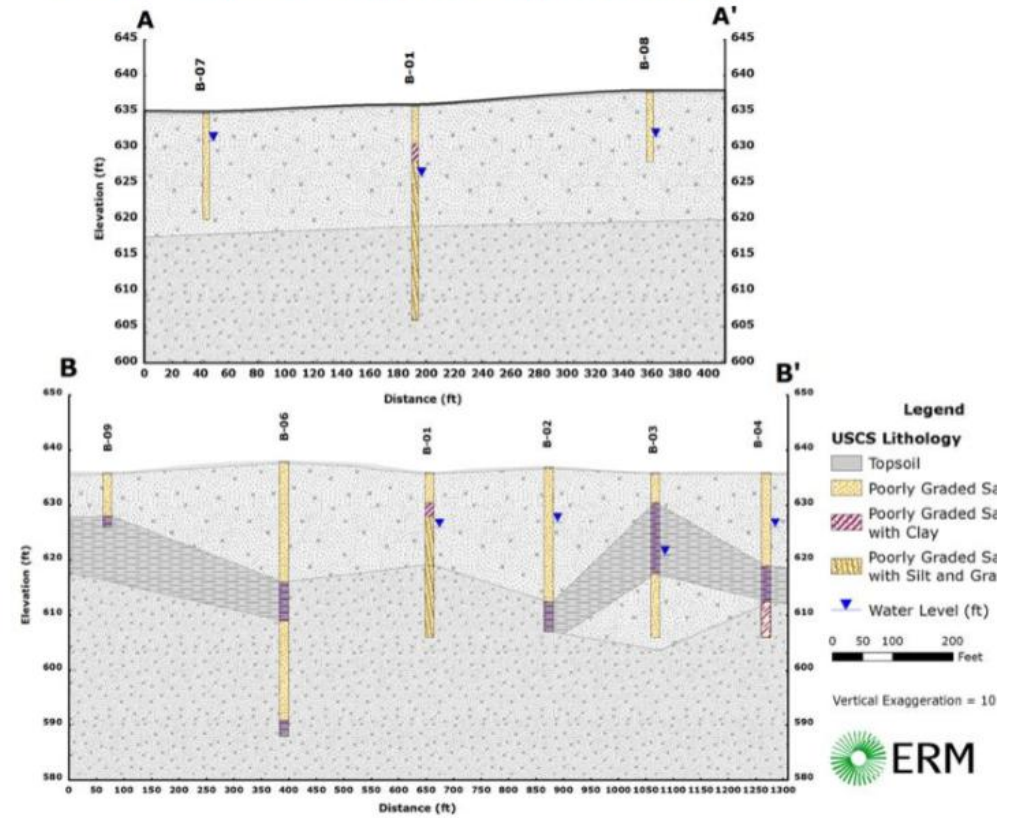


FIGURE 2 GEOLOGIC CROSS-SECTION TRANSECTS A – A' AND B – B'



Model Layer	Layer Name	General Description
1	Topsoil	About 3 to 9 inches of topsoil
2	Loose Granular	Typically very loose to loose poorly graded sand containing varying amounts of fines with occasional medium dense pockets and clay seams
3	Cohesive	Medium stiff to hard lean clay
4	Dense Granular	Typically medium dense to dense poorly graded sand containing varying amounts of fines with occasional loose pockets and clay layers

Stormwater & Groundwater Summary

- **Stormwater**

- The proposed stormwater management design is in accordance with engineering best practices and the *Ottawa County Procedures and Design Standards for Stormwater Management*. The current design plans outline the construction of two interconnected infiltration basins on-site for stormwater treatment of the proposed gravel pad area and a roadside vegetated swale that drains to a modified infiltration area for stormwater treatment of the proposed gravel access road.

- **Groundwater**

- Collectively, these hydrogeologic characteristics suggest that the proposed development poses a low risk to groundwater quality. The natural setting supports long-term environmental resilience, making the area well-suited for the BESS facility from a groundwater protection standpoint.

Construction Process

Construction Process

- Construction would begin in 2027/2028.
- General sequency of events is:
 - Site grading and preparation
 - Installation of underground electrical
 - Foundation construction
 - Setting of BESS containers
 - Above ground wiring
 - Commissioning & testing
- Forecasted Commercial Operation Date (COD) in 2029.

Noise

Acoustical Overview

- **Understanding Sound Levels**

- Decibel Scale (dB): Logarithmic scale measuring sound pressure
- A-weighted Decibels (dBA): Adjusted to reflect human hearing sensitivity (less sensitive to low frequencies)
- 0 dBA is faintest audible sound; normal conversation at 3 feet is about 60 dBA

- **Regulatory Limits**

- Blendon Township Ordinance: Max allowable noise is **50 dBA** at the nearest outer wall of any non-participating dwelling

- **Modeling Approach**

- Conducted using CadnaA software, which utilized the International Organization for Standardization standard ISO 9613-2
- Inputs considered: air absorption, ground effects, reflections, topography, conservative sound propagations (downwind conditions)
- No credit was taken for vegetation or trees

Acoustical Overview (Continued)

- **Equipment and Operational Load**
 - Modeled at 100% (full load) to simulate the worst-case noise scenarios (Shown in Figure A-2)
 - Modeled at 60% load to simulate more realistic expected noise levels, especially during nighttime hours (Shown in Figure A-3)
- **Mitigation Measures**
 - Vendor supplied noise attenuation kits were included for the inverters
- **Model Results**
 - Project noise will be below the Blendon Township Ordinance at all residential locations (49 dBA or less)
 - Partial load modeling (60%) showed much lower noise levels (41 dBA or less)
- **Sound Contour Mapping**
 - Sound contour maps were prepared showing expected noise levels in the area
- **Vibration**
 - Low frequency sound is minimal, and no noise induced vibration will occur

Acoustical Modeling Results for 100 Percent Load (dBA)

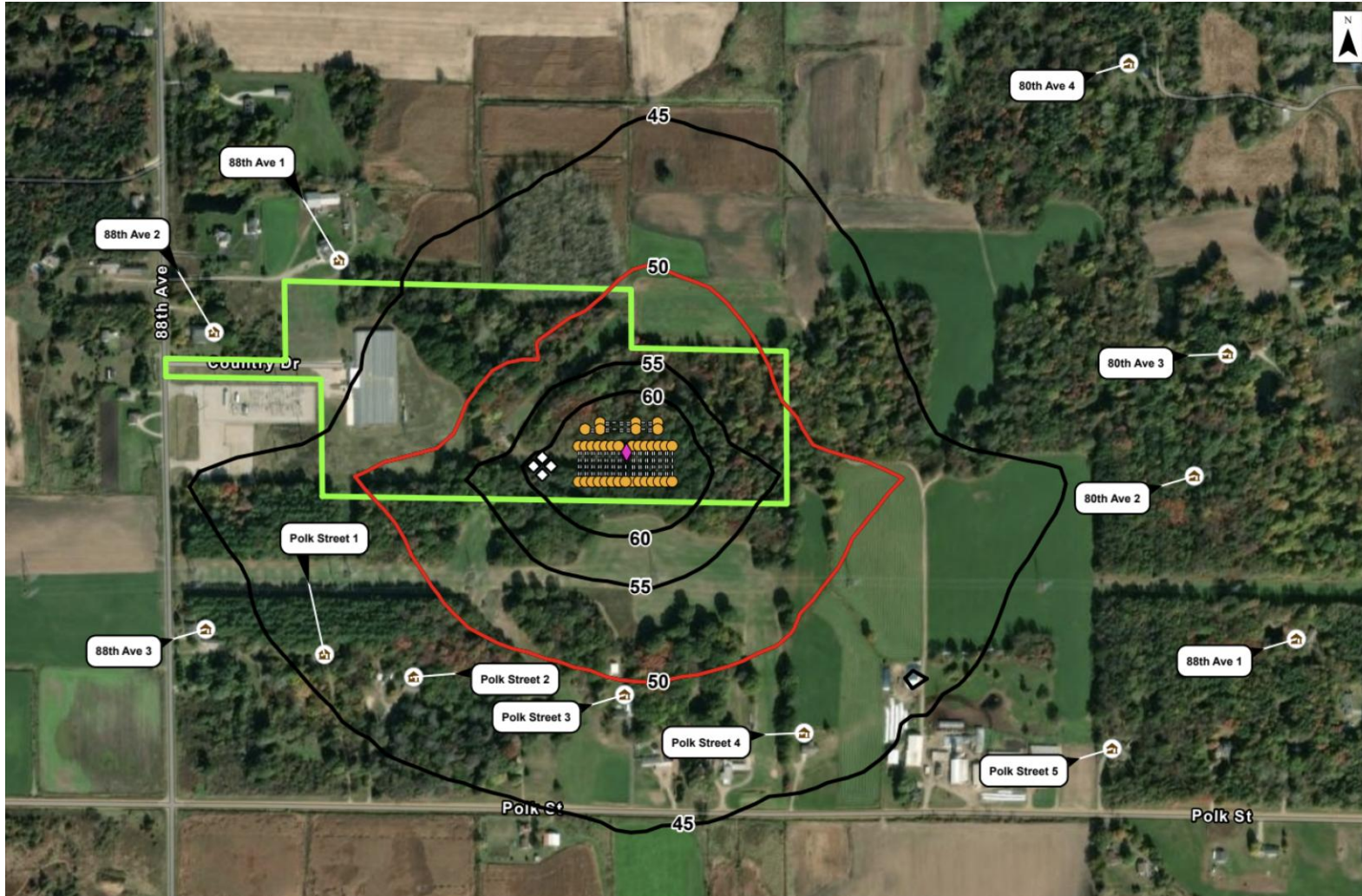
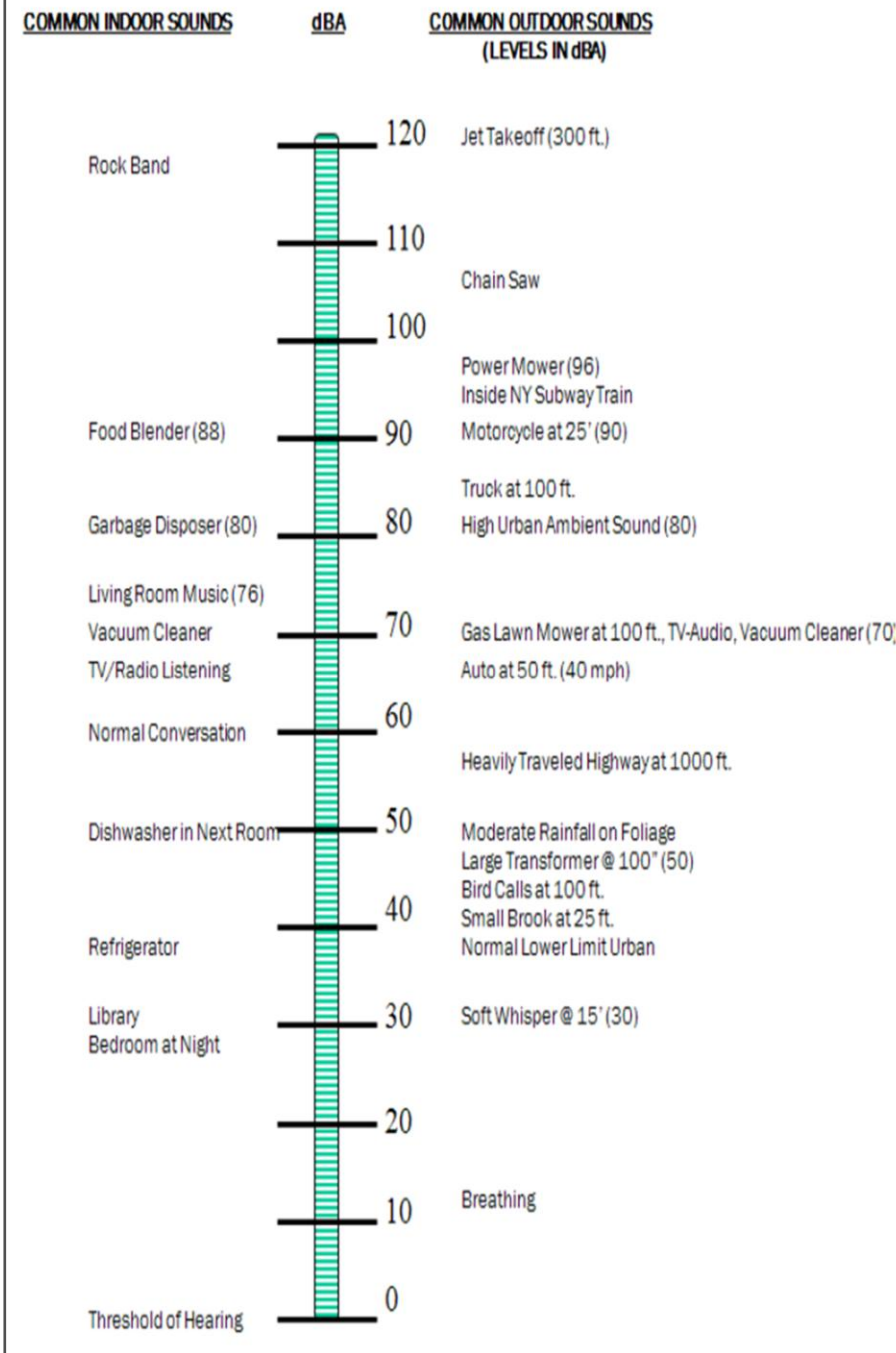
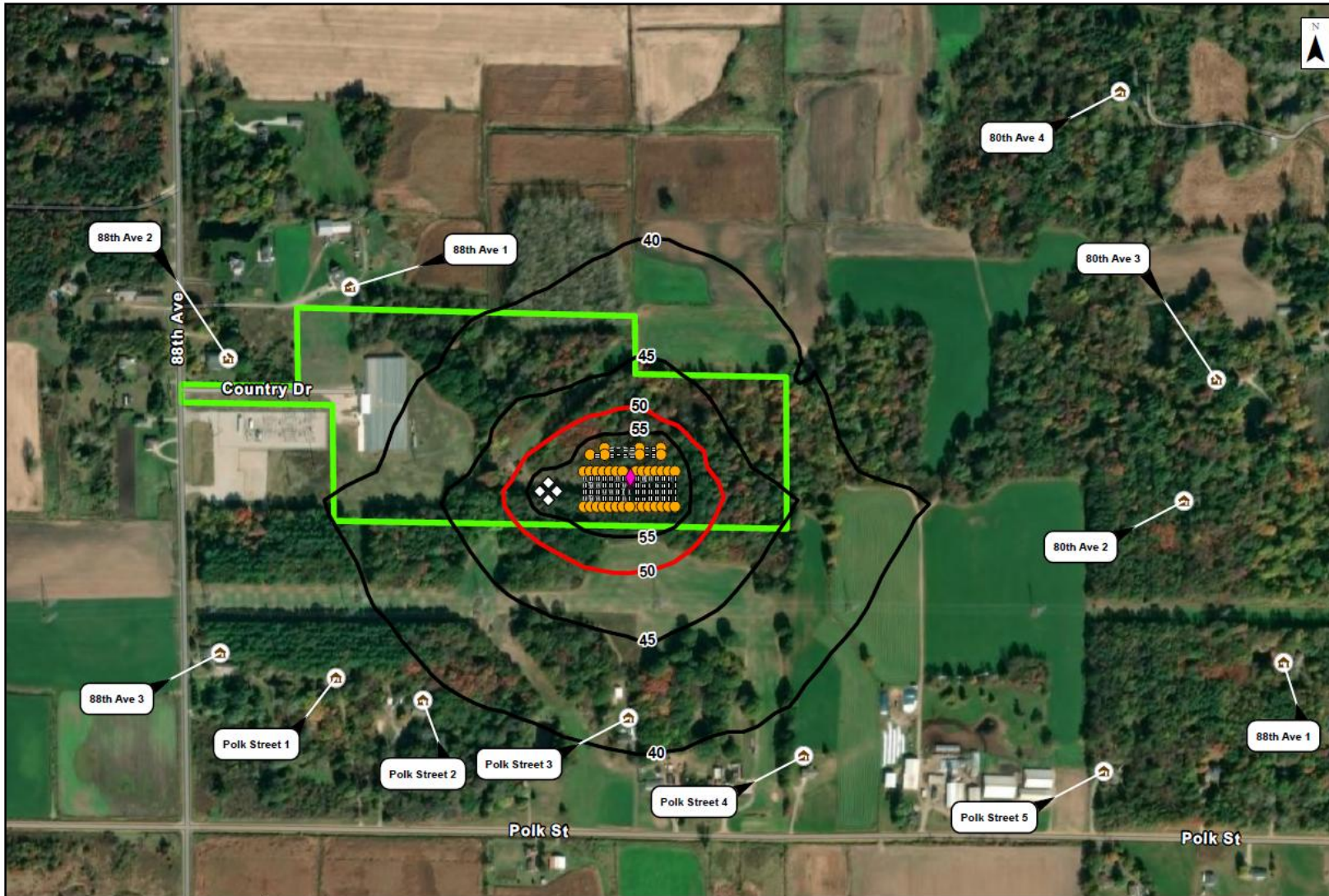


Figure A-2
Operational Noise Contours (dBA)
Full (100 Percent) Load
 KCE MI 4, LLC (KCE)
 Ottawa County, Michigan



Sources: Pirsch and Bland, 1970; Stueckli, et al, 1981; and EPA, 1974.

Acoustical Modeling Results for 60 Percent Load (dBA)



- ◆ Auxiliary Transformer
- Inverter
- Nearby Residence (NSA)
- Substation Transformer
- BESS Container
- Property Line
- Noise Contour (dBA)

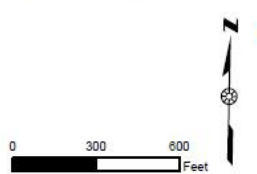
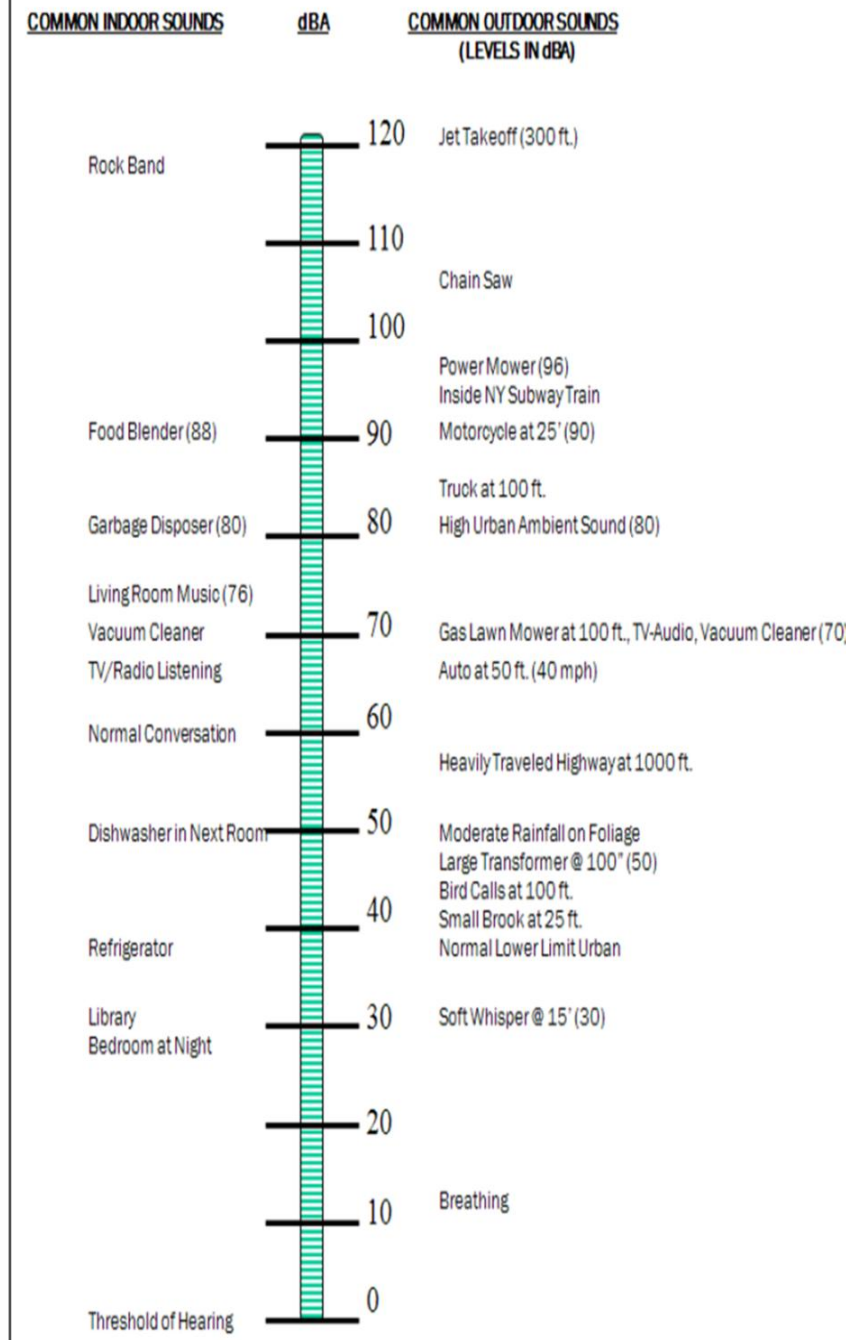


Figure A-3
Operational Noise Contours (dBA)
Partial (60 Percent) Load
 KCE MI 4, LLC (KCE)
 Ottawa County, Michigan



Sources: Pirach and Selvad, 1970; Stuckick, et al, 1991; and EPA, 1974.

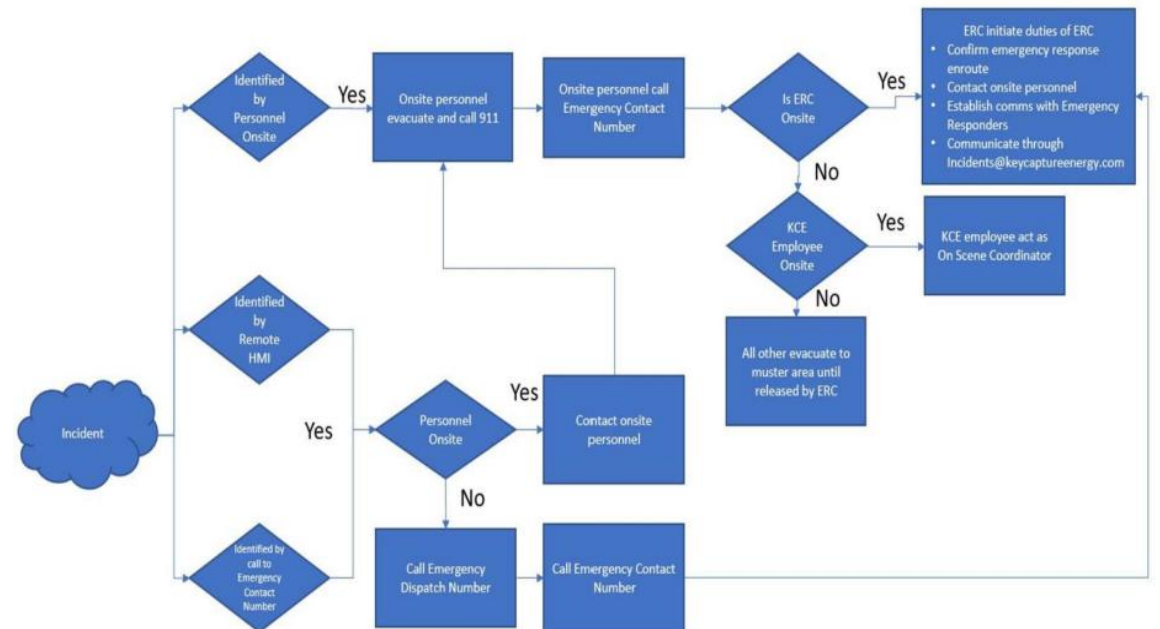
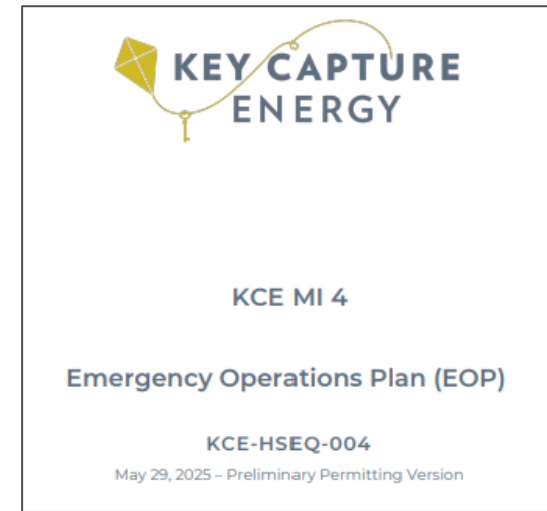
Acoustical Summary

- **Acoustical modeling included vendor supplied noise data for Project sources**
- **Mitigation measures (vendor supplied noise attenuation kits) for the inverters were included in the assessment**
- **Commercially available CadnaA software was used to conduct the modeling assessment**
 - Utilized the International Organization for Standardization standard ISO 9613-2 to provide a conservative assessment
 - Accounted for topography, ground effects, reflections. No credit taken for foliage or trees
 - Modeled under full load conditions to evaluate worst case conditions
 - Also modeled under part load conditions to simulate more realistic expected noise levels
- **Both full and partial load (60%) model results are below the Blendon Township zoning ordinance limit of 50 dBA at any non-participating dwelling**
 - 49 dBA or less under full load
 - 41 dBA or less under partial load
- **No vibration expected due to minimal low frequency noise**

Emergency Operations Plan

Emergency Operations Plan

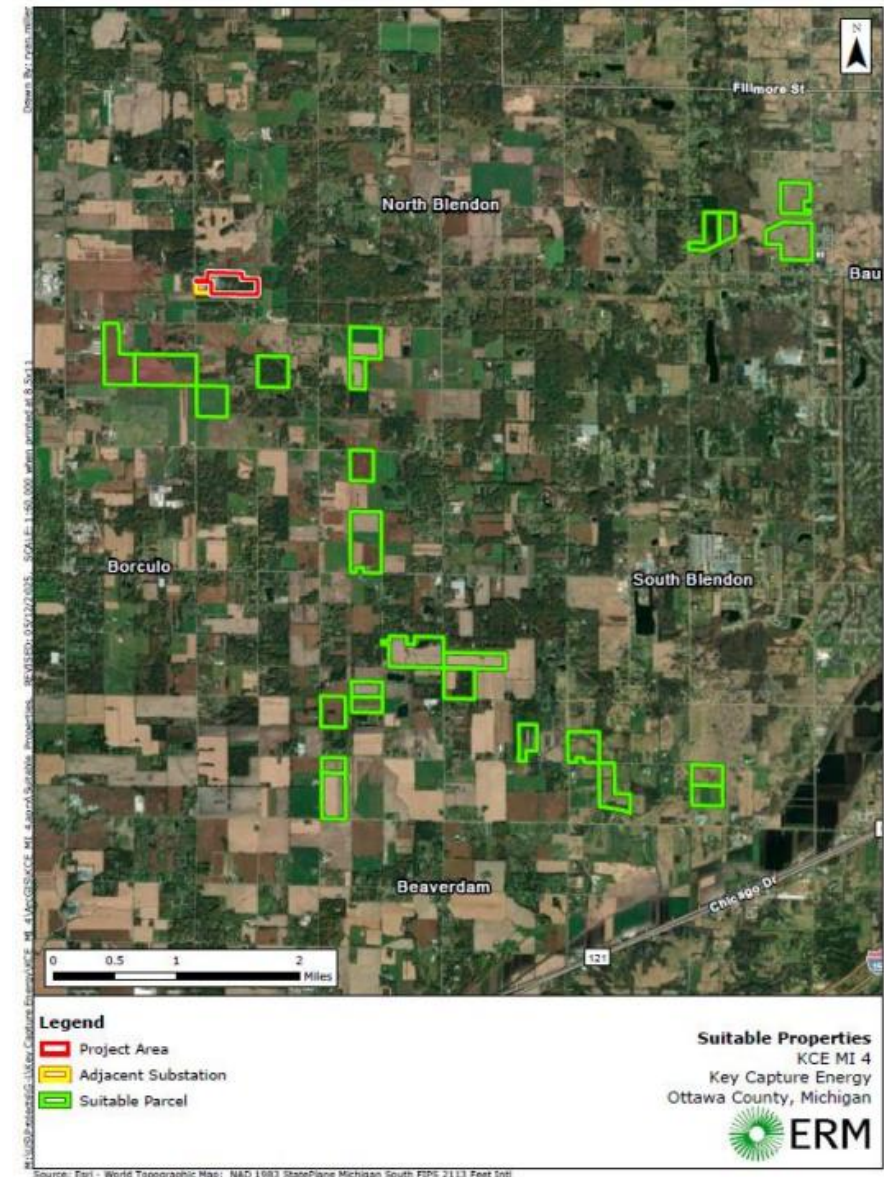
- KCE MI 4 has prepared an Emergency Operations Plan (EOP) included as Appendix G of the application. The codes and standards that govern the project require this plan to be updated and approved by the AHJ.
- The EOP sets forth the emergency operations plans and procedures so that all personnel understand the practices to be followed to prepare for and provide immediate and effective response to emergencies that might arise at KCE facilities.
- KCE is in communication with Ottawa County Emergency Management and Blendon Township Fire Department.



Alternative Site Analysis

Alternative Sites Evaluated

- The site meets all siting criteria and priorities in the Township's Master Plan.
- While other parcels in the Township possess *some* of the characteristics required for a suitable site for BESS, they each contain one or more fatal flaws.
- The primary obstacle to use of the industrial parcels is that the Township Zoning Ordinance does not include a BESS facility as a permitted or special land use in industrial districts.
- Additionally, the project's electrical interconnection is specific to the existing Van Buren substation. Alternative sites would require lengthy/large transmission lines to connect to this substation.



Host Community Agreement

Host Community Agreement

Section 13.05.35(a)(6) Energy Storage Ordinance:

- The Planning Commission may require a company proposing to construct an energy storage facility to enter into a host community agreement pursuant to Section 227 of Act 233 of 2023, as amended.
- The act requires developers to enter into a host community agreement, providing annual payments of \$2,000 per megawatt of a project's capacity to the township (\$200k for the MI 4 project).

HOST COMMUNITY AGREEMENT

This **Host Community Agreement** (the "Agreement") is entered into between the [TOWNSHIP], a Michigan municipality located in [COUNTY] County (the "Township"), and [DEVELOPER], a [DEVELOPER DESCRIPTION], of [DEVELOPER ADDRESS] ("[DEVELOPER]") (each individually a "Party"; collectively, the "Parties").

RECITALS

1. The Township is a host community to a proposed [#]-megawatt ("MW") [solar energy facility / wind energy facility / energy storage facility] ("Project") to be [partially] located within the Township's boundaries, as further described in the application Developer submitted dated _____ (the "Application").
2. [DEVELOPER] is willing to, as limited by this Agreement and in a manner consistent with Public Act 233 of 2023, pay to the Township \$2,000 per megawatt of nameplate capacity located within the Township ("Impact Fee"), which Impact Fee shall be used as determined by the Township for police, fire, public safety, or other infrastructure allowable by law which is designed or reasonably calculated to mitigate any potential impact from the Project.

AGREEMENT

In consideration of the foregoing recitals, which are incorporated into and made a part of this Agreement, and the mutual undertakings and benefits accruing to the parties hereunder and in conformity with applicable law, the parties hereto covenant and agree as follows:

I. EFFECTIVE DATE

This Agreement shall take effect on the last date executed by both the Township and [DEVELOPER].

II. IMPACT FEE

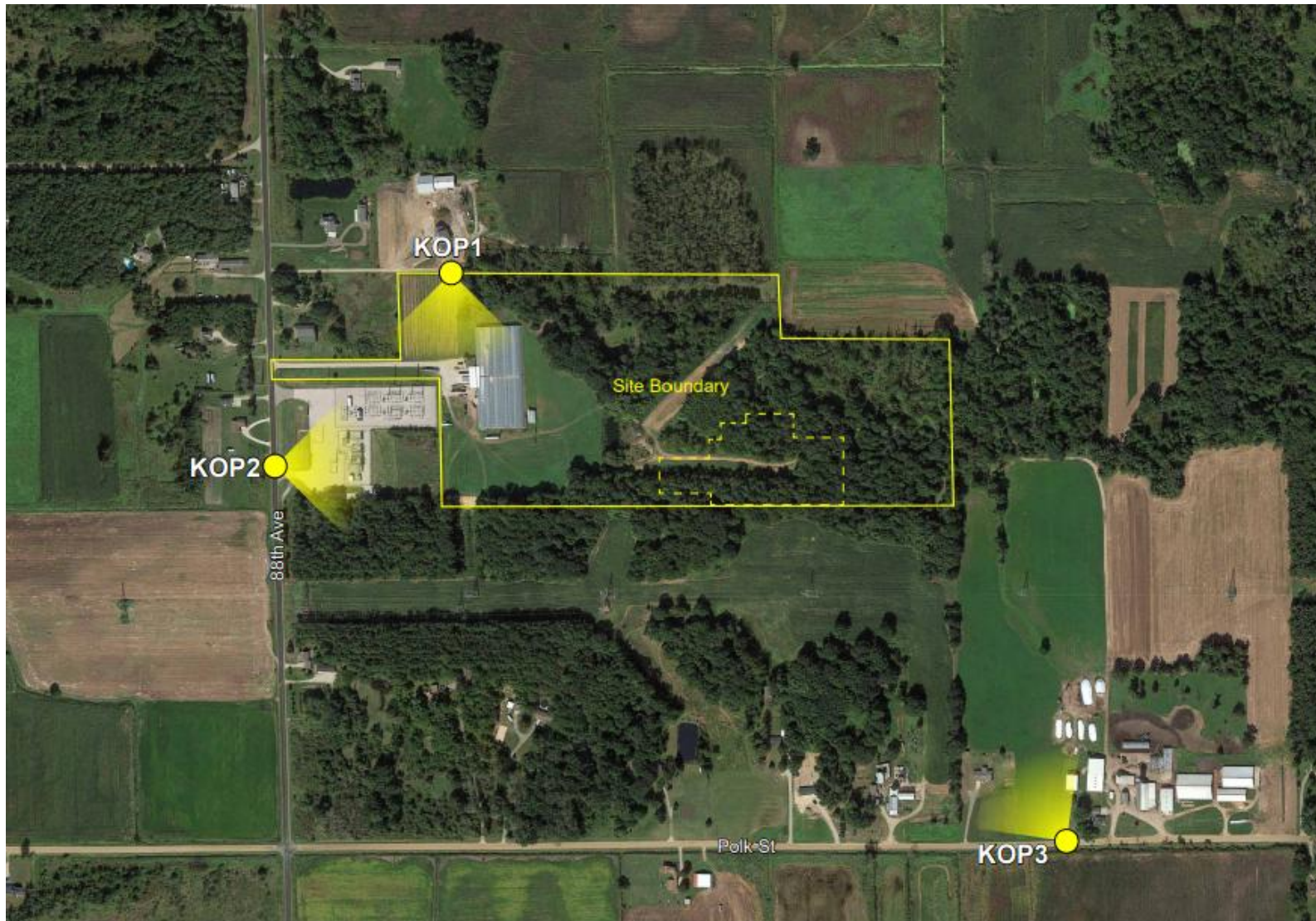
Within 30 days of commencement of operation of the Project, [DEVELOPER] shall pay to the Township an Impact Fee of \$2,000 per megawatt of nameplate capacity located within the Township.

III. ELIGIBLE EXPENDITURES AND PAYMENT

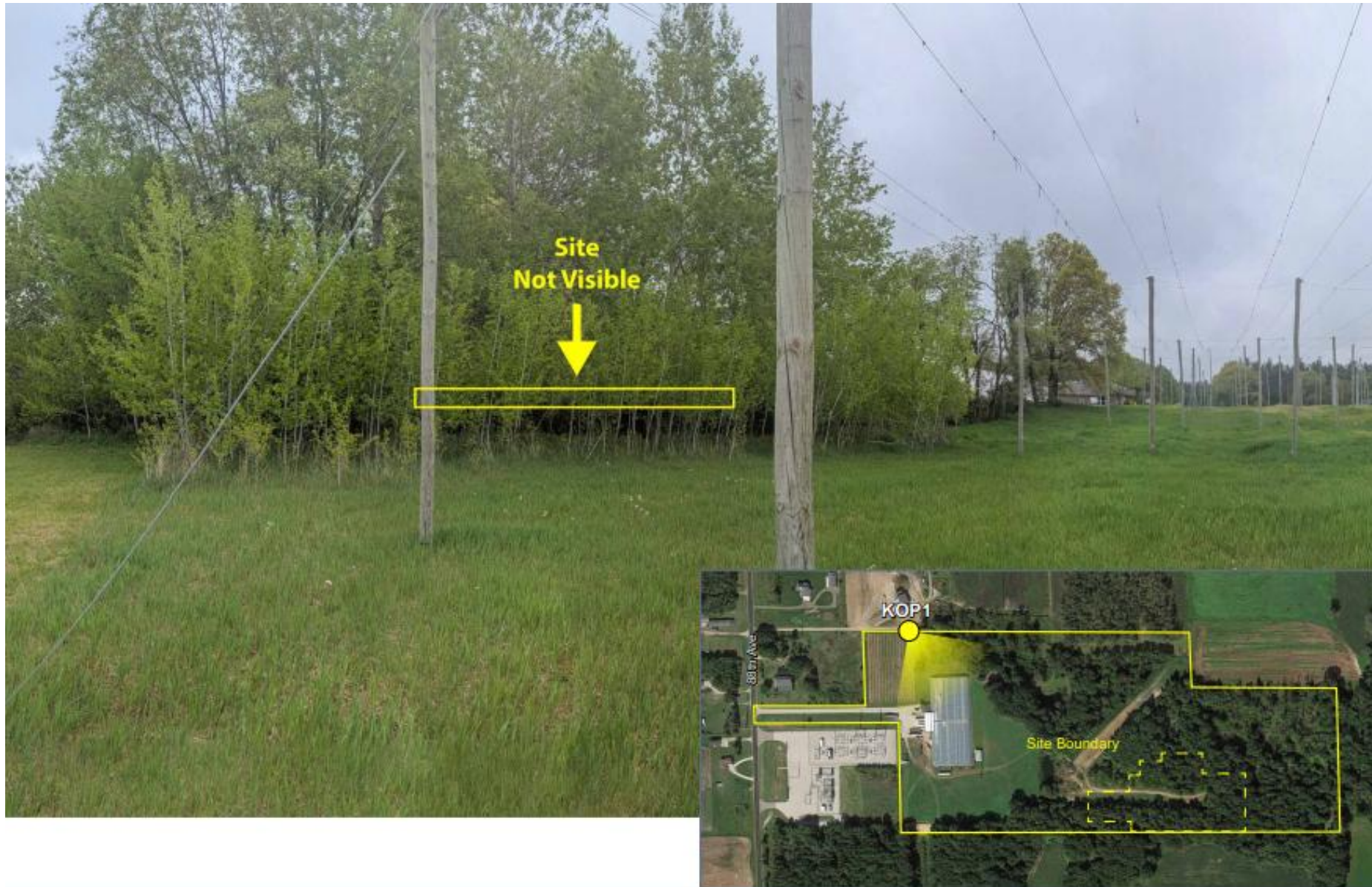
- A. Impact Fee. The total amount of the Impact Fee shall not exceed [\$2,000 x Expected Megawatts #].
- B. Eligible Expenditures. The Impact Fee shall be used as determined by the Township for police, fire, public safety, or other infrastructure allowable by law which is designed or reasonably calculated to mitigate any potential impact from the Project.

Aesthetics

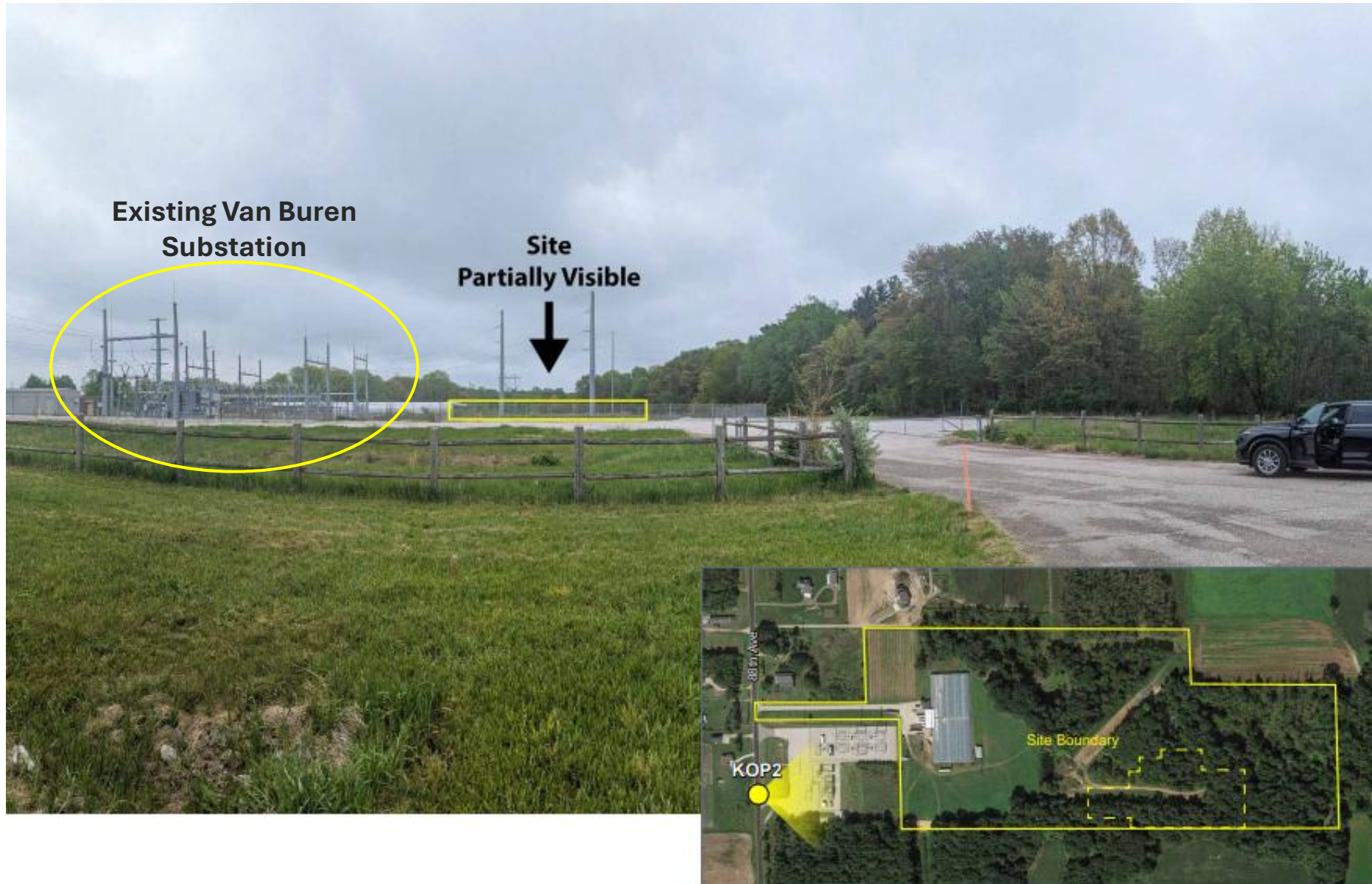
Project Plan View Showing Rendering Key Observation Points (KOPs)



Rendering, North Site Boundary Observation Point (KOP 1), Looking Southeast



Rendering, 88th Ave Observation Point (KOP 2), Looking East



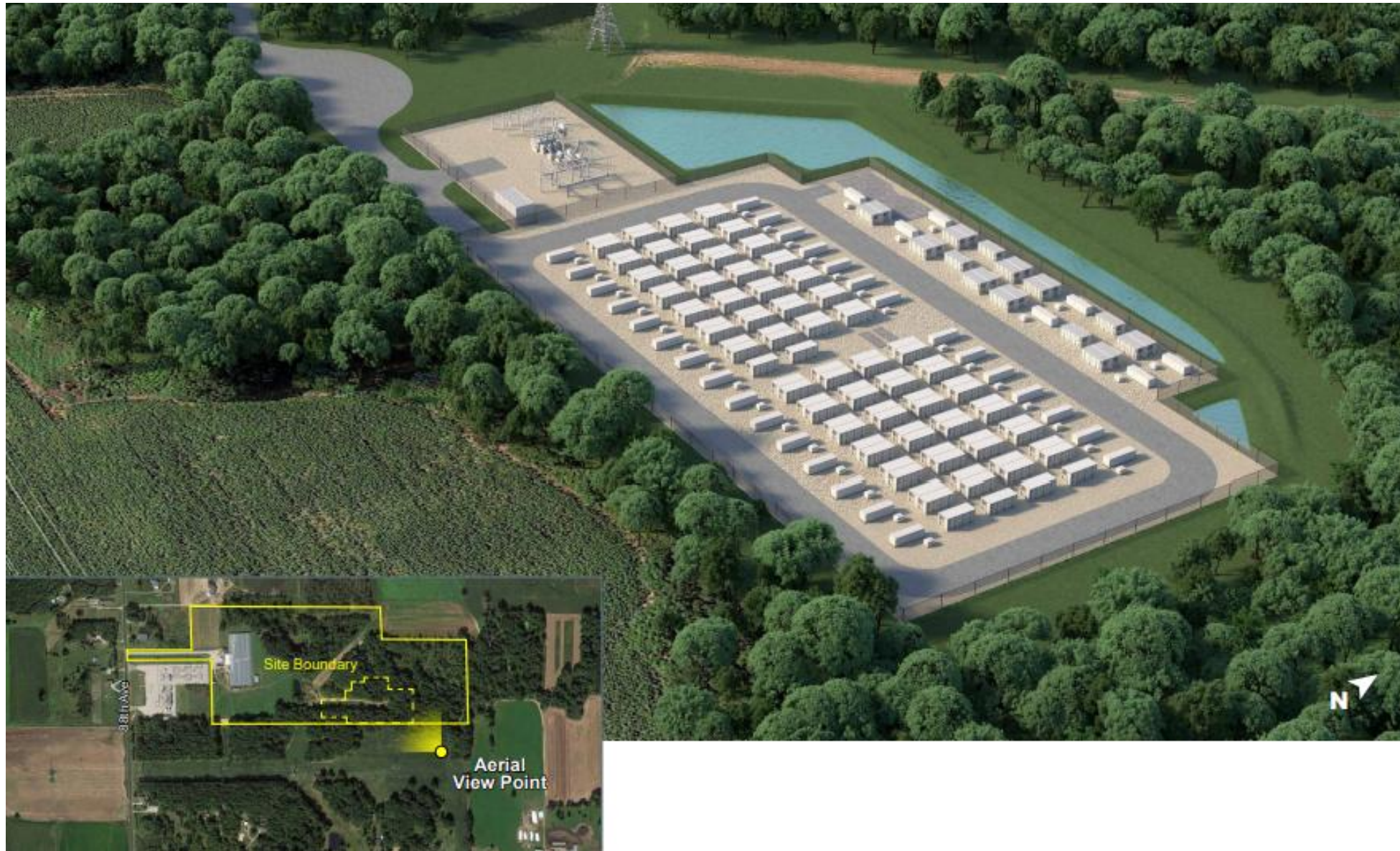
Rendering, Polk Street Observation Point (KOP 3), Looking Northwest



Project & Existing Substation ¾ Aerial View, Facing North-Northwest



Project ¾ Aerial View, Facing Northwest



Phase 1 ESA

Phase 1 Environmental Site Assessment

- Verdantas LLC completed a Phase I ESA in November 2022, consistent with ASTM E 1527-13, the nationwide standard.
- In accordance with ASTM requirements, Verdantas reviewed federal, state, and local lists of state hazardous sites; underground storage tanks (USTs); hazardous waste management facilities; and environmental releases of hazardous substances and petroleum.
- The assessment revealed no evidence of contamination in soil, soil vapor, or groundwater and no Recognized Environmental Conditions (RECs).
- Consistent with the ASTM standard, the Phase 1 ESA will be refreshed from time to time.



Phase I Environmental Site Assessment

Zeeland, Michigan Property
Site 1: MI4
8284 88th Avenue
Zeeland, Michigan 49464

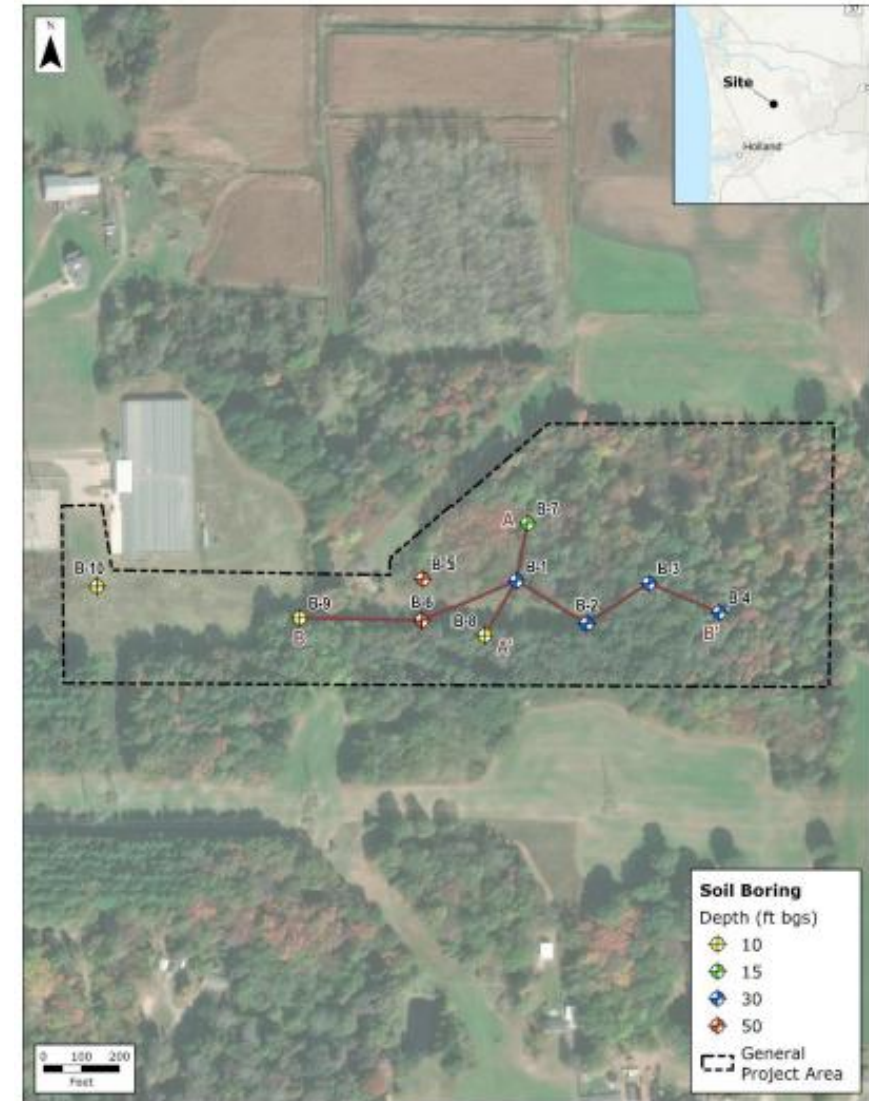
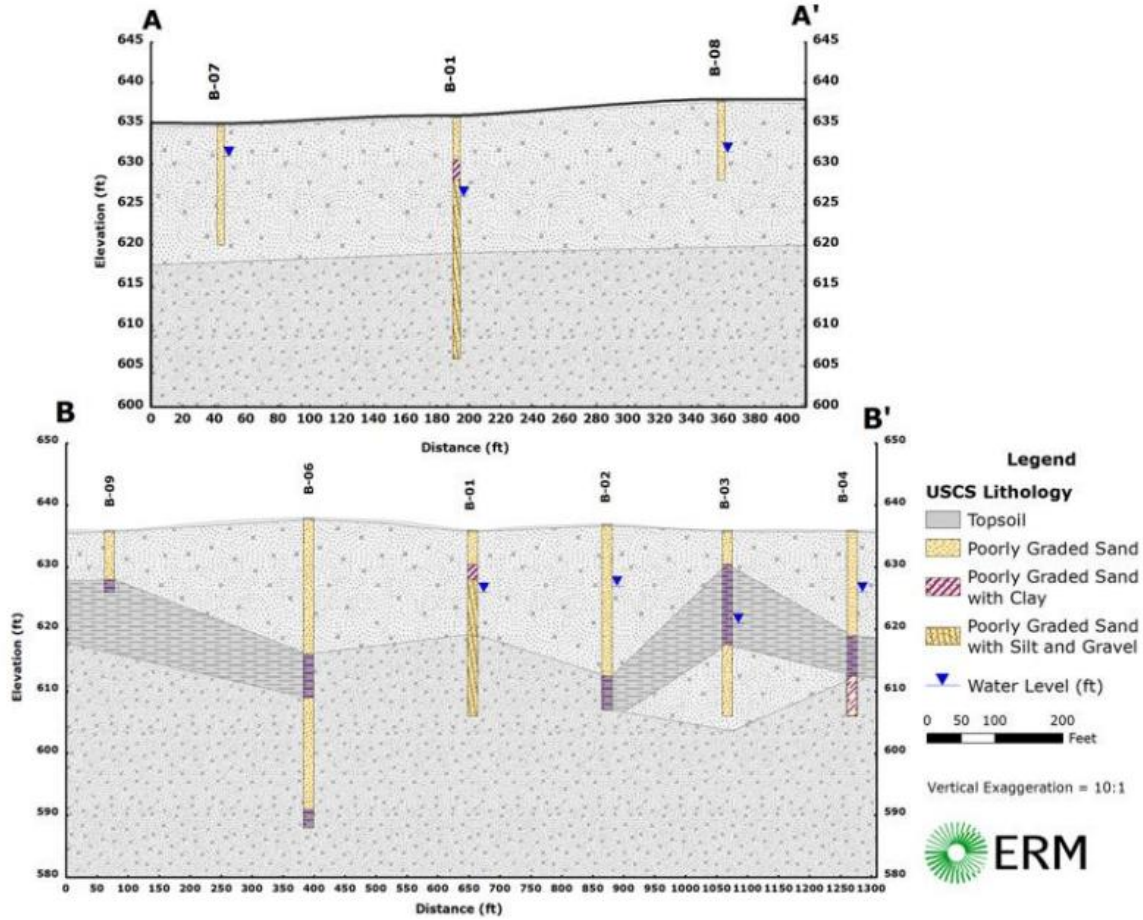
November 2022

Prepared for:
Environmental Design & Research, Landscape
Architecture, Engineering & Environmental
Services, D.P.C.
5 E Long Street, Suite 700
Columbus, Ohio

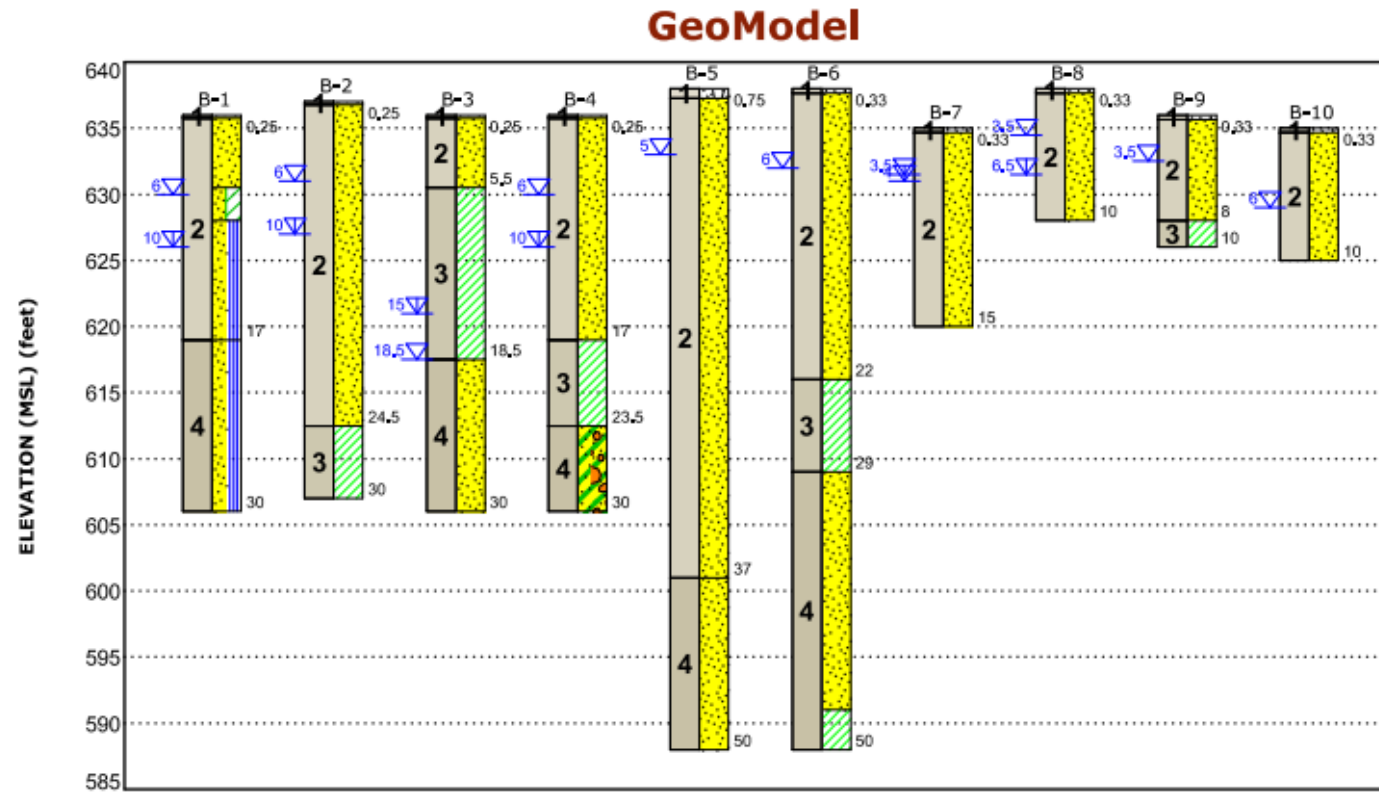
Prepared by:
Verdantas LLC
4 Hemisphere Way
Bedford, Ohio 44146

Geotechnical Study



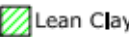


Geotechnical Study – Bore Hole Locations and Depths



Geotechnical Study – Bore Hole Soil Findings



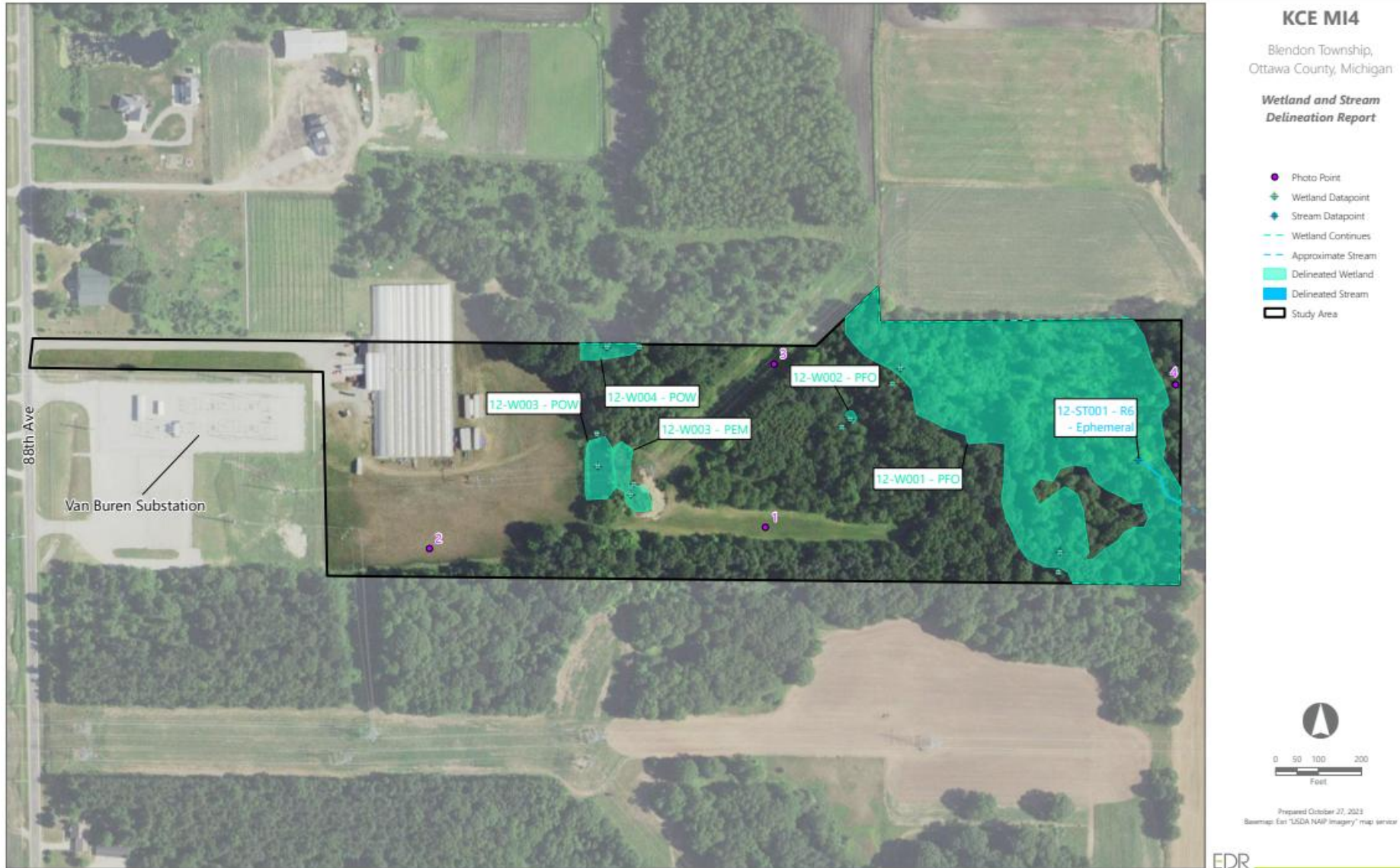
This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description	Legend
1	Topsoil	About 3 to 9 inches of topsoil	 Topsoil
2	Loose Granular	Typically very loose to loose poorly graded sand containing varying amounts of fines with occasional medium dense pockets and clay seams	 Poorly-graded Sand with Clay
3	Cohesive	Medium stiff to hard lean clay	 Lean Clay
4	Dense Granular	Typically medium dense to dense poorly graded sand containing varying amounts of fines, with occasional loose pockets and clay layers	 Poorly-graded Sand with Silt  Clayey Sand with Gravel

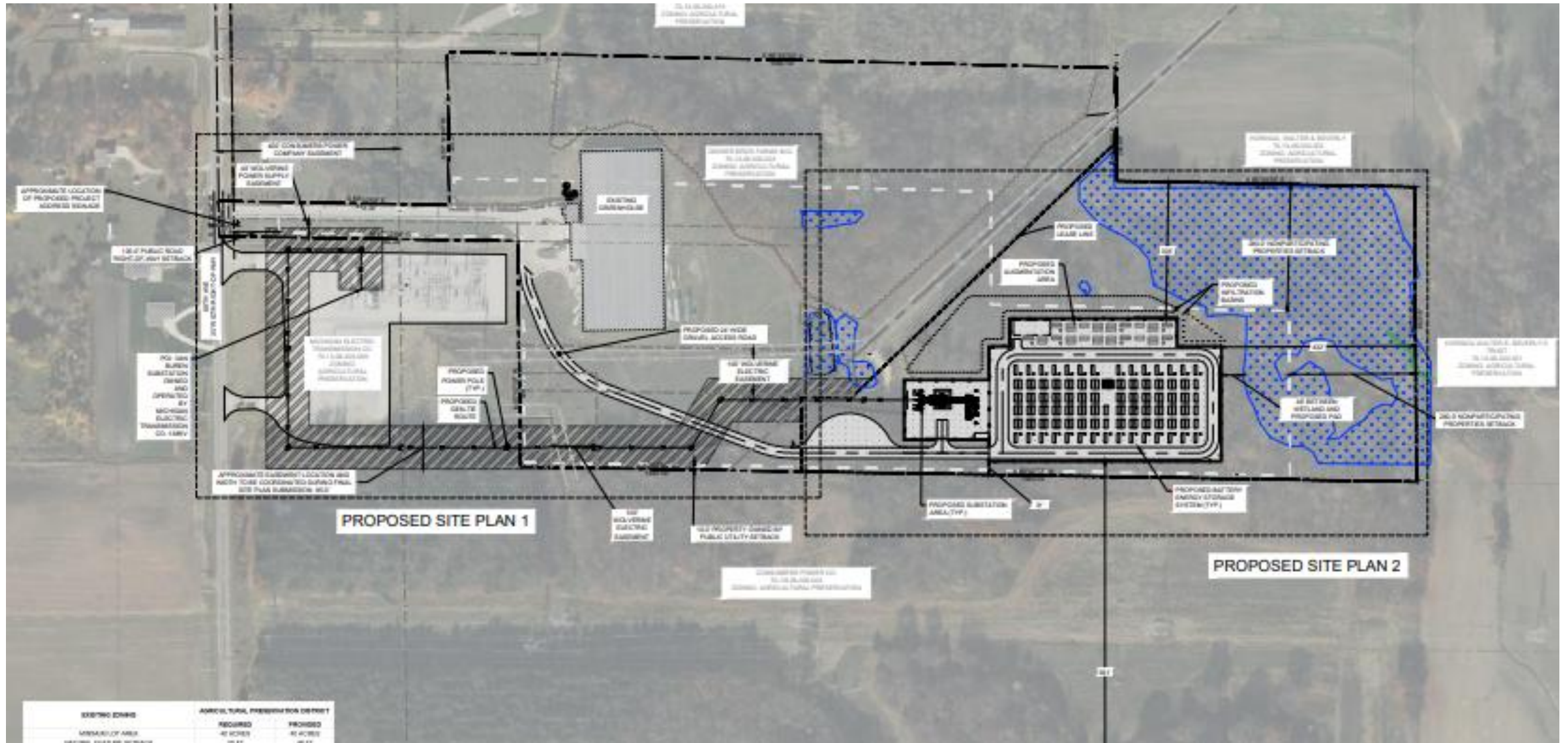
Wetland Delineation

Wetlands Delineation Map

Figure 7. Delineated Wetlands and Streams



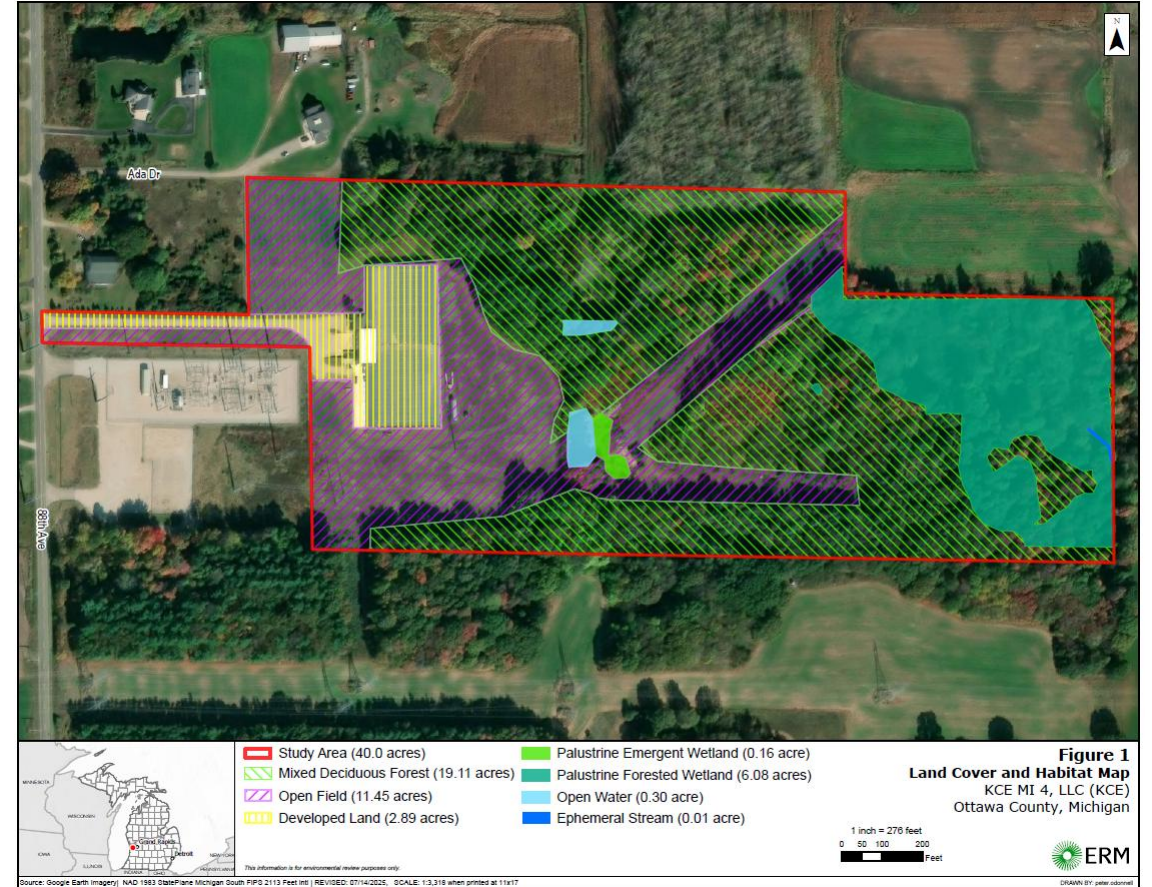
Project General Arrangement with Wetlands Avoidance Shown



Biological Resources

USFWS & MDNR Consultations

- **US Fish and Wildlife Service**
 - The project consulted with US Fish and Wild Service
 - Federally listed species may occur within the Project Area. However, conservation measures will be implemented and no further coordination with USFWS is required.
 - The Project will comply with the Migratory Bird Treaty Act as well as Bald and Golden Eagle Protection Acts by performing preconstruction nesting bird surveys.
- **Michigan Department of Natural Resources**
 - No take permit is required through the MDNR.
 - No further action, no additional surveys, or state consultation for any state-listed species is needed, unless significant changes are made to the Project.



Responses to Comments/Question From the 11/4 Planning Commission Meeting

Re: Question on Carbon Credits & Tax Credits

- The Project is not eligible for carbon credits as it is not a green energy generator.
- The Project is eligible for the federal Investment Tax Credit as allowed under the One Big Beautiful Bill Act.

Re: Suggestion That Hydrogen & Nuclear are Better Than Li-Ion BESS

- Hydrogen Facts:
 - Hydrogen projects have higher capital and operating cost than li-ion BESS.
 - Hydrogen has a round-trip efficiency of <35% vs. li-ion BESS at ~85% making them highly uneconomic for the majority of electricity storage applications.
 - Hydrogen projects use a tremendous amount of water for electrolysis.
 - Hydrogen is the smallest and most flammable element on planet earth. Hydrogen leaks and fires are an issue.
 - Hydrogen projects are larger, taller, and louder than li-ion BESS.
 - Hydrogen tax credits were removed under the One Big Beautiful Bill act, making hydrogen economically unviable in most cases.
- Small Modular Nuclear Reactors (SMRs) are a form of generation and not a substitute for energy storage. In fact, the first pumped hydro projects were built to absorb excess electricity from nuclear reactors that can't shut off or ramp down.

Re: On-Site Generation for Cooling

- Battery cooling is not the same as (say) nuclear cooling, and the cooling systems are not responsible for preventing the batteries from entering thermal runaway (versus a nuclear reactor that requires cooling to prevent a meltdown).
- If cooling systems fail, the batteries turn off and cool via convection.
- While there are onsite battery backup for controls systems (required by code), backup generation for cooling is not required under code or prudent industry practice.

Re: Moss Landing Soil Contamination

- Moss Landing was the world's largest battery, built in 2018, used NMC chemistry (with heavy metals), and was housed in a tightly-packed building. The Project's containers (the largest unit that could burn) are 1/300th the power capacity of Moss Landing. The Project also uses LFP chemistry (no heavy metals).
- We also note that framing of the Moss Landing soil results is important. The speaker at the Planning Commission hearing noted that the soil samples showed heavy metals 100x times larger than background levels but failed to note that the findings also show that the metals present were below levels deemed to be dangerous to human health.
- We'd direct those interested in more details to review the current administration's EPA's report on the event.

Re: Loss of Project Data Connectivity

- Power plant data connections are regulated by FERC, NERC, state PUCs, and local utilities and are far more robust than retail internet connections.
- KCE projects have redundant fire optic, 5G cell modem, and Star Link satellite connections. This greatly exceeds regulatory standards which only require a utility-grade microwave or hard-wire/fiber connection.
- If a connection is lost, the system is programmed to “fail-safe” and shut down.

Re: Decommissioning & Recycling

- We regret that we couldn't cover this topic in our allotted time.
- Please see Key Issue #10 in this deck which covers all related topics brought forth during the Planning Commission meeting.

Re: Homeowners Insurance & Property Values

- We regret that we couldn't cover this topic in our allotted time.
- Please see Key Issue #9 in this deck which covers all related topics brought forth during the Planning Commission meeting.

Re: Geotechnical & Groundwater Concerns

- We regret that we couldn't fully cover this topic in our allotted time.
- Please see Key Issue #3, the special presentation by ERM, and the Geotechnical Study appendix in this deck which covers all related topics brought forth during the Planning Commission meeting.

Re: A Fire Water Tanker Truck Not Being Big Enough to Fight a BESS Fire

- We defer to the Blendon County Fire Department to make its own decisions on what is or is not sufficient.
- KCE's opinions are as follows:
 - The Blendon Township Fire Department is a professional paid-on-call department and is very well equipped to handle a BESS incident versus typical rural departments. It's mutual-aid partners are also relatively well equipped versus typical.
 - We have agreed to bolster the Fire Department's existing resources with an additional tanker. If you analyze required flow rates, equipment travel cycle times, and tank sizing for Blendon County Fire Department's existing equipment, mutual aid department equipment, and an additional tanker, the proposed solution is more than sufficient.

Re: The Project Not Making Money & Being Abandoned

- A comment was made that the Project is not economically viable. This is incorrect. KCE is one of top 5 most experience stand-alone BESS operators and has a robust structured financial model supporting Project economics. We know what it will cost to build, operate, & finance, and we know how much revenue it will earn. The Project is economically viable.
- However, under the hypothetical situation that the Project goes bankrupt, it will either be purchased out of bankruptcy at a discount by a new party that operates it profitably (and pursuant to entitlement Conditions of Approval, same as KCE); or, be decommissioned pursuant to Blendon Townships decommissioning Financial Assurance requirements. Please see Key Issue #10 in this deck.

Re: Inability to Re-Use Firefighting Equipment

- A comment was made that firefighting equipment is expensive and cannot be re-used. We defer to the Blendon County Fire Department to make its own position on this topic known.
- KCE's opinions are as follows:
 - Only normal turnout gear is required to respond to a BESS incident.
 - Turnout gear & equipment includes trucks, hoses, firefighter clothing/PPE, and self-contained breathing apparatus (SCBA), are of which all re-usable.
 - The non-reusable consumables associated with responding to a fire include water, non-water agents (not advised for BESS), vehicle fuel, radio/light/detector/etc. batteries, SCBA gas (nitrogen/oxygen mixture), and medical supplies (if required).

Re: Requirement to Build a New Firehouse

- A comment was made that taxpayers would need to shoulder the cost of a new firehouse closer to the Project. This is incorrect. No new firehouse is required or being request by any party.

Re: Requirement For Fire Suppression

- A comment was made that the Project should be equipped with fire suppression. This is not advisable per code, fire science, or prudent industry practice; and in fact, makes the project un-insurable and un-financeable given that certain suppression agents increase risks.
- Please see Key Issues #1 and #2 in this deck that cover these topics in depth.

Re: Regarding ~930' Project Distance to Closest Residence

- A comment was made that the Project is not ~930' away from the nearest residence, but actually closer. As ~930' is an accurate distance, verifiable via survey, we believe reference was being made to the closest line being closer.
- We note that any analysis of sound, light, smoke, etc. is always done relative to sensitive receptors (e.g., homes) and not lines.

Re: BESS Not Being Green Energy

- A comment was made that BESS is not a form of “Green” energy.
- While BESS does help more efficiently use low-carbon generation sources on the power grid (as well as other resources), KCE has not advertised or represented this project as “Green”.

Re: Claim of Mentioning “Buying Low”, but not “Selling High”

- A comment was made that KCE spoke about buying energy low and failed to mention selling it high. This is incorrect and can be verified from video and stenographer transcripts from the event.
- To elaborate and clarify, most BESS owned by Independent Power Producers like KCE is monetized under a “tolling” arrangement whereby a Utility contracts for the services a BESS can provide on a fixed-price, term-certain, performance-guaranteed basis. The Utility is then the party that manages charging, discharging, and associated revenues and costs. This is the most-likely revenue-producing structure for the Project.

Re: Moss Landing Being Offline

- A comment was made about the period of time Moss Landing has been offline and discussion about re-opening.
- For clarity, the portion of Moss Landing that was impacted is being decommissioned. The portions of Moss Landing that were not affected (e.g., the Elkhorn facility) are back in service, as is the nearby Moss Landing Marine Laboratory and Moss Landing State Beach.

Re: Alternative Sites

- A suggestion was made that there are better sites for the Project (e.g., the landfill or Port Sheldon).
- KCE has chosen the Project based on several factors including, among others:
 - Existing substation and transmission (which define the existing character of the site)
 - Electrical usefulness (very high at Van Buren Substation with its 7 transmission line branches)
 - Unencumbered buildable land
 - Setbacks from adjacent exposures
 - Aesthetics & Viewshed (e.g., timbered perimeter)
 - Environmental, Geotechnical, Biological, and Hydrological Suitability
- Please see the Alternative Siting Analysis located in the appendix of this deck.

Re: Brownouts & Blackouts

- A comment was made by a resident that they've never had a brownout with the implication that the Project is not required to prevent such a brownout.
- The power grid must maintain a level of availability higher than most other machines/systems. It also takes several years for electrical resources to be developed and built (averaging 6-7 years for BESS projects). As such, grid operators do not wait until issues occur to fix them but must rather be proactive and forward-looking.
- Planned retirements of aging grid infrastructure and load growth (among other factors) is what incentivizes new electricity resource to be built in advance of having an issue (such as a brownout).

Re: Amp Load for Cooling Systems

- A resident familiar with electrical work asked about the amp load of cooling systems. KCE spoke with this resident after the meeting and clarified that the question was about round-trip-efficiency (“RTE”) of the Project (i.e., how much energy is lost in a charge/discharge cycle).
- Lithium-ion battery projects are the most energy-efficient commercialized energy storage technology with an average round-trip-efficiency of ~85%. This is materially higher than alternative technologies like pumped hydro (75-80%), flow batteries (50-75% RTE), Iron Air (35-50%), and hydrogen (<40%).

Re: Upgrading to New Technology

- A question was posed on whether KCE would upgrade the Project with future technology.
- Resources are put on the grid in the best form/format available at the time and then fulfill their useful lives with the original equipment (albeit with minimal sub-system upgrades) because this is the most cost-effective way to do so.
- By way of example, the J.H. Campbell plant was built in 1962 (Unit 1), 1967 (Unit 2), and 1980 (Unit 3). While enhancements have been made over the years to its controls systems as well as air quality management equipment, the original equipment largely still operates despite there being more efficient coal-fired power generation technology available.
- If KCE wanted to replace the Project's equipment, we note this would re-open the Project's entitlements and require a new building permit.

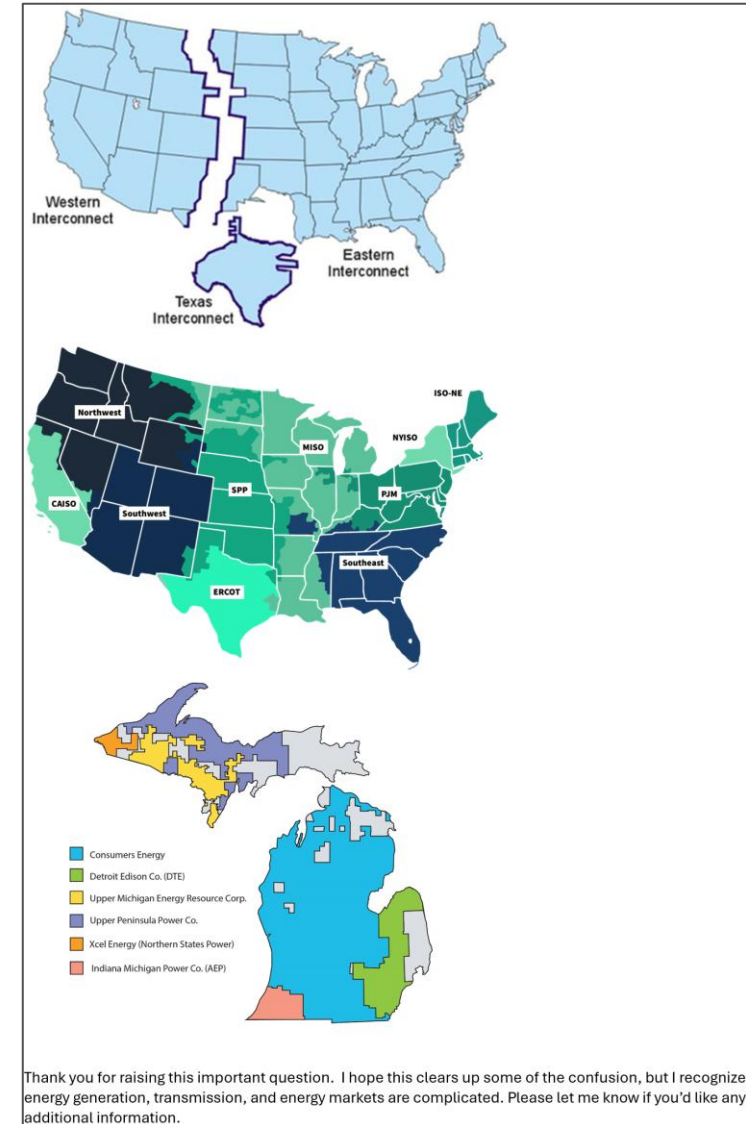
Re: Questions on Project Benefit Going Elsewhere (e.g., Chicago & Detroit)

Bev Horinga asked a follow-up question on this topic. Our response was as follows:

Hi Bev,

Thank you for following up on the comments made by Allison and Sylvia during Wednesday’s meeting. My team and I were surprised by their statements, which reflect a misunderstanding of how electric supply, demand, generation, transmission, and wholesale energy markets operate. I appreciate the opportunity to clarify. Here’s some talking points on this:

- As a first principle, you can’t tell electricity where to go; it simply follows the path of least resistance. What that means is that when the battery is charging, electrons come from the electrically closest generators first, and when it’s discharging, they go to the electrically nearest loads first (this is explained by a physics concept known as “Ohm’s Law”). It’s also true that the power grid as a whole is a big machine whereby all of the generators, power lines, batteries, and loads work together to strengthen the entire grid such that if any one of these go down, there’s a backup option to allow energy to flow where it’s needed (this is known as “N-1” reliability).
- The US has three distinct electrical grids (“Interconnects”): an Eastern Interconnect, a Western Interconnect, and the Texas Interconnect. Within those Interconnects, there are also Independent System Operators and Regional Transmission Organizations (“ISOs/RTOs”) responsible for managing a portion of each Interconnect and managing bulk power markets to allow energy to be financially transacted. Within the ISOs/RTOs, there are also Balancing Authorities (“BAs”) responsible for balancing supply and demand within the BA; these are generally aligned with utility service territories.
- MI 4 is located in Consumer’s territory, which is located within the Midwest Independent System Operator (“MISO”) territory, which is located within the Eastern Interconnect. So, MI 4 will predominantly balance supply and demand within Consumer’s territory (and more specifically, the electrically closest generators/loads within the territory, like Blendon Township), it also benefits the MISO as well the Eastern Interconnection as a whole. It’s also true that batteries elsewhere in the BA, ISO, and Interconnect benefit Blendon Township.
- As for the Chicago/Detroit questions specifically: If Detroit or Chicago need electrical resources, those resources get built near those cities (and both Chicago and Detroit have batteries under development, in construction, and operating). So, while it’s true that MI 4 primarily benefits the local area, it does help support both Chicago and Detroit to a small degree (and Portland ME, Atlanta GA, New Orleans LA, etc.). And, the batteries in Chicago, Detroit, Portland, Atlanta, New Orleans, etc. also benefit Blendon Township to a small degree, because they’re all interconnected.



Re: Electricity Bills Going Up or Down due to Project

- Regulators such as Public Utility Commissions analyze the supply and demand for electricity, with the goal of balancing utility revenue/profit, system reliability, and costs to consumers (accounting for inflation).
- If system reliability is forecast to be lower in the future due to an increase in demand (more ratepayers) or a reduction in generation (retiring power plants), then new resources must be brought online.
- The cost of new resources is passed on to ratepayers; however, these costs are offset by: 1) an increased rate base revenue pool (more customers = more revenue to pay costs); and 2) a reduction in rate-based costs due to no longer having to pay for retired infrastructure (and their associated costs).
- In Michigan, several power plants are about to retire, and their associated costs will not be carried by the rate base (unless securitized, which is a different topic). It is also true that both residential and business load growth is increasing rate-base revenue. Both offset the cost of the Project.

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- In Michigan, several power plants are about to retire, and their associated costs will not be carried by the rate base (unless securitized, which is a different topic). It is also true that both residential and business load growth is increasing rate-base revenue. Both offset the cost of the Project.

Re: Animals

- We regret that we couldn't fully cover this topic in our allotted time.
- Please see Key Issue #5 in this deck.

Re: Evacuation Radius

- We regret that we couldn't fully cover this topic in our allotted time.
- Please see Key Issue #2 as well as the special presentation on on BESS safety by Fire & Risk Alliance in this deck.

Re: Security & Terrorist Attacks

Cyber Security and Physical Security of grid infrastructure is highly regulated by the North American Electric Reliability Corporation (“NERC”) under their Critical Infrastructure Protection (“CIP”) rules.

The Project is required by law to comply with NERC CIP and must submit detailed records proving compliance.

To the right, please see our answer to a related inquiry from Bev Horinga on bullet strikes.

This is a good question and one that comes up fairly regularly. While the chances of any single facility experiencing a bullet strike are extremely low, when you look at all of the thousands of electrical infrastructure facilities nationwide (substations, generation facilities, transmission lines, etc.), bullet strikes do happen from time to time. Because your typical hunter is mindful of the trajectory of their bullets/shot, the majority of strikes on electricity facilities tend to be due to malicious behavior (e.g., folks plinking with 22's and shotguns loaded with slugs or buckshot are most common). If interested, the worst incident that has ever occurred was the [Metcalf Sniper Attack](#).

For the sake of national security, the federal government has highly regulated the designs of power industry equipment to be resilient to gunfire. From a national security perspective, a Federal agency called the North American Electric Reliability Counsel (NERC) has stringent Critical Infrastructure Protection (CIP) rules that we must follow that address everything from cyber security (hackers) to physical security, including gunfire.

The technical codes and standards that the facility must comply with also address projectiles like gunfire. The National Fire Protection Agency (NFPA) NFPA 855 code that BESS must comply with requires that batteries deployed in the field comply with a United Nations (UN) standard called UN 38.3. UN 38.3 requires batteries to be physically abused several different ways in a lab to address projectile penetration from objects like bullets, shaking similar to a bad earthquake, crushing similar to a bad vehicle crash during transportation, extreme heat and cold, and high altitude, among others.

In regard to our facility, the damage inflicted by a gunshot would obviously vary a lot depending on the caliber/gauge and muzzle velocity of the ammunition as well as distance; however, whether the project were shot by a 22 handgun, a 30-06 round that tumbles upon impact, or a 45 ACP hollow point the expands, the batteries will not catch fire and will not leak. The system will simply shut down until it can be repaired.

Re: ESS Tech, Inc. (“ESS”)

- A suggestion was made that KCE consider ESS Tech, Inc. (NYSE: GWH), a maker of iron flow batteries. KCE is familiar with ESS and all other energy storage technologies. KCE does not wish to comment on ESS specifically, but recommends interested parties do an internet search for “ESS Tech survival” to better understand the status of ESS.
- More generally, non-lithium-ion technologies have a unique set of attributes that do not make them a good fit for the Project including:
 - Land use of 1.5-10x more due to low energy density
 - Higher up-front unit capital costs and ongoing unit operating costs
 - Materially lower round-trip efficiency
 - Higher self-discharge rates (energy lost due to the passage of time)
 - Lower availability / up-time
 - Lower bankability (i.e., ability to take out mortgage on the project)
 - Challenging insurability (i.e., off-the-shelf insurance does not exist due to relatively lower levels of deployment)

Re: Developers Funding Water Pipes

- A suggestion was made that “developers” routinely fund water infrastructure with the suggestion that KCE do the same.
- It is true the developers of residential neighborhoods and commercial parks fund potable water and wastewater infrastructure associated with their development because these developments are routine user of potable- and waste-water services. The Project is un-manned and does not use fresh water or wastewater service.
- We do; however, use grid infrastructure, which we are required to fund upgrades to, similar to how other types of developments fund the infrastructure they use.
- Fire water is not recommended for use on BESS facilities by any recognized fire protection organization and is only rarely needed for secondary fires (e.g., vegetation). KCE has publicly stated that it will work with Blendon Township Fire Department on procuring an additional tanker, as they’ve requested.

Re: Visual Impact

- A resident claimed they will be able to see the Project from their house.
- The Project is surrounded by existing mature dense forest. This is better-than-typical versus BESS projects worldwide and is one of the reasons we chose this site for the Project.
- Please see the “Aesthetics” section of the Appendix to this deck showing photorealistic, to-scale renderings of the Project from several different angles and elevations.
- The only angle where a person can see the Project is from a specific section of 88th Avenue (KOP #2) where one must look past the existing Van Buren substation to see the Project.

Re: “First of a Kind”

- There was discussion of the Project being “first of a kind”.
- Please see the “Energy Storage Systems Basics” section of this deck with deployment statistics as well as Key Concern #7 in this deck addressing the wide deployment of the brands and technology contemplated for the Project.
- This Project is not first-of-a-kind and is contemplated with technology widely deployed elsewhere, including in Michigan.

Re: Incidents “We Don’t Know About”

- A resident pointed out that many BESS incidents are ones we don’t know about and that KCE admitted this.
- This comment is in reference to the “LFP BESS Incident Sequence of Events” slide, and specifically KCE’s discussion of upset conditions.
- An electrical upset condition is simply a short-circuit, no different than when a circuit breaker trips in a home. These are not safety incidents, but rather the prevention of an incident (and do not get reported).
- Millions of circuit breakers and fuses trip each year. This is a normal part of the operation of electrical devices.

Re: MSDS / Fumes / Air Quality

- Comments were made regarding fumes & air quality.
- We know what's in the batteries, gasses, and smoke. Please see Key Concern #1, the special presentation by Fire & Risk Alliance, as well as the EPA Energy Storage fact sheet in this deck.

Re: Local Entitlement

- A question was raised on how many project have actually been approved at the local level.
- Some states have state-level siting boards that determine whether infrastructure projects should be entitled; however, the vast majority of states are “home rule” (~40 states) which require local entitlement of power projects.
- The vast majority of power projects are entitled as the local level by communities like Blendon Township, including KCE’s projects.

Re: 2-Years of Development Prior to Local Engagement

- A question was raised on why KCE did not come to Blendon Township for entitlement until ~2 years after it began development.
- This is extremely common and was discussed at the beginning of KCE's presentation. Prior to entitlement, land rights must be secured, a project must undergo a lengthy electrical study process by the interconnection authority, and several environmental, geotechnical, biological, and other studies must be conducted. Approximately 85% of projects will discover fatal flaws during this process.
- Only after this lengthy process is complete (and no fatal flaws are discovered), can an application be submitted to a permitting body (e.g., Blendon Township) for review.

Re: PA 233

- We regret that we couldn't fully cover this topic in our allotted time.
- Please see Key Issue #11 in this deck.

Re: Economic Benefit to the Community

- We regret that we couldn't fully cover this topic in our allotted time.
- Please see the Host Community Agreement in the Appendix to this deck which discusses a \$200k benefit.
- If approved locally, Blendon Township will also receive \$500k from the State.
- Estimated tax benefits amount to ~\$6M.
- Total economic benefit to Blendon Township (if approved locally) is ~\$6.7M.

Re: The Fire Department Not Knowing About the Project

- I resident mentioned that the fire department doesn't know about the Project.
- KCE is in direct and frequent conversation with Ottawa County Emergency Management and Blendon Township Fire Department.
- Please see the slide “What happens in the event of an emergency? (1)”