



# **Battery Energy Storage Systems (BESS) in Solano County**

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- Update on Development of an Ordinance
- Moratorium Expires in January 2026

Presented to the Board of Supervisors  
On August 12, 2025  
By Resource Management

Erik Hagstrom, Associate Planner



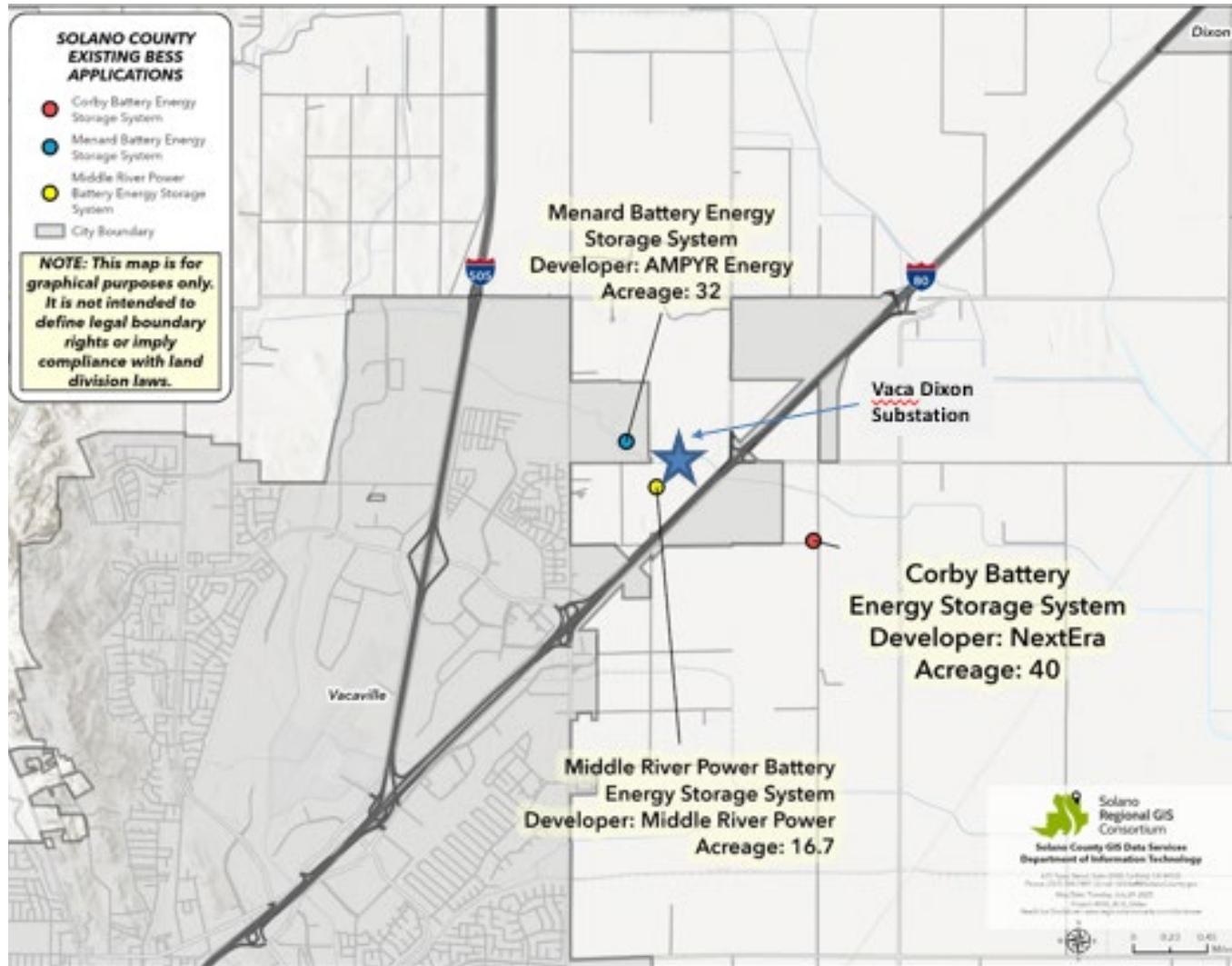
# BESS in Solano County

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- A moratorium passed by the Board of Supervisors in January 2024 allows staff time to develop specific criteria such as:
  - Project Siting
  - Permitting types and Approval Authorities
  - Setback/buffer standards
  - Requiring an Emergency Response Plan (SB 380)
  - Decommissioning Plan
- Zoning regulations regulate BESS under the General Category:
  - Ag zoning - *Infrastructure Uses – Utility Facility or infrastructure, outside of right-of-way*
- Two (2) preliminary project applications received, to date
  - *Deemed incomplete by the California Energy Commission (CEC)*
- Still exploring revenue opportunities and mitigation



# Proposed BESS Project Locations in Solano County





# Stakeholder Engagement: Technical Working Group

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The Technical Working Group consists of stakeholders from various sectors and meets regularly to advise on ordinance development

## Technical Working Group Members:

- **Priscilla Yeaney:** Solano County Assistant Agriculture Commissioner
- **Alfred Abruzzini:** Fire Chief Representative
- **Robyn Rains:** Solano County Emergency Services Manager
- **Scott Murtishaw:** California Energy Storage Alliance Executive Director
- **Sarah Dunn:** Community Member
- **Andrew Dye:** Solano County Environmental Health, Hazardous Materials



# Stakeholder Engagement

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- **National Expert Consultation**

Engagement with leading organizations including:

- National Fire Protection Association (NFPA)
- Underwriters Laboratories (UL)
- Electric Power Research Institute (EPRI)
- Hiller Companies (fire protection specialists)

- **Regional Coordination**

Ongoing dialog with:

- City of Vacaville (also developing BESS regulations)
- California counties including those that have experienced BESS thermal runaway incidents (San Diego, Monterey, Kern)



# Definitions

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**Front of Meter:** Energy systems or resources that are connected directly to the utility grid, before the electricity meter that measures a customer's consumption.

- *Utility company, independent power producers or grid operators*

**Back of Meter:** Refers to energy systems or resources that are located on the customer's side of the electricity meter.

- *Within a home, business or other facility*

**Thermal Runaway:** a self-reinforcing, uncontrolled increase in temperature within a system, often leading to damage, fire, or explosion.



# Draft Ordinance: Key Provisions

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## ➤ **Definition and Applicability**

- Defines BESS as an electrochemical device with a rated capacity of 1,000-kilowatt hours (1 megawatt hour) or greater
- Applies to front-of-the-meter systems only
- Exempts behind-the-meter systems supporting residential, commercial, agricultural, and industrial uses



# Draft Ordinance: Key Provisions

## ➤ **Proposed Permitting Process**

- Requires a pre-application meeting
- Technical Review Fee for third-party expert review
- Requires Use Permit review with public hearings before hearing bodies
- Comprehensive application requirements will include technical studies, emergency response plans and decommissioning plans

## ➤ **Proposed Safety Standards**

- Compliance with National Fire Protection Association (NFPA) 855 and Underwriters Laboratory (UL) 9540 standards
- Third-party technical studies and fire protection engineer review
- Requirements for fire detection, suppression systems, and water supply
- Air quality monitoring and reporting
- Prohibition of indoor BESS facilities



# Discussion Items: Prime Ag Land

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## Prime Agricultural Land Regulations

We present three options for addressing BESS development on prime agricultural land (prime, unique, statewide importance):

**Option 1 (Staff Recommendation):** Prohibition on prime agricultural land, unique agricultural land, and land of statewide importance

**Option 2:** Allow BESS facilities to occupy up to 45% of a parcel's prime agricultural land

**Option 3:** Allow BESS facilities on prime agricultural land only if they demonstrate benefit to local agriculture, nearby farmers, or food production



# Discussion Items: Setback Requirements

## Five options for setback requirements for consideration:

**Option 1:** Distance-based requirements with 300-foot setbacks from sensitive receptors and variable property line setbacks

**Option 2:** Reliance on National Fire Protection Association 855 and State requirements only. (currently 10 foot minimum)

**Option 3:** Uniform 50-foot setbacks from all property lines

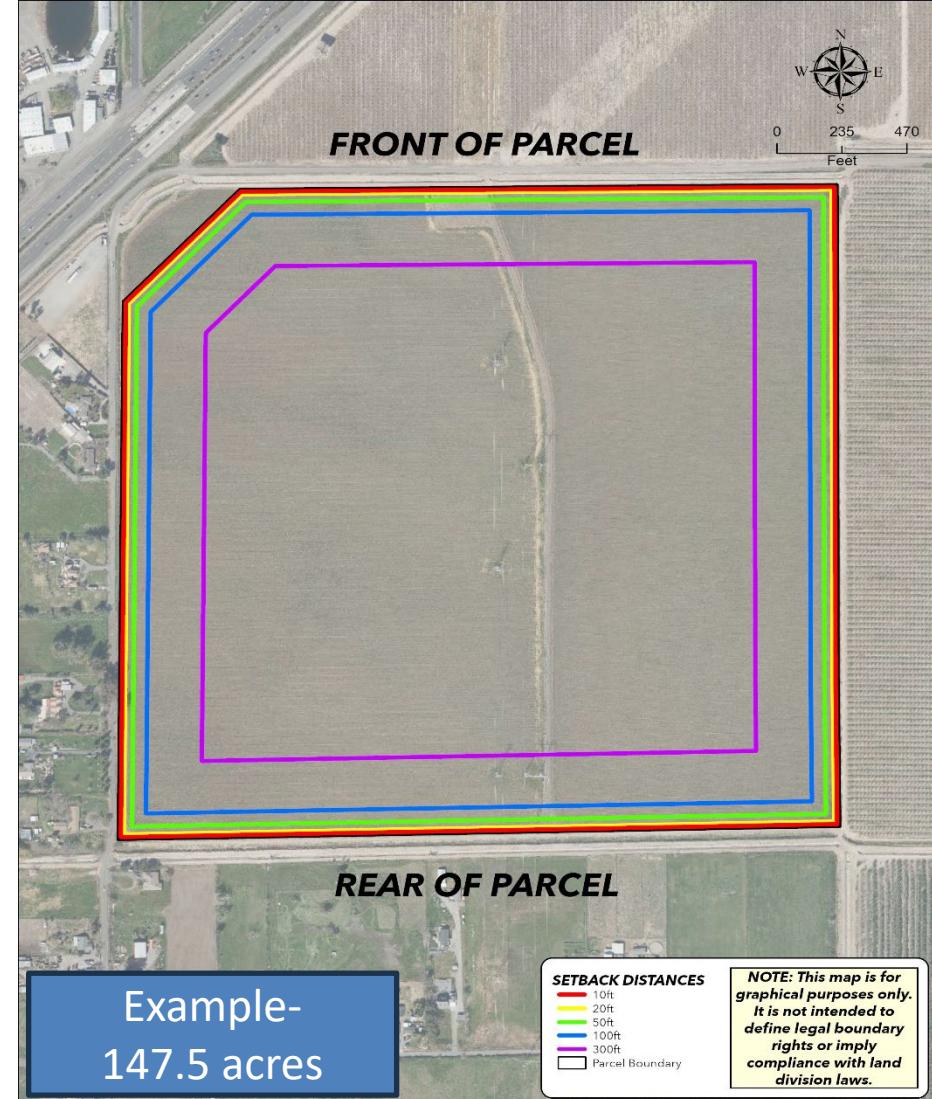
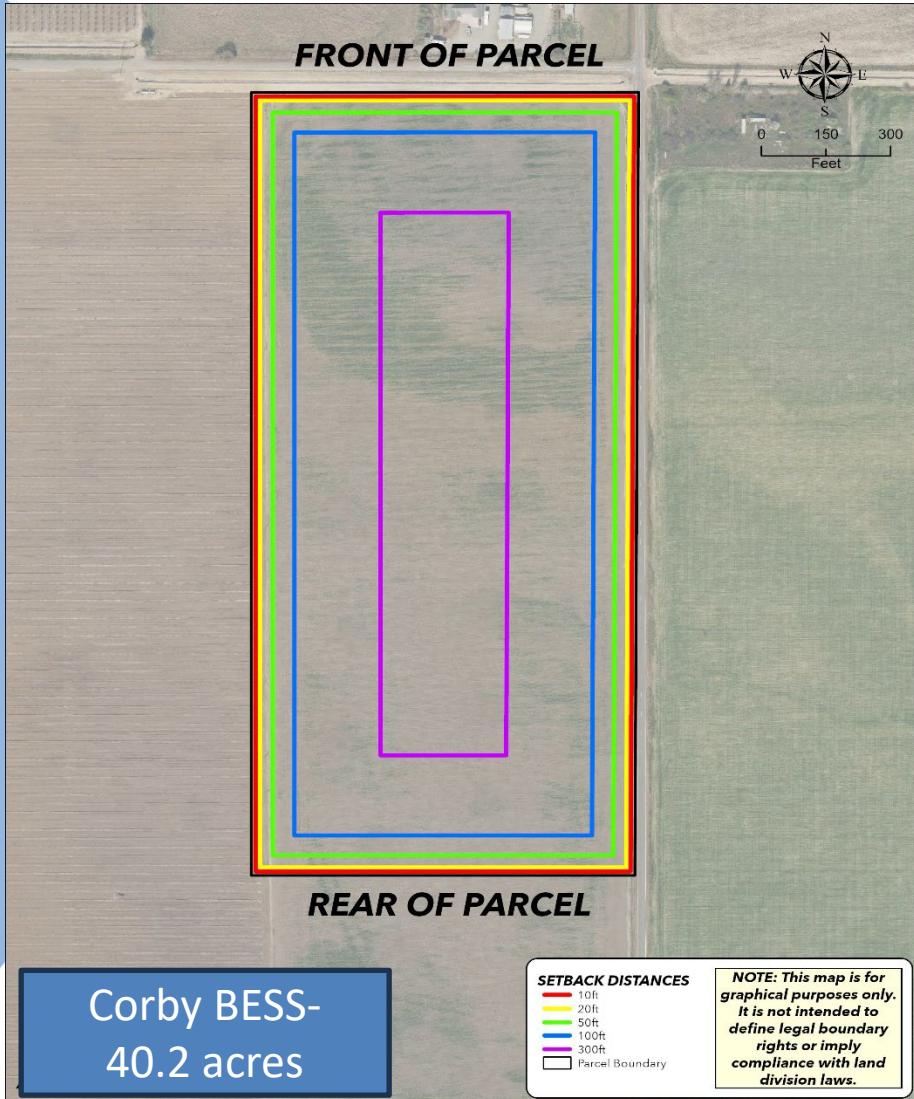
**Option 4:** Uniform 300-foot setbacks from all property lines

**Option 5 (Staff Recommendation):** Risk-based approach with different requirements based on thermal runaway risk determination:

- If thermal runaway risk exists:
  - 300-foot setback from existing sensitive receptors
  - 30-foot-wide fire rated access road encircling the module array
  - 100-foot setbacks from front property line
  - 50-foot setbacks from rear and side property lines
- If no thermal runaway risk:
  - State standards and minimum 20-foot setbacks from all property lines



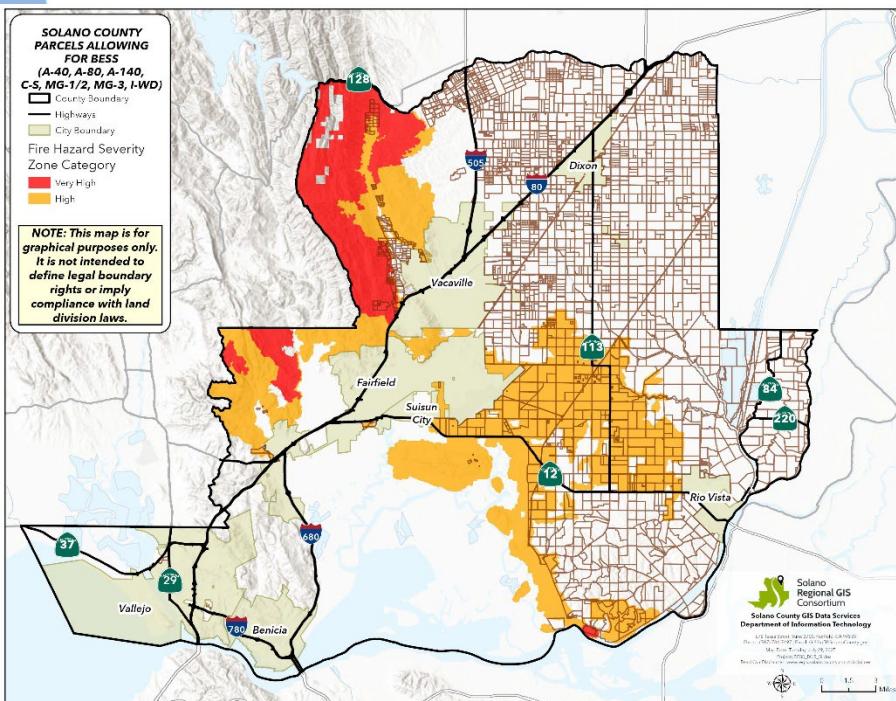
# Discussion Items: Setbacks





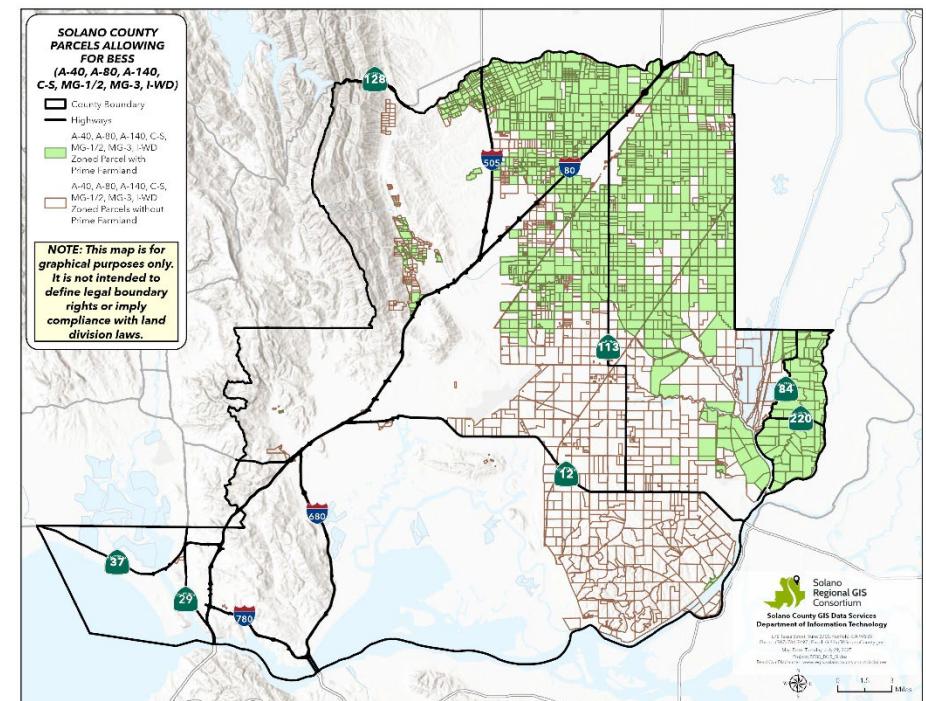
# Draft Ordinance: Proposed Exclusions

- Not permitted in High or Very High Fire Hazard Severity Zones
- Not permitted within FEMA designated floodplains unless raised to at least two feet above Base Flood Elevation
- Not permitted on prime agricultural land



August 12, 2025

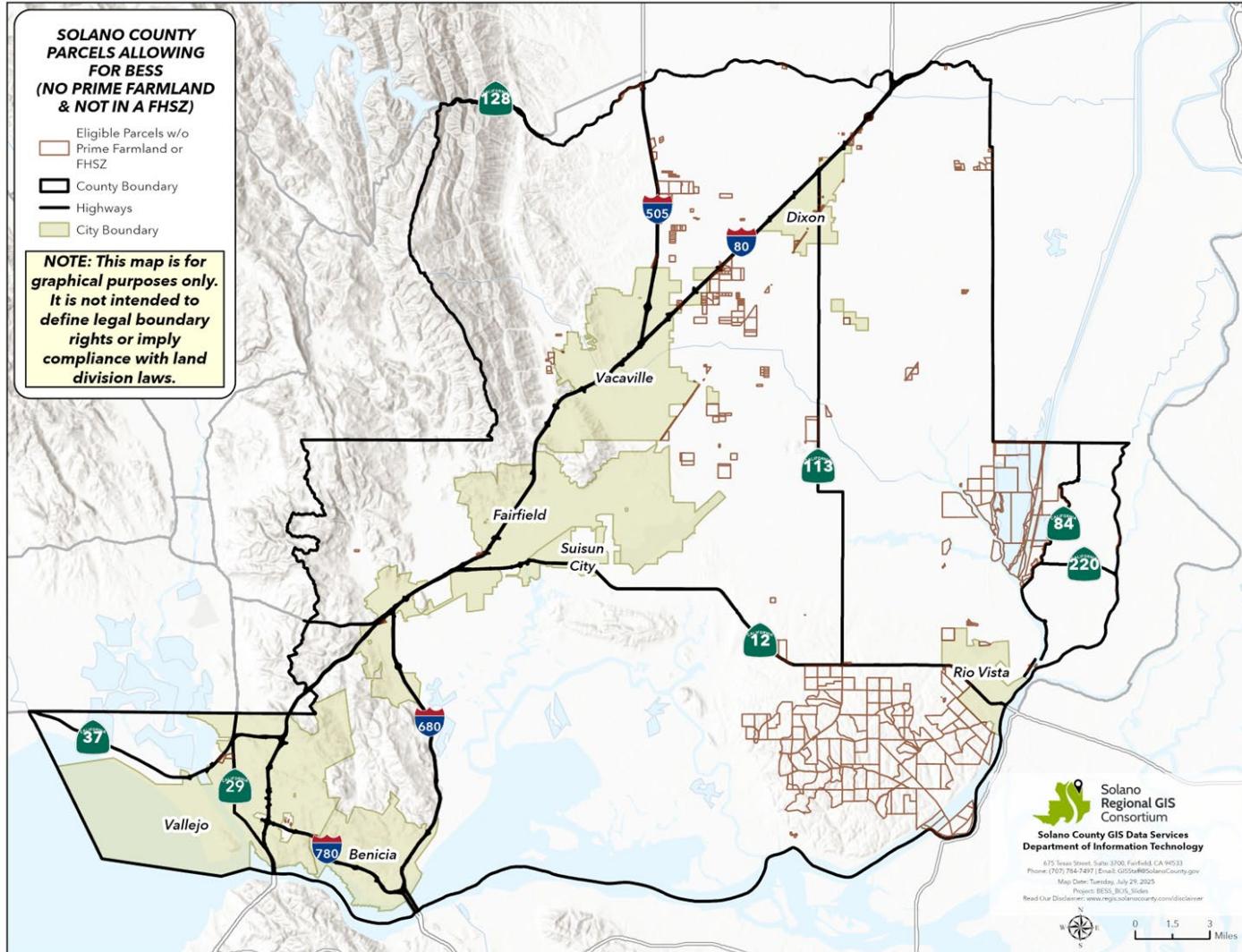
Draft BESS Ordinance



12



# Draft Ordinance: Remaining Available Parcels for Siting





# Draft Ordinance: Exemptions/Mitigation Requirements

Key Provision	Details
<b>County Discretion</b>	Additional mitigation may be required beyond standard requirements based on site-specific risks under Use Permit review.
<b>Exemptions for Low-Risk Tech</b>	<p>If Director of Resource Management determines <b>no thermal runaway risk</b>, applicants may be exempt from:</p> <ol style="list-style-type: none"><li>1. Annual contributions for fire response equipment</li><li>2. Annual funding for emergency responder training</li><li>3. Contributions to radio interoperability systems</li><li>4. Support for consolidated fire/medical dispatch centers</li></ol>
<b>Exemption Process</b>	<ol style="list-style-type: none"><li>1. Requires formal determination by Director of Resource Management</li><li>2. Based on third-party battery chemistry risk assessment</li><li>3. Only applies to technologies with verified no thermal runaway potential</li></ol>



# Draft Ordinance: Cybersecurity Compliance

Requirement	Implementation
<b>Core Mandate</b>	<ul style="list-style-type: none"><li>• <b>Full compliance</b> with Solano OES "Emergency Response Plan Guidance" document</li><li>• Applies to all BESS facilities regardless of size/location</li></ul>
<b>Pre-Permit Commitment</b>	<ul style="list-style-type: none"><li>• Applicants must <b>agree in writing</b> to comply with all Guidance requirements</li><li>• Acknowledges that final cybersecurity decisions may evolve post-permit</li></ul>
<b>Critical Focus Areas</b>	<ul style="list-style-type: none"><li>• <b>Continuous monitoring</b> of all IP-connected systems (Battery Management System, Emergency Management System, Supervisory Control and Data Acquisition)</li><li>• <b>Technical controls:</b> Multi-Factor Authentication, encryption, network segmentation</li><li>• <b>Annual reviews</b> with documentation</li><li>• <b>Alignment</b> with California Public Utilities Commission, National Institute of Standards and Technology, and International Electrotechnical Commission standards</li></ul>
<b>Operational Integration</b>	<ul style="list-style-type: none"><li>• Cybersecurity measures must be:<ul style="list-style-type: none"><li>- Integrated into emergency response plans</li><li>- Updated during system upgrades</li><li>- Tested in annual exercises</li></ul></li></ul>



# Recommendation

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1. Receive a presentation on the status of the draft Battery Energy Storage System (BESS) ordinance;
2. Provide feedback and direction on the proposed ordinance provisions, including key policy decisions regarding prime agricultural land regulations and setback standards; and
3. Direct staff to proceed with final ordinance preparation and public hearing scheduling.