

Permit Sonoma Peer Review of Applicant Prepared EIR Scope (Single Project)

PROJECT DESCRIPTION— BOLERO ENERGY STORAGE PROJECT (FILE NO. PLP22-0005; 1901 FRATES ROAD, PETALUMA)

Permit Sonoma requires an EIR Peer Review Consultant (PRC) to oversee the adequacy of an Applicant Prepared EIR for the proposed Bolero Energy Storage Project.

Bolero Energy Storage Project Overview:

The Applicant requests the County of Sonoma's approval of the following discretionary actions for the proposed BESS Facility on a portion of 1901 Frates Road, near Petaluma:

- Certification of an Environmental Impact Report (EIR);
- Adoption of a Mitigation Monitoring and Reporting Program (MMRP);
- A Final Resolution adopted by the County Board of Supervisors confirming that the County Open Space Easement (COSE) applicable to Assessor Parcel Numbers 017-050-006, 017-140-011, and 017-140-012 does not prohibit the proposed BESS Facility;
- Design review and a conditional Use Permit authorizing the following: (i) an up to 200 megawatt (MW)/800 megawatt-hour (MWh) BESS Facility located on approximately 15.6 acres; and (ii) a fence taller than six (6) feet within the property line setbacks.

The Project Site is a 115.12-acre lot located at 1901 Frates Road in an unincorporated area in the southern part of Sonoma County, immediately east of the municipal boundaries of the City of Petaluma (City) and within the City's Sphere of Influence (SOI). The legal lot is identified by Assessor Parcel Numbers 017-050-006, 017-140-011, and 017-140-012 and is encumbered by a 1990 County Open Space Easement (Document Number 1990-0089325, O.R.). A 15.6-acre portion of the Project Site, identified as APN 017-140-011, is proposed to be disturbed for construction of the BESS Facility (BESS Site).

The Project Site is immediately bounded to the north by the Pacific Gas & Electric (PG&E) Lakeville substation, to the east by Frates Road, and to the north and west by the former Adobe Creek golf course. The Adobe Creek waterway is located approximated 900 ft northwest of the subject parcel and the Adobe Creek residential neighborhood is located south of the Project Site within the City limits of Petaluma.

Originally, the BESS Site was part of the adjacent PG&E Substation. Around 1989, a lot line adjustment was approved that added the project site to the adjacent golf course. Existing structures on the BESS Site include a maintenance facility with accompanying bathrooms to support the operation of the former golf course. Since the closure of the golf course in 2017 the maintenance facility is still in limited use for ongoing property maintenance operations.

Existing uses on the remainder of the Project Site, that are encumbered by the County Open Space Easement, include a portion of the former Adobe Creek golf course including the course, parking lot, and restrooms. Approximately 3.5 acres of wetland area was created on a portion of the lot adjacent to Adobe Creek and north of the PG&E substation (identified as APN 017-140-012) as off-site mitigation for wetland impacts associated with an apartment project located in the City of Petaluma that is in the same watershed. The created wetlands are protected in perpetuity. No changes to

existing uses or site disturbance are proposed on the 115.12 acre lot outside of the 15.6 acre BESS Site.

According to the latest California Department of Forestry and Fire Protection's (Cal Fire) State Responsibility Area Fire Hazard Severity Zones map dated June 15, 2023, the unincorporated County areas north, east, and south of the Project Site are located within a High Fire Hazard Severity Zone. The Project Site and adjacent incorporated areas are not within a high fire threat district on the California Public Utilities Commission Fire Threat Map. The Project Site is served by the Rancho Adobe Fire District and Sonoma County Fire District.

The Project Site is located within the Petaluma Valley Groundwater Basin and the County classifies the Project Site as being in a Class 1, Major Groundwater Basin Area, groundwater zone. The Project Site is located immediately outside the City's Urban Growth Boundary and Urban Service Area.

According to the Sonoma County Airport Land Use Commission (ALUC), the Project Site is located in the Petaluma Municipal Airport's land use study area. Per Sonoma County ALUC Exhibit C3, portion of the northern half of the BESS Site is within either the Outer Safety Zone (OSZ) and Traffic Pattern Zone (TPZ) (ALUC 1998). These zones also cover other portions of the greater Project Site. The BESS Facility would have an estimated useful life of 20-40 years. The project includes future decommissioning at the end of its useful life, and the site is to be restored to open space use.

The conditional Use Permit (UPE) would authorize: (i) the BESS Facility and (ii) a fence that is taller than six feet within the property line setbacks. The BESS Facility would be developed on approximately 15.6 acres and capable of delivering up to 200 MW and 800 MWh of on-demand energy to the electrical grid. This is enough electricity for about 200,000 average existing single-family homes in Sonoma County and surrounding counties for approximately 4 hours. The BESS Facility equipment would be comprised of lithium-ion battery racks housed within standardized, purpose-built, all-weather, secured outdoor enclosures constructed of sturdy, fire-rated steel. The enclosures would be paired with cooling systems, safety systems, inverters, controls, metering/telemetry, and interconnection equipment. The 15.6 acre footprint of the BESS Facility is inclusive of all Project components such as equipment and landscape buffer areas, except a short generation-tie transmission line that would connect the BESS Facility to the adjacent PG&E Lakeville substation.

The ultimate technology providers for the BESS Facility have not been selected yet and would be procured via a competitive solicitation of reputable Tier 1 BESS suppliers. Augmentation of the lithium-ion batteries would be required over the lifespan of the BESS Facility. Depending on technology selection, augmentation could include replacement of the lithium-ion batteries within enclosures and/or the phased installation of new enclosures over the life of the BESS Facility. To fully analyze the potential impacts of the Project, the estimated full buildout of all BESS enclosures, through the life of the facility, is included in the BESS Facility's preliminary site plan.

The project site zoned Recreation and Visitor-Serving Commercial (K) with combining districts for Floodplain (F2), Riparian Corridor with 50-foot and 25-foot setbacks (RC50/25), Scenic Resources (SR), and Valley Oak Habitat (VOH). The project site has a General Plan Land Use Designation of Recreation and Visitor-Serving Commercial and the site is subject to the Sonoma Mountain Area Plan.

See full Bolero Energy Storage Project Description, attached.

APPROACH

This scope of work outlines specific duties to be performed by the PRC. This scope includes tasks outlined in the Scope of Work section below. For clarification, this scope of work (henceforth “**PRC Scope**”) uses the following terms:

1. **Consultant:** The consultant or team of consultants selected by the County for the completion of the peer review.
2. **PRC:** The consultant executing this peer review scope of work, coordinating with County staff and the applicant, resource agencies, and managing any applicable sub consultants to the completion of the peer review.
3. **PRC Scope:** The scope of work for the **PRC**
4. **Staff:** Refers to County staff unless stated otherwise.
The PRC is expected to work on a time and materials basis from a remote office with as-needed meetings at County offices or on-site.

PEER REVIEW SCOPE (“PR SCOPE”)

Task 1: County Coordination

The PRC will coordinate with County staff (staff) as is necessary to facilitate the preparation of materials and manage the project. Expected duties include:

1. 30 Minute, bi-weekly check-in calls or meetings with Permit Sonoma management and/or Supervisors on project status, issues, progress. Meetings may be waived if updates are not necessary, but waivers must be confirmed by staff.
2. Biweekly meeting notes outlining progress and action items shall be provided to Permit Sonoma. In the case the meeting is waived notes may still be requested by staff.

Task 2: Peer Review

The PRC will analyze the Applicant Prepared EIR materials for adequacy using available resource materials and prepare track change edits and/or comments/questions to ensure the EIR analysis and materials meet CEQA requirements. Anticipated deliverables include but are not limited to the following:

1. **Peer Review of Applicant Prepared EIR Analysis:** The PRC shall be responsible for reviewing the Draft and Final EIR for accuracy and consistency with CEQA requirements, including follow up iterations addressing questions and comments. The PRC shall provide track change edits, questions, and comments on all EIR analysis as necessary. The PRC shall work with County staff to ensure that the EIR analysis reflects the independent judgment of the County.
2. **Letters and Correspondence:** The PRC shall be responsible for all letters, and correspondence (as directed and in coordination with staff) related to the development and review of the EIR including responses to staff, public inquiry, correspondence with

applicants, responsible agencies, District offices, community organizations, and other County departments.

3. **Environmental Review:** The PRC shall be responsible for the review of the applicant-prepared Environmental Impact Report on behalf of the lead agency (County of Sonoma). The applicant-prepared Environmental Impact Report (EIR) will be supported by numerous professional studies.
 - a. Preparation responsibilities of the PRC include drafts provided to County staff of the Notice of Preparation, Draft EIR, response to comments and compilation of the Final EIR.
 - b. Tribal Consultation as needed to complete the EIR and legislative requirements in processing is to be conducted by Permit Sonoma with the PRC present and available for support unless otherwise directed by staff.
4. **Hearing and Public Meeting Materials:** The PRC is responsible for the development of all hearing and public meeting materials related to the development of the EIR utilizing Permit Sonoma templates. The PRC is expected to attend and support all public hearings for the project wherein there are anticipated questions or public comment on the EIR including but not limited to the Planning Commission and Board of Supervisors. Additional hearing bodies may be required for the project to be determined during processing.

Task 3: Administration

The PRC shall perform the following administrative functions:

1. Managing all project files electronically, accessible to County staff.
2. Responses to Public Records Act requests.
3. Drafts of all reports and required legal notices are to be developed by the PRC using Permit Sonoma templates. Final documents and studies shall be provided fully accessible.
4. Preparing and submitting detailed monthly invoices related to the PRC Scope that clearly identify tasks performed and billed to the approved Scope of Work task.
5. Time and task management to ensure that all tasks are completed on time and in accordance with the approved Scope of Work.
6. Coordination with staff of the Supervisorial Districts and partner agencies as directed by Permit Sonoma.
7. Coordinating with the Permit Sonoma communications team for media inquiries related to the project.
8. Producing content, memos, reports, and other communiques as needed for the EIR. This may include staff report sections, environmental reports, explanatory material for the Permit Sonoma website, and responses to public inquiries (in coordination with staff).
9. Coordinate, schedule, and lead meetings with applicants, stakeholders, and staff as needed in the course of Environmental Review.



North Bay Energy Storage Project Description
Case No. PLP22-0005
Updated March 19, 2024

I. Project Overview

The Applicant requests approval of the following discretionary actions for the proposed BESS Facility on a portion of 1901 Frates Road, near Petaluma:

- Certification of an EIR;
- Adoption of a Mitigation Monitoring and Reporting Program (MMRP);
- A Final Resolution adopted by the County Board of Supervisors confirming that the County Open Space Easement (COSE) applicable to Assessor Parcel Numbers 017-050-006, 017-140-011, and 017-140-012 does not prohibit the proposed BESS Facility because the BESS is a “public service facility” and because the BESS Facility is an allowed use under the COSE;
- Design review and a Conditional Use Permit (CUP) authorizing the following: (i) an up to 200 megawatt (MW)/800 megawatt-hour (MWh) BESS Facility located on approximately 15.6 acres; and (ii) a fence taller than six (6) feet.

The Project Site is a 115.12-acre legal lot located at 1901 Frates Road in an unincorporated area in the southern part of Sonoma County, immediately east of the municipal boundaries of the City of Petaluma (City) and within the City’s Sphere of Influence (SOI). The legal lot is identified by Assessor Parcel Numbers 017-050-006, 017-140-011, and 017-140-012 and is encumbered by a 1990 County Open Space Easement (Document Number 1990-0089325, O.R.). Only a 15.6-acre portion of the Project Site, identified as APN 017-140-011, is proposed to be disturbed for construction of the BESS Facility (BESS Site).

The Project Site is immediately bounded to the north by the Pacific Gas & Electric (PG&E) Lakeville substation, to the east by Frates Road, and to the north and west by the former Adobe Creek golf course. The Adobe Creek waterway and the Adobe Creek residential neighborhood are located northwest and south, respectively, of the Project Site.

The Project Site has General Plan designations of Recreation and Visitor Serving – Commercial (RVSC) and Sonoma Mountain Area Plan (Specific Plan). Zoning for the Project Site is Recreation and Visitor-Serving Commercial District (K) and Valley Oak Habitat Combining District (VOH).

Originally, the BESS Site was part of the adjacent PG&E Substation. Around 1989, a lot line adjustment was approved that added the BESS Site to the adjacent golf course. Existing structures on the BESS Site include a maintenance facility with accompanying bathrooms. The maintenance facility is still in limited use for ongoing property maintenance operations.

Existing uses on the remainder of the Project Site, that are encumbered by the County Open Space Easement, include a portion of the former Adobe Creek golf course including the golf course, a parking lot, and restrooms. Following closure of the golf course in 2017, approximately 3.5 acres of wetland area was created on a portion of the Project Site adjacent to Adobe Creek and north of the PG&E substation as off-site mitigation for wetland impacts associated with an apartment project located in the City of

Petaluma that is in the same watershed. The created wetlands are protected in perpetuity. No changes to existing uses or site disturbance are proposed outside of the 15.6 acre BESS Site.

According to the latest California Department of Forestry and Fire Protection’s (Cal Fire) State Responsibility Area Fire Hazard Severity Zones map dated November 21, 2022, the unincorporated County areas east and south of the Project Site are located within a High and Moderate Fire Hazard Severity Zones. The Project Site and adjacent areas are not within a high fire threat district on the California Public Utilities Commission Fire Threat Map. The Project Site is served by the Rancho Adobe Fire District and Sonoma County Fire District.

The Project Site is located within the Petaluma Valley Groundwater Basin and the County classifies the Project Site as being in a Class 1, Major Groundwater Basin Area, groundwater zone, meaning sufficient groundwater supplies are underlying the Project Site. The Project Site is located immediately outside the City’s Urban Growth Boundary and Urban Service Area.

According to the Sonoma County Airport Land Use Commission (ALUC), the Project Site is located in the Petaluma Municipal Airport’s land use study area. Per Sonoma County ALUC Exhibit C3, portion of the northern half of the BESS Site is within either the Outer Safety Zone (OSZ) and Traffic Pattern Zone (TPZ) (ALUC 1998). These zones also cover other portions of the Project Site. The BESS Facility would have an estimated useful life of 20-40 years. At the end of its useful life, it would be decommissioned and the site restored to open space use.

a) Conditional Use Permit for: BESS Facility and Fence that is more than 6 feet tall

The Conditional Use Permit (“CUP”) would authorize: (i) the BESS Facility and (ii) a fence that is taller than six feet. The BESS Facility would be developed on approximately 15.6 acres and capable of delivering up to 200 MW and 800 MWh of on-demand energy to the electrical grid. This is enough electricity for about 200,000 average existing single-family homes in Sonoma County and surrounding counties for approximately 4 hours. The BESS Facility equipment would be comprised of lithium-ion battery racks housed within standardized, purpose-built, all-weather, secured outdoor enclosures constructed of sturdy, fire-rated steel. The enclosures would be paired with cooling systems, safety systems, inverters, controls, metering/telemetry, and interconnection equipment. The 15.6 acre footprint of the BESS Facility is inclusive of all Project components such as equipment and landscape buffer areas, except a short generation-tie transmission line that would connect the BESS Facility to the adjacent PG&E Lakeville substation.

The ultimate technology providers for the BESS Facility have not been selected yet and would be procured via a competitive solicitation of reputable Tier 1 BESS suppliers. Augmentation of the lithium-ion batteries would be required over the lifespan of the BESS Facility. Depending on technology selection, augmentation could include replacement of the lithium-ion batteries within enclosures and/or the phased installation of new enclosures over the life of the BESS Facility. To fully analyze the potential impacts of the Project, the estimated full buildout of all BESS enclosures, through the life of the facility, is included in the BESS Facility’s preliminary site plan.

b) BESS Components

(1) Battery Enclosures

The BESS enclosure would be about the same size as a standard shipping container; however, the number, size, layout, and capabilities of each enclosure would vary depending on the final system

manufacturer selected for the BESS Facility. On average, the enclosure would be approximately 10 feet in height (inclusive of the foundation) and roughly 8 feet in width. The length of the enclosures would vary due to the modular nature of these units. An example of a representative BESS was provided during the October 19, 2022 Preliminary Design Review Hearing for this Project.

Regardless of the manufacturer, the BESS Facility's footprint and overall capability would not materially change. The BESS enclosures would be arranged in rows on the BESS Site. As proposed, the enclosures located on the southwestern part of the BESS Facility would be constructed more than 1,400 feet (e.g., greater than 0.25 miles) from residences located on the south side of Clubhouse Drive, with most of the battery enclosures being installed even farther away from these homes and enclosures on the northwestern part of the BESS Facility would be more than 900 feet from residences located on the west side of Casa Grande Road .

The batteries would be continuously monitored and controlled to ensure safe and efficient operations, and every BESS enclosure would be equipped with integrated operational management systems and safety systems, such as HVAC systems, ventilation, gas/heat/smoke detection, and alarms. The systems would be designed, constructed, and operated per the provisions of all applicable building and fire codes, including but not limited to the California Fire Code, and in consultation with the Sonoma County Fire Inspector.

The battery modules would be accessed for maintenance from the outside via all-weather doors. As a purpose-built space, each enclosure is designed to precisely house only the batteries and associated equipment, with no additional space to allow for entry or entrapment. As such, these BESS enclosures would not be habitable structures and all maintenance work would be conducted from outside of the enclosure, with no risk of confinement.

(2) *Battery Cells*

The Project would use rechargeable lithium-ion batteries. A review of hazardous materials, substances, and chemical lists/databases maintained by the EPA did not identify lithium-ion batteries as being classified as hazardous materials or substances defined under the Toxic Substances Control Act (EPA 2023). Lithium-ion batteries are considered less toxic than lead acid batteries, do not have spill and chemical burn risk, and have a much longer useful life. Lithium-ion batteries are a widely adopted battery technology that has been found in various consumer applications over the past decades and are used in cell phones, laptops, and other household electronics. Unlike traditional household alkaline batteries that are non-rechargeable and may leak due to mistreatment and abuse, rechargeable lithium-ion batteries use a completely different chemistry and form factor that does not leak.

Rechargeable lithium-ion batteries are not a new technology. Sony began marketing commercial lithium-ion batteries to the public over 30 years ago. Over the past decade, the use of lithium-ion batteries for electrical grid application has become more widespread as lithium-ion batteries energy storage systems have been increasingly economically viable.

While there are different lithium-ion battery chemistries to choose from, the Project is very likely to use lithium-iron phosphate (LFP or LFP₄) chemistry, compared with cobalt-based lithium-ion battery chemistries that are common in electric vehicles and first-generation BESS systems. LFP has both a higher thermal runaway onset temperature and a higher state of charge tolerance, all of which equates to a battery that can safely handle higher temperatures and more rigorous use. LFP technology has a long lifespan and exhibits greater safety and stability characteristics compared to many other chemistries. This

battery cell chemistry was selected based on its ability to represent a favorable balance between energy density, degradation, and cycle life.

(3) *Inverters/Transformers*

Low-voltage underground cables would connect the BESS enclosures to adjacent pad-mounted inverter-transformer skids. The inverters convert electricity from alternating current (AC) to direct current (DC) for charging and discharging operations. The transformers would convert electricity between the inverter's voltage and the low-side voltage of the BESS Facility's main step-up transformer before the electricity would be transmitted to the grid.

(4) *Supervisory Control and Data Acquisition*

An unstaffed relay and control cabinet on the BESS Site would contain the Supervisory Control and Data Acquisition (SCADA) equipment (i.e., utility cabinet). The relay and control console would be connected to the BESS Facility via underground cables. SCADA would manage and monitor communication information to and from the relay and SCADA console. A high-speed internet wireless and/or fiber optic link would provide communication between the SCADA and existing off-site BESS control centers that are currently operated by the Applicant, the BESS Facility's integrator, Pacific Gas & Electric (PG&E), and CAISO. The SCADA communication equipment, including fiber optic and high-speed internet infrastructure, would be fire-hardened to ensure continued communication between the BESS Facility and the off-site BESS control centers.

(5) *On-Site Project Substation*

In addition to the existing offsite PG&E Lakeville substation, the Project would include the construction of a comparatively smaller on-site substation that would be located along the northern edge of the BESS Site. The on-site Project substation would be a separate and secure area within the BESS Site. It would consist of high-voltage electrical equipment, auxiliary transformers, circuit breakers, relays, meters, and communications equipment. This equipment includes the power distribution center and main step-up transformer. The main step-up transformer increases voltage from that of the inverter-transformer skids to the grid interconnection voltage for discharging operation and vice versa for charging operation. To comply with the 35-foot height maximum requirement outlined in the Sonoma County Zoning Code for the K zoning district, no on-site substation equipment would exceed 35 feet in height.

The on-site Project substation would be connected to the adjacent PG&E Lakeville substation via a short generation-tie transmission line. The connection to the PG&E grid allows the BESS Facility to be charged from the electric grid and then discharged to the grid when needed, providing critical electrical reliability services to the region.

(6) *Generation-Tie Line*

A generation-tie line (sometimes referred to as a "gen-tie" line) and fiber-optic cables would be constructed from the on-site Project substation to a Point of Change of Ownership (POCO) designated by PG&E at the Lakeville substation. PG&E has the ultimate discretion in this design to decide the preferred location (overhead or underground) and route of the gen-tie line. Given this uncertainty, both the overhead and underground gen-tie line installation scenarios are described below for environmental impact analysis to capture potential effects from both installation methods.

If the gen-tie line connection occurs underground, a combination of trenching, directional drilling, and jack-and-bore installation activities would be necessary. In the underground connection scenario, the gen-tie line would be placed several feet below the surface and would not be visible until “daylighting” on the PG&E property and connecting with the Lakeville substation atop a POCO riser pole.

If PG&E determines that an overhead connection is preferred, the segment of the gen-tie line between the BESS Facility and the POCO may be above ground. In an above ground-connection scenario, up to approximately 500 feet of 60-kilovolt (kV) overhead gen-tie line would be strung between two to four wood or galvanized steel (or similar material) mono poles. This overhead gen-tie line would connect to a POCO riser pole located on PG&E property. To facilitate this connection, at least two of the existing power lines located on PG&E property between the BESS Site and the adjacent PG&E substation would need to be raised. To comply with the 35-foot height maximum requirement outlined in the Sonoma County Zoning Code for the K zone, up to three mono poles will not exceed 35 feet in height. (Note that the height of these utility poles would be similar in height to many of the existing utility poles near the BESS Facility and PG&E Lakeville substation).

PG&E has mandatory vegetation clearance requirements for its power lines. To comply with these clearance requirements for the BESS Facility’s gen-tie line and regardless of whether the gen-tie line connection occurs overhead or underground, it is estimated that up to approximately 6 to 11 existing trees would need to be trimmed or removed within the existing tree windrow located between the BESS Site and the Lakeville substation.

Any trees removed as part of the gen-tie line construction, or any other BESS Facility component are subject to the Sonoma County Tree Preservation Ordinance. This ordinance outlines requirements related to mandatory tree replacement and compensation for the trees removed. Every effort would be made during the design of the gen-tie line to avoid the removal of healthy County-protected tree species, with replacement trees planted as necessary pursuant to the County Tree Preservation Ordinance. The CEQA evaluation will address the removal of up to 54 trees, including 11 protected trees, as a conservative number of possible trees removed. However, the Applicant would endeavor to reduce the number of trees removed.

c) Other Project Design Features

In addition to the BESS components described above, the BESS Facility includes other design features to ensure compliance with all building, fire, health, and safety regulations, including setbacks, fire-operations access roads, perimeter fencing, separation between equipment, and other features, as described below.

(1) BESS Facility Access and Security

Access to the BESS Facility would be provided by an existing, asphalt paved, approximately 20-foot-wide driveway, located off Frates Road. Construction of the Project includes extending this driveway to the gated entrance of the BESS Facility. A motorized rolling metal gate would be installed at the BESS Facility entrance at the end of the extended driveway. A Knox Box would be installed at the gate to provide fire and police department access in the event of an emergency.

An emergency pedestrian egress gate would be installed at the northern/northwestern corner of the BESS Site, consistent with Evacuation Study recommendations. This would serve as a secondary point of egress in the event of an emergency on-site. This egress location would include a Knox Box to

allow first responders access. In addition, the Project would also include an Emergency Vehicle Access (EVA) road along the eastern/southeastern corner of the BESS Site, connecting to Frates Road. This EVA road would provide on-site access for first responders and their emergency vehicles if the primary Project access is not useable. This secondary point of access would also include a Knox Box.

The BESS enclosures and transformers would be arranged in rows separated by a Class II Base gravel surface, including an approximately 24-foot-wide central drive aisle bisecting the BESS Facility to provide internal access to both maintenance and emergency vehicles. In addition to this central drive aisle, a 16-foot-wide drive aisle would be provided around the perimeter of the enclosures for maintenance vehicles and secondary emergency access. Vehicular parking would only be allowed in designated areas on the BESS Site, and all project on-site driveways and internal drive aisles would include ‘No Parking Anytime’ signage.

To secure the BESS Facility, it would be bound by an approximately 6- to 8-foot-tall (depending on the underlying grade) chain-link fence, portions of which may also contain neutral-colored vinyl slats where not otherwise screened from public views by proposed landscaping. As such, the Project’s use permit application includes a fence taller than six (6) feet on all sides of the BESS. The design of the Project would consist of a combination of landscaped earthen berms, vegetation, existing topographical variations, and natural distance to ensure that receptors in the vicinity do not have direct line-of-sight of much of the BESS Facility equipment behind the fencing. Additionally, the substation would be a secure, separately chain-link fenced area. This internal onsite substation area would not be directly visible from any public vantage point outside of the BESS Facility.

(2) *Lighting*

For safety and security purposes, a limited number of new luminaires would be installed on the BESS Site, likely only at the gated entrance of the BESS Facility and within the on-site substation area. Lighting located at the entrance would be automatically controlled to operate between dusk and dawn while lighting within the on-site substation area would only be illuminated if/when needed for non-routine, unplanned nighttime maintenance activities. The BESS equipment would not be illuminated as part of normal operations, and entrance and on-site substation lighting would be used only for security, emergency ingress and egress, and maintenance. The luminaires would be fully shielded and directed downward to avoid light trespass beyond the BESS Site’s boundary. The Project would not be illuminated during normal daytime and nighttime operations. Although not anticipated, in the off chance that nighttime maintenance work is ever required, operations and maintenance staff would bring temporary portable lighting onto the site as needed.

(3) *Stormwater Drainage*

Generally, the BESS Site drains from north to south, with stormwater surface flows draining to a storm drain inlet located near the existing on-site maintenance building. This inlet connects to a stormwater pipe that eventually discharges to a vegetated drainage swale that parallels the western edge of Frates Road.

A new engineered stormwater drainage system would be constructed on-site to collect and treat on-site stormwater flows. This would be accomplished through site grading and the installation of a bio-retention stormwater feature proposed along the length of the BESS’s southern boundary. This bio-retention feature would be sized to capture and treat stormwater generated from on-site impervious surfaces from a minimum two-year storm event. The new stormwater drainage system will comply with

all applicable County Low Impact Design (LID) and other applicable stormwater collection, treatment, and discharge requirements.

(4) *Water Service*

The City provides domestic water to the BESS Site through an existing water line in Clubhouse Drive. From Clubhouse Drive, the water line runs in a northerly direction and connects to the existing maintenance facility on the BESS Site. However, rather than connecting to the existing City water line, the Project will use groundwater from an existing well located on the golf course north of the BESS Site for construction and operation.

Additional water infrastructure on the BESS Site includes an existing post indicator valve and fire hydrant, both of which are connected to the existing well on the Project Site by an existing water line. The fire protection system passed an inspection and flow test in July 2022 with a flow rate of 500 gallons. The BESS Site also contains a recycled water line that traverses the eastern edge. This recycled water line runs from Frates Road to the existing golf course pond located north of the BESS Site. The Project will switch to recycled water using the existing infrastructure if the Applicant can get an approved recycled water connection.

During construction, water would be required for concrete installation, soil conditioning, dust control, and erosion control. Water usage on-site during construction will fluctuate from day to day depending on construction activities performed, with more water than average being required during the earlier stages of construction (site preparation, grading) and less water than average during the later construction phases. But on average, roughly two to three water trucks would operate on the BESS Site during construction, equating to a construction water demand of approximately 15,000 gallons per day. Extrapolated over a 10-month construction schedule (assuming 22 construction working days per month), this equals a construction water demand of 10 acre-feet over the entire course of Project construction.

The construction contractor will use the existing groundwater well located on the Project Site for construction water needs, unless and until the Applicant can get an approved recycled water connection. Well water will be stored in temporary on-site storage tanks for use during construction. All reasonable attempts to minimize the use of potable water during construction will be made. Note that the Project Site is located within the Petaluma Valley Groundwater Basin and the County classifies the Project Site as being in a Class 1, Major Groundwater Basin Area, groundwater zone, meaning sufficient groundwater supplies are underlying the Project Site.

The 100-plus acre former golf course property comprised predominantly of natural turf was estimated to conservatively consume 90 million gallons of water per year (California Alliance for Golf 2015). The existing well provided irrigation water for approximately 30 percent of the golf course when it was in operation, which equates to 27 million gallons or 83 acre-feet annually drawn from the well. Recycled water was used to water the remainder of the golf course.

Once operational, the Project's water demand would be limited to landscape irrigation and for emergency fire response. The Project's design includes the installation of additional fire hydrants for emergency fire suppression needs. The Project would use the existing groundwater well located north of the BESS Site, unless and until the Applicant can get an approved recycled water connection, for both fire control and irrigation water. Should the Applicant obtain an approved recycled water connection, all reasonable attempts will be made to use reclaimed water for landscaping.

Based on preliminary calculations provide by the Project’s landscape architect, the Project’s landscape areas would require an estimated 287,202 gallons of water per year (approximately 0.9 acre-foot per year). Use of either groundwater or recycled water for emergency fire suppression purposes may require the use of a pressure tank and booster pumps to provide the required water pressure. In addition, there is a potential that emergency fire suppression water may need to be stored on-site within approximately two, up to approximately 90,000-gallon fire protection water tanks (up to 0.6 acre-feet of water) located in the same location as the current on-site maintenance building. The fire protection water tanks would be approximately 10 feet in height (which is shorter than the present height of the maintenance building) and would have a diameter of roughly 40 feet. A pump pad would be located adjacent to the fire suppression water tanks and would include a pressure tank, booster pumps, control panel, and associated equipment, most or all of which would be housed in a small utility shed. These tanks would be colored with a neutral tone consistent with the surrounding aesthetic environment. These fire protection measures would supplement the existing post indicator valve and hydrant located on the BESS Site, which are proposed to remain.

(5) *Sewer Service*

The Project Site is currently served by a sanitary sewer which provides service to the pro shop building found near the northern terminus of Clubhouse Drive, the golf course restroom facility located just north of the BESS Site, and the existing maintenance facility on the BESS Site. The Project would be unmanned and not require sewer service. The existing sewer service on the former golf course property would remain in place.

(6) *Landscape and Frontage Improvements.*

The new driveway and stormwater collection and treatment features would be located at or slightly below grade. The nearest above-grade Project improvement (i.e., the gated entrance to the facility) would be located at least 200 feet from the nearest public right-of-way vantage point. To soften views of the BESS Facility from any public vantage points, a combination of drought-tolerant landscaping, earthen berms, and naturally contoured earthwork will be incorporated along the eastern, southern, and western edges of the BESS Site (the northern boundary is not readily visible from a public vantage point, as this side of the BESS Facility directly faces the PG&E Lakeville substation and is bounded by an existing windrow of mature trees).

Plantings within the landscape areas would consist of a mix of approximately 200 or more mature trees in addition to shrubs, flowering perennials, and ground cover consistent with the County’s approved plant list/palette. The landscape areas are designed to be irrigated consistent with all applicable County requirements. For irrigation water, the Project would use the existing groundwater well located on the golf course, north of the BESS Site, unless and until the Applicant can get an approved recycled water connection.

(7) *Tree Removal*

PG&E has mandatory vegetation clearance requirements for its power lines. In order to comply with these clearance requirements for the BESS Facility’s gen-tie line, it is estimated that up to 6 to 11 existing trees would need to be either trimmed or removed within the existing tree windrow located between the BESS Site and the Lakeville substation.

In addition to the trees within the adjacent windrow, there are existing trees located on-site that are within the footprint of the BESS Facility that would need to be removed. Upon buildout of the BESS

Facility, it is estimated that approximately 43 existing on-site trees of varying species, dimensions, and health would be removed. Note that this estimate is in addition to the trees to be trimmed or removed as part of construction of the gen-tie. The EIR will address the removal of up to 54 trees total (BESS Facility plus gen-tie), including 11 protected trees, as a conservative number of possible trees removed. However, the Applicant would endeavor to reduce the number of trees removed.

Given that the Project Site is in a VOH Combining District (Valley Oak Habitat), design of the BESS Facility was specifically laid out to avoid impacts to Valley Oaks. Other tree species found on-site include acacia, coast live oak, coast redwood, eucalyptus, lemon-scented gum, Monterey cypress, and Monterey pine. Removal of any existing on-site trees is subject to the Sonoma County Tree Preservation Ordinance, which outlines requirements related to mandatory tree replacement as compensation for the trees removed.

A tree inventory was conducted to catalog the location, species, dimensions, and health of all trees on and adjacent to the BESS Site. This inventory includes a qualitative breakdown of tree replacement mitigation requirements.

(8) *Fire Safety*

The BESS Facility would utilize a battery enclosure/cabinet (or similar configuration) with an integrated fire protection system designed to prevent and effectively manage all risks of fire. In the unlikely situation that a fire would occur, the integrated fire protection system would control the fire so that it would not spread to surrounding batteries and cabinets or neighboring exposures.

Fire protection would also include multiple fire detection systems on-site and within the individual battery cabinets. In addition, each battery cabinet would contain an onboard battery management system that would monitor the appropriate state of the individual battery cells. In the event of an anomaly, the system would be designed to automatically and instantaneously cut off power from the affected part of the BESS Facility. Further, the BESS Facility would be continuously monitored around the clock by off-site staff at existing BESS control centers that are presently operated by the Applicant, the BESS Facility's integrator, PG&E, and CAISO. At the first sign of an anomaly, staff at the off-site control centers would alert local field staff, who would be immediately dispatched to the BESS Site to conduct further investigation. If necessary, the control center staff would also alert local public emergency response agencies, including but not limited to Rancho Adobe Fire District and Sonoma County Fire District, in the event of a system anomaly.

The BESS Facility would only utilize battery vendors that are fully certified to the most rigorous safety codes and standards. Overall, BESS Facilities and batteries are subject to extensive review and regulations as will be discussed in greater detail in the EIR analysis of potential seismic impacts and potential impacts related to hazards and hazardous materials.

(9) *Geotechnical Design Considerations*

The Geotechnical Investigation report prepared for the Project concluded that the Project is feasible from a geotechnical engineering viewpoint. The Geotechnical Investigation identified the primary concerns are the presence of weak and highly expansive natural surface soils. The on-site soils were determined to be suitable for reuse as general fill provided that: 1) all rock sizes greater than 6 inches in the largest dimension and perishable materials are removed, and 2) the fill materials are approved by the Project's Geotechnical Engineer before use.

The Geotechnical Investigation found that in the BESS enclosure or critical slab-on-grade areas, the risk of future structural damage by shrinking and swelling of the expansive clays must be further reduced by covering the expansive soils with a 30-inch-thick confining and moisture-protecting blanket of non-expansive fill or lime treated on-site soils. Expansive on-site soils will not be suitable for use as select fill unless lime treated. Where lime treatment is not viable, clean engineered fill would be imported to the BESS Site.

The battery enclosures will sit on concrete foundations designed pursuant to the latest applicable California Building Code regulations, including but not limited to Title 24, Part 2, Section 1613A of the 2022 California Building Code (Earthquake Loads) and Title 24, Part 2, Section 1616A of the 2022 California Building Code (Structural Integrity). The BESS enclosures will be seismically anchored to their foundations, minimizing the potential for the enclosures and their contents to shift during an earthquake. Safeguards such as an automated management system and circuit breakers would be in place to disconnect the system from the electrical grid if the system recognizes irregular movement.

In addition, applicable building codes and standards require that battery components be subjected to extensive physical and electrical abuse testing before they can be installed onsite. This abuse testing includes but is not limited to, Underwriters Laboratory (UL) 1973 (Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications). UL 1973 includes construction requirements, safety performance tests, and production tests. UL 1973 outlines several applicable construction parameters and a series of safety performance tests for BESS solutions. In addition, UL 1973 requires mechanical tests, including testing that is directly relevant to seismic-induced ground shaking, such as vibration tests, static force tests, impact tests, and drop impact tests.

Further, BESS systems are built and listed to UL 9540 (Standard for Safety for Energy Storage Systems and Equipment). UL 9540 incorporates other standards for seismic design, including IEEE 693 Recommended Practice for Seismic Design of Substations. Battery equipment manufacturers, through testing or simulation, determine the maximum seismic loads their equipment can safely withstand. These values are reported as the peak and average accelerations that can be safely withstood. These values can then be compared to the seismic design loads for a particular site, and an appropriate foundation and anchoring system can be designed. The BESS enclosures and associated BESS equipment will be designed to withstand ground accelerations roughly equivalent to an 8.0 magnitude earthquake. Foundation design will further increase the survivability of the BESS Facility by decoupling the motion of the equipment from the ground movement, reducing the accelerations experienced by the equipment in severe earthquakes.

d) Project Construction

Construction of the Project is anticipated to occur over approximately 10 months, beginning no earlier than late 2025. Construction includes demolition of the existing maintenance building, site preparation and grading including the earthen perimeter berm, extension of the BESS Facility driveway, installing the BESS foundations, installing the BESS enclosures, laying the undergrounding electrical collection and communication lines, assembly of accessory electrical components including inverter-transformers, installation of high-voltage equipment including the on-site substation and gen-tie line, and installation of landscaping. The municipal water supply and on-site recycled water lines would also need to be rerouted from their current alignment for new irrigation and fire protection needs, including new fire hydrants.

Site preparation would include the removal of existing trees to accommodate the Project. In addition to the approximately 6 to 11 trees that would need to be trimmed or removed within the existing

tree windrow located on the northern boundary of the BESS Site, removal of up to 43 trees (including 11 protected trees) from within the BESS Site would be needed. Preliminary grading quantity estimates show that the BESS Facility would require up to approximately 40,000 cubic yards (cy) of soil cut and up to 40,000 cy of soil fill. The preliminary Geotechnical Investigation has identified that weak soils may be encountered on-site. As such, environmental impact analysis conducted for the Project, including air quality modeling, assumes that construction of the Project would require up to 30 inches of over excavation for the BESS enclosures and associated electrical equipment, which, along with the new perimeter earthen berms, equates to an estimated 1,350 cy of soil export and 8,000 cy of soil import.

During construction, the Project would use the existing groundwater well located on the golf course, north of the BESS Site, unless and until the Applicant can get an approved recycled water connection. Water usage on-site during construction would fluctuate from day to day depending on construction activities performed, with more water than average being required during the earlier stages of construction (site preparation, grading) and less water than average during the later construction phases. But on average, roughly two to three water trucks would operate on the BESS Site during construction, equating to a construction water demand of approximately 15,000 gallons per day. Extrapolated over a 10-month construction schedule (assuming 22 construction working days per month), this equals a construction water demand of 10 acre-feet over the entire course of Project construction. Should the Applicant obtain an approved recycled water connection, all feasible attempts to minimize the use of potable water during construction would be made. During construction portable sanitary facilities will be utilized.

Raw materials required for construction would include gravel for drive aisles, concrete, sand, and cement for foundations, and water for concrete installation, dust control, and erosion control. The heavy equipment listed in the table below may be used during construction activities.

Construction Equipment and Workforce Estimated for BESS Facility

Construction Activity	Workforce	Typical Construction Equipment
Construction Management	2	Pickup and small vehicles
Demolition, Grading, foundations and underground electrical work	10	Dozer, grader, excavator or drill rig, crane, concrete pump trucks, concrete trucks, pickup trucks with trailers, all terrain forklifts, water trucks, dump trucks, compactors, generators, welders, pile drivers
Fence Construction and Landscape Installation	6	Forklift, backhoe, pickup trucks
Roads/Pad construction	10	Dozer, grader, front end loaders, compactor, roller, pickup trucks, water trucks, dump trucks, compactors, scrapers
Battery Installation	6	Crane, forklift, pickup trucks
Skilled Laborers	16	Pickup trucks

Owner Representatives	2	Pickup trucks
Battery Manufacturer/Supplier	8	Pickup trucks

Note: The total number of workers provided is through Project construction. It is expected that on average there will be 25–35 workers on site with a peak daily workforce of approximately 45 workers.

During construction of the Project, the general contractor would be charged with having a site-specific construction safety plan that includes a Construction Fire Protection Plan, Red Flag warning protocol, and all other applicable recommendations from a Construction Evacuation Recommendations memorandum. As required in the California Fire Code, the Fire Protection Plan would be reviewed and approved by the Sonoma County Fire Marshal before construction and must include the following:

- Procedures for reporting emergencies to the fire department.
- Procedures for emergency notification, evacuation and/or relocation of all persons in the building under construction and on the site.
- Procedures for hot work operations, management of hazardous materials, removal of combustible debris, and maintenance of emergency access roads.
- Site plans identifying the designated exterior assembly areas for each evacuation route.
- Site plans identifying required fire apparatus access roadways, on-site fire hydrants, existing service shutoffs (electrical, water, gas, steam, etc.), and site-specific information (hazards, security barriers, etc.).
- The name and contact phone number of the person(s) responsible for compliance with the Fire Protection Plan.

Per the California Fire Code, the general contractor would designate an individual to be the fire prevention program superintendent who would be responsible for the fire prevention program and ensure that it is carried out through completion of Project construction. This same onsite fire prevention program superintendent would also be responsible to coordinate and manage orderly evacuation from the BESS Site, if necessary. If evacuation from the BESS Site is required, construction personnel will be moved to a designated location(s) via pre-designated evacuation routes, as outlined in the site-specific construction safety plan.

The general contractor would conduct safety orientation training for all construction personnel prior to their first day of work on the construction site. This training would include information on how to subscribe and receive emergency evacuation notifications and identify adjacent evacuation zones to assist others with orderly evacuations. The site-specific construction safety plan and this training will include routine evacuation drills at regular intervals during the construction phase.

e) Operations and Maintenance

Energy stored in the BESS Facility would be discharged to the grid when the energy is needed throughout the day and night; as such, the facility would be available to operate 24 hours per day/7 days per week. Under operational norms, it is expected that the BESS Facility would fully charge and discharge once per day up to 365 days per year.

The BESS Facility would reinforce the regional power network while California transitions away from fossil fuels. As approximately 2,000 MW of fossil fuel power generation that uses ocean water for cooling is slated for retirement (enough electricity for about approx. 1,000,000 homes), PG&E, Sonoma Clean Power, and other electric customers throughout the State are demanding that new power resources be non-emitting and utilize renewable energy. The BESS Facility would serve as a critical piece of infrastructure to achieve this goal and advance the needs of Sonoma County residents. The BESS Facility would have the capacity to provide power for approximately 200,000 homes and businesses in the region for an approximately 4-hour duration.

As a local electricity resource, the BESS Facility would provide reliable on-demand power every day of the year for peak needs and renewable integration. With the increase in wildfires, mudslides, and high wind events that may cause a loss in power, the BESS Facility could be used to ensure electric reliability. Additionally, during Public Safety Power Shutoff events, the BESS Facility would be available to continue to provide power in Sonoma County and elsewhere. For example, in the event of a disruption in service with the broader high-voltage transmission system, PG&E would be able to utilize power from the BESS Facility to maintain power temporarily on the local system until service on the transmission system could be restored.

The Project would largely be unstaffed, and the site would not contain any habitable enclosures or facilities for on-site personnel. It is expected that between two to four staff members would visit the BESS Site a few times a week and as needed for maintenance and monitoring; thus, operational vehicular traffic would be minimal.

In addition to regularly scheduled maintenance, augmentation of the batteries would be required over the approximately 20-year lifespan of the BESS Facility. Depending on technology selection, augmentation could include replacement of batteries within enclosures and/or the phased installation of new BESS enclosures over the life of the BESS Facility. Batteries would be properly disposed of or recycled in accordance with state and local regulations. In order for Sonoma County to fully analyze the potential impacts of the BESS Facility, the estimated full buildout of all BESS enclosures that could be constructed through the life of the BESS Facility has been included in the Project's preliminary site plan.

Once operational, the Project Applicant's BESS Subject Matter Experts would provide training to local fire departments and local law enforcement on response and firefighting procedures at the BESS Facility, including Safety Data Material identifying potential hazards associated with the Project. This training would be intended to ensure that first responders are familiar with the operations and firefighting procedures to provide proper guidance to law enforcement in the unlikely event of a fire or emergency event. In addition, public education seminars regarding BESS Facility operations would also be provided by the Project Applicant, with the intended audience being nearby residents and businesses.

The proposed Project would not generate hazardous waste, however lithium-ion battery cells and fluids used in transformers and other equipment at the BESS Facility are classified as hazardous material. These materials are contained within weatherproof enclosures. Hazardous liquids, such as high voltage transformer cooling fluid, typically also have a secondary containment system built into their concrete pad. Given the presence of hazardous materials on the site, the Project Applicant would provide a Hazardous Materials Business Plan (HMBP) to the County's Hazardous Materials Unit prior to building permit issuance which will include an Emergency Response/Contingency Plan and an Employee Training Plan. The Project Applicant would comply with all required update and reporting requirements throughout the life of the Project.

f) Project Decommissioning and End-of-Lifecycle Recycling

At the end of the BESS Facility's useful life, the BESS equipment would either be replaced or decommissioned. Decommissioning and restoration activities will be implemented using best management practices and procedures at that time and will be conducted in accordance with applicable federal, state, and local regulations. Decommissioning activities would require similar activities and a similar equipment mix as the BESS Facility construction phase. They would include the removal of equipment, fencing, and foundations from the site and restoration of the BESS Site to an open space use that provides aesthetic and environmental value consistent with the terms of the COSE.

First, equipment would be removed, repurposed, disposed of, or recycled where feasible. The BESS Facility master supply agreement would address battery recycling obligations, such as an obligation for the battery manufacturer to reclaim their lithium-ion batteries to be recycled and used in new products. In addition to re-use in new battery cells, the recycled materials extracted can be used in a wide variety of consumer products such as lubricants and additives to building products. Clean concrete used in foundations would be crushed and disposed of off-site and/or recycled and reused off-site.

Second, the BESS Site would be restored to open space. Project landscaping including the landscape buffer and berm would remain. Gravel areas and access roads would be removed. If soils are determined to be compacted at levels that would affect successful restoration, decompaction would occur. Topsoil would be placed in disturbed areas and these areas would be revegetated with a native seed mix. Erosion control measures would be installed to prevent erosion and sedimentation while vegetation is being reestablished. Maintenance and monitoring of the restoration area would be conducted until established success criteria are met.

g) Use Permit for Fence Height

As is set forth earlier in this Project Description, the approximately six- to eight-foot-tall fence that will secure the BESS Facility requires a use permit because it may exceed the six-foot height limit applicable to fences in the K zoning district per Section 26-88-030 of the County Zoning Code.

h) Final Resolution re COSE

The Project Site is encumbered by a 1990 COSE between the predecessor-in-interest to Adobe Investments and the County. Under the State law that enabled the COSE, the COSE cannot prohibit a public services facility. The Project includes a request that the Board of Supervisors adopt a final resolution finding that the COSE does not prohibit the proposed BESS Facility because the BESS is a “public service facility” and because the BESS Facility is an allowed use under the COSE.