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Appendix 1M

Construction Traffic Management Plan

Construction Traffic Management Plan

Potentia-Viridi Battery Energy Storage Project Alameda County, California

JULY 2024

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ACE	Altamont Commuter Express
ADT	Average Daily Traffic
BESS	Battery Energy Storage System
CEC	California Energy Commission
CEQA	California Environmental Quality Act
County	Alameda County
Gen-tie	Generation Tie
I-580	Interstate 580
I-80	Interstate 80
LAVTA	Livermore Amador Valley Transit Authority
Linear Facility Route	Gen-tie line alignments, access roads, and collector line routes
LOS	Level of Service
LVK	Livermore Municipal Airport
MM	Mitigation Measure
MPH	Miles Per Hour
MUTCD	Manual on Uniform Traffic Control Devices
MW	Megawatt
OPR	Governor's Office of Planning and Research
O&M	Operation & Maintenance
OWSC	One-way stop control
PCE	Passenger Car Equivalence
Project	Potentia Viridi Solar Project
PV	Photovoltaic
SB	Senate Bill
SCADA	Supervisory Control and Data Acquisition
SF	Square feet
TCY	Tracy Municipal Airport
VMT	Vehicle Miles Traveled
WATCH	Work Area Traffic Control Handbook Manual

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1 Introduction

Levy Alameda, LLC (Applicant), a wholly owned subsidiary of Obra Maestra Renewables, LLC, proposes to construct, operate, and eventually repower or decommission the 400 megawatt (MW) Potentia-Viridi Battery Energy Storage System (Project) on approximately 85 acres in eastern Alameda County. The primary components of the Project include an up to 1,600 megawatt-hour (MWh) battery energy storage system (BESS) facility, an operations and maintenance (O&M) building, a project substation, a 500 kilovolt (kV) overhead intertie transmission (gen-tie) line, and interconnection facilities within the Pacific Gas and Electric (PG&E) owned and operated Tesla Substation. Construction would occur over an approximately 18-month period with initial mobilization and site preparation anticipated to begin no later than Q1 2026 and testing and commissioning anticipated to conclude no later than Q2 2028. This Traffic Management Plan (TMP) has been prepared to describe how the Project and its contractors plan to reduce traffic impacts during the peak phase of Project construction. The TMP was developed based on the findings of the Potentia Viridi Battery Energy Storage System Transportation Impact Study (Dudek, June 2024).

The Plan includes the following components: 1) Plan objectives, applicable regulations and permits; 2) Project summary; 3) Transportation Setting; 4) Plan elements; and, 5) Implementation and monitoring of Plan. This approved TMP will be used for future development of the detailed Traffic Control Plans (TCPs) for the project.

1.1 Plan Objectives

Effective management of Project traffic and safety of operators is paramount to the delivery of successful day-to-day activities on site. Primary objectives of this plan include:

- Maximizing operator and vehicle safety.
- Minimizing wherever possible conflicts between Project vehicles and the general public as a result of construction traffic and activities.
- Minimizing disruption, delays and congestion to local road users.
- Complying with federal, state, and local requirements.

1.2 Applicable Regulations

This plan conforms to the regulatory ordinances outlined by Caltrans, the California Energy Commission (CEC), and Alameda County. Ordinances to be adhered to include the following:

- Caltrans's Manual on Uniform Traffic Control Devices (MUTCD)
- Caltrans's Work Area Traffic Control Handbook (WATCH) Manual

2 Project Description

The proposed Project would include the construction, operations and maintenance, and decommissioning of a BESS facility, including a Project substation, O&M building, and an overhead gen-tie line. The Project would

interconnect into the Tesla Substation, located approximately 570 feet east of the Project's eastern boundary. Improvements to the PG&E Tesla Substation would be required as part of the Project.

The project site is located within unincorporated eastern Alameda County southwest of Interstate 580 (I-580) and I-205. The project site boundaries are illustrated Figure 1, Project Location and Study Area and the Project site plan is shown as Figure 2.

During operation, the Project would be maintained by three full-time dedicated operations staff. The staff would be based in a small O&M building located within the laydown yard, depicted in Figure 2. The O&M building would include basic offices, meeting rooms, washroom facilities and climate-controlled storage for equipment and materials. The O&M building would be powered from the Project, and would have self-contained washroom facilities with water and sewage tanks. The O&M building would have a small parking area for worker vehicles and storage space for spare parts and storage containers. The facilities would be remotely operated and monitored year-round and be available to receive or deliver energy 24 hours a day and 365 days a year. During the operational life of the Project, technicians would routinely inspect the Project facilities and conduct necessary maintenance to ensure safe operational readiness. If an issue arises, the system can be remotely shut down.

2.1 Project Access

As shown in Figure 2, there would be two access roads to the Project site; via an existing private driveway to the north of the site from Patterson Pass Road and a new private driveway at the southeast of the site, from Patterson Pass Road. The two access roads will be used throughout the construction and operations periods of the Project. A project substation access road would be constructed outside of the perimeter fence, connecting the northeast and southwest driveways, to facilitate substation access by third parties during operations. Traffic ingress and egress will be planned in consultation with Alameda County and are discussed in more detail in Section 5, Traffic Management Plan. All internal roadways and private driveways would be constructed to meet access requirements for operations and maintenance activities and be in accordance with Alameda County Fire Department Standards.

The surrounding roadways do not have pedestrian or bicycle facilities, and have enough pavement width to accommodate large trucks. The project site access roads would be located such that slow trucks exiting the site would be visible to oncoming traffic and would allow for traffic to slow down and be aware of trucks. In situations where there may be a large amount of slow-moving truck traffic entering or exiting the project site at one time, the contractor would perform this activity during off-peak times and utilize flaggers to warn of slow-moving trucks ahead. Construction workers would park on-site and would not be staged or transported from any offsite location. Additionally, the project site would be readily accessible by emergency vehicles along Patterson Pass Road. These items are described in more detail in Section 5, Traffic Management Plan.

2.2 Project Construction Trip Generation

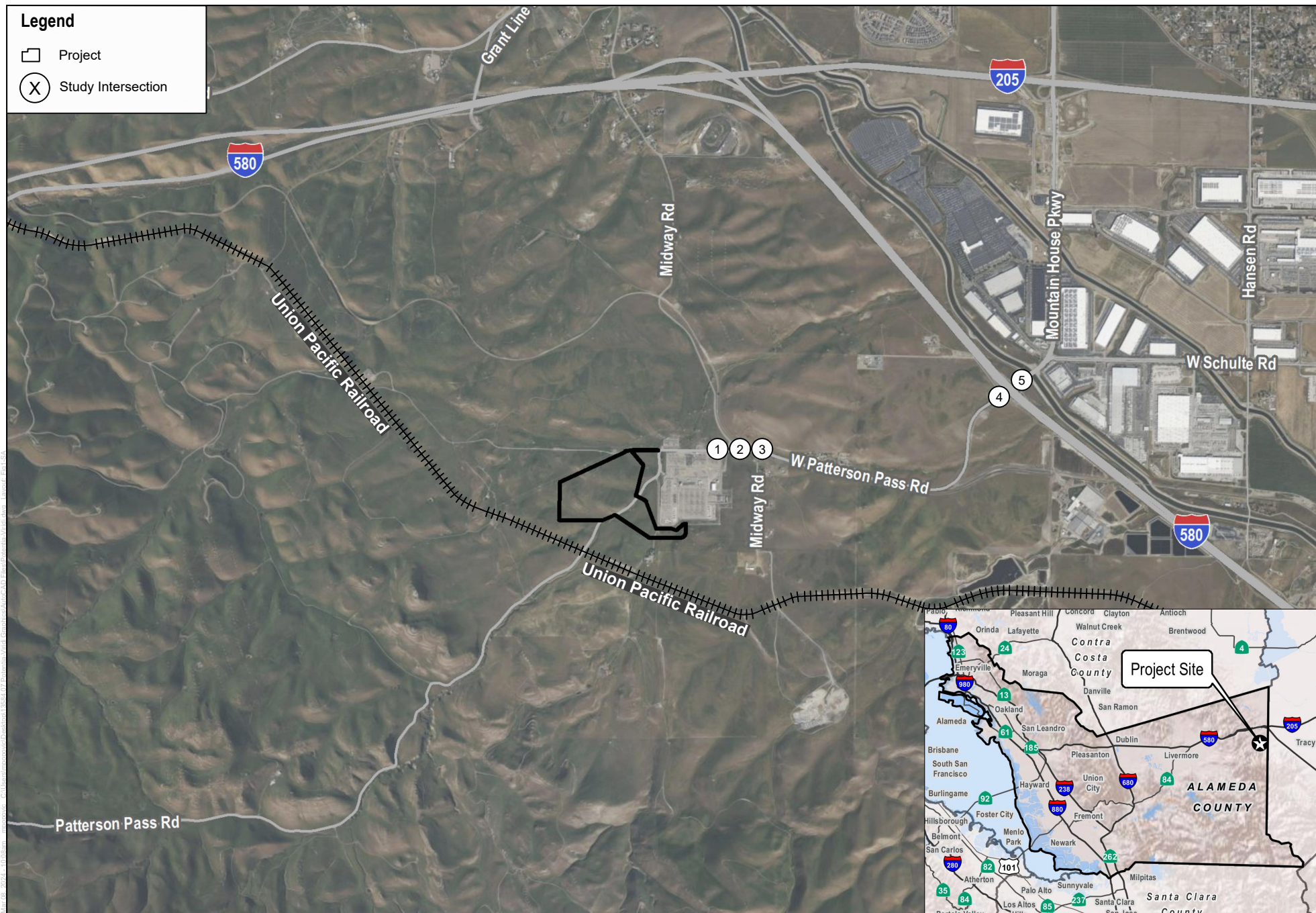
Construction would occur over an approximately 18-month period from approximately December 2026 to April 2028. The peak construction period of the Project when the highest volumes of construction-related traffic would be generated is planned to occur over a three-month period, when multiple phases of Project construction would occur concurrently. Trip generation estimates for the peak construction phase are based on the number of workers and trucks that would be required for the proposed construction activities, including the number of workers and the

amount of truck traffic that would be generated to and from the site daily and during the AM and PM peak commuting hours. The project trip generation estimates are based on the following activities:

1. Site Preparation – 8 Weeks (February 2027 – March 2027)
2. Grading – 22 weeks (March 2027 – August 2027)
3. BESS Foundations – 16 weeks (March 2027 – June 2027)
4. Battery/Container Installation – 20 weeks (June 2027 – October 2027)
5. PV Substation Installation – 32 weeks (August 2027 – March 2028)
6. PG&E Substation Upgrades – 32 weeks (November 2027 – March 2028)
7. Gen-tie foundation and Pole installation – 8 weeks (March 2027 – April 2027)
8. Gen-tie stringing and pulling – 2 weeks (April 2027 – May 2027)
9. Testing and commissioning – 26 weeks (November 2027 – April 2028)
10. Decommissioning – 6 months (year 2053)

During the peak construction phase, there would be approximately 254 construction workers, 53 daily vendor trucks, and 151 haul trucks. Generally, construction work schedules are expected to be at least 8 hours per day Monday through Friday, excluding federal holidays. Typically, the workday would consist of one shift beginning as early as 6:00 a.m. and ending as late as 7:00 p.m. The work schedule may be modified throughout the year to account for the changing weather conditions.

During the peak period of construction, the Project would generate approximately 916 daily trips, 305 AM peak hour trips, and 305 PM peak hour trips. This conservatively assumes that all construction workers arrive inbound to the site during the AM peak period (7:00 a.m. to 9:00 a.m.) and all workers depart the site during the PM peak period (4:00 p.m. to 6:00 p.m.). By applying a passenger car equivalent (PCE) factor to the haul trucks, the project would generate approximately 1,626 daily PCE trips, 394 AM peak hour PCE trips, and 394 PM peak hour PCE trips during the peak construction phase. For all other phases of construction, the amount of vehicular traffic is estimated to be less than the peak period. All construction-related traffic would be temporary and short term and would be removed from the study area roadway network upon completion of the Project.



SOURCE: Bing Maps (accessed 2024); Open Streets Map 2019

FIGURE 1

Project Location and Study Area

Potentia-Viridi BESS Project

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3 Existing Transportation Setting

This section provides a summary of the existing street network, including the major roadways serving the site, the existing transit and rail service, and bicycle and pedestrian facilities in the study area.

Roadway Network

Regional access to the site would be provided from I-580 to Patterson Pass Road – County Road 2063 to the east of the project. Characteristics of the primary roadways within the study area are described below.

- **Interstate 580 (I-580)** is an east-west, divided, six to eight-lane freeway that provides regional access to the project site. I-580 is an auxiliary highway of I-80 that begins in San Francisco and extends east to Teaneck, New Jersey, and serves as a critical connection for many other regional roadways, freeways, and highways. Caltrans classifies I-580 as a designated truck route, except for a portion of the route through Oakland. The nearest interchange to the site is provided at I-580 and Patterson Pass Road, approximately 1.5 miles east of the site. The posted speed limit is 65 miles per hour (MPH).
- **Patterson Pass Road – County Road 2063** is a two-lane, undivided, east-west roadway that provides local access to the project site via the interchange with I-580 east of the project site, and will be the main roadway to access the project. Patterson Pass Road connects the project site to the City of Livermore in the west at its intersection with Vasco Way. There are no pedestrian or bicycle facilities present. The posted speed limit is 55 MPH.
- **Midway Road** is a two-lane, north-south, undivided roadway which provides local connection to the project site via its intersection with Patterson Road. There are no pedestrian or bicycle facilities present. The posted speed limit is 40 MPH.

Local Intersections

Construction traffic would travel through the following intersections near the project site. The intersections are identified on Figure 1, Project Location and Study Area.

1. Midway Road/Patterson Pass Road (West) (one-way stop control [OWSC] on Midway Road)
2. N. Midway Road/Patterson Pass Road (Yield on N. Midway Road)
3. Midway Road/Patterson Pass Road (East) (OWSC] on Midway Road)
4. I-580 Eastbound Ramps/Patterson Pass Road (Signal)
5. I-580 Westbound Ramps/Patterson Pass Road (Signal)

Public Transit

Eastern Alameda County is served by bus services provided by Livermore Amador Valley Transit Authority (LAVTA), which provides regional and local services throughout Eastern Alameda County and Western San Joaquin County. Regionally, the project is served by passenger rail services offered by the Altamont Commuter Express (ACE). However, the closest bus stop to the project site is located at the Vasco Road Transit Center, approximately 10 miles west of the project site. The closest ACE station to the project site is the Tracy ACE Station, located approximately nine miles east of the project site. Therefore, no impacts to public transit are anticipated.

Union Pacific Railroad

An east-west Union Pacific rail line is located approximately 900 feet south of the project site, crossing over Patterson Pass Road. However, a railroad bridge carries the rail line over Patterson Pass Road, thus allowing rail traffic to flow without conflicting with vehicular traffic. There are no at-grade rail crossings near the site. Therefore, no impacts to rail facilities are anticipated.

Pedestrian and Bicycle Facilities

The project site is surrounded by undeveloped rural land with no pedestrian or bicycle infrastructure provided. There would be no impacts to pedestrian and bicycle infrastructure.

4 Construction Traffic Management Plan

Table 1 describes implementation of this plan throughout construction. The guidelines outlined in **Table 1** will reduce construction-related impacts; meet regulatory ordinances set forth by federal, state, and local agencies, and establish notifications for emergency personnel.

The Plan also includes the following components:

- Construction vehicle and truck routes and points of access for workers and trucks (see **Figure 3**). These routes and access points will be designed to not block emergency vehicles and equipment.
- Off-street parking areas for construction-related vehicles (see **Figure 4**).
- Advance warning signage and flaggers (see **Figure 5**).

Table 1. Construction Traffic Management Plan

No.	Measure	Implementation
1	Identify truck routes and permits to address the transport and delivery of heavy and oversized loads requiring permits from Department of Transportation (Caltrans) or other state and federal agencies.	Construction vehicles accessing the site will use routes indicated in Figure 3 whenever possible. Vehicles carrying hazardous materials, oversize vehicles and heavy haul vehicles will utilize only the haul routes indicated on Figure 3 . No haul routes require rail crossings. Use of residential and local roadways will be minimized. Transportation/hauling permits will be obtained for oversize or heavy loads as required by Caltrans.
2	Parking for workforce and construction vehicles.	<p>The applicant and contractors shall ensure adequate parking for construction personnel. While working on the project site, parking shall be provided within a properly designated lay down area to the extent possible. Figure 4 presents the on-site parking and laydown area.</p> <p>The industry standard is to assume 350 square feet (SF) per vehicle. This amount accounts for access, drive aisles, and parking stalls. At a rate of 350 square feet per vehicle for a maximum of 254 construction worker vehicles during peak construction, 88,900 square feet, or approximately 2 acres, would be required. During less traffic-intensive construction months, a smaller parking area would be provided at a continued rate of 350 SF per vehicle, as appropriate.</p> <p>The project shall maintain the appropriate amount of parking acreage for worker vehicles during each phase of construction within the approved project boundary and workers shall not park on public</p>

Table 1. Construction Traffic Management Plan

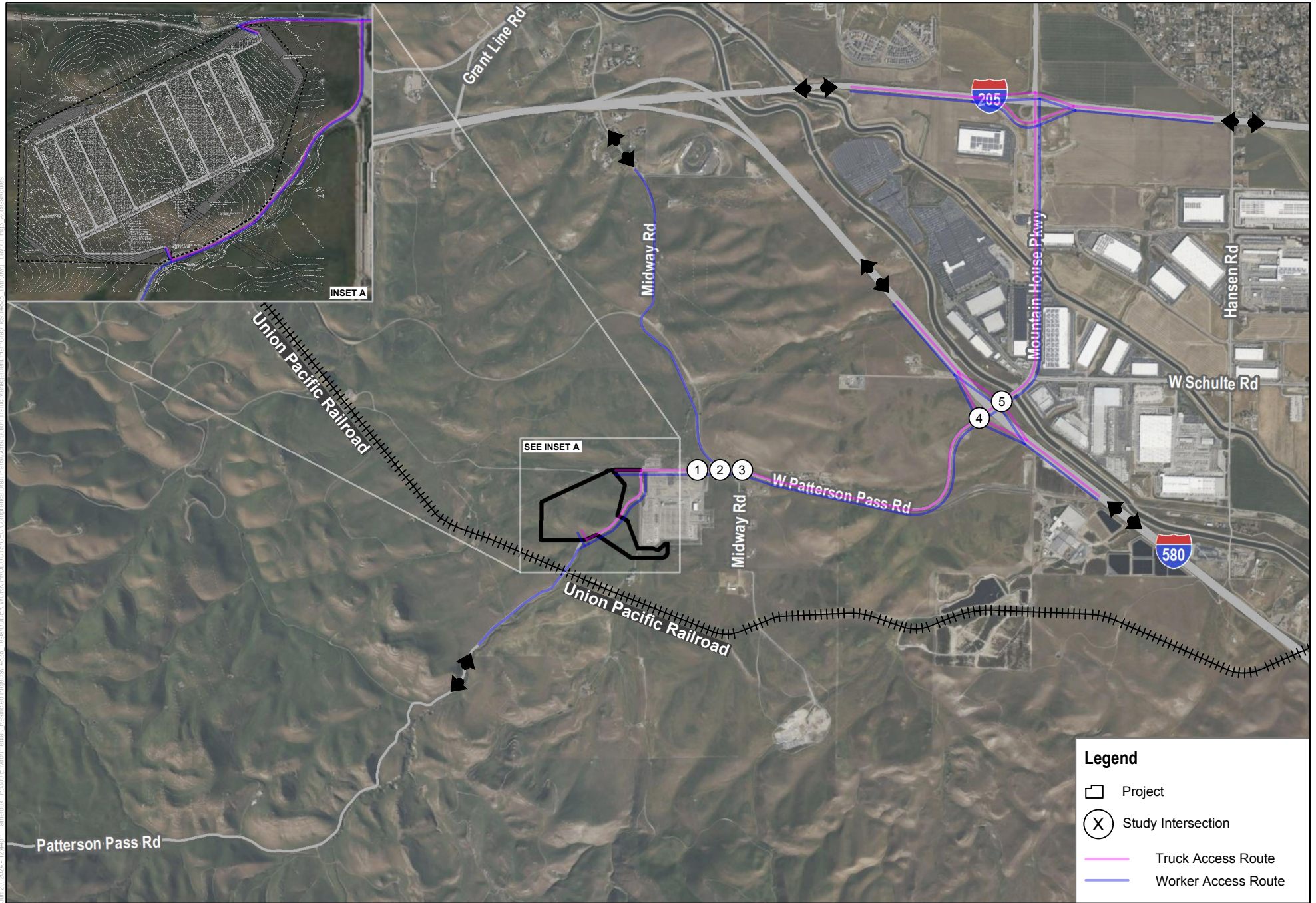
No.	Measure	Implementation
		roadways. The staging and laydown of equipment, materials, and supplies shall be located in an area separate from worker vehicles to avoid potential traffic hazards.
3	Placement of signage, lighting, and traffic control device at the project construction site and laydown areas.	All construction activities requiring the use of temporary traffic control signage, temporary lane closures or flagmen will take place during daylight hours.
4	Use of warning signage to meet County and Caltrans (if applicable) requirements for driver awareness of construction activity in the vicinity.	To warn drivers of slower-moving construction-related vehicles and trucks entering and crossing the roads, signage will be placed along Midway Road and Patterson Pass Road. Figure 5 indicates locations where the use of temporary traffic control signage may occur. Placement of temporary traffic control devices would be in accordance with all applicable regulations and guidance.
5	Use of flaggers at key locations to alert motorists to slow moving trucks.	<p>Flaggers may be used for temporary traffic control, as needed, to assist construction vehicles entering and exiting the site and to control off-site circulation along Midway Road and Patterson Pass Road. Traffic control under a flag person will be based on the requirements in the CA MUTCD and/or the WATCH. Figure 5 indicates locations where the use of flaggers may be needed.</p> <p>Driveway Access</p> <p>Access to the site would be via an existing private driveway to the north of the site from Patterson Pass Road and a new private driveway to the southeast of the site, from Patterson Pass Road. Access at the north driveway would be unobstructed as this is currently a dirt road with no existing through traffic. However, flaggers may be required to assist construction traffic where the dirt road meets Patterson Pass Road.</p> <p>At the driveway at the southeast portion of the site, flaggers should be positioned along Patterson Pass Road to facilitate ingress and egress at the project driveway and minimize conflicts with through traffic on Patterson Pass Road. The driveway is located near a horizontal curve along Patterson Pass Road, with limited sight distance.</p> <p>Gen-Tie Line Construction</p> <p>Within the project area, most of the Gen-Tie Line construction occurs outside roadways. However, the use of flaggers for traffic control will be required for short durations during construction of the Gen-Tie Line for</p>

Table 1. Construction Traffic Management Plan

No.	Measure	Implementation
		certain activities, such as stringing wire across Patterson Pass Road. Stringing wires may require the temporary closure of Patterson Pass Road in order to string and then secure the Gen-Tie Line.
6	Stagger work shifts to reduce peak periods of congestion and/or restrict worker arrivals and departures during peak hours during the peak construction phase.	<p>The anticipated peak time for vehicular traffic would occur during the site grading, construction of the BESS foundations, and the battery/container installation when the number of construction workers would be greatest. As shown in the Draft EIS, based on the assumption that all 254 workers arrive/depart the site within the morning and evening peak periods in individual vehicles, the Midway Road and Patterson Pass Road intersection (#1) would degrade to LOS E during the PM peak hour, the North Midway Road and Patterson Pass Road intersection (#2) would degrade to LOS E during the PM peak hour, and the I-580 westbound ramps at Patterson Pass Road (#5) would degrade to LOS F during the AM peak hour.</p> <p>Staggered work start/end times should allow for no more than 200 vehicular trips per hour during the peak travel hours.</p> <p>When total construction vehicles exceed 200 trips, the Project will require contractors to establish a carpool/rideshare program to maintain hourly vehicle traffic to under 200 trips. The work schedule will also be modified throughout the construction period to account for changing weather conditions (e.g. starting the work day earlier in summer months to avoid work during the hottest part of the day for health and safety reasons).</p>
7	Limit time for heavy truck deliveries.	Phase 2 (Grading) is anticipated to have the greatest number of heavy haul trucks, with a maximum of 302 daily heavy haul trips. Heavy equipment and building material deliveries, when feasible, should be scheduled to occur during off-peak hours to minimize impacts on peak traffic hours.
8	Provide for advance notification of residents and emergency service providers to bring awareness to the Project activities and measures to minimize impacts.	<p>Timely publicity can significantly improve traffic behavior on a construction project. Motorists who are forewarned of construction conditions may be more tolerant of delay and inconvenience and are likely to be more alert and responsive to work zone traffic control.</p> <p>Advance notification to affected residents and emergency service providers will be provided by the applicant or contractor at least two weeks prior to peak construction activities. A list of affected parties to be notified shall be provided by the County and shall consist of residents along Patterson Pass Road, as well as, all affected emergency service providers. The notification shall include the locations, days, times, durations, and a project contact. Notifications may also be provided through local newspapers and/or online sources.</p>

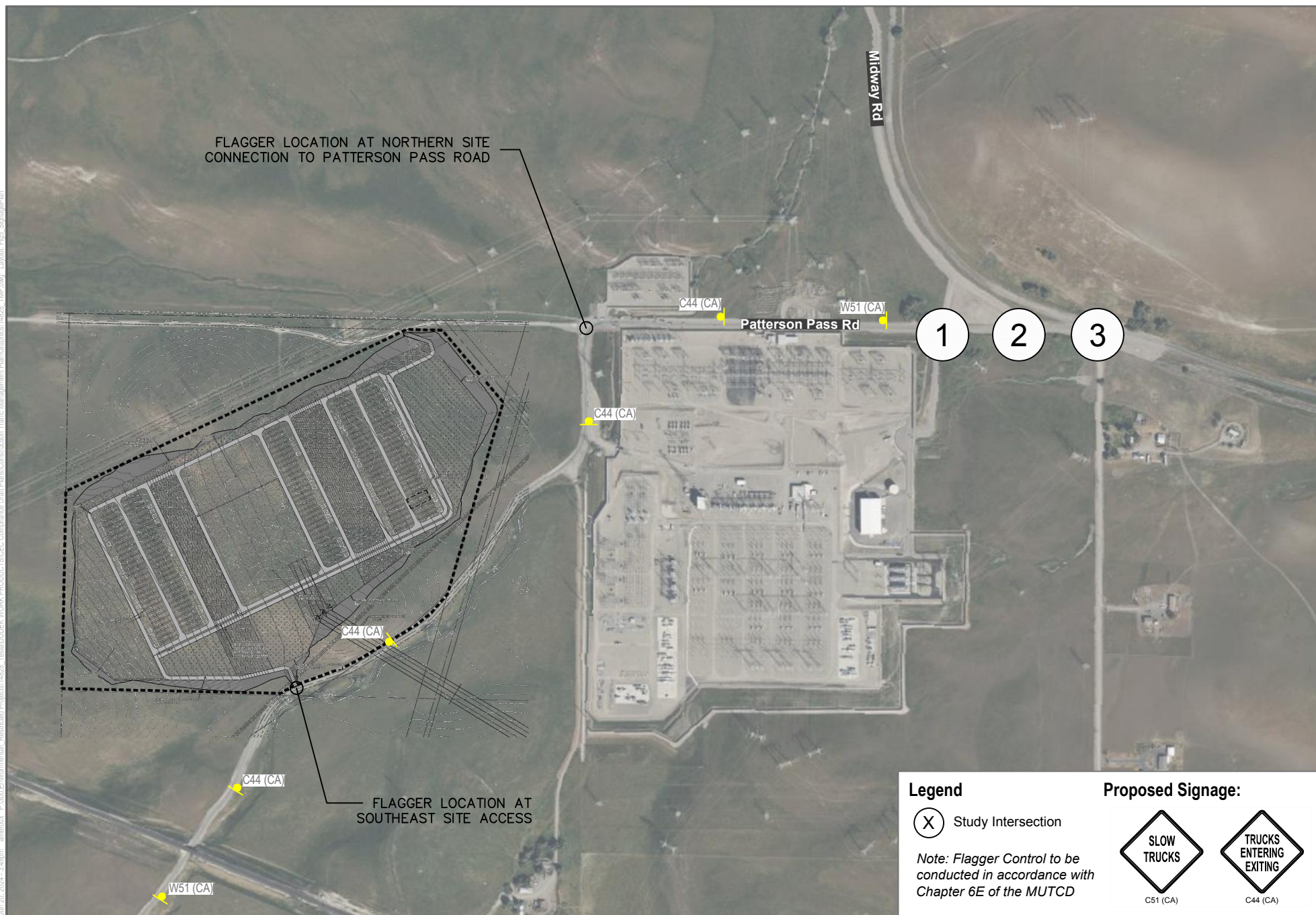
Table 1. Construction Traffic Management Plan

No.	Measure	Implementation
		Notices shall be mailed, and signs posted along Patterson Pass Road. Notices will indicate that such activities shall be limited to between the hours of 8:00 AM to 5:00 PM Monday through Friday, unless otherwise approved by the County.
9	Emergency vehicle access to the project site.	Emergency service provider contacts will be identified prior to the start of construction. In the case of an emergency during project construction, emergency vehicles will be given priority over construction and general-purpose traffic. The contractor shall assist emergency vehicle access through the construction area as necessary.
10	Preparation of Traffic Control Plan	The contractor shall prepare detailed TCPs illustrating specific locations for flaggers, signage and other advanced warning measures, prior to the commencing construction. The TCP shall be approved County of Alameda before construction begins. TCPs will be based on the requirements in the CA MUTCD and/or the WATCH.



SOURCE: Bing Maps (accessed 2024); Open Streets Map 2019

Jun 20, 2024, 3:43pm amznou P:\307 Environmental\Bentley Projects\14228 Teal\DUDEK WORK PRODUCTS\CEE Compliance Draft Plans\Construction Traffic Management Plan\Graphics\4228_TMAP.dwg Layout: Fig. SignagePlan



SOURCE: Bing Maps (accessed 2024); Open Streets Map 2019; Coffman Engineers 2024

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Not to Scale

FIGURE 5
Signage Plan

Potentia-Viridi BESS Project

5 TMP Implementation and Monitoring

The purpose of this TMP is to maximize operator and vehicle safety; minimize conflicts between Project vehicles and the general public; minimize disruption, delays and congestion to local road users; and comply with federal, state, and local requirements. Implementation and subsequent monitoring during construction will ensure that the proposed transportation measures identified in Table 1 are effective and achieve their purposes.

The project contractor shall assign a designated Field Construction Manager who will be responsible for implementation of the TMP, and to identify any adjustments to the plan as necessary to ensure the measures are successful.
