

2014 Energy Storage RFO

Energy Storage Systems for Distribution Substation Investment Deferral

Pacific Gas and Electric Company (“PG&E”) is soliciting offers for new energy storage systems (“ESS”) that would enable PG&E to defer otherwise necessary investments at up to five distribution substations. PG&E is soliciting offers for development of these ESS Projects, which should be developed near any of the identified substations, as part of PG&E’s 2014 Energy Storage Request for Offer (“RFO”). The investments that would be deferred involve upgrades to transformers at the substations. The five distribution substations targeted for this type of investment deferral are at various locations across PG&E’s service territory as illustrated in Figure 1.

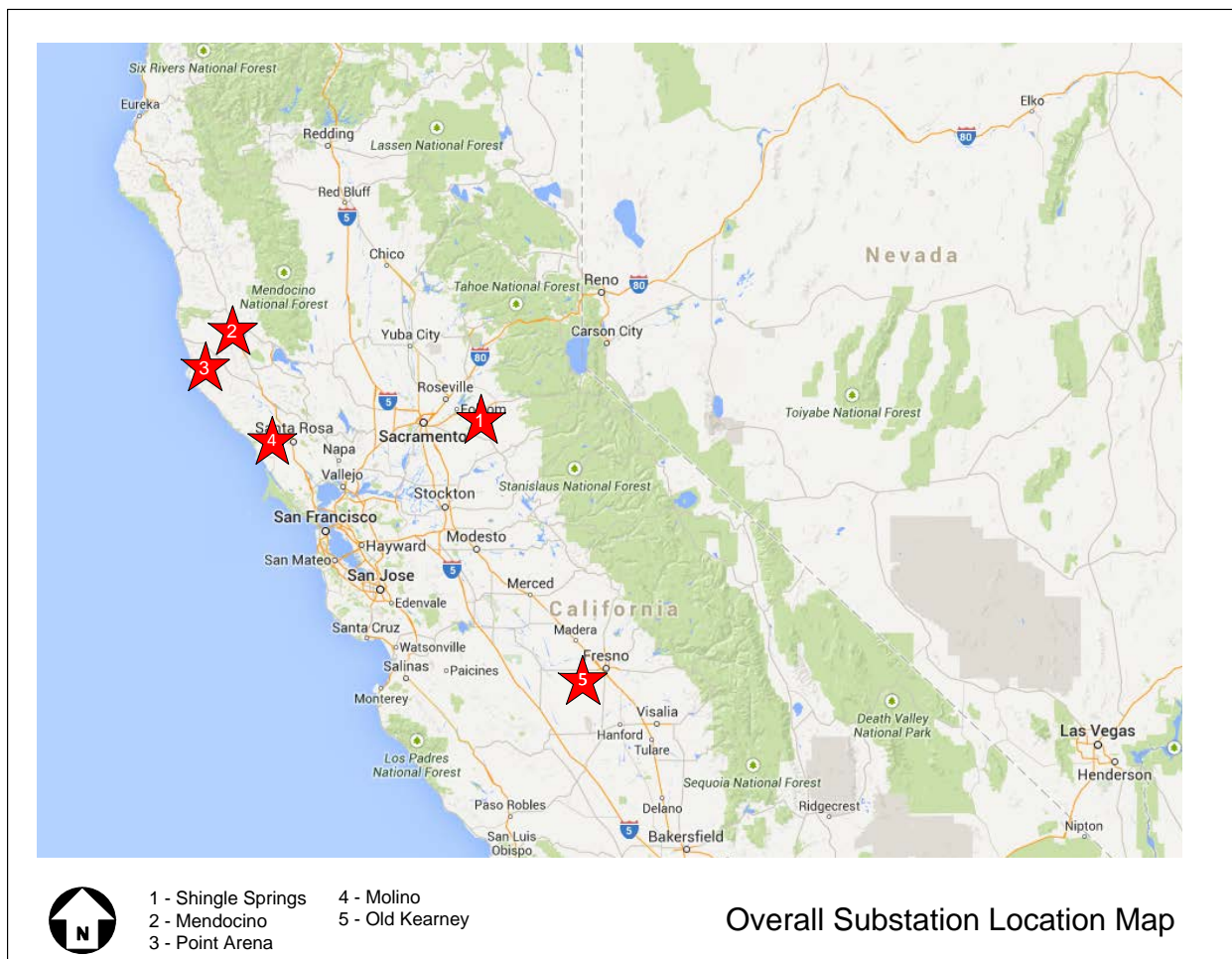


Figure 1: Distribution Substations Targeted for Investment Deferral

If selected through the RFO process, the entity charged with developing the ESS Project (the “Seller”) would enter into a Purchase and Sale Agreement (“PSA”), under which the Seller must develop (including obtaining all real property interests, permits and other authorizations and approvals required to construct and operate the Project), finance, and cause the ESS Project to be constructed, completed, tested and ready for placement into commercial operation, all on a turnkey basis at no risk, no cost or expense to PG&E until PG&E pays the purchase price set forth in the PSA and takes ownership of the ESS Project. PG&E will take ownership of the Project once it is constructed and the ESS has satisfied all performance and milestone guarantees. Performance and milestone guarantees include but are not limited to, guaranteed maximum power, discharge and charge duration, duty cycle, degradation rate, efficiency, and commercial operation date. Some of these criteria are threshold requirements for participation in the RFO, while other criteria will be used for evaluation purposes and selecting final bids for negotiation.

Table 1 provides a summary of key minimum ESS performance and milestone guarantees for each corresponding distribution substation.

Table 1: Minimum ESS Performance and Milestone Guarantees

Distribution Substation	Guaranteed Maximum Power (MW) at Year 1-10	Guaranteed Discharge Duration (hours)	Guaranteed Site Specific Required Duty Cycle	Guaranteed Commercial Operation Date (Later of the two dates)
Shingle Springs – Bank #2 Cameron Park, CA 95682	4	4	1/day for up to 365 days/year	May 1, 2017, or 12 months after CPUC approval
Mendocino – Bank #2 Redwood Valley, CA 94570	1	2	1/day for up to 365 days/year	May 1, 2018, or 12 months after CPUC approval
Point Arena – Bank #1 Point Arena, CA 95468	1	2	1/day for up to 365 days/year	May 1, 2017, or 12 months after CPUC approval
Molino – Bank #1 Sebastopol, CA 95472	1	2	1/day for up to 365 days/year	May 1, 2017, or 12 months after CPUC approval
Old Kearney – Bank #3 Fresno, CA 93706	1	2	1/day for up to 365 days/year	May 1, 2018, or 12 months after CPUC approval

The guaranteed site specific required duty cycle noted in Table 1 refers to the anticipated operation of the ESS. More specifically, this is defined as discharging the ESS from 100% state of charge (SOC) at guaranteed maximum power for the guaranteed discharge duration, then charging it to back to 100% SOC and subsequently discharging it at guaranteed maximum power for half of the guaranteed discharge duration, and finally charging it back to 100% SOC during the course of a single day. The ESS shall be capable of performing the guaranteed site specific duty cycle for up to 365 days per year excluding time for planned maintenance and/or forced outages.

Figure 2 shows an example of a site specific required duty cycle for an ESS with 1 MW guaranteed maximum power and 2 hour guaranteed discharge duration.

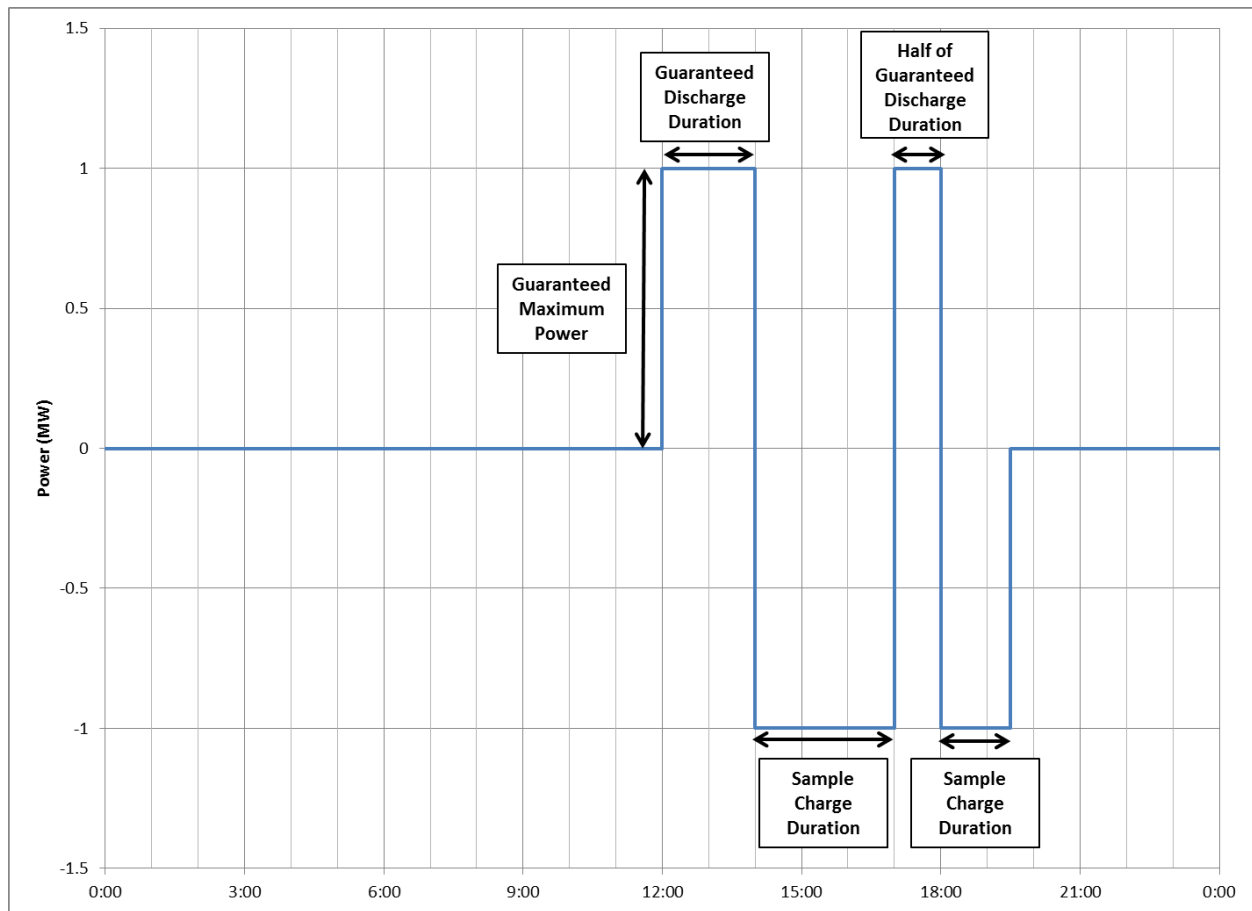


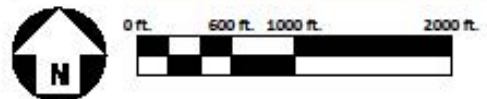
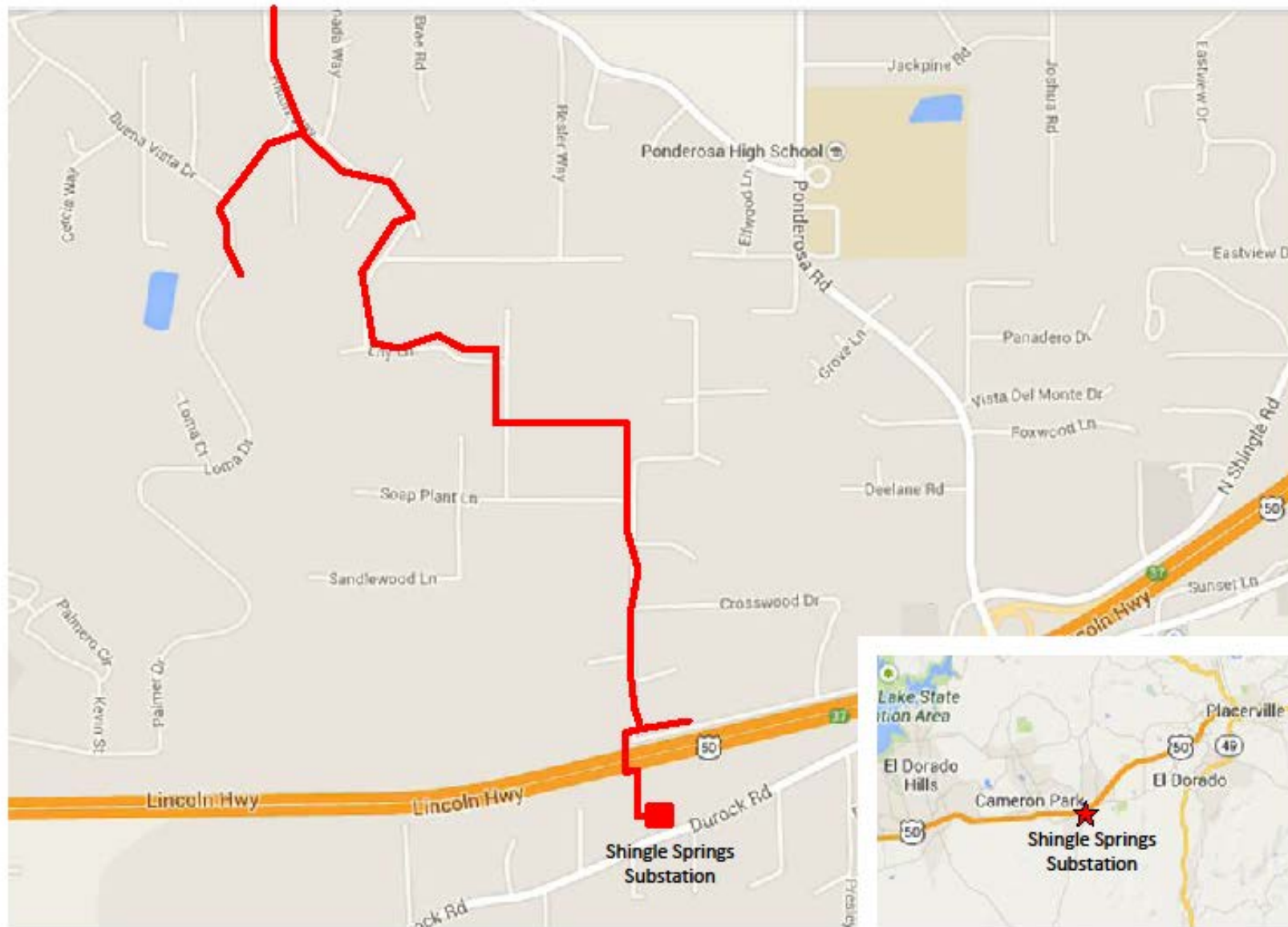
Figure 2: Example of Site Specific Required Duty Cycle

The ESS Project should be interconnected to the distribution substations or the main line of the distribution feeder(s) that is connected to the specified substation transformer bank. Appendix A shows the aerial map information of the substation and the connected feeder(s) of the five substation sites. If the substation transformer bank has two feeders, they are shown in red and green color. Projects may connect to either the red or green feeder lines. The ESS Project must be complete and fully integrated with all appurtenant systems to safely and reliably deliver energy to and from the distribution grid at the location-specific utility voltage. The Seller is responsible for obtaining land for the ESS Project. The ESS developer and all subcontractors must adhere to all PG&E and industry standards and requirements during engineering, design, construction, and testing of the ESS Project.

Once placed into commercial operation, the ESS Project must meet all performance guarantees for a period of 10 years. As a result, the Seller will be required to warrant equipment for periods defined in the PSA in order to protect the performance and economic viability of the Project. At the time of transfer of ownership to PG&E, all guarantees and warranties must be assigned to PG&E.

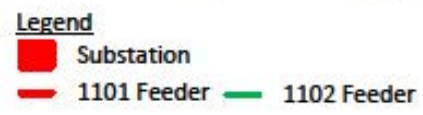
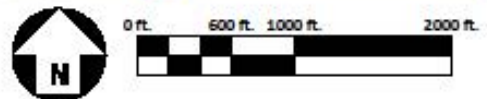
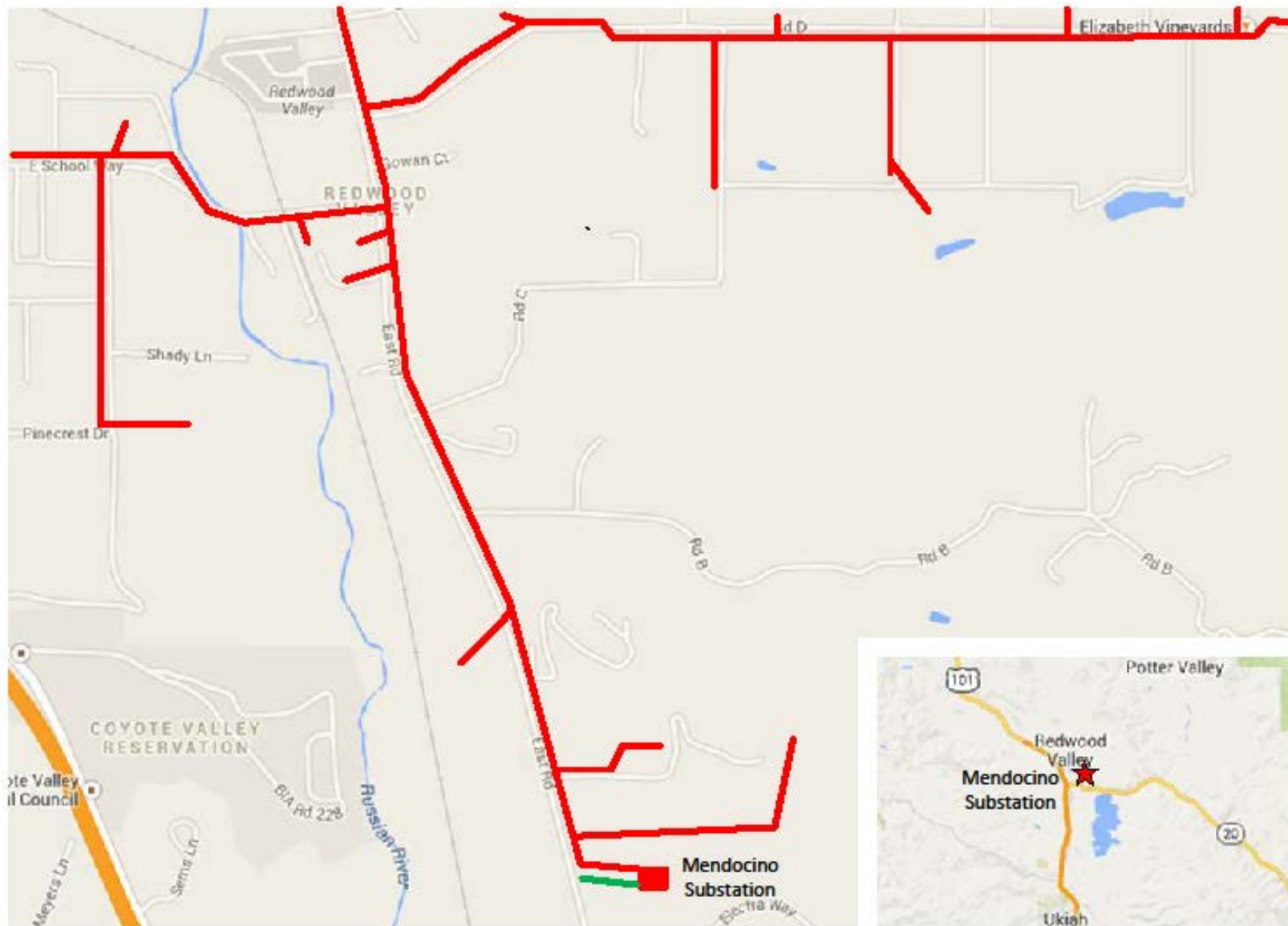
Parties interested in participating in the Energy Storage Systems for Distribution Substation Investment Deferral Project can find additional details, including Project administrative and technical requirements and forms, on the PG&E website (<http://www.pge.com/rfo/energystorage>). Please be sure to review the RFO materials, including the pro forma PSA carefully. In the event of a conflict between this document and the RFO materials, the RFO materials govern.

APPENDIX A: *Substation Location Maps With Feeders*

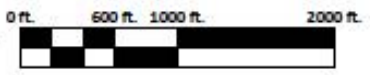
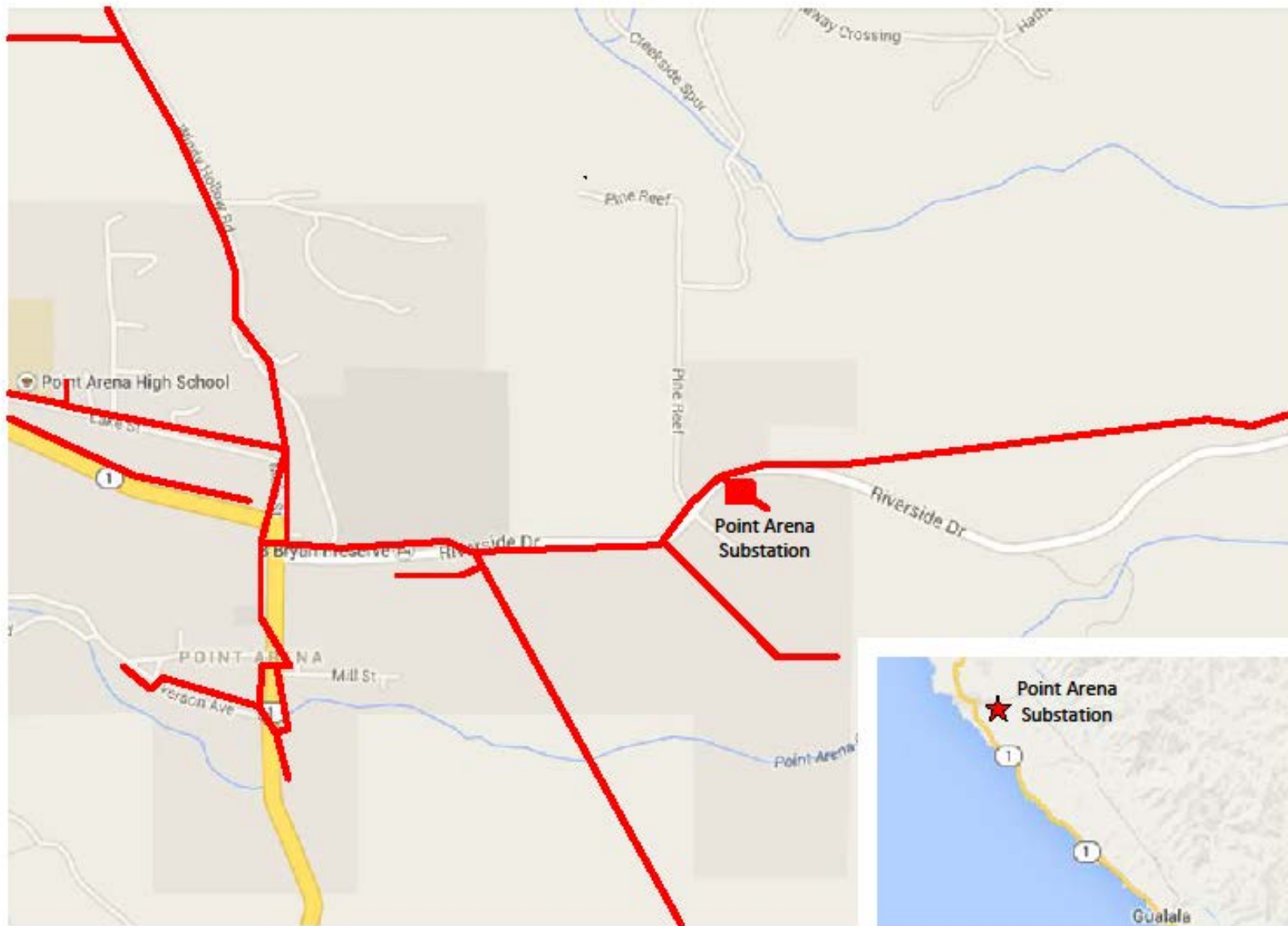


Legend
■ Substation
— 2105 Feeder

**Shingle Springs Substation
Local and Regional Map**



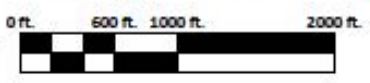
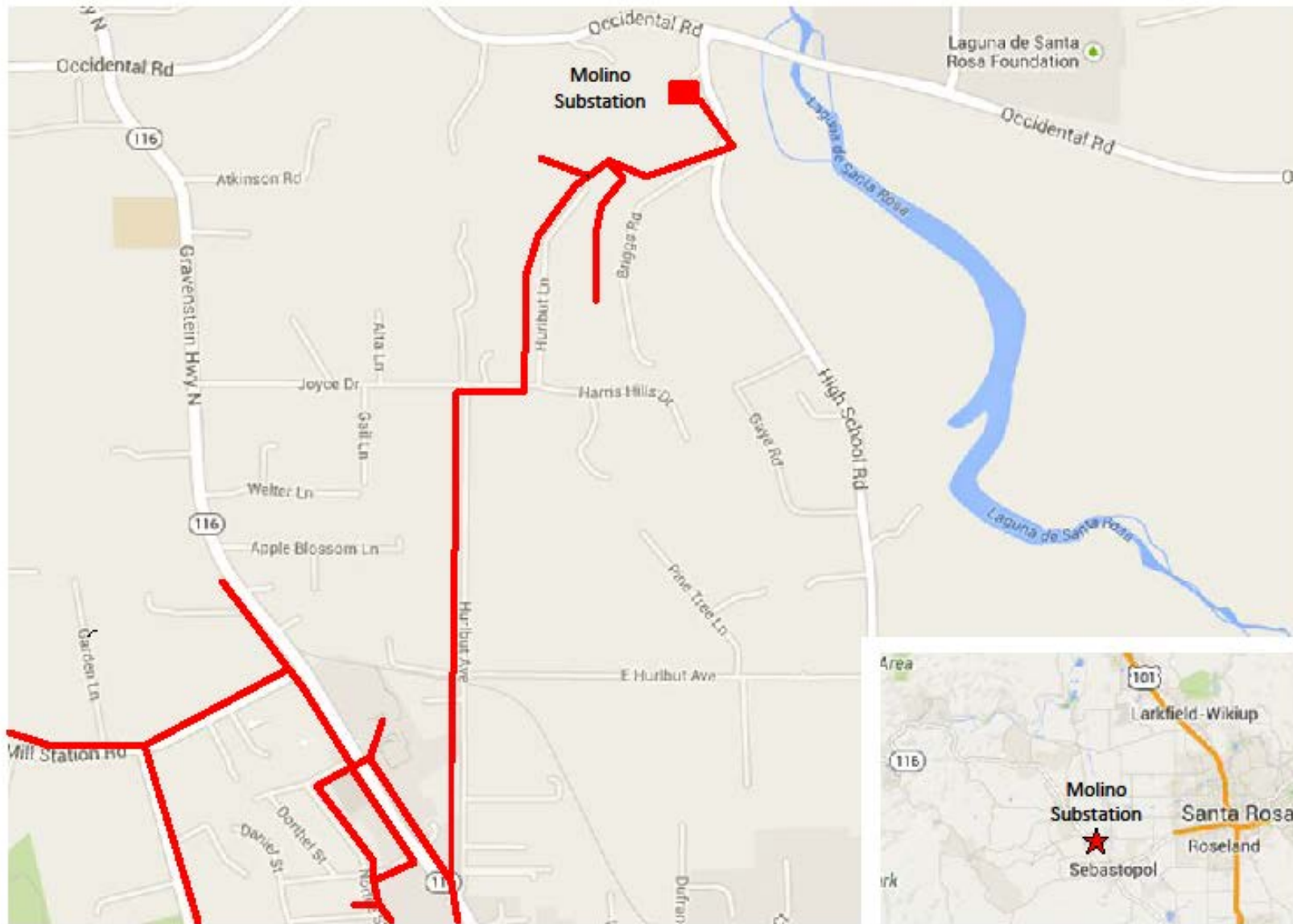
**Mendocino Substation
Local and Regional Map**



Legend

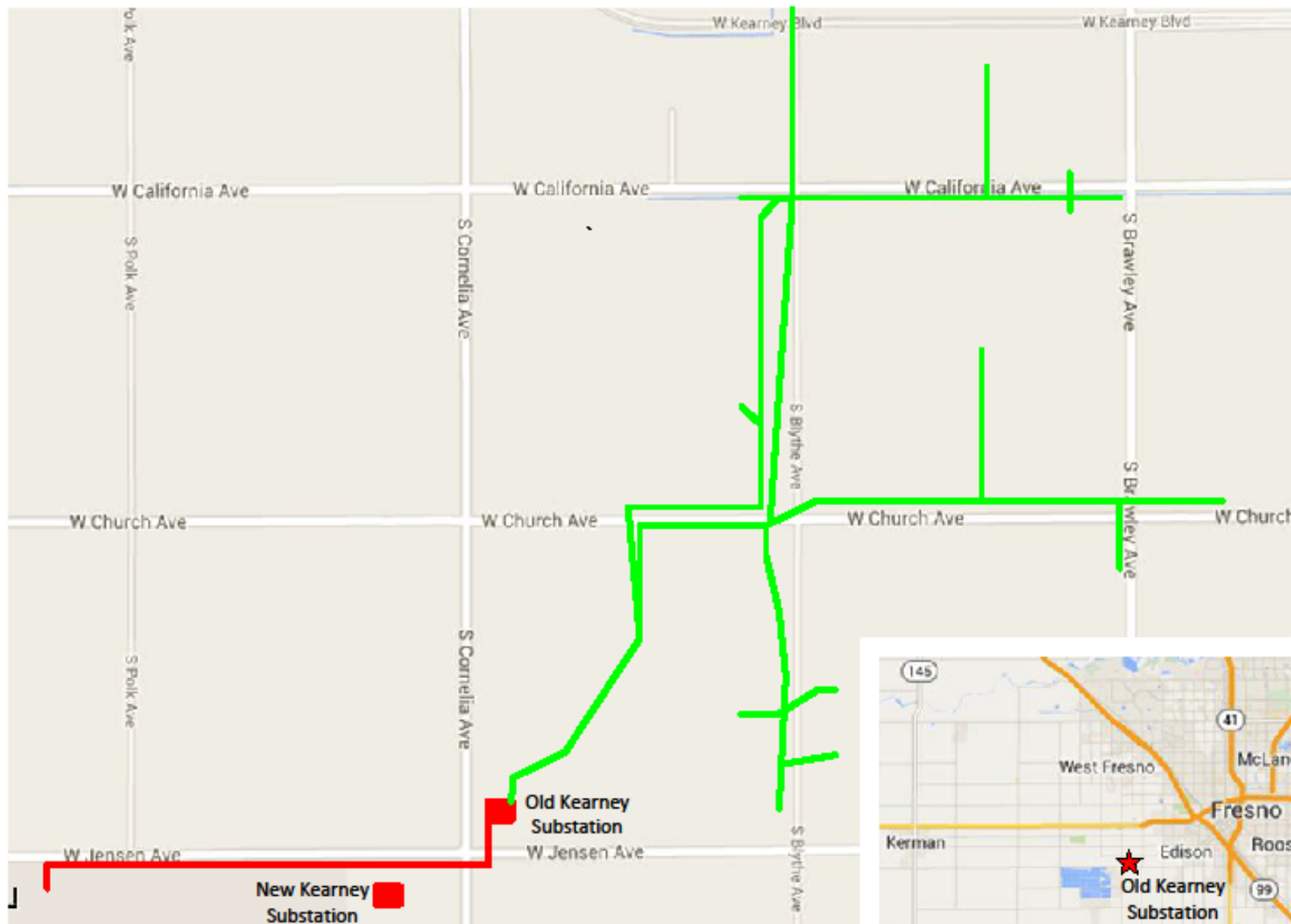
- Substation
- 1101 Feeder

**Point Arena Substation
Local and Regional Map**

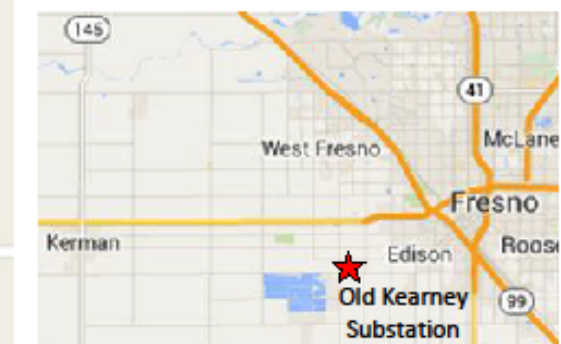


- Legend**
- Substation
 - 1101 Feeder

**Molino Substation
Local and Regional Map**



Legend
■ Substation
— 1113 Feeder
— 1114 Feeder



**Old Kearney Substation
Local and Regional Map**