New 138/24.9 kV Distribution Substations (Hafen Ranch and Blagg)

Presented to the CAISO on September 25-26, 2019

Valley Electric Association, Inc.

A Touchstone Energy® Cooperative

Overview - Need, Scope, Costs, and ISD

New residential and commercial construction is forecasted to increase local power demand. This new demand cannot be served from existing distribution substation capacity without causing overloads and under-voltages on distribution facilities. Two new distribution substations are the low cost most reliable projects to serve the forecasted new residential and commercial load.

- **Scope: Construct two new 138/24.9 kV 80 MVA distribution substations (Hafen Ranch and Blagg).**
- **Energize Hafen Ranch by looping in the existing Thousandaire-Gamebird 138 kv transmission line. Energize Blagg by looping in the existing Thousandaire-Charleston Park 138 kv transmission line.**
- **Conceptual Cost Estimate is about: $10m each (2019 dollars)**
- **Proposed In-Service dates: around 12/ 01 / 2024**

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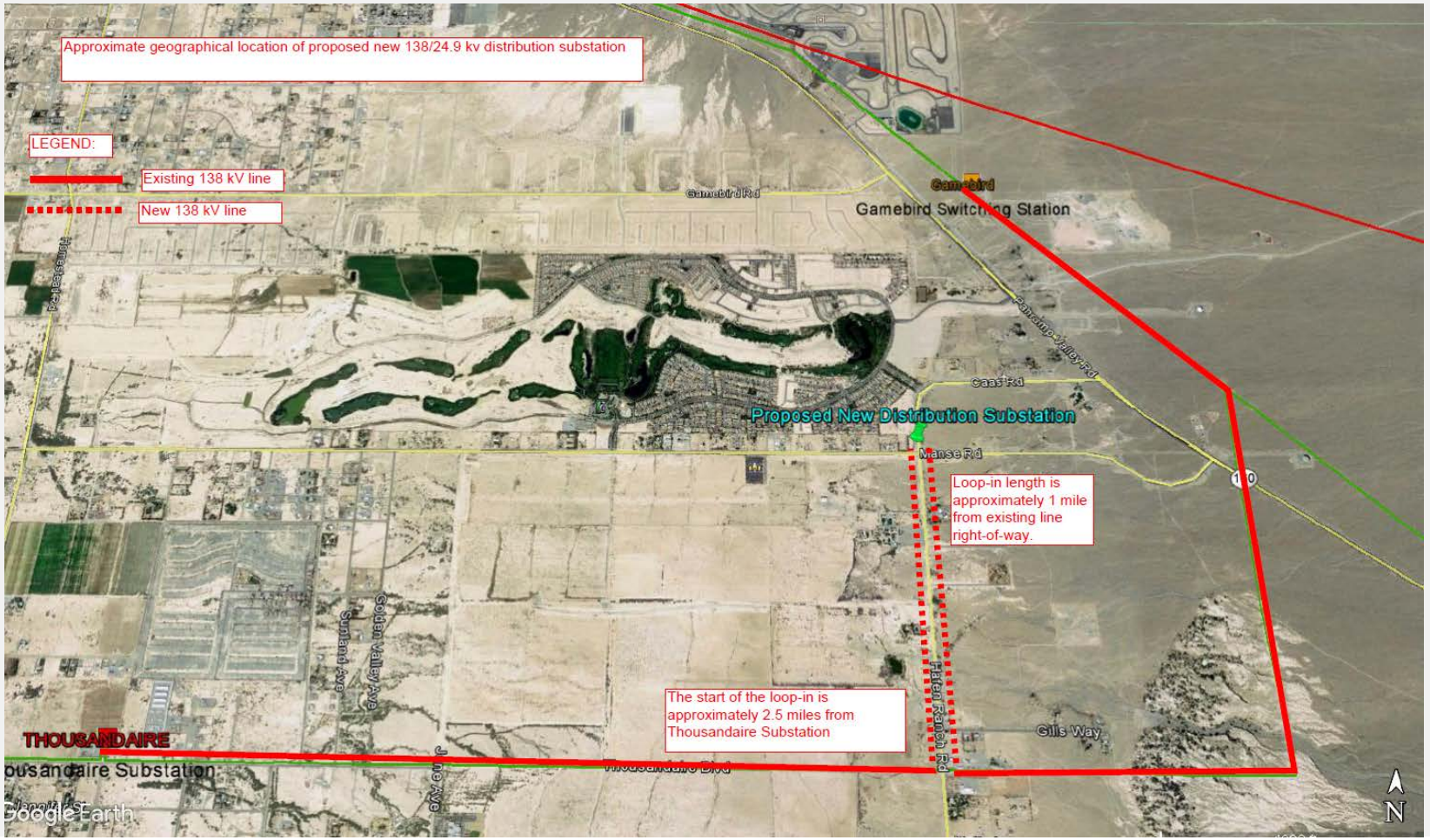
Geographic Location – Hafen Ranch 138/24.9 kV Substation (Reviewed in the 2017-2018 TPP)



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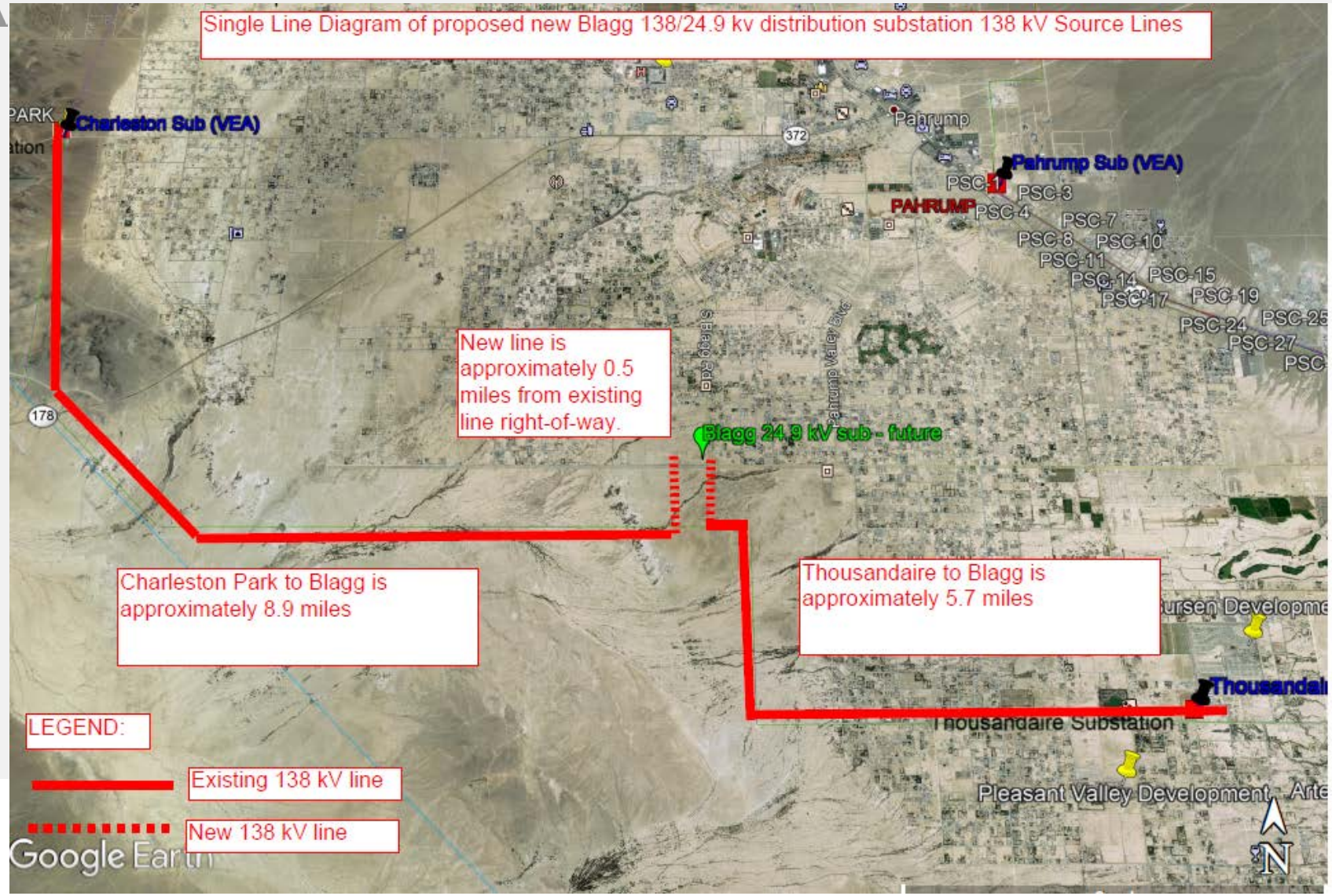
Geographic Location – Blagg 138/24.9 kV Substation



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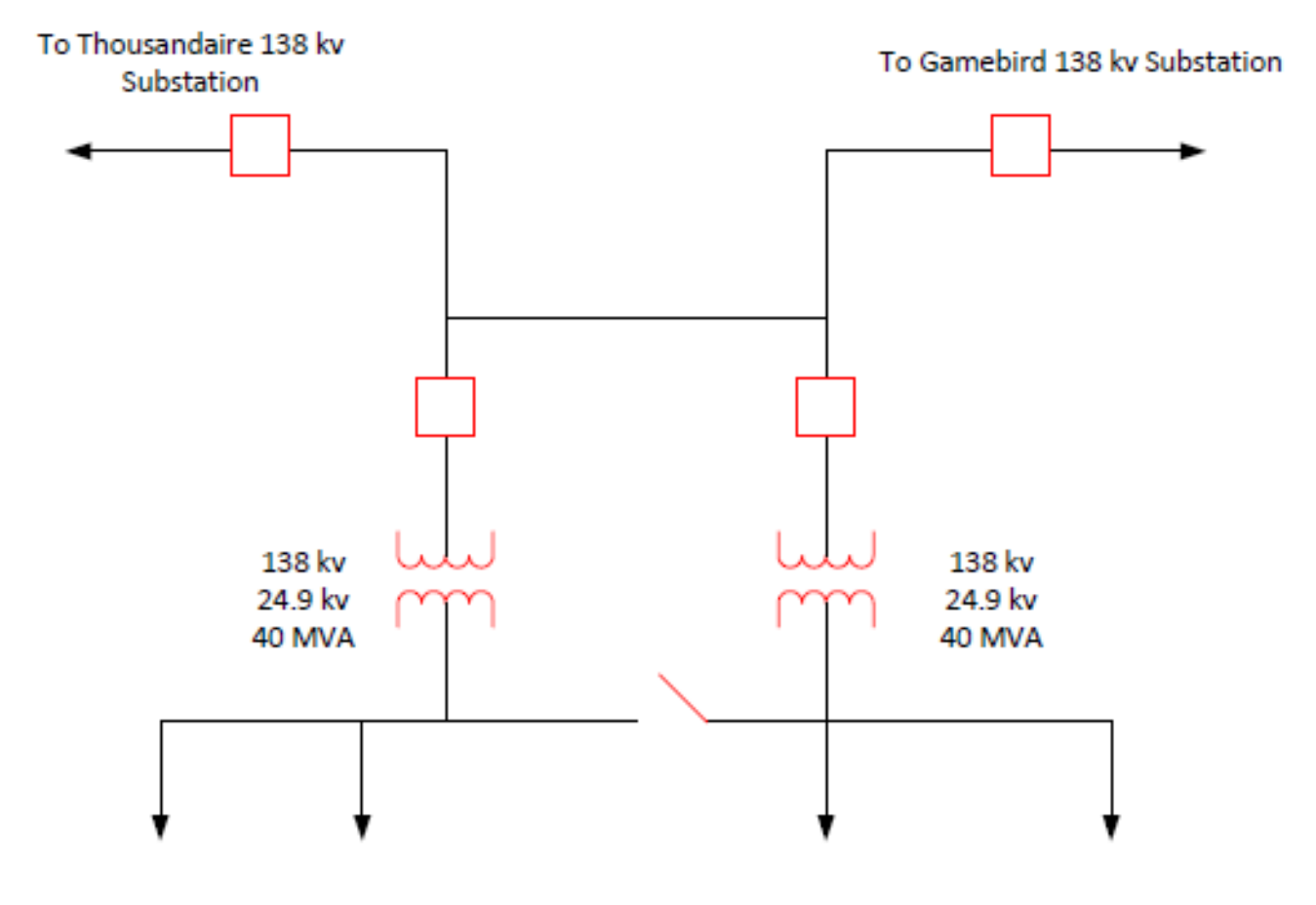
SLD of Hafen Ranch 138/24.9 kV Substation (Reviewed in the 2017-2018 TPP)



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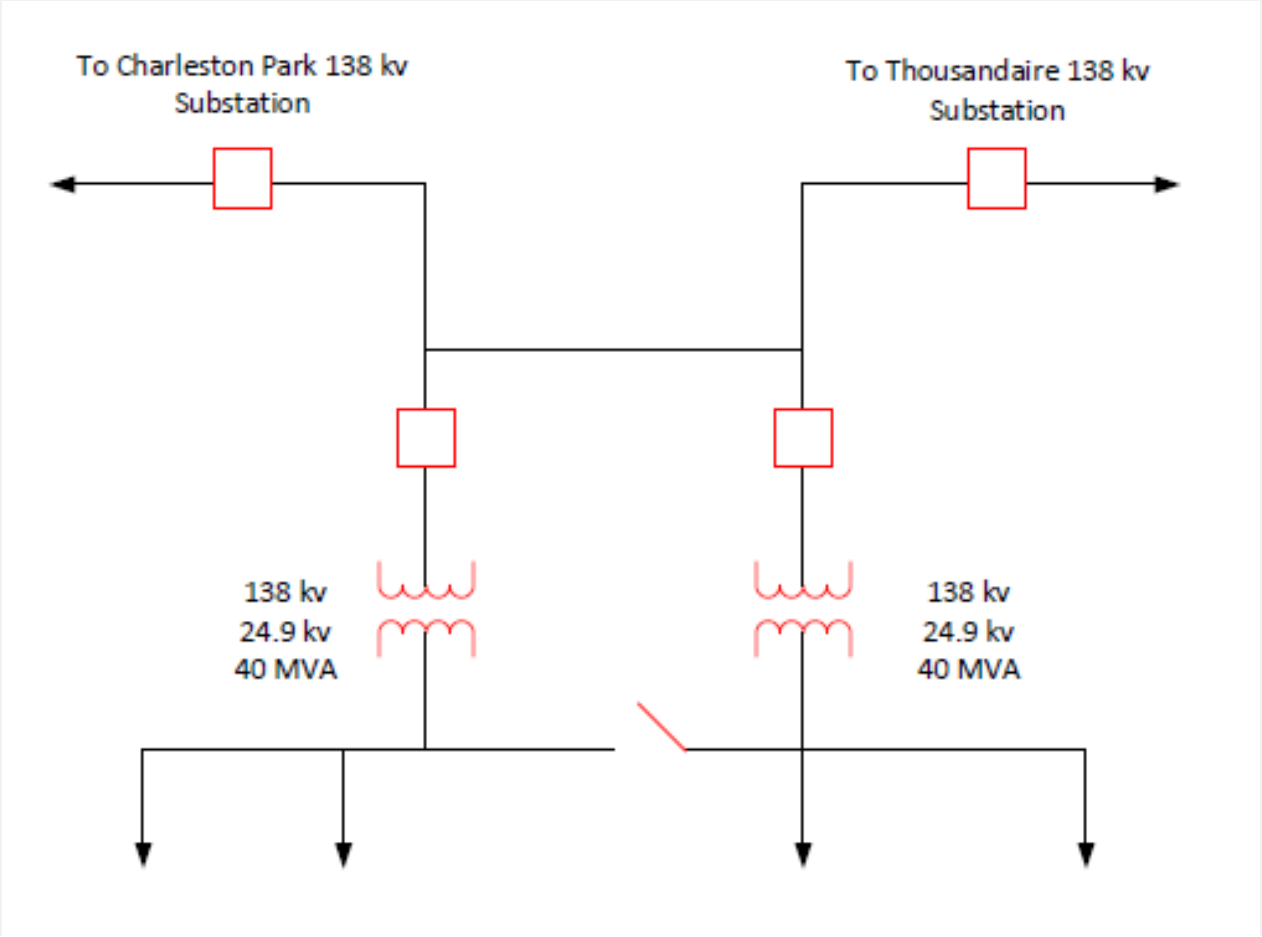
SLD of Blagg138/24.9 kV Substation



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No Impact to Transmission Grid

- Summary of NERC Steady State Contingency Results from Adding two new Distribution Substations to CAISO TPP base cases
  - Ran CAISO contingencies as pre-project cases
  - Add new mitigation projects as post project cases
    - Added 2019-2020 TPP proposed mitigation of new Gamebird 230 kV source.
    - Also added Jackass Flats – Mercury Switch 138 kV upgrade.
  - Modified CAISO contingency files to run post-project cases
- Found no impact to 138kV or 230kV Transmission (Post-Cases)
  - Same per unit flow violations and magnitudes as 2019-2020 TPP or less
  - Expected result from adding new distribution substations as same load in the same general area.

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