



City Council

Item #5: Silicon Valley Power Quarterly Strategic Plan Update

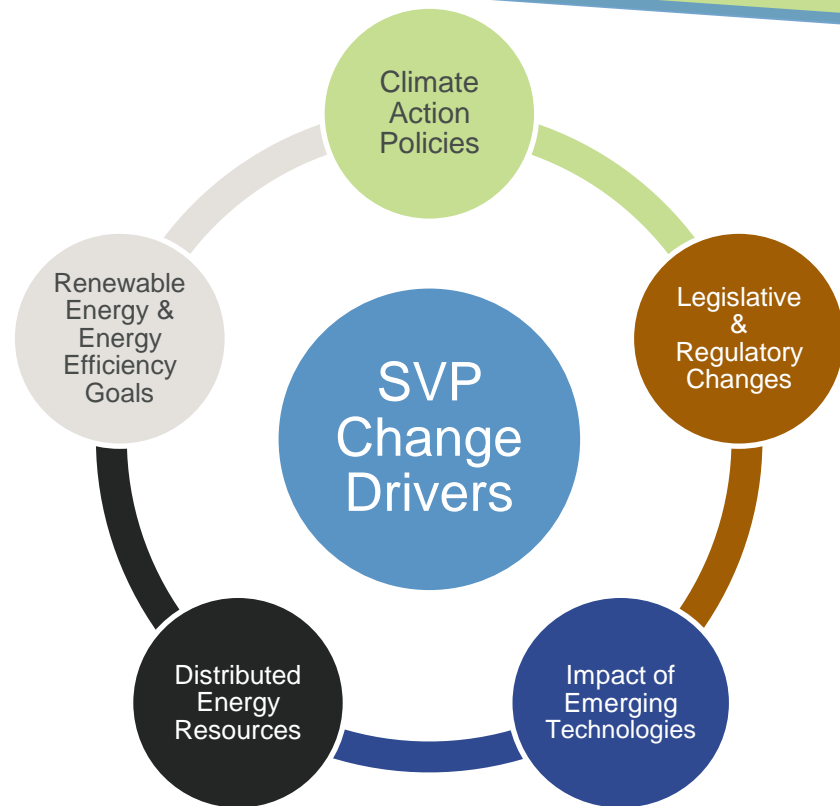
RTC 21-196

April 6, 2021



Agenda

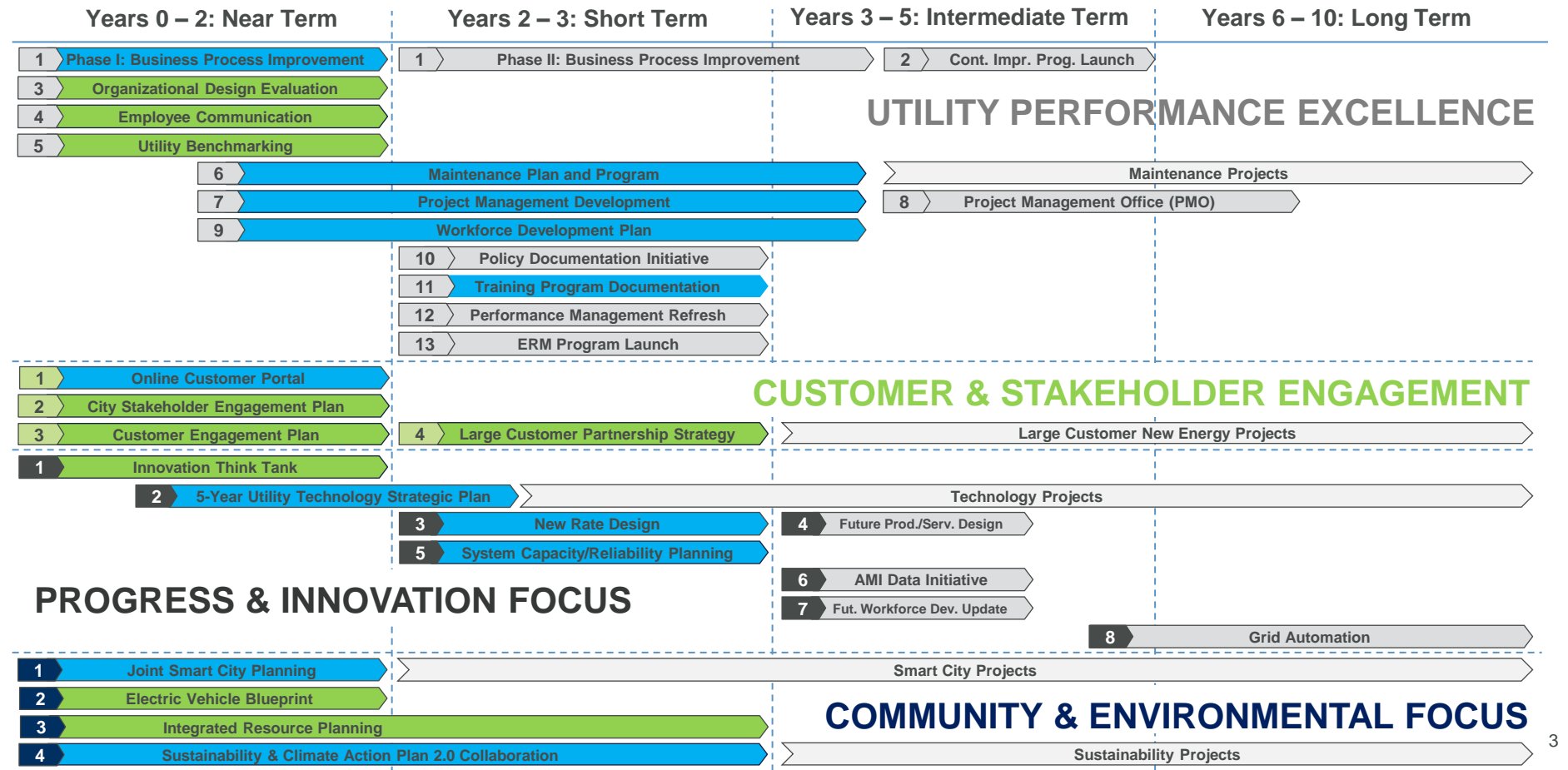
- Strategic Plan Update
- System Expansion Plan and Load Growth
- Previous Council Discussion
- Updated Information and Current Status
- Next Steps



Implementation Roadmap

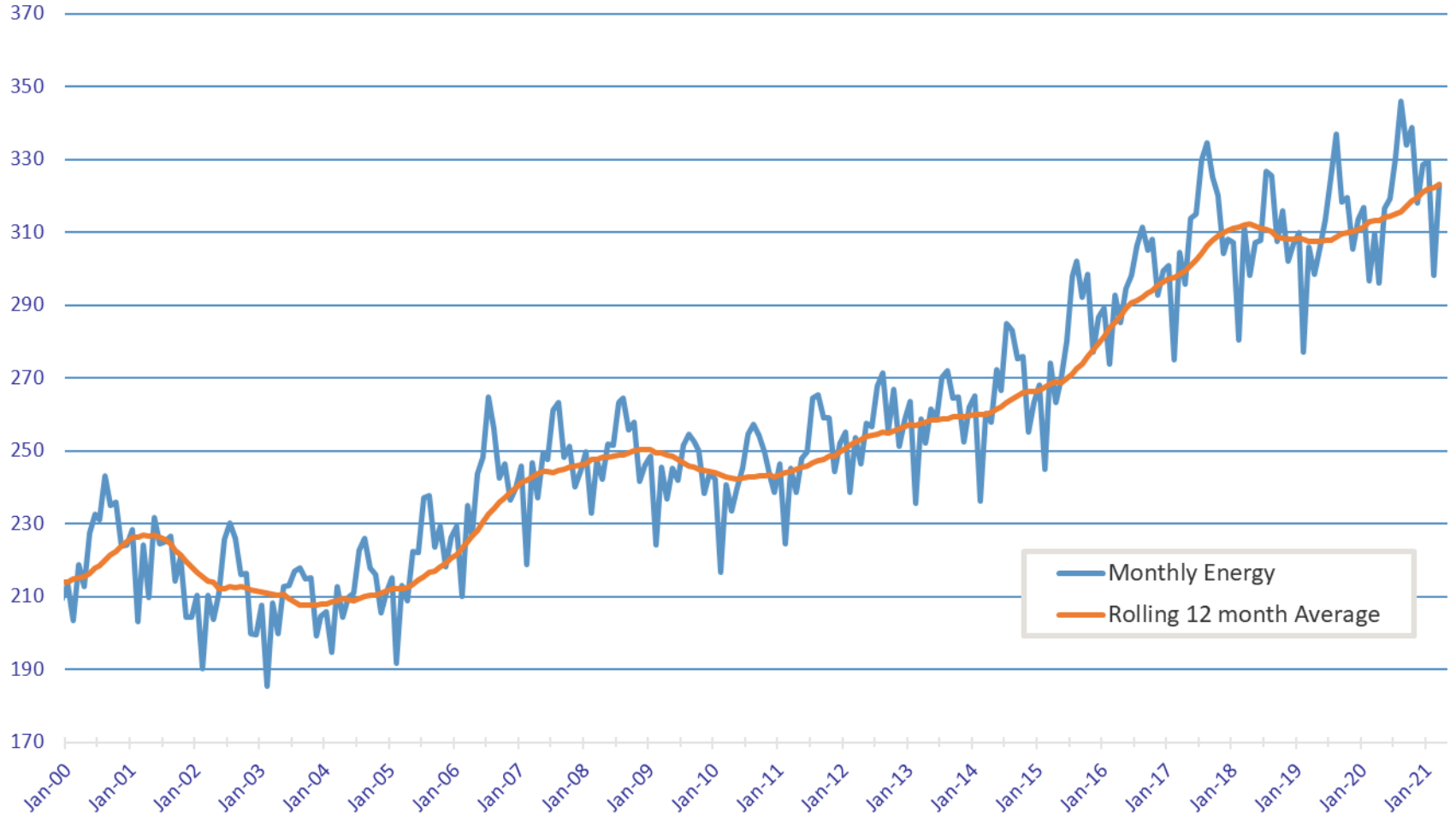
Completed

In Progress



SVP Historic Load Growth

Gigawatt Hours (GWh)





Strategic Priorities

- Met in November 2019 with executive staff to review strategic priorities
- Many priorities – Four key ones of focus
 - Utility Growth Plan and Capital Improvement Strategy
 - Maintenance Program
 - Power Acquisition Strategy
 - Succession Planning
- Some delays due to Covid-19
- Council updates as part of Quarterly Report





Previous Council Discussion

- SVP's Peak Demand
 - Current peak is almost 600 MW
 - 780 MW peak capacity rating in 2020
 - Planning for 1,000+ MW projected demand
- System Expansion Plan Solicitation
 - Consultants Selected
 - City Council authorized Agreements October 2020
 - Working on additional Transmission Capacity with PG&E
 - Prioritizing Projects
- Prepare System Expansion Plan
 - System Planning, Substation and Transmission Line Development, Load Development Costs
 - Near and long-term plan





Previous Council Discussion

Data Centers and Commercial & Residential Development Drive Load Growth

- City Council Approved Substation Agreements
 - Parker Substation – under expansion (99 MW*)
 - Oaks Junction – under construction (27 MW*)
 - San Tomas Junction – design phase (99 MW*)
 - Esperanca Substation – design phase (60 MW*)
- Upcoming Substation Agreements (late 2021 –early 2022)
 - Laurelwood Substation (49 MW*) - Stender Way Junction (49 MW*)
 - Martin Ave Junction (97 MW*) - Memorex Junction (89 MW*)
 - Freedom Circle Junction (49 MW* - Phase 1 of 2)



Previous Council Discussion

- Commercial and Residential Development
 - Tasman East Specific Plan (24 MW est.)
 - El Camino Specific Plan (55 MW est.)
 - Patrick Henry Specific Plan (35 MW est.)
- SVP Creates Integrated Capital Project Schedule for 5 to 10 years (+/- \$250 million)
- Additional Developer Contributions for Capacity Projects Will be Needed.



McClaren (99 MW)



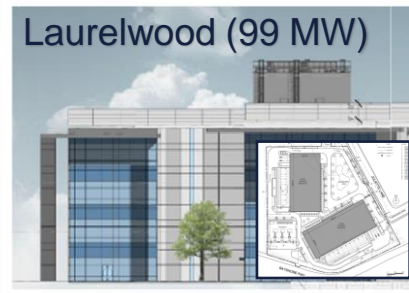
Parker Substation

Raging Wire (49 MW)



Oaks Junction

Laurelwood (99 MW)



San Tomas Junction

Related & East Tasman (60 MW)



Esperanza Substation

Mission College (49 MW)
Phase 1



Freedom Circle Junction

Walsh (99 MW)



Laurelwood Substation

Sequoia (49 MW)



Martin Ave Junction

Memorex (89 MW)



Memorex Junction

CoreSite SV9 (49 MW)



Stender Way Junction



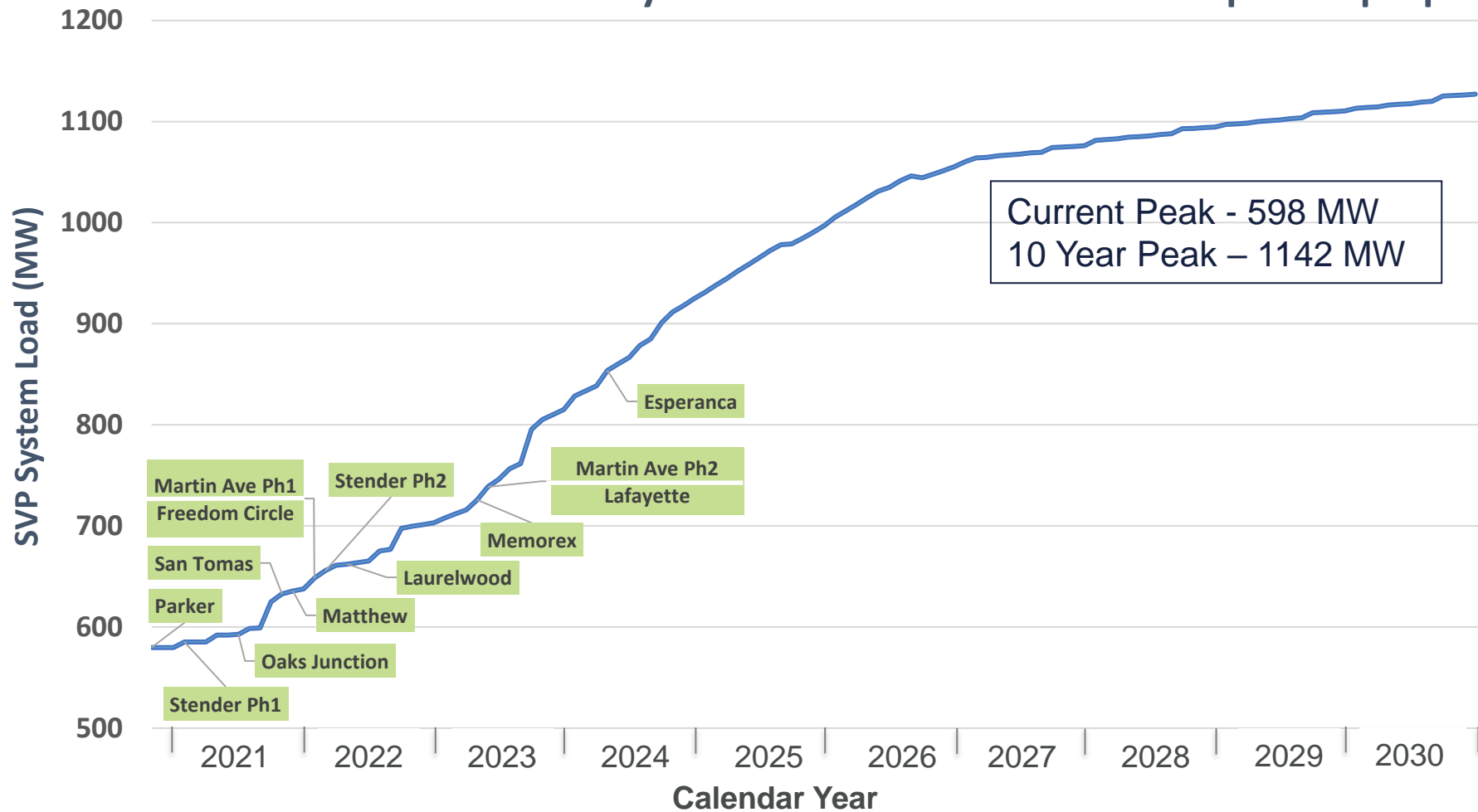
Load Growth and Capital Projects Update



Load Growth - Key Priorities

- Two Multi-phased Activities (SVP and PG&E Projects)
- Analyzed New Load for Upcoming Projects and Load Ramp
- Additional Power and Transmission Capacity
 - Acquire additional Generation
 - Working with CAISO and CEC on additional transmission capacity and growth
 - PG&E to develop and construct projects for transmission capacity
- SVP Projects
 - System Growth Plan
 - RFQ Temporarily on hold due to COVID
 - Council awarded contract on October 13, 2020
 - Preliminary results completed
 - Final report in May/June timeframe

NEW Simulated SVP System Load as Data Center Groups Ramp Up





Additional Generation ~ 550 MW carbon-free

Technology	MW	Est. Online Date	Contract Status
SPower Wind	50	2023	Executed
Wind	100 to 200	2025	In re-negotiations
Solar	75	2021	In Negotiations
Small/Large Hydro	73	Existing	In Negotiations
Small Hydro	6.8	Existing	In Negotiations
Solar	5	2023	In Negotiations
Solar	150	2023	Preliminary Investigation
Solar	89	2024	Preliminary Investigation



Additional Transmission

CAISO Yearly Transmission Planning Process

Completed Items

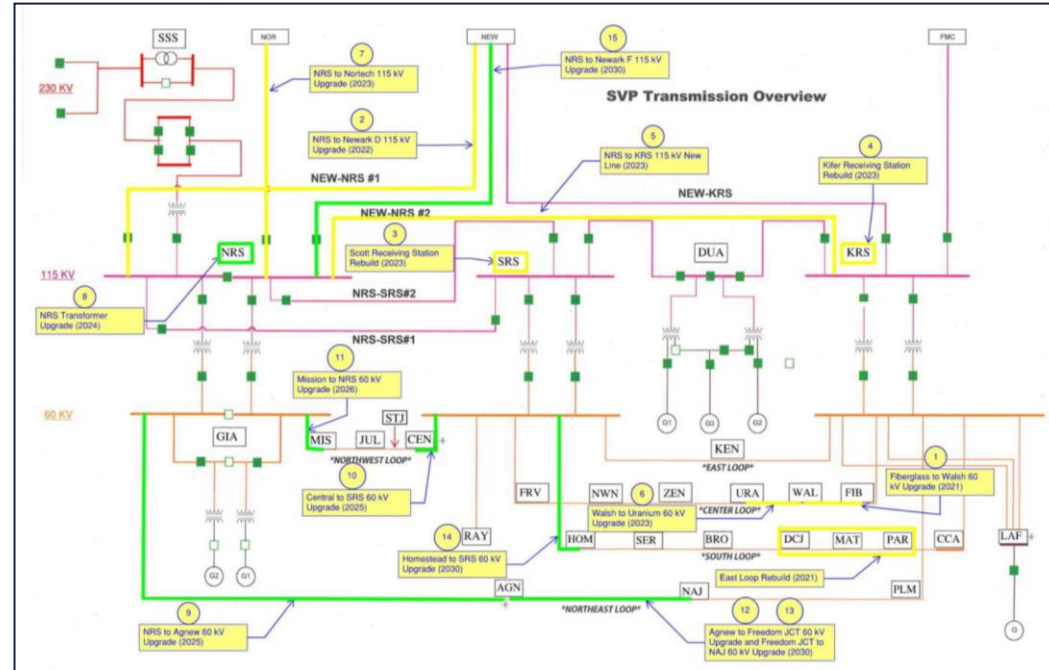
- **6/01/20** - Started work on updated load 1,142 MW's
- **11/3/30** – Started discussion with CEC
- **12/17/20** – Started meeting with PG&E regarding additional projects
- **1/25/21** – CEC adopts new SVP load forecast
- **3/11/21** – SVP comments on draft Study Plan
- **3/24/21** – SVP presents to CAISO board
- **3/31/21** – Final Study Plan Posted

Upcoming Items

- **8/3/21** – CAISO posts preliminary reliability study results
- **9/15/21** – PG&E posts mitigation plans
- **9/27/21** – Stakeholder meeting for comments on mitigation plans
- **1/31/22** – Draft Transmission Plan posted
- **3/23/22** – CAISO Board of Governors Approved Transmission Plan
- **4/1/22** – Project Procurement Phase Starts

System Growth Plan

- First Draft Completed
- 3-year Near Term Implementation Plan
- 20-Year Long Term Plan
- Will be Reviewed Every 3-5 years for Updates
- Projects are Both Capacity and Maintenance
- Approximately 16 near-term projects
- Approximately \$230 million





Large Projects

- Scott Receiving Station (SRS)
 - Over 50 years old (end of life)
 - Full replacement
 - Increasing capacity from 372 to 600 MVA
 - Lower maintenance, smaller footprint, easier to expand
 - \$60-\$70 million
- Kifer Receiving Station (KRS)
 - Over 50 years old (end of life)
 - Full replacement
 - Increasing Capacity from 372 to 600 MVA
 - Low maintenance, Smaller footprint, easier to expand
 - \$60-\$70 million



Scott Receiving Station



Other Projects

- Bulk Electric System (BES) Improvements
 - Replace NRS 115/60kV transformers (372 to 600 MVA)
 - NRS 230KV Transformer Spare
 - NRS 392 Breaker Mitigation
 - NW Loop Reconductor
 - New NRS-KRS 115kV Line
- Other 60kV System Improvements
 - NW/Center Loop Load Balancing
 - East Loop Reconductor
 - KRS & SRS breaker replacement



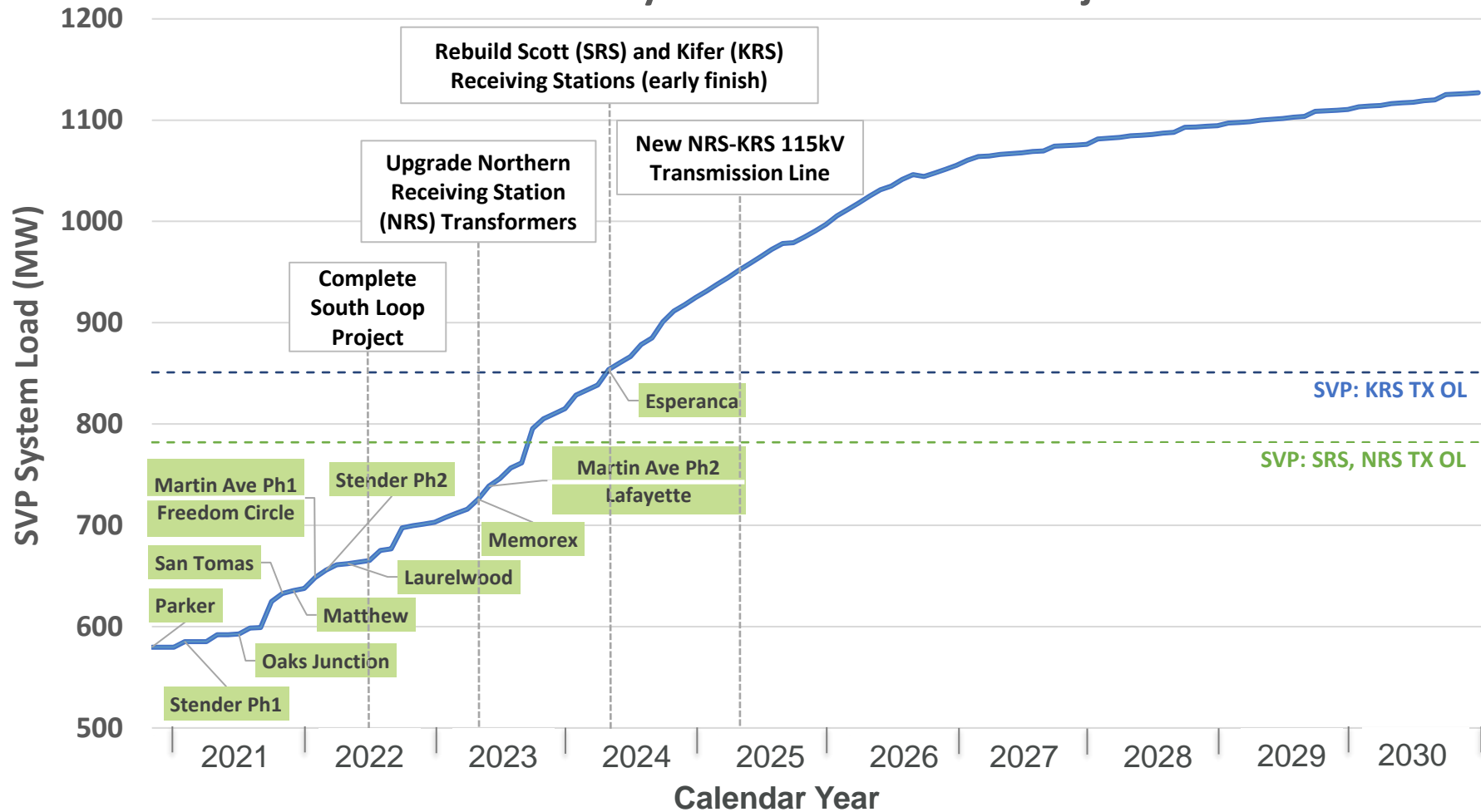


Battery Project (BESS)

- RFP Completed – vendor selected
- For Council consideration June/July timeframe
- Will provide 50 MW for 4 hours
- Located next to DVR Power Plant
- 2023/2024 Operational Goal
- Many Benefits
 - Serves peak load and meet growth
 - Increase use of renewable energy
 - Located in city and not affected by transmission
 - Resiliency - Could be used for load shed due to State Capacity Issues or Public Safety Power Shutoff
- \$50-\$60 million in Capital
- Approximately \$1.5M year Operating



NEW Simulated SVP System Load and SVP Projects





Upcoming Items

- Great work from staff to identify constraints and needs and then develop actions
- Will continue to work with CAISO, CEC and PG&E
- Council update on final System Growth Plan
- Use Council approved design master agreements
- Council Consideration of Battery Storage Contract
- Future Council construction contract awards
- Budget actions as part of budget process
- Approximately \$230 million of Construction Contracts and \$60 million BESS Contract funded by load development fee (new development) and rates
- Possible financing of approximately \$120+ million



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