


BENEFITS AND RISKS OF SAN JOSÉ PROVIDED ELECTRIC DISTRIBUTION SERVICE

Clean Energy Community Advisory Commission
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Lori Mitchell, Director
Jim Caldwell, Deputy Director

SAN JOSE 
CLEAN ENERGY
A Program of the City of San José

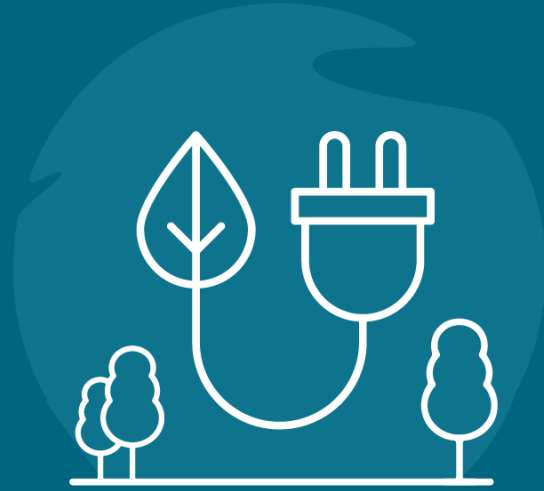
OUTLINE

GRID RESILIENCY

PUBLIC UTILITIES

CASE STUDY OF DOWNTOWN WEST

CONCLUSIONS AND NEXT STEPS

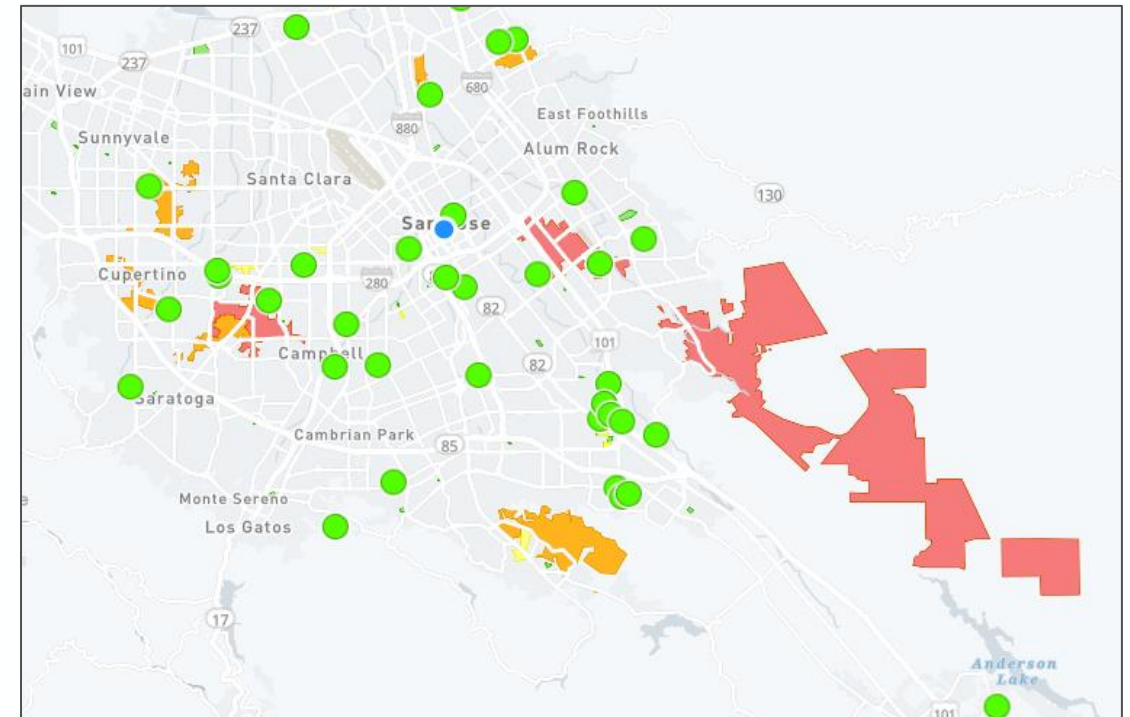


GRID RESILIENCY

RELIABILITY CONCERNS IN SAN JOSÉ

- Distribution outages due to high heat
 - August 14-15, 2020:
 - 573 separate distribution outages that impacted 250,000 residents
 - August 18, 2020
 - Substation outage near downtown impacted over 10,000 customers
 - September 2-9, 2022
 - 9/6 - nearly 100,000 residents impacted including 3 hospitals
 - 9/7 – nearly 22,000 residents impacted
- Increasing concern as loads rise and heat storms become more frequent and severe

PG&E Outages at 5:30pm on September 6, 2022



Customers affected



Source: PG&E Outage Center

POWER OUTAGE IMPACTS

- Life and Safety:
 - Exposure to severe weather
 - Heat / cold related illness and death
 - Inability to power life-supporting medical devices
 - Lack of refrigeration; medicine and food spoilage
 - Traffic safety issues
- Economic:
 - Lost productivity
 - High greenhouse gas emissions



Source: San José Spotlight

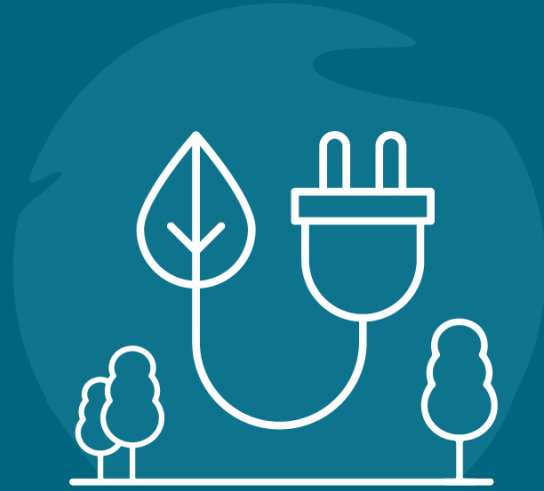


Source: CBS News Bay area

GRID RESILIENCY

- The Federal Energy Regulatory Commission (FERC) defines resilience as:
 - *“The ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event.”*
- For San José, this means:
 1. Having a more robust local distribution network with reduced failures and improved access for customer owned generation (solar + storage).
 2. Having sufficient transmission capacity to allow for growth and extreme weather.
 3. Protecting critical loads with local clean generation and storage (microgrids).
 4. More local control of electric service for new developments

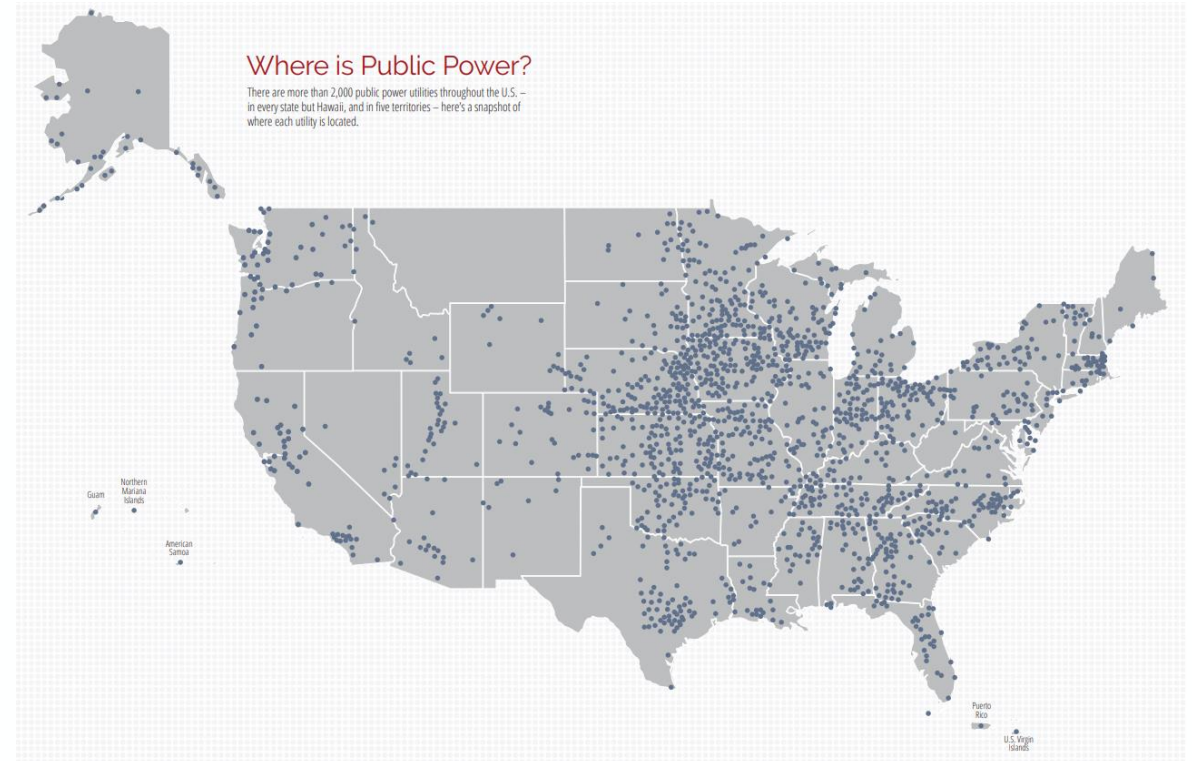




PUBLIC UTILITIES

PUBLIC UTILITIES IN THE UNITED STATES

- Over 2000 US Publicly Owned Utilities
- 1 in 7 Americans served by public utilities
- Proven model provides higher reliability
- Reinvest revenues back into their communities through:
 - Offering lower rates
 - Payments in lieu of taxes
 - Providing local jobs
 - Supporting local programs



PUBLIC UTILITIES IN CALIFORNIA

- 46 Publicly Owned Utilities in California
- Serve 25% of Californians
- Largest: SMUD (Sacramento region) & LADWP
- Small: Healdsburg, Shasta Lake, Lompoc
- Medium: Santa Clara, Palo Alto, SF, Pasadena, Anaheim, Roseville



Source: California Energy Commission

PUBLIC POWER IS MORE RELIABLE

Outage Duration	Public Power	National Average
Average	58 minutes	143 minutes
Median	40 minutes	126 minutes

PUBLIC POWER CUSTOMERS ON AVERAGE
EXPERIENCE LESS
THAN ONE HOUR WITHOUT POWER PER YEAR...



LESS THAN **HALF** OF THE NATIONAL AVERAGE.

PUBLIC POWER IS LOWER COST

California Municipalities	CA Residential Public Power Costs vs IOUs	CA Commercial Public Power Costs vs IOUs
Silicon Valley Power (City of Santa Clara)	48% Lower	26%-38% Lower
Sacramento Municipal Utility District	33% Lower	31.1%-47.6% Lower
Alameda Municipal Power	14.9%-31.5% Lower	11.3%-18.9% Lower
Los Angeles Department of Water and Power	31% Lower	7-27% Lower

	CA Public Power Costs vs IOUs (2017)
Residential rates	17.4% lower
Commercial rates	14.7% lower

EXAMPLE: ALAMEDA MUNICIPAL POWER

- Governed by the Alameda Public Utilities Board
- Rates are 31-49% lower than Investor-Owned Utility
- Municipal utility owns distribution assets for the entire City of Alameda



Source: Robert Campbell – U.S Army Corps of Engineers Digital Visual Library

EXAMPLE: CITY OF HEALDSBURG

- Serves 5,793 meters in the City of Healdsburg
- Governed by Healdsburg City Council
- Rates are approximately 33% lower than investor-owned utility
- Municipal utility owns and maintains:
 - 28 miles of underground lines and 28 miles of overhead lines
 - Badger substation, 800 transformers, 1300+ streetlights

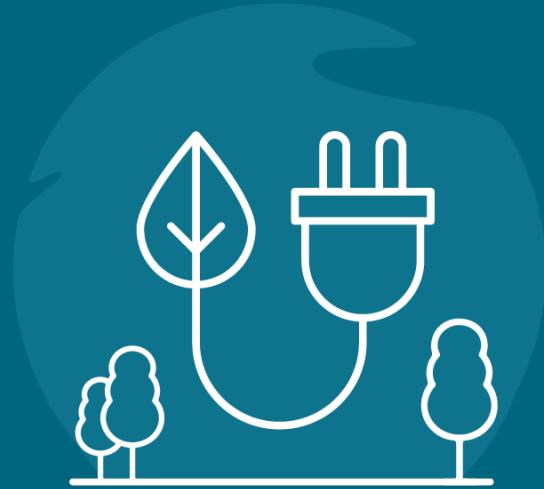


BENEFITS OF CITY ELECTRIC SERVICE

- Enables more clean energy and helps achieve Climate Smart Goals
- Enables design flexibility
 - grid modernization and integration of smart grid technologies
- Enables more customer demand response and load shaping
- Improves resiliency by enabling a more advanced microgrid
- Allows for equitable distribution of benefits to both residents and commercial customers in the development
- Potentially reduces costs

PATHWAY FOR CITY ELECTRIC SERVICE

- City worked with Flynn Resource Consultants Inc. to study the potential for San José Electric Distribution Service
- Case Study for the Downtown West Project concluded that San José can own and operate distribution system infrastructure that delivers lower cost and higher reliability through a City-owned Electric Utility
- City utility service encompasses:
 - Ownership, operation, maintenance of local electrical facilities
 - Customer service and billing
 - Rate setting and developing tariffs



A CASE STUDY OF THE DOWNTOWN WEST MIXED-USE DEVELOPMENT

THE DOWNTOWN WEST DEVELOPMENT

- Proposed by Google in August 2019
- Mixed-use development, approximately 80 contiguous acres
 - Estimated 7.3M sq ft office, 500K sq ft retail, 4,000 housing units



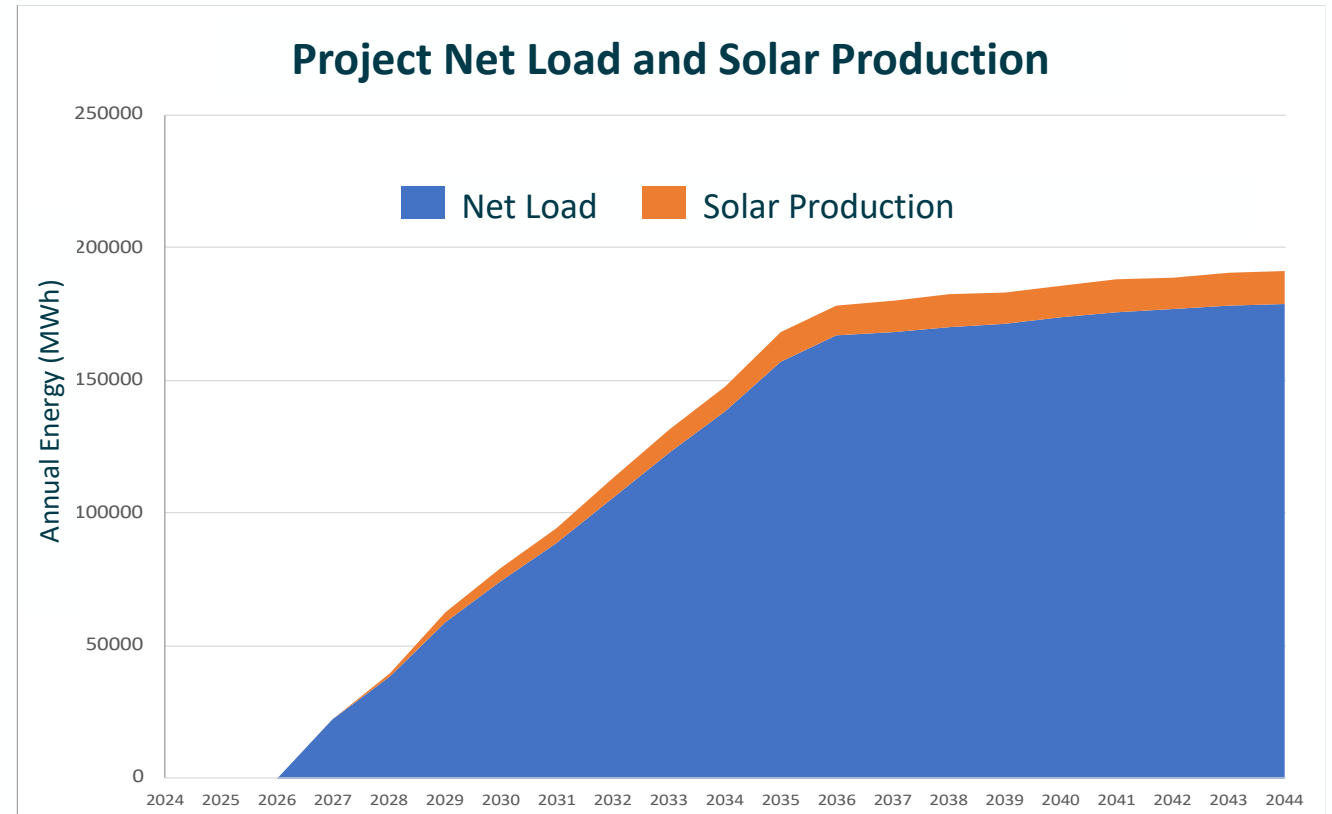
LEGEND

- Office
- Residential
- Land dedicated to City for affordable housing

- ✱ Land dedicated to City for Unentitled DSAP potential affordable housing
- Active use (retail, cultural, arts, education etc.)
- Parks + plazas + green spaces
- Downtown West Project Boundary

PROPOSED MICROGRID CAPABILITIES

- 7.8+ MW of Solar
- 15.6+ MWh of Battery storage
- 39 MW load at full buildout
- Shared resources between buildings
 - Not allowed under current CPUC regulations
- Microgrid can supply power to certain critical loads for extended outage without using backup diesel generation



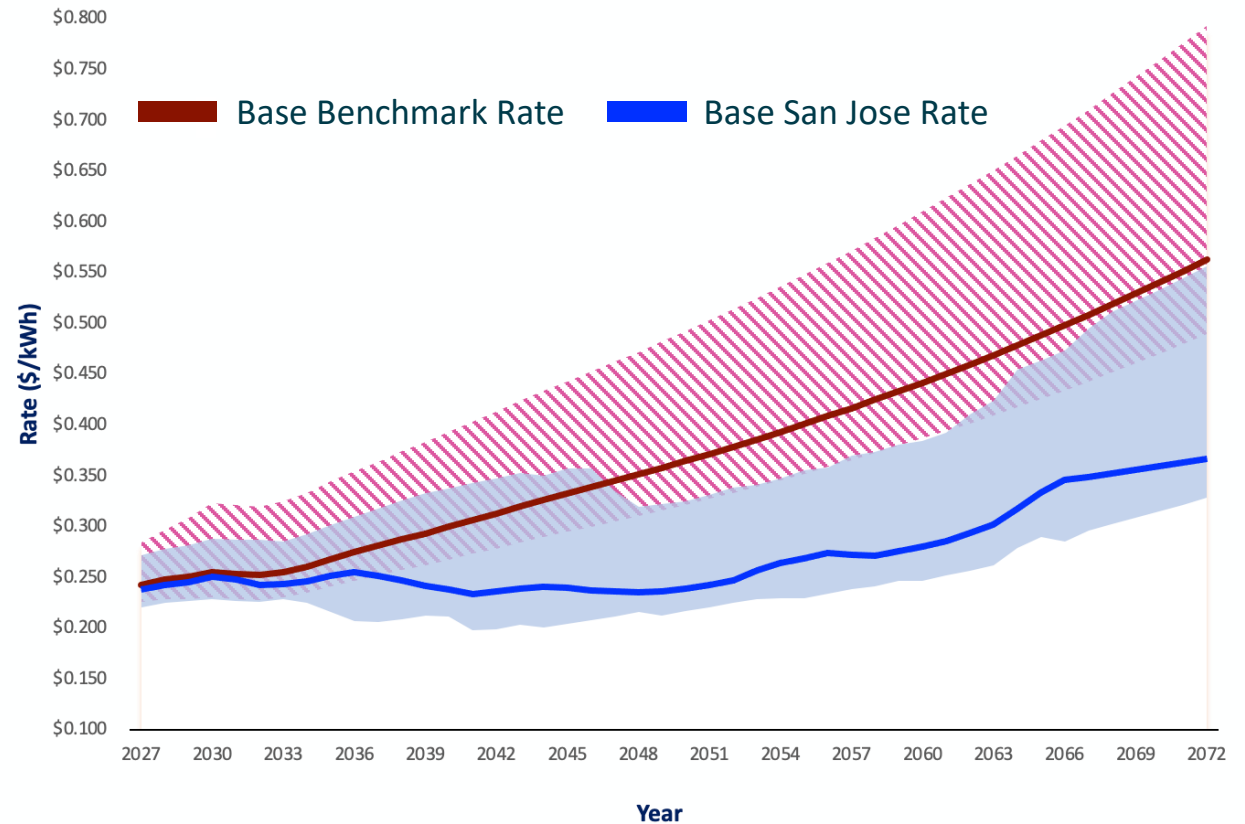


ECONOMICS OF THE CASE STUDY

ANALYSIS FINDINGS

- Comparable rates at launch, with developer funded startup costs
- Expected costs 15-25% below benchmark over 50-year period
- Unfavorable scenarios could result in City Utility rates 5-10% greater than benchmark
- Favorable scenarios could result in City Utility rates 30-50% lower than benchmark
- Range of benchmark rates in red and City utility rates in blue

Illustrative City Rate vs Benchmark Rate, and Rate Ranges





RISKS AND MITIGATIONS

RISKS AND MITIGATIONS

- Lessons learned from San Jose Clean Energy launch resulted in more conservative analysis and more rigorous stress testing
- Three main risks were identified
 1. Accuracy of the load forecast
 2. Uncertainty around future benchmark rates
 3. Staffing levels
- Mitigation strategies were identified for each risk

RISK 1: ACCURACY OF THE LOAD FORECAST

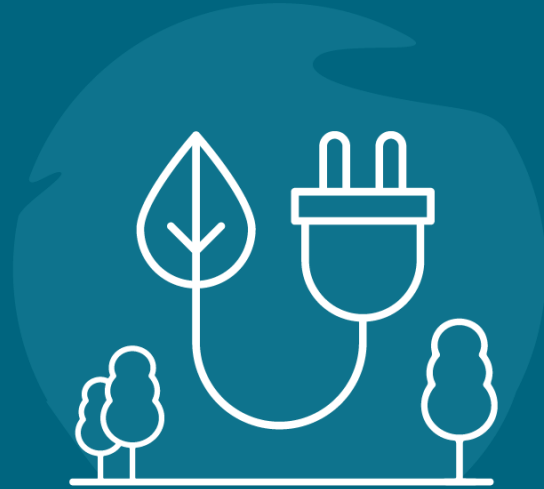
- Gradual load growth in the early years creates low revenue to cover fixed costs in early years
- Loads lower than forecast magnify this and prolong initial operations phase
- Mitigation:
 - Developer provides start-up funding; City utility to reimburse these funds over time only as load grows and revenue increases
 - If load growth is slower than expected, reimbursement of start up funding is delayed
 - Not a Risk for customers outside of the City utility or on the City general fund
- Less of a concern for future developments served by established City utility

RISK 2: BENCHMARK RATE UNCERTAINTY

- Difficult to predict benchmark rates over the 50-year study period
- Benchmark rates will likely increase significantly due to wildfire mitigation and modernization of the statewide transmission and distribution system
 - Study included estimates for these costs based on known rate filings and public data
 - To be conservative, benchmark rates escalated at inflation after 2030
- State may change how these costs are recovered, reducing the difference between the City utility and benchmark rates
- Mitigation:
 - Perform the cost-of-service study closer to when service begins (2026) to inform the decision to provide City service
 - Startup period is longer for this service than SJCE; recommend checking that rates are competitive before significant hiring and providing this new service

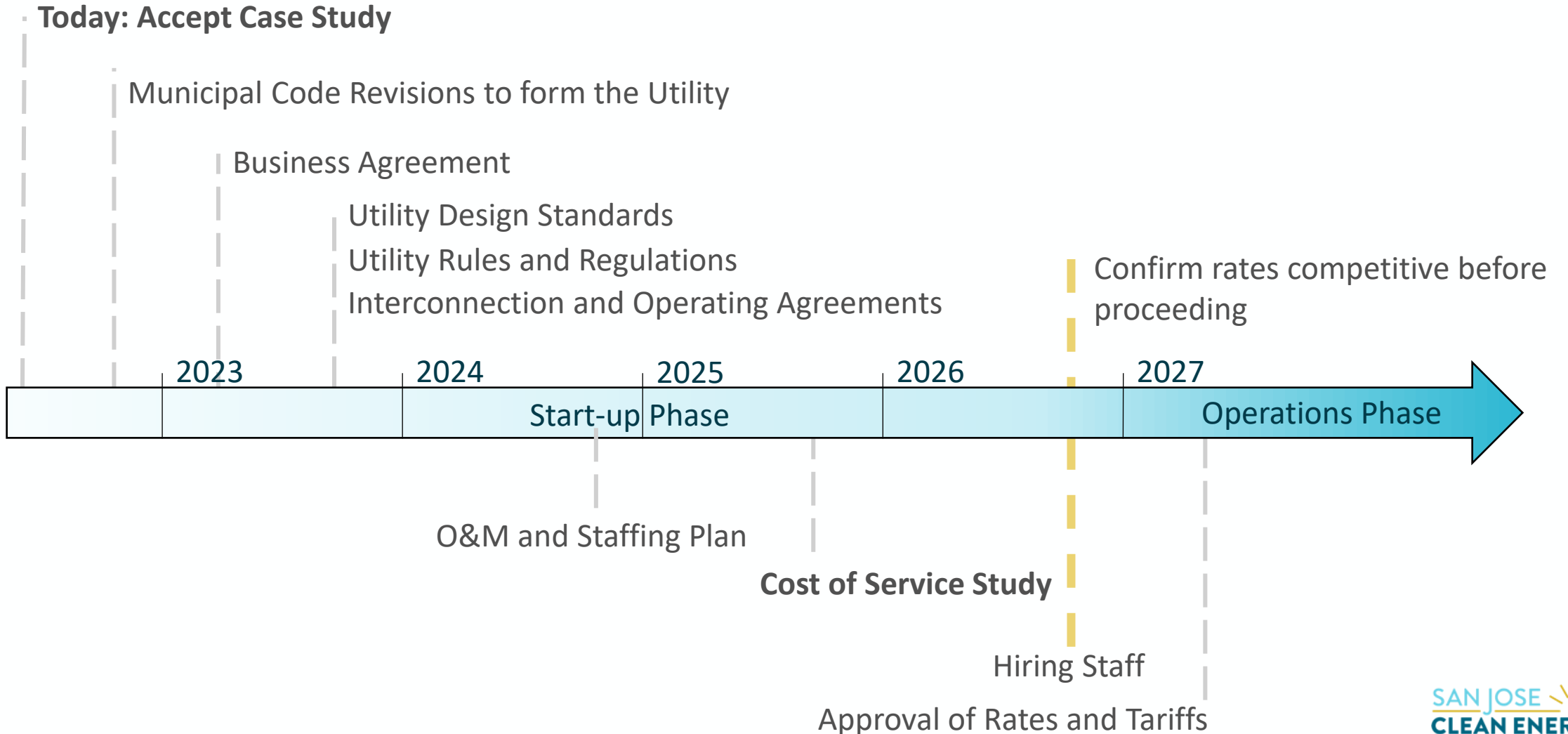
RISK 3: HIGH STAFFING LEVELS

- Higher staffing levels than expected may be needed to achieve desired service and safety levels
- Mitigation:
 - Operations & maintenance and staffing plan developed well in advance of utility startup
 - Close coordination with the developer to align timing of hiring with the build out of the project, reducing costs in startup years
 - Startup period is longer for this service than SJCE; recommend checking that rates are competitive before significant hiring and providing this new service



CONCLUSIONS AND NEXT STEPS

START UP TIMELINE: NEXT 5 YEARS



KEY CONCLUSIONS

- City electric service to Downtown West could provide improved resiliency, cleaner energy, and lower rates for the development
- Financial risks for the startup remain principally with the Developer
- City electric service to other new developments may present similar benefits and opportunities
 - Important to confirm technical feasibility for new locations
- Important findings:
 - Proceeding with investigation and initial startup steps does NOT commit the City or the Developer
 - The cost-of-service study should be a key driver of the decision to provide this service and should be performed closer to operations phase before significant hiring of staff

DRAFT COMMISSION RECOMMENDATION FOR DISCUSSION

The Commission expresses appreciation for the work to define the costs and benefits of City municipal electric distribution service to new developments in the City of San Jose.

The Commission supports City Council's recommendation for staff to propose an ordinance at the December 6, 2022, City Council meeting to allow the formation of a City owned municipal utility.

The Commission recognizes that amending the municipal code to form a municipal utility does not commit the City to provide electric distribution service to any new development. This is an important first step in providing electric service to new development.