

DOCKETED	
Docket Number:	26-OPT-01
Project Title:	Vaca Dixon Power Center Project
TN #:	268601
Document Title:	Appendix Q Socioeconomics Study (Redacted Version)_VDPC
Description:	The study describes the Project and regional socioeconomic conditions, and analyzes potential direct, indirect, and cumulative socioeconomic impacts using qualitative and, where possible, quantitative methods. Q.A List of Preparers; Q.B References. Confidential information has been redacted from this version.
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Submission Date:	2/12/2026 3:17:01 PM
Docketed Date:	2/12/2026

Appendix Q

Socioeconomics Technical Report

Version with confidential applicant financial information redacted



December, 2025

Vaca Dixon Power Center

Socioeconomic Technical Report

Prepared for: Vaca Dixon BESS LLC and Arges BESS LLC

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Acknowledgments

ECOnorthwest prepared this report with support from the guidance and input of several partners, including members, staff, and leadership of Rincon Consultants, Patch Services, Vaca Dixon BESS LLC and Arges BESS LLC.. It is consistent with the California Energy Commission's technical requirements and guidance for Socioeconomic analysis. This work was financially supported by Vaca Dixon BESS. LLC and Arges BESS LLC.

That assistance notwithstanding, ECOnorthwest is responsible for the content of this report. ECOnorthwest staff contributing to this study included Delia Walker-Jones, Parmis Taraghi, Natalie Walker, Terry Wirkkala and Sarah Reich. ECOnorthwest also relied on information derived from government agencies, private statistical services, the reports of others, interviews of individuals, or other sources believed to be reliable. ECOnorthwest has not independently verified the accuracy of all such information and makes no representation regarding its accuracy or completeness. Any statements nonfactual in nature constitute the authors' current opinions, which may change as more information becomes available.

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1. Project Overview

This report assesses the impacts of the Vaca Dixon Power Center Project (Project) on socioeconomic resources. It provides a description of the Project as well as an overview of existing regional conditions, including population and social characteristics, housing supply and market conditions, economic characteristics, county fiscal resources, public services, and utilities. It then provides a discussion of socioeconomic impacts including methodology. This analysis is provided to satisfy requirements for California Code of Regulations, Title 20, Division 2, Chapter 5, Appendix B, Section (g) (7) Socioeconomics in partial fulfillment of the California Energy Commission's (CEC) Assembly Bill (AB) 205 Opt-In process. This analysis is consistent with the laws, ordinances, regulations and standards (LORS) relevant to socioeconomics as identified in Section 4.1 Impact Evaluation Criteria.

1.1 Project Description

Vaca Dixon BESS LLC and Arges BESS LLC (Applicants), propose to construct, operate, and eventually repower or decommission the Vaca Dixon Power Center Project (Project). The battery energy storage system (BESS) facilities are proposed to be installed on an approximately 10-acre site in the City of Vacaville in Solano County, California (Exhibit 1). The proposed BESS facilities are located on Assessor Parcel Number (APN) 0133-060-060. The Project would operate 7 days a week, 365 days a year, with an up to 35-year¹ anticipated lifespan. The primary Project facility components at the approximately 10-acre combined BESS Project area include:

- ◆ Vaca Dixon BESS (57 megawatt [MW], 1-hour duration, 57 MW hour [MWh]), including electrical switchyard
- ◆ Arges BESS (100 MW, 4-hour duration, 400 MWh), including electrical substation

The Project also includes transmission intertie (gen-tie) lines crossing Interstate 80 (I-80) to the north to connect the BESS facilities to the existing Pacific Gas & Electric (PG&E) Vaca-Dixon Substation located on a PG&E-owned parcel (APN 0133-060-070) in unincorporated Solano County. Both BESS components would interconnect to the existing PG&E Vaca-Dixon Substation at 115 kilovolts (kV). The Vaca Dixon BESS is proposed to connect to the existing 13.8/115 kV generation step up (GSU) transformer at the existing CalPeak Power - Vaca Dixon Peaker Plant (VDPP) on the PG&E parcel via a new overhead 13.8 kV line from the proposed BESS switchyard to the low side of the VDPP GSU transformer to the north. The existing GSU transformer in the VDPP switchyard is connected to the PG&E substation by an existing 115 kV line. The Arges BESS would interconnect to the PG&E substation via a new overhead 115 kV gen-tie to be constructed from the Arges BESS switchyard at the BESS Project area south of I-80 to the PG&E substation to the north.

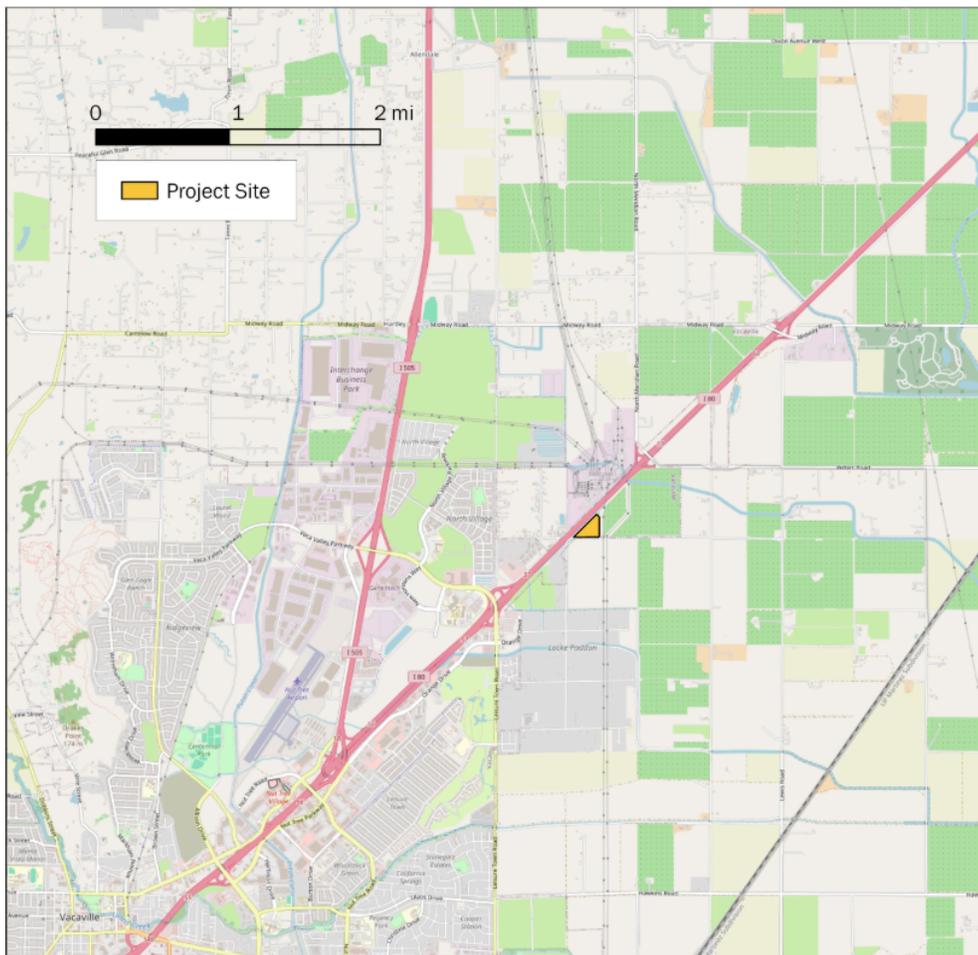
¹ After 35 years, the Project would be repowered or decommissioned.



The proposed gen-tie components for the Vaca Dixon 57 MWh and Arges BESS 400 MWh BESS facilities would be co-located on shared transmission structures carrying both 13.8 kV and 115 kV conductors for approximately 1,500 feet of the gen-tie lengths, from the vicinity of the BESS switchyards across I-80 and up to the northwest corner of the VDPP facility site. From that point, the 13.8 kV gen-tie component for the Vaca Dixon 57 BESS would continue approximately 150 feet to the east for connection to the low side of the 13.8/115 kV GSU transformer at the VDPP. The Arges BESS 400 MWh 115 kV gen-tie route continues approximately 725 feet north and east to the connection point at the PG&E Vaca-Dixon Substation. The gen-tie crossing of I-80 would require an encroachment permit from the California Department of Transportation (Caltrans).

The proposed BESS Project area is designated by the City of Vacaville General Plan as Business Park and the BESS Project area is located within the City’s Northeast Growth Area. Pursuant to Vacaville General Plan Policy D.

Exhibit 1. Vaca Dixon Power Center Project Site



Source: Vaca Dixon BESS LLC and Arges BESS LLC



2. Existing Regional Conditions

The sections below describe the existing regional conditions relevant to the socioeconomic impact analysis. This section is organized according to the categories of socioeconomic resources outlined in the California Energy Commission (CEC) guidance (California Energy Commission 2021). For the evaluation of social and economic impacts associated with the Project, the region of influence includes Solano County and four neighboring counties: Contra Costa, Napa, Yolo, and Sacramento. Together these five counties are referred to as the 'Socioeconomic Study Area' (Exhibit 2).

Exhibit 2. Socioeconomic Study Area



Source: ECONorthwest

2.1 Population and Community Makeup

Solano County (County) is situated in California's Central Valley, roughly halfway between San Francisco and Sacramento. The County is best known for its farms, vineyards, and waterfront district. It is also home to Travis Air Force Base, the largest military base on the West Coast. The County serves seven cities along with several unincorporated communities. As of 2022, the population in Solano County was 451,000, making it the 19th most populous county in the state. The County seat is Fairfield, and the largest city is Vallejo, with a population of approximately 125,100. (U.S. Census Bureau (c) 2023).



From 2010 to 2020, Solano County’s population grew on average 0.93 percent annually. From 2020 to 2022, during the COVID-19 pandemic, the County’s population experienced a negative average annual growth rate (AAGR) of -0.3 percent. Population projections from the California Department of Finance indicate an Average Annual Growth Rate (AAGR) of approximately 0.4 percent between 2023 and 2060, higher than the statewide projected AAGR of 0.04 percent for the same period. Population estimates and AAGRs for Solano County, surrounding counties, and the state of California, are shown in Exhibit 3 (U.S. Census Bureau (c) 2023, California State Department of Finance 2024).

Exhibit 3. Population Trends and Projections

Year	Solano County		Napa County		Yolo County		Contra Costa County		Sacramento County		California	
	Population	AAGR	Population	AAGR	Population	AAGR	Population	AAGR	Population	AAGR	Population	AAGR
2010	413,344	-	136,484	-	200,849	-	1,049,025	-	1,418,788	-	37,253,956	-
2020	453,491	0.93%	138,019	0.11%	216,403	0.75%	1,165,927	1.06%	1,585,055	1.11%	39,538,223	0.60%
2022	450,995	-0.28%	137,384	-0.23%	217,141	0.17%	1,162,648	-0.14%	1,579,211	-0.18%	39,356,104	-0.23%
2030	451,280	0.01%	132,087	-0.49%	230,484	0.75%	1,171,945	0.10%	1,611,309	0.25%	39,430,871	0.02%
2040	476,163	0.54%	131,600	-0.04%	240,261	0.42%	1,274,708	0.84%	1,708,461	0.59%	40,106,449	0.17%
2050	494,487	0.38%	128,515	-0.24%	243,409	0.13%	1,361,137	0.66%	1,782,519	0.43%	40,049,519	-0.01%
2060	512,165	0.35%	125,545	-0.23%	243,410	0.00%	1,444,900	0.60%	1,844,098	0.34%	39,508,492	-0.14%

Source: (U.S. Census Bureau (c) 2023) (California State Department of Finance 2024)

The populations of major cities within the five-county Socioeconomic Study Area, along with their respective distances from the Project site are displayed in Exhibit 4. The largest city in the area is Sacramento, with a population of 523,600 (U.S. Census Bureau (c) 2023). The BESS Project area is located within the City of Vacaville.



Exhibit 4. Population and Distance from Project Site, 2022

Community	Population (2022)	Distance from Project Site (Miles)
Solano County	450,995	
Vallejo	125,132	23
Fairfield	119,420	7
Vacaville	101,631	0
Suisun City	29,350	15
Napa County	137,384	
Napa	79,233	25
American Canyon	21,669	25
St. Helena	5,426	48
Calistoga	5,191	57
Yolo County	217,141	
Davis	67,203	16
Woodland	61,227	23
West Sacramento	54,163	25
University of California-Davis	8,229	15
Contra Costa County	1,162,648	
Concord	125,007	37
Richmond	115,619	39
Antioch	115,016	49
San Ramon	86,119	53
Sacramento County	1,579,211	
Sacramento	523,600	29
Elk Grove	176,105	40
Arden-Arcade	96,076	37
Citrus Heights	87,127	43
Total Population	3,547,379	

Source: (U.S. Census Bureau (c) 2023), (U.S. Census Bureau (d) 2024), (U.S. Census Bureau (e) 2024)

Racial and ethnic diversity is prevalent throughout the Socioeconomic Study Area. Exhibit 5 summarizes the demographic composition of the five counties and compares it to statewide figures. The population in the study area is predominantly White, comprising 35 to 50 percent of county populations, similar to the statewide figure of 35 percent.

While the counties are somewhat less ethnically diverse than the State overall, Hispanic or Latino individuals (of any race) account for 24 to 35 percent of the population, compared to about 40 percent statewide. Black or African American individuals represent approximately six percent of the statewide population and range from two to 13 percent across the counties. The share of individuals identifying as Asian ranges from eight to 18 percent within the study area, closely aligning with the statewide average of 15 percent. Those identifying as Native Hawaiian, Pacific Islander, Native American, or Alaska Native make up between zero and one percent of the population in both the study area and the State (U.S. Census Bureau (c) 2023).



Exhibit 5. Race and Ethnicity in the Socioeconomic Study Area and State, 2022

Race/Ethnicity	Solano County	Napa County	Yolo County	Contra Costa County	Sacramento County	California
White alone	35%	50%	44%	41%	42%	35%
Hispanic or Latino (of any race)	28%	35%	32%	26%	24%	40%
Asian alone	15%	8%	14%	18%	17%	15%
Black or African American	13%	2%	2%	8%	9%	5%
Two or more races	6%	4%	5%	5%	6%	4%
Native Hawaiian or Pacific Islander	1%	0%	0%	0%	1%	0%
Some other race alone	1%	0%	0%	1%	0%	0%
American Indian or Alaska Native	0%	0%	0%	0%	0%	0%
Total Population	450,995	137,384	217,141	1,162,648	1,579,211	39,356,104

Source: (U.S. Census Bureau (c) 2023)

2.2 Economy and Employment

Solano County is home to businesses and organizations recognized for their advanced manufacturing capabilities, as well as for their presence in the food and beverage and biotech industries (Solano Economic Development Corporation n.d.). The County is situated along the major transportation route of I-80 and home to Travis Air Force Base, a major employer in the County (Solano County (c) 2008).

Historically, the Solano County economy relied on agriculture and related industries (Solano County (c) 2008). Today, agriculture makes up just over one percent of Solano County employment (see Exhibit 6). However, the economy has diversified significantly, with Healthcare and Social Assistance, Accommodation and Food Services, and Retail Trade emerging as the most prominent industries in terms of employment (U.S. Bureau of Labor Statistics (c) 2024).

The City of Vacaville has faced difficulty attracting businesses to the area in recent years due in part to the PG&E electrical supply not keeping up with increasing electricity load demand. Two industries, biomanufacturing and advanced manufacturing, have been identified by the City of Vacaville’s Economic Development Department to expand in the region, but expansion in these industries is hindered due to electrical service limitations (Burriss 2024).

The Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) provides data on employment at the county level. Across the Socioeconomic Study Area, employment in the private sector, as well as local, state, and federal government industries, totaled approximately 1,406,453 in 2023 (U.S. Bureau of Labor Statistics (c) 2024). Healthcare and Social Assistance, in particular, accounts for a notable 21 percent of total employment in the area. In Napa County, manufacturing is the leading employment sector, also accounting for 21 percent of total employment. In Yolo County, Contra Costa County, and Sacramento County, the Health Care and Social Assistance industry supports the largest number of employees. Exhibit 6 displays the distribution of employment by industry in each Socioeconomic Study Area county as well as the distribution in the combined county Socioeconomic Study Area.



Exhibit 6. Employment Distribution by Industry in the Study Area Counties, 2023

Industry	Solano County	Napa County	Yolo County	Contra Costa County	Sacramento County	Study Area	California
Agriculture, Forestry, Fishing and Hunting	1.1%	7.8%	4.6%	0.3%	0.5%	1.2%	2.3%
Mining, Quarrying, and Oil and Gas Extraction	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%
Utilities	0.7%	0.2%	0.0%	0.2%	0.9%	0.6%	0.6%
Construction	8.4%	5.6%	4.8%	7.6%	6.2%	6.7%	5.1%
Manufacturing	7.9%	18.7%	6.5%	3.8%	3.3%	5.0%	7.4%
Wholesale Trade	2.9%	1.8%	0.0%	0.0%	2.5%	1.7%	3.7%
Retail Trade	12.8%	7.7%	7.4%	11.2%	8.7%	9.6%	9.0%
Transportation and Warehousing	3.7%	3.0%	10.0%	3.2%	3.8%	4.1%	4.8%
Information	0.7%	0.5%	0.8%	1.6%	1.0%	1.1%	3.2%
Finance and Insurance	2.0%	1.5%	0.8%	4.4%	2.9%	2.9%	2.8%
Real Estate and Rental and Leasing	1.3%	1.1%	1.5%	2.0%	1.5%	1.6%	1.7%
Professional, Scientific, and Technical Services	3.0%	2.8%	4.2%	6.7%	6.3%	5.7%	7.9%
Management of Companies and Enterprises	0.4%	0.7%	1.0%	1.6%	1.3%	1.3%	1.4%
Administrative/Support; Waste Mgmt./Remediation Svcs.	4.4%	5.0%	3.5%	6.4%	5.8%	5.6%	6.2%
Educational Services	7.6%	5.2%	21.1%	8.4%	7.0%	8.4%	8.3%
Health Care and Social Assistance	20.8%	15.0%	9.5%	20.5%	18.1%	18.1%	15.8%
Arts, Entertainment, and Recreation	1.8%	1.4%	1.1%	2.0%	1.6%	1.7%	2.2%
Accommodation and Food Services	9.8%	15.2%	8.3%	9.1%	8.2%	9.0%	9.4%
Other Services (except Public Administration)	3.2%	2.6%	2.2%	3.6%	3.4%	3.3%	3.2%
Public Administration	7.2%	4.2%	7.2%	3.8%	17.0%	11.1%	4.8%
Unclassified	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
Total Employment, All Industries	139,892	79,504	109,038	369,261	708,758	1,406,453	18,002,893

Source: (U.S. Bureau of Labor Statistics (c) 2024)

In 2022, personal income and gross domestic product (GDP) in the Socioeconomic Study Area totaled approximately \$259.6 billion and \$231.1 billion, respectively (U.S. Bureau of Economic Analysis (a) 2023, U.S. Bureau of Economic Analysis (b) 2023). Solano County contributed approximately \$26.1 billion in personal income and \$28.8 billion in GDP. Of the five counties in the Socioeconomic Study Area, Sacramento County accounts for the highest share of employment, personal income, and gross domestic product (U.S. Bureau of Labor Statistics (c) 2024, U.S. Bureau of Economic Analysis (a) 2023, U.S. Bureau of Economic Analysis (b) 2023).

Exhibit 7. Personal Income and GDP (thousands of dollars, 2022)

County/State	Personal Income	GDP
California State	\$3,006,647,281	\$3,167,460,825
Socioeconomic Study Area Total	\$259,576,582	\$231,059,492
Solano County	\$26,149,679	\$28,736,277
Napa County	\$11,665,710	\$11,316,575
Yolo County	\$14,277,264	\$15,675,696
Contra Costa County	\$109,965,993	\$76,340,778
Sacramento County	\$97,517,936	\$98,990,166

Source: (U.S. Bureau of Economic Analysis (a) 2023, U.S. Bureau of Economic Analysis (b) 2023)

According to Solano County's 2023 Index of Economic and Community Progress, job growth in Solano County persisted in 2023, but at a slower rate than it did in 2022. By the end of



2023, the number of residents working or seeking work remained below 2019 levels. However, if annual population growth remains positive—as it was in 2023—labor force growth is projected to continue through 2030. Inflation continues to exert pressure on regional wages, with post-inflation purchasing power changing very slowly across California and in neighboring regions such as the Bay Area and Sacramento area. Since 2019, more Solano County residents have been working from home, although commute traffic has returned. In 2023, Solano County employers hired more workers that commute to the county than workers that live and work there (Solano County Economic Development Corporation 2024).

Agricultural Production Overview

Agriculture is a defining feature of Solano County’s landscape. Roughly two-thirds of the county’s land area is used for farming, with about one-third of that devoted to irrigated crops. The county is known for a diverse mix of products, including almonds, cattle, and processing tomatoes. In 2022, farming in Solano County supported roughly 1,678 on-farm jobs. Beyond production, agriculture also drives a strong value-added sector—particularly food and beverage processing—which employs an additional 4,482 people in processing, distribution, and agricultural support services. Together, these activities represent an important economic activity in the county, linking rural production with regional and global markets. (Solano County n.d.).

The Central Valley is one of California’s major agricultural production regions, comprising two distinct subregions: the Sacramento Valley in the north and the San Joaquin Valley in the south. In 2022, the Sacramento Valley generated \$4.4 billion in agricultural production, representing nearly seven percent of the state’s total agricultural production value. Solano County, located at the southern edge of the Sacramento Valley, accounted for approximately nine percent of the Valley’s agricultural output in that year, or \$390.9 million (see Exhibit 8). Vegetable crop production accounted for roughly 25 percent of total production value in the County, led by processing tomatoes. This was followed by livestock and livestock production (\$85.1 million), field crops (\$77.2 million) and fruit and nut crops (\$75.3 million) (California Department of Food and Agriculture 2024).

Exhibit 8. Agricultural Production Value, 2022

	Solano County	Sacramento Valley	California
Vegetable Crops	\$98,770,000	\$538,884,000	\$11,257,838,000
Livestock and Livestock Production	\$85,124,000	\$650,033,000	\$15,013,506,000
Field Crops	\$77,223,000	\$1,234,670,000	\$6,119,063,000
Fruit & Nut Crops	\$75,264,000	\$1,544,259,000	\$27,120,310,000
Other	\$54,497,000	\$384,227,000	\$6,647,048,000
Total Value	\$390,878,000	\$4,352,073,000	\$66,157,765,000

Source: (California Department of Food and Agriculture 2024)

Note: Sacramento Valley includes Butte, Colusa, Glenn, Sacramento, Solano, Sutter, Tehama, Yolo and Yuba Counties.

Crop yields and values for French prunes, a crop historically present in Solano County and at the Project site are presented in Exhibit 9. Yield and values for crops can vary annually based



on market conditions as well as growing conditions. This is reflected in the range of yields from a low of 1.46 tons per acre in 2016 to a high of 3.4 tons per acre in 2023. Similarly, inflation adjusted prices for French prunes varied significantly from a low of \$1,597 per ton in 2020, or half the inflation adjusted high of \$3,194 per ton in 2015. Over the ten most recent years of available data, the normalized average yield for French prunes is 2.49 tons per acre, while the normalized average price per ton is \$2,208.

Exhibit 9. Average Annual Yield and Prices for French Prunes, 2014-2023

Year	Yield (Tons per Acre)	Price (\$ per Ton)	Harvested Acreage	Total Value
2014	2.79	\$2,790	877	\$6,841,894
2015	2.56	\$3,194	893	\$7,302,083
2016	1.46	\$2,435	1,190	\$4,230,485
2017	2.00	\$2,365	1,135	\$5,375,915
2018	2.49	\$2,429	1,200	\$7,239,865
2019	2.11	\$1,956	1,260	\$4,894,246
2020	2.16	\$1,597	1,690	\$5,813,497
2021	2.81	\$2,096	1,480	\$8,694,514
2022	2.97	\$1,781	1,580	\$8,358,989
2023	3.40	\$1,810	1,920	\$11,949,807
Normalized Average	2.49	\$2,208	1,304	\$6,815,125

Source: (Solano County Agricultural Commissioner Multiple)
 Note: Values are adjusted into 2024 dollars using the PPI.

Harvested acreage of French prunes in Solano County has over doubled across the past decade, from 877 acres in 2014 to 1,920 acres in 2023. Using inflation-adjusted prices, the total value of prune production in Solano County faced a low of \$4.2 million in 2016 to a high of \$11.9 million in 2023, with a normalized average of \$6.8 million in 2024 dollars.

2.3 Household Economic Status

Several indicators of household economic well-being are displayed in Exhibit 10. These indicators, derived from the U.S. BLS Local Area Unemployment Statistics (LAUS) program, include the unemployment rate, unemployment, and employment in each local economy. The employment estimates provided here differ from the QCEW employment estimates presented in Exhibit 6. The LAUS program measures the supply of labor, including everyone who is working or seeking work, while the QCEW program measures the demand for labor, focusing on jobs that employers have filled and reported to unemployment insurance programs. The significant differences in scope, coverage, and perspective lead to variations in their employment estimates. Based on the LAUS program methodology, the unemployment rate in all Socioeconomic Study Area counties in 2023 was lower than the statewide rate of 4.8 percent (U.S. Bureau of Labor Statistics (a) 2024).



Exhibit 10. Unemployment Rate, Total Employment, and Total Unemployment

County/State	Unemployment Rate	Employment	Unemployment
California State	4.8%	18,388,329	919,958
Socioeconomic Study Area Average	4.3%	318,802	14,487
Solano County	4.7%	193,619	9,444
Napa County	3.5%	69,429	2,544
Yolo County	4.7%	104,602	5,151
Contra Costa County	4.1%	527,843	22,767
Sacramento County	4.4%	698,518	32,528

Source: (U.S. Bureau of Labor Statistics (a) 2024)

The percentage of the population with income below the poverty level in 2022 was lower in all counties, except for Sacramento County, relative to the state (Exhibit 11). Median household income (MHI) in 2022 in all Socioeconomic Study Area counties other than Sacramento County and Yolo County was higher than at the state level. Median Household Income in Solano County specifically was just over \$97,000.

Exhibit 11. Median Household Income and Poverty Rate, 2022

County/State	Median Household Income	% of Population with Income below poverty level
California State	\$91,905	8.5%
Socioeconomic Study Area Average	\$98,395	6.9%
Solano County	\$97,037	5.7%
Napa County	\$105,809	5.3%
Yolo County	\$85,097	9.3%
Contra Costa County	\$120,020	6.2%
Sacramento County	\$84,010	8.0%

Source: (U.S. Bureau of Labor Statistics (a) 2024)

2.4 Fiscal Resources

Solano County Fiscal Resources

Solano County's primary operational financing source is the County General Fund. Other funding sources include Special Revenue Funds, Capital Projects Funds, Debt Service Funds, Enterprise Funds, and Internal Service Funds. In fiscal year (FY) 2023-2024, the top financing sources for the General Fund were Taxes (67 percent) and Charges for Services (18.3 percent) (Exhibit 12). Total financing for the General Fund in FY 2023-2024 amounted to approximately \$343.4 million (Taynton 2023).



Exhibit 12. Solano County General Fund Sources, FY 2023-2024

Financing Source Classification	2023-2024 Adopted	Share of Total Financing
Taxes	\$229,994,000	67.0%
Licenses, Fees, and Permits	\$9,355,619	2.7%
Fines, Forfeitures, & Penalties	\$1,142,000	0.3%
Revenue from Use of Money/Prop	\$3,394,993	1.0%
Intergovernmental Rev State	\$7,047,875	2.1%
Intergovernmental Rev Federal	\$6,400	0.0%
Intergovernmental Rev Other	\$2,926,566	0.9%
Charges for Services	\$62,747,092	18.3%
Misc Revenue	\$3,256,781	0.9%
Other Financing Sources	\$5,130,522	1.5%
From Reserve	\$18,391,950	5.4%
Total Financing Sources	\$343,393,798	100%

Source: (Taynton 2023)

Total General Fund spending in the same fiscal year amounted to approximately \$393.9 million, resulting in a net cost of about \$50.4 million. The largest category of appropriations was Other Financing Uses (60.1 percent) and Salaries and Employee Benefits (19 percent), as demonstrated in Exhibit 13. The General Fund Spending Plan provides further detail on funding appropriations. Public Protection represents the largest target of appropriations at 55 percent, followed by General Government at 22 percent and Health and Social Services at 13 percent (Taynton 2023).

Exhibit 13. Solano County General Fund Uses, FY 2023-2024

General Fund Appropriation Classification	2023-2024 Adopted	Share of Total Appropriations
Salaries and Employee Benefits	\$74,726,829	19.0%
Services and Supplies	\$38,968,576	9.9%
Other Charges	\$13,569,761	3.4%
F/A Equipment	\$74,951	0.0%
Leases	\$272,899	0.1%
Other Financing Uses	\$236,584,177	60.1%
Contingencies and Reserves	\$29,662,317	7.5%
Total Appropriations	\$393,859,510	100%

Source: (Taynton 2023)

Property Tax Revenue

Property taxes in Solano County are determined through assessed values established by the County Assessor. The annual property tax rate in the State of California is 1 percent of assessed values. Such taxes are an important source of local governmental revenues in the County. In FY2023-2024, the Property Assessment Roll—representing property ownership in Solano County as of January 1st, 2023—was \$70.29 billion, a 5.3 percent increase from the prior year value. This marked the twelfth year of growth in assessed values since 2011. The



residential real estate market experienced consistent growth over the past year (from January 1, 2021 to January 1, 2022), with new construction further contributing to the County's property tax base. Property taxes in the County are distributed among different local agencies, serving as a major source of discretionary revenue for schools, special districts, cities and counties (Taynton 2023).

Sales Tax Revenue

Retailers operating within California are required to register with the California Department of Tax and Fee Administration (CDTFA) and remit the state's sales tax, which applies to all retail transactions involving the sale of goods and merchandise, except for those specifically exempted by law (California Department of Tax & Fee Administration (a) n.d.). In Solano County, the sales tax rate is 7.375 percent. Within the county, there are six jurisdictions that impose total rates ranging from 8.125 percent to 9.25 percent (Exhibit 14) (California Department of Tax & Fee Administration (c) 2025).

Exhibit 14. Sales and Use Tax Rates by County and Jurisdiction, 2024

County/Jurisdiction	Sales and Use Tax Rate
Solano County	7.375%
City of Benicia	8.375%
City of Fairfield	8.375%
City of Rio Vista	8.125%
City of Suisun City	8.375%
City of Vacaville	8.125%
City of Vallejo	9.250%

Source: (California Department of Tax & Fee Administration (c) 2025)

Solano County’s FY 2023-2024 budget includes line-item revenues associated with the state sales tax 1991 realignment, the Measure B Library sales tax, and other miscellaneous taxable sales (Taynton 2023). State sales tax revenues associated with the 1991 Realignment funds are a dedicated share of state sales tax revenues that are intended to support local health and social services programs. Such revenues are allocated on an annual basis and are reserved for county-operated Health and Social Services (Taynton 2023).

Solano County Library’s services and programs are funded in part by a 1/8-of-a-penny sales tax known as Measure B, approved by voters in 1997. The tax was extended in 2012 through Measure L and makes up approximately 21 percent of library funding according to the Solano County Library FY 2023-2024 annual report (Solano County Library 2024).

Lodging Taxes

The Transient Occupancy Tax (TOT) is a tax charged to visitors that occupy a living space or establishment (i.e., hotel, motel, inn) for 30 days or less. In Solano County, the administration and collection of the TOT is the responsibility of the Solano County Treasurer-Tax Collector-



County Clerk’s Office. As of 2024, the TOT is 5 percent of rent, rent being the amount charged by an establishment for the occupancy of space, whether in the form of money, goods, labor or some other form of payment (Solano County (b) n.d.). Revenues from TOT reached an estimated \$125,000 in fiscal year 2023-2024 (Taynton 2023).

School District Impact Fee

Education Code Section 17620(a)(1) allows any school district to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities. State and local agencies are precluded from imposing additional fees or other required payments on development projects for mitigating possible enrollment impacts to schools (California Office of Public School Construction 2025). The one-time school development fee is calculated at \$0.84 per square foot of development on all categories of commercial or industrial development based on chargeable covered and enclosed space (California Office of Public School Construction 2025).

Vacaville Fiscal Resources

The majority of services in Vacaville are funded through revenue from the City’s General Fund. This includes police and fire services, street maintenance, parks and recreation, and administrative functions. Revenue from taxes accounts for the largest share of the General Fund Account. Other funding sources include intergovernmental revenues, departmental fees and charges, transfers in, and other unspecified revenues. Revenues in the 2024/2025 fiscal year are projected to amount to approximately \$149,993 (City of Vacaville 2025). Exhibit 15 shows Vacaville’s expected EOY General Fund sources and revenues projected for the end of the 2024/2025 fiscal year.

Exhibit 15. Vacaville General Fund Sources, FY 2024-2025

General Fund Revenue Account	FY 2024/2025 Projected EOY	Share of Total Financing
Property Tax	\$42,031,000	28.0%
Sales Tax	\$31,217,000	20.8%
Measure M	\$24,894,000	16.6%
Other taxes	\$25,570,000	17.0%
Intergovernmental	\$2,925,000	2.0%
Departmental fees and charges	\$13,043,000	8.7%
Other revenues	\$1,943,000	1.3%
Transfers in	\$8,370,000	5.6%
Total	\$149,993,000	100%

Source: (City of Vacaville 2025)

Property Tax

In accordance with the state constitution, the base property tax rate is set to 1 percent of assessed value. The majority of property tax revenue is allocated to the State and County.



Currently, Vacaville receives approximately 18 percent of property tax revenue. Growth in assessed value is limited to the lesser of 2 percent or CPI. Upon transfer of property ownership or upon the construction of a new property, properties are reappraised at current full market value. The City’s net taxable property value, including redevelopment project areas, totals \$17.5 billion for the 2024/2025 tax year—an increase of \$1 billion, or 6.1 percent, compared to the previous year. Revenue from property taxes accounts for approximately \$42.0 million in general fund revenue (City of Vacaville 2025).

Sales and Use Tax

As of July 2025, the sales tax rate in Vacaville is 8.125 percent. This includes the state rate of 5.5 percent, the City’s rate of 1.75 percent (which includes the 0.75 percent Measure M rate), the Proposition 172 public safety rate of 0.5 percent, the Transportation Development Act rate of 0.25 percent, and the Solano County Library rate of 0.125 percent. Vacaville has the second-lowest sales tax rate in Solano County. Sales and use tax revenue, including Measure M, is the General Fund’s largest revenue source, totaling \$50.8 million for FY 2024–25 and accounting for 36 percent of total General Fund revenues (City of Vacaville 2025).

Other Revenue Sources

In addition to the tax revenue sources detailed above, the City of Vacaville’s General Fund is supported by a variety of other revenue sources. Franchise fees from companies like PG&E, Recology, Comcast, and AT&T are projected to have generated about \$5.6 million (3.9 percent of revenues) by the end of FY 2024/2025. The voter-approved Paramedic Tax, dedicated to emergency medical and ambulance services, is expected to yield \$6.9 million (5.0 percent). Two excise taxes—Measure I, which supports cultural, recreational, and street services, and Measure G, applied to utility operations—are projected to generate \$2.9 million (2.0 percent) and \$6.3 million (4.4 percent), respectively. Additional smaller tax sources, including the Transient Occupancy Tax, Business License Tax, and Public Safety Sales Tax, together account for 2.5 percent of revenues. Intergovernmental funds from state, federal, and local sources are expected to total \$2 million (1 percent). Departmental fees and charges, including recreation, EMS, and inspection fees, are projected at \$12.8 million (9.0 percent). Other revenue sources—such as investment earnings and lease income—will contribute \$1.4 million (1 percent), with a decrease expected due to reduced interest income. Finally, operating transfers from other City funds, including public safety districts, are projected to reach \$10.1 million, a 25.6 percent increase largely driven by the addition of Lagoon Valley CFD funds (City of Vacaville 2024).

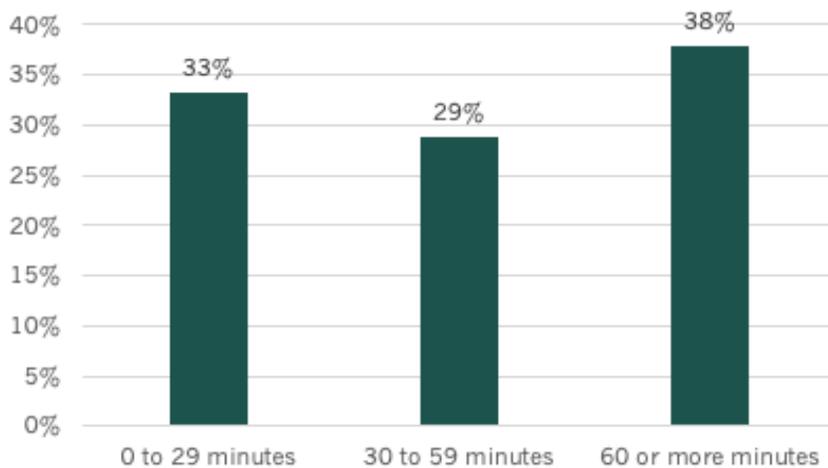
2.5 Regional Workforce Availability

Typically, construction workers routinely commute relatively longer distances to work than workers in many other occupations. Thus, the relevant labor market for quantifying potential local workforce supply for the Project extends beyond Solano County. Commuting patterns of the typical workers needed for the Project reveal the regional labor market from which



workers would be supplied. To estimate willingness to travel for workers who live in the surrounding region, the average drive time to work for the types of workers for which demand would be greatest are computed, including construction laborers, electricians, and construction equipment operators. The distribution of commuting times to work for the selected occupations across a broad area encompassing several census-designated micro geographies or Public Use Microdata Samples (PUMS)² are presented in Exhibit 16. About 62 percent of workers in these occupations travel less than 60 minutes to their job site with over a third of workers travelling 60 minutes or more to their job site (U.S. Census Bureau (a) 2021).

Exhibit 16. Commute Time to Work for Workers in Select Construction Occupations



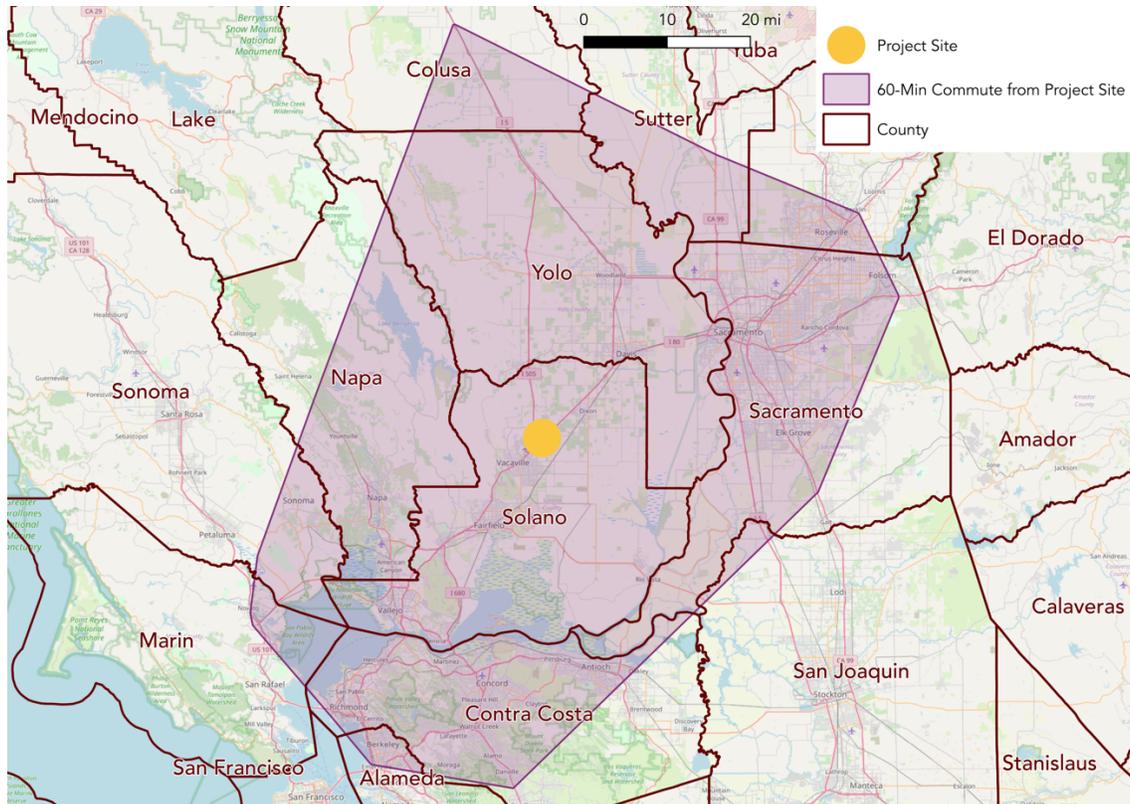
Source: (U.S. Census Bureau (a) 2021)

The data suggests that defining a labor market geography with a typical drive time of approximately 60 minutes to the Project site is not unreasonable in this region for the types of workers that the Project would employ. Though dependent on local traffic conditions at time of travel, this drive time equates to a distance of up to roughly 70 miles and encompasses all or part of Solano, Sacramento, Napa, Yolo, Contra Costa, and Sacramento counties. Although portions of other counties fall within the one-hour drive time, due to the presence of populated metropolitan areas, only Solano, Sacramento, Contra Costa, Napa, and Yolo counties are included in the Socioeconomic Study Area for the local labor market. The geographic extent of the local labor market based on the approximate 60-minute drive time is presented in Exhibit 17.

² Public Use Microdata Samples (PUMS) are files that contain records for a sample of housing units, with information on the characteristics of each housing unit and individuals within those households. Disclosure protection is enabled, preventing identification of individuals or housing units (U.S. Census Bureau (f) 2024).



Exhibit 17. Geographic Extent of the Local Labor Market



Source: (U.S. Census Bureau (a) 2021)

The commuting patterns of workers to job sites in Solano County are presented in Exhibit 18. The majority of workers commuting to job sites within Solano County come from within the County itself, Sacramento, Contra Costa, Napa, Yolo, and Alameda counties, with additional workers commuting from a multitude of other counties. The commuting patterns of existing Solano County workers underscores the willingness of workers to commute long distances to job sites in Solano County.



Counties, and Napa MSA contains Napa County. Although the San Francisco-Oakley-Berkeley MSA contains Contra Costa County and falls partially within a 60-minute commute radius of the Project site, it is excluded from consideration in this analysis due to the presence of major population areas falling outside the local labor market area for the Project.

There are just over 51,000 workers in relevant occupations across the three geographies (U.S. Bureau of Labor Statistics (b) 2024). Each BLS geography contains multiple counties in addition to the counties of relevance to the Project. However, given the exclusion of the San Francisco-Oakley-Berkeley MSA from consideration, the figures in Exhibit 19 may in fact represent an underestimate of the relevant labor market for the Project.

Exhibit 19. Employment by Occupation and Region, Bureau of Labor Statistics (2023)

SOC Code	Occupation Title	W&S Employment			Total
		Vallejo-Fairfield MSA	Sacramento-Roseville-Arden-Arcade MSA	Napa MSA	
11-9021	Construction Management	380	2,420	130	2,930
17-1022	Surveyors	40	330	0	370
17-2051	Civil Engineers	300	4,750	130	5,180
19-5011	Health and Safety Specialists	120	790	50	960
43-6014	Secretaries and Administrative Assistants	1,290	9,720	660	11,670
47-1011	Craft Supervision	1,080	5,570	370	7,020
47-2051	Concrete Finishers	330	2,660	190	3,180
47-2061	Construction Laborers	1,170	7,170	660	9,000
47-2071	Paving Operators	30	150	0	180
47-2073	Construction Equipment Operators	460	150	160	770
47-2111	Electricians	660	5,550	270	6,480
47-2221	Iron Workers	430	530	0	960
47-4011	Construction Inspector/Engineers	270	910	40	1,220
49-9051	Power Line Installers	360	810	0	1,170
Total		6,920	41,510	2,660	51,090

Source: (U.S. Bureau of Labor Statistics (b) 2024)

Although BLS Occupational Employment and Wage Statistics (OEWS) is generally considered the most accurate and reliable source of publicly available occupational employment data, the issues presented by its geographic boundaries introduce a need for a second, more regionally specific data source. County-level occupational employment figures from IMPLAN are provided to supplement the employment estimates above. The county-level occupation employment figures, along with the total regional employment, are presented in Exhibit 20 (IMPact analysis for PLANning (a) 2022).



Exhibit 20. Employment by Occupation and County, IMPLAN (2022)

SOC Code	Occupation Title	W&S Employment				
		Solano	Napa	Yolo	Contra Costa	Sacramento
11-9021	Construction Management	589	217	307	1,398	2,396
17-1022	Surveyors	48	15	26	178	275
17-2051	Civil Engineers	341	111	248	996	2,708
19-5011	Health and Safety Specialists	106	46	104	257	628
43-6014	Secretaries and Administrative Assistants	1,835	835	1,988	5,200	10,605
47-1011	Craft Supervision	955	345	515	2,180	3,929
47-2051	Concrete Finishers	284	108	155	640	1,124
47-2061	Construction Laborers	1,658	622	857	3,844	6,659
47-2071	Paving Operators	64	23	32	164	269
47-2073	Construction Equipment Operators	525	197	325	1,197	2,563
47-2111	Electricians	977	378	610	2,244	3,873
47-2221	Iron Workers	97	34	49	201	359
47-4011	Construction Inspector/Engineers	131	47	90	397	741
49-9051	Power Line Installers	179	59	120	464	1,087
Total		7,787	3,035	5,425	19,360	37,216

Source: (IMpact analysis for PLANning (a) 2022)

The occupations with the fewest regional workers across both datasets are surveyors, paving operators, and power line installers. The occupations with the most regional workers across both datasets include secretaries and administrative assistants, as well as construction laborers. Relying on the figures presented in Exhibit 19 and Exhibit 20, three estimates of employment are generated for each occupation (see Exhibit 21). These estimates represent the potential range of labor generally available within a reasonable commuting time to the Project site (i.e. the local labor supply).



Exhibit 21. Local Labor Supply Estimates

SOC Code	Occupation	IMPLAN W&S Employment (IMPLAN, 2022)	BLS W&S Employment (BLS, 2023)	Average
11-9021	Construction Management	13,640	9,000	11,320
17-1022	Surveyors	7,923	7,020	7,472
17-2051	Civil Engineers	8,082	6,480	7,281
19-5011	Health and Safety Specialists	1,909	1,170	1,539
43-6014	Secretaries and Administrative Assistants	553	180	366
47-1011	Craft Supervision	2,311	3,180	2,745
47-2051	Concrete Finishers	739	960	850
47-2061	Construction Laborers	20,462	11,670	16,066
47-2071	Paving Operators	4,403	5,180	4,792
47-2073	Construction Equipment Operators	542	370	456
47-2111	Electricians	4,907	2,930	3,918
47-2221	Iron Workers	1,141	960	1,051
47-4011	Construction Inspector/Engineers	1,404	1,220	1,312
49-9051	Power Line Installers	4,807	770	2,788
Total		72,823	51,090	61,956

Source: (U.S. Bureau of Labor Statistics (b) 2024), (IMpact analysis for PLANning (a) 2022), ECOnorthwest Analysis

2.6 Regional Housing Availability

Local housing is generally concentrated in densely populated regions of the Socioeconomic Study Area. This is true of rental housing and hotels/motels, two of the housing types evaluated in this section. RV parks, the third housing type considered, are more dispersed throughout the area. Where possible, this review of housing supply focuses on an area within a 70-mile radius of the Project site.

Rental Housing

In the absence of housing data exclusive to a 70-mile radius of the Project site, Exhibit 22 summarizes rental housing stock and the estimated number of vacant rental units within Solano County and the larger Socioeconomic Study Area. Rental housing includes houses, apartments, mobile homes, groups of rooms, and single rooms meant for occupancy (U.S. Census Bureau (b) 2023). This category of housing does not include dormitories, transient quarters like hotels and motels, or RVs. The five-county region includes about 1.3 million total housing units that are either occupied or vacant, with the highest share concentrated in Sacramento County. Approximately 38 percent of the total permanent housing stock in the Socioeconomic Study Area is rental housing. This proportion is slightly lower than the overall statewide share of 44.4 percent (U.S. Census Bureau (b) 2023). There are an estimated 16,600 vacant rental units in the Socioeconomic Study Area, making up only 3 percent of total rental units. The vacancy rate for rental housing is relatively low throughout the



Socioeconomic Study Area. The average vacancy rate ranges from 0.5 percent to 10 percent across the Socioeconomic Study Area (U.S. Census Bureau (b) 2023).

Napa County has the lowest number of vacant rental units in the Socioeconomic Study Area at 890, while Sacramento County has the highest number of vacant rental units at around 8,300. Solano County has approximately 163,500 total housing units, of which 37 percent are rental units (see Exhibit 22). The rental share is higher in certain communities within the County, such as Vallejo (41 percent) and Fairfield (40 percent). The rental vacancy rate is about 3 percent, indicating that there are about 1,800 vacant rental units in the County.

Exhibit 22. Regional Rental Housing Stock, County Total and Select Municipalities

City/County	Total Housing Units (Occupied or Vacant)	Rental Housing as % of Housing	Rental Vacancy Rate	Vacant Rental Units
Solano County Total	162,513	37%	3%	1,804
Vallejo	46,253	41%	4%	745
Fairfield	39,346	40%	2%	359
Vacaville	35,518	34%	3%	324
Benicia	11,341	30%	5%	174
Napa County Total	55,588	35%	5%	890
Napa	31,666	41%	4%	557
Calistoga	2,330	37%	10%	81
St. Helena	2,963	32%	7%	69
Yountville	1,824	34%	6%	36
Yolo County Total	80,533	48%	3%	1,232
Davis	27,427	58%	4%	604
West Sacramento	19,968	42%	6%	504
Woodland	21,622	44%	0.5%	47
Esparto	1,278	27%	8%	26
Contra Costa County Total	424,057	33%	3%	4,312
Richmond	41,566	48%	3%	640
Antioch	37,408	39%	3%	403
San Ramon	30,271	29%	4%	359
Concord	46,745	39%	2%	345
Sacramento County Total	588,894	42%	3%	8,349
Sacramento	206,808	49%	4%	3,772
Arden-Arcade	40,713	55%	4%	830
Carmichael	33,321	47%	5%	767
Citrus Heights	34,419	40%	4%	512
5-County Total	1,311,585	38%	3%	16,587

Source: (U.S. Census Bureau (b) 2023)

The California Housing Partnership’s 2023 Affordable Housing Needs Report for Solano County indicates that the County has 15,650 low-income renter households that lack access to affordable housing. To afford the County’s average monthly rent of \$1,888, potential tenants would need to earn \$36.31 per hour, which is approximately 2.3 times the state minimum wage. State and federal funding for housing production and preservation in Solano County is now \$84 million, marking a 21 percent decrease from the previous year.



Approximately 79 percent of extremely low-income (ELI) households in the County spend more than half of their income on housing, compared to zero percent of moderate-income households (California Housing Partnership 2023). The shortage of affordable rental housing in and around the Project site would potentially present a challenge for any nonlocal Project construction workers relocating to the local area.

Hotel/Motel Lodging

The area immediately surrounding the Project site has no significant hotel/motel lodging market. However, the hotel market within a reasonable commuting distance from the Project is dominated by economy lodging. In addition, the market includes upper midscale and upscale properties. Currently, there are 247 operating hotels with 16,800 rooms in the market. Six new hotels under construction will add 672 rooms (Smith Travel Research 2024).

Over the last 12 months, on average, the market has had about 16,800 available rooms, of which nearly 10,300 were sold. Occupancy ran at 61.1 percent, and the average daily room rate before any taxes or extras, was \$213.68. Since 2011, demand has been growing at a logarithmic rate of 0.7 percent a year. Supply grew at a 1.0 percent rate. Room rates have been increasing at 1.3 percent a year faster than inflation.

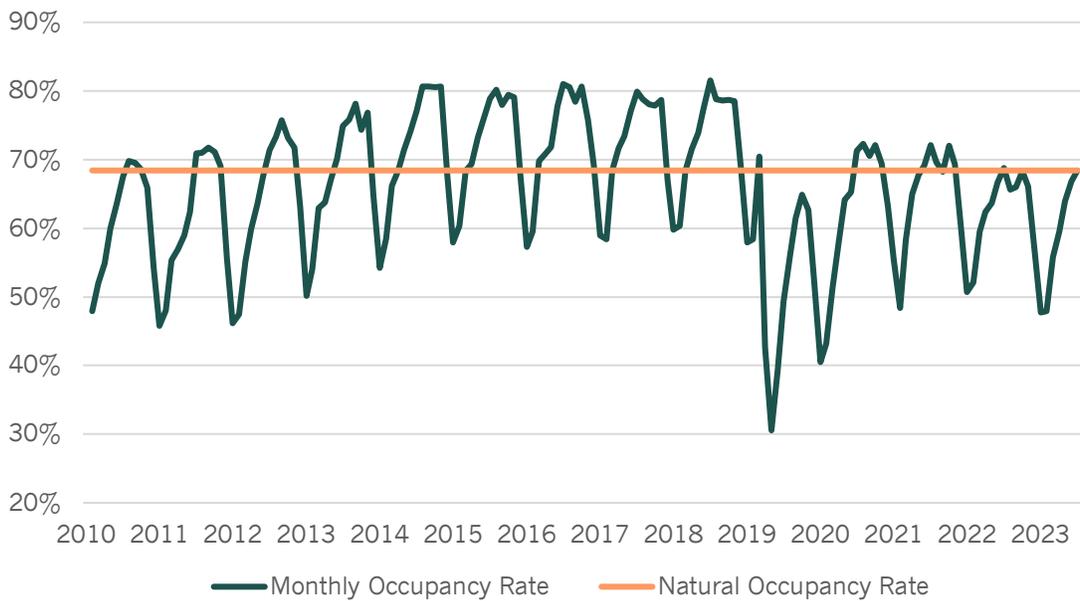
Natural Occupancy Rate

Current market conditions are not predictive of future conditions. When analyzing hotel markets more than a year or two into the future, it is necessary to determine the occupancy rate at which long-run supply and demand are in balance. This is called the natural occupancy rate and is calculated by economists using a regression analysis of historical data (deRoos 1999).

Exhibit 23 illustrates the monthly market occupancy rate since January 2011 compared to the market's natural occupancy rate. The market in this area is mildly seasonal. Historically, hotel occupancy has been on average less than 60 percent in December and January, between 60 and 70 percent in November and from February through April, and over 70 percent from June through October. Peak occupancy occurs in February and March.



Exhibit 23: Natural and Actual Hotel Occupancy Rate in the Socioeconomic Study Area, January 2011 – July 2024



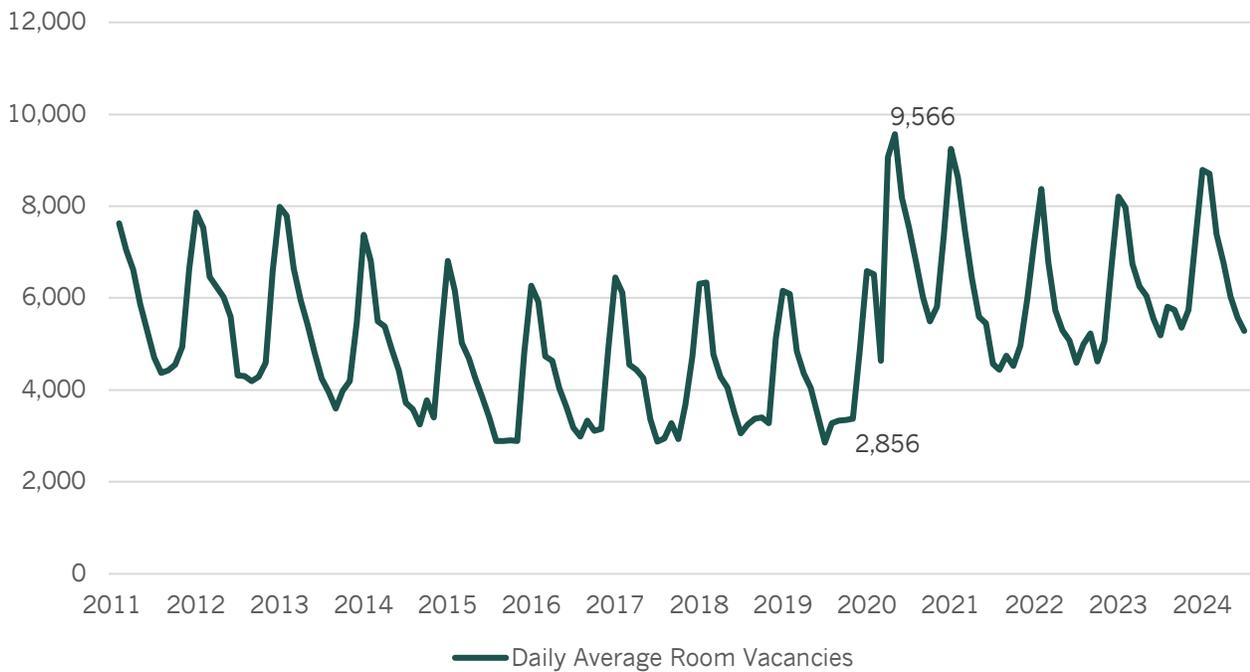
Source: (Smith Travel Research 2024), ECONorthwest Analysis

The estimated natural occupancy rate for the area is 68.4 percent. The average occupancy rate over the past 12 months is 61.1 percent, which is slightly less than the natural occupancy rate, suggesting the market is essentially in equilibrium with a slight undersupply of available rooms. An additional 1,791 rooms would bring the market into balance, representing a little more than a ten percent increase in supply.

As shown Exhibit 24, the market has between roughly 2,900 and 9,600 daily room vacancies. This analysis assumes a daily average of around 5,260 vacant units. It is a common practice for large construction projects in sparsely populated areas to negotiate with local economy hotels to provide temporary housing for construction workers. Many of the vacancies are in economy hotels, which may be amenable to contracting to provide temporary worker housing.



Exhibit 24: Average Daily Room Vacancies in the Socioeconomic Study Area, January 2011 – July 2024



Source: (Smith Travel Research 2024), ECONorthwest Analysis

RV Parks

RV sites with full hookups and dump station access are a viable housing option for construction workers due to their convenience and affordability. Full hookups facilitate access to water, electricity, and sewage, while dump stations help maintain a hygienic environment with a convenient means of waste disposal. Many nonlocal construction workers travel with an RV to stay near a job site.

Based on a review of online sources, 20 RV Parks exist within a 70-mile radius of the Project site, encompassing approximately 1,600 RV sites. Of these sites, approximately 32 percent or 495 sites are situated within a 30-mile commute and about 68 percent or 1,061 sites are situated within a 30- to 70-mile commute. Of the parks with publicly available fee information, monthly rates range from \$599 to \$2,016. Ninety-five percent of the RV parks included in this analysis offer full hookups, and about 60 percent report having dump stations. Some parks do not explicitly list these amenities on their websites, although they still may provide them. Limited-stay RV Parks were not included in this inventory. Occupancy rates at RV parks that responded to an inquiry ranged from 25 percent to 100 percent in the Winter and 80 to 100 percent in the Summer (Exhibit 25). Assuming an average occupancy rate of 76 percent, an estimated 376 RV sites would be available in the region during the year.



Exhibit 25. Regional RV Park Inventory

Location	Total RV Parks	Total RV Sites	Vacant RV Sites	Monthly Rate Range
Solano County	5	467	113	\$650 - \$1,818
Napa County	1	30	7	\$1,500 - \$1,500
Yolo County	2	165	40	\$1,150 - \$1,650
Contra Costa County	1	114	28	\$975 - \$975
Sacramento County	8	535	129	\$599 - \$1,000
Other Counties	3	245	59	\$990 - \$2,016
Total	20	1,556	376	\$599 - \$2,016

Source: Various RV Park Websites, ECONorthwest analysis

Summary of Available Housing Supply

The supply of available housing within a one-hour commute of the Project site is shown in Exhibit 26. In all counties, the supply of vacant rental housing units and vacant hotel/motel rooms is greater than the supply of vacant RV sites. In all counties combined, there are an estimated 16,600 vacant rental units, 6,800 available hotel/motel rooms, and 1,600 vacant RV sites, amounting to a total of about 25,000 vacant dwelling units.

Exhibit 26. Summary of Available Rental Housing Supply in Socioeconomic Study Area

Location	Vacant Rental Housing Units	Vacant Hotel/Motel Rooms	Vacant RV Sites	Total Vacant Dwelling Units
Solano County	1,804	1,870	467	4,141
Napa County	890	1,782	30	2,702
Yolo County	1,232	1,359	165	2,756
Contra Costa County	4,312	1,327	114	5,753
Sacramento County	8,349	190	535	9,075
Other Counties		302	245	547
Total	16,587	6,830	1,556	24,973

Source: (U.S. Census Bureau 2023), (Smith Travel Research 2024), Various RV Park Websites

Note: Due to the geographic scale of available data, no vacant rental housing units are included for other counties that partially fall within a one-hour commute of the Project site.

2.7 Regional Utilities and Public Services Availability

This section provides an overview of utilities and public services with the potential to be impacted or to interact with the Project. Where possible, information on capacity, service standards, and existing or expected use levels is provided. Public services explored in this analysis include fire protection, law enforcement, emergency response, medical facilities, and school districts.



Public Services and Facilities

Public services and facilities addressed in this section include law enforcement, fire protection, emergency response, medical facilities, school districts, and other assessment districts.

Law Enforcement

The Project site is located within the jurisdiction of the Vacaville Police Department (VVPD) with gen-tie lines extending into unincorporated Solano County in the jurisdiction of the Solano County Sheriff's Office. VVPD serves the community of Vacaville through patrol and detective services. The department includes a youth services division, a special weapons and tactics team, K-9 units, a community resource unit, and other special units. As of 2021, the Vacaville Police Department employed 167 full time employees, including sworn positions, professional support staff, civilian volunteers, reserve officers and cadets (City of Vacaville Police Department n.d.). The Vacaville Police Department declined to be interviewed as part of this work (Enault 2025).

The Solano County Sheriff's Office serves the entire County in collaboration with the law enforcement agencies of its seven cities, including the Benicia, Dixon, Fairfield, Rio Vista, Suisun, Vacaville, and Vallejo Police Departments. The Solano County Sheriff's- Office is responsible for servicing unincorporated parts of Solano County. The office is led by County Sheriff Thomas A. Ferrara.

While the Project site is primarily under the jurisdiction of the Vacaville Police Department, Project gen-tie lines extend into the jurisdiction of Solano County Sheriff's Office, so examining countywide crime patterns and emergency response times offers useful context for understanding broader public safety conditions in the area. According to the Solano County Sheriff's Office Crime Graphic, common crimes in the last five years in the vicinity of the Project site have included assault, burglary, stolen vehicles, larceny, and theft. In the last five years, there have been 93 calls for service within a one-mile radius of the Project site (Sun Ridge Systems, Inc. 2025).

Between 2017 and 2024, the police dispatch processing time for 911 calls was just 62 seconds in unincorporated areas of Solano County. The police dispatch time in Vallejo for the same period was 84 minutes (Solano County Civil Grand Jury 2023). In response to a chronic and significant police staffing shortage in the Vallejo Police Department, California Senate approved SB 1379 (2024) by allowing retired officers to work above the previous 960-hour annual maximum, up to full-time for the Solano County Sheriff's Office, thereby allowing the Solano County Sheriff Department to have the deputies needed to respond to emergency calls in Vallejo (Gase 2024).

Fire Protection

The Project site is located within the Vacaville Fire Department service area with Project gen-tie lines in the jurisdiction of the Dixon Fire Protection district (DFPD). The Vacaville Fire



Department serves the city of Vacaville, responding to all 9-1-1 calls relating to fires, medical emergencies, hazardous materials release, and other situations requiring specialized rescue services. Emergency response is deployed from six fire stations. The operations division consists of 91 employees working over three operational “shifts,” each commanded by a battalion chief. The operations division consists of 91 employees (City of Vacaville Fire Department n.d.).

Vacaville Fire Department’s calls for service have increased by approximately 23 percent since 2020. The majority of calls pertain to rescue/EMS (74.05 percent), followed by good intent calls (10.54 percent), service calls (8.76 percent), false alarm calls (3.96 percent), and fire-related calls (1.71 percent). The remaining share of call types includes severe weather or natural disaster calls, special incident calls, rupture/overhead (no fire) calls (Vacaville Fire Department 2024).

On average, it takes approximately 1:18 minutes for service providers to be enroute once notified of a need for service. Travel time averages around 6:02 minutes, and average unit commitment is about 28:14 minutes (Vacaville Fire Department 2024). Although it is anticipated that the Vacaville Fire Department will respond to all fire-related emergencies within their jurisdiction, they do have a mutual aid agreement in place with the Dixon Fire Protection District. Vacaville Fire Department did not respond to an interview request as part of this work.

The Dixon Fire Department (DFPD) serves the Dixon Fire Protection District—covering 313 square miles—as well as a city area of 6.7 square miles. The Dixon Fire Department has an agreement with the City of Vacaville for automatic aid in certain parts of the district including the location of the gen-tie lines. Due to proximity and jurisdiction, the City of Vacaville would be anticipated to arrive first in case of an emergency at the Project site or gen-tie lines (Lewis 2024). It serves a combined population of nearly 25,000 residents operating 24 hours a day, 265 days a year. This combination department is staffed by 21 career personnel and 3 volunteer/reserve members, working on a 48/96-hour rotation schedule. The Dixon Fire Department responded to 2,970 calls for service in 2023. This agency is responsible for regulating and responding to incidents at the Project Site (City of Dixon n.d.). Funding for the department is primarily through property tax revenue, which makes up roughly 90 percent of funding sources (Lewis 2024).

EMS Services

The Solano County Office of Emergency Services (OES) serves as the primary coordination agency for managing emergencies and disasters impacting residents, public infrastructure, and government operations within the Solano County Operational Area. This area encompasses the entire county, including its cities, towns, and special districts. Solano County OES is responsible for ensuring effective planning, coordination, response support, and communication among all agencies involved in large-scale emergencies and disasters. It collaborates closely with various government jurisdictions within the county, as well as with law enforcement, fire services, emergency medical services, state and federal agencies,



utilities, private sector entities, and volunteer organizations to deliver a unified disaster response (Solano County (a) n.d.). The most recent data available on EMS and Ambulance providers in Solano County is presented in Exhibit 27.

The Vacaville Fire Department also oversees emergency medical services to the City. These services include emergency ambulance transportation services and ambulance transport services to state prisons. Emergency medical services are classified into two service types: Basic Life Support (BLS) and Advanced Life Support (ALS) (American Red Cross 2025). The emergency response time goal is to be on the scene within seven minutes or less 90 percent of the time.

Exhibit 27. Emergency Medical Services and Ambulance Providers in Solano County

Providers	Availability	Transport Provider	Service Types Offered	Number of Ground/Air Vehicles in Fleet
Medic Ambulance	24 hrs	Yes	ALS, BLS	45
Cordelia Fire Protection District	24 hrs	No	ALS, BLS	0
Dixon Fire Department	24 hrs	No	ALS	0
Fairfield Fire Department	24 hrs	No	ALS, BLS	0
Benicia Fire Department	24 hrs	No	ALS	0
Suisun Fire Protection District	24 hrs	No	BLS	0
Vacaville Fire Department	24 hrs	Yes	ALS	6
Vacaville Fire Protection District	24 hrs	No	BLS	0

Source: (Emergency Medical Services Authority 2024)

Note: Service types include Basic life Support (BLS) and Advanced Life Support (ALS).

Medical Centers

The City of Sacramento’s UC Davis Medical Center is the only level I trauma center servicing adults in the Socioeconomic Study Area. It is among the largest and highest-ranked hospitals in the State, with a capacity of 656 beds and the ability to handle more than 900,000 annual visits. On average, their emergency department sees more than 200 patients per day (Univeristy of California Davis Health 2025). It is located about 34 miles from the Project site. Closer medical facilities include the Vacaville Medical Center (trauma level II), NorthBay Medical Center (trauma level II), NorthBay Health VacaValley Hospital (trauma level unknown), the Sutter Davis Hospital (trauma level unknown), the Vallejo Medical Center (trauma level unknown), and the David Grant Medical Center (trauma level III), which is located on the Travis Air Force Base. There is also a trauma level I pediatric hospital located 52 miles from the Project site (Exhibit 28).



Exhibit 28. Medical Centers

Hospital	Address	Distance from Project Site	Trauma Level	Beds
U.C. Davis Medical Center	2315 Stockton Blvd., Sacramento 95817	34 miles	Level I	656
UCSF Benioff Children's Hospital - Oakland	747 52nd Street, Oakland 94609	52 miles	Level I (Pediatric)	191
David Grant Medical Center	101 Bodin Circle, Travis AFB 94535	12 miles	Level III	298
Kaiser Permanente - Vacaville Medical Center	1 Quality Dr., Vacaville 95688	14 miles	Level II	144
Kaiser Permanente - Vallejo Medical Center	975 Sereno Dr, Vallejo, CA 94589	29 miles	NA	267
NorthBay Medical Center	1200 B Gale Wilson Blvd., Fairfield 94533	14 miles	Level II	154
Sutter Davis Hospital	2000 Sutter Place, Davis 95616	18 miles	NA	57
NorthBay Health VacaValley Hospital	1000 Nut Tree Rd., Vacaville 95687	5 miles	NA	50

Source: Various Hospital Websites

School District Overview

The Solano County Office of Education serves seven school districts and close to 60,000 students (Education Data Partnership (a) 2024). The Project site is situated within Vacaville Unified School District, in close proximity to the border with Dixon Unified School District. Enrollment data is provided for both school districts. Vacaville Unified School District includes 19 schools with census-day enrollment of 13,253 students for the 2022-2023 school year (Education Data Partnership (c) 2024). Dixon Unified School District includes eight schools with census day enrollment of 3,468 students for the 2022-2023 school year (Education Data Partnership (b) 2024).

Current and projected enrollment by grade level grouping for Vacaville Unified School District is displayed in Exhibit 29. Projected enrollment figures for Vacaville Unified School District are not available online. However, the district’s 2023-2024 facilities plan indicates that enrollment “is now growing at approximately 0.8 percent per year (Hibser Yamauchi Architects, Inc. 2024). ECONorthwest uses this rate to estimate enrollment through 2030. The district notes, however, that “past growth does not necessarily indicate future trends [...] [W]ith the potential and ongoing development occurring throughout the district, increased enrollment is anticipated in the future” (Hibser Yamauchi Architects, Inc. 2024).



Exhibit 29. Current and Projected Enrollment, Vacaville Unified School District (2022/23 – 2029/30)

Grade Level	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
Kindergarten	1,080	1,089	1,097	1,106	1,115	1,124	1,133	1,142
Grade 1	939	947	954	962	969	977	985	993
Grade 2	911	918	926	933	941	948	956	963
Grade 3	947	955	962	970	978	985	993	1,001
Grade 4	964	972	979	987	995	1,003	1,011	1,019
Grade 5	952	960	967	975	983	991	999	1,007
Grade 6	970	978	986	993	1,001	1,009	1,018	1,026
Grade 7	1,001	1,009	1,017	1,025	1,033	1,042	1,050	1,058
Grade 8	1,012	1,020	1,028	1,036	1,045	1,053	1,062	1,070
Grade 9	1,084	1,093	1,101	1,110	1,119	1,128	1,137	1,146
Grade 10	1,144	1,153	1,162	1,172	1,181	1,190	1,200	1,210
Grade 11	1,168	1,177	1,187	1,196	1,206	1,215	1,225	1,235
Grade 12	1,081	1,090	1,098	1,107	1,116	1,125	1,134	1,143
Total	13,253	13,359	13,466	13,574	13,682	13,792	13,902	14,013

Source: (Hibser Yamauchi Architects, Inc. 2024) (Education Data Partnership (c) 2024)

Current and projected enrollment figures by grade level for Dixon Unified School District are available through the District’s most recent Long-Range Facilities Master Plan (see Exhibit 30) (Dixon Unified School District 2024).

Exhibit 30. Current and Projected Enrollment, Dixon Unified School District (2022/23 – 2029/30)

Grade Level	2022/2023	2023/2024	2024/2025	2025/2026	2026/2027	2027/2028	2028/2029	2029/2030
Kindergarten	211	241	258	298	292	288	284	280
Grade 1	216	177	195	192	212	208	206	205
Grade 2	205	221	183	199	196	217	215	212
Grade 3	201	211	228	189	206	203	224	221
Grade 4	208	205	215	231	192	209	208	227
Grade 5	208	209	206	215	231	192	211	208
Grade 6	206	214	214	211	222	240	201	218
Grade 7	216	216	225	225	223	233	252	211
Grade 8	195	222	222	231	232	230	240	258
Grade 9	251	242	271	270	279	280	278	287
Grade 10	258	255	246	274	275	283	285	281
Grade 11	300	251	248	239	270	271	279	279
Grade 12	266	296	244	240	231	265	266	273
SDC	69	73	71	71	74	76	76	77
Total	2,941	3,033	3,026	3,085	3,135	3,195	3,225	3,237

Source: (Education Data Partnership (b) 2024) (Dixon Unified School District 2024)

Utilities

The Project would not be connected to natural gas service or wastewater systems. The Project will connect to a City of Vacaville owned water main during the operational phase. Any Project construction and operation generated solid waste would be disposed of locally.



Gas

Pacific Gas & Electric is the only provider of natural gas in Solano County. The Project would not connect to gas service. Thus, this utility is not assessed.

Water

The City of Vacaville Utilities Department operates the City's water treatment plant, reservoirs, wells, water distribution system, and booster pump station. On average, the City of Vacaville distributes an average of 15 million gallons of water daily or 5.48 billion gallons of water annually. The Project site is within the Vacaville service district (City of Vacaville Water n.d.). During construction, the Project will not be physically connected to a municipal water system but will utilize City of Vacaville municipal water via an existing fire hydrant located adjacent to the southwestern portion of the BESS Project site. Operational phase water for the fire water loop would be obtained by tapping an existing 12-inch diameter City water main that parallels the northern site boundary.

Wastewater

The Project will not connect to a municipal wastewater system. Thus, this utility is not assessed.

Solid Waste

The implementation of solid waste and recycling programs in the City of Vacaville is the Responsibility of the Office of Environmental Sustainability and Energy. The Project site is serviced by Recology Vacaville Solano trash collectors, which offer waste zero services to assist businesses in applying best management practices in collecting compost, recycling, and landfill materials. Two regional landfills, Recology Hay Road landfill and Potrero Hills landfill offer waste disposal services to the region (Solano County Resource Management n.d.). The Potrero Hills landfill provides non-hazardous solid waste landfill disposal services (Waste Connections n.d.). The Recology Hay Road landfill accepts common construction and demolition materials including but not limited to, concrete, construction and demolition debris, freon, appliances, white goods, metals, clean soil and dirt, wood, drywall, and organic materials (Recology Waste Zero (a) n.d.). Businesses may dispose of acceptable hazardous waste at the Recology Vacaville Solano facility by appointment only. The facility does not accept ammunition, appliances, asbestos, commercial chemicals, explosives, medical waste, medicine, radioactive materials, tires, or trash (Recology Waste Zero (b) n.d.).



3. Socioeconomic Impacts

This section addresses the expected socioeconomic impacts arising from the construction and operation of the Project. It begins with an overview of the methods used to assess potential socioeconomic impacts, both quantitatively and qualitatively. Followed by the socioeconomic evaluation criteria used to assess potential significant impacts, determination of impact significance, and the socioeconomic impact analyses of Project construction and operation in support of impact determination.

3.1 Methodology

This analysis of socioeconomic impacts follows guidelines outlined by CEC’s AB 205 Opt-In process. This section outlines the methodology for the analysis, including Project assumptions, analytical methods, and data sources used in the analysis. It also identifies the impact evaluation criteria used to assess the “significance” of potential impacts, consistent with California Environmental Quality Act (CEQA) guidelines for assessing the economic and social effects of physical changes resulting from the Project (Association of Environmental Professionals 2019).

3.2 Project Assumptions

ECONorthwest collaborated with the Applicants to develop detailed the Project cost, timeline, and employment assumptions used throughout the socioeconomic impact analysis. These assumptions are described in detail as they apply to the analysis in the following sections.

Socioeconomic Study Area

The geographic extent of the Socioeconomic Study Area as it relates to the Project is depicted in Exhibit 2. The Project location and layout is shown in Exhibit 1. The local labor market for the Project encompasses a commute of up to one hour, a geography that includes portions of Solano, Sacramento, Contra Costa, Napa, and Yolo counties. Although portions of other counties fall within the one-hour drive time, due to the presence of the populated metropolitan areas, only Solano, Sacramento, Contra Costa, Napa, and Yolo counties are included in the Socioeconomic Study Area for the local labor market.

Analytical Methods and Data Sources

Economic Impact Modeling

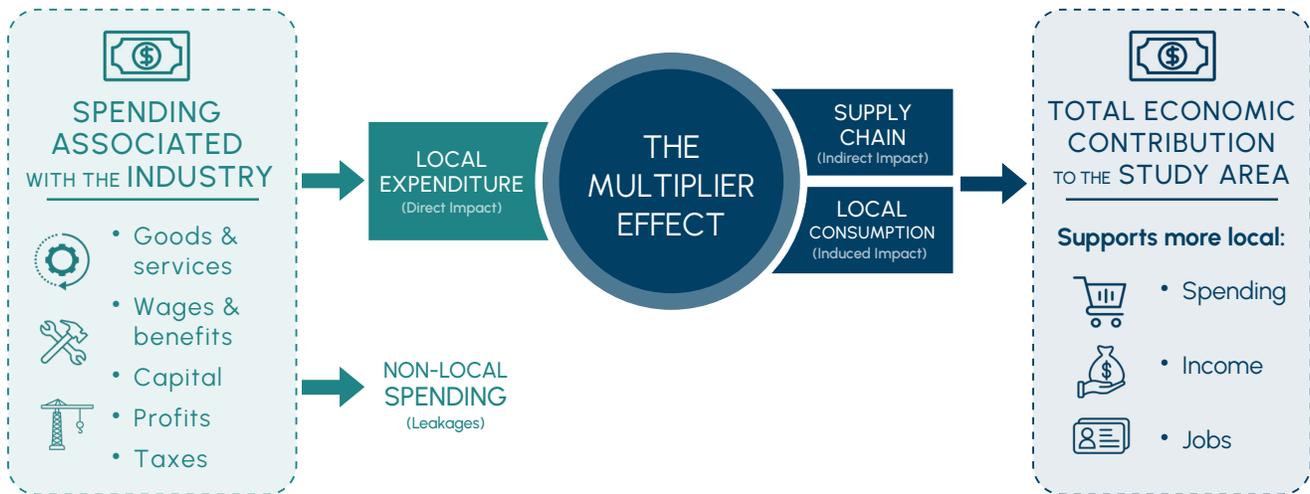
IMPLAN is a regional input/output (I/O) model widely used to assess the economic impacts of renewable energy developments and many other types of projects. The IMPLAN model divides the economy into 528 sectors, and models the linkages between the various sectors, including



accounting for government and household spending. Using national industry and county-level economic data from the U.S. Bureau of Economic Analysis, U.S. Census, and other government sources, IMPLAN models how spending in one sector of the economy is spent and re-spent in other sectors of the economy. The linkages are modeled through I/O tables that account for all dollar flows between different sectors of the economy (IMPLAN (c) 2025).

The economic relationships modeled by IMPLAN allow the user to estimate the overall change in the economy that would result from construction and operation of a proposed project (see Exhibit 31). The dollars spent on a project’s construction and operation are analyzed to determine the total economic impact within the selected geography (Solano County).⁴ The direct investments in a project’s construction and operation trigger successive rounds of spending that result in a change in employment, labor income, and value added in the local economy. The summation of these impacts is referred to as the economic output.

Exhibit 31. Overview of Economic Impact Analysis Framework



Source: ECOnorthwest, 2024

IMPACT TYPES

Economic multipliers derived from the model are used to estimate total economic impacts. Total economic impacts consist of three components: direct, indirect, and induced impacts.

- ◆ **Direct impacts** consist of expenditures made specifically for the proposed project, such as construction labor and materials. These direct impacts generate economic activity elsewhere in the local economy through the multiplier effect, as initial changes

⁴ Solano County represents the geographic region primarily affected by construction and operation of the Project, so the economic impact analysis models the economic activity supported by the Project within Solano County to represent the local impacts of the Project. Economic activity supported by the Project but occurring outside of the County are modelled as leakages in this model. This methodology is consistent with the economic impact methodology often utilized for renewable energy development. Please note this region of analysis differs from the five-county region identified as the Socioeconomic Study Area, which represents the ‘local area’ from which workers may reasonably commute and at which geography the regional socioeconomic conditions are presented.



in demand “ripple” through the local economy and generate indirect and induced impacts.

- ◆ **Indirect impacts** are generated by direct expenditures on goods and services from suppliers. Indirect effects are often referred to as “supply-chain” impacts because they involve interactions among businesses across different sectors.
- ◆ **Induced impacts** are generated by the spending of households associated either directly or indirectly with the proposed project. Workers employed during construction, for example, will use their income to purchase groceries and other household goods and services. Workers at businesses that supply materials to the project during construction or operation will do the same. Induced effects are also referred to as “consumption-driven” impacts.

IMPACT MEASURES

Impacts are assessed using the following measures that are reported by the 2023 IMPLAN model:

- ◆ **Jobs** are measured as the average number of employees engaged in full- or part-time work. Model outputs are adjusted to full-time equivalents (FTEs) using coefficients provided by IMPLAN.⁵
- ◆ **Labor income** is expressed as the sum of employee compensation and proprietary income.
 - Employee compensation (wages) includes workers’ wages and salaries, as well as other benefits such as health, disability, and life insurance; retirement payments; and non-cash compensation; expressed as total cost to the employer.
 - Proprietary income (business income) represents the payments received by business owners or self-employed workers.
- ◆ **Output** is the total value of an industry’s production and includes all components of the production function: labor income, taxes, profit, and intermediate inputs.

LIMITATIONS OF INPUT-OUTPUT MODELS

I/O models are static models used to measure an economy's inputs and outputs based on data that represents the relationships within an economy at a specific point in time. This analysis uses data from the 2023 model year, which is the most recent year for which data is available. The model then estimates how specific changes in inputs to an economy result in changes throughout the economy. This approach—known as a “partial equilibrium analysis”—works well when the modeled changes don’t radically reshape the relationships within an economy or effect the fundamental characteristics of labor markets, prices, or property

⁵ Each FTE job equates to one full-time job for one year or 2,080-hour units of labor. Part-time or temporary jobs constitute a fraction of a job.



values. Given what we know of the area economy, the scale of the Project, and other considerations, the IMPLAN model is an appropriate tool to perform this analysis.

Key Informant Interviews

Key informant interviews are undertaken with local agency staff and other local officials to supplement publicly available information on the public utilities and services. The interviews contribute to an analysis of existing conditions and the potential impacts of the Project on demand for public services and costs of providing services. Interviews help to verify preliminary information collected about public services and create better understanding around how the Project may affect these resources in the future. ECONorthwest requested interviews with local law enforcement, fire protection, EMS, water, and regional economic development. ECONorthwest completed interviews with the Dixon Fire Protection District and Vacaville Economic Development. These officials are listed in Appendix B: References under Agency Contacts and Personal Communication.

3.3 Socioeconomic Impact Analysis

The following sections analyze the potential socioeconomic impacts of the projects on local communities, governments and the economy.

3.3.1 Workforce Availability Analysis

The workforce availability analysis evaluates the interaction between employment during Project construction and the local labor market to determine the availability of the local workforce to serve Project labor demand. The following workforce topics are addressed: the Project's anticipated labor demand by specific occupational category, the availability of local workforce to serve Project demand,⁶ and the proportion of labor by occupation expected to originate locally vs. nonlocally. The workforce analysis relies upon publicly available data through 2023, regional trends, published literature and local expert opinion. However, future labor market conditions may differ from historical trends.

Labor Demand

BESS construction requires a combination of skilled and unskilled labor. General construction workers carry out much of the construction and installation work. However, more complex tasks necessitate the involvement of civil engineers, electricians, and specialized construction equipment operators. Additionally, surveyors, health and safety specialists, and construction managers are needed to oversee the construction process. These roles are required in varying numbers at different stages of the construction process for the Vaca Dixon BESS and Arges BESS. The peak labor demand will occur during construction of the Arges BESS components. As tasks during the Vaca Dixon BESS construction phase are completed, some workers may transition to construction of the Arges BESS components. Similarly, workers may move

⁶ Local is defined within the analysis below



between different tasks within construction of each BESS facility, such as construction laborers shifting from excavation to pile driving to concrete pouring as needed. The Project is expected to have an average monthly labor demand of 46 across relevant occupations during construction of the Vaca Dixon BESS. During construction of the Arges BESS, average monthly labor demand is expected to be 53 workers. Across the full construction timeline, the peak labor demand is expected to be 73 workers, where peak labor demand represents the summation of maximum monthly labor demand for each occupation across the entire construction period. Total peak labor demand exceeds total monthly labor demand in any given month because the month in which maximum labor demand occurs varies by occupation.

The Applicants provided data on the anticipated occupational distribution of Project labor demand. Electricians are expected to have the highest demand, with up to 20 workers employed at any given time during Project construction, representing 27 percent of Project total labor demand. This is followed by construction laborers, with a maximum of 8 workers employed at any given time over Project Construction. These figures, along with the anticipated labor demand for other occupations, are presented in Exhibit 32.

Exhibit 32. Anticipated Project Monthly Peak Construction Labor Demand

SOC Code	Occupation	Peak Labor Demand	Share of Peak Labor Demand
47-2111	Electricians	20	27%
47-2061	Construction Laborers	8	11%
47-2073	Construction Equipment Operators	7	10%
47-2071	Paving Operators	6	8%
17-2051	Civil Engineers	4	5%
47-2051	Concrete Finishers	4	5%
47-4011	Construction Inspector/Engineers	4	5%
11-9021	Construction Management	4	5%
47-1011	Craft Supervision	4	5%
19-5011	Health and Safety Specialists	4	5%
47-2221	Iron Workers	4	5%
43-6014	Secretaries and Admin. Assistants	2	3%
17-1022	Surveyors	2	3%
		73	100%

Source: Vaca Dixon BESS LLC and Arges BESS LLC

Notes: SOC Code 43-6014 excludes Legal, Medical and Executive Secretaries and Administrative Assistants. Peak labor demand represents the total maximum monthly demand for each occupation across the entire construction period.

The anticipated Project labor demand for each occupation by month for the full duration of the construction timeline is illustrated in Exhibit 33. Construction of the Vaca Dixon BESS is scheduled to run from July 2027 through June 2028, while construction of the Arges BESS is planned for July 2028 to June 2029.



Exhibit 33. Anticipated Project Labor Demand by Month

SOC Code	Occupation	2027						2028						2029						Peak Labor Demand						
		July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December		January	February	March	April	May	June
		Vaca Dixon BESS												Arges BESS												
47-2111	Electricians	15	15	15	17	17	17	20	20	20	15	13	13	17	17	17	20	20	20	20	20	20	15	15	15	20
47-2061	Construction Laborers	2	2	2	5	5	5	7	7	7	5	5	5	4	4	4	4	6	8	8	8	8	6	6	6	8
47-2073	Construction Equipment Operators	5	5	5	2	2	5	7	7	7	5	5	5	5	5	5	5	5	5	7	7	7	5	5	5	7
47-2071	Paving Operators	0	0	4	4	0	0	0	0	0	0	0	0	0	0	6	6	6	0	0	0	0	0	0	0	6
17-2051	Civil Engineers	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4
47-2051	Concrete Finishers	2	2	4	4	4	4	0	0	0	2	4	4	2	2	4	4	4	4	0	0	2	4	4	4	4
47-4011	Construction Inspector/Engineers	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4
11-9021	Construction Management	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
47-1011	Craft Supervision	2	2	2	2	2	4	4	4	4	2	2	2	2	2	2	2	4	4	4	4	4	2	2	2	4
19-5011	Health and Safety Specialists	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4
47-2221	Iron Workers	2	2	2	2	0	0	0	0	0	0	0	0	4	4	4	4	0	0	0	0	0	0	0	0	4
43-6014	Secretaries and Admin. Assistants	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
17-1022	Surveyors	2	2	0	2	2	0	0	0	0	2	2	2	2	2	2	2	0	2	2	2	2	2	2	2	2
Total Monthly Labor Demand		42	42	46	50	44	45	50	50	50	43	43	43	48	48	56	59	57	53	53	53	53	48	50	52	73
Average Monthly Labor Demand by Phase		46												53												

Source: Vaca Dixon BESS LLC and Arges BESS LLC

Notes: SOC Code 43-6014 excludes Legal, Medical and Executive Secretaries and Administrative Assistants. Peak labor demand represents the summation of maximum monthly labor demand for each occupation across the entire construction period. Total peak labor demand exceeds total monthly labor demand in any given month because the month in which maximum labor demand occurs varies by occupation.

Workforce Availability Analysis

The Project’s anticipated labor demand is described above and the amount of labor generally available within a reasonable commuting time to the Project site or labor supply is described in Section 2.5 Regional Workforce Availability. A simple comparison of labor demand and labor supply indicates that workers in all occupations could be hired locally because the Project only requires a small proportion of laborers from the total local labor pool. Put differently, the local labor supply far exceeds the Project’s labor demand for all occupations, as denoted by the green highlighting in Exhibit 34.

The estimated peak number of workers that Project construction is anticipated to employ (i.e. peak labor demand) is presented in Exhibit 33Exhibit 34. This figure is then compared with the three local labor supply (LLS) estimates, resulting in a series of local labor supply utilization rates (i.e., labor demand as a percentage of the local labor supply). The shading in the table highlights where the percentage of Project labor demand relative to local labor supply exceeds certain thresholds:

GREEN indicates a surplus of available local workforce to meet Project labor demand. Construction of the Project would utilize less than the current population-weighted average regional unemployment rate of 4.3 percent (U.S. Bureau of Labor Statistics (a) 2024).



YELLOW indicates close to adequate available local workforce to meet Project labor demand. Construction of the Project would utilize between 4.3 percent and 10 percent of the local labor supply.

ORANGE indicates a shortage of available local workforce to meet Project labor demand. Construction of the Project would utilize of over 10 percent of the local labor supply.

As indicated by the green highlighting there is a sufficiently large local labor supply to meet peak Project labor demand.

Exhibit 34. Project Labor Demand as Percentage of Local Labor Supply

SOC Code	Occupation	Peak Labor Demand	LLS Utilization, Low	LLS Utilization, High	LLS Utilization, Average
47-2111	Electricians	20	0.22%	0.15%	0.18%
47-2061	Construction Laborers	8	0.11%	0.10%	0.11%
47-2073	Construction Equipment Operators	7	0.11%	0.09%	0.10%
47-2071	Paving Operators	6	0.51%	0.31%	0.39%
17-2051	Civil Engineers	4	2.22%	0.72%	1.09%
47-2051	Concrete Finishers	4	0.17%	0.13%	0.15%
47-4011	Construction Inspector/Engineers	4	0.54%	0.42%	0.47%
11-9021	Construction Management	4	0.03%	0.02%	0.02%
47-1011	Craft Supervision	4	0.09%	0.08%	0.08%
19-5011	Health and Safety Specialists	4	1.08%	0.74%	0.88%
47-2221	Iron Workers	4	0.14%	0.08%	0.10%
43-6014	Secretaries and Administrative Assistants	2	0.21%	0.18%	0.19%
17-1022	Surveyors	2	0.16%	0.14%	0.15%
Total	Total	73			

Source: (U.S. Bureau of Labor Statistics (a) 2024), (IMpact analysis for PLANning (a) 2022), ECONorthwest analysis

Although the number of workers in a particular occupation within a specific area is an appropriate starting point for assessing local worker availability, several other factors come into play. These include compensation, benefits, perks, licensing requirements, working conditions, competing job opportunities, and overall economic conditions. These conditions influence workers’ decisions regarding whether to accept one job over another. Some of these factors, such as compensation, are within the employer’s control, while others, like competing opportunities and general economic conditions, are beyond employer’s influence.

Given that most of the factors discussed above cannot be characterized, the analysis of local workforce availability relies on the assumption that for all occupations with average LLS utilization rates below the population-weighted average unemployment rate of the relevant counties—4.3 percent in this case—the Project will be able to hire sufficient workers locally to fill all positions throughout the construction period. Rates that meet this criterion are highlighted green in Exhibit 35, which presents the result of applying these assumptions to the estimated average annual workforce. The estimate of nonlocal workers is used to inform the housing analysis in Section 3.3.2 Housing Availability Analysis.



Exhibit 35. Estimated Project Workforce: Local and Nonlocal Workers

SOC Code	Occupation	Peak Labor Demand	Local Labor, Percent	Local Labor, Workers	Non-Local Labor, Percent	Non-Local Labor, Workers
11-9021	Construction Management	20	100%	20	0%	0
17-1022	Surveyors	8	100%	8	0%	0
17-2051	Civil Engineers	7	100%	7	0%	0
19-5011	Health and Safety Specialists	6	100%	6	0%	0
47-2051	Concrete Finishers	4	100%	4	0%	0
47-2073	Construction Equipment Operators	4	100%	4	0%	0
47-2061	Construction Laborers	4	100%	4	0%	0
47-1011	Craft Supervision	4	100%	4	0%	0
47-2111	Electricians	4	100%	4	0%	0
47-2071	Paving Operators	4	100%	4	0%	0
43-6014	Secretaries and Administrative Assistants	4	100%	4	0%	0
47-4011	Construction Inspector/Engineers	2	100%	2	0%	0
47-2221	Iron Workers	2	100%	2	0%	0
Total		73	100%	73	0%	0

Source: (U.S. Bureau of Labor Statistics (b) 2024), (IMPact analysis for PLANning (a) 2022), ECONorthwest analysis

3.3.2 Housing Availability Analysis

The housing availability analysis focuses on the housing supply within a reasonable commuting distance from the Project site. The establishment of this boundary is supported by evidence presenting relevant commute times in Section 2.5 Regional Workforce Availability. The demand for housing is based on the number of nonlocal workers needed for Project construction. The workforce availability analysis estimates that the Project will not need to hire any nonlocal workers, thereby eliminating the need for temporary housing. However, were the Project to require nonlocal workers for any reason, the supply of housing in the local area is substantial and sufficient to accommodate this need.

As described in Section 2.6 Regional Housing Availability, local housing is generally concentrated in densely populated regions of the Socioeconomic Study Area. This is true of rental housing and transient lodging, two of the housing types evaluated in this section. RV parks, the third housing type considered, are more dispersed throughout the area. Exhibit 26 summarizes the supply of available housing within a one-hour commute of the Project site. In all counties combined, there are an estimated 16,587 vacant rental units, 6,830 available hotel/motel rooms, and 1,556 vacant RV sites, amounting to a total of 24,973 vacant dwelling units.

Since Project construction will employ an entirely local workforce, no temporary housing demand from the Project is anticipated.

3.3.3 Utilities and Public Service Impact Analysis

This section describes the potential impacts, including additional costs and ability to meet local service standards of utilities and public services including fire, law enforcement, emergency response, medical facilities, and school districts. This work is based on published information and key informant interviews where granted. ECONorthwest requested interviews



with local law enforcement, fire protection, EMS, water, and regional economic development. ECONorthwest completed interviews with the Dixon Fire Protection District and Vacaville Economic Development. These officials are listed in Appendix B: References under Agency Contacts and Personal Communication.

Public Services Impact Assessment

FIRE PROTECTION AND EMERGENCY RESPONSE

The Project site is located within the Vacaville Fire Department’s service area with Project gen-tie lines in the jurisdiction of the DFPD. The Project is located along I-80, a well-traveled freeway with significant existing traffic due to population growth in the region (Lewis 2024). The small Project construction workforce could potentially temporarily increase traffic commuting to the Project site. Response time to an emergency at the Project is anticipated to require up to 20 minutes, depending on traffic patterns at the time of an emergency and the responding agency. This suggests that calls to the Project Site could draw resources away from other emergencies for periods of time, however, according to DFPD, the Project is not anticipated to impact their ability to respond to existing customers during Project construction and operation (Lewis 2024).

LAW ENFORCEMENT

The Project site falls within the jurisdiction of the Vacaville Police Department with Project gen-tie lines in the jurisdiction of the DFPD. The region in the vicinity of the Project site has faced incidents related to assault, burglary, stolen vehicles, larceny, and theft. Interview requests with local law enforcement were not returned or refused, so this analysis characterizes potential impacts from similar projects (please see Appendix B: References, Agency Contacts and Personal Communication). It is anticipated that once constructed, the Project could be at increased risk of trespass, vandalism, and theft when compared to current land use, though these impacts would be anticipated to be minor due to the nature of the surrounding region and site security measures.

SCHOOL DISTRICTS

Project construction is anticipated to utilize a completely local workforce. Therefore, no additional constraints on local school districts are anticipated due to Project construction and operation including but not limited to impacts on student enrollment, staffing, and facilities.

Utilities Impact Assessment

The Project would not require or rely on gas or wastewater services. Construction waste would be adequately handled at appropriate local facilities. The Project would utilize a municipal source for the fire water loop. Thus, potential impacts to municipal water are the only utility impacts assessed as part of this analysis.



MUNICIPAL WATER

The Project lies within the City of Vacaville municipal water service area. The Project anticipates requiring an estimated 4.8 to 5.6 acre-feet⁷ of water over the construction phase and less than one acre-foot per year for the operational phase, which would be sourced from the water loop via the City of Vacaville water main. The proposed water supply source for the construction phase of the Project is an existing City of Vacaville fire hydrant on the southwest corner of the BESS Project area on the north side of Kilkenny Road. The proposed water source for the operational phase of the project is the existing City of Vacaville water main. Thus, the Project will increase demand for City of Vacaville municipal water.

Over the construction phase, the Project will require up to approximately 5,000 gallons of water daily over the first two to three months for activities related to site grading and leveling, and 2,000 to 3,000 gallons daily for the balance of construction activities including dust suppression. Temporary sanitary facilities would be provided during construction and would not require an on-site water supply.

Over the operational phase, typical daily Project water demand is anticipated to be 0 gallons. Water will be utilized for fire water and landscaping, as applicable, representing a daily maximum possible water demand of approximately 2,500 gallons. Portable restroom facilities will be utilized during Project operations, and no wastewater discharges are anticipated during the operational phase.

The City of Vacaville municipal water service delivers an average of 15 million gallons of water daily (City of Vacaville Water n.d.). Due to the relatively small quantity of municipal water deliveries that Project demand represents, the Project is not anticipated to adversely impact the City of Vacaville's ability to service existing or future water customers or prices.

3.3.4 Economic Impact Analysis

Project Payroll

Construction and operations of the Project will employ a workforce with associated wage and payroll costs. Employee payroll includes all wages paid, employee benefits, employer taxes, and other employer expenses (for example, insurance, sick leave, and paid time off). Payroll costs for construction and operations are presented below.

CONSTRUCTION

In total, for the approximately two year construction period for both projects, payroll for construction of the Project totals [REDACTED].

⁷ One acre-foot is equivalent to 325,851 gallons.



OPERATIONS

For operations of the Vaca Dixon BESS, the Applicant anticipates spending [REDACTED] on annual payroll. Upon completion of the Arges BESS, the Applicant estimates that an additional [REDACTED] will be spent on annual payroll. At full-build out, annual payroll for operations is estimated at [REDACTED] (see Exhibit 36).

Exhibit 36. Estimated Annual Operations Payroll

BESS Facility	Annual Payroll
Vaca Dixon BESS	[REDACTED]
Arges BESS	[REDACTED]
Total Project Annual Operations Payroll	[REDACTED]

Source: Vaca Dixon BESS LLC and Arges BESS LLC

Project Expenditures

Construction and operations of the Project would require material, equipment, and services from within the Solano County economy and beyond. Total Project expenditures on goods and services are presented below for construction and operations, as well as details on the share and value of locally purchased goods and services.

CONSTRUCTION

Exhibit 37 presents the share and value of locally purchased material and equipment costs for construction. For construction of the Vaca Dixon BESS, the Applicant anticipates purchasing [REDACTED] in materials and equipment within Solano County. For construction of the Arges BESS, the Applicant anticipates [REDACTED] in local materials and equipment expenditures.

Exhibit 37. Estimated Local Expenditures for Construction

Cost Category	Percent Sourced Locally	Estimated Local Expenditures		
		Vaca Dixon BESS	Arges BESS	Project Total
Concrete	100%	[REDACTED]	[REDACTED]	[REDACTED]
Construction Consumables	90%	[REDACTED]	[REDACTED]	[REDACTED]
Other Equipment	50%	[REDACTED]	[REDACTED]	[REDACTED]
Cabling Equipment	50%	[REDACTED]	[REDACTED]	[REDACTED]
Total Local Expenditure		[REDACTED]	[REDACTED]	[REDACTED]

Source: Vaca Dixon BESS LLC and Arges BESS LLC.

Note: Costs exclude sales tax.

Exhibit 38 presents capital costs for construction regardless of purchase location. The Applicant anticipates spending [REDACTED] on plant and equipment costs for construction of the Vaca Dixon BESS and [REDACTED] for construction of the Arges BESS. The Applicant anticipates [REDACTED] in total capital costs for the Project.



Exhibit 38. Estimated Capital Cost for Construction

Cost Category	Estimated Capital Cost		
	Vaca Dixon BESS	Arges BESS	Project Total
Battery Equipment	██████████	██████████	██████████
Other Equipment	██████████	██████████	██████████
Cabling Equipment	██████████	██████████	██████████
Concrete	██████████	██████████	██████████
Shipping Costs	██████████	██████████	██████████
Construction Consumables	██████████	██████████	██████████
Total Capital Costs	██████████	██████████	██████████

Source: Vaca Dixon BESS LLC and Arges BESS LLC.

Note: Capital costs exclude sales tax and construction land lease, overhead, and financing costs.

OPERATIONS

The share and value of locally purchased materials and services for operations are shown in Exhibit 39. Operations of the Vaca Dixon BESS will begin in 2028, and operations of the Arges BESS begin in 2030. Operation at full-build out of the Project include operations of both BESS facilities. For operation of the Vaca Dixon BESS only, the Applicant anticipates spending ██████████ within Solano County. Operation of the Arges BESS requires an additional ██████████ in local operations expenditures. At full-build out of the Project, the Applicant anticipates purchasing ██████████ in materials and equipment within Solano County annually. The applicant anticipates the total material, equipment, and service costs for operations to be ██████████ annually at full-build out (see Exhibit 40).

Exhibit 39. Estimated Annual Local Expenditures for Operations

Cost Category	Percent Sourced Locally	Estimated Annual Local Expenditures		
		Vaca Dixon BESS	Arges BESS	Full-Build Out
Electricity Utility	100%	██████████	██████████	██████████
Water Utility	100%	██████████	██████████	██████████
Vehicle Expenses	100%	██████████	██████████	██████████
Professional Services	50%	██████████	██████████	██████████
Equipment Repair Services	50%	██████████	██████████	██████████
Miscellaneous Services	50%	██████████	██████████	██████████
Equipment	10%	██████████	██████████	██████████
Total Local Expenditure		██████████	██████████	██████████

Source: Vaca Dixon BESS LLC and Arges BESS LLC.



Exhibit 40. Estimated Material, Equipment, and Service Costs for Operations

Cost Category	Estimated Capital Cost		
	Vaca Dixon BESS	Arges BESS	Full-Build Out
Electricity Utility	██████████	██████████	██████████
Water Utility	██████████	██████████	██████████
Vehicle Expenses	██████████	██████████	██████████
Professional Services	██████████	██████████	██████████
Equipment Repair Services	██████████	██████████	██████████
Miscellaneous Services	██████████	██████████	██████████
Equipment	██████████	██████████	██████████
Total Operations Material, Equipment, and Service Costs	██████████	██████████	██████████

Source: Vaca Dixon BESS LLC and Arges BESS LLC.

Project Economic Impacts

Economic impacts of the Project were estimated with the IMPLAN model framework and software (see Exhibit 31 for details). The dollars spent on the Project’s construction and operation are analyzed to determine the total economic impact to Solano County. The direct investments in the Project’s construction and operation trigger successive rounds of spending that result in a change in employment, labor income, and value added in the local economy. Secondary (indirect and induced) effects are estimated only based on local purchases of materials, equipment, and services. The economic impacts of Project construction and operations are presented below by BESS facility. Construction impacts are one-time only economic activity whereas operations impacts are annual over the operational life of the Project.

CONSTRUCTION

The estimated economic impacts of local construction-related expenditures are summarized for Solano County in Exhibit 41. These estimates represent one-time economic activities that would occur over the anticipated construction period. Job estimates are presented in FTEs, with each identified job representing a full-time job over 12 months (or 2,080 hours) of employment. ECONorthwest estimated the economic impacts of all construction related expenditures including labor costs, materials, equipment, construction land lease, and taxes (sales and property tax). Direct economic output represents both local and nonlocal expenditures, however secondary economic output represents the impact of the local construction expenditures in the Solano County economy.

Construction of the Project would directly employ an estimated average of 46 workers during construction of the Vaca Dixon BESS and an average of 53 workers during construction of the Arges BESS. Construction period for each BESS facility would last 12 months. Local construction-related expenditures would support an estimated 57 indirect jobs and 74 induced jobs over the 24-month duration that construction takes place. The Project supports an estimated 229 total jobs, or roughly 73 total jobs during construction of the Vaca Dixon BESS and 156 total jobs during construction of the Arges BESS in Solano County. Labor income attributable to these jobs totals ██████████, with ██████████ in direct labor and ██████████ in secondary (indirect and induced) labor income.



The direct economic output of the Project equals the total cost of construction (including payroll), capital expenditures, and taxes paid (see Section 3.3.5 Fiscal Impact Analysis), or approximately [REDACTED] total. This value includes spending both inside and outside of the Solano County economy (see Exhibit 37); however, it is necessary to show the total construction cost relative to the secondary output generated only within the Solano County economy due to the local spending from construction. Project construction supports an estimated [REDACTED] in secondary (indirect and induced) economic output in the Solano County economy. EConorthwest uses an economic output multiplier to understand the magnitude of the economic effect within Solano County. The multiplier is calculated by dividing the total output by the direct output. The output multiplier is [REDACTED], meaning that for every [REDACTED] of direct output, an additional [REDACTED] of output will be supported in the Solano County economy.

Exhibit 41. Economic Impacts of Construction

Impact Measure	Impact Type	Vaca Dixon BESS	Arges BESS	Project Total
Jobs	Direct	46	53	98
	Indirect	13	44	57
	Induced	15	60	74
	Total	73	156	229
Labor Income	Direct	[REDACTED]	[REDACTED]	[REDACTED]
	Indirect	[REDACTED]	[REDACTED]	[REDACTED]
	Induced	[REDACTED]	[REDACTED]	[REDACTED]
	Total	[REDACTED]	[REDACTED]	[REDACTED]
Output	Direct	[REDACTED]	[REDACTED]	[REDACTED]
	Indirect	[REDACTED]	[REDACTED]	[REDACTED]
	Induced	[REDACTED]	[REDACTED]	[REDACTED]
	Total	[REDACTED]	[REDACTED]	[REDACTED]

Source: (IMpact analysis for PLANning (b) 2023); Vaca Dixon BESS LLC and Arges BESS, LCC, 2024; EConorthwest analysis.

Note: All monetary values presented in 2024 dollars. Figures may not sum due to rounding.

OPERATIONS

The estimated average annual economic impacts of the operations of the Project are summarized for Solano County in Exhibit 42. Vaca Dixon BESS operations begin in 2028, followed by Arges BESS operations beginning in 2030. After Arges BESS construction, the impacts would occur annually over the entire Project life, represented in the “Annual Operations at Full-Build Out” column in Exhibit 42. This analysis assumes constant operation costs over the life of the Project based on estimates provided by the Applicants; however, actual operations costs may vary annually over the life of the Project. EConorthwest estimated the economic impacts of all operations related expenditures including labor costs, materials, equipment, land lease, and taxes (sales and property tax). Direct economic output represents both local and nonlocal expenditures; however, secondary economic output represents the impact of the local operations expenditures in the Solano County economy.

During Vaca Dixon BESS operation, the Project would directly employ one worker with a labor income, which represents [REDACTED] of payroll costs. During Arges BESS operation, the Project would directly employ two workers with a labor income which represents [REDACTED] of payroll



costs. At full-build out, the Project would directly employ three workers with a total associated [REDACTED] in direct labor income (see Exhibit 42).

Local operations-related expenditures and employment of the Vaca Dixon BESS support an estimated two secondary (indirect and induced) jobs and [REDACTED] in secondary labor income. In total, Vaca Dixon BESS operations support three jobs and [REDACTED] in labor income. At full-build out of both BESS facilities, local operations-related expenditures and employment support an estimated four secondary jobs and [REDACTED] in secondary labor income annually. For the operational life, the Project supports an estimated seven total jobs and [REDACTED] in labor income in Solano County per year.

The direct economic output of the Project equals the total cost of operations-related goods and services, payroll, and taxes paid. In operations of the Vaca Dixon BESS, direct economic output equals [REDACTED], and at full-build out is [REDACTED], representing spending both inside and outside of Solano County (Exhibit 39 details the local operations-related expenditures and see Section 3.3.5 Fiscal Impact Analysis for details on tax payments). Vaca Dixon BESS operations would support [REDACTED] million in secondary economic output, exclusively in the Solano County economy, indicating an economic output multiplier of [REDACTED]. At full build-out, operation activities would support [REDACTED] in secondary economic output, with an economic output multiplier of [REDACTED].

Exhibit 42. Economic Impacts of Annual Operations

Impact Measure	Impact Type	Vaca Dixon BESS	Arges BESS	Annual Operations at Full-Build Out
Jobs	Direct	1	2	3
	Indirect	1	1	2
	Induced	1	2	2
	Total	2	5	7
Labor Income	Direct	[REDACTED]	[REDACTED]	[REDACTED]
	Indirect	[REDACTED]	[REDACTED]	[REDACTED]
	Induced	[REDACTED]	[REDACTED]	[REDACTED]
	Total	[REDACTED]	[REDACTED]	[REDACTED]
Output	Direct	[REDACTED]	[REDACTED]	[REDACTED]
	Indirect	[REDACTED]	[REDACTED]	[REDACTED]
	Induced	[REDACTED]	[REDACTED]	[REDACTED]
	Total	[REDACTED]	[REDACTED]	[REDACTED]

Source: (IMpact analysis for PLANning (b) 2023); Vaca Dixon BESS LLC and Arges BESS LLC; ECONorthwest analysis.

Note: All monetary values presented in 2024 dollars. Figures may not sum due to rounding.

3.3.5 Fiscal Impact Analysis

The Applicant estimates sales tax and property tax payments based on current knowledge of sales and property taxes. These estimates provide reasonable representation of potential tax revenue generated by the Project. Construction generates one-time sales tax revenue, while operations generate annual sales tax and property tax revenue, estimated on an average annual basis. ECONorthwest utilizes tax estimates as provided by the Applicants in the economic impact analysis.



Sales Taxes

Purchases in California are subject to state and local sales tax. The California statewide sales tax rate is 7.25 percent (California Department of Tax & Fee Administration (a) n.d.). The sales tax rate in Solano County is 7.375 percent and in the City of Vacaville is 8.125 percent (California Department of Tax & Fee Administration (c) 2025). California provides a sales tax exemption for purchases related to utility-scale renewable energy Project construction and operations. The partial exemption would equate to a sales tax rate of 3.31 percent (California Legislative Information 2025). The partial exemption is currently set to expire in 2030. The sales tax analysis for construction and operation of the Project relies on current sales tax rates though actual sales tax rates are subject to change through time.

The Applicant provided estimates of sales and use taxes on applicable construction related purchases (all costs excluding labor and financing costs) and costs related to Project operations. The Applicant anticipates a sales tax rate after exemption of approximately 4.6 percent.

CONSTRUCTION

The Applicant anticipates that purchases during construction of the Project will generate ██████ in sales tax, with approximately ██████ during construction of the Vaca Dixon BESS facility and ██████ during construction of the Arges BESS facility. Exhibit 43 details the sales and use tax generated over the construction of the Project.

Exhibit 43. Estimated Construction Sales and Use Tax

BESS Facility	Sales and Use Tax
Vaca Dixon BESS	████████
Arges BESS	████████
Total Construction Sales Tax	████████

Source: Vaca Dixon BESS LLC and Arges BESS LLC.

Note: Figures may not sum due to rounding.

OPERATIONS

The Applicant anticipates that purchases over the operational life of the Project will generate a total of ██████ in sales tax annually or ██████ annually for operation of each BESS facility. Sales tax estimates at full-build out represent the average and may vary from year to year. Exhibit 44 details annual average sales and use tax payments for Project operations.



Exhibit 44. Estimated Annual Operations Sales and Use Tax

BESS Facility	Annual Sales and Use Tax
Vaca Dixon BESS	██████████
Arges BESS	██████████
Annual Operations Sales Tax	██████████

Source: Vaca Dixon BESS LLC and Arges BESS LLC.

Note: Figures may not sum due to rounding.

Property Taxes

The Project would generate property tax revenue for relevant taxing districts. The Applicants provided estimates of annual average property tax payments for the operations of the Vaca Dixon BESS beginning in 2028 and the payments to be added once the Arges BESS is operational.

The estimated annual property tax associated with each BESS facility, as well as the total property tax paid annually across the operational life of the Project, is presented in Exhibit 45. The Applicant anticipates paying ██████████ annually in property taxes during operation of the Vaca Dixon BESS. The Arges BESS requires an estimated ██████████ in additional annual property tax payments. At full-build out, the Applicants anticipate paying approximately ██████████ in property taxes annually during the operational life of the Project.

Exhibit 45. Estimated Annual Property Tax

BESS Facility	Annual Property Tax
Vaca Dixon BESS (two years)	██████████
Arges BESS (addition)	██████████
Annual Property Tax	██████████

Note: Figures may not sum due to rounding.

Source: Vaca Dixon BESS LLC and Arges BESS LLC.

School Impact Fee

The Project site is located within the boundaries of the Vacaville Unified School District, which is entitled to collect school impact fees for new construction within their district under the California Education Code Section 17620. The one-time fee is calculated at \$0.84 per square foot of development on all categories of commercial or industrial development based on chargeable covered and enclosed space (California Office of Public School Construction 2025) (Thomson Reuters n.d.).⁸ School districts in California are entitled to a school impact fee on new construction assessed on the total area of the Project’s covered and enclosed structures. The Project owner would pay a one-time fee to the school district. This analysis assumes that

⁸ Chargeable covered and enclosed space are defined as "the covered and enclosed space determined to be within the perimeter of a commercial or industrial structure, not including any storage areas incidental to the principal use of the construction, garage, parking structure, unenclosed walkway, or utility or disposal area."



the only structures within the Project site that this fee could potentially be applied to are the two O&M control enclosures, equating to 1,200 sq ft, which would produce a one-time school impact fee of roughly \$1,008. The actual determination will be made by the office issuing the building permit. The payment of the fee to the school district would be made in compliance with Education Code section 17620 (California Office of Public School Construction 2025).

Development Impact Fee

The Project is located within the boundaries of the City of Vacaville, which entitles the City to collect development impact fees for industrial construction within the City under Vacaville Municipal Code, Section 11.01. (City of Vacaville Accessed 2025). Fees are outlined in Exhibit 46. This analysis assumes that the only structures within the Project site that this fee could potentially be applied to are the O&M control enclosures, equating to 1,200 sq ft and the Project site is roughly 10 acres, which would produce a development impact fee of between \$36,025 and \$66,914. The actual determination of fees will depend on the classification of enclosed space and will be made by the City of Vacaville.

Exhibit 46. City of Vacaville Development Impact Fee

Fee Type	Industrial Low	Industrial High
General Facilities Development Impact Fee (\$/sqft)	\$0.12	\$0.23
Police Development Impact Fee (\$/sqft)	\$0.09	\$0.17
Fire Development Impact Fee (\$/sqft)	\$0.12	\$0.24
Traffic Impact Fee (\$/sqft)	\$3.78	\$20.18
Storm Drainage Impact Fee (per acre)	\$4,038	\$5,447
Total Development Fees	\$36,025	\$66,914

(City of Vacaville Building Division 2025)

3.3.6 Agricultural Production Effects

The Project site includes approximately 9.7 acres of active agricultural production in permanent crops (see Exhibit 47). It is currently planted with French prunes and operated by Empire Farming Company, which also produces walnuts, almonds, peaches, and raisins throughout the Central Valley. Empire Farming Company has owned the property since 2012. Prior to that, the land was used for grazing. Prunes harvested from the Project site are sold to Sunsweet Growers, a grower-owned cooperative headquartered in Yuba City, CA. Sunsweet Growers account for approximately 20 percent of global prune production (Thiara 2025).



Exhibit 47. Agricultural Production Around the Project Site



Source: (California Department of Water Resources 2024)

Operation of the Project will lead to a small reduction in agricultural production within the Project site. While current land use does not always predict future agricultural activity, this analysis assumes that, absent the Project, the site would continue to be used for French prune production based on its current and historical use. To estimate the potential loss in production value, an interview was conducted with Gary Thiara, President & CEO of Empire Farming Company, and supplemented with publicly available data where necessary.

Crop acreage within the Project site was estimated using California's Statewide Crop Mapping Geodatabase, which identified approximately 9.7 acres of fruit trees. The landowner confirmed that French prunes are grown on the property. Yield and price estimates were sourced from Solano County Agricultural Commissioner Crop and Livestock Reports. To represent typical conditions, the most recent ten years of available data (2014 through 2023) were utilized to determine average yield and price for French prunes in Solano County, which were then applied to the Project site (see Exhibit 9 for more details).⁹ These figures are presented in

⁹ Agricultural prices and yields are subject to significant annual volatility due to a range of market and environmental factors, including consumer preferences, supply levels, water availability, and both micro- and macro-climate conditions. To account for this variability, a normalized average is used to estimate expected agricultural prices and yields. This approach excludes outliers—specifically the maximum and minimum values—before calculating the average, providing a more accurate reflection of typical agricultural conditions.



Exhibit 48. Based on this methodology, the total value of French prune production at the Project site is estimated to be \$52,622.

Exhibit 48. Estimated Annual Production Value of French Prunes for One Acre and the Project Site

	Acres	Yield (Tons per Acre)	Price (\$ per Ton)	Total Value
Per Acre	1	2.49	\$2,208	\$5,425
Project Site	9.7	2.49	\$2,208	\$52,622

Source: (Solano County Agricultural Commissioner Multiple)

Note: Values are presented in 2024 dollars.

Agricultural Economic Output and Employment

Removing land from agricultural production within the Project site would have impacts to the local agricultural economy due to the associated reduction in local spending. The direct production value of agricultural output at the Project site—estimated at [REDACTED] annually—is used in an IMPLAN analysis to assess the Project’s secondary economic impacts. The model is calibrated using landowner-provided production input expenditure data, totaling [REDACTED] per acre (Thiara 2025). Employment associated with agricultural production at the Project site is seasonal labor contracted from a third party that services a number of area farms (Thiara 2025), and is also estimated within the IMPLAN model, based on landowner-reported labor costs.

The estimated impacts of removing land from agricultural production are estimated as follows:

- ◆ The direct impact represents the gross value of production that the farmer would no longer receive from producing crops.¹⁰ Employment associated with agricultural production at the Project site is seasonal labor contracted from a third party (i.e. indirect employment) and therefore no direct employment is associated with the agricultural projection.
- ◆ The indirect impact represents economic activity supported by the agricultural production in the Project site. This includes spending on inputs like fertilizer, chemicals, fuel for machinery, contract seasonal labor, and contract services for spraying. This spending supports indirect jobs associated with labor income. When agricultural production on the site ceases, the presumption is that this spending no longer occurs, and this amount of FTE, labor income, and output would be lost. This

¹⁰ The landowner will receive payments in return for leasing land to the Project. This private transaction would, in theory, be equivalent to or greater than the value farmers receive from producing crops. These payments and their contribution to the regional economy are modeled as part of the Project costs in the Project operations economic impact analysis. Although the farmer is compensated financially, any employment associated with crop production would still be impacted.



impact may or may not translate into reductions in individual employment positions (jobs).

- ◆ Induced impacts are generated by the spending of households associated either directly or indirectly with ongoing agricultural operations within the Project site. Assuming this income is no longer earned, it is not available to spend and would also represent lost economic activity when agricultural production stops.

The economic impacts of existing agricultural production at the Project site that would be lost due to the Project are presented in Exhibit 49. In total, existing French prune production in the Project site contributes no FTE in direct on-farm production with 0.26 indirect jobs and 0.03 induced jobs, for a total contribution of 0.29 jobs, which is associated with ██████ in labor income.

Since agricultural labor in the Project site is seasonal and contracted from a third party that services a number of area farms (Thiara 2025), this indirect labor can likely be absorbed by the third-party contractor. However, seasonal farm workers may be paid hourly, so a small reduction in wages for could result from the Project.

Finally, the direct agricultural output of ██████ would contribute an additional ██████ in secondary output related to business and consumer spending, for a total of ██████ in total economic output. This represents the amount of spending that would potentially be reduced in the Solano County economy a result of a reduction in agricultural production in the Project site.

Exhibit 49. Agricultural Production Impacts in the Project Site

Impact Type	Jobs	Labor Income	Output
Direct	0.00	██████	██████
Indirect	0.26	██████	██████
Induced	0.03	██████	██████
Total	0.29	██████	██████

Source: ECONorthwest Analysis

3.3.7 Environmental Justice

The purpose of this analysis is to assess the potential impacts of Project development on local Environmental Justice communities, namely minority and low-income populations that may be disproportionately impacted by environmental hazards and who experience reduced quality of life as compared to other communities. This analysis relies on guidelines established by the Environmental Protection Agency (EPA) Center on Environmental Quality (CEQ). The criteria for “minority” and “low-income” communities are defined as follows:

Minority populations:

Individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.



Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis (Council on Environmental Quality 1997).

Low-income populations:

Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census’ Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect (Council on Environmental Quality 1997) .

A community is defined as low-income if median household income is below 200 percent of the federal poverty level (Bureau of Land Management 2022).

The analysis area for impacts to EJ communities includes all census tracts within a 10-mile radius of the Project site. This area represents the setting that could potentially experience negative environmental impacts associated with construction, operation, maintenance, and decommissioning of the Project. The State of California is used as a reference area. Exhibit 50 displays the population composition of low-income, minority, and Native American/Indigenous populations for the state along with the threshold applied for each category of community.

Exhibit 50. EJ Community Selection Thresholds

Reference Area	Low Income Percentage	Low Income Threshold	Minority Percentage	Minority Threshold	Tribal/ Indigenous Percentage	Tribal/ Indigenous Threshold
California	23%	23%	65%	50%	3.60%	3.60%

Source: (U.S. Census Bureau (c) 2023) (Council on Environmental Quality 1997)

Exhibit 51 provides the EJ status of each Census Tract within a 10-mile radius of the Project site on the basis of its composition of minority, low-income, and tribal/indigenous populations. Of the 33 tracts that fall partially or entirely within the radius, 25 contain EJ populations. Light blue shading indicates that a census tract does not meet the criteria in question, while dark blue shading indicates that a census tract does meet the criteria in question. Based on estimates in the first three columns, the final column establishes whether or not a Census Tract qualifies as an EJ community.



Exhibit 51. EJ Status by Census Tract

Census Tract	Share Minority	Share Below 200% Federal Poverty Rate	Share Tribal /AIANNH	EJ Status
Census Tract 2529.13	39%	15%	10%	Yes
Census Tract 2529.08	55%	4%	5%	Yes
Census Tract 2531.06	39%	15%	2%	No
Census Tract 2523.15	64%	8%	3%	Yes
Census Tract 2529.12	46%	7%	7%	Yes
Census Tract 2528.02	44%	9%	10%	Yes
Census Tract 2529.14	62%	16%	8%	Yes
Census Tract 2532.08	70%	23%	1%	Yes
Census Tract 2534.02	58%	22%	5%	Yes
Census Tract 2534.04	44%	19%	0.3%	No
Census Tract 2529.10	49%	7%	5%	Yes
Census Tract 2532.07	39%	9%	4%	Yes
Census Tract 2530	82%	0%	5%	Yes
Census Tract 2531.05	60%	25%	3%	Yes
Census Tract 2533	40%	16%	3%	No
Census Tract 2523.13	55%	17%	5%	Yes
Census Tract 2532.06	49%	6%	3%	No
Census Tract 2531.01	35%	14%	1%	No
Census Tract 2532.03	44%	22%	6%	Yes
Census Tract 2531.08	51%	20%	3%	Yes
Census Tract 2523.16	79%	25%	4%	Yes
Census Tract 2529.03	32%	7%	2%	No
Census Tract 2529.04	51%	7%	1%	Yes
Census Tract 2529.11	39%	6%	5%	Yes
Census Tract 2529.15	60%	5%	9%	Yes
Census Tract 2528.01	47%	24%	17%	Yes
Census Tract 2532.01	36%	9%	11%	Yes
Census Tract 2534.03	48%	8%	2%	No
Census Tract 2523.17	77%	14%	9%	Yes
Census Tract 9800	0%	0%	0%	No
Census Tract 2529.09	52%	4%	2%	Yes
Census Tract 2532.05	53%	17%	2%	Yes
Census Tract 2531.07	63%	23%	6%	Yes

Source: (U.S. Census Bureau (c) 2023)

The temporary construction phase may increase the demand for public services at the Project site, including for law enforcement, fire protection, and emergency medical services. The potential increase in demand could adversely impact services for EJ communities of concern, temporarily over the construction phase. The Project site is located along I-80, a well-traveled freeway with significant existing traffic due to population growth in the region (Lewis 2024). Though the construction workforce and other construction related traffic would temporarily increase traffic commuting to the Project site, this increase would be temporary and is anticipated to be minor.

The Project could potentially adversely impact spending and income associated with existing agriculture at the Project site. Because the spending patterns associated with the economic output of Project construction and operation would be different than the current spending on agricultural production (which would no longer take place within the Project footprint), the distribution of economic impacts could potentially shift resources from the agricultural economy to other sectors of the economy. However, no on-farm job loss is anticipated due to



the Project and any adverse impacts are anticipated to be minor (Thiara 2025). Thus, overall economic activity would increase in Solano County with the Project over its lifespan.

No known potentially significant adverse impacts related to air quality or noise are currently anticipated due to the Project, and thus, no related impacts to EJ communities are anticipated.



4. Socioeconomic Impact Evaluation

4.1 Impact Evaluation Criteria

Potential socioeconomic impacts were evaluated using the criteria described in Appendix B of the Guidelines for Power Plant Site Certification (California ISO 2021) and Appendix G of the CEQA Guidelines (Association of Environmental Professionals 2019). The criteria are derived from the CEC requirements and questions in the CEQA checklist addressing population, housing, government facilities, and services. Following the CEQA guidance that the questions are “intended to encourage the thoughtful assessment of impacts and do not represent thresholds of significance” (Association of Environmental Professionals 2019), the discussion focuses on characterizing the economic and social changes that would result from the Project, both potentially beneficial and adverse. Additional detailed analysis is presented in the following section where relevant to support socioeconomic impact evaluation.

Laws, Ordinances, Regulations, and Standards

The socioeconomics and environmental justice (EJ) requirements for the project would be guided by relevant federal, state, and local laws, ordinances, regulations, and standards (LORS) to address socioeconomic impacts and disproportionate adverse effects on Environmental Justice (EJ) communities.¹¹ Exhibit 52 provides a summary of the federal, state, and local LORS applicable to socioeconomics and EJ communities of concern.

¹¹ Minority and low-income populations that may be disproportionately impacted by environmental hazards and who experience reduced quality of life as compared to other communities (Council on Environmental Quality 1997). The criteria for “minority” and “low-income” communities are defined in Section 4.6 Environmental Justice.



Exhibit 52. Applicable Laws, Ordinances, Regulations, and Standards

LORS	Requirements/Applicability	Administering Agency	Application Section Explaining Conformation
State			
Government Code Sections 65996-65997: School Impact Fee	Establishes that the levy of a fee for construction of an industrial facility be considered mitigating impacts on school facilities. School districts may charge a one-time assessment fee to mitigate potential school impacts.	California Office of Public School Construction, State Allocation Board	Local Government Revenues - School District Impact Fee
Education Code Section 17620	School district may levy a fee against any construction within the boundaries of the district for the purpose of funding construction of school facilities. Local school districts may charge a one-time assessment fee to mitigate potential school impacts	State Allocation Board?	Local Government Revenues - School District Impact Fee
Government Code Section 65040.12, subd (e)	Defines and proposes methods for advancing environmental justice; Defines environmental as the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies; Establishes the California Office of Planning and Research as the Coordinating Agency for Environmental Justice	State of California Department of Justice	Economic Impact Analysis - Environmental Justice
Title 14 California Code, Section 15131	CEQA outlines various environmental factors considered in this analysis, including Population and Housing, Utilities and Service Systems, Public Services, and Agricultural Resources.	Governor's Office of Land Use and Climate Innovation (LCI), the California Natural Resources Agency (CNRA), and the California Public Utilities Commission (CPUC)	Socioeconomic Impacts - multiple subsections
Local			
Ordinance No. 2024-1852-U-E	Extension of an Interim Ordinance Prohibiting New Commercial Battery Energy Storage Systems within the Unincorporated Territory of the County of Solano, Adopted as an Urgency Measure. Applies only to use permits approved prior to January 23, 2024.	Solano County	Not Applicable
Vacaville Unified School District Developer Fees	The Vacaville Unified School District (VUSD) charges developer fees for residential and commercial/industrial developments. Commercial/Industrial fees amount to \$0.84 per square foot.	Vacaville Unified School District	Local Government Revenues - School District Impact Fee
Ordinance No. 1993	A moratorium prohibiting the approval, commencement, operation, relocation, or expansion of grid-scale Battery Energy Storage Systems within the city limits while the city reviews and adopts regulations for such uses, as required by Government Code Section 65858.	City of Vacaville	Not Applicable
Vacaville Municipal Code, Section 11.01	The City of Vacaville collects various development impact fees from new projects as a way for new development to pay its fair share toward building the infrastructure and public facilities required to support future growth.	City of Vacaville	Local Government Revenues - Development Impact Fee

Source: (Thomson Reuters n.d.), (Thomson Reuters (b) n.d.), (California Legislative Information (a) n.d.), (Solano County 2024), (Vacaville Unified School District n.d.) (City of Vacaville Building Division 2025)

4.2 Socioeconomic Impact Evaluation

This section summarizes impacts for each socioeconomic criteria identified for evaluation in CEC and CEQA guidance. These summaries are drawn from detailed supporting analysis provided in Section 4 Socioeconomic Impact Analysis.



IMPACT SOC-1 Population

Criteria: Would the Project induce substantially unplanned population growth in the area, either directly or indirectly?

Estimate the potential population increase caused directly and indirectly by the Project [CEC Socioeconomic Requirement (iii)].

Significance: *Not Significant | No Effect*

Construction: Construction of the Project would require a peak labor demand (i.e. the maximum monthly labor demand for each occupation across the entire construction period) of 73 employees over the full construction timeline, which includes a one-year period for construction of the Vaca Dixon BESS and a one-year period for construction of the Arges BESS (please see section 3.3.1 Workforce Availability Analysis for more information on peak labor demand). There are just over 51,000 individuals employed in relevant occupations in the Socioeconomic Study Area. Sufficient workforce is available in the Socioeconomic Study Area to meet Project workforce demand for relevant occupations. Thus, it is anticipated that no workers would need to relocate to the Socioeconomic Study Area for Project construction, so no impact on Socioeconomic Study Area population is anticipated due to construction of the Project.

Operation: Operation of the Project over the anticipated Project life would employ a workforce of 3 employees during operation, most likely drawing from the existing population of the Socioeconomic Study Area. Thus, no additional population is anticipated due to Project operation.

For supporting analysis, please see section 3.3.1 Workforce Availability Analysis.

IMPACT SOC-2 Housing

Criteria: Would the Project displace substantial numbers of existing people or housing, necessitating the construction or replacement of housing elsewhere?

Estimate the potential impact of population increase on housing during the construction and operation phases [CEC Socioeconomic Requirement (iv)].

Significance: *Not Significant | No Effect*

Construction: Construction of the Project is not anticipated to increase temporary housing demand in the Socioeconomic Study Area since sufficient workforce is available in the Socioeconomic Study Area to meet Project workforce demand and thus, no workers would relocate to the Socioeconomic Study Area for Project construction.

Operation: Housing demand in the Socioeconomic Study Area would not increase by any discernable amount during operation of the Project. Operation of the Project would employ 3



employees, most likely drawing from the existing workforce of the Socioeconomic Study Area, so no impact to housing demand is anticipated due to Project operation.

For supporting analysis, please see section 3.3.2 Housing Availability Analysis.

IMPACT SOC-3 Economy and Employment: Direct Employment

Criteria: Would the Project have an adverse impact on overall employment in the region?

Estimate the number of workers to be employed each month by occupation during construction, and for operations, an estimate of the number of permanent operations workers during a year. [CEC Socioeconomic Requirement (i)]

Estimate the percentage of nonlocal workers who will relocate to the project area to work on the Project. [CEC Socioeconomic Requirement (ii)]

Significance: *Not Significant | Small Positive Change*

Construction: Construction of the Project is anticipated to require a peak workforce demand of 73 employees over the full construction timeline. Construction of the Vaca Dixon BESS (from 2027 to 2028) requires an average monthly workforce of 46 FTE employees and construction of the Arges BESS (from 2028 to 2029) requires an average monthly workforce of 53 FTE employees. Exhibit 33 presents the anticipated Project labor demand by month for the full duration of Project construction. Construction workforce is anticipated to be 100 percent local, sourced from the Socioeconomic Study Area, equating to less than 0.01 percent of existing Socioeconomic Study Area employment. Therefore, no significant adverse impact to employment in the region is anticipated from construction of the Project.

Operation: Operation of the Project is anticipated to employ three employees at full-build out over the operational life of the Project, equating to less than 0.01 percent of existing Study Area employment. Operation of the Vaca Dixon BESS requires one employee, and an additional two employees would be added after the construction of the Arges BESS. Ongoing operation of the Project will displace 9.7 acres of agricultural production, which is associated with 0 direct jobs. Therefore, no adverse impact to employment in the region is anticipated from operating the Project.

For supporting analysis, please see sections 3.3.4 Economic Impact Analysis and 3.3.6 Agricultural Production Effects.

IMPACT SOC-4 EMPLOYMENT AND ECONOMY: DIRECT INCOME

Criteria: Would the Project have an adverse impact on overall employment in the region?

Estimate total construction payroll and separate estimates of the operational payroll for permanent and short-term (contract) operations employees [CEC Socioeconomic Requirement (vii)].

Significance: *Not Significant | Small Positive Effect*

Construction: Construction of the Project will support payroll of \$37.34 million over the construction phases of the Project. The Project construction labor income is 0.14 percent of Solano County total labor income and 0.01 percent of the Socioeconomic Study Area total



labor income in 2023. Therefore, no significant adverse impact to income in the region is anticipated from construction of the Project.

Operation: Operation of the Project would support payroll of \$385,000 annually at full-build out over the operational life of the Project (see Exhibit 36 for more detail). Ongoing operation of the Project will displace 9.7 acres of agricultural production, which is associated with no direct employment or income. The Project operational labor income is less than 0.01 percent of the Socioeconomic Study Area total labor income and therefore, no significant adverse impact to income in the region is anticipated from operating the Project.

For supporting analysis, please see sections 3.3.4 Economic Impact Analysis and 3.3.6 Agricultural Production Effects.

IMPACT SOC-5 Employment and Economy: Direct Output

Criteria: Would the Project have an adverse impact on overall employment in the region?

Estimate the expenditures for locally purchased materials for the construction and operation phases of the Project [CEC Socioeconomic Requirement (viii)].

Estimate the capital cost (plant and equipment) of the Project [CEC Socioeconomic Requirement (ix)].

Significance: *Not Significant | Small Positive Effect*

Construction: Construction of the Project would require the purchase of specialized equipment from outside of Solano County and local purchase of construction related goods and services from within Solano County. Total capital cost (plant and equipment only) of the Project is estimated at [REDACTED]. Local construction purchases are anticipated to be [REDACTED] over the construction phase of the Project (see Exhibit 37 and Exhibit 38 for details).

Operation: Operation of the Project would require the purchase of parts and services as needed for operation of the Project over the anticipated 30-year life of the Project. Operations-related parts, services, and equipment purchased annually at full-build out of the Project is anticipated to be [REDACTED], with [REDACTED] anticipated to be local purchases (see Exhibit 39 and Exhibit 40 for details). Operation of the Project would adversely impact economic activity associated with agricultural production in the Project site. Annual agricultural production input purchases equate to [REDACTED] with [REDACTED] in local purchases.

Because spending associated with Project operation would be different than current spending for agricultural production (which would no longer take place within the Project footprint), the distribution of economic impacts could potentially shift resources from agriculture to other sectors of the economy. However, operation of the Project is anticipated to lead to a net increase in spending in the region and therefore, no net adverse impact to spending in the region is anticipated from developing the Project.

For supporting analysis, please see sections 3.3.4 Economic Impact Analysis and 3.3.6 Agricultural Production Effects.

IMPACT SOC-6 Economy and Employment: Total Economic Impacts

Criteria: Would the Project have an adverse impact on overall employment in the region?



Estimate direct, indirect, and induced income and employment effects due to construction and operation of the Project [CEC Socioeconomic Requirement (xii)]

Significance: *Not Significant | Small Positive Effect*

Construction: Construction of the Project is anticipated to contribute 98 direct FTE jobs, 57 indirect FTE jobs, and 74 induced jobs for a total of 229 FTE jobs, accounting for 0.16 percent of all existing employment in Solano County. Construction of the Project is anticipated to contribute ██████████ in direct income, ██████████ in indirect income, and ██████████ in induced income for a total of ██████████ in income, accounting for 0.17 percent of total existing labor income in Solano County. Therefore, no significant adverse impact to employment in the region is anticipated from construction of the Project.

Operation: Operation of the Project is anticipated to contribute 3 direct FTE jobs, 1 indirect FTE job, and 2 FTE induced jobs for a total of 6 FTE jobs annually over the operational life of the Project, accounting for less than 0.01 percent of Solano County employment. Operation of the Project is anticipated to contribute ██████████ in direct labor income, ██████████ in indirect labor income and ██████████ in induced labor income for a total of ██████████ in labor income within Solano County annually over the operational life of the Project, accounting for less than 0.01 percent of total Solano County income.

Ongoing operation of the Project will displace 9.7 acres of agricultural production, which is associated with 0 direct jobs and 0.29 indirect and induced jobs. Agriculture in the Project site annually contributes \$0 in direct income, ██████████ in indirect income, and ██████████ in induced income for a total of ██████████ in income, accounting for less than 0.01 percent of total existing labor income in Solano County.

Because employment associated with Project operation would be different than current employment for agricultural production (which would no longer take place within the Project footprint), the distribution of employment and income would potentially shift from agriculture to other employment sectors of the economy. However, operation of the Project is anticipated to lead to a net employment and income increase in the region and therefore, no net adverse impact to employment and income in the region is anticipated from developing the Project.

For supporting analysis, please see sections 3.3.4 Economic Impact Analysis and 3.3.6 Agricultural Production Effects.

IMPACT SOC-7 Fiscal Impacts

Criteria: Estimate the sales taxes generated during construction and separately during an operational year of the Project. [CEC Socioeconomic Requirement (x)]

Estimate property taxes generated during an operational year of the Project [CEC Socioeconomic Requirement (xi)]

Significance: *Not Significant | Small Positive Effect*

Construction: Construction spending on the Project could result in sales tax benefits for the Socioeconomic Study Area amounting to ██████████ over construction of the Vaca Dixon BESS and ██████████ over construction of the Arges BESS. Construction spending would result in local sales tax revenue amounting to ██████████ over the three-year anticipated construction schedule. Construction of the Project would result in a positive fiscal impact of less than one percent of annual Solano County tax revenue. Sales tax revenue is estimated



based on current knowledge of purchases, however future supply chain conditions could alter the amount of local purchase, leading to a change in sales tax benefits associated with the Project. Construction of the Project would result in development impact fee revenue estimated between [REDACTED] and [REDACTED], which would ultimately be determined by the City depending on classification and building size. These fees will benefit various city departments.

Operation: Spending on operations and maintenance would result in sales tax benefits in the Socioeconomic Study Area amounting to [REDACTED] annually, or less than 0.1 percent of annual Solano County tax revenue. Property taxes associated with operation of the Project at full build-out equate to an average of [REDACTED] annually over the Project’s lifetime, or less than one percent of annual Solano County tax revenue. Actual property tax revenue would depend on the assessor’s determination and other factors upon completion of construction.

For supporting analysis, please see Section 3.3.5 Fiscal Impact Analysis.

IMPACT SOC-8 Educational Facilities

Criteria: For projects outside metropolitan areas with a population of 500,000 or more, information on schools shall include Project-related enrollment changes by grade level groupings and associated facility and staffing impacts by school district during the construction and operating phases [CEC Socioeconomic Requirement (v)]

Estimate the applicable school impact fees. [CEC Socioeconomic Requirement (vi)]

Significance: *Not Significant | No Effect*

Construction: Construction of the Project is not anticipated to result in a significant increased demand on schools since 100 percent of the construction workforce is anticipated to be local. Thus, no impact on enrollment, facilities, and staffing for local school districts is anticipated.

Operation: Operation of the Project is anticipated to require 3 FTE employees that are anticipated to be employed from within the local workforce. Thus, no Project related impact on school enrollment, facilities, and staffing for local school districts is anticipated.

Pursuant to California Education Code Section 17620, a one-time school impact fee is assessed on the Project’s covered and enclosed spaces (California Office of Public School Construction 2025). The one-time fee is calculated at \$0.84 per square foot of development on all categories of new commercial or industrial development based on chargeable covered and enclosed space, assumed to be 1,200 sq ft for the Project. The Project owner would pay a one-time fee estimated at \$1,008 to local school districts in compliance with California Education Code section 17620 (California Office of Public School Construction 2025).

For supporting analysis, please see Sections 3.3.1 Workforce Availability Analysis, 3.3.3 Utilities and Public Service Impact Analysis, and 3.3.5 Fiscal Impact Analysis.

IMPACT SOC-9 Public Services and Facilities

Criteria: Would the Project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance



objectives for any of the public services: fire projection, police protection, schools, parks, other public facilities?

Would the Project impose additional costs on ability to meet local service standards on public services including fire, law enforcement, emergency response, medical facilities, other assessment districts, and school districts [CEC Socioeconomic Requirement (v)]?

Significance: *Less than significant | Potential Temporary and Minor Effects During Construction*

Construction: Construction of the Project could potentially increase the risk of emergency incidents requiring public safety or medical attention and likely would increase the frequency of responses to the Project site. The Project site is located within the Vacaville Fire Department's coverage zone and is less than 10 miles from Fire Station 73. Thus, construction of the Project is not anticipated to negatively impact the Vacaville Fire Department's ability to service existing customers.

The Project site is located along I-80, a well-traveled freeway with significant existing traffic due to population growth in the region (Lewis 2024). Though workforce related to Project construction would temporarily increase traffic commuting to the Project site, this increase would not be significant due to the relatively small number of construction workers required for Project construction. Thus, Project construction would not significantly increase the risk of traffic accidents and other travel and transportation issues requiring emergency service provider response.

Pursuant to Vacaville Municipal Code, section 11.01, the Project would result in development impact fee revenue for City of Vacaville services including police, fire, traffic, storm water, school and a general fund. Fee revenue is estimated at \$36,000 to \$67,000, which would ultimately be determined by the city depending on Project classification and building size. The Project owner would pay a one-time school impact fee estimated at \$1,008 to local school districts.

Operation: Once constructed, the Project could be at increased risk of trespass, vandalism, and theft when compared to current land use. Similar facilities attract people looking for metal and valuable materials to sell, and trespass and theft can sometimes lead to accidents, injuries, and fire that require both law enforcement and medical response. Additional demands on first responders may come from an increased need for specialized training to understand risks and protocols to respond to risks posed by new technologies.

The BESS is a new system in the fire district, and any additional response criteria necessary to respond to an emergency at the Project site will require team training to respond to potential emergencies at the BESS location, though response to a BESS fire is anticipated to incorporate no direct response to protect physical assets (Lewis 2024). Operation of the Project is not anticipated to negatively impact the Vacaville Fire Department's ability to service existing customers.

For supporting analysis, please see Section 3.3.3 Utilities and Public Service Impact Analysis.

IMPACT SOC-10 Utilities

Criteria: Would the Project impose additional costs on utilities or change capacity or service levels for existing or future customers of gas, water, wastewater, or solid waste? [CEC Socioeconomic requirement (v)]



Significance: *Not Significant | Potential Minor and Intermittent Adverse Effects*

Construction: The Project is not anticipated to require or rely on gas or wastewater services. Construction waste would be adequately handled at appropriate local facilities. Construction of the Project will require a maximum of up to approximately 5,000 gallons of water daily over the first 2 to 3 months of each phase of construction and 2,000 to 3,000 gallons of water daily for the remainder of construction activities. The Project will not physically connect to a municipal water system during construction but proposes procuring water from a City of Vacaville metered water source through an existing fire hydrant north of Kilkenny Road. Therefore, the Project does not require expansion of existing municipal infrastructure. Construction of the Project will increase demand for municipal water by a maximum of 5,000 gallons per day representing less than 0.01 percent of daily municipal water deliveries. Thus, no significant adverse impacts to municipal water costs or water service levels for existing or future customers are anticipated due to the Project.

Operation: Once constructed, the Project is not anticipated to require or rely on gas or wastewater services. Ongoing operational waste would be adequately handled at appropriate local facilities. During operation, the total annual water usage for the Project would be less than one acre-foot per year (AFY). Water demand during operation of the Project would be primarily related to fire water and landscaping, as applicable. The Project design includes installation of a fire water loop around the BESS facilities, which would connect to an existing City of Vacaville owned water main. Annual water usage estimate includes flow testing for the fire water system. The Project will increase demand for municipal water by a small amount over the operational phase of the Project, with the daily maximum demand representing roughly 0.01 percent of current daily or less than 0.01 percent of current annual municipal water deliveries. Thus, no significant adverse impacts to municipal water costs or water service levels for existing or future customers are anticipated due to the Project.

For supporting analysis, please see Section 3.3.3 Utilities and Public Service Impact Analysis.

IMPACT SOC-11 Community Character

Criteria: Would the Project change the character of nearby local communities or affect the ability of the local population to address its needs?

Would the Project create a substantial change in community interaction patterns, social organization, social structures, or social institutions; substantial conflict with community attitudes, values, or perceptions; or substantial inequities in the distribution of the costs and benefits?

Significance: *Not Significant | Potential Minor Positive Effects and Minor Adverse Effects*

Construction: Project construction is not anticipated to result in changes to community character arising from changes in local population characteristics because the workforce is anticipated to come from the local area. The Project site is located along I-80, a well-traveled freeway with significant existing traffic due to population growth in the region (Lewis 2024). Though workforce related to Project construction would temporarily increase traffic commuting to the Project site, this increase would not be significant due to the relatively small number of construction workers required for Project construction. Therefore, no adverse impact to community character in the region is anticipated from developing the Project. The



Project site is located near the Vaca-Dixon Substation, so Project activities are not inconsistent with land uses and other activities in the vicinity.

Operation: The Project Site is located on 9.7 acres of active agricultural production, which represents less than 0.01 percent of the 339,500 acres of farms in Solano County in 2022. The Project site is located near the Vaca-Dixon Substation, so Project activities are not inconsistent with existing land uses and other activities in the vicinity. Ongoing operation of the Project will displace 9.7 acres of agricultural production, which is associated with 0.29 jobs representing and less than 0.01 percent of employment in the agricultural sector in Solano County. Therefore, no significant adverse impact to employment in the region is anticipated from operating the Project. Thus, the Project will not substantially change the character of the surrounding land uses or community.

The Project would be expected to increase electric grid reliability in the region and provide voltage support. A reduction in the frequency of power disruptions will benefit residents and businesses in a region that currently faces ongoing electricity constraints (Burris 2024). Increased electric grid stability will allow communities in the region to continue to be productive when they otherwise might not, increasing the local population's ability to address its needs.

The Project is required to develop a Community Benefits Agreement, which would outline a plan to invest resources with local organizations that community leaders, in collaboration with the Applicants, identify as priority needs and would contribute to enhancing community character and resident quality of life.

For supporting analysis, please see Section 3.3.1 Workforce Availability Analysis.

IMPACT SOC-12 Environmental Justice

Criteria: Would the Project result in impacts to environmental justice populations by technical areas and whether any impacts would disproportionately affect the environmental justice populations [CEC socioeconomic Requirements (xiii)]?

Significance: *Not Significant | Potential Minor Adverse Effects*

Construction: Construction of the Project is not anticipated to cause an influx of nonlocal workers or impact local housing supply. The temporary construction workforce would increase the demand for services at the Project site and along commuter routes, including law enforcement, fire protection, emergency medical services, and medical facilities. Increase in demand for these services could place additional pressure on these services, which may adversely impact services for EJ communities of concern in the region.

Operation: Within a 10-mile radius of the Project, 25 of 33 census tracts contain EJ populations composed of minority, low-income, or tribal/indigenous populations. Based on findings in the Project Noise and Vibration Study (Rincon Consultants 2025), no potentially significant noise impacts related to Project operation are known. Air quality and public health do not have any identified potentially significant impacts or associated mitigation measures. Thus, no significant impacts to EJ communities are anticipated.

Operation of the Project would not significantly impact agricultural jobs and income associated with existing agriculture at the Project site. Because the spending and employment associated with Project operation would be different than the current spending and employment associated with agricultural production (which would no longer take place within the Project footprint), the Project would shift economic activity and employment opportunities



from the agricultural sector to other sectors of the economy. However, annual adverse impacts are anticipated to be limited to 0.29 jobs, ██████ in income, representing less than 0.01 percent of employment and labor income in the agricultural sector in Solano County. Due to the relatively small size of adverse impacts compared to the agricultural sector in Solano County, this shift would not be expected to significantly impact EJ communities of concern in the region. Thus, no significant impacts to EJ communities are anticipated.

For supporting analysis, please see Sections 3.3.6 Agricultural Production Effects and 3.3.7 Environmental Justice.



5. Appendices

Appendix A: List of Preparers

Chen, Rebecca: Research Analyst

Knapp, Ryan: Technical Manager

Reich, Sarah: Project Director

Taraghi, Parmis: Senior Research Analyst

Walker, Natalie: Project Manager

Walker-Jones, Delia: Technical Manager

Whelan, Bob: Senior Economist

Wirkkala, Terry: Project Director



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AGENCY CONTACTS AND PERSONAL COMMUNICATION

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Law Envorcement	Chris Polen	Police Chief, City of Vacaville Police Department	chris.polen@cityofvacaville.com	6/11/25		Denied: 06/18/2025
Fire/EMS	Kristian Conception	Fire Chief, City of Vacaville Fire	kris.concepcion@cityofvacaville.com	6/11/25		
Transportation	Vince Jacala	Branch Chief, solano County, CalTrans District 4	vince.jacala@dot.ca.gov	6/11/25	7/17/25	
EMS	Benjamin Gammon	EMS Agency Administrator, Solano County	bggammon@solanocounty.com	10/9/24	10/18/24	
Economic Development Department	Donald Burrus	Director of Economic Development Services, City of Vacaville	don.burrus@cityofvacaville.com	10/9/24	10/18/24	10/21/24
Fire Protection	Todd McNeal	Fire Chief, Dixon Fire Protection District	tmcneal@cityofdixon.us	*no longer employed here		
Fire Protection	Greg Lewis	Intrim Fire Chief, Dixon Fire Protection District	glewis@dixonfireca.gov	10/10/24		10/16/24
Law Enforcement	Thomas Ferrara	Solano County Sheriff	SheriffPIO@SolanoCounty.com	10/9/24	10/18/24	

