ATTACHMENT N: SOCIOECONOMIC REVIEW

Wautoma Solar Energy Project
Socioeconomic Review

Prepared for:

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Acronyms and Abbreviations

ASC	Application for Site Certification
BESS	battery energy storage system
BPA	Bonneville Power Administration
GMA	Growth Management Act
MSA	Metropolitan Statistical Area
Project	Wautoma Solar Energy Project
PV	photovoltaic
RV	recreational vehicle
SR	State Route
WAC	Washington Administrative Code

1. Project Overview

Innergex is planning to construct the Wautoma Solar Energy Project (Project) in northwestern Benton County. Located approximately 1 mile south of the State Route (SR) 241 and SR 24 interchange, the Project is a 470-megawatt[1] solar photovoltaic (PV) generation facility coupled with a 4-hour battery energy storage system (BESS), as well as related interconnection and ancillary support infrastructure. The Project Lease Boundary encompasses approximately 5,852 acres and is located entirely on private land. The Project will connect to the Bonneville Power Administration (BPA) transmission system at the existing BPA Wautoma Substation, which is located on BPA-managed federal lands surrounded by the Project Area. The Applicant intends to begin construction in 2024.

2. Summary of Results

This Socioeconomic Review addresses components of Washington Administrative Code (WAC) 463-60-535 for the Application for Site Certification (ASC). The document contains information about impacts to population, labor force, and housing. The following review indicates that, at peak construction, the locally available workforce should be sufficient to meet demand for local direct workers, which are expected to account for about 45 to 65 percent of the total construction workforce. Local workers are those who normally reside within daily commuting distance of the Project site and would commute daily to the Project site from their homes. Non-local workers hired from outside the area are expected to temporarily relocate to the vicinity of the Project for the duration of their employment. The following review suggests that there are sufficient housing resources to accommodate non-local workers, and the temporary influx of these workers is not expected to constrain the housing market for existing residents or result in changes in housing values, rents, or new housing construction.

3. Socioeconomic Study Area

The primary socioeconomic study area for this analysis is based on WAC 463-60-535 and incorporates areas that may be affected by employment within a 1-hour commute of the Project area. The Project area is located in northwestern Benton County, immediately adjacent to the Benton-Yakima county line. The areas within 1 hour include the city of Yakima; the Tri-Cities of Kennewick, Pasco, and Richland; 20 other smaller incorporated communities; and unincorporated areas in five counties. The five counties are Adams, Benton, Franklin, Grant, and Yakima counties, Washington.

Together, Benton and Franklin counties make up the Kennewick-Richland Metropolitan Statistical Area (MSA). MSAs consist of integrated geographic regions typically made up of an urbanized

[1] Megawatt rating provided in alternating current (MWac)

economic core and economically related counties (Office of Management and Budget 2020). The Tri-Cities of Kennewick, Pasco, and Richland are the core of the Kennewick-Richland MSA. Benton and Franklin counties are the economically related counties that share a high degree of economic integration with the urbanized core and one another. The cities of Kennewick and Richland are located in Benton County; the city of Pasco is located in Franklin County. Yakima County makes up the Yakima MSA. The city of Yakima is the urbanized core, which shares a high degree of economic integration with the surrounding county. These three counties—Benton, Franklin, and Yakima counties—make up the study area for the following review.

Adams and Grant counties are also partially within an approximate 1-hour commute of the Project area. Although within a 1-hour approximate commute, existing employment and commuting patterns suggest that Project employment would have limited impacts on these counties. These counties are, therefore, not included as part of the study area.

4. Population, Labor Force, and Housing

This section addresses components of WAC 463-60-535 related to population, labor force, and housing.

4.1 Population and Labor Force Impacts

(a) Population and growth rate data for the most current ten-year period for the county or counties and incorporated cities in the study area.

Benton County had an estimated population of 209,400 in 2021 (Table 1). A majority of the population (82 percent) lived in one of five incorporated communities, with more than two-thirds of the total living in Kennewick (40 percent) and Richland (29 percent). The tenth most populated county in Washington, Benton County had an average population density of 123.2 people per square mile in 2021 compared to a statewide average of 116.9 people per square mile (Washington OFM 2021a).

Total population in Benton County increased by 29,400 people or 16.3 percent between 2012 and 2021, an increase above the state average of 13.9 percent (Table 1). Population growth results from either net in-migration or natural increase. Net in-migration occurs when more people move to an area than leave. Natural increase occurs when there are more births than deaths. Migration accounted for 70 percent of statewide population growth between 2012 and 2021, with natural increase accounting for the remaining 30 percent. Migration played a slightly smaller role in Benton County, accounting for approximately 65 percent of population growth over this period, with natural increase accounting for the remaining 35 percent (Washington OFM 2021b).

Franklin County had an estimated population of 98,350 in 2021 (Table 1). The majority of the population (80 percent) lives in the city of Pasco, with the remaining population divided between three other incorporated communities (Mesa, Connell, and Kahlotus; 6 percent) and unincorporated areas (14 percent). Franklin County had an average population density of 79.2 people per square mile in 2021 compared to a statewide average of 116.9 people per square mile (Washington OFM 2021a).

Table 1. Population

Geographic Area	Population Estimates		2012 to 2021		
	2012	2021	Net Change	Percent Change	Annual Growth Rate
Benton County[1]	**180,000**	**209,400**	**29,400**	**16.3**	**1.5**
Benton City	3,295	3,500	205	6.2	0.6
Kennewick	75,160	84,620	9,460	12.6	1.2
Prosser	5,785	6,130	345	6.0	0.6
Richland	49,890	61,320	11,430	22.9	2.1
West Richland	12,570	17,070	4,500	35.8	3.1
Unincorporated	33,300	36,760	3,460	10.4	1.0
Franklin County	**82,500**	**98,350**	**15,850**	**19.2**	**1.8**
Pasco	62,670	78,700	16,030	25.6	2.3
Other Incorporated[2]	6,010	5,660	-350	-5.8	-0.6
Unincorporated	13,820	13,990	170	1.2	0.1
Yakima County[1]	**246,000**	**258,100**	**12,100**	**4.9**	**0.5**
Grandview	11,000	10,960	-40	-0.4	0.0
Granger	3,285	3,690	405	12.3	1.2
Harrah	650	580	-70	-10.8	-1.1
Mabton	2,290	1,975	-315	-13.8	-1.5
Moxee	3,505	4,405	900	25.7	2.3
Naches	805	1,110	305	37.9	3.3
Selah	7,290	8,235	945	13.0	1.2
Sunnyside	16,130	16,400	270	1.7	0.2
Tieton	1,195	1,430	235	19.7	1.8
Toppenish	8,950	8,870	-80	-0.9	-0.1
Union Gap	6,105	6,595	490	8.0	0.8
Wapato	5,030	4,610	-420	-8.3	-0.9
Yakima	91,930	97,810	5,880	6.4	0.6
Zillah	3,035	3,190	155	5.1	0.5
Unincorporated	84,800	88,240	3,440	4.1	0.4
Washington State	**6,817,770**	**7,766,975**	**949,205**	**13.9**	**1.3**

Notes:
1. All five incorporated communities in Benton County are within an approximate 1-hour commute from the Project; this is also the case with all 14 incorporated communities in Yakima County.
2. The other incorporated communities in Franklin County (Connell, Kahlotus, and Mesa) are more than an approximately 1-hour commute from the Project.

Source: Washington OFM 2021c

Total population in Franklin County increased by an estimated 15,850 people or 19.2 percent between 2012 and 2021, an increase above the state average of 13.9 percent (Table 1). Natural increase accounted for more than two-thirds (67 percent) of the increase, with net in-migration making up the remaining 33 percent (Washington OFM 2021b).

Yakima County had an estimated population of 258,100 in 2021 (Table 1). More than one-third of the population (38 percent) lives in the city of Yakima, 28 percent lives in one of the 13 other incorporated communities, and the remaining 34 percent live in unincorporated parts of the county. Yakima County had an average population density of 60.1 people per square mile in 2021 compared to a statewide average of 116.9 people per square mile (Washington OFM 2021a).

Total population in Yakima County increased by an estimated 12,100 people or 4.9 percent between 2012 and 2021, an increase below the state average of 13.9 percent (Table 1). More people moved from than to Yakima County over this period, resulting in a loss of 3,900 people through net out-migration. This loss was, however, more than offset by natural increase, which accounted for all of the population gain over this period (Washington OFM 2021b). A number of the smaller communities in Yakima County lost population over this period (Table 1).

(b) Published forecast population figures for the study area for both the construction and operation periods.

The Washington OFM prepares county population projections for planning under Washington State's Growth Management Act (GMA). High-, medium-, and low-growth expectations are prepared for each county, with the medium series considered the most likely because it is based on assumptions that have been validated with past and current information (Washington OFM 2018). Current projections developed in support of the GMA extend through 2040, with supplemental projections developed from 2040 through 2050 to provide additional data for counties.

The Project is expected to have an operational life of 35 years, which would extend beyond the available population projections. However, projections are available through 2050 and provide useful insight into anticipated population growth over the operational life of the Project. Population is projected to continue grow from 2020 through 2050 in the study area counties, as well as statewide (Table 2).

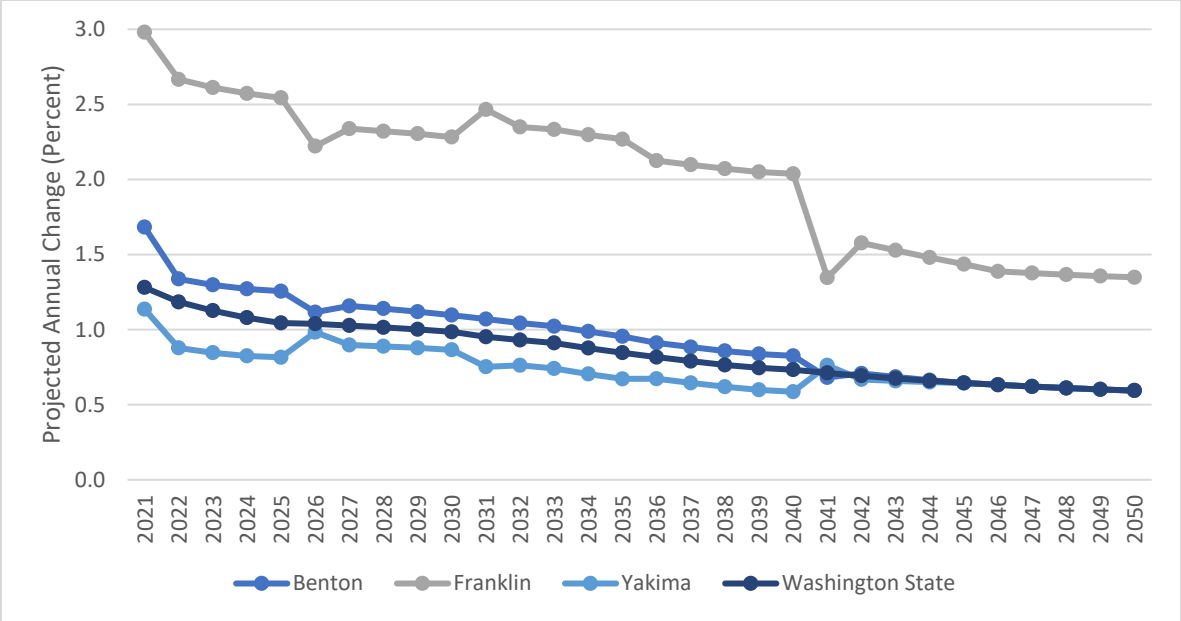
From 2020 to 2025, population was projected to increase by 7 percent and 15 percent in Benton and Franklin counties, respectively, and 5 percent in Yakima County compared to a statewide average of 6 percent. Population is also projected to increase at a faster rate in Franklin County from 2020 to 2050, with a projected increase of about 83 percent (82,900 people), compared to smaller relative increases of 33 percent (65,600 people) in Benton County, 25 percent (65,100 people) in Yakima County, and 29 percent (2.2 million people) statewide (Table 2). Annual growth rates in Franklin County are expected to be more than twice the state average for almost the entire period. Projected annual rates in Benton County are higher than the state average from 2020 to 2040 and the same from 2041 to 2050 (Figure 1). Annual gains in Yakima County are mostly lower than the state average from 2021 to 2040 and mostly the same from 2041 to 2050.

Table 2. Population Projections 2020 to 2050

Geographic Area	2020 (Census Count)[1]	2020 (Projection)[2]	2025	2030	2040	2050
Benton County	206,873	201,563	215,740	228,162	250,524	267,139
Franklin County	96,749	99,712	113,781	127,443	158,574	182,589
Yakima County	256,728	262,887	274,932	287,567	307,591	327,994
Washington State	**7,707,047**	**7,638,415**	**8,085,043**	**8,503,178**	**9,242,022**	**9,855,117**

Notes:
1. U.S. Census counts for 2020 are federal census counts for that year. Estimates for 2021 are provided in Table 1.
2. The population projections here, including the 2020 projection, are Medium series projections developed in 2017 in support of Washington State's GMA.

Sources: Washington OFM 2018, 2021c



Source: Washington OFM 2018

Figure 1. Projected Annual Change in Population, 2021 to 2050

(c) Numbers and percentages describing the race/ethnic composition of the cities and counties in the study area.

According to the most recent U.S. Census estimates, more than two-thirds (68.5 percent) of the population of Washington state is White. Persons of Hispanic or Latino origin were identified as the single largest minority group, accounting for 12.7 percent of the total population (Table 3). A similar share of the total population in Benton County was identified as White (70.4 percent), with persons of Hispanic or Latino origin accounting for a much larger share than the statewide average (21.7 percent compared to 12.7 percent) (Table 3). The majority of the populations in four of the incorporated communities in Benton County were White, with White populations ranging from 63.9 percent (Benton City) to 79.8 percent (West Richland). In Prosser, the other incorporated community in Benton County, slightly less than half of the population (48.7 percent) was identified as White, with persons of Hispanic or Latino origin accounting for 46.4 percent of the total (Table 3).

Less than half (40.4 percent) of the population in Franklin County was identified as White, with persons of Hispanic or Latino origin accounting for an estimated 53.1 percent of the total. In Pasco the corresponding totals were 38.1 percent (White) and 55.5 percent (Hispanic or Latino) (Table 3).

Similar to Franklin County, in Yakima County, less than half (43.2 percent) of the population was identified as White, with persons of Hispanic or Latino origin accounting for an estimated 49.3 percent of the total. The Hispanic/Latino share of the population exceeded the county average in 10 of the 14 incorporated communities in Yakima County, ranging from about 51 percent (Moxee) to 94 percent (Mabton) of the total (Table 3). The American Indian share of the population in Yakima County also exceeded the state average, 3.5 percent compared to 1.1 percent. The American Indian population exceeded the county average in three of the incorporated communities in Yakima County: Zillah (5.4 percent), Wapato (12.7 percent), and Harrah (18.3 percent) (Table 3).

Table 3. Race and Ethnicity, 2019

Geographic Area	Total Population[1]	Percent of Total				
		White[2]	Hispanic or Latino	American Indian and Alaska Native[2]	Some other race[2,3]	Two or more races[2]
Benton County	**197,518**	**70.4**	**21.7**	**0.6**	**4.3**	**3.0**
Benton City	3,373	63.9	32.7	1.9	0.1	1.4
Kennewick	81,479	64.9	26.9	0.4	4.6	3.1
Prosser	6,202	48.7	46.4	1.8	3.1	0.0
Richland	56,399	78.0	11.4	0.5	6.4	3.7
West Richland	14,495	79.8	12.6	0.9	3.0	3.6
Franklin County	**92,009**	**40.4**	**53.1**	**0.3**	**4.2**	**2.0**
Pasco	72,899	38.1	55.5	0.3	4.1	2.1
Yakima County	**249,697**	**43.2**	**49.3**	**3.5**	**2.1**	**2.0**
Grandview	11,116	14.1	84.6	0.0	1.0	0.3
Granger	3,756	10.0	88.4	0.6	0.8	0.3
Harrah	613	15.7	62.8	18.3	0.2	3.1
Mabton	2,087	5.0	93.8	0.0	1.0	0.3
Moxee	4,012	40.4	51.1	3.1	3.5	1.8
Naches	627	88.2	7.8	0.5	3.5	0.0
Selah	7,856	75.2	20.2	0.3	1.6	2.7
Sunnyside	16,559	13.4	85.3	0.1	0.5	0.7
Tieton	1,686	12.9	85.0	1.4	0.5	0.2
Toppenish	8,873	9.0	86.6	3.1	0.8	0.5
Union Gap	6,163	40.7	56.5	1.5	0.5	0.8
Wapato	5,041	6.1	78.7	12.7	1.1	1.4
Yakima	93,413	47.9	45.7	1.3	3.1	2.0
Zillah	3,116	57.8	33.6	5.4	0.0	3.2
Washington	**7,404,107**	**68.5**	**12.7**	**1.1**	**12.9**	**4.8**

Notes:
1. All estimates are annual totals developed as part of the 2015-2019 American Community Survey 5-Year Estimates.
2. Non-Hispanic only. The federal government considers race and Hispanic/Latino origin to be two separate and distinct concepts. People identifying as Hispanic or Latino origin may be of any race. The data summarized in this table present Hispanic/Latino as a separate category.
3. The "Other" category presented here includes census respondents identifying as: Black or African American; Asian; Native Hawaiian and Other Pacific Islander; or Some Other Race.

Source: U.S. Census Bureau 2020a

(d) Aggregate per capita and household incomes, including the number and percentages of the population below the poverty level for the cities and counties within the study area.

Per capita and median household incomes were below the state averages in all three counties. This was also the case for all the incorporated communities within an approximately 1-hour commute of the Project Lease Boundary, with the exception of Richland and West Richland in Benton County (Table 4). Both per capita and median household income were higher than the state averages in Richland. In West Richland, median household income was higher than the state median.

Table 4. Income and Poverty by County and City

Geographic Area[1]	Per Capita Income		Median Household Income		Poverty	
	2019 Dollars	Percent of State Per Capita	2019 Dollars	Percent of State Median	Population Below Poverty Level	Percent of Total Population[2]
Benton County	**32,882**	**84**	**69,023**	**94**	**23,336**	**11.9**
Benton City	25,950	67	55,175	75	406	12.2
Kennewick	27,731	71	59,533	81	12,432	15.5
Prosser	23,848	61	50,164	68	1,122	18.1
Richland	40,100	103	77,686	105	4,990	8.9
West Richland	36,191	93	99,817	135	1,192	8.3
Franklin County	**24,380**	**63**	**63,584**	**86**	**13,558**	**15.2**
Pasco	24,230	62	62,775	85	11,191	15.5
Yakima County	**23,459**	**60**	**51,637**	**70**	**42,755**	**17.4**
Grandview	16,783	43	49,002	66	1,724	15.7
Granger	15,322	39	49,958	68	703	18.7
Harrah	21,251	55	57,917	79	106	17.3
Mabton	13,656	35	42,378	57	416	20.3
Moxee	20,561	53	59,297	80	701	17.5
Naches	31,848	82	61,528	83	61	9.9
Selah	30,451	78	58,120	79	731	9.5
Sunnyside	16,259	42	42,780	58	3,696	22.6
Tieton	13,849	36	45,852	62	446	26.5
Toppenish	16,384	42	50,089	68	1,565	17.9
Union Gap	17,832	46	41,310	56	1,570	25.9
Wapato	14,565	37	40,772	55	1,517	30.9
Yakima	23,514	60	44,950	61	18,544	20.4
Zillah	27,548	71	63,667	86	500	16.0
Washington State	**38,915**	**100**	**73,775**	**100**	**785,244**	**10.8**

Notes:
1. Estimates are annual totals developed as part of the 2015-2019 American Community Survey 5-Year Estimates.
2. This represents the percent of the total population for whom poverty status is determined. Poverty status is determined for all people except institutionalized people, people in military group quarters and college dormitories, and unrelated individuals under 15 years old.

Sources: U.S. Census Bureau 2020b,c,d

The estimated share of the population below the poverty level in Washington state was 10.8 percent in 2019. The corresponding rates in all three counties were higher than the state average, ranging from 11.9 percent in Benton County to 17.4 percent in Yakima County, with an estimated 15.2 percent of the population below the poverty level in Franklin County. In Benton County, the share of households below the poverty level in the five incorporated communities within 1 mile of the Project area ranged from 8.3 percent (West Richland) to 18.1 percent (Prosser). The corresponding share in Pasco (15.5 percent) was slightly higher than the county average (15.2 percent). In Yakima County, the corresponding shares ranged from 9.5 percent (Selah) to 30.9 percent (Wapato). The share of the population below the poverty rate also exceeded 20 percent in five of the other communities in Yakima County (Mabton, Sunnyside, Tieton, Union Gap, and Yakima) (Table 4).

(e) A description of whether or not any minority or low-income populations would be displaced by this project or disproportionately impacted.

As indicated in Part 3, Section 15 of the ASC, the Project is not expected to displace existing or future housing, including housing for minority or low-income populations. No residences are located within the Project Lease Boundary, and none will be displaced as a result of the Project.

(f) The average annual work force size, total number of employed workers, and the number and percentage of unemployed workers including the year that data are most recently available. Employment numbers and percentage of the total work force should be provided for the primary employment sectors.

The average annual work force size, total number of employed workers, and the number and percentage of unemployed workers are presented for Benton, Franklin, and Yakima counties and Washington state in Table 5. Statewide, the average annual employment rate in 2021 was 5.2 percent. Viewed by county, the corresponding rates were 5.6 percent (Benton County), 6.6 percent (Franklin County), and 7.0 percent (Yakima County) (Table 5).

Table 5. Average Annual Workforce, 2021

Geographic Area	Civilian Labor Force	Employment	Unemployment	Unemployment Rate
Benton County	104,709	98,851	5,858	5.6%
Franklin County	43,810	40,929	2,881	6.6%
Yakima County	131,144	121,998	9,146	7.0%
Washington State	**3,913,513**	**3,708,738**	**204,775**	**5.2%**
Source: Washington Employment Security Department 2022				

An estimated 111,173 people were employed in Benton County in 2020. Health care and social assistance was the largest economic sector based on employment, accounting for about 13.5 percent of total employment, followed by government, which accounted for 11.2 percent (Table 6). In Franklin County, an estimated 42,590 people were employed in 2020. Government was the largest sector, accounting for 16.3 percent of total employment (Table 6). An estimated 132,124 people were employed in Yakima County in 2020. Agriculture was the largest employer, accounting for 14.6 percent of employment, followed by the health care and social assistance sector and government, each accounting for almost 14 percent of the total (Table 6).

Table 6. Employment by Economic Sector, 2020

Economic Sector	Benton County	Franklin County	Yakima County	Washington State
Total Employment[1]	**111,173**	**42,590**	**132,124**	**4,385,827**
Percent of Total[2]				
Agriculture	4.6	9.5	14.6	2.1
Forestry, fishing, and hunting	(D)	(D)	7.9	1.0
Mining	(D)	(D)	0.1	0.1
Utilities	0.1	(D)	0.1	0.1
Construction	8.2	7.5	4.1	6.2

Table 6. Employment by Economic Sector, 2020

Economic Sector	Benton County	Franklin County	Yakima County	Washington State
Manufacturing	4.4	9.0	6.5	6.6
Wholesale trade	1.5	4.9	3.7	3.2
Retail trade	10.6	9.7	9.8	10.4
Transportation and warehousing	2.1	(D)	3.5	4.3
Information	0.7	0.4	0.5	3.7
Finance and insurance	3.4	1.7	2.2	3.9
Real estate, rental, and leasing	3.5	3.2	2.8	4.6
Professional, scientific, and technical services	10.0	2.8	2.5	7.8
Management of companies and enterprises	0.5	0.1	0.6	1.1
Administrative and waste management services	10.3	3.6	2.3	4.9
Educational services	1.0	1.4	1.5	1.8
Healthcare and social assistance	13.5	8.8	13.8	11.2
Arts, entertainment, and recreation	1.4	1.0	1.0	1.8
Accommodation and food services	6.5	4.8	4.9	5.6
Other services (except public administration)	4.4	5.2	3.9	4.8
Government	11.2	16.3	13.7	14.6

Notes:
(D) Not shown to avoid disclosure of confidential information; estimates for this item are, however, included in the totals.
1. Employment estimates include self-employed individuals. Employment data are by place of work, not place of residence, and therefore include people who work in the area but do not live there. Employment is measured as the average annual number of jobs, both full-time and part-time, with each job counted at full weight.
2. Percentages for two of the counties (Benton and Franklin) do not sum to 100 because employment counts are not provided for some sectors to avoid disclosing confidential information (identified by [D] in the table).

Source: U.S. Bureau of Economic Analysis 2021

(g) An estimate by month of the average size of the project construction, operational work force by trade, and work force peak periods.

The proposed schedule and workforce are summarized in Table 7 and Figure 2. Construction is expected to begin in 2024 and will require approximately 22 months to complete. During the first 60 days, there would be site clearing and grading of access roads. Construction personnel would likely involve about 30 to 50 workers during this period. Once Project construction begins, the number of workers employed on-site will increase and peak at approximately 515 workers. On average, 225 workers will be employed on-site over the 22-month construction period (Table 7). Construction employment will generally follow a bell-shaped curve, with the on-site workforce dropping back to approximately 50 workers during the final months of construction (Figure 2).

Table 7. Proposed Schedule and Workforce

Phase	Proposed Timing	Duration	Employee Numbers on Site and Frequency
Site preparation	2024	60 days	Approximately 30 to 50 workers
Construction	2024 to 2025	22 months	On average 225, with a peak construction workforce of 515
Operation/use	2026	35 years	Up to 4
Closure/reclamation	2061	6 months	Similar to, or less than those required for construction

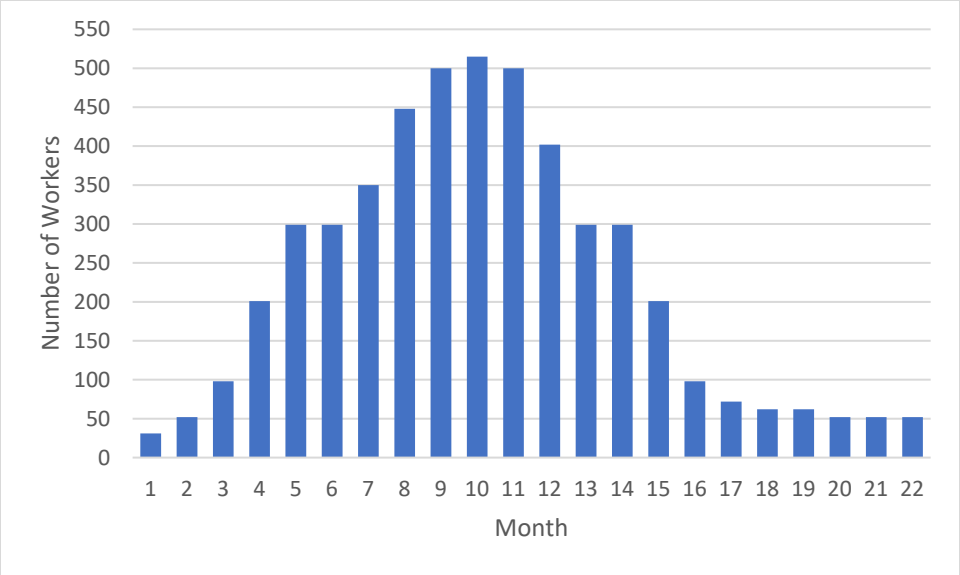


Figure 2. Estimated On-Site Construction Workforce by Month

During operation, the Applicant anticipates that up to four workers will be on-site, but not necessarily every day. On-site workers will include one site manager employed directly by the Applicant and two to three technicians from their O&M provider.

(h) An analysis of whether or not the locally available work force would be sufficient to meet the anticipated demand for direct workers and an estimate of the number of construction and operation workers that would be hired from outside of the study area if the locally available work force would not meet the demand.

As indicated in Part 2, Section A.2, the Applicant is developing a strategy to ensure that local benefits reach the community, local landowners, local skilled workers, and local businesses. A campaign will be run during construction to maximize local construction worker hiring (i.e., within 1 hour from the Project and within Washington). This strategy will include a local procurement policy, community event sponsorship, and participation throughout the Project's life cycle.

With this in mind, the Applicant anticipates that a majority of the on-site construction workforce will be hired locally to the extent workers are available, with an estimated 45 to 65 percent of the workforce expected to already reside within a 1-hour commute of the Project area. Based on this estimate, the local workforce employed on-site would average 101 to 146 workers over the 22-month construction period, with a peak of about 232 to 335 workers.

Review of occupational data for the two MSAs within 1 hour indicates that the area has a large construction workforce pool. Representative occupational employment estimates for the disciplines required to construct the Project are presented for the Kennewick-Richland and Yakima MSAs in Tables 8 and 9, respectively. In addition to total employment, Tables 8 and 9 also provide location quotient information as well as mean hourly and annual wage data. The location quotients, which are a measure of relative economic specialization, indicate that the local share of employment in the representative occupations identified in Table 8 for the Kennewick-Richland MSA exceeds the corresponding national averages in five of the six identified occupations. The

corresponding shares for the Yakima MSA exceed the national averages for two of the occupations (Table 9).

Table 8. Existing Construction Workforce in the Kennewick-Richland MSA by Occupation

SOC Code[1]	Labor Discipline	Total Employment	Location Quotient[2]	Mean Hourly Wage[3]	Mean Annual Wage[3]
11-9021	Construction Managers	420	1.79	48.81	101,520
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	920	1.82	40.35	83,920
47-2061	Construction Laborers	1,410	1.77	23.69	49,270
47-2073	Operating Engineers and Other Construction Equipment Operators	380	1.16	32.10	66,760
47-2111	Electricians	1,230	2.29	37.89	78,820
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,300	0.88	24.08	50,090

Notes:
SOC = standard occupational classification
1. Data are for May 2020, the most current data available.
2. The location quotients estimated here by the U.S. Bureau of Labor Statistics show an occupation's share of an area's employment relative to the national average. A location quotient above 1.0 indicates that an occupation accounts for a larger share of employment in an area than it does nationally, and a location quotient below 1.0 indicates the area's share of employment in the occupation is lower than the national share.
3. These wage estimates represent wages and salaries only, and do not include employee bonuses or nonwage costs to the employer, such as health insurance or employer contributions to retirement plans.

Source: U.S. Bureau of Labor Statistics 2022

Table 9. Existing Construction Workforce in the Yakima MSA by Occupation

SOC Code[1]	Labor Discipline	Total Employment	Location Quotient[2]	Mean Hourly Wage[3]	Mean Annual Wage[3]
11-9021	Construction Managers	100	0.52	41.46	86,240
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	210	0.53	35.39	73,620
47-2061	Construction Laborers	580	0.92	20.46	42,560
47-2073	Operating Engineers and Other Construction Equipment Operators	110	0.44	25.89	53,850
47-2111	Electricians	430	1.01	26.90	55,950
53-3032	Heavy and Tractor-Trailer Truck Drivers	1,360	1.16	23.68	49,260

Notes:
See notes to Table 8.
Source: U.S. Bureau of Labor Statistics 2022

(i) A list of the required trades for the proposed project construction.

Trades required during the construction phase of the Project include:

- Construction managers and supervisors
- Construction laborers
- Equipment operators
- Electricians
- Truck drivers

The corresponding occupational categories are identified above in Tables 8 and 9.

(j) An estimate of how many direct or indirect operation and maintenance workers (including family members and/or dependents) would temporarily relocate.

Operation and maintenance of the Project is anticipated to employ up to four workers (Table 7). These workers and their families are likely to reside within daily commuting distance and will either already reside in the area or permanently relocate. Up to four workers and their family members could potentially relocate. The average U.S. family household consisted of 3.13 people per family in 2021 (U.S. Census Bureau 2021). Applying this average family household size results in up to 13 people permanently relocating to the Project vicinity during Project operation.

(k) An estimate of how many workers would potentially commute on a daily basis and where they would originate.

Workers hired locally (i.e., within Benton, Franklin, and Yakima counties) would commute daily between the Project and their normal place of residence. During construction, an estimated average of 101 to 146 local workers would commute daily to the Project site, with an estimated 232 to 335 local workers on-site during peak construction (see Section (h) above). Based on the existing distribution of population in the three counties, the majority of these workers would likely normally reside in the larger cities of Kennewick, Richland, Pasco, and Yakima (see Table 1).

The remainder of the estimated construction workforce (an average of 79 to 124 workers, with a peak of 180 to 283) would be non-local and would temporarily relocate to the vicinity of the Project for the duration of their employment. The majority of these workers would likely seek temporary accommodation in the larger nearby communities, where much of this type of accommodation is located (see Housing Impacts, Section (a), below). These workers would commute daily between the Project and their temporary place of residence.

During operations, an estimated two to four workers would commute daily to and from the Project.

4.2 Housing Impacts

(a) Housing data from the most recent ten-year period that data are available, including the total number of housing units in the study area, number of units occupied, number and percentage of units vacant, median home value, and median gross rent. A description of the available hotels, motels, bed and breakfasts, campgrounds or other recreational facilities.

Housing resources are summarized by city, county, and state in Table 10. The data presented in this table are annual estimates for 2019 prepared by the U.S. Census Bureau using 5 years of data (2015 to 2019) (U.S. Census Bureau 2020e). The U.S. Census Bureau defines a housing unit as a house, apartment, mobile home or trailer, group of rooms, or single room occupied or intended to be occupied as separate living quarters. There were an estimated 76,241 housing units in Benton County in 2019, with the cities of Kennewick and Richland together accounting for almost three-quarters of the total, 41 percent and 31 percent, respectively (Table 10). An estimated total of 4,120 units were vacant in Benton County in 2019, approximately 5.4 percent of the total. Median values for owner-occupied homes were below the state median ranging from about $148,400 in Benton City to about $270,500 in West Richland. Median rent for renter-occupied units ranged from $835 (Prosser) to more than $1,000 (Richland and West Richland).

Franklin County had an estimated total of 28,063 housing units in 2019, with the city of Pasco accounting for 81 percent of the total (Table 10). An estimated total of 1,340 units were vacant in Franklin County in 2019, approximately 4.8 percent of the total. Median values for owner-occupied homes were lower than in adjacent Benton County, with a county-wide median of $202,400 compared to a Benton County median of $235,800. Median rent for renter-occupied units in Franklin County was $913, slightly lower than the median in Benton County ($974) (Table 9).

Yakima County had an estimated total of approximately 88,700 housing units in 2019. The city of Yakima accounted for 40 percent of the total, with 24 percent located in the other 13 incorporated communities and the remaining 36 percent of the total located in unincorporated areas (Table 10). An estimated total of 5,650 units were vacant in Yakima County in 2019, approximately 6.4 percent of the total. Median values for owner-occupied homes ($175,900) and median rent for renter-occupied units ($825) were both lower than the corresponding values for Benton and Franklin counties (Table 10).

Table 10. Housing Characteristics

Geographic Area	Total Housing Units	Occupied Housing Units	Vacant Housing Units		Median Home Value (dollars)	Median Gross Rent (dollars)
			Number	Percent of Total		
Benton County	**76,241**	**72,121**	**4,120**	**5.4**	**235,800**	**974**
Benton City	1,276	1,245	31	2.4	148,400	863
Kennewick	31,093	29,341	1,752	5.6	215,500	922
Prosser	2,635	2,534	101	3.8	182,900	835
Richland	23,582	22,263	1,319	5.6	263,500	1,087
West Richland	4,931	4,746	185	3.8	270,500	1,280
Franklin County	**28,063**	**26,723**	**1,340**	**4.8**	**202,400**	**913**
Pasco	22,736	21,824	912	4.0	199,400	922
Yakima County	**88,698**	**83,048**	**5,650**	**6.4**	**175,900**	**825**
Grandview	3,445	3,275	170	4.9	145,400	782
Granger	902	863	39	4.3	115,200	809
Harrah	192	188	4	2.1	122,600	832
Mabton	569	528	41	7.2	100,000	730
Moxee	1,103	1,063	40	3.6	171,700	1,150
Naches	325	296	29	8.9	155,900	921
Selah	3,104	2,935	169	5.4	224,800	1,027
Sunnyside	4,885	4,561	324	6.6	129,400	722
Tieton	457	425	32	7.0	120,400	820
Toppenish	2,538	2,448	90	3.5	130,100	704
Union Gap	2,236	2,081	155	6.9	107,800	868
Wapato	1,353	1,279	74	5.5	112,400	687
Yakima	35,800	33,772	2,028	5.7	173,000	820
Zillah	1,276	1,144	132	10.3	178,400	921
Washington	**3,106,528**	**2,848,396**	**258,132**	**8.3**	**339,000**	**1,258**

Note:
1. Estimates are annual totals developed as part of the 2015-2019 American Community Survey 5-Year Estimates.
Source: U.S. Census Bureau 2020e

The number of housing units has increased statewide and in all three counties since 2010, with net gains of about 12,800 units (18.6 percent), 6,000 units (24.6 percent), and 5,800 units (6.8 percent) in Benton, Franklin, and Yakima counties, respectively (Table 11). Viewed by community, the largest absolute increase (6,140 units) and second largest relative increase (32.7 percent) was in Pasco, followed by Richland (5,030 units) and Kennewick (4,160 units) (Table 11).

Table 11. Number of Housing Units, 2010 to 2021

Geographic Area	2010	2021	2010 to 2021	
			Net Change	Percent Change
Benton County	**68,618**	**81,386**	**12,768**	**18.6**
Benton City	1,162	1,403	241	20.7
Kennewick	28,507	32,668	4,161	14.6
Prosser	2,129	2,375	246	11.6
Richland	20,876	25,905	5,029	24.1
West Richland	4,298	6,104	1,806	42.0
Franklin County	**24,423**	**30,441**	**6,018**	**24.6**
Pasco	18,782	24,924	6,142	32.7
Yakima County	**85,474**	**91,292**	**5,818**	**6.8**
Grandview	3,136	3,292	156	5.0
Granger	813	967	154	18.9
Harrah	180	187	7	3.9
Mabton	548	563	15	2.7
Moxee	1,032	1,392	360	34.9
Naches	346	405	59	17.1
Selah	2,759	3,108	349	12.6
Sunnyside	4,556	4,864	308	6.8
Tieton	385	468	83	21.6
Toppenish	2,334	2,463	129	5.5
Union Gap	2,173	2,293	120	5.5
Wapato	1,293	1,322	29	2.2
Yakima	34,887	37,743	2,856	8.2
Zillah	1,105	1,154	49	4.4
Washington State	**2,885,677**	**3,248,713**	**363,036**	**12.6**

Source: Washington OFM 2022

Rental housing resources are summarized in Table 12. Viewed by county, these estimates suggest that rental housing is available in all three counties, with an estimated 1,232 units available for rent in Benton County, 234 units available in Franklin County, and 904 units in Yakima County. More than 90 percent of the estimated units available in Benton County are in Kennewick (49 percent) and Richland (45 percent). Kennewick and Richland both had estimated rental vacancy rates (5.2 percent and 6.6 percent, respectively) that exceeded the Benton County average (5.1 percent) (Table 11).

These data suggest that rental housing markets are tighter in Franklin and Yakima counties, with respective estimated vacancy rates of 2.7 percent and 2.8 percent. In Franklin County, an estimated 234 housing units were available for rent, with two-thirds (66 percent, 155 units) of this total located in the city of Pasco (Table 11). In Yakima County, an estimated 904 units were available for

rent, with 60 percent (546 units) located in the city of Yakima. Additional units classified for seasonal, recreational, or occasional use may also be available in both counties (Table 11).

Rental housing options may also include other special living situations, such as Airbnb units and spare bedrooms in homes that residents would be willing to rent to construction workers. These types of potential housing opportunities are not included in the data presented in Table 12.

Table 12. Rental Housing, 2019

Geographic Area	Total Vacant Housing Units[1]	Rental Vacancy Rate[1]	Units Available for Rent[1]	Seasonal, Recreational, or Occasional Use[1,2]
Benton County	**4,120**	**5.1**	**1,232**	**661**
Benton City	31	1.4	4	12
Kennewick	1,752	5.2	602	173
Prosser	101	0	0	0
Richland	1,319	6.6	557	172
West Richland	185	0	0	70
Franklin County	**1,340**	**2.7**	**234**	**112**
Pasco	912	2.3	155	56
Yakima County	**5,650**	**2.8**	**904**	**1,234**
Grandview	170	1.3	19	0
Granger	39	4.3	16	0
Harrah	4	1.5	1	1
Mabton	41	12.1	17	0
Moxee	40	0	0	0
Naches	29	0	0	0
Selah	169	0	0	47
Sunnyside	324	2.1	41	29
Tieton	32	0	0	19
Toppenish	90	0.8	7	7
Union Gap	155	6.9	48	10
Wapato	74	7.5	52	0
Yakima	2,028	3.4	546	189
Zillah	132	6.8	32	16
Washington State	**258,132**	**3.6**	**40,176**	**94,397**

Notes:
1. All data are annual estimates from the American Community Survey 5-year estimates for 2015-2019.
2. Housing units for seasonal, recreational, or occasional use are generally considered to be vacation homes. They are not included in the estimated number of housing units shown here as available for rent.

Sources: U.S. Census Bureau 2020e,f

Temporary housing is also available in the form of hotel and motel rooms. Data compiled by STR Global, a travel research firm, identified 44 hotels in the Tri-Cities area in November 2017, with a total of 4,063 guestrooms (ECONorthwest 2018). STR Global compiles data for commercial lodging establishments with at least 15 rooms. They do not count single-room occupancy hotels, most bed and breakfast inns, or short-term rentals like Airbnb. A number of new hotels have opened in the Tri-Cities in recent years and several others are currently under construction. With these additions,

the number of guestrooms in the Tri-Cities is expected to increase to about 4,700 (Culverwell 2020). Other recent trends in the area include the potential conversion of existing hotels and motels to micro-apartments (Carter 2022, Culverwell 2022). Lodging facilities available elsewhere in Benton County include four hotels in Prosser, with more than 140 guestrooms.

Hotels in the Tri-Cities had an overall average occupancy rate of 62.5 percent from December 2016 to November 2017. The market is seasonal, with monthly occupancy rates ranging from 42 percent in December to 77 percent in June. Occupancy in July and August averaged 69 percent. The Tri-Cities attracts a larger than average share of business and meeting visitors, which tends to support fairly strong occupancy in the shoulder seasons (spring and fall) (ECONorthwest 2018).

In Yakima, there were 30 hotels and motels in 2017, with an estimated total of 2,400 guestrooms. Occupancy rates in the area have historically averaged around 55 to 60 percent (Hoang 2017).

Temporary accommodation in the study area also includes recreational vehicle (RV) parks and campsites. Facilities in Benton and Franklin counties within 1 hour of the Project area include 15 RV parks and campgrounds, with a total of 1,640 RV spaces. Parks and campgrounds are located in Richland, West Richland, Pasco, Prosser, Benton City, and Vantage. An additional six RV parks and campgrounds, with a total of 390 spaces, are located within 1 hour of the Project area in Yakima County, including locations in Yakima, Sunnyside, and Selah.[2]

(b) How and where the direct construction and indirect work force would likely be housed. A description of the potential impacts on area hotels, motels, bed and breakfasts, campgrounds and recreational facilities.

Project construction is expected to begin in 2024 and require approximately 22 months to complete. On average, 225 workers will be employed on-site with an estimated peak of 515 workers on-site at one time. The non-local share of the workforce is estimated to be approximately 35 to 55 percent, with non-local workers expected to temporarily relocate to the vicinity of the Project for the duration of their employment. As a result, an estimated average of 79 to 124 workers are expected to seek temporary accommodation in the Project vicinity, with an estimated peak of 180 to 283 workers.

Non-local workers are expected to seek a range of temporary accommodations, including rental housing (houses, apartments, mobile homes), hotel/motel rooms, and RV parks/campgrounds, as well as other special living situations such as Airbnb units and spare bedrooms. The review of temporary housing resources presented above indicates that temporary housing resources in the study area include approximately 2,100 housing units that are vacant and available for rent, with additional units classified for seasonal, recreational, or occasional use that may also be available (Table 12). Temporary housing is also available in the form of hotel and motel rooms. Available estimates indicate that there are about 7,100 hotel and motel rooms in the vicinity of the Project.

[2] Data on RV parks and campsites were compiled from a number of online sources, including visittri-cities.com, rvshare.com, goodsam.com, and campgroundreviews.com, as well as individual campground web sites.

Assuming a peak occupancy of 77 percent suggests that approximately 1,630 rooms are normally empty and available for rent.

This review indicates that existing temporary housing resources in the study area that are normally vacant and available for rent exceed estimated Project construction-related demand. Viewed as a share of the supply of housing units available for rent (2,100 units) and the normally available supply of hotel and motel rooms (1,630 rooms), peak demand (180 to 283 workers) would be equivalent to about 5 to 8 percent of the normally available supply. Note that this likely overestimates the number of units that would be required (up to 283 during peak construction) because it assumes that the estimated demand will be single occupancy. In practice, workers are likely to share rental accommodations and also consider sharing hotel/motel rooms to reduce costs.

In addition, temporary accommodation in the study area includes 21 RV parks and campgrounds, with a combined total of more than 2,030 RV spaces (see the preceding section). There are also a number of homes for seasonal, recreational, or occasional use in the Project vicinity, and workers may seek alternative living situations including Airbnb units and spare bedrooms in homes that residents would be willing to rent to construction workers.

(c) Whether or not meeting the direct construction and indirect work force's housing needs might constrain the housing market for existing residents and whether or not increased demand could lead to increased median housing values or median gross rents and/or new housing construction. Describe mitigation plans, if needed, to meet shortfalls in housing needs for these direct and indirect work forces.

As discussed in the preceding section, the estimated normally available supply of temporary housing resources exceeds estimated construction-related demand, and meeting the construction workforce's housing needs is not expected to constrain the housing market for existing residents or lead to changes in housing values, rents, or new housing construction.

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