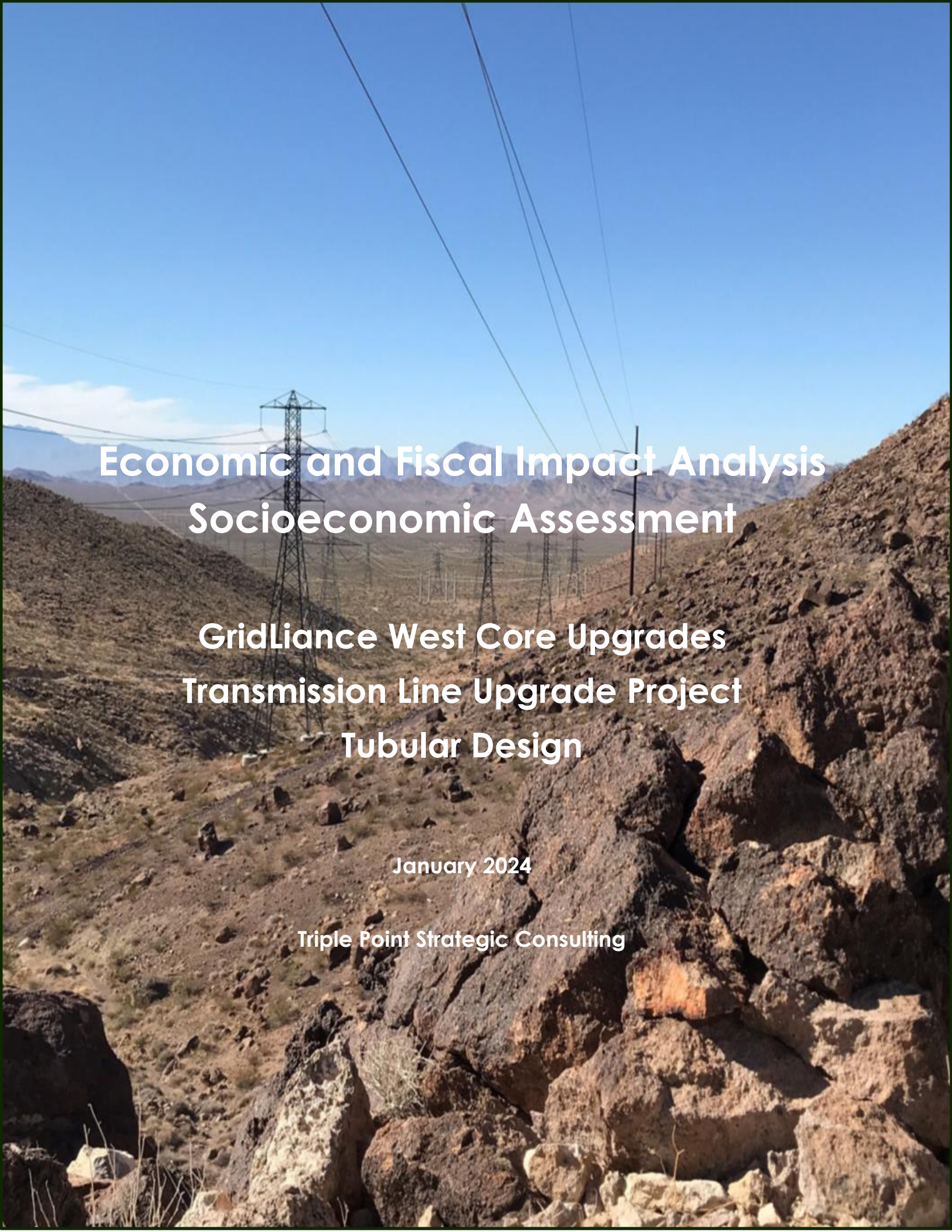

Economic and Fiscal Impact Analysis
Socioeconomic Assessment

GridLiance West Core Upgrades
Transmission Line Upgrade Project
Tubular Design

January 2024

Triple Point Strategic Consulting

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Economic and Fiscal Impact Analysis
Socioeconomic Assessment

GridLiance West Core Upgrades
Transmission Line Upgrade Project
Tubular Design

Submitted to:
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January 2024

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ACRONYMS AND ABBREVIATIONS

ACS	American Community Survey
BEA	Bureau of Economic Analysis
BLM	Bureau of Land Management
BLS	Bureau of Labor Statistics
BSTS	Bayesian structural time series
CAISO	California Independent System Operator Corporation
CCFD	Clark County Fire Department
CCSD	Clark County School District
DPBH	Division of Public and Behavioral Health
ED	emergency department
EMS	emergency medical service
FTE	full-time equivalents
FPL	federal poverty level
FY	fiscal year
GDP	gross domestic product
HAZMAT	hazardous materials
I-O	Input-Output
kV	kilovolt
LPF	Leontief Production Function
LQ	location quotient
LVICC	Las Vegas Interagency Communication Center
LVMPD	Las Vegas Metropolitan Police Department
NCSD	Nye County School District
OPI	Other Property Income
Project	GridLiance West Core Upgrades Transmission Line Upgrade Project
PVFR	Pahrump Valley Fire & Rescue
SNAP	Supplemental Nutrition Assistance Program
SOC	Standard Occupational Classification
TOPI	Taxes on Production and Imports
TPSC	Triple Point Strategic Consulting
ZORI	Zillow Observed Rent Index

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EXECUTIVE SUMMARY

The GridLiance West Core Upgrades Transmission Line Upgrade Project (Project) is modeled as a 155-mile electric energy transmission line for the purpose of estimating economic impacts to Clark and Nye Counties using IMPLAN software. Estimates of fiscal impacts arising from the purchase of specialty equipment from outside of Clark and Nye Counties, where the Project would be located, and a regional socioeconomic assessment are also presented. Two levels of upgrades are considered, one to 230 kilovolt (kV) and another to 500kV. Economic and fiscal impacts are estimated for each level. This report is based on tubular design for the 500kV transmission lines.

Construction is assumed to take place during 2025 and 2026. For each Project component, impacts are allocated by assumption to each county in varying shares based on location and relative size of each county's economy. Operations begin in 2027 and will continue for 28 years.

SUMMARY OF 230KV ECONOMIC IMPACT RESULTS

The total capital budget for constructing the Project is $1.4 billion. The annual operations and maintenance budget during operations is projected to be $2.7 million.

Impact on Clark County during Construction

- A total of 2,424 jobs supported during each year of construction, including indirect and induced jobs (note that for the IMPLAN models created for this analysis, jobs are approximately equivalent to full-time equivalents [FTE])
- A total labor income of $334 million over 2 years, including indirect and induced jobs
- A total economic impact of $1.03 billion over 2 years
- A total of $14.4 million in local and county tax revenues

Impact on Nye County during Construction

- A total of 321 jobs supported during each year of construction, including indirect and induced jobs
- A total labor income of $50.6 million over 2 years, including indirect and induced jobs
- A total economic impact of $154 million over 2 years
- A total of $2.0 million in local and county tax revenues

Annual Impact on Clark County during Operations

- A total average of 3.2 jobs per year created over the Project's lifetime
- An annual total labor income of $347,000
- An annual total economic impact of $2.6 million
- A total of $60,000 per year in local and county tax revenues

Annual Impact on Nye County during Operations

- A total average of 0.7 job per year created over the Project's lifetime
- An annual total labor income of $98,000
- An annual total economic impact of $840,000
- A total of $17,000 per year in local and county tax revenues

SUMMARY OF 500KV ECONOMIC IMPACT RESULTS

The total capital budget for constructing the Project is $1.9 billion. The annual operations and maintenance budget during operations is projected to be $4 million.

Impact on Clark County during Construction

- A total of 2,796 jobs supported during each year of construction, including indirect and induced jobs
- A total labor income of $385 million over 2 years, including indirect and induced jobs
- A total economic impact of $1.2 billion over 2 years
- A total of $16.6 million in local and county tax revenues

Impact on Nye County during Construction

- A total of 700 jobs supported during each year of construction, including indirect and induced jobs
- A total labor income of $110 million over 2 years, including indirect and induced jobs
- A total economic impact of $335 million over 2 years
- A total of $4.3 million in local and county tax revenues

Annual Impact on Clark County during Operations

- A total average of 4.8 jobs per year created over the Project's lifetime
- An annual total labor income of $522,000
- An annual total economic impact of $4.0 million
- A total of $90,500 per year in local and county tax revenues

Annual Impact on Nye County during Operations

- A total average of 1.1 jobs per year created over the Project's lifetime
- An annual total labor income of $147,000
- An annual total economic impact of $1.3 million
- A total of $25,700 per year in local and county tax revenues

SUMMARY OF 230KV FISCAL IMPACTS

The Project would require significant purchase of special equipment, such as transformers and switches, from outside Clark and Nye Counties.

Over the Project's lifetime, each county will receive significant personal property tax revenue:

- Clark County receives $44.6 million
- Nye County receives $7.6 million

Each county will receive sales and use tax on specialty equipment during construction:

- Clark County receives $36.6 million
- Nye County receives $4.2 million

SUMMARY OF 500KV FISCAL IMPACTS

The Project would require significant purchase of special equipment, such as transformers and switches, from outside Clark and Nye Counties.

Over the Project's lifetime, each county will receive significant personal property tax revenue:

- Clark County receives $45.0 million
- Nye County receives $39.3 million

Each county will receive sales and use tax on specialty equipment during construction:

- Clark County receives $36.9 million
- Nye County receives $21.5 million

The Project would enhance reliability by increasing access to GridLiance interconnected generation and storage capacity, and thus ensure these resources are available to meet California Independent System Operator Corporation (CAISO) bulk loads during shortage conditions. The fiscal impacts arising from personal property and sales tax revenues will provide resources to Clark and Nye Counties to mitigate negative impacts. Federal fees will provide resources to the Bureau of Land Management (BLM) and other agencies for Project oversight. Improvements to the region's energy infrastructure will broadly foster future economic development.

About Triple Point Strategic Consulting LLC

Triple Point specializes in developing custom economic and financial models. Focus areas are renewable energy, affordable housing, health assessments, sustainable tourism, and economic development. Triple Point is actively engaged in modeling for scenario planning, financial forecasting, permitting and approvals, optimal resource allocation, and improved decision-making. Economic impact studies are conducted using the IMPLAN model.

Triple Point is active across the western United States and Canada. Recent projects include determining the economic impacts of numerous utility-scale energy projects across the west, creating an economic model for the Aspen School District, conducting a six-county housing market study in western Colorado, developing a model of Lake Tahoe Basin's tourist economy for sustainability planning, preparing a large-scale economic development plan within the Navajo Nation, modeling the "water economy" of county in Idaho, and conducting municipal financial forecasting of many ski resort communities.

Triple Point Strategic Consulting was founded in 2013 by Jeff Moffett who earned his M.S. in Econometrics and Ph.D. in Applied Statistics at the University of Washington, Seattle. For more information, visit www.tpsconsulting.net.

1 INTRODUCTION

1.1 PURPOSE

This report has been prepared for the proposed GridLiance West Core Upgrades Transmission Line Upgrade Project (Project). This report quantifies the economic and fiscal impacts the Project would have on Clark and Nye Counties, Nevada. A socioeconomic assessment describes the two-county region in which the Project will be developed.

1.2 PROJECT OVERVIEW

The California Independent System Operator Corporation (CAISO) undertakes an annual transmission planning process that identifies needed transmission solutions for the CAISO region, which includes the GridLiance planning region of southwestern Nevada.

The proposed Project consists of the following transmission line components:

- Upgrade Sloan Canyon to Trout Canyon to 500kV
- Upgrade Trout Canyon to Johnnie Corner to either 230kV or 500kV
- Upgrade Johnnie Corner to Desert View to 230kV

All of the 500kV transmission lines are estimated based on tubular design construction. Approximately one-third of the Project is from Trout Canyon to Johnnie Corner. Final determinations from CAISO regarding transmission line upgrades will also have implications for switchyard and substation upgrades. The Johnnie Corner Substation will only be built if 500kV is used, and the expansion of Wheeler Pass and Gamebird are heavily dependent on whether 230kV or 500kV are used. This report estimates the economic and fiscal impacts for two development options labeled "230kV upgrades" and "500kV upgrades." Further descriptions of these two options are shown in Section 2.

CASIO rate payers will be paying for the line upgrades. Core Upgrades, in turn, will lower electric bills. This next-generation energy project will lead to more reliable power with less impact on Nevada ratepayers' wallets, according to GridLiance West.

1.3 BENEFITS OF INCREASED ELECTRICAL GRID CONNECTIVITY AND RELIABILITY

The CAISO planning area has several major transmission lines that connect its system to surrounding areas such as Oregon, Arizona, and Nevada. The CAISO annual transmission plan identifies transmission solutions from three main categories: reliability, public policy, and economic needs. The Project was identified in the approved CAISO Board of Governors 2021-

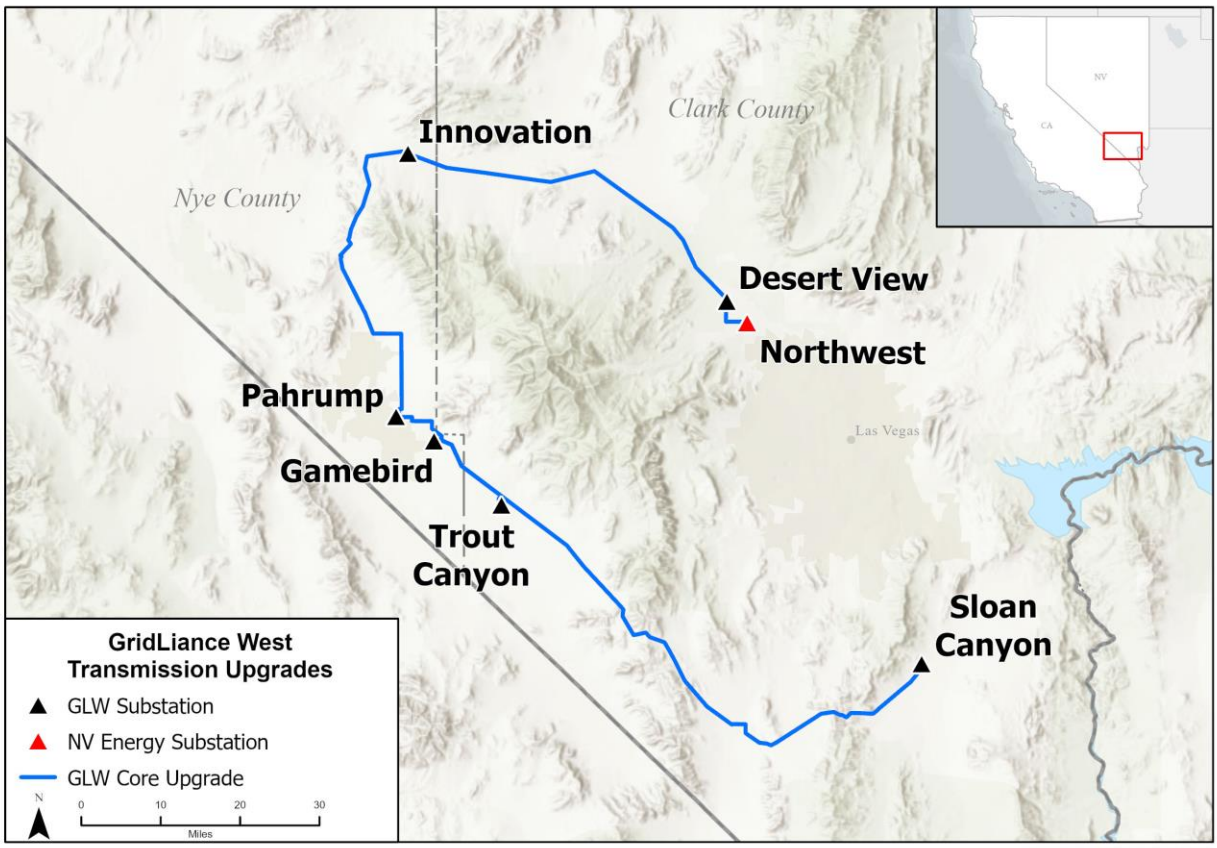
2022 Transmission Plan as a project that addresses reliability and public policy needs for the region. The purpose of the Project is to provide a solution to these regional transmission needs.

Reliability of the electrical grid is affected by high and increasing energy demand driven by population growth and varying energy supplies. In recent years, California has seen rolling brownouts and blackouts triggered by high demand during summer months. High temperatures, extreme dryness, and record-high winds have created conditions in the state that increase the risk of major wildfires. When severe weather and wildfire risk threatens a portion of the electric system, it may be necessary for state utilities to turn off electricity in the interest of public safety. The Project would improve system reliability in two ways. First, the Project would add bulk electric infrastructure to the existing grid, which would build redundant systems to resolve and allow flexibility for unanticipated and scheduled grid outages, respectively. It would also provide system protection from off-peak overload conditions associated with off-peak high renewable generation output.

The Project would enhance reliability by increasing access to GridLiance interconnected generation and storage capacity, and thus ensure these resources are available to meet CAISO bulk loads during shortage conditions.

1.4 PROJECT LOCATION

The Project would be located in southwest Clark County, Nevada, and southeast Nye County, Nevada, wrapping around the Spring Mountains west of Las Vegas as shown in Figure 1-1. The transmission lines span a distance of approximately 155 miles, of which 68 percent is in Clark County and 32 percent in Nye County. At 230kV, there would be three switchyards and three substations. At 500kV, there would be six substations and one switchyard.



Source: GridLiance West.

Figure 1-1 Project Location Map

1 INTRODUCTION

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2 ECONOMIC IMPACT ASSESSMENT METHODS

2.1 OVERVIEW

This Economic and Fiscal Impact Assessment evaluates the economic impact of construction, operations, and maintenance of the Project over its planned 30-year lifetime in the context of the regional economy. The Project's lifetime spans 2 years of construction followed by 28 years of operations. The assessment quantifies the direct impacts resulting from development of the Project as well as the indirect (supply chain spending) and induced (labor income spending) impacts. Labor income spending, intermediate expenditures, tax revenues, and total economic output are provided. An Input-Output (I-O) modeling approach, using IMPLAN software, is used to estimate Project impacts (IMPLAN 2022). The "data year" for this analysis is 2022, which is the latest available. IMPLAN's methods are described in detail in Appendix A (Section 8).

Developing an IMPLAN model for the Project's construction requires specifying a region of impact, identifying representative industries, and selecting the years that the impacts would occur. Inputs also include estimates of capital and operating expenditures. For the IMPLAN models created for this analysis, jobs are approximately equivalent to FTE. Developing an IMPLAN model for the Project's operations and maintenance phase requires inputting an operating budget, the starting year of operations, and the Project's operating life.

2.2 CONSTRUCTION PLANS

According to the Plan of Development, following preconstruction activities, construction would be conducted in a sequential set of tasks performed by multiple crews. The construction activities would include preliminary engineering surveys, access and site preparation, excavation, foundation construction, installing foundations, assembling and erecting structures, stringing conductors and shield wires, testing and commissioning, restoration and cleanup, and site reclamation.

2.2.1 Construction Duration and Employment Measurement

This analysis models the construction over 2 years (2025 and 2026) and assumes half of the Project would be constructed in each year. We assume the period begins on January 1 and ends on December 31. In IMPLAN, employment results are presented as the number of jobs per year, with the duration of one job being 1 year.

2.2.2 Construction Industry and Region of Influence

The economic impacts resulting from Project construction are best modeled using IMPLAN Sector 52 (construction of new power and communication structures). Given the size of Sector 52 in each county and the location of the Project throughout both counties, we make

assumptions as to the share of impact of each Project component within each county. Table 2-1 shows the share of each Project substation component construction impact assumed to be in each county.

Table 2-1 Distribution of Substation and Switchyard Construction Impact by Component and County

Substations	Clark Share	Nye Share
Sloan Canyon	100%	0%
Trout Canyon	95%	5%
Gamebird	40%	60%
Wheeler Pass	40%	60%
Johnnie Corner (500kV only)	40%	60%
Innovation	40%	60%
Desert View	100%	0%

Table 2-2 shows the share of each Project transmission line component construction impact assumed to be in each county. For the Trout to Gamebird and Innovation to Desert View transmission lines that cross county lines, the share of mileage of each line in each county was factored into these assumptions.

Table 2-2 Distribution of Transmission Construction Impact by Component and County

Transmission Lines	Clark Share	Nye Share
Sloan Canyon to Trout Canyon	95%	5%
Trout Canyon to Gamebird	58%	42%
Gamebird to Wheeler Pass	40%	60%
Wheeler Pass to Johnnie Corner	40%	60%
Johnnie Corner to Innovation	40%	60%
Innovation to Desert View	91%	9%
Desert View to Northwest	100%	0%

In this manner, the construction of each component is modeled as a unique IMPLAN event within each county.

2.3 CONSTRUCTION BUDGET FOR 230KV UPGRADES

The total construction budget for the Project at 230kV is $1.378 billion in 2023 dollars. In order to model the economic and fiscal impacts, construction and specialty equipment costs must be broken out.

Construction expenses are labor and materials such as concrete and solder, which can generally be purchased locally and have local economic impacts that are well estimated using IMPLAN.

Specialty equipment, including transformers and switches do not have local economic impact, as they are not manufactured in the region, but are generally taxable and thus have fiscal impacts.

Table 2-3 shows budgeted construction and equipment expenditures for each substation component and Table 2-4 shows the same for each transmission line.

Table 2-3 Core Upgrades 230kV Substations Capital Expenditure Budget Summary, 2023 dollars (thousands)

Substations	Construction Expenses (local materials and labor)	Equipment (specialty items purchased from outside of region)	Total
Sloan Canyon Substation (500/230kV)	$76,460	$78,100	$154,560
Trout Canyon Substation (500/230kV)	$93,630	$176,590	$270,220
Gamebird Switchyard (230kV)	$9,390	$3,820	$13,210
Wheeler Pass Switchyard (230kV)	$14,120	$5,860	$19,980
Innovation Substation (230kV)	$4,800	$2,300	$7,100
Desert View Switchyard (230kV)	$6,040	$2,600	$8,640
Substation Subtotal	**$204,440**	**$269,270**	**$473,710**

Source: GridLiance West, LLC.

Table 2-4 Core Upgrades 230kV Transmission Lines Capital Expenditure Budget Summary, 2023 dollars (thousands)

Transmission Lines	Construction Expenses (local materials and labor)	Equipment (specialty items purchased from outside of region)	Total
Sloan Canyon to Trout Canyon (500kV)	$446,344,874	$154,835,126	$601,180,000
Trout Canyon to Gamebird (230kV)	$29,330,000	$9,160,000	$38,490,000
Gamebird to Wheeler Pass (230kV)	$21,770,000	$7,060,000	$28,830,000
Wheeler Pass to Johnnie Corner (230kV)	$54,760,000	$15,360,000	$70,120,000
Johnnie Corner to Innovation (230kV)	$44,610,000	$12,650,000	$57,260,000
Innovation to Desert View (230kV)	$78,020,000	$21,200,000	$99,220,000
Desert View to Northwest (230kV)	$7,200,000	$2,210,000	$9,410,000
Transmission Subtotal	**$682,034,874**	**$222,475,126**	**$904,510,000**

Source: GridLiance West, LLC.

2.3.1 IMPLAN Inputs for 230kV Construction in Clark County

Applying the distribution assumptions described in Section 2.2.2 to the construction budget gives the amount of direct investment in each county for each component. A share of the direct investment, including some design and administrative expenses, does not impact the local economies. To model only the impacts to the local economies, an assumption was made to reduce each amount of investment by 10 percent. Note this is a separate reduction from the leakage factors within IMPLAN (see Section 2.6.1 for further explanation).

The total construction expenditure over 2 years in Clark County, excluding specialty equipment purchased outside the region, is estimated to total $675 million in 2023 dollars. Table 2-5 shows the amount of direct local investment used to model the impact of constructing each substation on Clark County.

Table 2-5 Direct Substation Construction Investment in Clark County by Component at the 230kV Level, 2023 dollars

Substations	Direct Investment in Clark County
Sloan Canyon Substation (500/230kV)	$68,880,000
Trout Canyon Substation (500/230kV)	$80,130,430

Substations	Direct Investment in Clark County
Gamebird Switchyard (230kV)	$3,383,642
Wheeler Pass Switchyard (230kV)	$5,088,075
Innovation Substation (230/138kV)	$1,729,657
Desert View Switchyard (230kV)	$5,441,214
Substation Subtotal	**$164,653,019**

Table 2-6 shows the amount of direct local investment used to model the impact of constructing each transmission line on Clark County.

Table 2-6 Direct Transmission Construction Investment in Clark County by Component at the 230kV Level, 2023 dollars

Transmission Lines	Direct Investment in Clark County
Sloan Canyon to Trout Canyon (500kV)	$381,990,886
Trout Canyon to Gamebird (230kV)	$15,284,698
Gamebird to Wheeler Pass (230kV)	$7,844,717
Wheeler Pass to Johnnie Corner (230kV)	$19,732,507
Johnnie Corner to Innovation (230kV)	$16,075,003
Innovation to Desert View (230kV)	$63,880,841
Desert View to Northwest (230kV)	$6,161,904
Transmission Subtotal	**$510,970,556**

2.3.2 IMPLAN Inputs for 230kV Construction in Nye County

As with Clark County investment, the construction budget was allocated to each Project component impacting Nye County. The total construction expenditure over 2 years in Nye County, excluding specialty equipment purchased outside the region, is estimated to total $120 million in 2023 dollars. Table 2-7 shows the amount of direct local investment used to model the impact of constructing each substation on Nye County.

Table 2-7 Direct Substation Construction Investment in Nye County by Component, 2023 dollars

Substations	Direct Investment in Nye County
Sloan Canyon Substation (500/230kV)	$0
Trout Canyon Substation (500/230kV)	$4,217,391
Gamebird Switchyard (230kV)	$5,075,463
Wheeler Pass Switchyard (230kV)	$7,632,113
Innovation Substation (230/138kV)	$2,594,486
Desert View Switchyard (230kV)	$0
Substation Subtotal	**$19,519,453**

Table 2-8 shows the amount of direct local investment used to model the impact of constructing each transmission line on Nye County.

Table 2-8 Direct Transmission Construction Investment in Nye County by Component, 2023 dollars

Transmission Lines	Direct Investment in Nye County
Sloan Canyon to Trout Canyon (500kV)	$20,104,783
Trout Canyon to Gamebird (230kV)	$8,587,253
Gamebird to Wheeler Pass (230kV)	$11,767,075
Wheeler Pass to Johnnie Corner (230kV)	$29,598,761
Johnnie Corner to Innovation (230kV)	$24,112,504
Innovation to Desert View (230kV)	$6,404,506
Desert View to Northwest (230kV)	$324,311
Transmission Subtotal	**$100,899,194**

2.4 OPERATIONS AND MAINTENANCE BUDGET FOR 230KV UPGRADES

2.4.1 Overview

Completion of Project construction is assumed to be at the end of 2026. Operations and maintenance impacts are modeled from the beginning of 2027 and lasting for 28 years.

After construction is complete, the Project would require ongoing management and maintenance. Periodic inspections would be conducted. Maintenance activities include, but are not limited to, transmission line repairs from storms and other causes, replacing faulty equipment, and access road blading.

2.4.2 Operations Phase Region of Influence

The economic impacts resulting from Project operations and maintenance are best modeled using IMPLAN Sector 47 (electric power transmission and distribution). We assume the Project will draw staff from each county in proportion to the line distance in each county. We use this assumption to allocate operations expenditure to each county, which results in a 68 percent distribution to Clark County and 32 percent distribution to Nye County.

2.4.3 IMPLAN Operations and Maintenance Inputs Summary

Table 2-9 shows the IMPLAN parameters used to model the operations and maintenance expenditures for a single year.

Table 2-9 Annual Operations and Maintenance Expenditures by County, 2023 dollars

County	IMPLAN Industry Description	Sector	Annual Expenditure
Clark	Electric power transmission and distribution	47	$1,521,725
Nye	Electric power transmission and distribution	47	$711,609

Source: GridLiance West, LLC.

2.5 CONSTRUCTION BUDGET FOR 500KV UPGRADES

Construction budgets and specialty equipment expenditures for the 500kV level of the Project were derived by assuming cost multipliers for each Project component. Table 2-10 shows the amount of increase for each Project substation and switchyard at the 500kV level. Note that at the 500kV level a substation would be constructed at Johnnie Corner.

Table 2-10 Cost Multipliers for Each Substation and Switchyard at the 500kV Level

Substations	500kV Cost Increase
Sloan Canyon Substation (500/230kV)	No increase
Trout Canyon Substation (500/230kV)	No increase
Gamebird Substation (500/230kV)	Increase 112.5%
Wheeler Pass Substation (500/230kV	Increase 112.5%
Johnnie Corner Substation (500/230kV)	Equivalent to Trout Canyon
Innovation Substation (230/138kV)	No increase

Substations	500kV Cost Increase
Desert View Switchyard (230kV)	No increase

Source: GridLiance West, LLC.

The total construction budget for the Project at 500kV is $1.880 billion in 2023 dollars. In order to model the economic and fiscal impacts, construction and specialty equipment costs are broken out.

Table 2-11 shows budgeted construction and equipment expenditures for each substation component and Table 2-12 shows the same for each transmission line.

Table 2-11 Core Upgrades 500kV Substations Capital Expenditure Budget Summary, 2023 dollars

Substations	Construction Expenses (local materials and labor)	Equipment (specialty items purchased from outside of region)	Total
Sloan Canyon Substation (500/230kV)	$76,460,000	$78,100,000	$154,560,000
Trout Canyon Substation (500/230kV)	$93,630,000	$176,590,000	$270,220,000
Gamebird Substation (500/230kV)	$19,953,750	$8,117,500	$28,071,250
Wheeler Pass Substation (500/230kV	$30,005,000	$12,452,500	$42,457,500
Johnnie Corner Substation (500/230kV)	$93,630,000	$176,590,000	$270,220,000
Innovation Substation (230/138kV)	$4,800,000	$2,300,000	$7,100,000
Desert View Switchyard (230kV)	$6,040,000	$2,600,000	$8,640,000
Substation Subtotal	**$324,518,750**	**$456,750,000**	**$781,268,750**

Source: GridLiance West, LLC, TPSC.

Table 2-12 Core Upgrades 230kV Transmission Lines Capital Expenditure Budget Summary, 2023 dollars

Transmission Lines	Construction Expenses (local materials and labor)	Equipment (specialty items purchased from outside of region)	Total
Sloan Canyon to Trout Canyon (500kV)	$446,344,874	$154,835,126	$601,180,000
Trout Canyon to Gamebird (500kV)	$70,205,497	$21,925,753	$92,131,250
Gamebird to Wheeler Pass (500kV)	$52,075,645	$16,888,105	$68,963,750
Wheeler Pass to Johnnie Corner (500kV)	$133,545,833	$37,459,167	$171,005,000
Johnnie Corner to Innovation (230kV)	$44,610,000	$12,650,000	$57,260,000
Innovation to Desert View (230kV)	$78,020,000	$21,200,000	$99,220,000
Desert View to Northwest (230kV)	$7,200,000	$2,210,000	$9,410,000
Transmission Subtotal	**$832,001,848**	**$267,168,152**	**$1,099,170,000**

Source: GridLiance West, LLC, TPSC.

2.5.1 IMPLAN Inputs for 500kV Construction in Clark County

By applying the distribution assumptions described in Section 2.2.2 to the construction budget gives the amount of direct investment in each county for each component. A share of the direct investment, including some design and administrative expenses does not impact the local economies. To model only the impacts to the local economies, an assumption was made to reduce each amount of investment by 10 percent. Note this is a separate reduction from the leakage factors within IMPLAN (see Section 2.6.1 for further explanation).

The total construction expenditure over 2 years within Clark County, excluding specialty equipment purchased outside the region, is estimated to total $780 million in 2023 dollars. Table 2-13 shows the amount of direct local investment used to model the impact of upgrading each substation on Clark County.

Table 2-13 Direct Substation Construction Investment in Clark County by Component at the 500kV level, 2023 dollars

Substations	Direct Investment in Clark County
Sloan Canyon Substation (500/230kV)	$68,880,000
Trout Canyon Substation (500/230kV)	$80,130,430

Substations	Direct Investment in Clark County
Gamebird Substation (500/230kV)	$7,190,240
Wheeler Pass Substation (500/230kV	$10,812,160
Johnnie Corner Substation (500/230kV)	$33,739,128
Innovation Substation (230/138kV)	$1,729,657
Desert View Switchyard (230kV)	$5,441,214
Substation Subtotal	**$207,922,829**

Table 2-14 shows the amount of direct local investment used to model the impact of constructing each transmission line on Clark County.

Table 2-14 Direct Transmission Construction Investment in Clark County by Component at the 500kV level, 2023 dollars

Transmission Lines	Direct Investment in Clark County
Sloan Canyon to Trout Canyon (500kV)	$381,990,886
Trout Canyon to Gamebird (500kV)	$36,586,084
Gamebird to Wheeler Pass (500kV)	$18,765,213
Wheeler Pass to Johnnie Corner (500kV)	$48,122,610
Johnnie Corner to Innovation (230kV)	$16,075,003
Innovation to Desert View (230kV)	$63,880,841
Desert View to Northwest (230kV)	$6,161,904
Transmission Subtotal	**$571,582,541**

2.5.2 IMPLAN Inputs for 500kV Construction in Nye County

As with Clark County investment, the construction budget was allocated to each Project component impacting Nye County. The total construction expenditure over 2 years within Nye County, excluding specialty equipment purchased outside the region, is estimated to total $262 million in 2023 dollars. Table 2-15 shows the amount of direct local investment used to model the impact of constructing each substation on Nye County.

Table 2-15 Direct Substation Construction Investment in Nye County by Component at the 500kV level, 2023 dollars

Substations	Direct Investment in Nye County
Sloan Canyon Substation (500/230kV)	$0
Trout Canyon Substation (500/230kV)	$4,217,391
Gamebird Substation (500/230kV)	$10,785,359
Wheeler Pass Substation (500/230kV	$16,218,240
Johnnie Corner Substation (500/230kV)	$50,608,693
Innovation Substation (230/138kV)	$2,594,486
Desert View Switchyard (230kV)	$0
Substation Subtotal	**$84,424,169**

Table 2-16 shows the amount of direct local investment used to model the impact of constructing each transmission line on Nye County.

Table 2-16 Direct Transmission Construction Investment in Nye County by Component at the 500kV level, 2023 dollars

Transmission Lines	Direct Investment in Nye County
Sloan Canyon to Trout Canyon (500kV)	$20,104,783
Trout Canyon to Gamebird (500kV)	$26,659,464
Gamebird to Wheeler Pass (500kV)	$28,147,819
Wheeler Pass to Johnnie Corner (500kV)	$72,183,916
Johnnie Corner to Innovation (230kV)	$24,112,504
Innovation to Desert View (230kV)	$6,404,506
Desert View to Northwest (230kV)	$324,311
Transmission Subtotal	**$177,937,303**

2.6 OPERATIONS AND MAINTENANCE BUDGET FOR 500KV UPGRADES

The same model parameters and assumptions described in Sections 2.4.1 and 2.4.2 are used to estimate the economic and fiscal impacts of operations and management at the 500kV level.

2.6.1 IMPLAN Operations and Maintenance Inputs Summary

Table 2-17 shows the IMPLAN parameters used to model the operations and maintenance expenditures for a single year.

Table 2-17 Annual Operations and Maintenance Expenditures by County, 2023 dollars

County	IMPLAN Industry Description	Sector	Annual Expenditure
Clark	Electric power transmission and distribution	47	$2,288,265
Nye	Electric power transmission and distribution	47	$1,070,068

Source: GridLiance West, LLC.

2.7 ASSUMPTIONS AND UNCERTAINTIES

Estimating the direct, indirect, and induced impacts of the future in a regional economy is extremely complicated. IMPLAN averages labor compensation, production value, and other metrics for 546 different industries of the economy by region. For example, this study models the construction of the Project as Sector 52 (construction of new power and communication structures). Actual future economic impacts depend on specific operating plans and may evolve over time as the result of technological innovation and alternating management strategies. Actual impacts also depend on final Project specifications and approvals.

For local purchases (e.g., concrete, fencing, fuel, small tools, office supplies), IMPLAN's data for Clark County shows a 16 percent leakage rate for the construction phase and 18 percent for the operations phase. For Nye County, the leakage rate is 15 percent for construction and 12 percent for operations. In other words, these are the portions of the modeled construction and operations expenditures that represent spending outside the region.

Taxes on equipment purchases from outside of Clark and Nye Counties are based on local tax rates and inflation assumptions. Actual tax revenues will depend on final purchase prices, assessor appraisals, actual inflation, and final determination of deprecation. The fiscal impacts in Section 5 not estimated with IMPLAN.

Finally, forecasts of future events are inherently uncertain, as the coronavirus pandemic demonstrated.

3 ECONOMIC IMPACTS OF 230KV UPGRADES

3.1 OVERVIEW

This section describes the economic benefits accruing to Clark and Nye Counties as the result of constructing and operating the Project at the 230kV level. Particular attention is given to total economic output, employment, labor income, industry growth, and tax revenues. For each category, each level of impact (direct, indirect, and induced) is estimated. Direct impacts occur in the sector being modeled while indirect and induced impacts occur in many sectors.

3.2 ECONOMIC IMPACTS OF CONSTRUCTION IN CLARK COUNTY

The dollar figures presented in this section occur over 2 years (2025 and 2026). For example, labor income is the total earned over the 2-year construction period. Employment is shown annually. IMPLAN calculates estimates of economic impacts based on the total planned capital expenditure, as well as the underlying model data.

3.2.1 Total Output

IMPLAN defines the total production value of an industry as output. In this case, the industry is specifically defined as Sector 52 and the Core Upgrades is the product. Table 3-1 shows an estimate of the total economic impact of $1 billion that would result in Clark County from construction of the Project, including the $675.6 million of direct capital expenditure.

Table 3-1 Clark County Construction Impact by Type and Category, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$227,018,933	$200,113,199	$225,804,941	$22,686,502	$675,623,574
Indirect	$40,977,401	$60,846,234	$24,073,117	$8,570,738	$134,467,490
Induced	$65,550,582	$85,228,047	$54,459,133	$13,284,110	$218,521,872
Total	**$333,546,916**	**$346,187,480**	**$304,337,191**	**$44,541,349**	**$1,028,612,936**

The indirect and induced labor income impacts account for 12.3 and 19.7 percent of total labor income impacts, respectively. The total output for indirect and induced impacts accounts for 13.1 and 21.2 percent of total output, respectively.

3.2.2 Construction Employment Supported

Table 3-2 shows the number of Clark County construction jobs supported. IMPLAN estimates are based on the capital expenditure budget, as well as the local salary and wage information within the underlying model data. The total number of direct jobs supported would be 1,542 per year for 2 years. An additional 882 per year would be supported as result of indirect and induced impacts (see the Glossary of Terms for a description of IMPLAN jobs). The average annual labor income per direct job would be $73,597 and average annual labor income for all jobs would be $68,794.

Table 3-2 Construction Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	1,542
Indirect	299
Induced	583
Total	**2,424**

3.2.3 Clark County Occupation Detail

Table 3-3 shows the top 15 occupations supported for constructing the Project based on the Bureau of Labor Statistics (BLS) Standard Occupational Classification (SOC) codes at the 3-digit level per year of construction.

Table 3-3 Clark County Construction Impacts for the Top 15 Occupations, 2023 dollars

Occupation	Average Annual Jobs	Total Employee Comp	Hours Worked	Total Comp/ Hour
Construction Trades Workers	392	$23,649,696	745,292	$32
Installation, Maintenance, and Repair Occupations	339	$23,782,941	697,955	$34
Supervisors of Construction and Extraction Workers	92	$7,848,372	198,272	$40
Supervisors of Installation, Maintenance, and Repair Workers	82	$7,847,389	176,512	$44
Business Operations Specialists	81	$7,931,868	161,835	$49
Material Moving Workers	63	$3,033,312	104,404	$29
Management Occupations	57	$7,327,717	121,156	$60

Occupation	Average Annual Jobs	Total Employee Comp	Hours Worked	Total Comp/ Hour
Top Executives	52	$8,176,845	114,444	$71
Retail Sales Workers	47	$1,722,083	64,154	$27
Motor Vehicle Operators	44	$2,644,800	89,197	$30
Other Office and Administrative Support Workers	41	$1,905,107	66,524	$29
Financial Clerks	39	$2,208,225	68,808	$32
Vehicle Equipment Mechanics, Installers, and Repairers	36	$2,464,289	72,806	$34
Food and Beverage Serving Workers	32	$897,990	35,166	$26
Secretaries and Administrative Assistants	31	$1,699,718	53,468	$32

3.2.4 Economic Impact by Type and Industry

The direct investment of $675.6 million would impact many industries in Clark County. Table 3-4 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 52 would experience the most impact since that is where the direct capital investment would occur; however, 374 industries would receive at least some impact.

Table 3-4 Impact by Type and Industry for Top 15 Industries, 2023 dollars

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Construction of new power structures	$675,623,574	$0	$0	$675,623,574
Owner-occupied dwellings	$0	$0	$27,481,108	$27,481,108
Other real estate	$0	$8,511,514	$8,539,138	$17,050,653
Other durable goods merchant wholesalers	$0	$12,872,254	$1,649,391	$14,521,645
Commercial and industrial machinery leasing	$0	$11,592,769	$480,459	$12,073,228
Hospitals	$0	$0	$10,077,090	$10,077,090
Architectural, engineering, and related services	$0	$9,236,504	$343,543	$9,580,047

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Monetary authorities and depository credit intermediation	$0	$2,510,428	$6,301,060	$8,811,487
Management of companies and enterprises	$0	$5,142,100	$3,608,066	$8,750,166
Building material supplies stores	$0	$6,692,768	$727,075	$7,419,844
Nonstore retailers	$0	$822,615	$6,561,521	$7,384,136
Truck transportation	$0	$5,077,443	$2,198,656	$7,276,098
Tenant-occupied housing	$0	$0	$6,956,329	$6,956,329
Offices of physicians	$0	$0	$6,870,149	$6,870,149
Insurance carriers, except direct life	$0	$1,273,701	$5,104,175	$6,377,876

3.2.5 Total Tax Revenue Impacts of Construction

The IMPLAN tax impact report provides estimates of tax revenues. The tax impact report captures all tax revenue in Clark County across all levels of government for the specific industries and institutions affected by an event. Table 3-5 shows the tax impacts resulting from construction. The total tax revenue impact would be $138.3 million.

Table 3-5 Tax Impact of Construction by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$1,124,539	$2,110,317	$4,194,391	$15,306,389	$64,829,952	$87,565,588
Indirect	$414,035	$769,753	$1,550,966	$5,647,865	$11,055,326	$19,437,946
Induced	$643,142	$1,196,015	$2,408,902	$8,772,571	$18,312,900	$31,333,530
Total	**$2,181,716**	**$4,076,085**	**$8,154,259**	**$29,726,825**	**$94,198,178**	**$138,337,064**

3.3 ECONOMIC IMPACTS OF CONSTRUCTION IN NYE COUNTY

This section presents the corresponding impact estimates for Nye County as presented for Clark County in Section 3.2. Table 3-6 shows the planned direct capital expenditure in Nye County of $120.4 million in 2023 dollars.

3.3.1 Total Output

Table 3-6 shows an estimate of the total economic impact that would result in Nye County from construction of the Project.

Table 3-6 Nye County Construction Impact by Type and Category, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$42,481,107	$31,179,619	$43,221,408	$3,536,512	$120,418,646
Indirect	$4,007,504	$8,103,745	$2,133,909	$1,666,730	$15,911,887
Induced	$4,129,297	$7,174,731	$4,789,023	$1,529,133	$17,622,184
Total	**$50,617,907**	**$46,458,095**	**$50,144,340**	**$6,732,375**	**$153,952,717**

The indirect and induced labor income impacts are significant, though not as significant as in Clark County, accounting for 7.9 and 8.2 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are more significant, accounting for 10.3 and 11.4 percent of total output, respectively.

3.3.2 Construction Employment Supported

Table 3-7 shows the number of Nye County construction jobs supported. The total number of direct jobs supported would be 240 per year for 2 years. An additional 81 per year would be supported as result of indirect and induced impacts. The average annual labor income per direct job would be $88,372 and average annual labor income for all jobs would be $78,844.

Table 3-7 Construction Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	240
Indirect	33
Induced	48
Total	**321**

3.3.3 Nye County Occupation Detail

Table 3-8 shows the top 15 occupations supported for constructing the Project based on the BLS SOC codes at the 3-digit level per year of construction.

Table 3-8 Nye County Construction Impacts for the Top 15 Occupations, 2023 dollars

Occupation	Average Annual Jobs	Total Employee Comp	Hours Worked	Total Comp/ Hour
Construction Trades Workers	59	$4,497,027	112,565	$40
Installation, Maintenance, and Repair Occupations	51	$4,459,642	104,420	$43
Supervisors of Construction and Extraction Workers	14	$1,497,428	30,019	$50
Supervisors of Installation and Maintenance Workers	12	$1,468,198	26,573	$55
Business Operations Specialists	10	$1,176,021	20,779	$57
Other Management Occupations	8	$1,241,783	17,029	$73
Top Executives	7	$1,205,441	15,043	$80
Material Moving Workers	6	$314,611	10,094	$31
Retail Sales Workers	6	$186,362	8,351	$22
Vehicle Mechanics, Installers, and Repairers	6	$356,656	11,114	$32
Office and Administrative Support Workers	5	$285,415	8,583	$33
Motor Vehicle Operators	5	$318,339	10,564	$30
Financial Clerks	5	$311,612	8,634	$36
Electronic Equipment Mechanics, Installers	4	$371,930	9,286	$40
Secretaries and Administrative Assistants	4	$222,472	6,305	$35

3.3.4 Economic Impact by Type and Industry

The direct investment of $120.4 million would impact many industries in Nye County. Table 3-9 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 52 would experience the most impact since that is where the direct capital investment would occur; however, 201 industries would receive at least some impact.

Table 3-9 Impact by Type and Industry for Top 15 Industries, 2023 dollars

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Construction of new power structures	$120,418,646	$0	$0	$120,418,646
Owner-occupied dwellings	$0	$0	$4,092,924	$4,092,924
Other durable goods merchant wholesalers	$0	$1,970,974	$234,192	$2,205,165
Building material and supplies stores	$0	$1,611,881	$157,951	$1,769,832
Commercial equipment leasing	$0	$1,693,936	$33,061	$1,726,997
Petroleum refineries	$0	$1,226,089	$305,839	$1,531,928
Other real estate	$0	$914,597	$593,456	$1,508,053
Nonstore retailers	$0	$120,408	$998,351	$1,118,759
Architectural, engineering, and related services	$0	$1,016,616	$19,976	$1,036,592
Ready-mix concrete manufacturing	$0	$1,030,501	$5,201	$1,035,702
Truck transportation	$0	$624,007	$241,623	$865,630
Petroleum and petroleum products	$0	$582,193	$168,961	$751,155
Electric power transmission and distribution	$0	$291,230	$455,548	$746,778
Limited-service restaurants	$0	$14,949	$694,619	$709,568
Hospitals	$0	$0	$708,093	$708,093

3.3.5 Total Tax Revenue Impacts of Construction

The IMPLAN tax impact report captures all tax revenue in Nye County across all levels of government for the specific industries and institutions affected by an event. Table 3-10 shows the tax impacts resulting from construction. The total tax revenue impact would be $20.5 million.

Table 3-10 Tax Impact of Construction by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$0	$280,692	$776,715	$2,439,616	$11,668,067	$15,165,090
Indirect	$0	$126,978	$353,520	$1,119,943	$1,048,912	$2,649,352
Induced	$0	$116,956	$325,559	$1,031,105	$1,189,151	$2,662,771
Total	**$0**	**$524,626**	**$1,455,794**	**$4,590,664**	**$13,906,130**	**$20,477,213**

3.4 COMBINED TOTAL IMPACT OF CONSTRUCTION

Table 3-11 shows an estimate of the combined total economic impact that would result in Clark and Nye Counties to be $1.183 billion.

Table 3-11 Combined Construction Impact by Type and Category, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$269,500,040	$231,292,817	$269,026,349	$26,223,014	$796,042,220
Indirect	$44,984,904	$68,949,980	$26,207,026	$10,237,467	$150,379,378
Induced	$69,679,879	$92,402,778	$59,248,157	$14,813,243	$236,144,056
Total	**$384,164,823**	**$392,645,575**	**$354,481,532**	**$51,273,724**	**$1,182,565,654**

The indirect and induced labor income impacts are significant, accounting for 11.7 and 18.1 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are even more significant, accounting for 12.7 and 20.0 percent of total output, respectively.

3.5 ECONOMIC IMPACTS OF OPERATIONS IN CLARK COUNTY

We assume 2027 to be the first year of operations and model a single year of operations. In this section, annual operating impacts are presented as well as 28-year accumulative impacts for select results. The annual direct spending in Clark County resulting from Project operations is anticipated to be $1.5 million in 2023 dollars.

3.5.1 Total Annual Output from Operations and Maintenance

Table 3-12 shows a total annual economic impact of $2.6 million that would result from Project operations in Clark County.

Table 3-12 Clark County Annual Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$155,183	$794,078	$471,855	$100,609	$1,521,725
Indirect	$124,161	$448,906	$246,805	$75,193	$895,064
Induced	$67,630	$87,875	$56,187	$13,705	$225,397
Total	**$346,975**	**$1,330,859**	**$774,846**	**$189,506**	**$2,642,186**

The indirect and induced labor income impacts are significant, accounting for 35.8 and 19.5 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are also significant, accounting for 33.9 and 8.5 percent of total output, respectively.

3.5.2 Operations Employment Created

Table 3-13 shows the employment created in Clark County as the result of Project operations. The total number of direct jobs created would be 0.9 per year for the 28-year lifetime. An additional 2.3 jobs per year would be supported as result of indirect and induced impacts. The average annual labor income per direct job would be $166,864 and the average annual income for all jobs would be $108,430.

Table 3-13 Clark County Operations Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	0.9
Indirect	1.1
Induced	1.2
Total	3.2

3.5.3 Total Accumulative Output from Operations and Maintenance

IMPLAN is a linear model. Thus, we can extrapolate the 28-year accumulative operating impact by multiplying annual impact by the number of years. Table 3-14 shows the total lifetime output to be $74.0 million.

Table 3-14 Clark County Total Accumulative Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$4,345,133	$22,234,176	$13,211,936	$2,817,050	$42,608,295
Indirect	$3,476,502	$12,569,362	$6,910,527	$2,105,393	$25,061,784
Induced	$1,893,654	$2,460,509	$1,573,234	$383,726	$6,311,122
Total	**$9,715,289**	**$37,264,047**	**$21,695,696**	**$5,306,170**	**$73,981,202**

3.5.4 Economic Impact by Type and Industry

Each year, the $1.5 million of direct spending would ripple through Clark County's economy and impact many industries. Table 3-15 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 47 would experience the most impact since that is where the operating expense would occur; however, 357 industries would receive at least some impact.

Table 3-15 Clark County Impact of Operations by Type and Industry for Top 15 Industries, 2023 dollars (thousands)

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Electric power transmission and distribution	$1,522	$83	$2	$1,607
Electric power generation - Fossil fuel	$0	$569	$1	$569
Electric power generation - Solar	$0	$77	$0	$78
Owner-occupied dwellings	$0	$0	$28	$28
Electric power generation - Wind	$0	$23	$0	$23
Other real estate	$0	$7	$9	$16
Employment services	$0	$13	$2	$15
Monetary authorities and depository credit intermediation	$0	$6	$7	$12
Other local government enterprises	$0	$10	$2	$12
Hospitals	$0	$0	$10	$10
Oil and gas extraction	$0	$10	$0	$10
Local government electric utilities	$0	$10	$0	$10
Rail transportation	$0	$8	$0	$8
Full-service restaurants	$0	$2	$6	$8
Legal services	$0	$4	$3	$8

3.5.5 Total Tax Revenue Impact of Operations and Maintenance

Table 3-16 shows the tax impacts resulting from annual operations. The total annual tax impact would be $307,000.

Table 3-16 Clark County Annual Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$4,833	$8,931	$18,153	$66,014	$60,673	$158,604
Indirect	$3,612	$6,677	$13,567	$49,341	$42,736	$115,933
Induced	$664	$1,234	$2,485	$9,050	$18,894	$32,327
Total	**$9,109**	**$16,842**	**$34,205**	**$124,405**	**$122,303**	**$306,864**

3.5.6 Total Accumulative Tax Revenue Impact

Table 3-17 shows the accumulative tax impacts resulting from lifetime operations would be $8.6 million.

Table 3-17 Clark County Lifetime Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$135,315	$250,068	$508,274	$1,848,401	$1,698,848	$4,440,906
Indirect	$101,142	$186,954	$379,877	$1,381,535	$1,196,603	$3,246,111
Induced	$18,578	$34,549	$69,584	$253,408	$529,028	$905,147
Total	**$255,035**	**$471,571**	**$957,735**	**$3,483,344**	**$3,424,479**	**$8,592,164**

3.6 ECONOMIC IMPACTS OF OPERATIONS IN NYE COUNTY

The annual direct spending in Nye County resulting from Project operations is anticipated to be $712,000 in 2023 dollars.

3.6.1 Total Annual Output from Operations and Maintenance

Table 3-18 shows a total annual economic impact of $840,000 that would result from Project operations in Nye County.

Table 3-18 Nye County Annual Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$71,872	$373,533	$218,928	$47,276	$711,609
Indirect	$18,418	$43,043	$24,577	$9,072	$95,109
Induced	$7,705	$13,381	$8,916	$2,852	$32,853
Total	**$97,995**	**$429,956**	**$252,420**	**$59,200**	**$839,571**

The indirect and induced labor income impacts are significant, accounting for 18.8 and 7.9 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are also significant, accounting for 11.3 and 3.9 percent of total output, respectively.

3.6.2 Operations Employment Created

Table 3-19 shows the number of jobs created in Nye County as the result of Project operations. The total number of direct jobs created by operating the Project is estimated to be an average of

0.4 per year over the Project's lifetime. The average annual labor income per direct job would be $163,345 and average annual income for all jobs would be $132,425.

Table 3-19 Nye County Operations Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	0.4
Indirect	0.1
Induced	0.2
Total	**0.7**

3.6.3 Total Accumulative Output from Operations and Maintenance

IMPLAN is a linear model. Thus, we can extrapolate the 28-year accumulative operating impact by multiplying annual impact by the number of years. Table 3-20 shows the total lifetime output to be $23.5 million.

Table 3-20 Nye County Total Accumulative Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$2,012,407	$10,458,911	$6,129,982	$1,323,739	$19,925,038
Indirect	$515,712	$1,205,191	$688,143	$254,007	$2,663,053
Induced	$215,734	$374,666	$249,644	$79,848	$919,892
Total	**$2,743,853**	**$12,038,768**	**$7,067,769**	**$1,657,594**	**$23,507,983**

3.6.4 Economic Impact by Type and Industry

Each year, the $712,000 of direct spending would impact other industries. Table 3-21 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 47 would experience the most impact since that is where the operating expense would occur; however, 190 industries would receive at least some impact.

Table 3-21 Nye County Impact of Operations by Type and Industry for Top 15 Industries, 2023 dollars

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Electric power transmission and distribution	$711,609	$15,316	$854	$727,778
Electric power generation - Solar	$0	$70,963	$83	$71,046
Owner-occupied dwellings	$0	$0	$7,605	$7,605

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Petroleum refineries	$0	$1,682	$573	$2,254
Retail - Nonstore retailers	$0	$57	$1,864	$1,922
Other real estate	$0	$486	$1,107	$1,593
Hospitals	$0	$0	$1,323	$1,323
Limited-service restaurants	$0	$21	$1,300	$1,320
Water, sewage and other systems	$0	$911	$143	$1,055
Offices of physicians	$0	$0	$995	$995
Scientific research and development services	$0	$611	$334	$945
Retail - General merchandise stores	$0	$10	$882	$892
Truck transportation	$0	$415	$451	$866
Wholesale petroleum products	$0	$480	$316	$796
Rail transportation	$0	$725	$50	$775

3.6.5 Total Tax Revenue Impact of Operations and Maintenance

Table 3-22 shows the tax impacts resulting from annual operations. The total annual tax impact would be $92,600.

Table 3-22 Nye County Annual Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$0	$3,601	$10,032	$31,810	$27,812	$73,255
Indirect	$0	$692	$1,927	$6,107	$5,648	$14,374
Induced	$0	$218	$607	$1,923	$2,218	$4,966
Total	**$0**	**$4,511**	**$12,566**	**$39,840**	**$35,678**	**$92,595**

3.6.6 Total Accumulative Tax Revenue Impact

Table 3-23 shows the accumulative tax impacts resulting from lifetime operations would be $2.6 million.

Table 3-23 Nye County Lifetime Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$0	$100,825	$280,892	$890,672	$778,742	$2,051,131
Indirect	$0	$19,373	$53,954	$171,002	$158,130	$402,459
Induced	$0	$6,107	$17,000	$53,842	$62,102	$139,051
Total	**$0**	**$126,305**	**$351,846**	**$1,115,516**	**$998,974**	**$2,592,641**

3.7 COMBINED TOTAL IMPACT OF ANNUAL OPERATION

Table 3-24 shows a combined total annual economic impact of $3.5 million that would result from operations.

Table 3-24 Combined Annual Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$227,055	$1,167,610	$690,783	$147,885	$2,233,333
Indirect	$142,579	$491,948	$271,381	$84,264	$990,173
Induced	$75,335	$101,256	$65,103	$16,556	$258,251
Total	**$444,969**	**$1,760,815**	**$1,027,267**	**$248,706**	**$3,481,757**

The indirect and induced labor income impacts are significant, accounting for 32.0 and 16.9 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are also significant, accounting for 28.4 and 7.4 percent of total output, respectively.

3.8 SUMMARY

The economic benefits of constructing the Project are significant for this region and especially for Nye County. In terms of share of each county's economy, at the 230kV level, this study estimates a total annual economic impact of $77.8 million (annual construction plus annual operating), which is 1.9 percent of the county's $4.1 billion economy. In Nye County, construction would generate about $990,000 per year in county tax revenues (Table 3-10) or about 2 percent of the county's annual budget (Section 6.6.2). In the case of Clark County, this study estimates Clark County would receive a $517 million impact, which would represent 0.2 percent of its $265 billion economy.

4 ECONOMIC IMPACTS OF 500KV UPGRADES

4.1 OVERVIEW

This section describes the economic benefits accruing to Clark and Nye Counties as the result of constructing and operating the Project at the 500kV level.

4.2 ECONOMIC IMPACTS OF CONSTRUCTION IN CLARK COUNTY

The dollar figures presented in this section occur over 2 years (2025 and 2026). For example, labor income is the total earned over the 2-year construction period. Employment is shown annually. IMPLAN calculates estimates of economic impacts based on the total planned capital expenditure, as well as the underlying model data.

4.2.1 Total Output

IMPLAN defines the total production value of an industry as output. In this case, the industry is specifically defined as Sector 52 and the Core Upgrades is the product. Table 4-1 shows an estimate of the total economic impact that would result in Clark County from construction of the Project, including $779.5 million of direct capital expenditure.

Table 4-1 Clark County Construction Impact by Type and Category, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$261,924,664	$230,881,986	$260,524,012	$26,174,708	$779,505,370
Indirect	$47,277,959	$70,201,764	$27,774,526	$9,888,548	$155,142,796
Induced	$75,629,437	$98,332,448	$62,832,602	$15,326,634	$252,121,121
Total	**$384,832,061**	**$399,416,198**	**$351,131,139**	**$51,389,889**	**$1,186,769,287**

The indirect and induced labor income impacts account for 12.3 and 19.7 percent of total labor income impacts, respectively. The total output for indirect and induced impacts accounts for 13.1 and 21.2 percent of total output, respectively.

4.2.2 Construction Employment Supported

Table 4-2 shows the number of Clark County construction jobs supported. IMPLAN estimates are based on the capital expenditure budget, as well as the local salary and wage information within the underlying model data. The total number of direct jobs supported would be 1,779 per year for 2 years. An additional 1,017 per year would be supported as result of indirect and

induced impacts (see Glossary for description of IMPLAN jobs). The average annual labor income per direct job would be $73,597 and average annual labor income for all jobs would be $68,794.

Table 4-2 Construction Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	1,779
Indirect	345
Induced	672
Total	**2,796**

4.2.3 Clark County Occupation Detail

Table 4-3 shows the top 15 occupations supported for constructing the Project based on the BLS SOC codes at the 3-digit level per year of construction.

Table 4-3 Clark County Construction Impacts for the Top 15 Occupations, 2023 dollars

Occupation	Average Annual Jobs	Total Employee Comp	Hours Worked	Total Comp/ Hour
Construction Trades Workers	452	$27,286,000	859,886	$32
Installation, Maintenance, and Repair Occupations	391	$27,439,732	805,271	$34
Supervisors of Construction and Extraction Workers	106	$9,055,114	228,758	$40
Supervisors of Installation and Maintenance Workers	95	$9,053,979	203,652	$44
Business Operations Specialists	94	$9,151,448	186,718	$49
Material Moving Workers	73	$3,499,705	120,456	$29
Other Management Occupations	66	$8,454,404	139,785	$60
Top Executives	60	$9,434,091	132,040	$71
Retail Sales Workers	54	$1,986,866	74,018	$27
Motor Vehicle Operators	51	$3,051,456	102,911	$30
Office and Administrative Support Workers	48	$2,198,030	76,752	$29

Occupation	Average Annual Jobs	Total Employee Comp	Hours Worked	Total Comp/ Hour
Financial Clerks	45	$2,547,754	79,387	$32
Vehicle Equipment Mechanics and Repairers	42	$2,843,191	84,001	$34
Food and Beverage Serving Workers	37	$1,036,062	40,573	$26
Secretaries and Administrative Assistants	35	$1,961,062	61,689	$32

4.2.4 Economic Impact by Type and Industry

The direct investment of $779.5 million would impact many industries in Clark County. Table 4-4 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 52 would experience the most impact since that is where the direct capital investment would occur; however, 374 industries would receive at least some impact.

Table 4-4 Impact by Type and Industry for Top 15 Industries, 2023 dollars

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Construction of new power structures	$779,505,370	$0	$0	$779,505,370
Owner-occupied dwellings	$0	$0	$31,706,518	$31,706,518
Other real estate	$0	$9,820,218	$9,852,090	$19,672,308
Other durable goods merchant wholesalers	$0	$14,851,452	$1,902,997	$16,754,448
Industrial machinery leasing	$0	$13,375,237	$554,333	$13,929,570
Hospitals	$0	$0	$11,626,513	$11,626,513
Architectural, engineering, and related services	$0	$10,656,681	$396,365	$11,053,046
Monetary authorities	$0	$2,896,423	$7,269,891	$10,166,314
Management of companies and enterprises	$0	$5,932,733	$4,162,831	$10,095,564
Building material equipment supplies stores	$0	$7,721,828	$838,868	$8,560,696
Nonstore retailers	$0	$949,098	$7,570,400	$8,519,498
Truck transportation	$0	$5,858,135	$2,536,714	$8,394,849

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Tenant-occupied housing	$0	$0	$8,025,913	$8,025,913
Offices of physicians	$0	$0	$7,926,482	$7,926,482
Insurance carriers, except direct life	$0	$1,469,541	$5,888,978	$7,358,519

4.2.5 Total Tax Revenue Impacts of Construction

The IMPLAN tax impact report provides estimates of tax revenues. The tax impact report captures all tax revenue in Clark County across all levels of government for the specific industries and institutions affected by an event. Table 4-5 shows the tax impacts resulting from construction. The total tax revenue impact would be $159.6 million.

Table 4-5 Tax Impact of Construction by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$1,297,445	$2,434,793	$4,839,308	$17,659,852	$74,798,005	$101,029,403
Indirect	$477,696	$888,108	$1,789,438	$6,516,263	$12,755,159	$22,426,665
Induced	$742,030	$1,379,910	$2,779,287	$10,121,415	$21,128,635	$36,151,277
Total	$2,517,171	$4,702,811	$9,408,033	$34,297,530	$108,681,799	$159,607,345

4.3 ECONOMIC IMPACTS OF CONSTRUCTION IN NYE COUNTY

This section presents the corresponding impact estimates for Nye County as presented for Clark County in Section 4.2.

4.3.1 Total Output

Table 4-6 shows an estimate of total economic impact of $335.4 million that would occur in Nye County from construction of the Project, including $262.4 million of direct capital expenditure.

Table 4-6 Nye County Construction Impact by Type and Category, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$92,555,481	$67,932,426	$94,168,409	$7,705,157	$262,361,472
Indirect	$8,731,327	$17,655,991	$4,649,242	$3,631,379	$34,667,939
Induced	$8,996,683	$15,631,906	$10,434,059	$3,331,590	$38,394,238
Total	$110,283,491	$101,220,323	$109,251,710	$14,668,125	$335,423,648

The indirect and induced labor income impacts are significant, though not as significant as in Clark County, accounting for 7.9 and 8.2 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are more significant, accounting for 10.3 and 11.4 percent of total output, respectively.

4.3.2 Construction Employment Supported

Table 4-7 shows the number of Nye County construction jobs supported. The total number of direct jobs supported would be 524 per year for 2 years. An additional 176 per year would be supported as result of indirect and induced impacts. The average annual labor income per direct job would be $88,732 and average annual labor income for all jobs would be $78,844.

Table 4-7 Construction Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	524
Indirect	71
Induced	105
Total	**700**

4.3.3 Nye County Occupation Detail

Table 4-8 shows the top 15 occupations supported for constructing the Project based on the BLS SOC codes at the 3-digit level per year of construction.

Table 4-8 Nye County Construction Impacts for the Top 15 Occupations, 2023 dollars

Occupation	Average Annual Jobs	Total Employee Comp	Hours Worked	Total Comp/ Hour
Construction Trades Workers	129	$9,797,874	245,250	$40
Installation, Maintenance, and Repair Occupations	110	$9,716,420	227,505	$43
Supervisors of Construction Workers	30	$3,262,513	65,404	$50
Supervisors of Installation and Maintenance Workers	27	$3,198,829	57,896	$55
Business Operations Specialists	23	$2,562,250	45,272	$57
Other Management Occupations	17	$2,705,527	37,102	$73
Top Executives	15	$2,626,348	32,774	$80

Occupation	Average Annual Jobs	Total Employee Comp	Hours Worked	Total Comp/ Hour
Material Moving Workers	14	$685,457	21,991	$31
Retail Sales Workers	13	$406,036	18,195	$22
Vehicle Equipment Mechanics and Installers	12	$777,061	24,214	$32
Office and Administrative Support Workers	12	$621,847	18,700	$33
Motor Vehicle Operators	11	$693,580	23,017	$30
Financial Clerks	11	$678,924	18,812	$36
Electronic Equipment Mechanics and Installers	10	$810,340	20,231	$40
Secretaries and Administrative Assistants	8	$484,709	13,736	$35

4.3.4 Economic Impact by Type and Industry

The direct investment of $262.4 million would impact many industries. Table 4-9 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 52 would experience the most impact since that is where the direct capital investment would occur; however, 201 industries would receive at least some impact.

Table 4-9 Impact by Type and Industry for Top 15 Industries, 2023 dollars

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Construction of new power and communication structures	$262,361,472	$0	$0	$262,361,472
Owner-occupied dwellings	$0	$0	$8,917,436	$8,917,436
Other durable goods merchant wholesalers	$0	$4,294,248	$510,244	$4,804,492
Building material equipment and supplies stores	$0	$3,511,877	$344,134	$3,856,011
Industrial machinery leasing	$0	$3,690,655	$72,031	$3,762,686
Petroleum refineries	$0	$2,671,335	$666,345	$3,337,680
Other real estate	$0	$1,992,674	$1,292,989	$3,285,662

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Nonstore retailers	$0	$262,337	$2,175,153	$2,437,490
Architectural, engineering, and related services	$0	$2,214,946	$43,523	$2,258,469
Ready-mix concrete manufacturing	$0	$2,245,198	$11,333	$2,256,531
Truck transportation	$0	$1,359,552	$526,434	$1,885,986
Wholesale petroleum products	$0	$1,268,451	$368,123	$1,636,574
Electric power transmission and distribution	$0	$634,516	$992,523	$1,627,039
Limited-service restaurants	$0	$32,570	$1,513,397	$1,545,968
Hospitals	$0	$0	$1,542,753	$1,542,753

4.3.5 Total Tax Revenue Impacts of Construction

The IMPLAN tax impact report captures all tax revenue in Nye County across all levels of government for the specific industries and institutions affected by an event. Table 4-10 shows the tax impacts resulting from construction. The total tax revenue impact would be $44.6 million.

Table 4-10 Tax Impact of Construction by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$0	$611,556	$1,692,263	$5,315,299	$25,421,738	$33,040,857
Indirect	$0	$276,652	$770,230	$2,440,069	$2,285,311	$5,772,262
Induced	$0	$254,817	$709,311	$2,246,514	$2,590,856	$5,801,497
Total	**$0**	**$1,143,025**	**$3,171,804**	**$10,001,882**	**$30,297,905**	**$44,614,616**

4.4 COMBINED TOTAL IMPACT OF CONSTRUCTION

Table 4-11 shows an estimate of the combined total economic impact that would result in Clark and Nye Counties to be $1.5 billion.

Table 4-11 Combined Construction Impact by Type and Category, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$354,480,145	$298,814,412	$354,692,420	$33,879,865	$1,041,866,842

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Indirect	$56,009,286	$87,857,755	$32,423,768	$13,519,926	$189,810,735
Induced	$84,626,120	$113,964,354	$73,266,661	$18,658,223	$290,515,359
Total	**$495,115,551**	**$500,636,521**	**$460,382,849**	**$66,058,015**	**$1,522,192,936**

The indirect and induced labor income impacts are significant, accounting for 11.3 and 17.1 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are even more significant, accounting for 12.5 and 19.1 percent of total output, respectively.

4.5 ECONOMIC IMPACTS OF OPERATIONS IN CLARK COUNTY

We assume 2027 to be the first year of operations and model a single year of operations. In this section, annual operating impacts are presented as well as 28-year accumulative impacts for select results. The annual direct spending in Clark County resulting from Project operations is anticipated to be $2.3 million in 2023 dollars.

4.5.1 Total Annual Output from Operations and Maintenance

Table 4-12 shows a total annual economic impact of $4.0 million that would result from Project operations in Clark County.

Table 4-12 Clark County Annual Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$233,354	$1,194,080	$709,543	$151,289	$2,288,265
Indirect	$186,704	$675,034	$371,128	$113,069	$1,345,935
Induced	$101,698	$132,141	$84,490	$20,608	$338,937
Total	**$521,757**	**$2,001,254**	**$1,165,161**	**$284,966**	**$3,973,138**

The indirect and induced labor income impacts are significant, accounting for 35.8 and 19.5 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are also significant, accounting for 33.9 and 8.5 percent of total output, respectively.

4.5.2 Operations Employment Created

Table 4-13 shows the employment created in Clark County as the result of Project operations. The total number of direct jobs created would be 1.4 per year for the 28-year lifetime. An additional 3.4 jobs per year would be supported as result of indirect and induced impacts. The

average annual labor income per direct job would be $167,881 and average annual income for all jobs would be $108,473.

Table 4-13 Clark County Operations Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	1.4
Indirect	1.6
Induced	1.8
Total	**4.8**

4.5.3 Total Accumulative Output from Operations and Maintenance

IMPLAN is a linear model. Thus, we can extrapolate the 28-year accumulative operating impact by multiplying annual impact by the number of years. Table 4-14 shows the total lifetime output to be $111.2 million.

Table 4-14 Clark County Total Accumulative Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$6,533,913	$33,434,227	$19,867,202	$4,236,087	$64,071,429
Indirect	$5,227,725	$18,900,944	$10,391,576	$3,165,946	$37,686,191
Induced	$2,847,547	$3,699,944	$2,365,721	$577,022	$9,490,233
Total	**$14,609,185**	**$56,035,116**	**$32,624,499**	**$7,979,054**	**$111,247,853**

4.5.4 Economic Impact by Type and Industry

Each year, the $2.3 million of direct spending would ripple through Clark County's economy and impact many industries. Table 4-15 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 47 would experience the most impact since that is where the operating expense would occur; however, 361 industries would receive at least some impact.

Table 4-15 Clark County Impact of Operations by Type and Industry for Top 15 Industries, 2023 dollars

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Electric power transmission and distribution	$2,288,265	$124,769	$3,331	$2,416,366
Electric power generation - Fossil fuel	$0	$855,067	$1,188	$856,256

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Electric power generation - Solar	$0	$116,381	$162	$116,542
Owner-occupied dwellings	$0	$0	$42,428	$42,428
Electric power generation - Wind	$0	$34,911	$49	$34,960
Other real estate	$0	$10,872	$13,239	$24,111
Employment services	$0	$18,889	$3,658	$22,547
Monetary authorities	$0	$8,932	$9,806	$18,738
Other local government enterprises	$0	$15,039	$3,173	$18,213
Hospitals	$0	$0	$15,705	$15,705
Oil and gas extraction	$0	$15,398	$95	$15,493
Local government electric utilities	$0	$14,807	$67	$14,873
Rail transportation	$0	$12,438	$183	$12,621
Full-service restaurants	$0	$3,608	$8,863	$12,471
Legal services	$0	$6,721	$4,856	$11,577

4.5.5 Total Tax Revenue Impact of Operations and Maintenance

Table 4-16 shows the tax impacts resulting from annual operations. The total annual tax impact would be $461,000.

Table 4-16 Clark County Annual Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$7,267	$13,430	$27,297	$99,268	$91,236	$238,498
Indirect	$5,432	$10,040	$20,401	$74,195	$64,263	$174,331
Induced	$998	$1,855	$3,737	$13,609	$28,411	$48,610
Total	**$13,697**	**$25,325**	**$51,435**	**$187,072**	**$183,910**	**$461,439**

4.5.6 Total Accumulative Tax Revenue Impact

Table 4-17 shows the accumulative tax impacts resulting from lifetime operations would be $12.9 million.

Table 4-17 Clark County Lifetime Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$203,478	$376,035	$764,307	$2,779,498	$2,554,611	$6,677,929
Indirect	$152,091	$281,128	$571,234	$2,077,457	$1,799,370	$4,881,280
Induced	$27,936	$51,952	$104,636	$381,057	$795,517	$1,361,098
Total	**$383,505**	**$709,115**	**$1,440,177**	**$5,238,012**	**$5,149,498**	**$12,920,307**

4.6 ECONOMIC IMPACTS OF OPERATIONS IN NYE COUNTY

The annual spending in Nye County resulting from Project operations is anticipated to be $1.1 million in 2023 dollars.

4.6.1 Total Annual Output from Operations and Maintenance

Table 4-18 shows a total annual economic impact of $1.3 million that would result from Project operations in Nye County.

Table 4-18 Nye County Annual Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$108,076	$561,693	$329,209	$71,091	$1,070,068
Indirect	$27,696	$64,724	$36,957	$13,641	$143,018
Induced	$11,586	$20,121	$13,407	$4,288	$49,403
Total	**$147,358**	**$646,538**	**$379,572**	**$89,021**	**$1,262,489**

The indirect and induced labor income impacts are significant, accounting for 18.8 and 7.9 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are also significant, accounting for 11.3 and 3.9 percent of total output, respectively.

4.6.2 Operations Employment Created

Table 4-19 shows the number of jobs created in Nye County as the result of Project operations. The total number of jobs created by operating the Project is estimated to be an average of 1.1 per year over the Project's lifetime. The average annual labor income per direct job would be $163,751 and average annual income for all jobs would be $132,755.

Table 4-19 Nye County Operations Phase Employment Impacts

Impact Type	Average Annual Jobs
Direct	0.7
Indirect	0.2
Induced	0.3
Total	**1.1**

4.6.3 Total Accumulative Output from Operations and Maintenance

IMPLAN is a linear model. Thus, we can extrapolate the 28-year accumulative operating impact by multiplying annual impact by the number of years. Table 4-20 shows the total lifetime output to be $35.3 million.

Table 4-20 Nye County Total Accumulative Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$3,026,119	$15,727,393	$9,217,845	$1,990,548	$29,961,905
Indirect	$775,492	$1,812,283	$1,034,783	$381,958	$4,004,516
Induced	$324,406	$563,398	$375,397	$120,070	$1,383,271
Total	**$4,126,017**	**$18,103,073**	**$10,628,026**	**$2,492,576**	**$35,349,692**

4.6.4 Economic Impact by Type and Industry

Each year, the $1.1 million of direct spending would impact other industries. Table 4-21 shows the distribution of output by type of impact for the top 15 industries most impacted as measured by dollar value of total output. Sector 47 would experience the most impact since that is where the operating expense would occur; however, 193 industries would receive at least some impact.

Table 4-21 Nye County Impact of Operations by Type and Industry for Top 15 Industries, 2023 dollars

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Electric power transmission and distribution	$1,070,068	$23,031	$1,284	$1,094,382
Electric power generation - Solar	$0	$106,709	$125	$106,834
Owner-occupied dwellings	$0	$0	$11,435	$11,435
Petroleum refineries	$0	$2,529	$861	$3,390

Total Output Impact by Industry	Direct	Indirect	Induced	Total
Nonstore retailers	$0	$86	$2,804	$2,890
Other real estate	$0	$731	$1,664	$2,395
Hospitals	$0	$0	$1,990	$1,990
Limited-service restaurants	$0	$31	$1,954	$1,986
Water, sewage and other systems	$0	$1,371	$215	$1,586
Offices of physicians	$0	$0	$1,497	$1,497
Scientific research and development services	$0	$918	$502	$1,420
General merchandise stores	$0	$15	$1,327	$1,342
Truck transportation	$0	$624	$677	$1,302
Wholesale petroleum products	$0	$722	$475	$1,197
Rail transportation	$0	$1,090	$75	$1,165

4.6.5 Total Tax Revenue Impact of Operations and Maintenance

Table 4-22 shows the tax impacts resulting from annual operations. The total annual tax impact would be $139,000.

Table 4-22 Nye County Annual Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$0	$5,415	$15,085	$47,833	$41,822	$110,155
Indirect	$0	$1,040	$2,898	$9,184	$8,492	$21,614
Induced	$0	$328	$913	$2,892	$3,335	$7,468
Total	**$0**	**$6,783**	**$18,896**	**$59,909**	**$53,649**	**$139,237**

4.6.6 Total Accumulative Tax Revenue Impact

Table 4-23 shows the accumulative tax impacts resulting from lifetime operations would be $3.9 million.

Table 4-23 Nye County Lifetime Tax Impact of Operations by Type and Category, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$0	$151,614	$422,385	$1,339,332	$1,171,019	$3,084,350
Indirect	$0	$29,132	$81,133	$257,141	$237,786	$605,192
Induced	$0	$9,184	$25,564	$80,965	$93,384	$209,097
Total	**$0**	**$189,930**	**$529,082**	**$1,677,438**	**$1,502,189**	**$3,898,639**

4.7 COMBINED TOTAL IMPACT OF ANNUAL OPERATION

Table 4-24 shows a combined total annual economic impact of $5.2 million that would result from operations.

Table 4-24 Combined Annual Operations Impact, 2023 dollars

Impact Type	Labor Income	Intermediate Expenditures	Other Property Income	Taxes on Production	Total Output
Direct	$341,430	$1,755,772	$1,038,752	$222,380	$3,358,333
Indirect	$214,401	$739,758	$408,084	$126,711	$1,488,954
Induced	$113,284	$152,262	$97,897	$24,896	$388,339
Total	**$669,114**	**$2,647,792**	**$1,544,733**	**$373,987**	**$5,235,627**

The indirect and induced labor income impacts are significant, accounting for 32.0 and 16.9 percent of total labor income impacts, respectively. The total output for indirect and induced impacts are also significant, accounting for 28.4 and 7.4 percent of total output, respectively.

4.8 SUMMARY

In terms of share of county economy—in the case of Nye County—at the 500kV level this study estimates a total annual economic impact of $168 million (annual construction plus annual operating), which is 4.1 percent of the county's $4.1 billion economy. In Nye County, construction would generate about $2.2 million per year in county tax revenues (Table 4-10) or about 4.2 percent of the county's annual budget (Section 6.6.2). This study estimates Clark County would experience a $597 million impact, which would represent 0.23 percent of its $265 billion economy..

5 FISCAL IMPACTS

5.1 OVERVIEW

As previously mentioned, the Project would require the purchase of considerable specialized equipment, including transformers and switches, purchased from outside of Clark and Nye Counties. Personal property and sales taxes would apply to the transfer and ownership of this equipment. This section estimates these tax revenues in each county and at each of the two Project levels. Local taxes on the purchase of goods and services used to construct the project, such as hammers, concrete, and solder, are shown in Sections 3 and 4 and are not included in this section.

5.2 PROPERTY TAX

In Nevada, the total taxable value of property is the sum of the value of the land, personal property, and improvements after depreciation. As the Project would lease land from the BLM, those lands would be liable for federal fees, but not real property tax. Private land acquired for the Project would be subject to real property tax. The taxable value of real property, personal property and improvements are based on valuations determined by the Assessor.

5.3 PERSONAL PROPERTY TAX AT THE 230KV LEVEL

This section provides estimates of personal property tax revenues impacting each county over the Project's lifetime at the 230kV level. An estimate of lifetime revenue is broken out by individual tax authority and total annual payments are shown graphically.

5.3.1 Clark County

The current tax rate for unincorporated Clark County is $2.5017 per $100 of assessed value. The assessed value is 35 percent of the total taxable value. Taxable value is a function of depreciation, and this analysis is based on the 30-year life depreciation schedule contained in the state's Personal Property Manual for 2024–2025 (Nevada Department of Taxation 2023). The actual depreciation schedules may depend on the equipment life expectancies published by the manufacturers.

This estimate of personal property tax impact assumes that half the equipment was purchased in 2025 for $220.3 million and the other half was purchased in 2026 for $221.3 million, in purchase year dollars. These amounts have been inflated from 2023 values using IMPLAN's inflator for Sector 52 of 0.43 percent.

The Project is estimated to generate a total of $44.6 million in personal property tax revenue for Clark County over the Project's lifetime. This amount is the net present value assuming an

inflation rate of 1 percent. Final and actual property tax revenue would depend on the assessor's determination upon completion of construction. Table 5-1 breaks out this estimate of personal property tax revenue by taxing authority.

Table 5-1 Clark County Property Tax Revenue by Authority Over the Lifetime of the Project at the 230kV Level

Unincorporated Clark County Property Tax Authority	Rate	Tax Revenue Impact
Assistance to Indigent Persons	0.1000%	$1,783,220
Clark County Capital	0.0500%	$891,610
Clark County Family Court	0.0192%	$342,378
Clark County General Operating	0.4599%	$8,201,028
County School Debt (Bonds)	0.5534%	$9,868,339
County School Maintenance & Operation	0.7500%	$13,374,149
Indigent Accident Fund	0.0150%	$267,483
Las Vegas/Clark County Library	0.0942%	$1,679,793
LVMPD Manpower Supplement County	0.2800%	$4,993,016
State Cooperative Extension	0.0100%	$178,322
State of Nevada	0.1700%	$3,031,474
Total	**2.5017%**	**$44,610,813**

Figure 5-1 shows the total annual tax payments over the Project's lifetime.

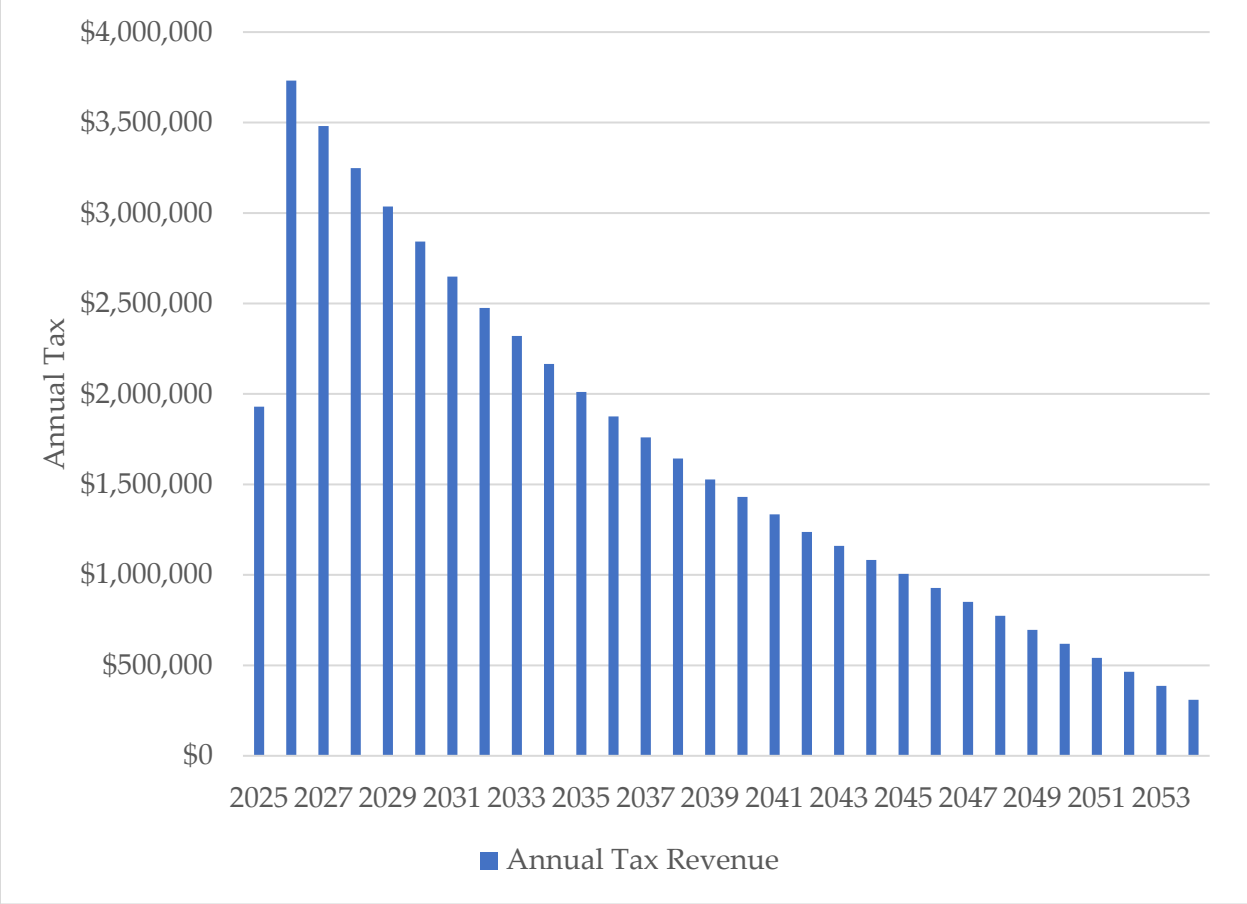

Figure 5-1 Core Upgrades 230kV Clark County Personal Property Tax Estimate

5.3.2 Nye County

The current tax rate for the Pahrump is $3.4086 per $100 of assessed value. The actual effective tax rate will vary with the allocation of property in various Nye County tax districts. The assessed value is 35 percent of the total taxable value. Taxable value is a function of depreciation, and this analysis is based on the 30-year life depreciation schedule contained in the state's Personal Property Manual for 2024–2025 (Nevada Department of Taxation 2023). The actual depreciation schedules would depend on the equipment life expectancies published by the manufacturers.

This estimate of personal property tax impact assumes that half the equipment was purchased in 2025 for $27.6 million and the other half was purchased in 2026 for $27.8 million, in purchase year dollars. These amounts have been inflated from 2023 values using IMPLAN's inflator for Sector 52 of 0.43 percent.

The Project is estimated to generate a total of $7.6 million in personal property tax revenue over the Project's lifetime. This amount is the net present value assuming an inflation rate of 1 percent. Final and actual property tax revenue would depend on the assessor's determination

upon completion of construction. Table 5-2 breaks out this estimate of personal property tax revenue by taxing entity.

Table 5-2 Nye County Property Tax Revenue by Entity Over the Lifetime of the Project at the 230kV Level

Pahrump Tax District (62) Property Tax Entity	Rate	Tax Revenue Impact
Nye County General Fund	1.0470%	$2,342,646
Distributive School Fund	0.7500%	$1,678,113
School District's Debt Service Fund	0.5850%	$1,308,929
Town of Pahrump General Fund	0.4417%	$988,297
State of Nevada Fund	0.1700%	$380,372
Pahrump Library District Fund	0.0988%	$221,063
Juvenile Probation and Corrections Facility Support Fund	0.0800%	$178,999
Medical and General Indigent Fund	0.0790%	$176,761
Capital Projects Fund	0.0350%	$78,312
Special Capital Projects Fund	0.0250%	$55,937
Medical Assistance to the Indigent Persons Fund	0.0201%	$44,973
Pahrump Swimming Pool Fund	0.0163%	$36,471
Agricultural Extension Fund	0.0150%	$33,562
Indigent Persons Injured by Motor Vehicles Fund	0.0150%	$33,562
Public Health Fund	0.0117%	$26,179
Youth Services	0.0060%	$13,425
911 Emergency Telephone Number Fund	0.0050%	$11,187
Pahrump Museum	0.0039%	$8,726
Tonopah Museum	0.0026%	$5,817
Nye County Airport Fund	0.0015%	$3,356
County Road Fund	0.0000%	$0
Tax Entity Total	**3.4086%**	**$7,626,690**

Figure 5-2 shows the total annual tax payments over the Project's lifetime.

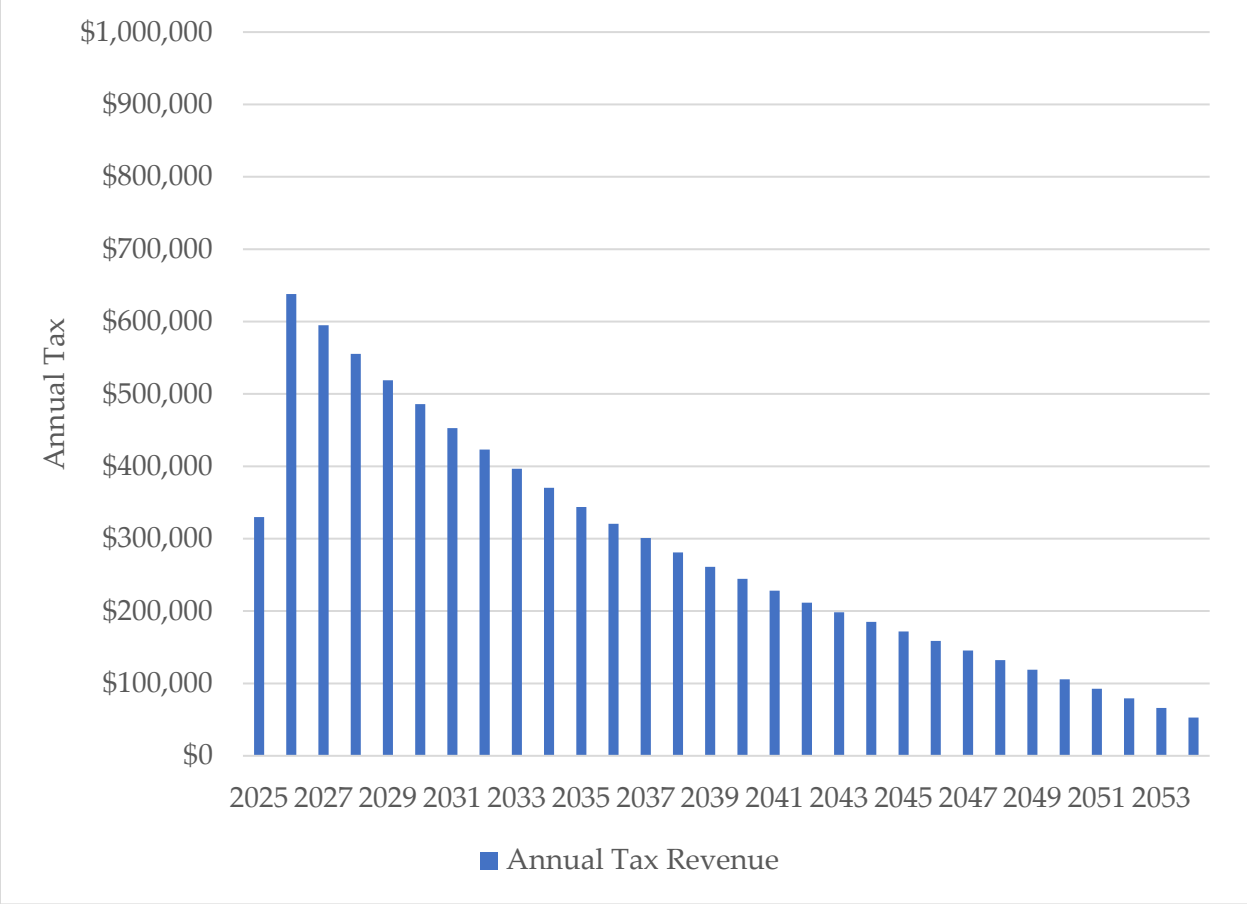

Figure 5-2 Core Upgrades 230kV Nye County Personal Property Tax Estimate

5.4 PERSONAL PROPERTY TAX AT THE 500KV LEVEL

This section provides estimates of personal property tax revenues impacting each county over the Project's lifetime at the 500kV level. An estimate of lifetime revenue is broken out by individual tax authority and total annua payments are shown graphically. The estimates presented in this section use the same methodology adopted for the 230kV level described in Section 5.3.

5.4.1 Clark County

This estimate of personal property tax impact assumes that half the equipment was purchased in 2025 for $222.4 million and the other half was purchased in 2026 for $223.4 million, in purchase year dollars. These amounts have been inflated from 2023 values using IMPLAN's inflator for Sector 52 of 0.43 percent.

The Project is estimated to generate a total of $45.0 million in personal property tax revenue for Clark County over the Project's lifetime. This amount is the net present value assuming an inflation rate of 1 percent. Final and actual property tax revenue would depend on the assessor's determination upon completion of construction. Table 5-3 breaks out this estimate of personal property tax revenue by taxing authority.

Table 5-3 Clark County Property Tax Revenue by Authority Over the Lifetime of the Project at the 500kV Level

Unincorporated Clark County Property Tax Authority	Rate	Tax Revenue Impact
Assistance to Indigent Persons	0.1000%	$1,800,127
Clark County Capital	0.0500%	$900,063
Clark County Family Court	0.0192%	$345,624
Clark County General Operating	0.4599%	$8,278,784
County School Debt (Bonds)	0.5534%	$9,961,902
County School Maintenance & Operation	0.7500%	$13,500,952
Indigent Accident Fund	0.0150%	$270,019
Las Vegas/Clark County Library	0.0942%	$1,695,720
LVMPD Manpower Supplement County	0.2800%	$5,040,355
State Cooperative Extension	0.0100%	$180,013
State of Nevada	0.1700%	$3,060,216
Total	**2.5017%**	**$45,033,774**

Figure 5-3 shows the total annual tax payments over the Project's lifetime.

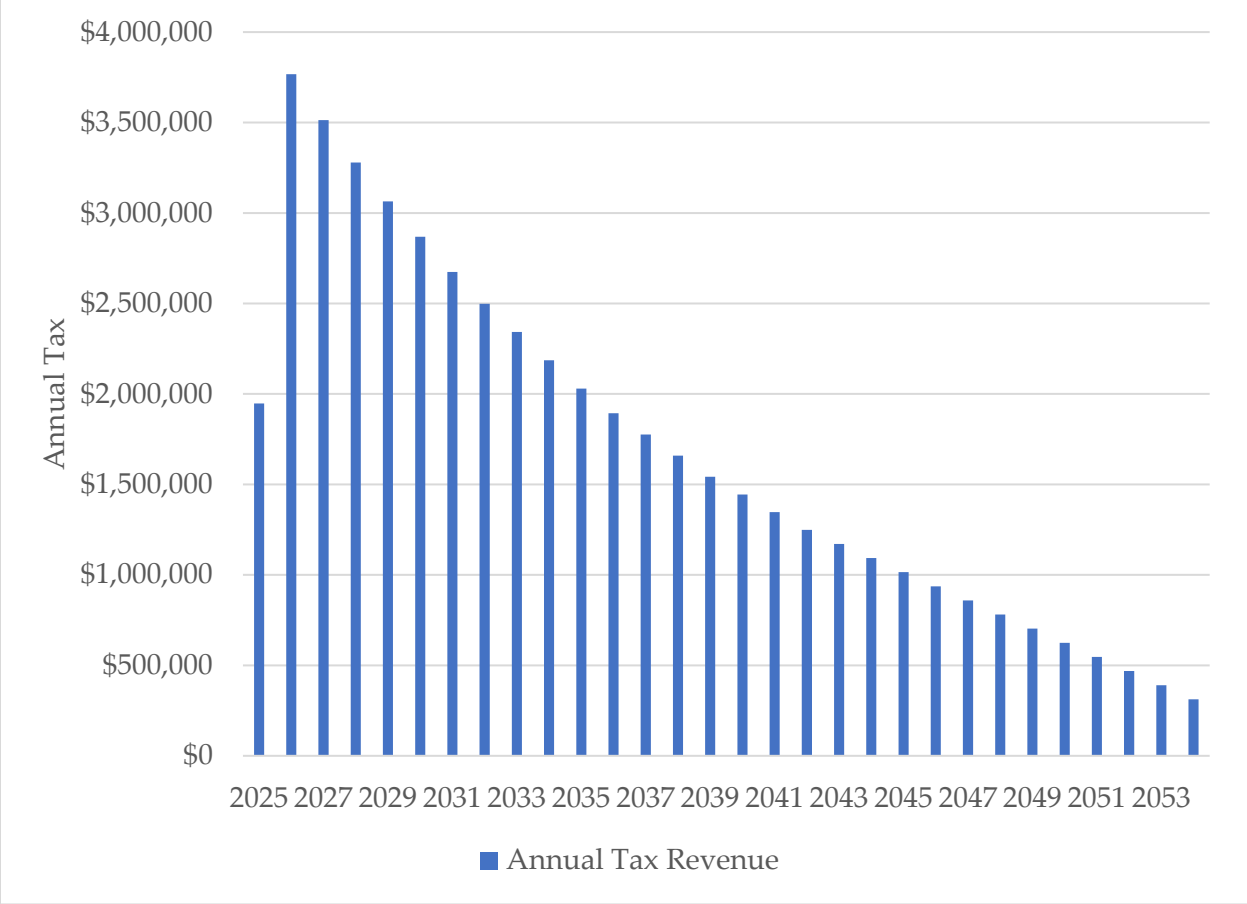

Figure 5-3 Core Upgrades 500kV Clark County Personal Property Tax Estimate

5.4.2 Nye County

This estimate of personal property tax impact assumes that half the equipment was purchased in 2025 for $142.6 million and the other half was purchased in 2026 for $143.2 million, in purchase year dollars. These amounts have been inflated from 2023 values using IMPLAN's inflator for Sector 52 of 0.43 percent.

The Project is estimated to generate a total of $39.3 million in personal property tax revenue over the Project's lifetime. This amount is the net present value assuming an inflation rate of 1 percent. Final and actual property tax revenue would depend on the assessor's determination upon completion of construction. Table 5-4 breaks out this estimate of personal property tax revenue by taxing entity.

Table 5-4 Nye County Property Tax Revenue by Entity Over the Lifetime of the Project at the 500kV Level

Pahrump Tax District (62) Property Tax Entity	Rate	Tax Revenue Impact
Nye County General Fund	1.0470%	$12,086,709
Distributive School Fund	0.7500%	$8,658,101
School District's Debt Service Fund	0.5850%	$6,753,319
Town of Pahrump General Fund	0.4417%	$5,099,044
State of Nevada Fund	0.1700%	$1,962,503
Pahrump Library District Fund	0.0988%	$1,140,561
Juvenile Probation and Corrections Facility Support Fund	0.0800%	$923,531
Medical and General Indigent Fund	0.0790%	$911,987
Capital Projects Fund	0.0350%	$404,045
Special Capital Projects Fund	0.0250%	$288,603
Medical Assistance to the Indigent Persons Fund	0.0201%	$232,037
Pahrump Swimming Pool Fund	0.0163%	$188,169
Agricultural Extension Fund	0.0150%	$173,162
Indigent Persons Injured by Motor Vehicles Fund	0.0150%	$173,162
Public Health Fund	0.0117%	$135,066
Youth Services	0.0060%	$69,265
911 Emergency Telephone Number Fund	0.0050%	$57,721
Pahrump Museum	0.0039%	$45,022
Tonopah Museum	0.0026%	$30,015
Nye County Airport Fund	0.0015%	$17,316
County Road Fund	0.0000%	$0
Tax Entity Total	**3.4086%**	**$39,349,339**

Figure 5-4 shows the total annual tax payments over the Project's lifetime.

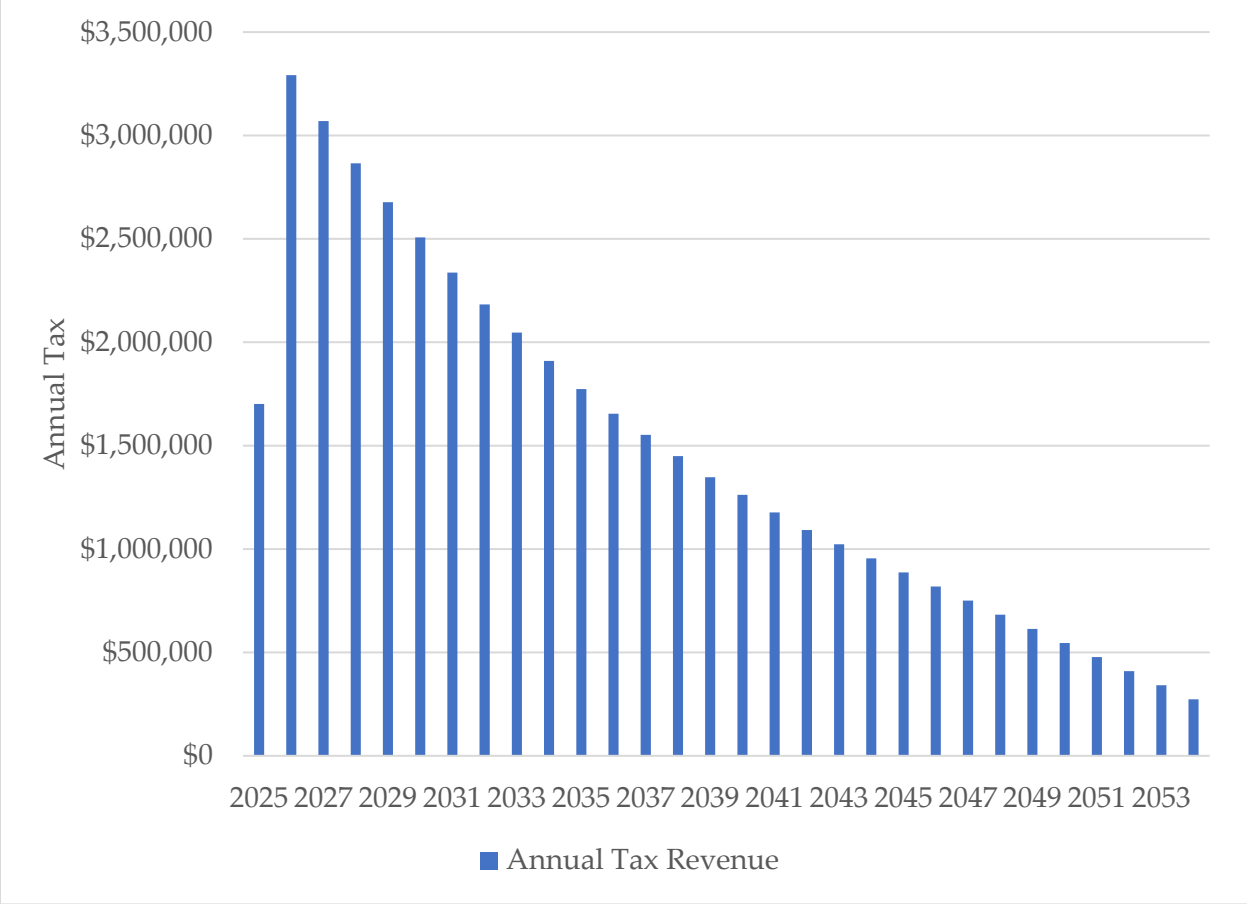

Figure 5-4 Core Upgrades 500kV Nye County Personal Property Tax Estimate

5.5 SALES AND USE TAX AT THE 230KV LEVEL

In the State of Nevada, personal property transferred for value is taxable. This section estimates the sales tax revenue arising from the purchase of the specialty equipment, such as transformers and switches. Use tax is the counterpart of sales tax and the tax rate is the same as the sales tax rate in the county the property is used in. Use tax is imposed on tangible personal property for which sales tax has not been paid, and often applies to supplies and equipment purchased from out-of-state vendors. Since this equipment is not manufactured locally, it does not have local economic impact, but it does have fiscal impact in the form of sale tax revenue. This assessment assumes that GridLiance West takes possession of the property in the county where it is to be assembled, installed, and/or operated.

5.5.1 Clark County

The minimum statewide tax rate is 6.85 percent. On September 3, 2019, the Clark County Commission passed its most recent sales tax increase of 0.125 percent on the sale of all tangible personal property that is taxable and tied to improving education. Effective January 1, 2020, the

Clark County total sales and use tax rate increased to 8.375 percent. The taxable initial equipment purchase in Clark County is estimated to total $436.9 million in 2023 dollars.

Table 5-5 shows a breakdown of the sales and use tax revenues received from the initial purchase of taxable equipment. The total amount received is $36.6 million in 2023 dollars, including the local amount of $27.9 million.

Table 5-5 Clark County Sales and Use Tax Revenue from Initial Construction at the 230kV Level

Sales and Use Tax Authority	Rate	Tax Revenue
State Sales Tax	2.000%	$8,738,451
Local School Support Tax	2.725%	$11,906,139
Basic City-County Relief Tax	0.500%	$2,184,613
Supplemental City-County Relief Tax	1.750%	$7,646,144
Mass Transit	0.500%	$2,184,613
Infrastructure	0.250%	$1,092,306
Flood Control	0.250%	$1,092,306
Additional Police Officers	0.400%	$1,747,690
Total	**8.375%**	**$36,592,262**

5.5.2 Nye County

As of January 1, 2020, Nye County collects an additional 0.75 percent for a total rate of 7.6 percent. The taxable initial equipment purchase in Nye County is estimated to total $54.8 million in 2023 dollars.

Table 5-6 shows a breakdown of the sales and use tax revenues received from the initial purchase of taxable equipment. The total amount received is $4.2 million in 2023 dollars, including the local amount of $3.1 million.

Table 5-6 Nye County Sales and Use Tax Revenue from Initial Construction at the 230kV Level

Sales and Use Tax Authority	Rate	Tax Revenue
State Sales Tax	2.00%	$1,096,452
Local School Support Tax	2.60%	$1,425,388
Basic City-County Relief Tax	0.50%	$274,113

Sales and Use Tax Authority	Rate	Tax Revenue
Supplemental City-County Relief Tax	1.75%	$959,395
Nye County Public Roads	0.25%	$137,056
Nye County Public Safety	0.50%	$274,113
Total	**7.60%**	**$4,166,517**

5.6 SALES AND USE TAX AT THE 500KV LEVEL

This section estimates the sales tax revenue arising from the purchase of the specialty equipment at the 500kV level. This assessment assumes that GridLiance West takes possession of the property in the county where it is to be assembled, installed, and/or operated.

5.6.1 Clark County

The taxable initial equipment purchase in Clark County is estimated to total $441.1 million in 2023 dollars.

Table 5-7 shows a breakdown of the sales and use tax revenues received from the initial purchase of taxable equipment. The total amount received is $36.9 million in 2023 dollars, including the local amount of $28.1 million.

Table 5-7 Clark County Sales and Use Tax Revenue from Initial Construction at the 500kV Level

Sales and Use Tax Authority	Rate	Tax Revenue
State Sales Tax	2.000%	$8,821,301
Local School Support Tax	2.725%	$12,019,023
Basic City-County Relief Tax	0.500%	$2,205,325
Supplemental City-County Relief Tax	1.750%	$7,718,639
Mass Transit	0.500%	$2,205,325
Infrastructure	0.250%	$1,102,663
Flood Control	0.250%	$1,102,663
Additional Police Officers	0.400%	$1,764,260
Total	**8.375%**	**$36,939,199**

5.6.2 Nye County

The taxable initial equipment purchase in Nye County is estimated to total $282.9 million in 2023 dollars.

Table 5-8 shows a breakdown of the sales and use tax revenues received from the initial purchase of taxable equipment. The total amount received is $21.5 million in 2023 dollars, including the local amount of $15.8 million.

Table 5-8 Nye County Sales and Use Tax Revenue from Initial Construction at the 500kV Level

Sales and Use Tax Authority	Rate	Tax Revenue
State Sales Tax	2.00%	$5,657,062
Local School Support Tax	2.60%	$7,354,180
Basic City-County Relief Tax	0.50%	$1,414,265
Supplemental City-County Relief Tax	1.75%	$4,949,929
Nye County Public Roads	0.25%	$707,133
Nye County Public Safety	0.50%	$1,414,265
Total	**7.60%**	**$21,496,834**

5.7 FEDERAL ACREAGE RENT AT THE 230KV AND 500KV LEVELS

The Federal Land Policy and Management Act of 1976 provides that right-of-way holders must generally pay fair market value for use of public lands.

The acreage rent depends on the number of acres and various factors published by the BLM (Bureau of Land Management 2022). The number of acres utilized currently by existing transmission lines and switches is shown in Table 5-9 along with the acres required for each level of upgrades.

Table 5-9 Federal Acres in BLM ROW

Location	Current Acres	230kV Acres	500kV Acres
Clark	1,074	2,361	2,644
Nye	505	1,111	1,244
Total	**1,579**	**3,472**	**3,888**

Source: SWCA.

Table 5-10 provides estimates of lifetime acreage rents.

Table 5-10 Estimated Lifetime Acreage Rents by County for Each Project Level

Location	Current Rent	230kV Rent	500kV Rent
Clark	$4,871,213	$10,711,116	$11,994,476
Nye	$2,448,660	$5,384,260	$6,029,378
Total	**$7,319,873**	**$16,095,376**	**$18,023,854**

5.8 REAL PROPERTY TAX

GridLiance West may need to acquire easements across private parcels from individual landowners and/or purchase parcels outright. This will have impacts on the tax base, depending amount of each transaction, future assessed values, level of improvement, and land classification.

5.9 IMPACT ON NEIGHBORING PROPERTY VALUES

Since the Project upgrades existing infrastructure and does not develop new infrastructure, with the exception of Johnnie Corner Substation at the 500kV level, an incremental impact on neighboring property values resulting from the Project would be unlikely. Further, much of the Project would be located in remote locations. Impacts to non-market values are presented in Section 6.9.

A 2017 literature review specific to transmission lines and property values concluded little or no effects on price (Pitts 2017). Finally, a 2019 meta-analysis of energy infrastructure impact on housing value reviewed 54 studies. The results are somewhat inconclusive (Leach 2019). A study specific to agricultural land values found no effect on land values near utility-scale solar farms. This study further points out that the adjacent land could be positively impacted if also converted to solar production and that transmission line construction may also have positive impact for similar reason (Abashidze 2023).

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6 SOCIOECONOMIC ASSESSMENT

6.1 OVERVIEW

This section presents a socioeconomic assessment of Clark and Nye Counties. Given the drastically different size of each county's economy, metrics are presented separately for each county so the impacts to Nye County are not diluted.

The description of the local economy focuses on primary industries, employment, and household incomes. Location quotient and shift-share analysis show how select industries in each county compare to the national economy. The size of each county government is described in terms of budget. Assessments of housing, health, and community services further describe each county. Impacts to non-market values are commented on briefly. The section concludes with a discussion of cumulative impacts.

Although this section does not include Project-specific labor acquisition, housing, and transportation plans, the information presented serves as a basis for developing such plans.

Every attempt has been made to provide the most current data available, however, much of the data presented is sourced from the U.S. Census, which is generally available through 2021 (U.S. Census Bureau 2022).

6.2 DATA SOURCES

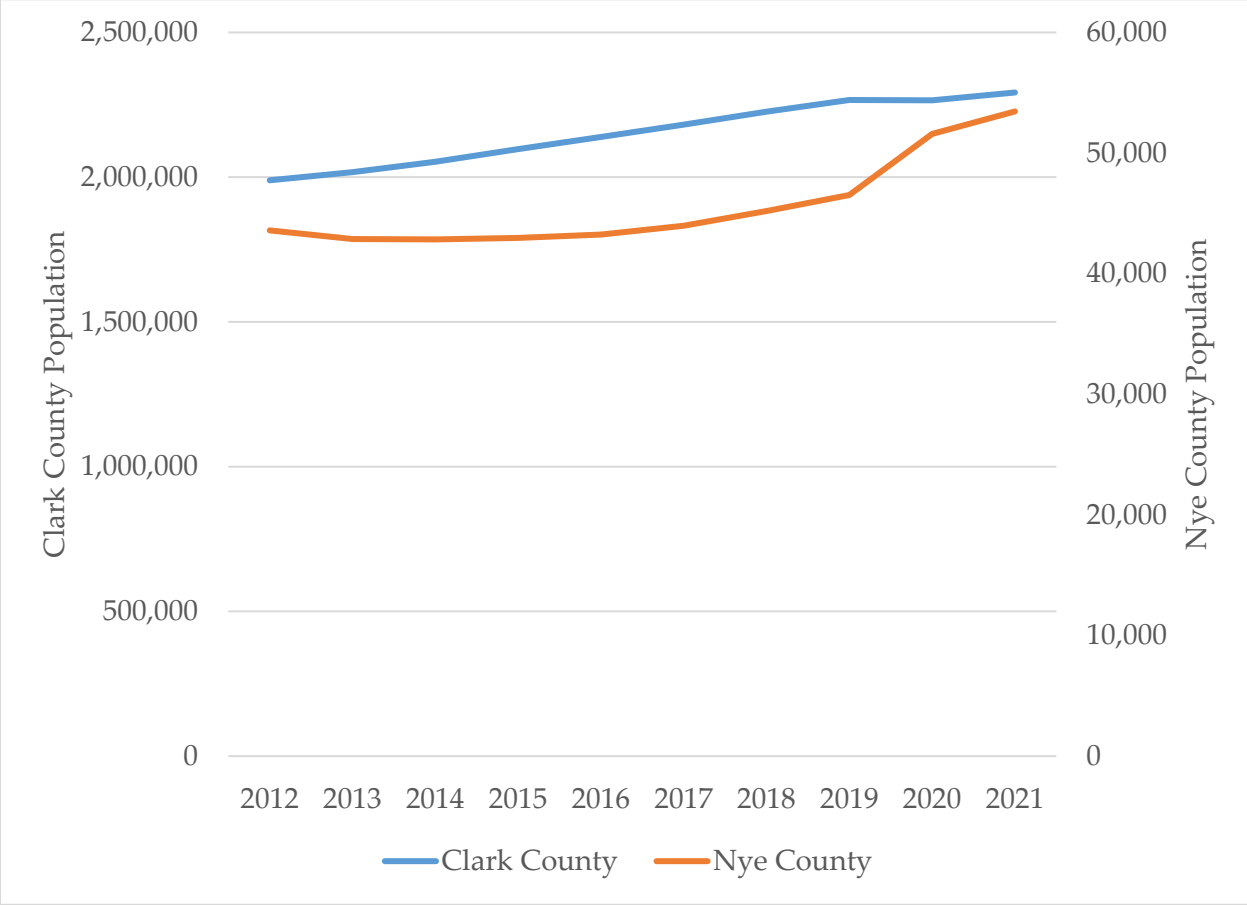
In order to assess the socioeconomic characteristics of Clark and Nye Counties, a variety of documents and publications have been reviewed from local, state, federal, academic, nonprofit, and other private organizations. A list of primary organizations is shown below, with specific citations provided throughout the report.

- IMPLAN
- Clark County
- Nye County
- State of Nevada
- U.S. Census Bureau
- University of Nevada, Reno
- Zillow

In regard to the U.S. Census Bureau, we primarily present data from the American Community Survey (ACS). For some metrics, Decennial Census (PL 94-171) data is available and may vary from ACS estimates.

6.3 POPULATION

Clark County has almost 43 times the population of Nye County. In 2021, there were almost 2.3 million residents living in Clark County, compared to 53,450 in Nye County. From 2012, Clark County grew at an annual average rate of 1.6 percent, while Nye County grew at an average of 2.3 percent with most of the growth occurring over the past 3 years. Figure 6-1 shows the growth trends over time and incorporates the Decennial Census redistricting data for 2020, which exceeds the ACS estimates this study relies on to analyze trends over time. Thus, the recent jump in Nye County's population may be an artifact of Census data collection and estimation rather than an actual significant increase.

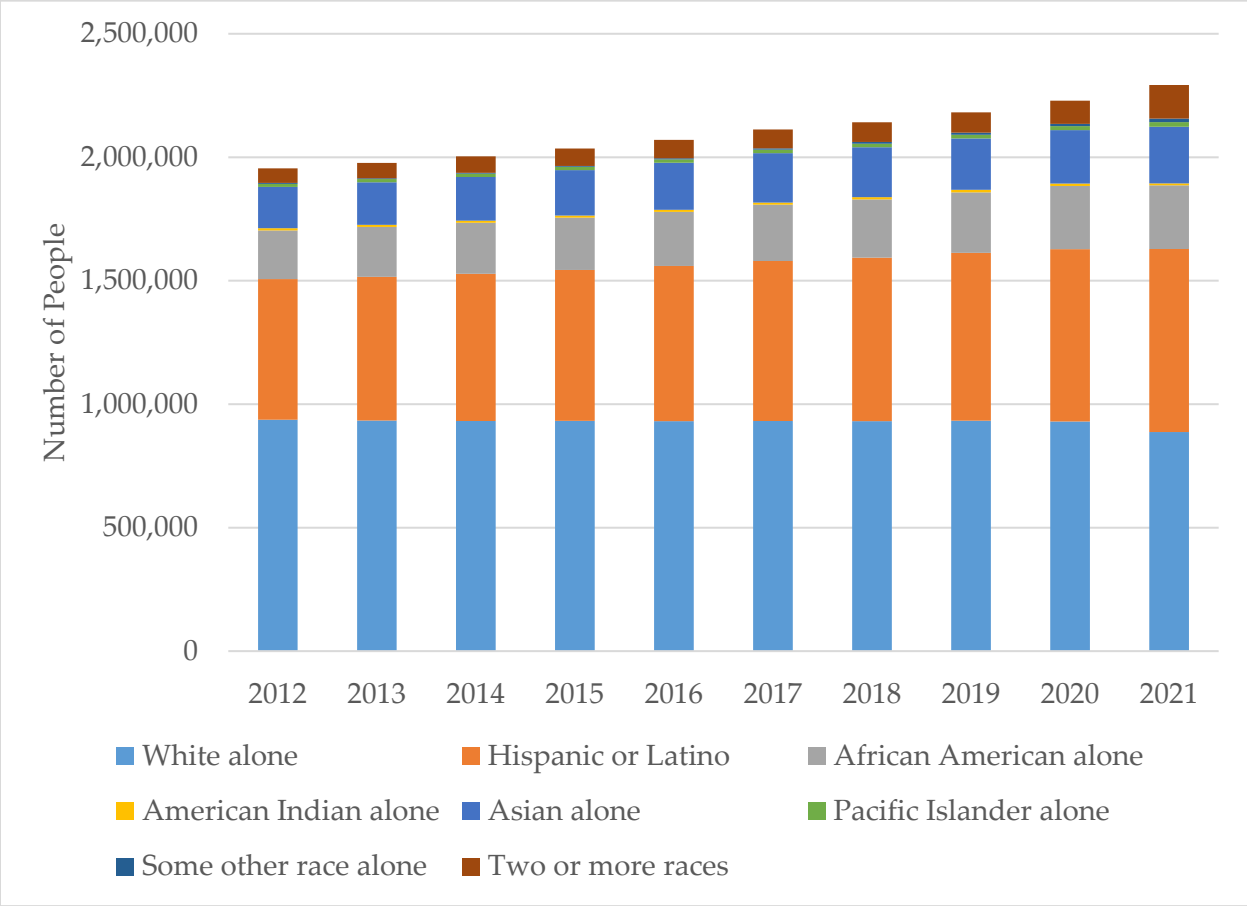


Source: U.S. Census.

Figure 6-1 Population Growth of Clark and Nye Counties

According to the Nevada State Demographer's Office, Clark County's population is forecast to grow 8.7 percent from 2021 to 2031 and Nye County's population is forecast to grow 7.5 percent over the same period—both less than the state forecast of 9.3 percent (Griswold 2021). At these rates of growth, Clark County will reach 2.46 million people by 2031 and Nye County will have just over 58,000.

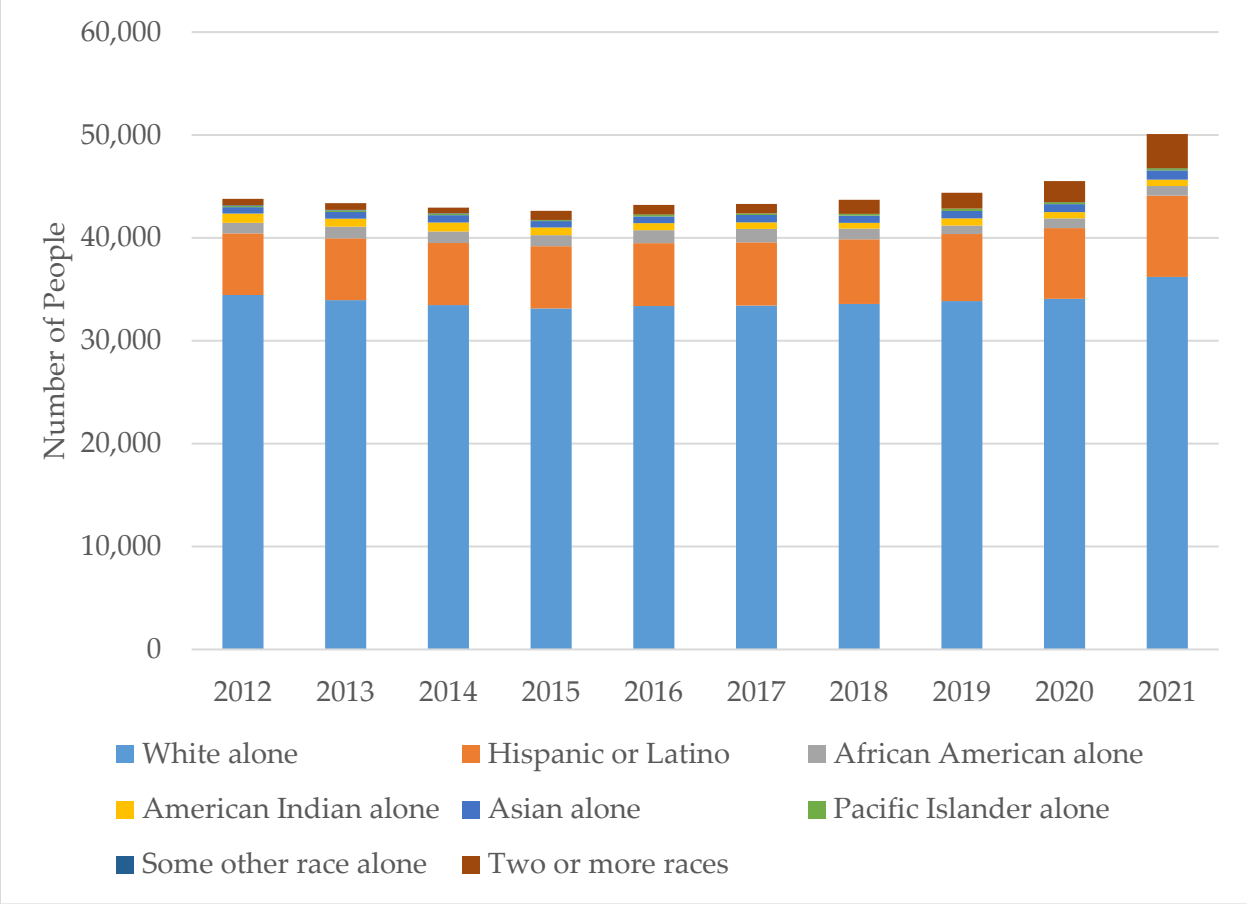
Figure 6-2 shows Clark County's population growth by race categories. Clark County is more racially diverse than Nye County with the "White alone" segment of the population comprising less than half of the population (39 percent). As in Nye County, the white population has declined slightly from 2012, while other races have been growing. The "Hispanic or Latino" segment accounts for 32 percent of the population and has been growing at an annual average rate of 2.6 percent since 2012. American Indians are less than 0.5 percent of the total population; their population has been growing at an annual average rate of 1.9 percent.



Source: U.S. Census.

Figure 6-2 Clark County Population Growth by Race

Figure 6-3 shows Nye County's population growth by race categories. As of 2021, the "White alone" segment comprised 72 percent of the population, although this segment of the population has been declining from 2012. In contrast, the "Hispanic or Latino" population grew annually at 1.8 percent to reach 16 percent of the total population by 2021. The American Indian population declined from 902 to 613 over these 10 years.



Source: U.S. Census.

Figure 6-3 Nye County Population Growth by Race

6.4 ECONOMIC ANALYSIS

This section describes the regional economy in terms of industries and individuals. Hospitality, gambling, and real estate are large drivers in Clark County along with its medical and financial sectors. Nye County relies on mineral extraction, government, and (to a lesser extent than Clark County) hospitality sectors to drive its economy.

6.4.1 Primary Industries

The total output (the value of all products and services produced) of Clark County's 391 industries was $265 billion in 2022, including $160 billion of gross domestic product (GDP). Table 6-1 lists the top 15 Clark County industries as measured by total economic output.

Table 6-1 Top 15 Clark County Industries by Total Economic Output, 2022 dollars

Industry Description	Total Output
Hotels and motels, including casino hotels	$14,096,413,227
Owner-occupied dwellings	$13,536,734,121
Other real estate	$12,736,492,511
Management of companies and enterprises	$7,836,301,202
Full-service restaurants	$6,715,882,041
Air transportation	$5,772,834,130
Limited-service restaurants	$5,358,363,481
Hospitals	$5,043,787,420
Insurance carriers, except direct life	$4,750,576,612
Gambling industries (except casino hotels)	$4,549,222,779
Monetary authorities	$4,518,902,129
Construction of new single-family residential structures	$4,431,927,886
Tenant-occupied housing	$4,305,518,719
Construction of other new residential structures	$3,866,583,512
Insurance agencies, brokerages, and related activities	$3,811,393,584

Source: IMPLAN.

Table 6-2 lists the top 15 Nye County industries. The total output of Nye County's 216 industries is $4.1 billion, including $2.3 billion of GDP. In terms of GDP, Clark County's economy is almost 70 times larger than Nye County's.

Table 6-2 Top 15 Nye County Industries by Total Economic Output, 2022 dollars

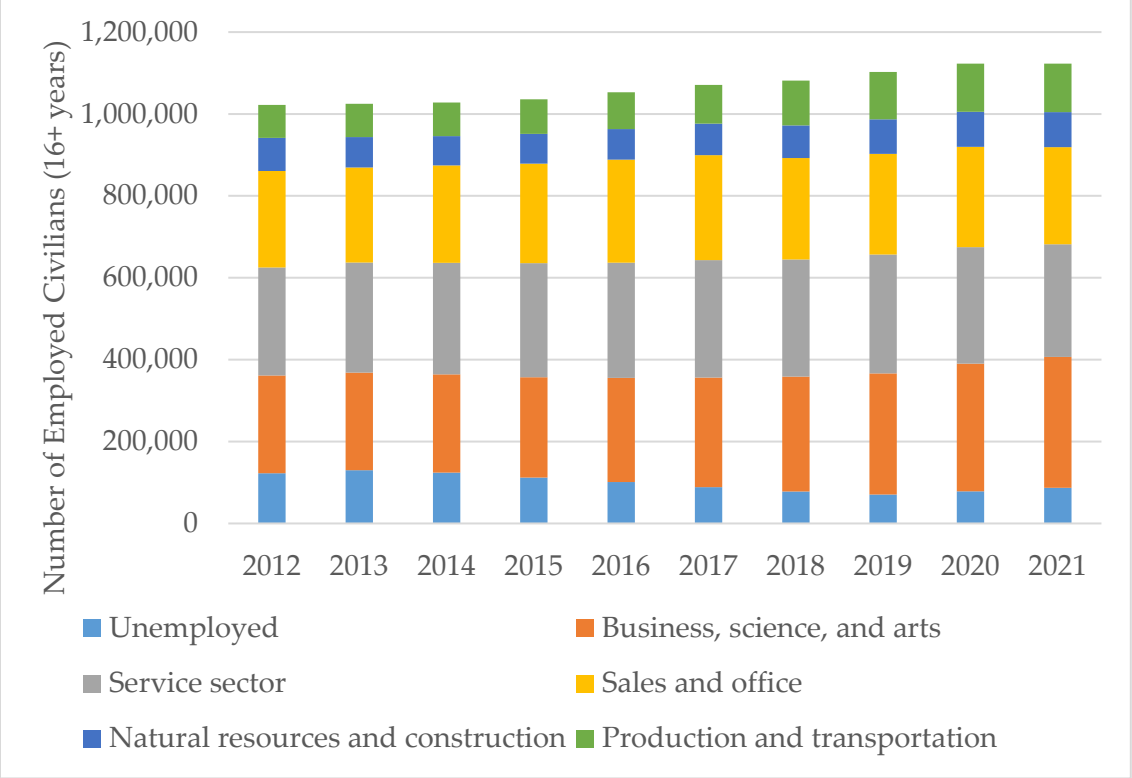
Industry Description	Total Output
Gold ore mining	$493,656,839
Scientific research and development services	$441,418,500
Owner-occupied dwellings	$309,769,073
Electric power transmission and distribution	$273,549,540
Other real estate	$144,026,464
Copper, nickel, lead, and zinc mining	$112,928,165

Industry Description	Total Output
Facilities support services	$102,774,173
Retail - Nonstore retailers	$80,698,051
Local government education	$72,005,802
Petroleum refineries	$71,444,585
Local government other	$63,212,301
Limited-service restaurants	$58,693,039
Hospitals	$54,118,544
Gambling industries (except casino hotels)	$54,110,599
Hotels and motels, including casino hotels	$51,207,952

Source: IMPLAN.

6.4.2 Employment Trends

In Clark County, the number of people employed in the occupational categories of "business, science, and arts" and "production and transportation" showed the strongest growth over the past 10 years at 3.3 and 4.5 percent, respectively. The number of unemployed declined at an annual average rate of 3.3 percent. In 2021, the total number of employed people exceeded 1 million (Figure 6-4).

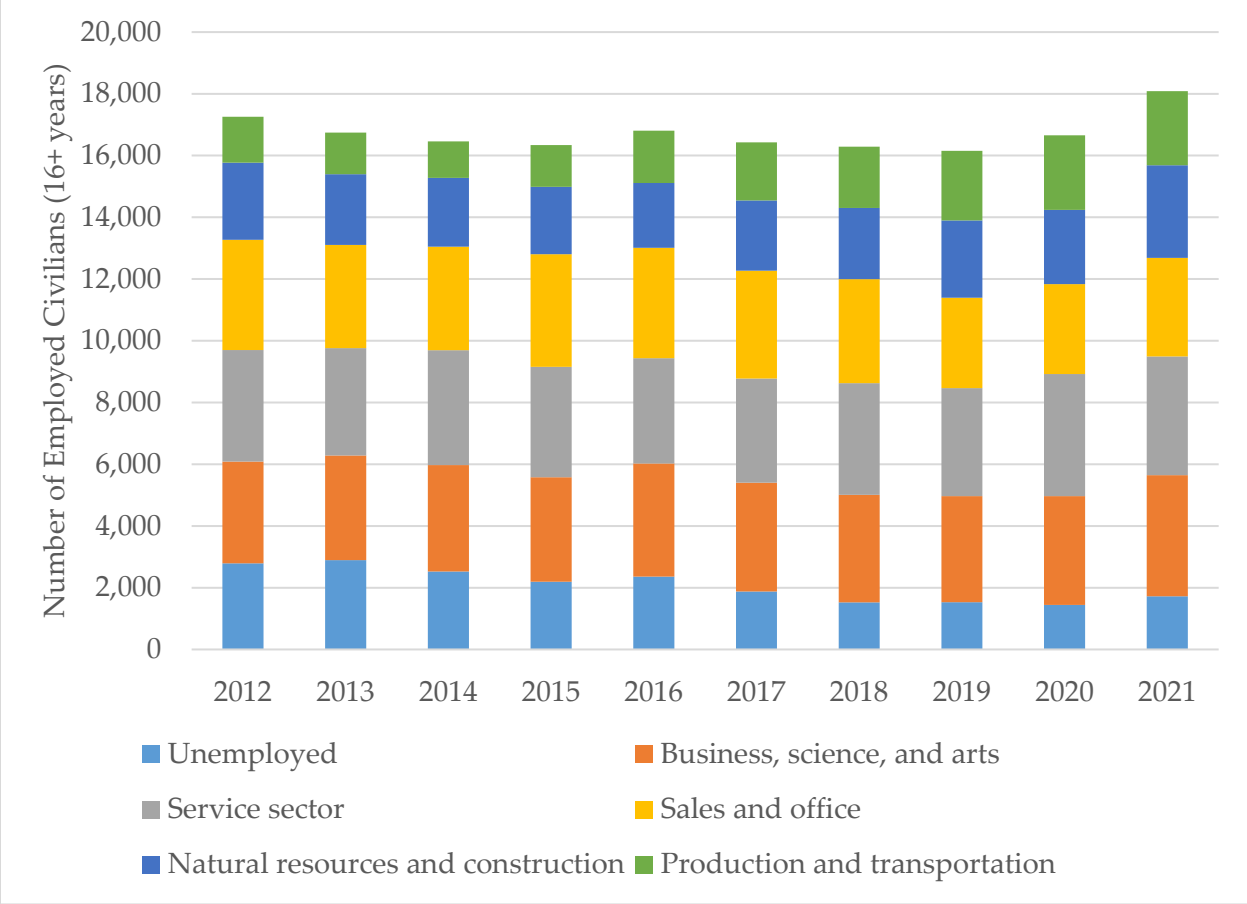


Source: U.S. Census.

Figure 6-4 Clark County Employment Trends by Occupational Category

The employment trends in Nye County are similar, though the magnitudes are generally greater. The number of people employed in "production and transportation" grew at 6.1 percent. The number of unemployed declined at an annual average rate of 4.4 percent. In 2021, the total number of employed people was 18,000 (Figure 6-5), which was about 2 percent of Clark County employment.

For both counties, Project construction would support some of these jobs, while Project operations would create new jobs.



Source: U.S. Census.

Figure 6-5 Nye County Employment Trends by Occupational Category

Table 6-3 provides a more detailed breakout of Clark County's labor force in 2021, employing over 1.1 million people. With more than 74,000 individuals in the construction sector alone, there would be enough workers to build and operate the Project.

Table 6-3 Clark County Labor Force in 2021

Labor Force Population (16 years and over)	Number
Agriculture, forestry, fishing and hunting, and mining	3,266
Construction	74,642
Manufacturing	39,522
Wholesale trade	18,016
Retail trade	120,230
Transportation and warehousing, and utilities	68,964
Information	16,130

Labor Force Population (16 years and over)	Number
Finance and insurance, and real estate and rental and leasing	62,884
Professional, scientific, and management, and waste services	125,008
Educational services, and health care and social assistance	166,194
Arts, recreation, accommodation, and food services	256,302
Other services, except public administration	47,265
Public administration	37,658
Armed Forces	8,246
Unemployed	87,046
Total	**1,131,373**

Source: U.S. Census

Table 6-4 shows a detailed breakout of Nye County's labor force in 2021, which is significantly smaller than Clark County's labor force. However, due to the proximity of much of the Project to Pahrump, construction would support Nye County jobs and Project operations would create new jobs.

Table 6-4 Nye County Labor Force in 2021

Labor Force Population (16 years and over)	Number
Agriculture, forestry, fishing and hunting, and mining	1,550
Construction	1,570
Manufacturing	868
Wholesale trade	341
Retail trade	2,028
Transportation and warehousing, and utilities	1,112
Information	291
Finance and insurance, and real estate and rental and leasing	599
Professional, scientific, and management, and waste services	1,370
Educational services, and health care and social assistance	2,167
Arts, recreation, accommodation, and food services	2,939
Other services, except public administration	625

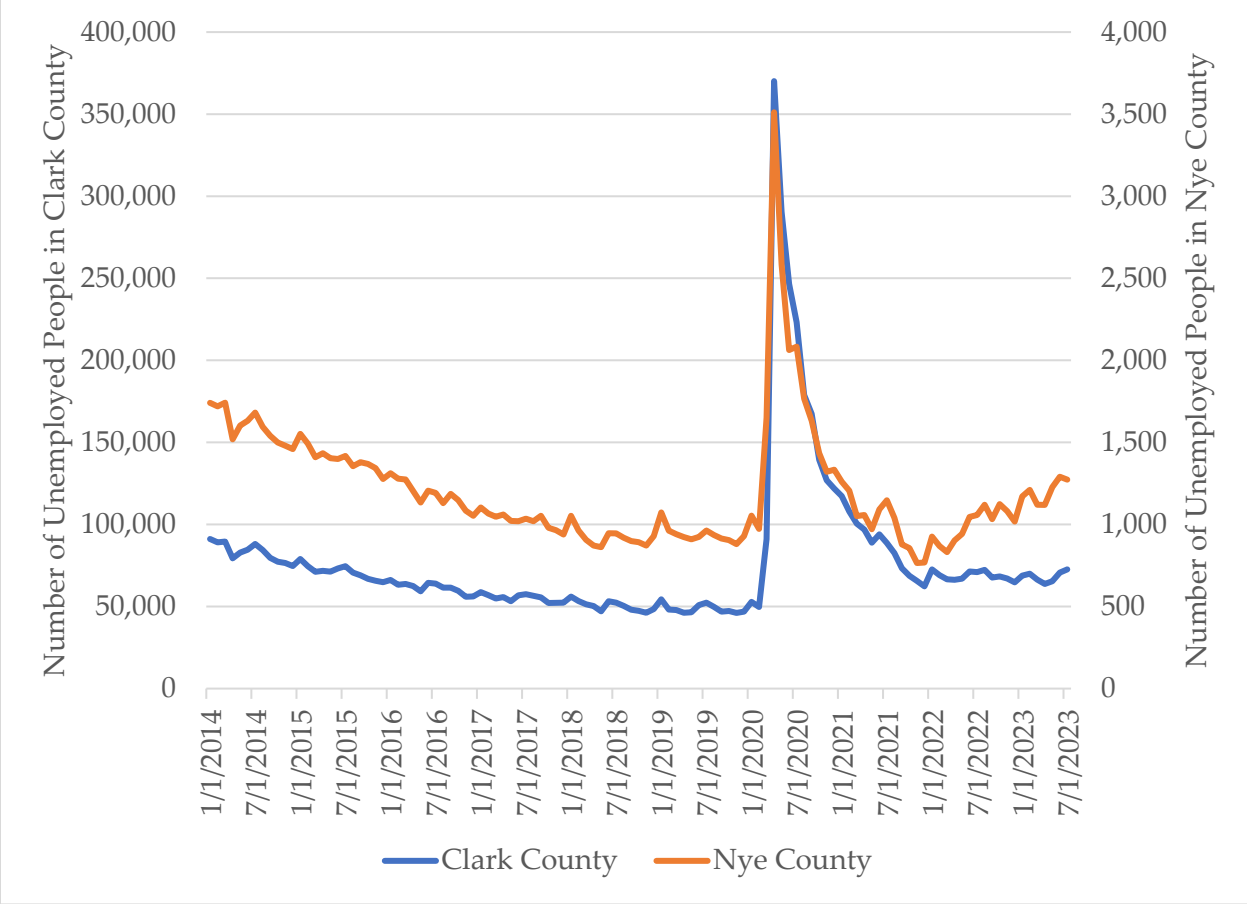
Labor Force Population (16 years and over)	Number
Public administration	900
Armed Forces	0
Unemployed	1,725
Total	**18,085**

Source: U.S. Census

6.4.3 Unemployment

Post-pandemic unemployment counts bottomed out in December 2021 with 62,300 unemployed in Clark County (BLS Beta Labs 2023) and 765 unemployed in Nye County in November 2021 (BLS Beta Labs 2023). Since then, the number of unemployed in both counties has been rising. As of July 2023, unemployment in Clark County exceeded 72,500 persons and in Nye County there were almost 1,273 persons looking for work (Figure 6-6).

From an unemployment perspective, it is clear that constructing the Project would predominantly employ workers from Clark County as well as Nye County. Operating the Project would most likely provide employment opportunities to Nye County residents.



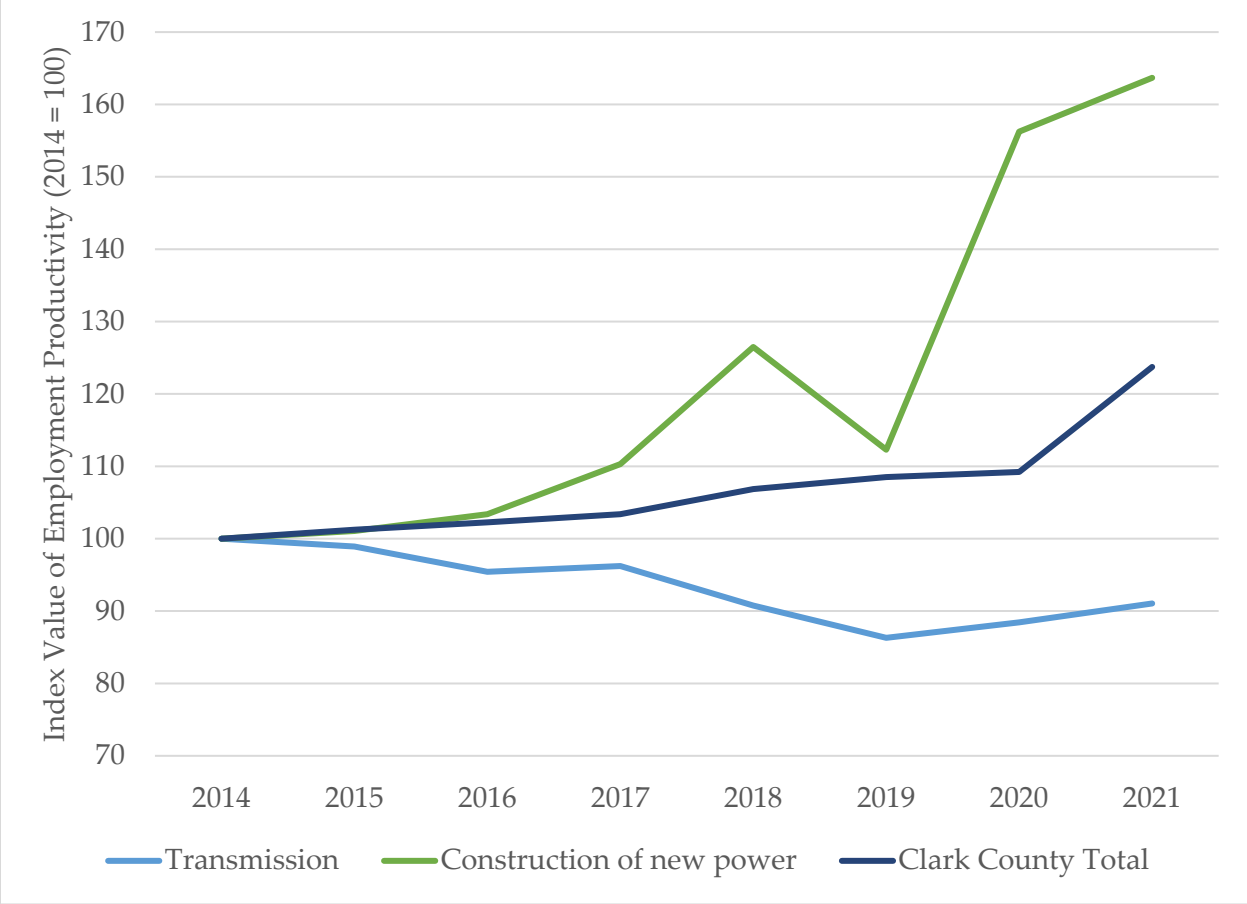
Source: Bureau of Labor Statistics.

Figure 6-6 Unemployment in Clark and Nye Counties

6.4.4 Employee Productivity Index

Indexing numerical data allows for quick comparison and is common in economic and financial analysis. By normalizing data to a common starting point, the relative rate of change of variables over time is easily observed. Indexing enhances perspective of economic trends.

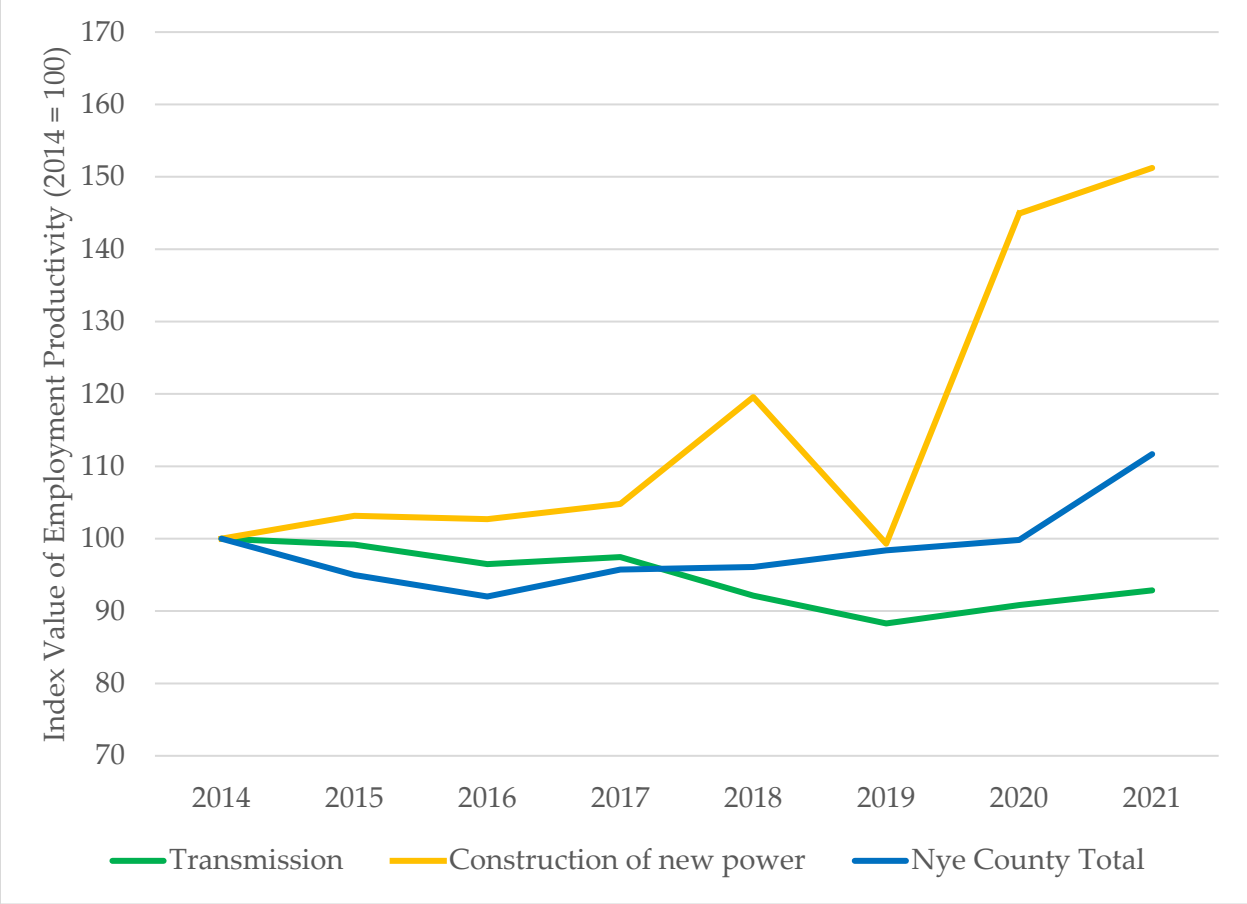
Figure 6-7 shows employment productivity trends, as measured by total output per job, for select Clark County industries from 2014 to 2021, indexed to 2014 levels. Productivity gains in the construction of new power and communication structures exceeded those of Clark County overall by a wide margin. Productivity in the transmission industry declined from 2014 to 2019, before rebounding.



Source: IMPLAN.

Figure 6-7 Clark County Employment Productivity Index, 2014–2021

Figure 6-8 shows employment productivity trends for select Nye County industries from 2014 to 2021, indexed to 2014 levels. As in Clark County, productivity gains have been greatest in the construction of new power and communication structures industry, growing 50 percent over the period. Transmission in Nye County also followed Clark County, increasing over the past 2 years, yet still below 2014 level.



Source: IMPLAN.

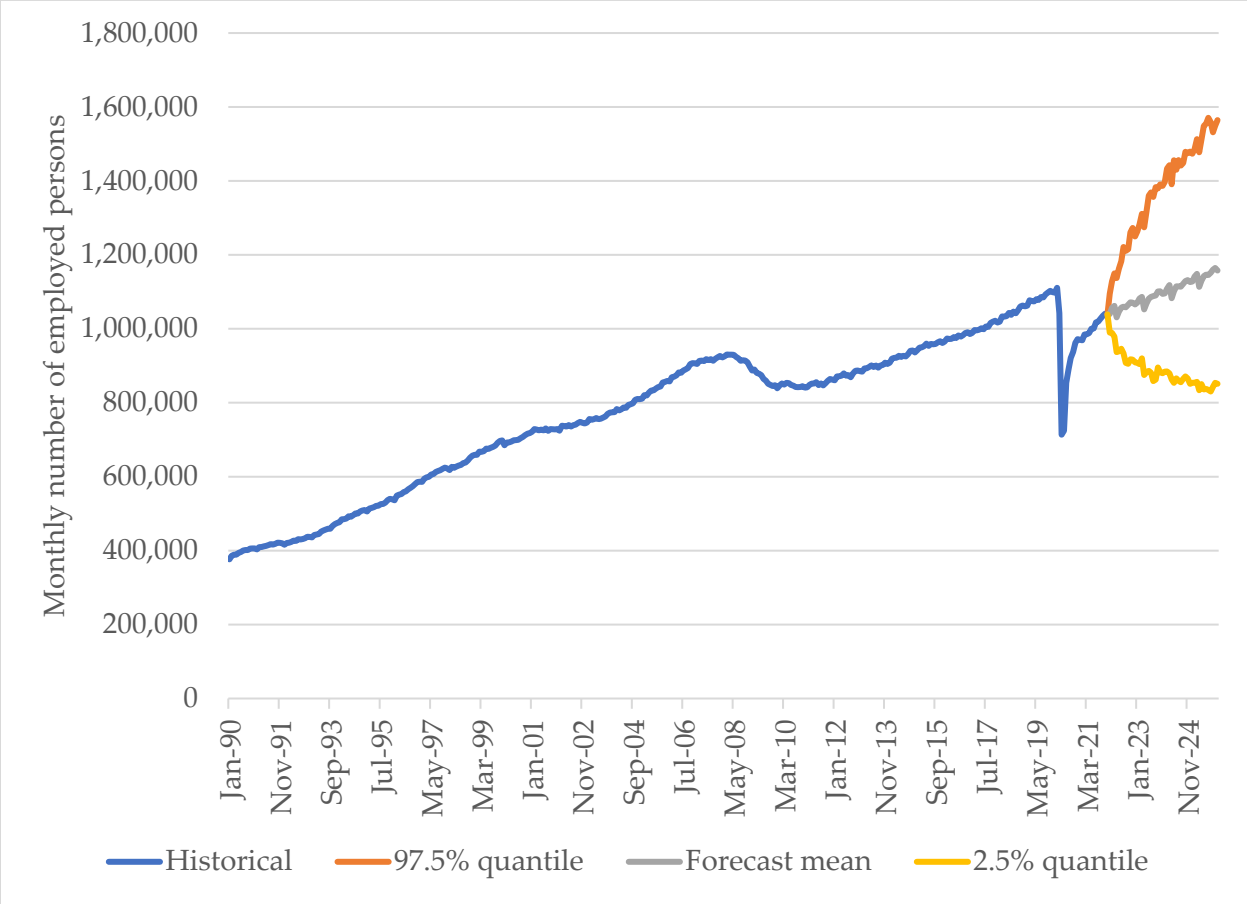
Figure 6-8 Nye County Employment Productivity Index, 2014–2021

6.4.5 Historical and Projected Employment Trends

The demand for energy will most likely grow as populations and economies grow. The future growth of employment in Clark and Nye Counties is projected using a Bayesian structural time series (BSTS) model, a technique for fitting historical data and forecasting future trends (Scott and Varian 2013). BSTS was chosen for its ability to forecast future trends, including seasonal variation, using robust time series data. In this case, data is available in monthly intervals from January 1990. This model was fitted by specifying a semi-local linear trend. Confidence intervals bound a mean forecast to quantify the degree of uncertainty in the future (Scott 2017).

The Federal Reserve Bank of St. Louis provides economic data from the Bureau of Labor Statistics going much further back than is available in IMPLAN (U.S. Bureau of Labor Statistics 2022). Total employment data for Clark and Nye Counties is available on monthly intervals from January 1990 (U.S. Bureau of Labor Statistics 2022). Having long-term historical trend data improves model fitting, however the severe decline in employment during the spring of 2020 as a result of the global pandemic is a significant deviation from the long-term trends. This results in a higher degree of forecast uncertainty. The forecasts run through 2025.

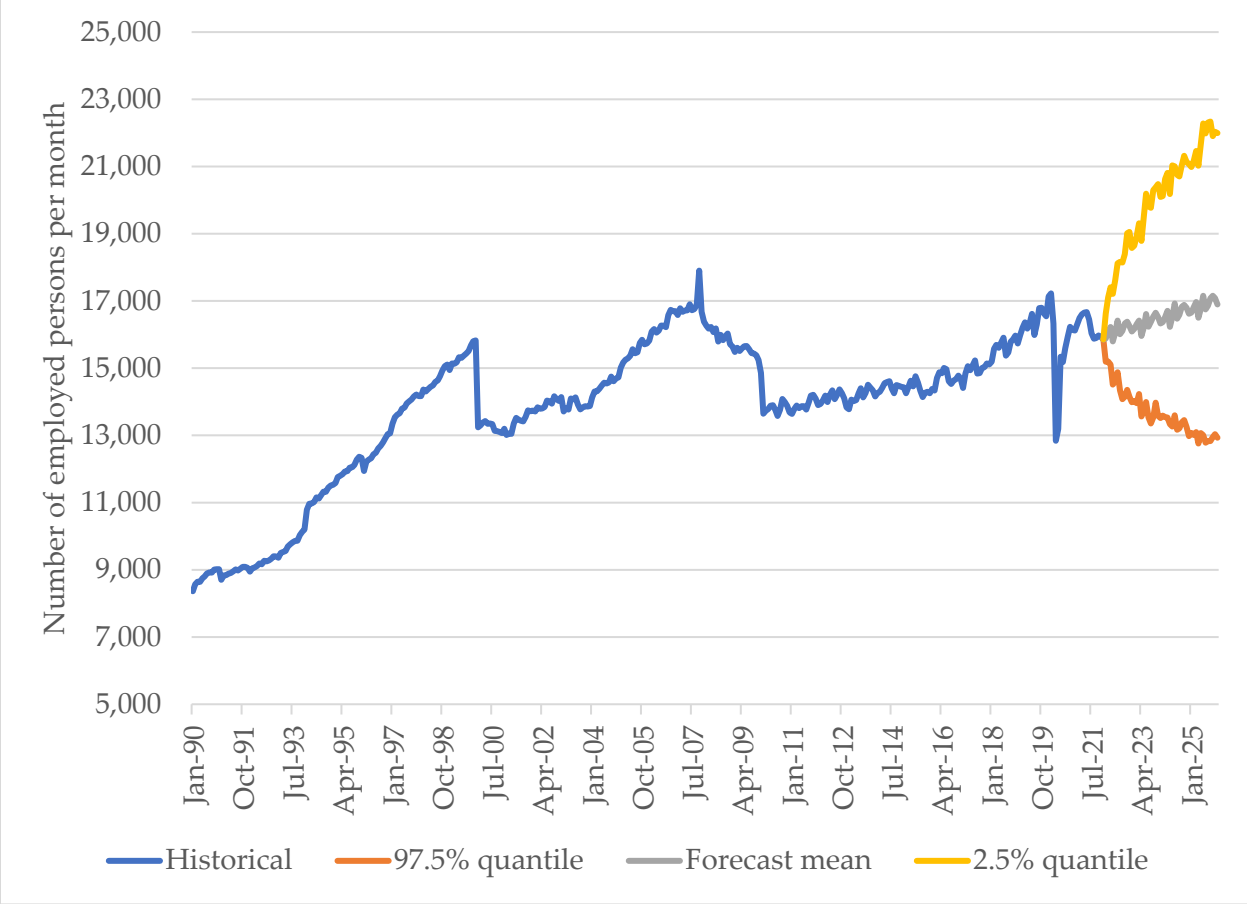
Figure 6-9 shows the historical data and mean forecast for Clark County employment, which increases approximately 0.24 percent per month. The quantiles shown vary significantly. By December 2025, the mean forecast of monthly employment is 1.16 million, within a confidence range of 850,000 to 1.56 million.



Sources: Federal Reserve Bank of St. Louis, Triple Point Strategic Consulting.

Figure 6-9 Historical and Forecasted Total Employed Persons in Clark County

Figure 6-10 shows the historical data and mean forecast for Nye County employment, which increases approximately 0.33 percent per month. The quantiles shown also vary significantly. By December 2025, the mean forecast of monthly employment is 16,900, within a confidence range of 12,900 to 22,000.



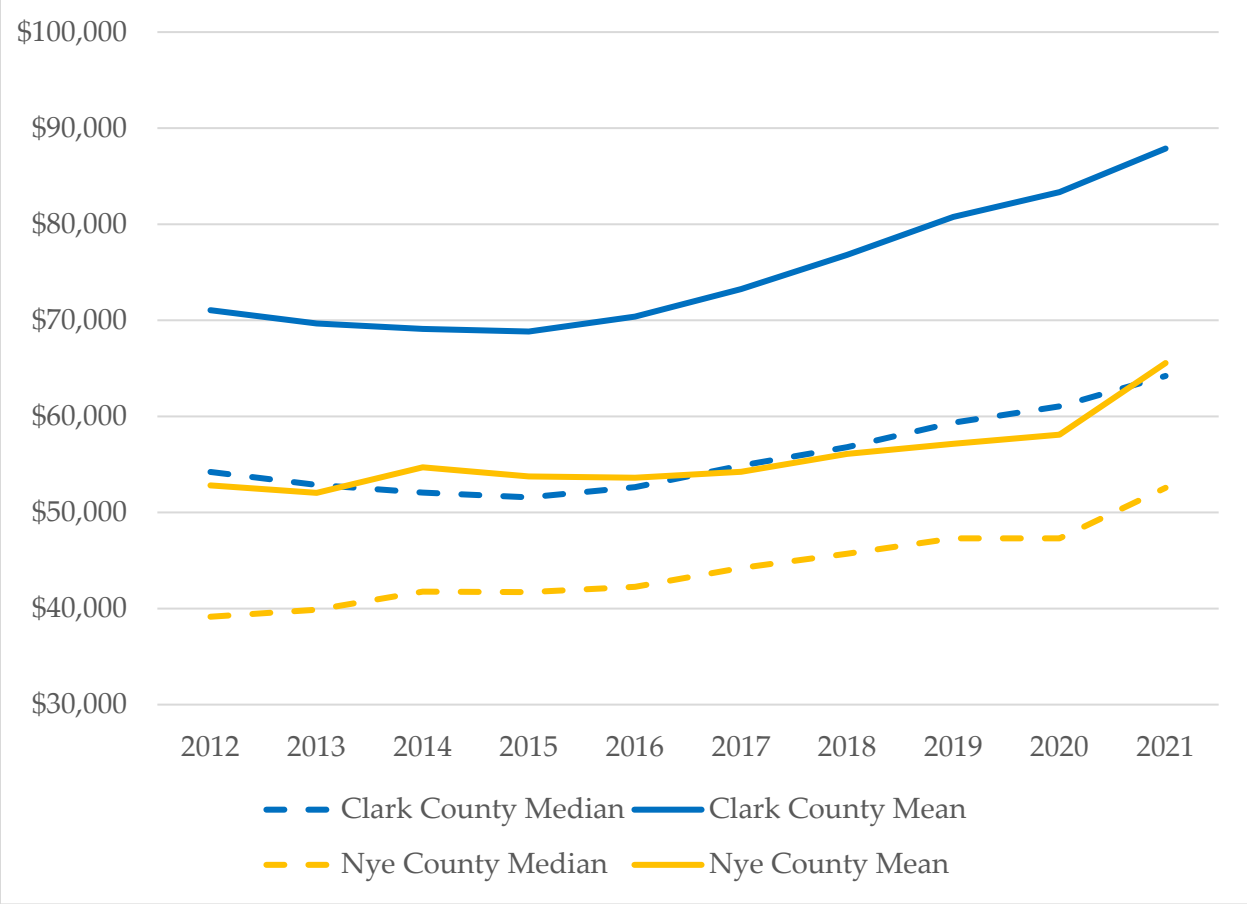
Sources: Federal Reserve Bank of St. Louis, Triple Point Strategic Consulting.

Figure 6-10 Historical and Forecasted Total Employed Persons in Nye County

6.4.6 Household Income Trends

The median household income in Clark County grew at an annual average growth rate of 1.9 percent over the past 10 years, reaching $64,210 in 2021. Nye County's median household income increased at an annual average rate of 3.4 percent to $52,570 in 2021. In both counties, mean income is greater than median income, which is an indication of income disparity. In Clark County, disparity has been increasing with mean income growing at 2.4 percent, which is not the case in Nye County where mean income only grew at 2.5 percent annually (Figure 6-11).

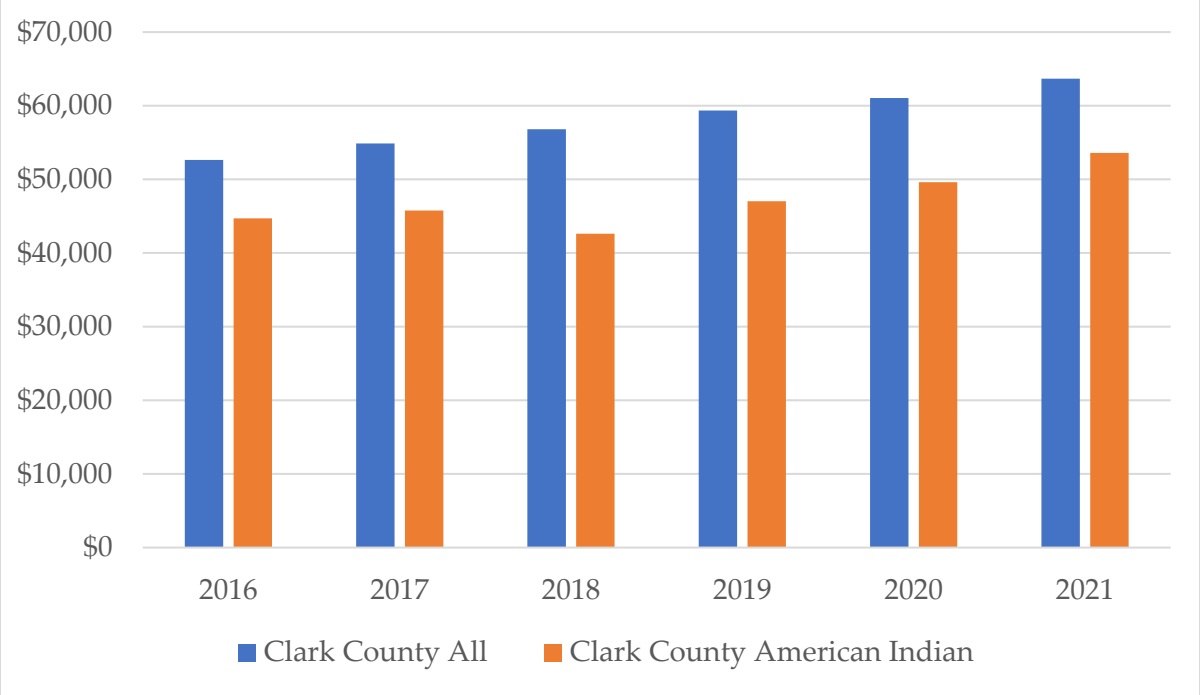
The average compensation associated with the Project's construction and operating jobs would be greater than the median household incomes in Clark and Nye Counties. The Project's employment opportunities would be especially attractive for Nye County residents, where median income is lower than in Clark County.



Source: U.S. Census.

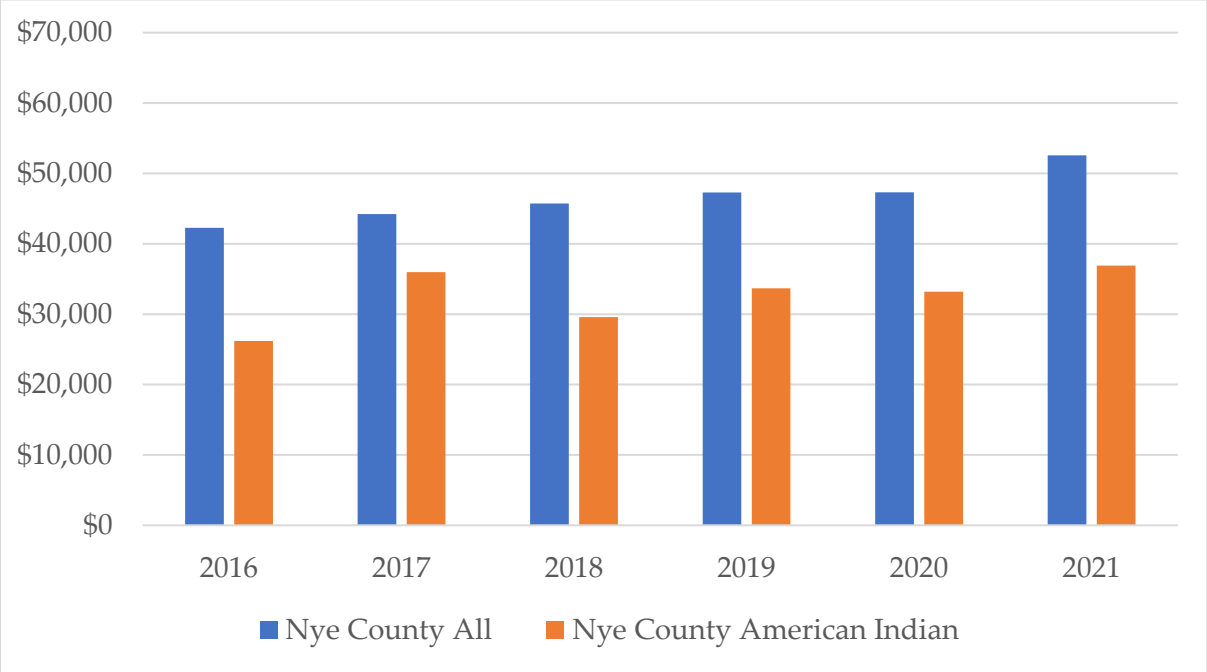
Figure 6-11 Household Income Trends

In both counties, American Indian household incomes trail the county aggregates (Figure 6-12 and Figure 6-13). By 2021, the American Indian median income was 84 percent of the county median. Median incomes for American Indians in Nye County have increased at a greater rate than the county median in recent years, but by 2021 was only 70 percent of the county level.



Source: U.S. Census.

Figure 6-12 American Indian Household Income Trends in Clark County



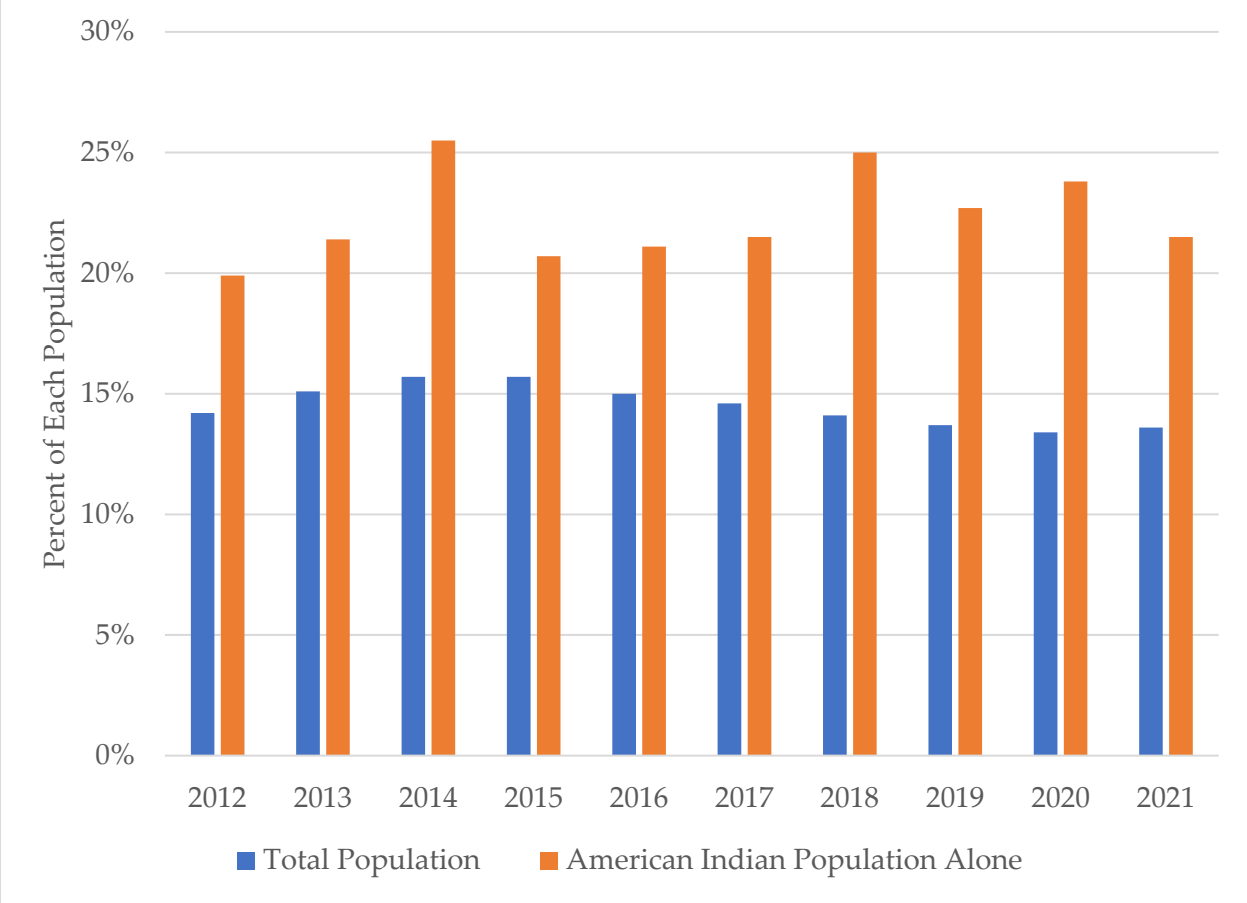
Source: U.S. Census.

Figure 6-13 American Indian Household Income Trends in Nye County

6.4.7 Federal Poverty Level

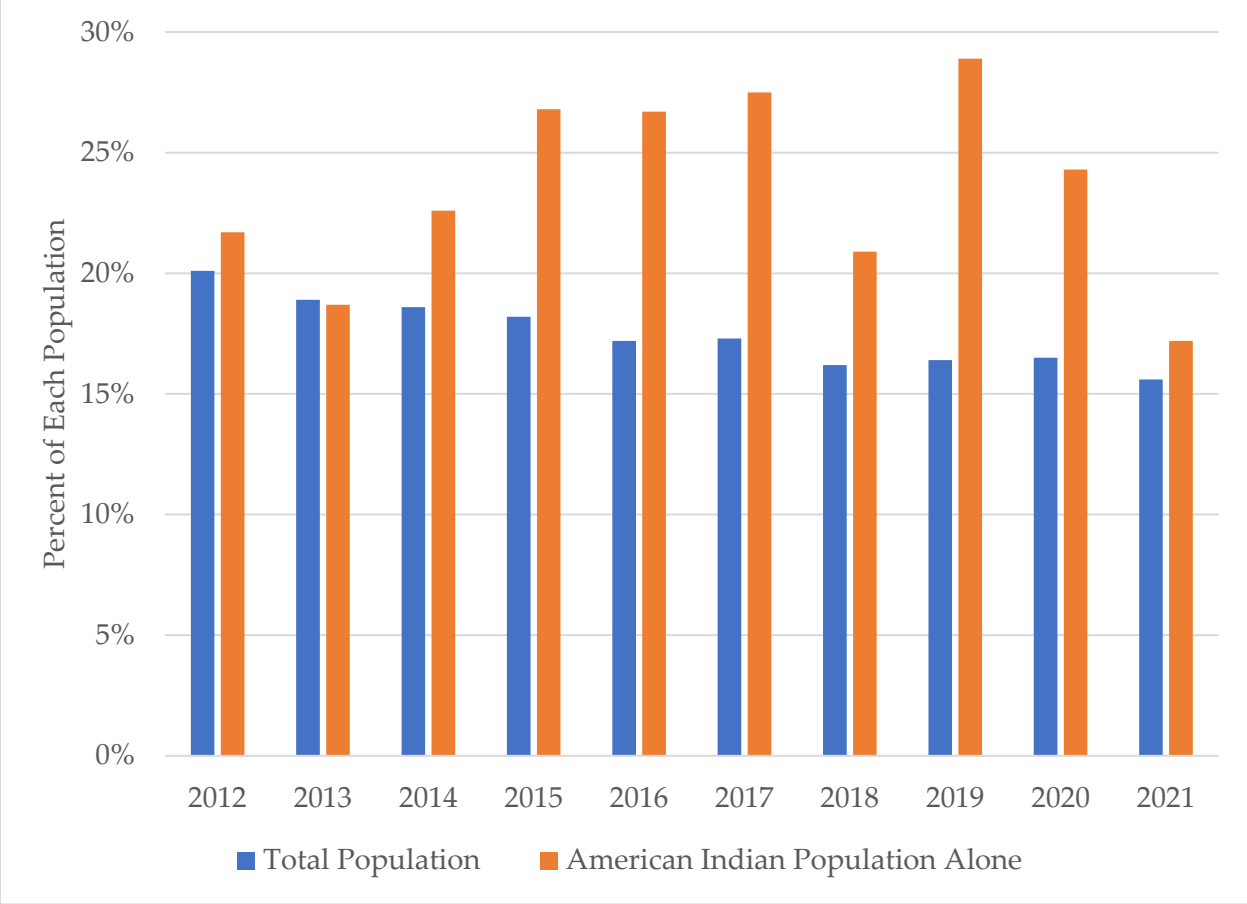
The U.S. Census Bureau uses the official poverty measure or federal poverty level (FPL) to determine poverty status in the United States (Institute for Research on Poverty 2022). The FPL compares pre-tax cash income against a threshold that is set at three times the cost of a minimum food diet in 1963 and is adjusted for family size. The Census reports the percentage of families and people whose income in the past 12 months is below the poverty level on the basis of comparing FPL to incomes by family size.

As a result of lower incomes, a greater share of the American Indian population lives below the FPL. In recent years, the overall share of people living below the FPL declined by roughly 2 to 3 percentage points to 13.6 percent in Clark County and 15.6 percent in Nye County by 2021. In contrast, the share of the American Indian population living below the FPL has generally averaged around 22 percent level in Clark County (Figure 6-14) and 23 percent in Nye County (Figure 6-15), though the latter is much more variable, perhaps due to low Census sample size.



Source: U.S. Census.

Figure 6-14 Percent of Clark County Population Living below the Federal Poverty Level



Source: U.S. Census.

Figure 6-15 Percent of Nye County Population Living below the Federal Poverty Level

6.4.8 Self-Sufficiency

The University of Washington's Center for Women's Welfare Self-Sufficiency Standard (Standard) "defines the income working families need to meet a minimum yet adequate level, considering family composition, ages of children, and geographic differences in costs. The Standard is an affordability and living wage economic security measure that provides an alternative to the official poverty measure" (Center for Women's Welfare, University of Washington 2022).

As such, the Standard is a more realistic measure of poverty than the FPL. Table 6-5 shows the Standard for a young, single-parent family. Each county's overall median household income is less than the Standard for this family type. Table 6-6 shows the Standard for an older, larger family of five. In this case, each county's overall median income is about 16 percent less than the Standard for this family.

Table 6-5 Self-Sufficiency for 1 Adult, 1 Infant, and 1 Preschooler, 2021

Category	Clark County	Nye County
Housing costs	$1,143	$823
Child care costs	$1,938	$1,429
Food costs	$563	$535
Transportation costs	$308	$243
Health care costs	$519	$519
Miscellaneous costs	$447	$355
Taxes	$872	$616
Monthly self-sufficiency wage	$5,357	$4,088
Annual self-sufficiency wage	$64,287	$49,060

Source: Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington

Table 6-6 Self-Sufficiency for 2 Adults, 2 School-Age, and 1 Teen, 2021

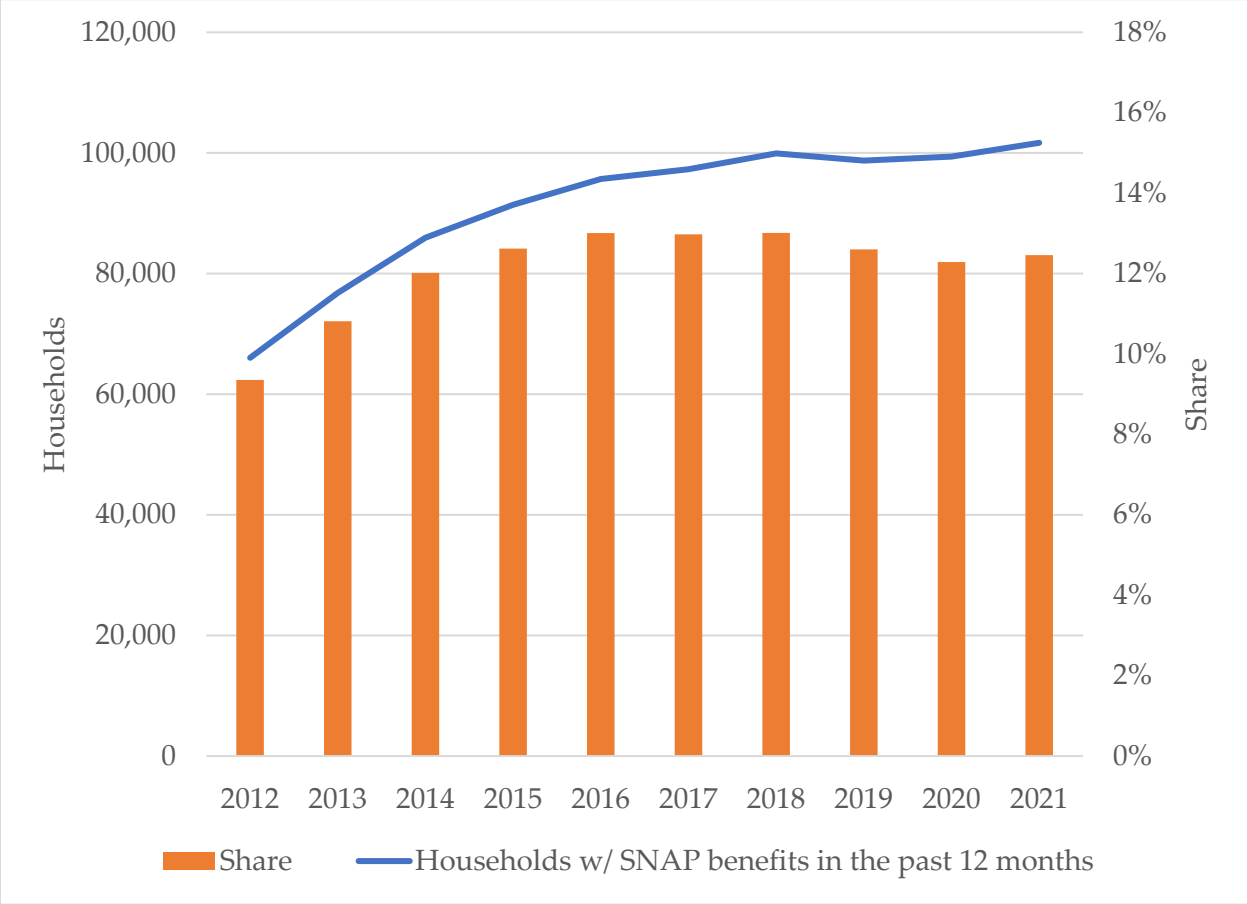
Category	Clark County	Nye County
Housing costs	$1,636	$1,072
Child care costs	$1,130	$888
Food costs	$1,137	$1,082
Transportation costs	$596	$467
Health care costs	$684	$684
Miscellaneous costs	$518	$419
Taxes	$939	$687
Monthly self-sufficiency wage	$6,040	$4,677
Annual self-sufficiency wage	$72,484	$56,119

Source: Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington.

The average compensation associated with the Project's construction and operating jobs would be much greater than the self-sufficiency requirements in Clark and Nye Counties, providing high-quality employment opportunities.

6.4.9 SNAP Benefits

Another indication of community income levels and self-sufficiency is the number of households receiving Supplemental Nutrition Assistance Program (SNAP) benefits. Figure 6-16 shows the number of households receiving SNAP benefits increased 51 percent from 2012 to 2018 before somewhat leveling off in recent years at around 100,000.



Source: U.S. Census.

Figure 6-16 Clark County Households Receiving SNAP Benefits

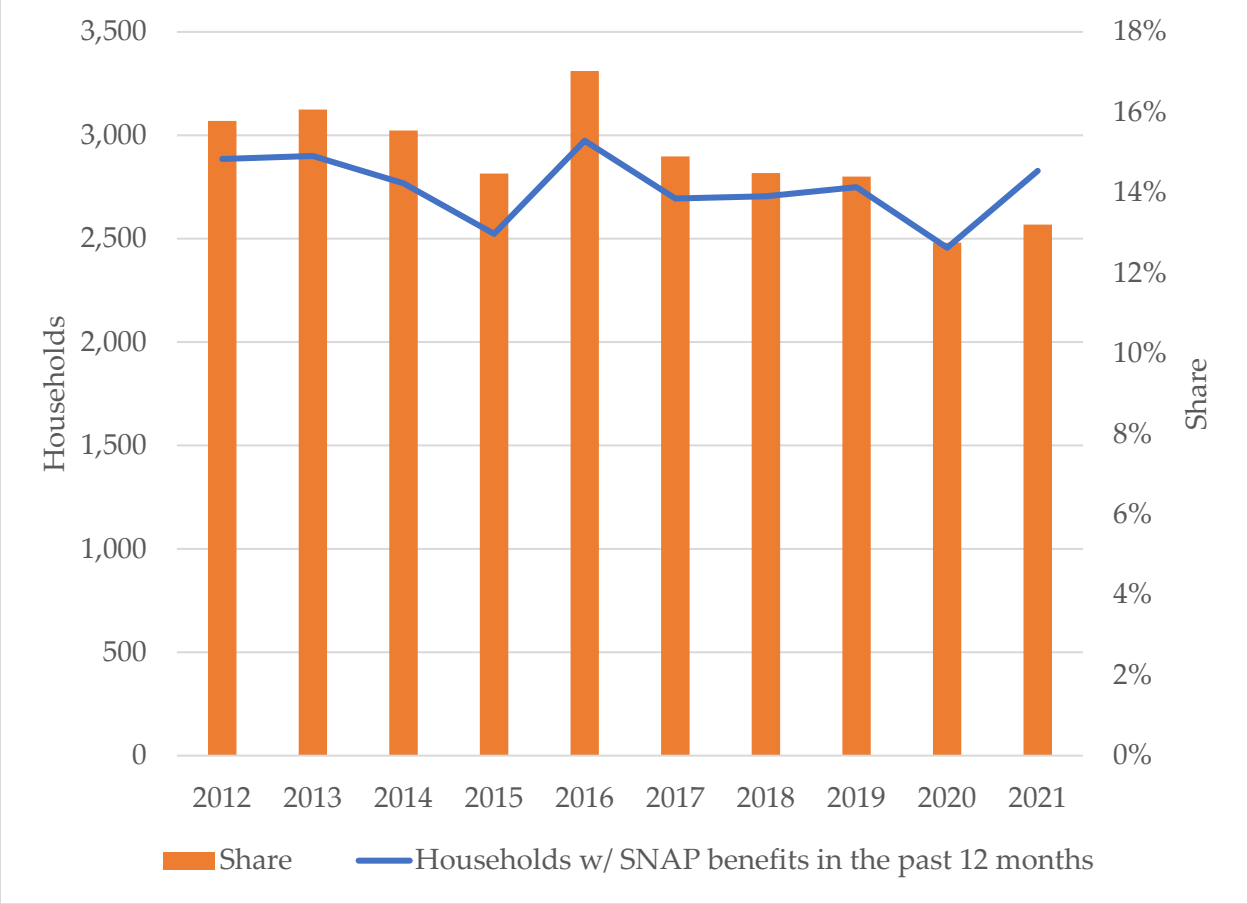
In Clark County, 20 percent of American Indian households receive SNAP benefits, significantly more than the share of all households. From 2016 to 2021, the share of American Indian households receiving SNAP benefits decreased by a percentage point as it did for all households (Table 6-7).

Table 6-7 Share of Clark County Households Receiving SNAP Benefits by Race

Household Category	Receiving SNAP 2016	Percent	Receiving SNAP 2021	Percent
All households	95,672	13%	101,680	12%
White alone	51,902	10%	44,726	9%
Non-white	43,770	19%	56,954	17%
American Indian	932	21%	1,469	20%

Source: U.S. Census.

The share of households receiving SNAP benefits in Nye County reached 17 percent in 2016 and has since fallen back to 13 percent in 2021 (Figure 6-17).



Source: U.S. Census.

Figure 6-17 Nye County Households Receiving SNAP Benefits

In Nye County, 24 percent of American Indian households received SNAP benefits in 2016. From 2016 to 2021, the share of households receiving SNAP benefits decreased for all races.

American Indian households receiving SNAP benefits decreased significantly to 9 percent (Table 6-8).

Table 6-8 Share of Nye County Households Receiving SNAP Benefits by Race

Household Category	Receiving SNAP 2016	Percent	Receiving SNAP 2020	Percent
All households	2,974	17%	2,828	13%
White alone	2,447	16%	2,189	12%
Non-white	527	24%	639	18%
American Indian	76	24%	30	9%

Source: U.S. Census.

Finally, school district free and reduced lunch programs are another indication of the economic health and trends in a community. Students are generally eligible when their household income is within 185 percent of the FPL. According to the University of Nevada, Reno's Extension Office, 87 percent of Clark County students were eligible in 2021, an increase from 69 percent in 2019 (Clark County Extension Office 2022). In Nye County, eligibility increased from 81 percent in 2019 to 99 percent in 2021 (Social Characteristics for Nye County, Nevada 2022).

6.5 ECONOMIC DIVERSIFICATION

Location Quotient (LQ) and shift-share analysis are two measures to evaluate the strength of industries in a regional economy. The more industries that outperform national averages, the stronger and more diverse the economy. These techniques can also be used to identify comparative advantages and investment opportunities.

6.5.1 Location Quotients

The LQ measures an industry's share of its regional economy relative to the industry's share of the national economy. When a regional industry's LQ is greater than 1.0, the region will have a high concentration of firms and/or employees in that industry and the region most likely exports that industry's products or services. Likewise, an LQ of less than 1.0 indicates a low concentration of that industry and net imports are likely.

An industry's LQ is often considered along with the number of people it employs in that region. Local economies are particularly sensitive to the changes and trends of their industries that have high LQs and many employees. Perhaps the best example of this is the Puget Sound's dependence on Boeing in the 1970s.

Not surprisingly, hotels and casinos each have high LQs and are significant employers in Clark County (Table 6-9). Both industries are unique and specialized in the region. Although not large employment, 9 of the top 20 sectors by LQ are manufacturing.

Table 6-9 Clark County Industries with the Highest Location Quotients

Industry Description	Employment 2021	LQ
Small electrical appliance manufacturing	950	11.0
Hotels and motels, including casino hotels	77,794	8.3
Other communication and energy wire manufacturing	657	8.3
Gambling industries (except casino hotels)	22,903	8.0
Lime manufacturing	190	6.6
Wiring device manufacturing	1,731	6.4
All other miscellaneous manufacturing	2,943	6.3
Gypsum product manufacturing	448	5.7
Business support services	22,868	3.1
Electric power generation – solar	130	3.0
Other support services	7,991	3.0
Other nonmetallic minerals	86	2.8
Performing arts companies	4,406	2.7
Primary battery manufacturing	89	2.7
Ornamental and architectural metal work manufacturing	752	2.6
Air transportation	7,804	2.4
Warehousing and storage	28,389	2.4
Photographic services	810	2.2
Transit and ground passenger transportation	28,291	2.2
Lighting fixture manufacturing	505	2.2

Mining and mineral industries are highly concentrated in Nye County as shown in Table 6-10. Electric power transmission and distribution has a relatively high LQ of 7.0.

Table 6-10 Nye County Industries with the Highest Location Quotients

Industry Description	Employment 2021	LQ
Gold ore mining	850	529.9
Other clay, ceramic, refractory minerals mining	147	410.8

Industry Description	Employment 2021	LQ
Copper, nickel, lead, and zinc mining	147	81.7
Other chemical and fertilizer mineral mining	21	76.0
Other nonmetallic minerals	21	50.4
Electric power generation – solar	18	31.3
Facilities support services	463	24.0
Metal mining services	36	10.5
Gambling industries (except casino hotels)	370	9.6
Manufactured ice	6	8.6
Electric power transmission and distribution	167	7.0
Scientific research and development services	1,646	6.1
Paint and coating manufacturing	17	4.6
Water, sewage, and other systems	19	4.5
Investigation and security services	421	4.0
Stone mining and quarrying	16	3.9
Newspaper publishers	35	3.8
All other miscellaneous manufacturing	23	3.7
Waste management and remediation services	157	3.6
Hotels and motels, including casino hotels	441	3.5

Table 6-11 shows the Clark County LQs and employment figures for the electric power industries as well as the construction industry sectors. Construction of new power and communication structures employed over 5,800 people and has an LQ of just over 1.0. Electric power transmission and distribution is a large employer, though the LQ is less than 1.0.

Table 6-11 Clark County Construction and Electric Industry Location Quotients

Industry Description	Employment 2021	LQ
Electric power generation – solar	130	3.0
Construction of new single-family residential structures	17,157	1.1
Construction of new multifamily residential structures	5,573	1.1
Maintenance and repair construction of nonresidential structures	5,970	1.1
Construction of new commercial structures	11,682	1.1
Construction of other new residential structures	8,170	1.1
Maintenance and repair construction of highways, bridges	1,034	1.1

Industry Description	Employment 2021	LQ
Construction of new highways and streets	7,313	1.1
Maintenance and repair construction of residential structures	2,913	1.1
Construction of new power and communication structures	5,856	1.1
Construction of new manufacturing structures	4,597	1.1
Construction of new educational and vocational structures	6,301	1.1
Electric power generation – fossil fuel	393	0.7
Electric power transmission and distribution	1,168	0.7
Electric power generation – wind	10	0.2
Electric power generation – hydroelectric	0	0.0
Electric power generation – nuclear	0	0.0
Electric power generation – geothermal	0	0.0
Electric power generation – biomass	0	0.0
Electric power generation – all other	0	0.0

Table 6-12 shows the Nye County LQs and employment figures for the electric power industries as well as the construction industry sectors. Electric power transmission and construction of new power and communication structures have the second and third highest LQs in Nye County.

Table 6-12 Nye County Construction and Electric Industry Location Quotients

Industry Description	Employment 2021	LQ
Electric power generation – solar	18	31.3
Electric power transmission and distribution	167	7.0
Construction of new power and communication structures	141	1.9
Maintenance and repair construction of residential structures	37	1.0
Construction of new highways and streets	88	1.0
Construction of new commercial structures	135	1.0
Construction of new educational and vocational structures	76	1.0
Maintenance and repair construction of nonresidential structures	68	1.0
Construction of other new residential structures	94	1.0

Industry Description	Employment 2021	LQ
Construction of new multifamily residential structures	63	1.0
Construction of new single-family residential structures	194	0.9
Maintenance and repair construction of highways, bridges	12	0.9
Construction of new manufacturing structures	52	0.9
Electric power generation – hydroelectric	0	0.0
Electric power generation – fossil fuel	0	0.0
Electric power generation – nuclear	0	0.0
Electric power generation – wind	0	0.0
Electric power generation – geothermal	0	0.0
Electric power generation – biomass	0	0.0
Electric power generation – all other	0	0.0

6.5.2 Shift-Share Analysis

Shift-share analysis compares the two-county region to the U.S. national economy in terms of job growth. There are four components to shift-share analysis. The industrial mix effect represents the share of a region's growth that can be attributed to that industry's national growth. The national growth effect attributes regional growth (or decline) to national growth—think of a rising tide lifting all boats. The expected change in the number of regional jobs in an industry is a function of the industrial mix and national growth effects. Finally, the regional competitive effect is the difference between the actual change in the number of regional jobs in an industry and the expected change in the number of those jobs.

The competitive effect indicates the extent to which a regional industry is over- or underperforming relative to the national economy and the national trends for that industry. If the national growth of an industry is greater than its regional growth, the region may not have a unique advantage. However, if an industry at the regional level is growing, yet declining nationally, the region may have a distinct advantage.

Table 6-13 shows the shift-share components for select industries and the electric power sectors in Clark County for the years 2017 to 2021. These components have been calculated from Bureau of Economic Analysis (BEA) data sourced through IMPLAN. The total number of national jobs declined over this period by 0.7 percent. Construction of new power structures grew in line with expectations. Changes within the county's electric generation industries are relatively minor, noting that fossil fuel generation outperformed the other electric generation sectors and transmission declined. Hospitality and retail outperformed their expectations, while real estate and management underperformed expectations.

Table 6-13 Shift-Share Analysis for Selected Clark County Industries (Jobs), 2017–2021

Industry	Actual Change	Industrial Mix	National Growth	Expected Change	Competitive Effect
Fossil fuel	38	(48)	(48)	(97)	135
Solar	108	28	28	56	53
Wind	10	(1)	(1)	(1)	12
Geothermal	(38)	0	0	0	(38)
Transmission	(60)	89	89	177	(237)
Natural gas	(22)	15	15	29	(51)
Construction of new power	686	174	174	347	339
Retail food and beverage	1,503	152	152	303	1,200
Retail clothing	(4,563)	(3,730)	(3,730)	(7,460)	2,897
Retail general	(299)	(268)	(268)	(535)	237
Air transportation	323	(689)	(689)	(1,378)	1,701
Insurance and brokerages	(1,039)	(1,387)	(1,387)	(2,774)	1,735
Real estate	(5,687)	751	751	1,503	(7,190)
Architectural and engineering	4,647	3,441	3,441	6,883	(2,235)
Management of companies	507	1,353	1,353	2,705	(2,199)
Hospitals	1,838	341	341	682	1,156
Gambling	(5,751)	(2,298)	(2,298)	(4,597)	(1,155)
Hotels, including casino	(30,761)	(10,692)	(10,692)	(21,384)	(9,377)
Full-service restaurants	(2,604)	(5,332)	(5,332)	(10,663)	8,059
Limited-service restaurants	3,481	(78)	(78)	(156)	3,637

Notes: green shading = industries whose job growth exceeded expectations; red shading = industries whose job growth underperformed expectations.

Table 6-14 shows the shift-share components for select industries and the electric power generation sectors in Nye County for the years 2017 to 2021. In Nye County, gold mining, gambling, and hotels outperformed expectations by the largest margins. Scientific research and facilities support underperformed by the largest margins. Construction of new power structures and electricity transmission underperformed modestly.

Table 6-14 Shift-Share Analysis for Selected Nye County Industries (Jobs), 2017-2021

Industry	Actual Change	Industrial Mix	National Growth	Expected Change	Competitive Effect
Gold ore mining	41	(42)	(42)	(83)	124
Clay and ceramic mining	(62)	(20)	(20)	(40)	(21)
Chemical and fertilizer mineral mining	21	(2)	(2)	(3)	24
Nonmetallic minerals	(23)	(6)	(6)	(12)	(11)
Metal mining services	11	(11)	(11)	(22)	34
Electric power – solar	8	4	4	8	(0)
Electricity transmission	5	13	13	25	(20)
Construction of power and communication structures	(3)	4	4	8	(11)
Soybean and oilseed processing	0	0	0	0	0
Manufactured ice	4	(0)	(0)	(1)	4
Nonwoven fabric mills	1	0	0	0	1
Medicinal and botanical manufacturing	9	3	3	6	3
Industrial high-speed drive and gear manufacturing	0	0	0	0	0
Newspaper publishers	25	(15)	(15)	(29)	54
Specialized design services	(23)	(6)	(6)	(11)	(12)
Scientific research and development services	535	570	570	1,140	(606)
Facilities support services	27	92	92	184	(157)
Waste management and remediation services	2	16	16	32	(31)

Industry	Actual Change	Industrial Mix	National Growth	Expected Change	Competitive Effect
Gambling industries (except casino hotels)	(56)	(37)	(37)	(74)	18
Hotels and motels, including casino hotels	(43)	(61)	(61)	(121)	78

Notes: green shading = industries whose job growth exceeded expectations; red shading = industries whose job growth underperformed expectations.

6.6 COUNTY TAX REVENUES

This section reviews the Clark and Nye County financials and budgets, with a focus on revenues.

6.6.1 Clark County

Clark County's fiscal year (FY) ends June 30. The FY 2023 total general fund revenue budget, not including the beginning fund balance, is $1.8 million (Clark County Nevada 2022) (Table 6-15). Thirty percent of the revenue comes from Nevada's consolidated tax distribution or shared revenue system and a quarter is property tax revenue.

Table 6-15 Clark County General Fund Revenue

Category	FY 2021 Actual	FY 2022 Estimate	FY 2023 Budget
Property taxes	$375,350,154	$394,431,945	$442,270,588
Licenses and permits	$197,800,321	$265,144,719	$268,900,000
Intergovernmental	$443,568,153	$508,940,539	$528,540,886
Charges for services	$87,028,958	$89,335,772	$91,920,543
Fines and forfeits	$15,557,523	$16,773,769	$12,500,000
Miscellaneous	$5,364,815	$4,000,000	$4,000,000
Operating transfers	$309,694,087	$791,688,146	$447,851,293
Total	**$1,434,364,011**	**$2,070,314,890**	**$1,795,983,310**

Source: Clark County Finance Department.

Overall, the Clark County budget is comprised of 113 governmental and proprietary funds, including the General Fund, with total estimated expenditures exceeding $10.3 billion in the FY 2023 budget.

6.6.2 Nye County

Nye County's FY also ends June 30. The FY 2023 total general fund revenue budget, not including the beginning fund balance, is $50.8 million as shown in Table 6-16 (Board of County Commissioners, Nye County, Nevada 2022). About half of the revenue comes from Nevada's consolidated tax distribution or shared revenue system and just over a third comes from property taxes. In addition, the Nye County budget is comprised of 55 governmental and proprietary funds, including the general fund, with total estimated expenditures reaching $148.8 million in the FY 2023 budget.

Table 6-16 Nye County General Fund Revenue

Category	FY 2021 Actual	FY 2022 Estimate	FY 2023 Budget
Property taxes	$18,233,545	$19,570,216	$18,184,754
Licenses and permits	$1,106,214	$1,052,388	$1,257,178
Intergovernmental resources	$26,340,066	$23,942,078	$25,978,539
Charges for services	$3,373,986	$3,460,407	$3,604,055
Fines and forfeits	$481,932	$533,417	$559,524
Miscellaneous	$2,027,497	$966,739	$1,176,356
Operating transfers	$81,823	$28,550	$7,600
Total	**$51,645,063**	**$49,553,795**	**$50,768,006**

Source: Nye County Comptroller's Office.

6.6.3 Combined Two-County Region

The combined FY 2023 general fund revenue budgets of the two counites is over $1.8 billion. Table 6-17 shows the annual tax revenue impact of construction for Clark and Nye Counties for each year of construction at the 230kV level. The two counties would receive $3.7 million in tax revenue, not including $800,000 in sub-county revenue and $1.8 million for special districts. Sales tax on specialty equipment purchased for construction for the two counties combined would be an estimated $40.8 million at the 230kV level. Personal property tax would also yield millions on an annual basis subject to depreciation.

Table 6-17 Annual Tax Impact to Clark and Nye Counties from Construction Activity by Type and Category at the 230kV Level, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$158,095	$350,249	$741,900	$2,226,494	$29,356,346	$32,833,084
Indirect	$310,572	$652,483	$1,514,589	$4,602,986	$4,045,117	$11,125,747

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Induced	$336,672	$671,859	$1,539,417	$4,669,836	$5,752,278	$12,970,063
Total	**$805,339**	**$1,674,591**	**$3,795,906**	**$11,499,316**	**$39,153,741**	**$56,928,894**

Table 6-18 shows the annual tax revenue impact of construction for Clark and Nye Counties for each year of construction at the 500kV level. The two counties would receive $4.7 million in tax revenue, not including $1 million in sub-county revenue and $2 million for special districts. Sales tax on specialty equipment purchased for construction for the two counties combined would be an estimated $58.4 million at the 500kV level. Personal property tax would also yield millions on an annual basis subject to depreciation.

Table 6-18 Annual Tax Impact to Clark and Nye Counties from Construction Activity by Type and Category at the 500kV Level, 2023 dollars

Impact Type	Sub-County	Special Districts	County	State	Federal	Total Tax
Direct	$180,895	$437,479	$947,763	$2,839,068	$38,033,271	$42,438,477
Indirect	$355,362	$823,718	$1,946,729	$5,932,261	$4,868,401	$13,926,471
Induced	$385,226	$818,497	$1,899,168	$5,771,739	$6,868,471	$15,743,101
Total	**$921,483**	**$2,079,694**	**$4,793,660**	**$14,543,068**	**$49,770,144**	**$72,108,049**

Ongoing annual operations will generate $80,000 for both counties combined at the 230kV level and $121,000 at the 500kV level (see Sections 3 and 4). This tax revenue impact would continue for the lifetime of the Project, in addition to sub-county and special district tax revenue. In principle, these revenues would be available to increase social services, to mitigate negative impacts, to provide job training, and for many other potential needs.

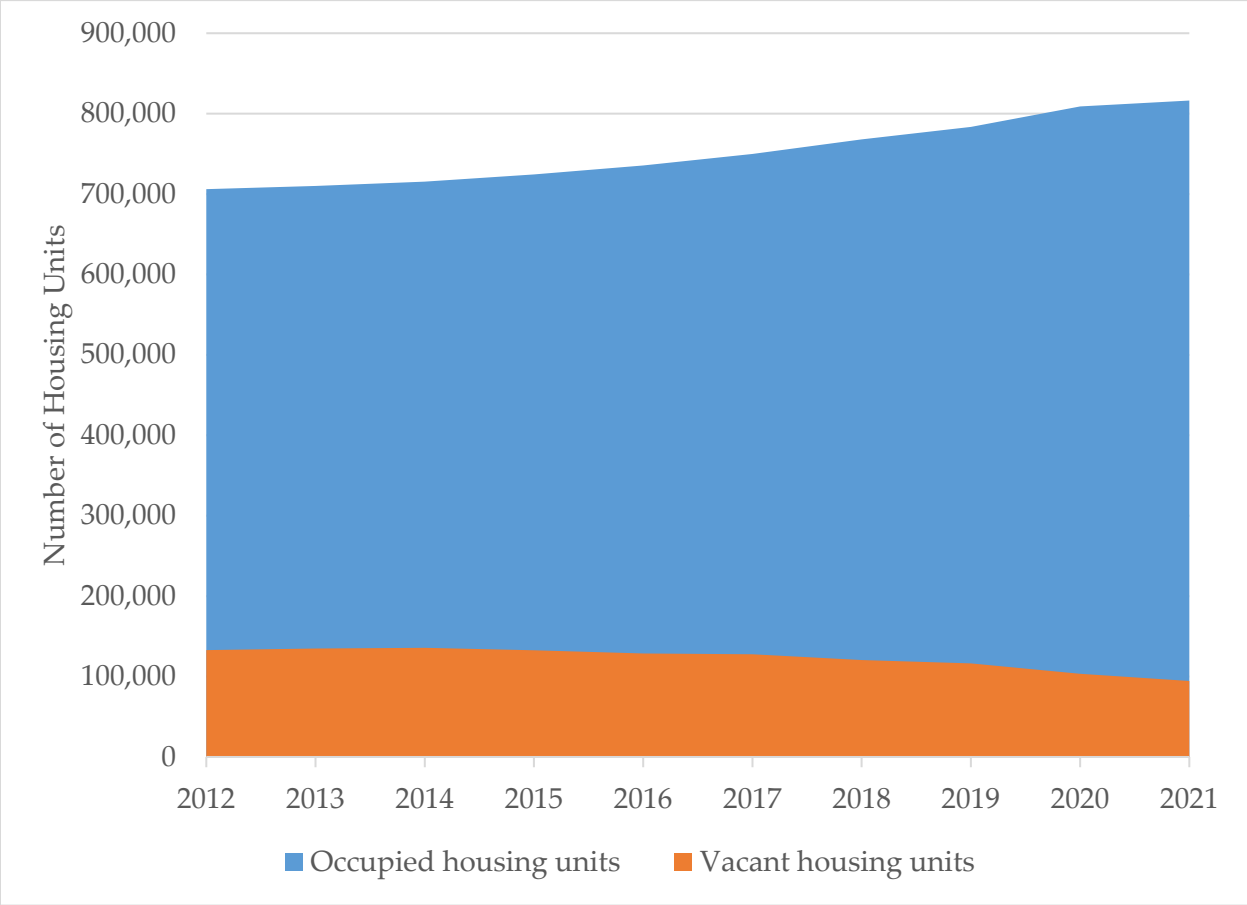
6.7 HOUSING ANALYSIS

Constructing the Project would directly support an annual average of approximately 1,500 to 2,000 jobs per year in the two counties depending on the level constructed. Some of these jobs would be filled by commuters, while others may seek housing near the Project site. This section describes the housing inventory in Clark and Nye Counites in terms of type and tenure. Property values and rental rates are also presented in the context of the average labor incomes the Project would support and create.

6.7.1 Housing Inventory

According to the U.S. Census, the total number of housing units in Clark County increased by almost 72,000 units from 2012 to 2021 to almost 911,000 units, for an annual average growth rate

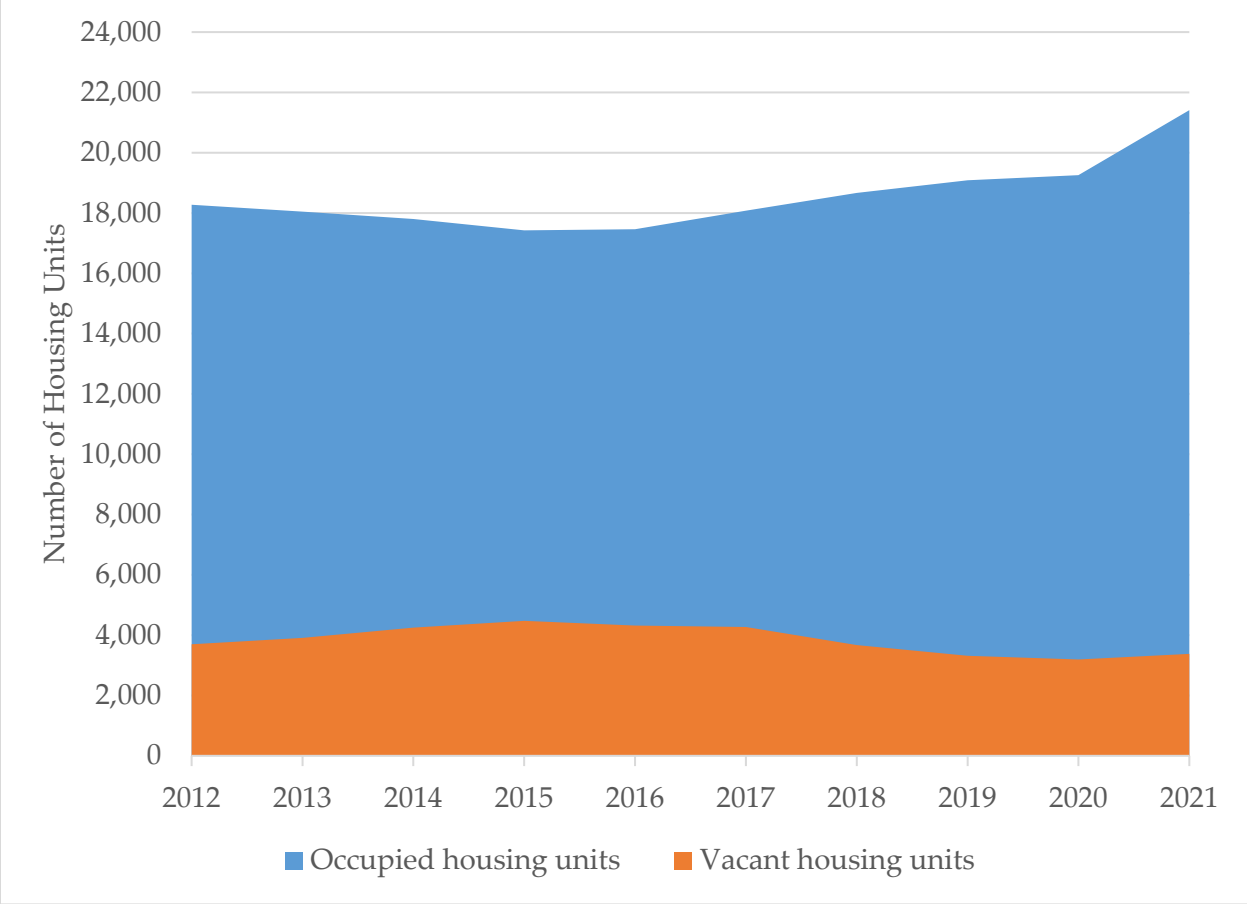
of 0.9 percent. The number and share of vacant units declined over the past decade, from 133,000 in 2012 (16 percent) to 94,000 (10 percent) of the total units in 2021 (Figure 6-18).



Source: U.S. Census.

Figure 6-18 Occupied and Vacant Housing Units in Clark County

The total number of housing units in Nye County increased by 2,819 units from 2012 to 2021 to 24,793 units, for an annual average growth rate of 1.3 percent. The number and share of vacant units declined over the past decade, from 3,700 in 2012 (17 percent) to 3,382 (14 percent) of the total units in 2021 (Figure 6-19).



Source: U.S. Census.

Figure 6-19 Occupied and Vacant Housing Units in Nye County

Table 6-19 shows the majority of homes in each county are single-family detached. The balance of homes in Clark County is a broad distribution of multifamily units, totaling 40 percent combined. In Nye County, the balance is largely comprised of mobile homes (33 percent).

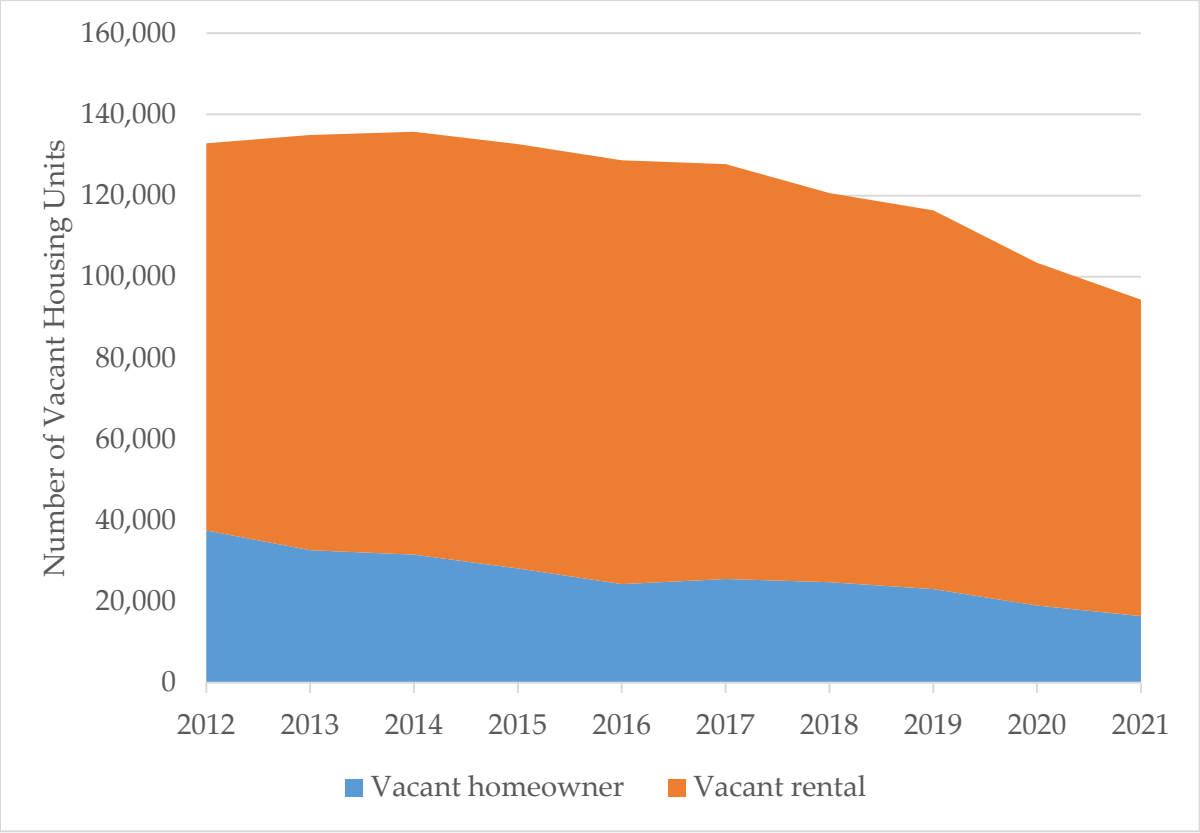
Table 6-19 Distribution of Housing Units by Type in Clark and Nye Counties, 2021

Housing Description	Clark County	Share	Nye County	Share
1-unit, detached	543,828	60%	13,944	56%
1-unit, attached	45,436	5%	533	2%
2 units	10,081	1%	463	2%
3 or 4 units	64,269	7%	692	3%
5 to 9 units	74,298	8%	237	1%
10 to 19 units	51,264	6%	172	1%
20 or more units	94,671	10%	427	2%

Housing Description	Clark County	Share	Nye County	Share
Mobile home	25,427	3%	8,072	33%
Boat, RV, van, etc.	1,393	0%	253	1%
Total	**910,667**	**100%**	**24,793**	**100%**

Source: U.S. Census.

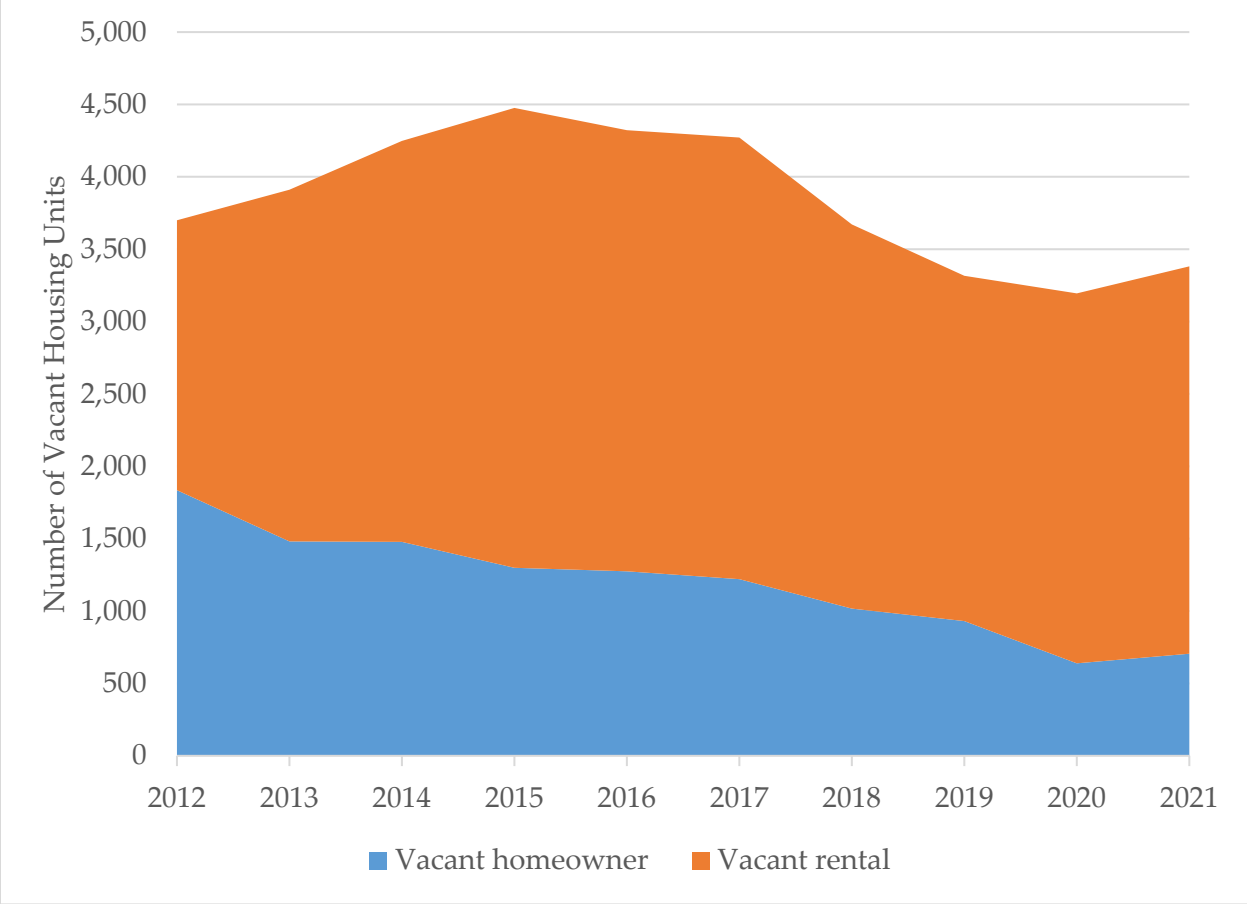
The majority of the vacant housing units in Clark County—78,000 (83 percent)—are rental units. Since 2012, the rental share of vacant units has increased consistently from 72 percent. The absolute number of vacant rental units has decreased from a peak of 104,500 in 2015 to 78,000 in 2021. Vacant owner units decreased from 37,500 in 2012 to 16,400 in 2020 (Figure 6-20).



Source: U.S. Census.

Figure 6-20 Vacant Housing Units by Tenure in Clark County

The majority of the vacant housing units in Nye County—2,677 (79 percent)—are rental units. Since 2012, the rental share of vacant units has increased consistently from 50 percent. The absolute number of vacant rental units has increased by 812 over the previous 10 years. Vacant owner units have decreased from 1,835 in 2012 to 705 in 2021 (Figure 6-21).



Source: U.S. Census.

Figure 6-21 Vacant Housing Units by Tenure in Nye County

6.7.2 Housing Tenure and Home Values

Nearly three-quarters of the homes in Nye County are owner-occupied, whereas only 55 percent of Clark County homes are occupied by owners (Table 6-20). These residents are paying property taxes and their property values are partially dependent on the strength of the local economy.

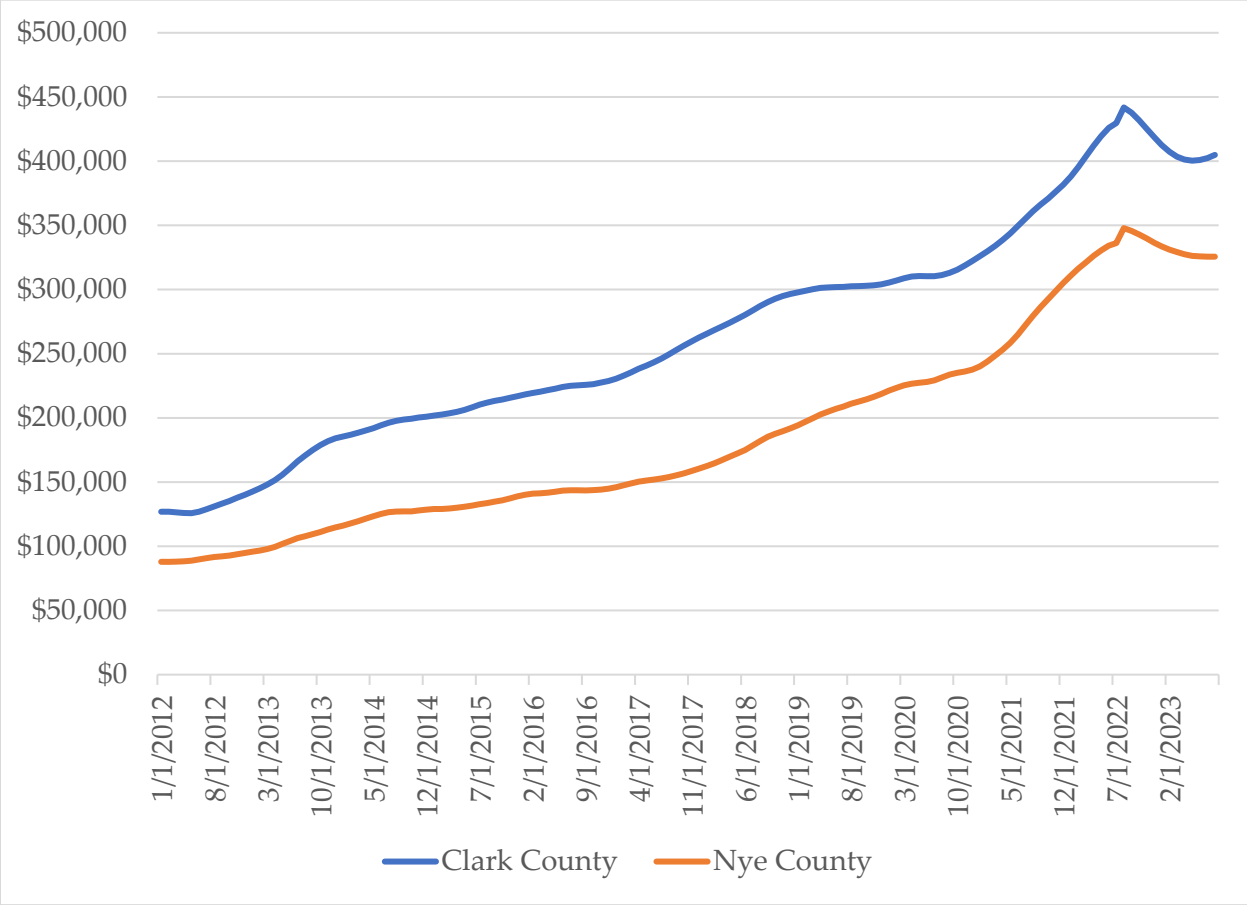
Table 6-20 Housing Tenure in 2021

Tenure	Clark County	Percent	Nye County	Percent
Owner occupied	452,624	55%	15,541	73%
Renter occupied	363,672	45%	5,870	27%
Total	**816,296**	**100%**	**21,411**	**100%**

Source: U.S. Census.

The Zillow Home Value Index is a smoothed, seasonally adjusted measure of the typical home value and market changes across a given region and housing type (Zillow 2023). It reflects the

typical value for homes in the 35th to 65th percentile range. Figure 6-22 shows home values in Clark County have risen at a modestly greater rate than Nye County from 2012 to 2023. This is consistent with Clark County being the economic center of the region.

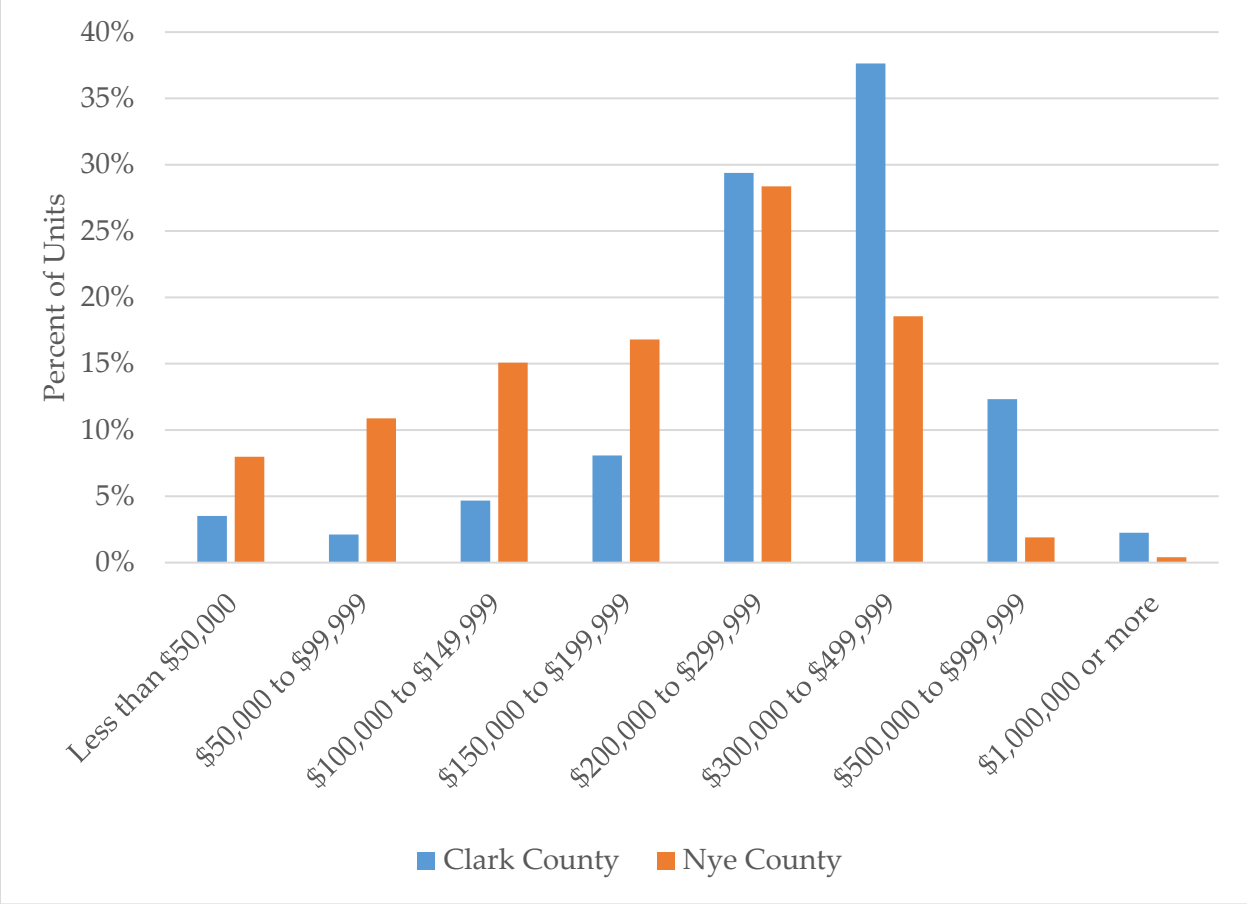


Source: Zillow.

Figure 6-22 Home Value Index of Mid-Tier Homes in Clark and Nye Counties

Homes are less expensive on average in Nye County than Clark County, although Nye's median income is lower. With an interest rate of 7.0 percent, 10 percent down payment, and a 30-year fixed mortgage, a $350,000 home in Nye County would require a household income of approximately $117,000. This would be affordable for many of the Project's direct operating jobs (see Sections 3 and 4).

The distribution of owner-occupied home values for each county is shown in Figure 6-23. The majority of homes are valued at less than $400,000 and should be affordable for the individuals employed by the jobs created by Project operations.

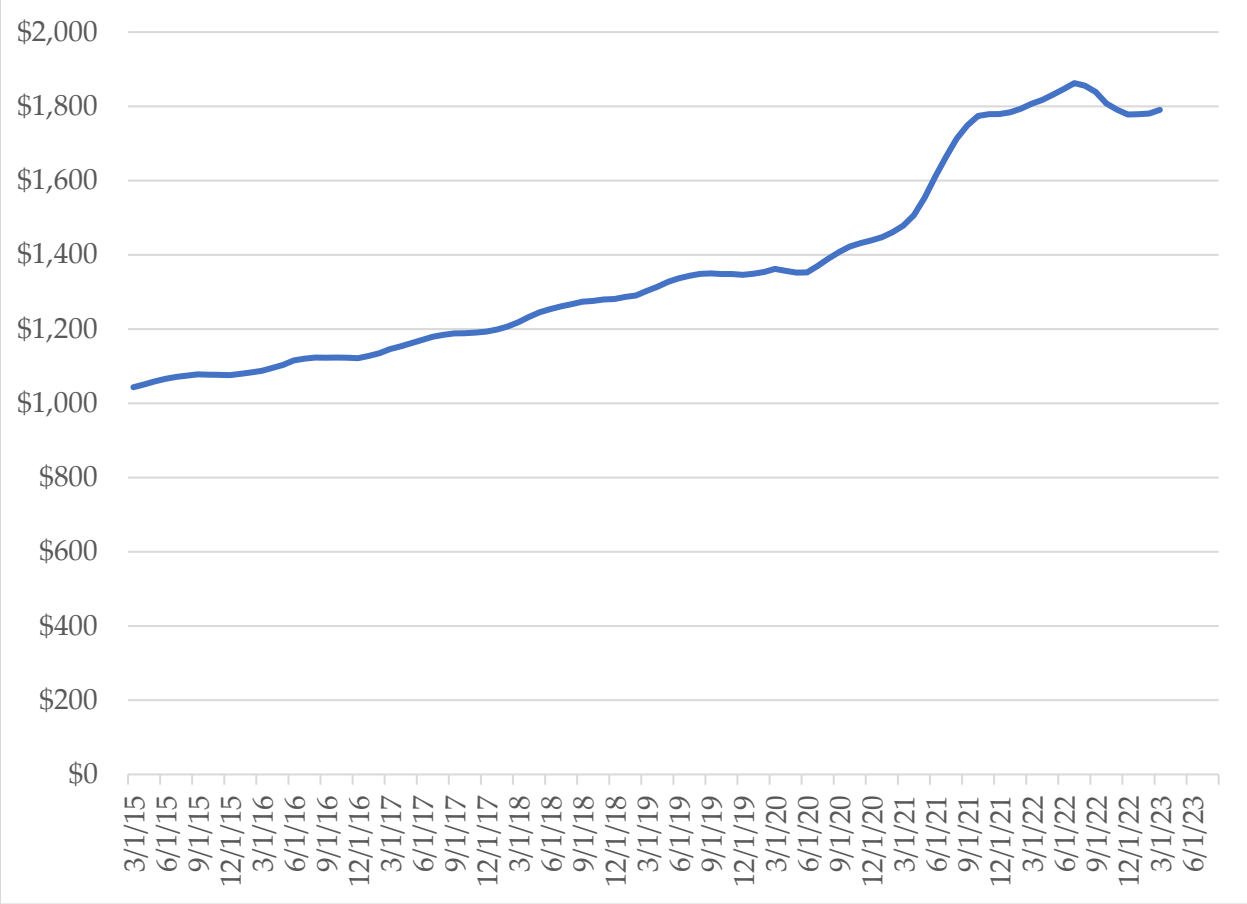


Source: U.S. Census.

Figure 6-23 Distribution of Owner-Occupied Housing Units by Value in Clark and Nye Counties, 2020

6.7.3 Rental Rates

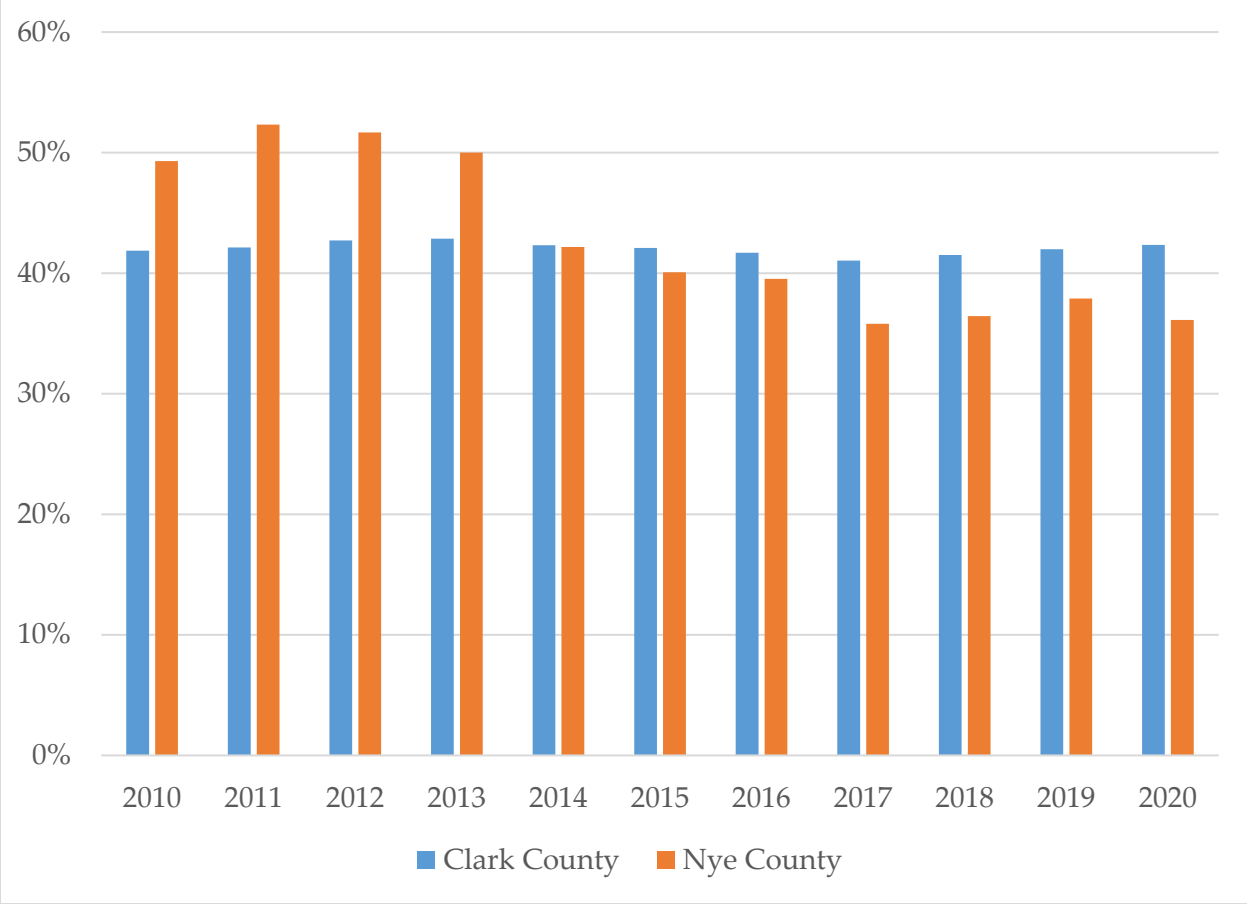
The increase in population (Figure 6-1) and decrease in vacancy (Figure 6-20) has put upward pressure on rents. The Zillow Observed Rent Index (ZORI) is a weighted index designed to represent the mean of the entire market, rather than just current listings. ZORI is available for Clark County only. Figure 6-24 shows rents rising steadily from 2015 through 2020, followed by a rapid rate of increase in 2021, before peaking in 2022. In 2023 rates have been rising slowly and have not yet returned to the levels seen in 2022.



Source: Zillow.

Figure 6-24 Rental Rate Index for Clark County.

Many households that rent housing are cost-burdened. For households renting, 44 percent of Clark County households and 39 percent of Nye County households are spending 35 percent or more of the household income on rent (Figure 6-25). Thus, there does not appear to be an excess supply of affordable rental inventory for the workforce to construct the Project. Once operational, finding housing would not be a problem for those employees.



Source: U.S. Census.

Figure 6-25 Share of Housing Cost-Burdened Rental Households

6.7.4 Transient Lodging Inventory

Many, if not most, of the workers would commute from home within the two-county region. Other workforce housing options may need to be pursued. Vacant housing would allow some workers to move closer to the Project site, either permanently or temporarily.

There would also be the possibility of using transient lodging inventory and short-term rental units during part or all of the 2-year construction period. Certainly, Las Vegas has a significant concentration of transient lodging which could be used to house workers during peak phases of construction and/or specialists brought in from outside the region.

Employees operating the Project over the 28-year lifetime would find both rental and ownership affordable relative to average compensation.

6.8 COMMUNITY SERVICES CAPACITY

Construction of the Project would boost economic activity. For example, more workers traveling to and from the Project site would generate spending on gas and food, but may also incur negative impacts such as traffic violations and injuries at or away from work. This section describes the capacity of various community services in Clark and Nye Counties, from law enforcement and emergency services to health and education. Indeed, construction of the Project would increase demand for these services just as increased economic activity and incremental tax generation should support additional services as needed.

6.8.1 Law Enforcement

Several federal, state, and local agencies provide law enforcement in Clark County. The Las Vegas Metropolitan Police Department (LVMPD) is a joint city-county police force for the City of Las Vegas and unincorporated Clark County. Clark County spans 7,560 square miles and is home to more than two-thirds of Nevada's 3.2 million people. Tourist volume in 2021 exceeded 32 million, or about 15 times the number of residents.

From FY 2021 to FY 2022, the number of police officers increased from 3,301 to 3,387, maintaining a ratio of 2.0 officers per 1,000 residents with some minor fluctuations. In addition, the department employs over 1,300 civilians (Las Vegas Metropolitan Police Department 2022). The Nevada Highway Patrol operates along major highways throughout Nevada, including I-15. The BLM has law enforcement officers available to dispatch from Lake Mead Dispatch (LVICC 2020).

Table 6-21 shows the LVMPD operating fund budget, which totals over $660 million for the FY ending June 30, 2022.

Table 6-21 Las Vegas Metropolitan Police Department Operating Budget

Description	FY 2021	FY 2022
Salaries	$378,123,128	$379,608,960
Benefits	$182,165,238	$188,344,782
Services/supplies	$85,387,043	$85,435,257
Capital	$4,941,974	$3,437,250
Transfers out	$5,000,000	$5,000,000
Total	**$655,617,383**	**$661,826,249**

Source: Las Vegas Metropolitan Police Department.

The Nye County Sheriff's Department staffed 111 officers in 2021, or just over 2.0 officers per 1,000 residents (Police Scorecard 2022).

Table 6-22 shows the components of the Nye County budget attributable to law enforcement and public safety, totaling over $26 million for the FY ending June 30, 2022.

Table 6-22 Nye County Law Enforcement Budgets

Description	FY 2021 Actual	FY 2022 Estimate	FY 2023 Budget
Sheriff	$11,532,397	$12,240,482	$12,756,194
Emergency management	$354,725	$334,853	$430,888
Public safety	$11,887,122	$12,575,334	$13,187,082
Total	**$23,774,244**	**$25,150,669**	**$26,374,164**

Source: (Nye County Finance Department 2022).

6.8.2 Fire Protection

The Clark County Fire Department (CCFD) provides firefighting services throughout unincorporated Clark County from 31 full-time and 10 volunteer fire stations. As of 2021, there were 685 authorized suppression personnel, 130 volunteer firefighters, and 151 prevention and support staff (Clark County, Nevada 2022). The department serves over a million residents and the ratio of paid and volunteer firefighters per 1,000 people is 0.8, a decrease from 1.14 in 2010 (CCFD 2020). The CCFD budgets roughly $18 million annually for fire and $6 million for emergency medical service (EMS) (Clark County Fire District 6 2023).

Pahrump Valley Fire & Rescue (PVFR) serves 50,000 permanent and 5,000 seasonal residents from four stations. District duties include the following:

- Advanced life support EMS services
- Fire prevention/inspections
- Fire suppression
- Hazardous materials (HAZMAT)
- Technical rescue

Funding for PVFR is allocated in the Town of Pahrump budget (Table 6-23).

Table 6-23 Pahrump Fire Department Budget

Description	FY 2020 Actual	FY 2021 Estimate	FY 2022 Budget
Salary and Wages	$904,039	$881,764	$1,169,737
Employee Benefits	$546,326	$748,531	$789,690
Services and Supplies	$222,184	$353,628	$403,150
Capital Outlay	$148,500	$0	$100,000
Total	**$1,821,049**	**$1,983,923**	**$2,462,577**

Source: (Town of Pahrump 2021)

In addition to PVFR, Nye County maintains nine fire services and three HAZMAT teams.

6.8.3 Emergency Medical Services

The fire districts described in Section 6.8.2 provide EMS response in the region. Most of the emergency department (ED) visits by Clark and Nye County residents occur in one of these two counties, primarily Clark County. Table 6-24 shows almost all ED visits among Clark County residents from 2016 to 2018 occurred in Clark County. Only 0.2 percent of visits occurred outside Clark County.

Table 6-24 ED Visits among Clark County Residents by ED Location, 2016–2018

ED Location	Visits	Share
Carson City	191	0.0%
Clark	2,005,306	99.8%
Lincoln	201	0.0%
Nye	1,012	0.1%
Other Nevada counties	508	0.0%
Washoe	2,208	0.1%
White Pine	268	0.0%
Total	**2,009,694**	**100%**

Source: (Nevada Department of Health and Human Services 2019)

Table 6-25 shows 82 percent of Nye County residents' ED visits went to Nye County and the majority of the remainder went to Clark County.

Table 6-25 ED Visits among Nye County Residents by ED Location, 2016–2018

ED Location	Visits	Share
Nye	49,247	82%
Churchill	776	1%
Washoe	392	1%
Clark	8,776	15%
Mineral	516	1%
Other Nevada counties	290	0%
Total	**59,997**	**100%**

Source: (Nevada Department of Health and Human Services 2019)

Nye County residents accounted for two-thirds of the out-of-county visits to the ED in Clark County from 2016 to 2018 (Table 6-26). Washoe residents accounted for 13 percent of the visits.

Table 6-26 ED Visits by Non-Clark County Residents to Clark County ED, 2016–2018

County of Residence	Visits	Share
Carson City	731	6%
Lincoln	634	5%
Nye	8,776	66%
Other Nevada counties	1,104	8%
Washoe	1,667	13%
White Pine	334	3%
Total	**13,246**	**100%**

Source: Nevada Department of Health and Human Services.

Clark County residents accounted for 79 percent of the out-of-county visits to the ED in Nye County from 2016 to 2018 (Table 6-27). Esmerelda County residents accounted for 7 percent.

Table 6-27 ED Visits by Non-Nye County Residents to Nye County ED, 2016–2018

County of Residence	Visits	Share
Carson City	21	2%
Clark	1,012	79%
Esmerelda	93	7%

County of Residence	Visits	Share
Other Nevada counties	74	6%
Washoe	79	6%
Total	**1,279**	**100%**

Source: Nevada Department of Health and Human Services.

6.8.4 Health Care Facilities

In Nevada in 2019, there were 64,510 people employed in the healthcare sector, which includes physicians, dentists, pharmacists, and nurses, and 41,110 people employed in the healthcare support sector, which includes nursing and physical therapist assistants, phlebotomists, and medical transcriptionists (BLS 2020). A total of 54 state, non-profit, and for-profit hospitals were located throughout Nevada in 2020. A majority of these hospitals are located in the Las Vegas area (Nevada DPBH 2020).

6.8.4.1 Clark County

In Clark County, there were 18 hospitals with 4,661 licensed beds and 20,153 FTE in 2021. The combined annual payroll was over $1.6 billion (Griswold 2021).

6.8.4.2 Nye County

The Project site is located 5 miles from Pahrump where the closest emergency care facilities are located. Desert View Hospital in Pahrump is a critical access hospital offering a range of services including emergency care, physical therapy, wound care, radiology, surgery, a 24-hour laboratory, and cardiopulmonary care (Desert View Hospital 2022). As of 2021, Desert View Hospital employed 256 FTE and the annual payroll was $12,638,626 (Griswold 2021).

In July 2022, Community Health Development Partners broke ground to build the Pahrump Community Health Center, a 25,000-square-foot ambulatory surgery center and medical office building. The facility will consist of four operating rooms, two procedure rooms, and a catheterization lab, and will offer a broad range of medical services including general surgery, cardiology, orthopedics, otolaryngology, pain management, podiatry, and ophthalmology. The center is expected to open in 2023 (Pahrump Valley Times 2022).

6.8.5 Community Health

6.8.5.1 Clark County

The 2019 Southern Nevada Community Health Needs Assessment was commissioned by Dignity Health–St. Rose Dominican Hospitals, the Southern Nevada Health District, and the Nevada Institute for Children's Research and Policy (Dignity Health-St. Rose Dominican Hospitals 2019). The report found the following priority needs:

- Access to care (health insurance coverage, service navigation, linguistic and cultural sensitivity)

- Motor vehicle and pedestrian safety (distracted driving, impaired driving, bicyclist and pedestrian safety)
- Violence prevention (gun violence, child abuse, domestic violence, suicide)
- Substance use (alcohol use, maternal substance use, opioid overdoses)
- Mental health (lack of providers, stigma)

A 2021 updated Community Health Assessment conducted by the Southern Nevada Health District identified the following four health priorities (Southern Nevada Health District 2021):

- Chronic disease (consistently a top-ten cause of death in Clark County)
- Access to care (health should not depend on race, income, nor zip code)
- Transportation (need to increase access and reduce cost of receiving care)
- Funding (limited public health funding not addressing high costs)

Clark County results from the 2019 Nevada State Health Needs Assessment identified behavioral health as the top priority, as shown in Table 6-28 (Nevada Department of Health and Human Services 2019). Key informant interviews also emphasized behavioral health issues, homelessness, low incomes, lack of education, and the fact that Clark County is an urban county far from rural, northern Nevada where legislative decisions are made. Solutions include vocational training and increased funding.

Table 6-28 Health Priorities Identified in Clark County, 2019

Top Three Priority Health Issues	Percent of Responses
Behavioral health	34%
Access to health care	25%
Housing/poverty	12%

Source: Nevada Department of Health and Human Services.

According to the 2019 Clark County Health Profile, chronic disease and substance issues are generally in line with or better than state averages. However, household income, insurance, immunizations, and sexually transmitted disease rates are worse than state averages (Nevada Department of Health and Human Services 2019).

As of 2018, 88.8 percent of Clark County's population had health insurance coverage, slightly less than the 89.0 share of urban Nevada overall (Griswold 2021).

County Health Rankings and Roadmaps ranks Clark County in the upper-middle range of Nevada counties in 2023 (50 to 75 percent) with a rank of 6 out of 16 for health outcomes, which represents the current state of health in terms of length and quality of life (County Health Rankings & Roadmaps 2023).

6.8.5.2 Nye County

The Nye County Community Survey results from the 2019 Nevada State Health Needs Assessment identified access to health care as the top-priority health issue, with over half the respondents citing this issue (Table 6-29). Behavioral health and housing/poverty were second and third, respectively (Nevada Department of Health and Human Services 2019).

Table 6-29 Health Priorities Identified in Nye County, 2019

Top Three Priority Health Issues	Percent of Responses
Access to health care	52%
Behavioral health	18%
Housing/poverty	10%

Source: Nevada Department of Health and Human Services.

Nye County has high rates of smoking, heart attacks, opioid overdosing, and suicides relative to state and national averages. Key information interviews also emphasized behavioral health issues, low incomes, lack of jobs, and lack of health care providers of all kinds. Solutions include increasing funding and improving infrastructure.

According to the 2019 Nye County Health Profile, death rates for heart disease, cancer, chronic lower respiratory disease, accidents, stroke, Alzheimer's disease, influenza and pneumonia, suicide, cancer, and other causes were all statistically significantly higher than the state rates. Alcohol abuse and prescription drug use were also statistically more significant than state averages. Child immunizations were below the state average (Nevada Department of Health and Human Services 2019).

As of 2018, 91.1 percent of Nye County's population had health insurance coverage, slightly above the 90.1 percent share of rural Nevada overall (Griswold 2021).

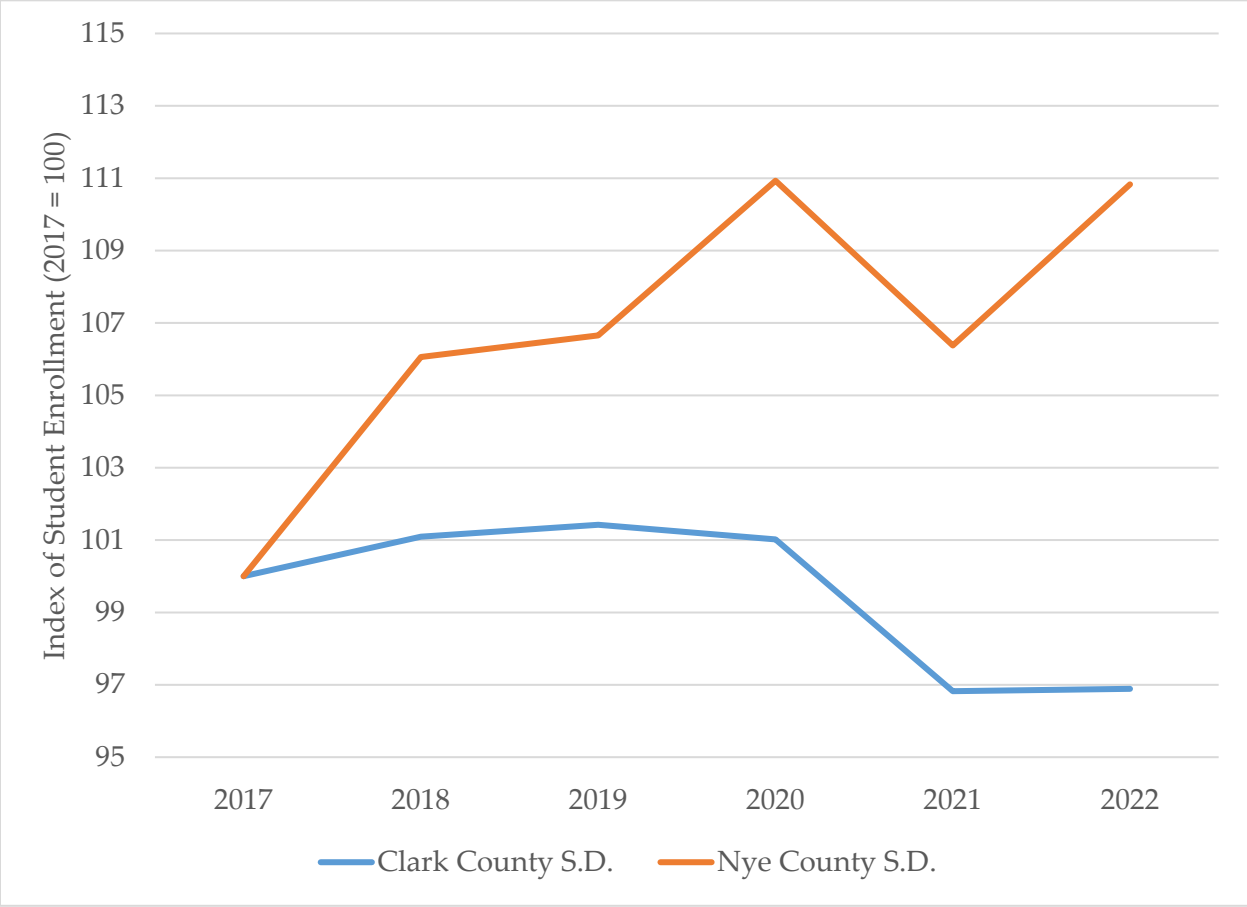
County Health Rankings and Roadmaps ranks Nye County 14 out of the 16 counties in Nevada (County Health Rankings & Roadmaps 2023). Nye County is in the lowest range for health outcomes (0 to 25 percent), which represents the current state of health in terms of length and quality of life.

6.8.6 Schools

Clark County School District (CCSD) serves all of Clark County, including the incorporated cities. Established in 1956, CCSD is the nation's fifth-largest school district offering a variety of nationally recognized programs, including magnet schools, career and technical academies, and advanced placement programs. CCSD educates 64 percent of the students in Nevada (Clark County School District 2023). As of the 2021–22 school year, there were 310,556 students enrolled and 17,780 teachers. The district has 381 schools, and the graduation rate is 81 percent (Nevada Department of Education 2023).

Nye County School District (NCSD) is the largest geographical school district in the contiguous 48 states spanning 18,182 square miles. Advanced placement, career and technical education, alternative education, distance education, online learning, and adult community education programs are offered to meet the individual needs of all students throughout its remote rural communities (Nye County School District 2023). As of the 2021–22 school year, there were 5,577 students enrolled and 328 teachers. The district has 28 schools, and the graduation rate is 83 percent (Nevada Department of Education 2023).

Given that CCSD is significantly larger than the NCSD, the three charts below present a comparison of trends as an index of enrollment, student-to-teacher ratio, and spending per pupil. Figure 6-26 shows enrollment was increasing in each district prior to the pandemic, though at a greater rate in Nye County. From 2020, Nye County's student enrollment has remained about the same whereas Clark County saw a decrease in enrollment following the pandemic. This is consistent with a migration from urban to rural areas as result of the pandemic.



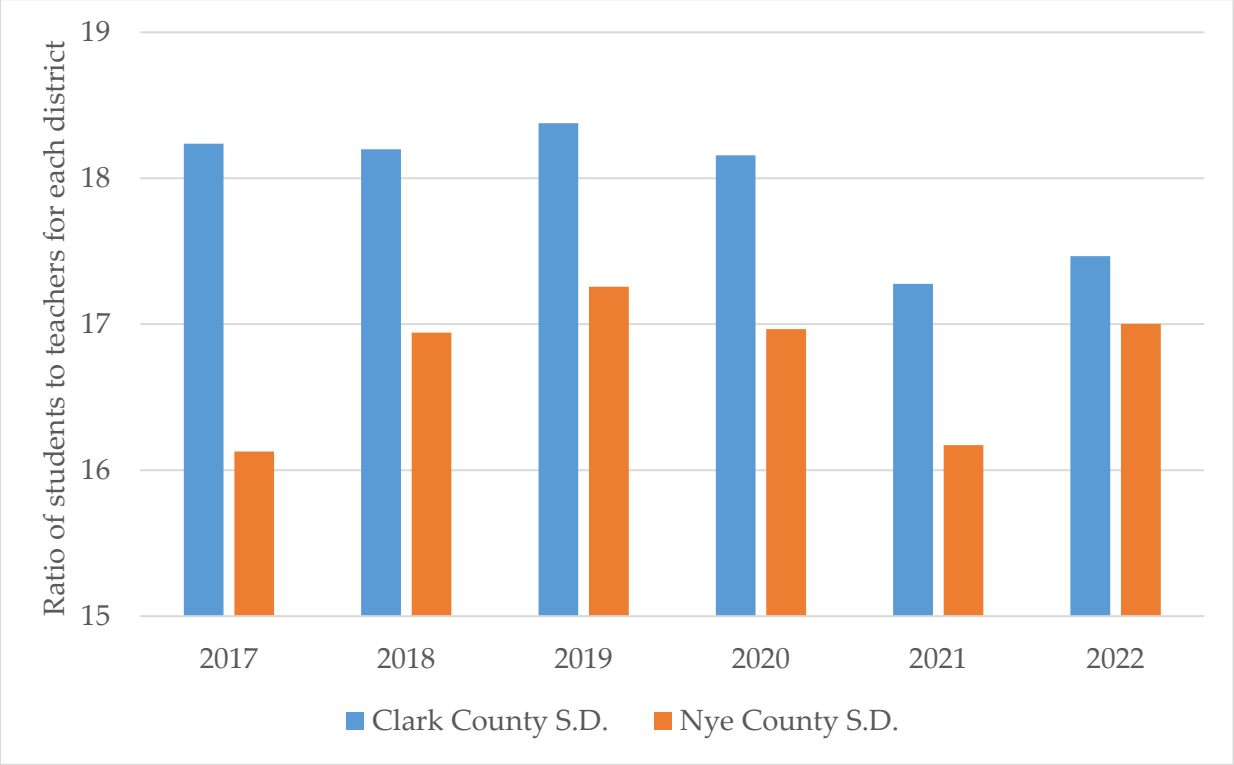
Source: Nevada Department of Education.

Figure 6-26 Student Enrollment Trends by School District

The CCSD student-to-teacher ratio has remained fairly consistent at a level of 17 to 18 students per teacher for the last several years, in a trend generally consistent with enrollment. The NCSD

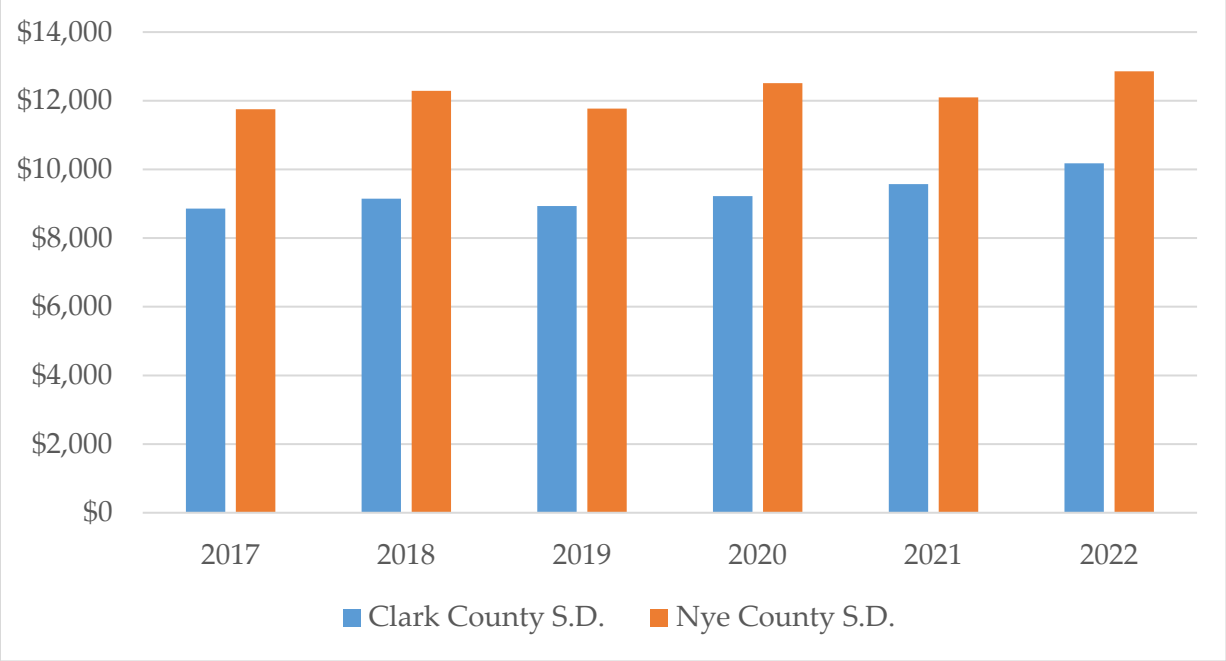
ratio has also remained fairly consistent at a level of 16 to 17 students per teacher for the last several years, in a trend generally consistent with enrollment (Figure 6-27).

Figure 6-28 shows expenditures per pupil remaining relatively flat for each district in recent years, with CCSD spending just over $10,000 per pupil in 2022 and NCSD spending almost $13,000 per pupil.



Source: Nevada Department of Education.

Figure 6-27 Student-to-Teacher Ratios by School District



Source: Nevada Department of Education.

Figure 6-28 Expenditures per Pupil by School District

It is difficult to estimate the direct impact Project construction would have on schools. Presumably, some workers would relocate to the area with school children. Commuters would leave children in their current systems. Indirectly, increased economic activity could encourage some younger families to have children.

6.8.7 Solid Waste

According to the November 2022 Plans of Development, the materials required for the construction of the Project that are classified as hazardous materials would consist primarily of fuels and lubricants. Products such as gasoline, diesel fuel, crankcase oil, lubricants, and solvents would be present within the ROW during construction. These products would generally be used to fuel, lubricate, and clean vehicles and equipment and would be transported in approved containers and/or containerized trucks. All production, use, storage, transport, and disposal of hazardous materials related to construction of the Project would comply with all applicable federal, state, and local laws and regulations. The Applicant would prepare a Waste and Hazardous Materials Management Plan prior to the initiation of construction (SWCA 2022).

The Southern Nevada Health District Board acting as the Solid Waste Management Authority regulates waste management in southern Nevada (Southern Nevada Health District 2021). Republic Services of Southern Nevada provides recycling and waste disposal options throughout Clark County (Republic Services 2023). In Pahrump, C&S Waste Solutions operates Pahrump Valley Disposal, the Nye County Landfill, and Joe's Sanitation (C&S Waste Solutions

2023). Presumably, the Project would have an agreement with one of these entities to provide solid waste disposal services for typical construction and operational waste.

6.9 NON-MARKET VALUE IMPACT

Non-market value resources, such as the beauty of the natural landscape and wildlife habitat that contribute to quality of life, are not easily quantified, or monetized and may influence the economic success of the region. According to a recent survey of community assets and values related to the environment in Nye County, there are existing shared values around outdoor opportunities, public lands, parks, and community centers. Desired assets include diverse dining/recreation, walking/bike paths, community recreation center, and community beautification (Extension 2021).

The limited data and research referenced in Section 5.9 suggests the Project would not impact nearby property values. More importantly, the Project will either upgrade existing transmission lines and/or run new lines adjacent to existing lines, thus the Project's incremental impact on non-market values would be minimal.

6.10 CUMULATIVE IMPACTS

Cumulative impacts are the combined, incremental effects of human activity. This section considers the potential for other large construction projects to impact the region simultaneously. The nature and extent of cumulative impacts will be significantly influenced by the location of the project between two very different counties. Clark County covers only 7 percent of Nevada's land area but holds 73 percent of the state's population (Wikipedia 2023). In contrast, Nye County covers 16.5 percent of the state's land area and holds only 1.6 percent of the state's population. Clark County's economy is one of the largest in the country and is centered around hospitality and gaming, which were hit hard by the pandemic. Gold mining, cyclical in nature, is the largest industry in Nye County by output. A further description of the economic relationship between these two counties is provided by the 2021 Nevada Economic Report (Nevada Department of Employment, Training and Rehabilitation 2021):

> Looking back over the past 20 years, prior to the onset of the COVID-19 pandemic, the trends in unemployment rates among Nevada's counties have been largely consistent. The highest unemployment rates have consistently been in Nye County or in Lyon County—rural counties bordering Nevada's largest counties of Clark County and Washoe County, respectively. This trend was magnified in the Great Recession [also known as the 2008 Recession] due to the impact of the housing market collapse in these communities which had experienced more growth as housing prices in the metropolitan areas grew and pushed affordable housing into neighboring counties. Even into 2020, Nye and Lyon had the highest unemployment rates in the state.

The Project would have a balanced impact on the region as described in this report. Clark County would be supplying the majority of labor and other resources, which it has the capacity to provide, while Nye County would receive economic benefits in proportion to the labor and resources it would supply.

A scan of other proposed transmission projects in the region (Table 6-30) shows a growing industry that will provide construction jobs in sequence and ongoing operating jobs that will diversify and enhance Nye County's economy.

Table 6-30 Additional Transmission Projects in Clark and Nye County-Pahrump Valley

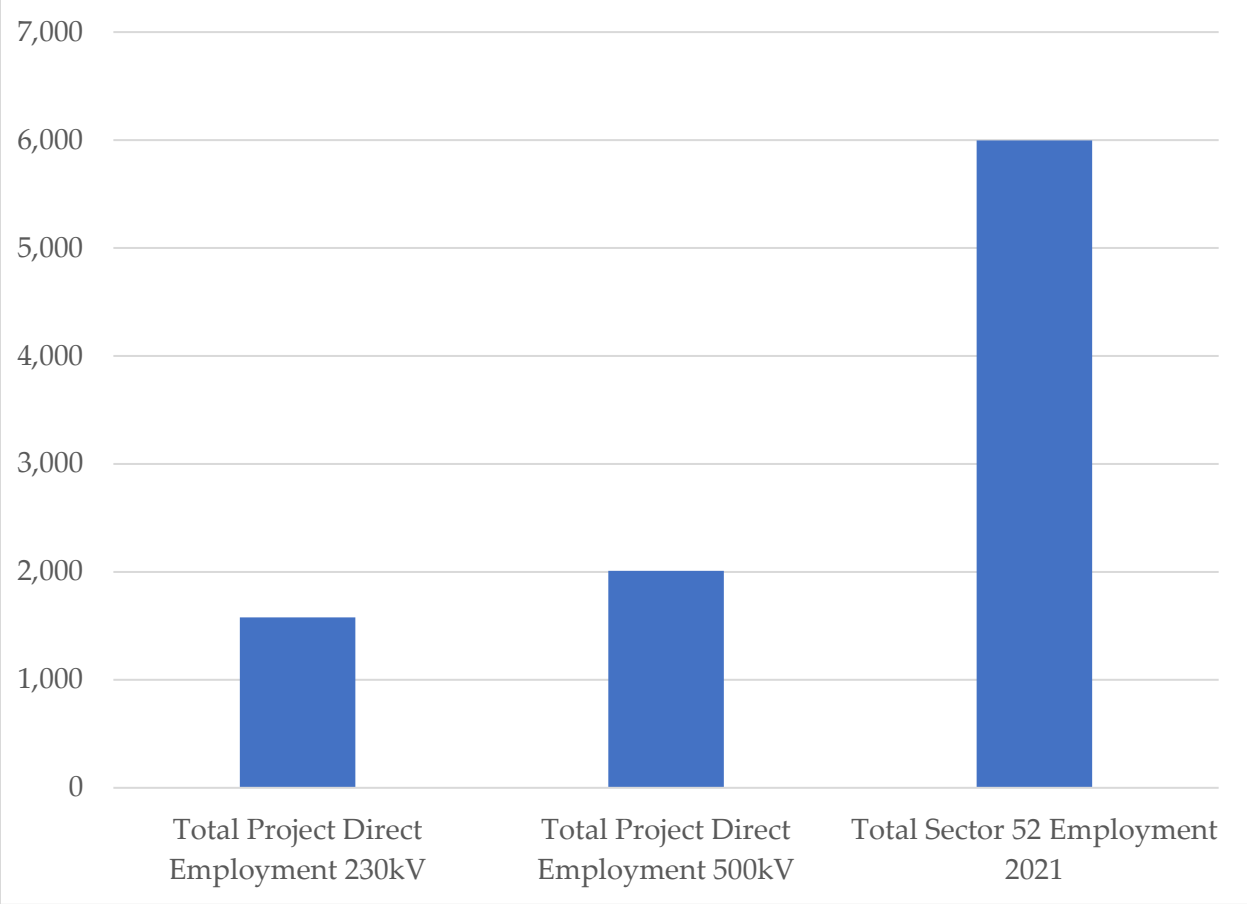
Project Name	Status	County	Start
Pahrump Valley Loop-In Project	TBD	Nye	2022
Southwest Nevada Reliability Improvement Project	TBD	TBD	2023
Greenlink West	Pending	Clark, Esmerelda, Lyon, Mineral, Nye, and Storey	TBD
Greenlink North	Pending	White Pine, Eureka, Lander, Churchill, and Lyon	TBD

Source: TPSC.

Additionally, the CASIO 2022-2023 transmission plan (California ISO 2023) identifies more projects across is broad service area, many of which are smaller the Project.

6.10.1 Employment

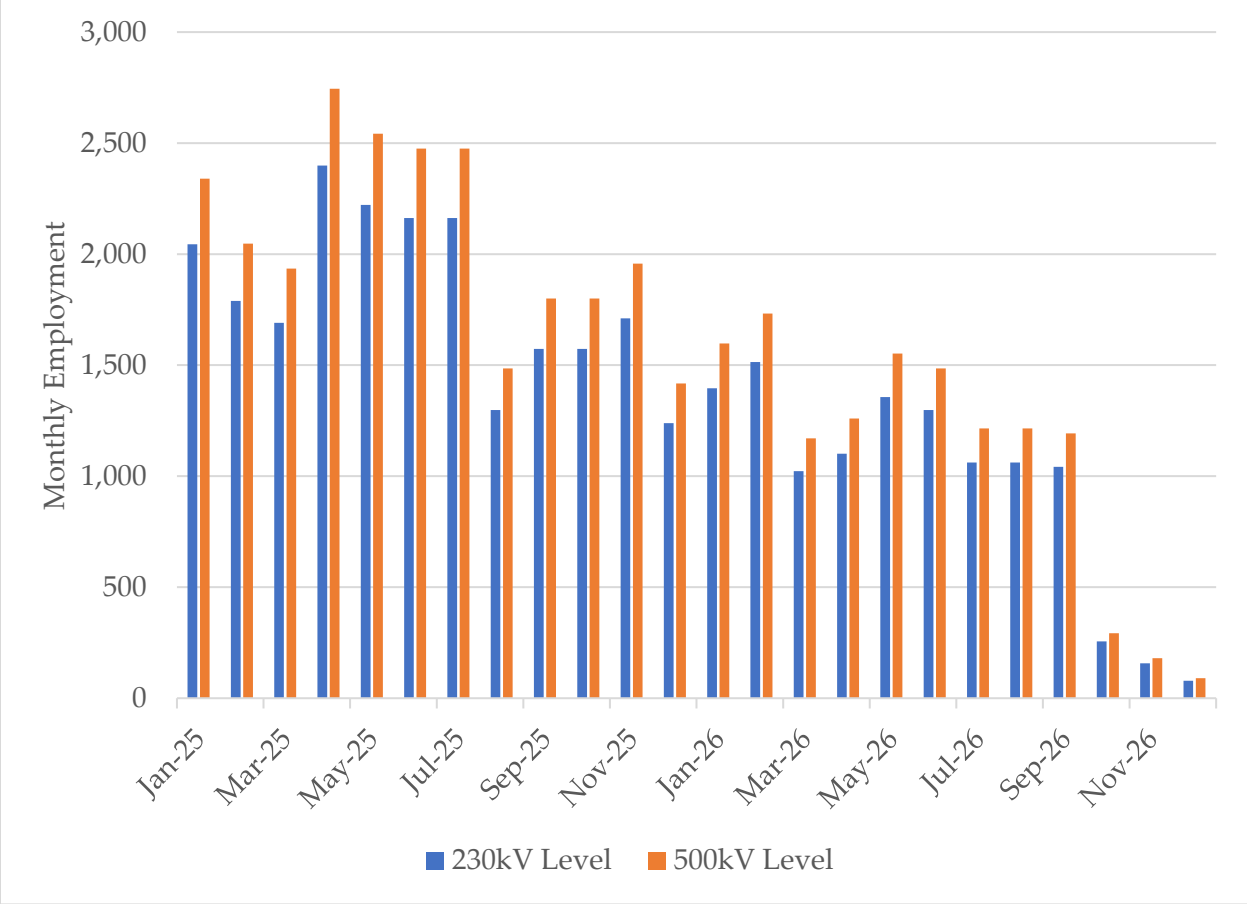
Most of these projects are "proposed" and have not been approved to start construction. It is possible that not all of these projects will be constructed and to what extent they would overlap is unknown at this time. However, it is possible that during the Project's proposed construction period, the demand for workers in this sector would exceed the Project itself. At the 500kV level, the direct employment required to construct this Project is about a third of the current Sector 52 employment in both counties combined (Figure 6-29), the employment required for this Project should be available. Further, these projects could convert employment from other construction sectors, if necessary.



Source: IMPLAN.

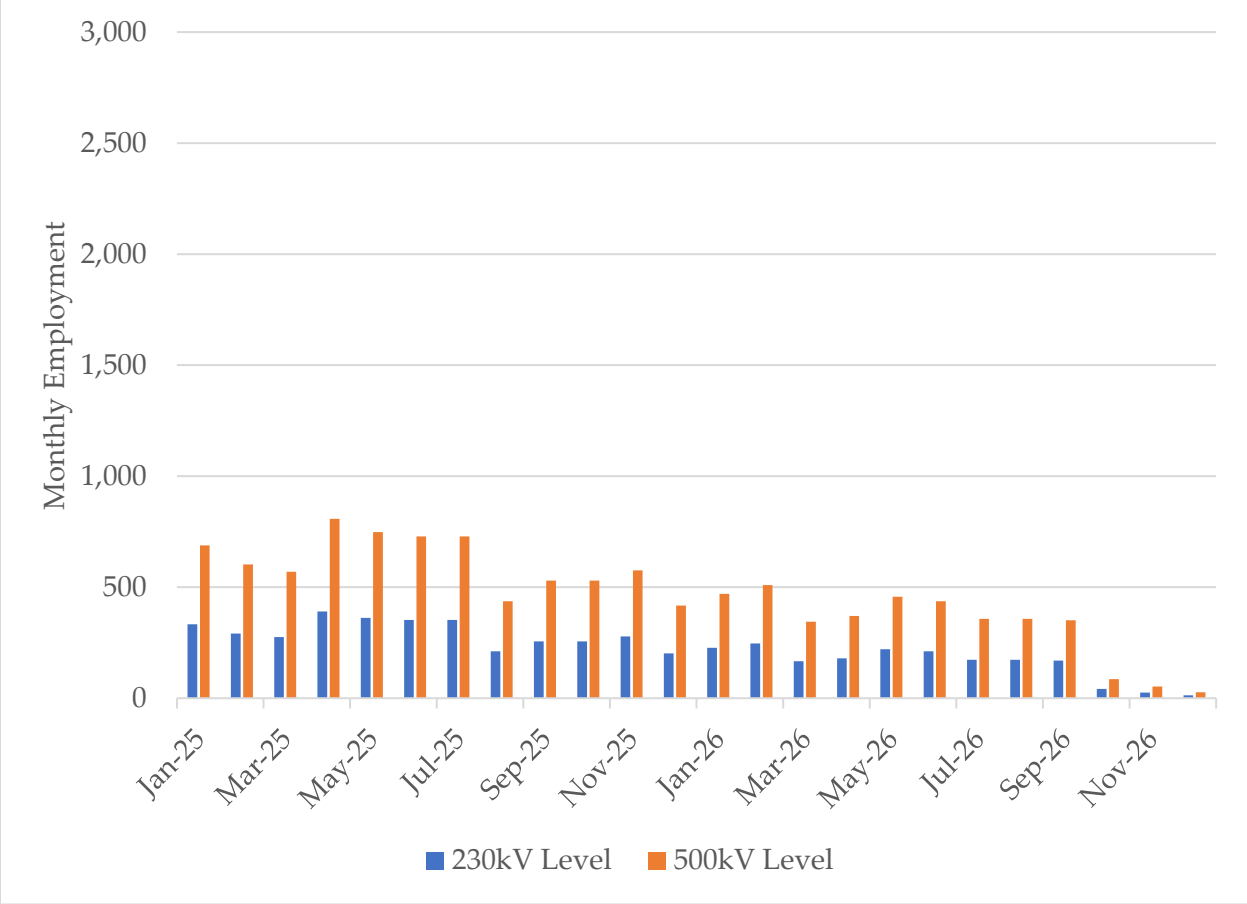
Figure 6-29 Comparison of Annual Direct Construction to Combined Sector 52 Employment

Figure 6-30 shows the estimated distribution of employment by month based on the annual average Project employment estimates modeled in Sections 3 and 4 and preliminary monthly workflow plans provided by GridLiance West. Figure 6-31 shows the same estimated distribution for Nye County using the same y-axis scale for ease of comparison. In both cases, the impacts are greatest during the first seven months of Project construction.



Source: IMPLAN, GridLiance West, TPSC.

Figure 6-30 Estimated Monthly Direct Employment Impact on Clark County by Level



Source: IMPLAN, GridLiance West, TPSC.

Figure 6-31 Estimated Monthly Direct Employment Impact on Nye County by Level

6.10.2 Housing

The actual demand for incremental, construction-phase rental housing would depend on specific schedules for each phase of construction and the number of projects developed concurrently. The majority of this Project's construction workforce is expected to commute from elsewhere in Clark County and this would be the case for additional projects constructed concurrently. As discussed in Section 6.7, some workforce housing may consist of occupying existing vacant homes, as well as temporary rental resources including transient lodging rooms in Nye County and short-term rentals. Construction of new housing would not be a likely option given the time required to construct the housing relative to the time required to construct the Project, in addition to the fact that constructing housing would require its own workforce.

6.10.3 Transportation

According to the November 2022 Plans of Development, typical construction traffic would consist of trucks transporting construction equipment and materials to and from the site and

vehicles of management and employees during the construction period. Most construction staff and workers would commute daily to the job site from Clark and Nye Counties.

Carpooling, park-and-ride, bus, shuttle, and other forms of transit would reduce impacts to local roads and highways during construction. As with housing, the actual demand for transportation would depend on specific construction schedules for each phase of construction as well as the number of other projects constructed concurrently. Timing of shifts throughout the day and week would distribute commuting more evenly.

6.10.4 Community Services

There would be cumulative impacts to the various community services from construction of this Project and possibly others. Additional law enforcement personnel may be required to respond to the needs of a temporary expansion of the workforce. Fire and EMS departments would likely see an increase in calls. This would increase their level of activity and associated costs, but may not require additional staff. As described in Section 6.8.4, hospital services are already regionalized with ED visits and in-patient stays distributed across western Nevada.

In terms of cumulative impacts, increased mining activity would likely have a very modest impact on school enrollment. Further, total K-12 enrollment has declined by about 15,000 students from 2019 as result of the pandemic, so presumably schools would be able to easily absorb any increased enrollment from current levels. As previously mentioned, incremental school enrollment resulting from Project construction is very difficult to estimate; however, if there were one new, incremental student for every five Project construction jobs, that would add another 300 - 400 students.

6.10.5 Tax Revenues

If several energy projects are constructed concurrently, there would be cumulative impacts; however, the combined economic activity would correspondingly increase tax revenues. Personal property tax on Project equipment would be significant. As described in Section 5, portions of the sales tax collected in Clark County are dedicated to mass transit, infrastructure, and police officers. Sales tax revenues would accrue to both counties based not only on direct spending, but indirect and induced spending from Project construction and operations.

7 CONCLUSION

The Project has been approved by the CASIO Board of Governors for its ability to improve the reliability of the electrical grid as well as public policy needs for the region. The purpose of the Project is to provide a solution to these regional transmission needs. The Project would enhance reliability by increasing access to GridLiance interconnected generation and storage capacity, and thus ensure these resources are available to meet CAISO bulk loads during shortage conditions.

The fiscal impacts arising from personal property and sales tax revenues will provide Clark and Nye Counties resources to mitigate negative impacts. Federal fees will provide the BLM and other agencies resources for Project oversight.

During the 2 years of construction activity, the Project will have a significant economic impact on the region. Upon completion, the Project will create a modest number of quality jobs. Improvements to the region's energy infrastructure will foster future economic development broadly.

Clark County has a large economy with the capacity to construct a project of this size. However, given the proximity to Nye County, we show both construction and operations phase impacts accruing to Nye County as well. With a much smaller economy, Nye County would benefit from the economic development and diversification this Project would provide. The proximity of Clark County to Nye County makes this project feasible to build and will disproportionately benefit Nye County socioeconomically.

7 CONCLUSION

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8 APPENDIX

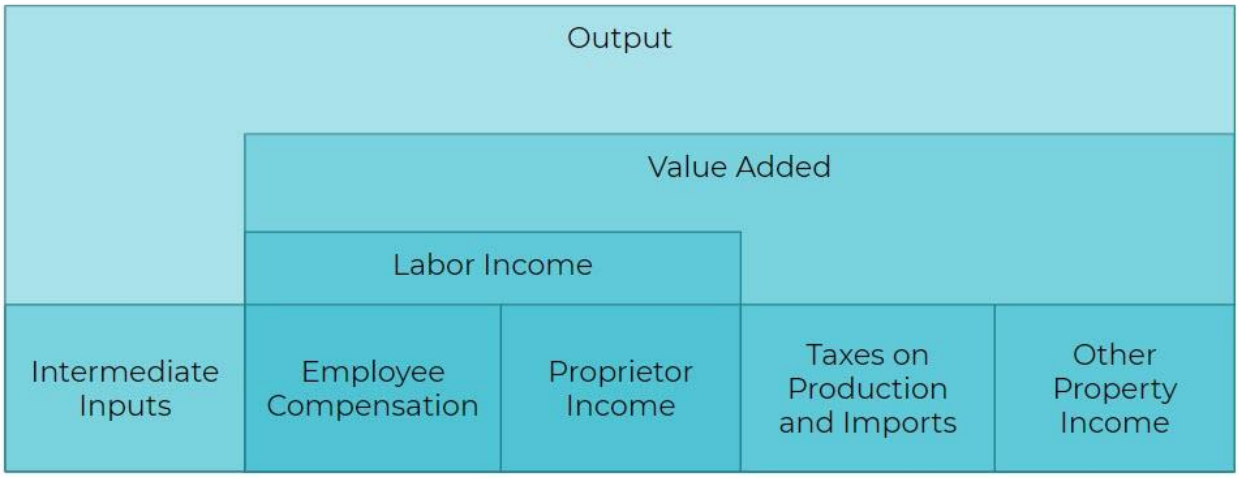
8.1 THE IMPLAN ECONOMIC IMPACT MODEL

I-O modeling is based on the foundational concept that all industries, households, and governments in an economy are connected through buy-sell relationships; therefore, a given economic activity supports a ripple of additional economic activity throughout the economy. IMPLAN is an I-O modeling system that uses annual, regional data to map these buy-sell relationships so users can predict how specific economic changes would impact a given regional economy or estimate the effect of past or existing economic activity.

Output is the value of products and services produced by an industry in a calendar year. Total output is broken down into the following four categories (see Section 10 for definitions):

- Intermediate expenditures
- Labor income
- TOPI, less subsidies
- Other Property Income (OPI)

The allocation of output into these categories is determined by a Leontief Production Function (LPF). IMPLAN derives a unique LPF for each industry in each region and for each year. Graphically, the LPF is shown in Figure 8-1.



Source: IMPLAN.

Figure 8-1 Diagram of a Leontief Production Function.

IMPLAN incorporates all available economic data for each county in the country. Employment and labor income data are sourced from the BLS Census of Employment and Wages, Census Bureau's County Business Patterns Reports, and BEA's Regional Economic Accounts

information, which also provides information on annual Gross Domestic Product. Data regarding industry inputs, byproducts, margins, and industry spending patterns are also sourced from the BEA's Input-Output Benchmark Table and other sources.

For estimating economic output, IMPLAN sources information from several federal surveys such as the Census' Annual Survey of Manufacturers and the BEA's Output Series. Other sources include the National Agricultural Statistical Service, National Bureau of Economic Research, Internal Revenue Service, and Energy Information Administration.

IMPLAN was originally conceived in 1972 as part of the Rural Development Act of 1972. After initial development by the U.S. Forest Service, IMPLAN was further developed by the University of Minnesota during the 1980s. In the 1990s, IMPLAN was privatized, and the Minnesota IMPLAN Group began taking commercial orders. IMPLAN is now widely used for modeling economic impacts across many business sectors.

This analysis uses the latest version of IMPLAN, which currently incorporates 546 industry sectors as defined by the BEA and the latest datasets from 2022.

IMPLAN breaks out the "electric power generation, transmission, and distribution" industry into eight electrical power generation industries, and one electric power transmission and distribution industry.

For a particular producing industry, multipliers estimate three components of total change within the local area:

- *Direct effects* represent the initial change in the industry in question. For example, building a new transmission line will directly expand the size of that industry within the region it is located.
- *Indirect effects* are changes in inter-industry transactions as supplying industries respond to increased demands from the directly affected industries. Supply-chain purchases are indirect economic impacts.
- *Induced effects* reflect local spending changes resulting from income changes in the directly and indirectly affected industry sectors. Spending of both direct and indirect labor income generates induced economic impacts.

8.1.1 Estimating Tax Revenue Impacts Using the IMPLAN Model

Taxes are levied at different levels of government. IMPLAN estimates tax impacts at the following levels: Federal, State + Local, State, County, Sub-County General, and Sub-County Special Districts. IMPLAN's tax impact estimates are based on collected and reported taxes in the region for the given data year. Sub-County General includes city and township governments. Sub-County Special Districts include fire and public school districts.

TOPI, less subsidies, include sales and excise taxes, customs duties, property taxes, motor vehicle licenses, severance taxes, other taxes, and special assessments. TOPI tax impacts are split into subcategories based on each region's contribution of the collected tax. TOPI are tax

revenues, *but not inclusive of all tax revenues*, paid by an industry (refer to Section 10 for definitions). For example, social insurance taxes are a part of employee compensation and profits taxes are part of OPI. In the case of TOPI direct impacts, property taxes on construction impacts are not property taxes on a built structure itself but rather on the construction companies' properties.

In IMPLAN, taxes are specific to the industry and geographic region. However, the breakout by tax category (e.g., sales tax, property tax) is not industry specific because of raw data limitations. Thus, the distribution for a given geographic region is an all-industry average. Also, in IMPLAN there is no way to know the breakout of the components of each subset of tax (e.g., sales tax) into additional detail, as the raw data does not have this level of detail. However, the ratios for TOPI: Output and OPI: Output are industry specific. I-O models by default treat TOPI as a leakage, meaning that any TOPI generated as part of an analysis will not generate any additional effects. OPI generally refers to profits and returns to capital and will be negative if the industry is operating at a deficit.

For detailed itemization of taxes modeled in IMPLAN by category, refer to Taxes: Where's the Tax? (IMPLAN 2022).

8.1.2 Employment Using the IMPLAN Model

Employment data in IMPLAN follows the same definition used by the BEA and BLS, which is full-time/part-time annual average (refer to Section 10 for further explanation). Because a person can hold more than one job, a job count is not necessarily the same as a count of employed persons. Construction jobs are considered "supported" since the building of a facility requires or supports a region's workforce. In the case of this Project, the operating and maintenance jobs are considered "created" since they would not exist prior to construction of the Project.

8 APPENDIX

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9 REFERENCES

Abashidze, Nino. 2023. "Utility-Scale Solar Farms and Agricultural Land Values." *Land Economics* (University of Wisconsin) 15.

BLS Beta Labs. 2023. *BLS Data Viewer - Clark County.* https://beta.bls.gov/dataViewer/view/timeseries/LAUCN320030000000004.

—. 2023. *BLS Data Viewer - Nye County.* https://beta.bls.gov/dataViewer/view/timeseries/LAUCN320230000000004.

BLS. 2020. *May 2019 State Occupational Employment and Wage Estimates Nevada.* March 31. https://www.bls.gov/oes/current/oes_nv.htm.

Board of County Commissioners, Nye County, Nevada. 2022. *Nye County Fiscal Year 2022-2023 Budget Message.* May 26. https://nyecountynv.gov/DocumentCenter/View/41803/22-23-Nye-County-FINAL-Budget---OPTION-2-As-approved---Corrected-Signed-.

Bureau of Land Management. 2022. "Calendar Years 2021 - 2025 Right-of-Way Rental Schedule Re-Assignment of County Zones." Instruction Memorandum. https://www.blm.gov/policy/im-2021-005.

C&S Waste Solutions. 2023. *Thinking Ahead.* https://candswaste.com.

California ISO. 2023. "2022-2023 Transmission Plan." Revised Draft. http://www.caiso.com/InitiativeDocuments/Revised-Draft-2022-2023-Transmission-Plan.pdf.

CCFD. 2020. "CCFD Annual Reports (2010, 2011, 2012, 2013, and 2017)." http://www.clarkcountynv.gov/fire/Pages/CCFDAnnualReports.aspx.

Center for Women's Welfare, University of Washington. 2022. *Self-Sufficiency Standard - Nevada.* https://selfsufficiencystandard.org/nevada.

Clark County Extension Office. 2022. *Social Characteristics for Clark County, Nevada.* https://naes.agnt.unr.edu/PMS/Pubs/2022-4430.pdf.

Clark County Fire District 6. 2023. *Financials.* https://www.ccfd6.org/budgets/.

Clark County Nevada. 2022. *Budgets.* https://www.clarkcountynv.gov/government/departments/finance/financial_reporting/budget/budgets.php.

Clark County School District. 2023. *Newsroom.* https://newsroom.ccsd.net/about/.

9 REFERENCES

Clark County, Nevada. 2022. *Clark County Fire Department - 2021 summary.* https://files.clarkcountynv.gov/clarknv/CCFD%20%202021%20Summary%20of%20Activities%20&%20Responses.pdf?t=1661198157431&t=1661198157431.

County Health Rankings & Roadmaps. 2023. *Clark, Nevada.* https://www.countyhealthrankings.org/explore-health-rankings/nevada/clark?year=2023.

—. 2023. *Nye, Nevada.* https://www.countyhealthrankings.org/explore-health-rankings/nevada/nye?year=2023.

Desert View Hospital. 2022. *Health Is Your Top Priority - Ours Too.* https://desertviewhospital.com/.

Dignity Health-St. Rose Dominican Hospitals, Southern Nevada Health District, and Nevada Institute for Children's Research and Policy. 2019. *Clark County, Nevada Community Health Needs Assessment.* May. https://www.healthysouthernnevada.org/content/sites/snhd/2019-community-health-needs-assessment.pdf.

Extension. 2021. *Community Assets for Nye County, Nevada.* https://naes.agnt.unr.edu/PMS/Pubs/2022-4534.pdf.

Griswold, Tabor and John Packham, Jeannine Warner, Laima Etchegoyhen. 2021. *Nevada Rural and Frontier Health Data Book Tenth Edition.* University of Reno, Nevada, Office of Statewide Initiatives. Accessed October 2022. https://med.unr.edu/statewide/reports-and-publications/nevada-rural-and-frontier-health-data-book.

IMPLAN. 2022. *Economic Impact Application.* Vers. IMPLAN 2018. https://www.implan.com/.

—. 2022. *Taxes: Where's the Tax?* Accessed August 21, 2022. https://support.implan.com/hc/en-us/articles/360041584233-Taxes-Where-s-the-Tax-.

Institute for Research on Poverty. 2022. *How is Poverty Measured?* Accessed October 2022. https://www.irp.wisc.edu/resources/how-is-poverty-measured/.

Las Vegas Metropolitan Police Department. 2022. "Annual Report 2021." https://online.fliphtml5.com/ncrkx/hqyh/#p=1.

Leach, Catherine Brinkley and Andrew. 2019. "Energy next door: a meta-analysis of energy infrastructure impact on housing value." *Energy Research & Social Science* 15.

LVICC. 2020. *Welcome to the Las Vegas Interagency Communication Center.* http://lvinteragency.org/.

Nevada Department of Education. 2023. *2021-2022 Clark at a Glance.* http://nevadareportcard.nv.gov/DI/nv/clark/2022.

9 REFERENCES

—. 2023. *2021-2022 Nye at a Glance.* http://nevadareportcard.nv.gov/DI/nv/nye/2022.

Nevada Department of Employment, Training and Rehabilitation. 2021. *2021 Nevada Economic Report, Annual Review and Projections.* October 22. https://www.dol.gov/sites/dolgov/files/eta/Performance/pdfs/annual_economic_reports/2021/NV%202021%20Economic%20Report.pdf.

Nevada Department of Health and Human Services. 2019. *2019 County Health Profiles - Clark County.* https://dhhs.nv.gov/uploadedFiles/dhhsnvgov/content/Programs/Office_of_Analytics/Images/2019%20County%20Health%20Profile-%20Clark.pdf.

—. 2019. *2019 County Health Profiles - Nye County.* https://dhhs.nv.gov/uploadedFiles/dhhsnvgov/content/Programs/Office_of_Analytics/Images/2019%20County%20Health%20Profile-%20Nye.pdf.

Nevada Department of Health and Human Services. 2019. "Nevada State Health Needs Assessment 2019." Department of Health and Human Services. Accessed October 2022. https://dhhs.nv.gov/uploadedFiles/dhhsnvgov/content/Programs/Grants/NV_SHNA_FINAL.pdf.

Nevada Department of Taxation. 2023. "Personal Property Manual: Valuation Guidelines 2024-2025." https://tax.nv.gov/LocalGovt/PolicyPub/ArchiveFiles/PersonalPropertyManual/2024-2025_Personal_Property_Manual/.

Nevada DPBH. 2020. "Licensee Search." DHHS, April 9. https://nvdpbh.aithent.com/Protected/LIC/LicenseeSearch.aspx?Program=HF&PubliSearch=Y&returnURL=%7e%2fLogin.aspx%3fTI%3d2#noback.

Nye County Finance Department. 2022. *Fiscal Year 2023 Final Budget.* https://nyecountynv.gov/1113/Fiscal-Year-2023.

Nye County School District. 2023. *Every Student a Success.* https://www.nye.k12.nv.us/.

Pahrump Valley Times. 2022. *New Surgical Center Breaks Ground in Pahrump.* July 12. https://pvtimes.com/news/new-surgical-center-breaks-ground-in-pahrump-111473/.

Pitts, Thomas Jackson and Jennifer. 2017. "The Effects of Electric Transmission Lines on Property Values: A Literature Review." *Journal of Real Estate Literature* 22.

Police Scorecard. 2022. *Nye County Sherrif's Department.* https://policescorecard.org/nv/sheriff/nye-county.

Republic Services. 2023. *Welcome to Republic Services of Southern Nevada.* https://www.republicservices.com/municipality/southern-nevada.

9 REFERENCES

Scott, Steven L. 2017. *Fitting Bayesian structural time series with the bsts R package.* July 11. Accessed September 4, 2020. http://www.unofficialgoogledatascience.com/2017/07/fitting-bayesian-structural-time-series.html.

Scott, Steven L., and Hal Varian. 2013. "Predicting the Present with Bayesian Structural Time Series." https://storage.googleapis.com/pub-tools-public-publication-data/pdf/41335.pdf.

2022. *Social Characteristics for Nye County, Nevada.* https://naes.agnt.unr.edu/PMS/Pubs/2022-3163.pdf.

Southern Nevada Health District. 2021. *Solid Waste & Compliance.* June 25. https://www.southernnevadahealthdistrict.org/permits-and-regulations/solid-waste-compliance/.

—. 2021. *Southern Nevada Community Health Assessment Report 2020/2021.* https://www.healthysouthernnevada.org/content/sites/snhd/reports/2022Update_SNHD_CHA.pdf.

SWCA. 2022. "Sloan Canyon to Trout Canyon Transmission Line Upgrade Project." Plan of Development.

Town of Pahrump. 2021. *Final Budget Fiscal Year Ending June 30, 2022.* May 18. https://pahrumpnv.gov/ArchiveCenter/ViewFile/Item/319.

U.S. Bureau of Labor Statistics. 2022. *All Employees: Total Nonfarm in Las Vegas-Henderson-Paradise, NV (MSA).* Accessed July 27, 2022. https://fred.stlouisfed.org/series/LASV832NA.

—. 2022. *Employed Persons in Nye County, NV.* Accessed July 27, 2022. https://fred.stlouisfed.org/series/LAUCN320230000000005 .

U.S. Census Bureau. 2022. *Explore Census Data.* https://data.census.gov.

Wikipedia. 2023. *Clark County, Nevada.* https://en.wikipedia.org/wiki/Clark_County,_Nevada.

Zillow. 2023. *Housing Data - Home Values.* https://www.zillow.com/research/data/.

10 GLOSSARY OF TERMS

Dollar year: The year represented by the values in an Impact Event being modeled. This is usually (but not always) the same as the year in which the event occurred or is expected to occur.

Intermediate expenditures: These are repeating everyday materials required to make a final product. For example, an automobile manufacturer will purchase steel to make cars and a restaurant owner will purchase frozen hamburgers and cleaning supplies on a regular basis.

Jobs and Employment: The job impact counts are supported in the case of construction and created in the case of operations within the region that would result from this project. Note that IMPLAN jobs are not equivalent to FTE. IMPLAN defines jobs as "An Industry-specific mix of full-time, part-time, and seasonal employment. An annual average that accounts for seasonality and follows the same definition used by the BLS and BEA." For example, in IMPLAN, 1 job lasting 12 months = 2 jobs lasting 6 months each = 3 jobs lasting 4 months each. A job can be either full-time or part-time. Similarly, a job that lasts one quarter of the year would be 0.25 job.

Labor income: This represents the total value of all forms of employment income paid throughout a defined economy during a specified period of time. It reflects the combined cost of total payroll paid to employees (e.g., wages and salaries, benefits, payroll taxes) and payments received by self-employed individuals and/or unincorporated business owners (e.g., capital consumption allowance) across the defined economy.

Other Property Income (OPI): All money collected by an industry that isn't paid into the operations of the company. This would include profits, capital consumption allowance, payments for rent, royalties, and interest income. This is also known as Gross Operational Surplus.

Output: This is the value of production by industry in a calendar year. Total output is the sum of labor income, OPI, TOPI, and intermediate expenditures.

Taxes on Production and Imports (TOPI): This impact category includes (sales tax, property tax, motor vehicle taxes, severance, excise, assessments, custom duties, and other taxes and fees) less government subsidies.