CONSORTIUM THREE-YEAR PLAN
2019-2022

# VICTOR VALLEY
# ADULT EDUCATION
## REGIONAL CONSORTIUM

VVAERC
Victor Valley Adult
Education Regional Consortium

CALIFORNIA
ADULT EDUCATION
PROGRAM
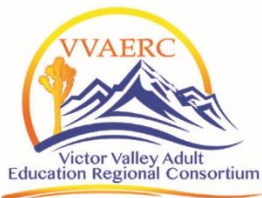
**MARTHA MENDEZ**
*Project Manager*

📞 (760) 245-4271 ext 2685
✉ Martha.Mendez@vvc.edu

# Comprehensive Regional Three-Year Plan

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## 2.1 Executive Summary

**Victor Valley Adult Education Regional Consortium (VVAERC)** will continue to implement a multi-year strategy to enhance and/or pilot additional Adult Education Programs across all member districts. Our Three-Year Plan serves as the foundation for the development of our goals for the next three years and hopes to stabilize and improve adult education services in the region. The VVAERC will seize the momentum backing workforce preparation programs and harnesses the passion of local school administrators to turn attention toward adults needing basic and secondary education skills, Adults with Disabilities, and those who would benefit from ESL programs to tie into a roadmap for employment success.

VVAERC members will continually engage in ongoing analyses to identify gaps in services and adjust programs in order to support career and academic pathways leading to increased wages and/or transitions to post-secondary institutions. To accomplish this, we have selected a series of goals focused on improving transitions to college and career, developing a pathway to citizenship, guaranteeing continuous quality improvement, marketing efforts, and offering more CTE courses. We have developed a plan of action that will strengthen partnerships within the region, as well as increase access to student services for all adult learners. This plan includes strategic activities designed to ensure our goals would be accomplished and evaluating the effectiveness of these goals would be possible, all with the aim to close gaps in adult education. New strategies will be piloted and implemented to also help improve student success by aligning ESL curriculum and assessments between schools and VVC, transitioning HSD students to VVC, leveraging VVC resources, expanding concurrent enrollment opportunities, and offering articulated CTE courses at adult schools.

In meeting the region's needs, VVAERC's members continue to work collaboratively with each other and with community partners to provide resources for all adult learners in the region. By seeking opportunities to increase CTE programs, creating pathways to higher education, and improving the systems of support we can better equip students with the necessary skills and tools for in demand jobs in the region. Combined events, such as our joint Adult Education Commencement Ceremony at VVC and shared delivery of professional development, will strengthen collaborative efforts and bring more regional awareness of our consortium.

We will continue to work tirelessly to be recognized as leaders in adult education by offering certifications leading to employment and by serving as a model program for other consortia. Our students and community will benefit greatly by our region's progress in ensuring that we focus on equity and access for all, thereby leading to success in both college and career.

## 2.2 Pre-Planning Assessment

The Victor Valley Adult Education Regional Consortium (VVAERC) was established in the Spring of 2014 for the purpose of bringing together adult education providers in K-12 school districts and Victor Valley Community College to better serve the educational needs of adults in our region.  The consortium covers the Victor Valley high desert region and its membership is made up of Victor Valley Community College and the five school districts within the geographic boundaries of the college district:

● Apple Valley Unified School District
● Hesperia Unified School District
● Lucerne Valley Unified School District
● Snowline Joint Unified School District
● Victor Valley Union High School District

The goal of the Consortium is to better provide adults with education in the following program areas:

● Elementary and secondary basic skills, including classes required for a high school diploma or high school equivalency
● Classes and courses for immigrants eligible for education services in citizenship and English as a second language
● Educational programs for adults with disabilities
● Short-term career technical educational programs with high employment potential
● Programs for apprentices

Additionally, the consortium partners with organizations representing local community agencies and community-based organizations (CBO).

## Current Partners:

- Adult Education
- America's Job Center of California
- California Department of Veteran Affairs
- Carpenters & Pipefitters Union
- Catholic Charities
- ComAV, Adelanto
- County of San Bernardino
- Department of Rehabilitation
- Economic Development Department
- General Atomics, El Mirage
- Goodwill Industries
- High Desert Hispanic Chamber of Commerce
- InTech Center, Fontana
- K16 Bridge Program
- Mountain Desert Career Pathways Consortium
- Regional Occupational Programs
- San Bernardino County Sheriff Detentions and Corrections Bureau
- San Bernardino County Superintendent of Schools
- The County of San Bernardino Workforce Development Department
- TODEC
- U.S. Department of Labor
- Victor Valley area Chamber of Commerces
- WIOA Partners
- Workforce Development Department, Americas Job Centers of California

## Victor Valley Adult Education Regional Consortium Service Area

The Victor Valley Adult Education Regional Consortium (VVAERC) service area is comprised of 17 zip codes in San Bernardino County.  The VVAERC region ranges from Kramer Hills in the north, to Lucerne Valley in the Southeast and near Phelan in the southwest.
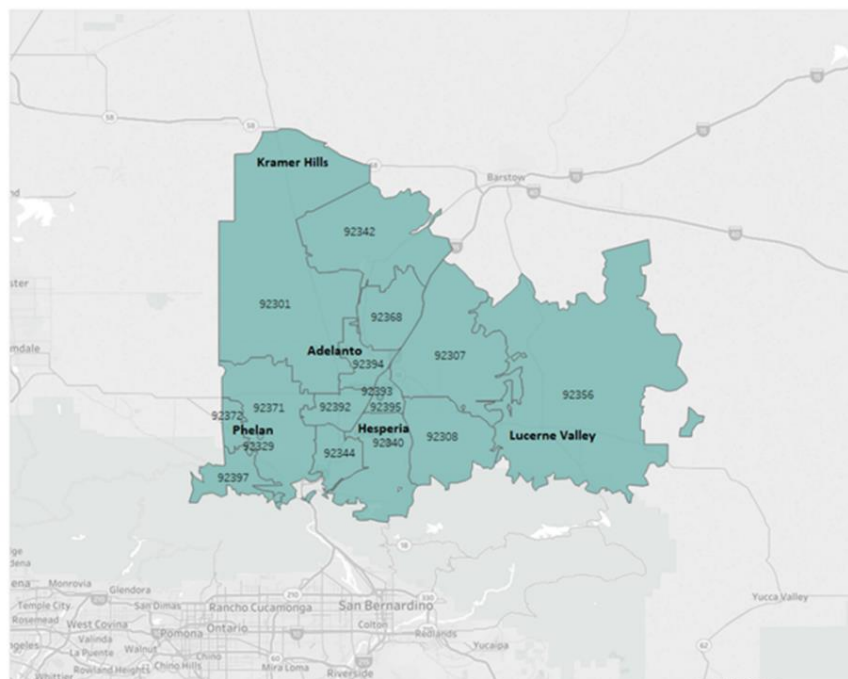
## Table 1 - Regional Service Providers - Victor Valley

| Provider Name | Provider Type | Address where AE services are provided | Program Areas | | | | | | | If other, provide a brief description of services provided |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | ABE | ASE | ESL | CTE | AWD | WR | PA | |
| Hesperia Adult School | Education/Member | 16527 Lemon Street, Hesperia, CA 92345 | | X | X | X | | X | | WIOA Provider |
| Snowline Adult School | Education/Member | 9298 Sheep Creek Rd., Phelan, CA 92371 | | X | X | X | | | | WIOA Provider |
| Apple Valley Adult School | Education/Member | 13063 Pawnee Road Apple Valley, CA 92308 | X | X | X | X | X | X | | WIOA Provider |
| Lucerne Valley Adult School | Education/Member | 33233 Rabbit Springs Road, Lucerne Valley, CA 92356 | X | X | X | X | | | | |
| Victor Valley Adult School | Education/Member | 16350 Mojave Dr. Building 7 Victorville, CA 92395 | | X | X | X | | | | |
| Victorville City Library | City Library | 15011 Circle Drive, Victorville, CA 92395 | | | | X | | | | Beginning Computer Classes, Beginning Spanish Computer Classes |
| Victor Valley College | Community College | 18422 Bear Valley Road, Victorville, CA 92395 | | | X | X | X | X | X | ESL, College Transition, Community Job Fair, WIOA Provider |
| Apple Valley Branch Library | County Library | 14901 Dale Evans Parkway Apple Valley, CA 92307 | | | | X | | | | Basic Computer classes, Adult Literacy classes |
| TODEC | Non-Profit | 14335 Hesperia Rd. Victorville, CA 92395 | | | X | | | | | Basic Computer and internet skills, literacy, citizenship, English, US history and government |
| Catholic Charities | Non-Profit | 15000 7th St, Victorville, CA 92395 | | | X | | | | | Citizenship classes and legal resources |
| Career Institute | CBO | 12180 Ridgecrest Rd # 204, Victorville, CA 92395 | | | | X | | | | Career and job placement programs |
| ACE Healthcare | CBO | 18145 CA-18 Suite F & G, Apple Valley, CA 92307 | | | | X | | | | Healthcare |
| Goodwill Industries | CBO | 16970 Bear Valley Rd, Victorville, CA 92395 | | | | X | | | | Career Development |
| San Joaquin Valley College | Private College | 9331 Mariposa Road, Hesperia, CA 92344 | | | | X | | | | Business, Criminal Justice, Medical, Technical and Industrial |
| High Desert Training Institute | Private College | 12421 Hesperia Road Suite 11, Victorville, CA 92395 | | | | X | | | | Medical Billing and Medical Records Coding |
| Workplace Training Solutions Center | Private, Post-secondary school | 18182 CA-18 #107, Apple Valley, CA 92307 | | | | X | | | | Healthcare and safety training |
| AUMT Institute | Private, Post-secondary school | 12402 Industrial Blvd., A, Victorville, CA 92395 | | | | X | | | | Phlebotomy school |
| High Desert Americas Job Center of California | Public | 17310 Bear Valley Rd., Suite 109, Victorville, CA | | | | X | | X | | Workforce Readiness, Job Fair, WIOA Provider, Employment Resources |
| Hesperia Branch Library | Public Library | 9650 7th Ave. Hesperia, CA 92345 | | | | X | | | | Basic Computer classes, Adult Literacy |
| San Bernardino County Workforce Development Board | WIOA Partner | | | | | | | | | AJCC's |

VVAERC convened to plan and discuss future goals and strategies that will be implemented during the next three years.  The consortium participated in a series of activities to help develop these goals based on data and information collected and analyzed.  The goals created are aligned to the needs of the community, students, staff, and other stakeholders.  In efforts to assess the needs of the consortium, VVAERC's completed the following activities:

1.  A faculty/staff survey was created and collected from 51 individual responses, and centered around program areas in need for attention, additional course offerings and collaboration between other schools, college, and outside partners.  This information was discussed by members and helped with creating our SWOT Analysis.

2.  A student survey was created, and 501 students responded providing insight on the following main topics:
    a.  Reason for attending school
    b.  Requested new courses
    c.  Employment status
    d.  Educational goals
    e.  Barriers to education
    f.  Educational services needed to help with goals

3.  VVAERC's also participated in taking **CAEP's Self-Assessment Tool**. The summary of responses was discussed and helped determine our consortium's greatest areas of need, as well as our SWOT Analysis.

4.  To have an accurate view of Adult Education funding, **Table 2. Funding for Adult Education Programs** was created and supplied a better understanding of fund sources and allocation. See Appendix.

5.  VVAERC contracted **BW Research Partnership** to conduct a Labor Market overview of our consortium's region detailing key factors, such as: demographics of adults in the region, employment growth, important industry clusters, and general LMI data on top occupations in the region.  This information allowed the consortium to look at historical employment and demographic trends in the region. See Appendix.

6.  VVAERC used CAEP's Fact Sheets to have a clearer picture of future employment trends to better position adult education to meet employment demands in the region. [caladulteddev.scoe.net/2019FactSheets](caladulteddev.scoe.net/2019FactSheets)

After completion of the above activities, VVAERC reviewed and analyzed data in order to create a SWOT Analysis of consortium strengths, weaknesses, opportunities, and threats, as well as a Gap Analysis, and logic models detailing 6 overarching goals to pursue for 2019-2022.

## Table 2 – Funding for Adult Education Programs and Services

| Member Name: | Victor Valley Adult Education Regional Consortium | | |
|---|---|---|---|
| **Source and Type of Funds** | **Funding Estimates FY2019-20** | **Funding Estimates FY2020-21** | **Funding Estimates FY2021-22** |
| State / Federal Funding | | | |
| AEP | $2,219,245 | $2,219,245 | $2,219,245 |
| CalWORKs | $28,553 | $38,853 | $38,853 |
| CCD Apportionment | $0 | $0 | $0 |
| Corrections | $0 | $0 | $0 |
| LCFF / District Funds | $0 | $0 | $0 |
| Perkins V | $0 | $0 | $0 |
| WIOA II | $409,564 | $371,343 | $371,343 |
| Other Funding | | | |
| Hiset | $714 | $1,000 | $1,000 |
| **Total** | **$2,658,076** | **$2,630,441** | **$2,630,441** |

# 2.3 Community Need and Customers

In this section we will discuss the needs of our community, the needs of our current customers, and regional labor market opportunities that exist, from which we hope our students will be able to capitalize on.

## Identifying and Addressing General Service Gaps

During consortium meetings the VVAERC was able to identify gaps and weaknesses that should be addressed in the coming three years.  Some of the recognized gaps included:

1.  A need for increased tracking of student transitions into the workforce, post-secondary education, and career training.
2.  A need for an increase in outreach to partner agencies in our region, to better leverage resources.
3.  A need to grow job placement services to connect students with openings.

We will develop strategies for best practices on collecting, analyzing, and coordinating efforts to meet student needs.  In addition, VVAERC seeks to increase community outreach within the region with the support of transition counselor position.

## SWOT Analysis:

Strengths:
- Relationships with community partners
- College's relationship with community partners
- Increased data collaboration between our data level staff throughout the consortium
- Dedicated transitions counselor
- Alignment of CASAS throughout the region
- Increased partnership with the college
- Support of the college to our graduation
- Articulation of CTE Adult Education

Weaknesses:
- Transition to higher level ESL
- Current transitioning from adult school to college
- Transportation options
- Staffing for student transitions
- Data from post-secondary education to workforce to colleges

Opportunities:
- Expand WIOA for adult schools and colleges
- Federal grant for CTE – possible collaboration between VVC and schools
- WASC accreditation

Threats:
- Competition - schools and companies marketing to our students
- Online high schools
- Private post-secondary and K-12 charter schools
- For-profit schools
- New community college legislation – college level coursework mandate

## Labor Market Info:

### Employment & Economic Activity

There are a total 85,648 jobs in the VVAERC region.  Since 2013, the number of jobs in the region has increased 13%, or by an additional 9,651 jobs.  Average wages per job in VVAERC ($60,435) are below both the state and national averages.

Since 2013, employment in the VVAERC region has increased at a faster rate than state (12%) and national (8%) averages. This is important, as overall employment growth is a general indicator of the economic health of a region, which shows that VVAERC's is healthy, and should be sustainable.  As we have a better understanding of the region's employment trends, VVAERC leadership will be able to make data-driven decisions that help support efforts to continue to grow the region's economy.

## Figure 1: Regional Demographics

Our region's demographic makeup has been analyzed and is displayed below. There is a population of approximately 280,000 and about 52,500 of the adults in the region have less than a high school diploma. This provides us with an opportunity to help serve those adults in achieving a high school diploma, GED, or high school equivalency.



Regional Demographics

66 VICTOR VALLEY ADULT EDUCATION REGIONAL CONSORTIUM
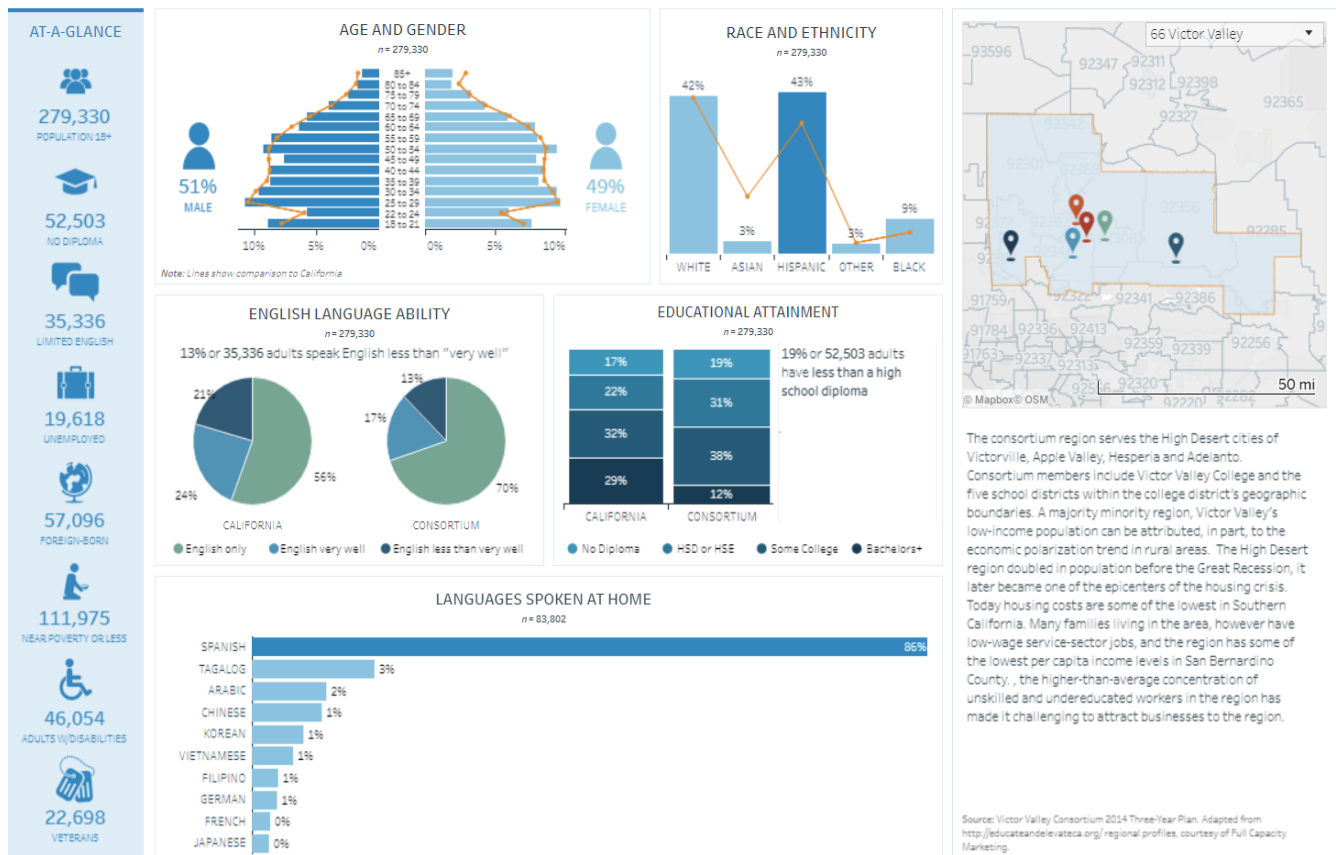
## Potential Student Assessment

The potential Victor Valley Adult Education Regional Consortium adult education student population is delineated into four categories:

- Students Needing Elementary & Secondary Basic Skills
- English as a Second Language
- Adults with Disabilities
- Career & Technical Education

### Students Needing Elementary & Secondary Basic Skills

There are nearly 53,000 of these potential students who have a less than a high school diploma (or high school equivalency). Adult education courses targeting these students are meant to build a solid foundation of vocabulary, reading, and writing skills, and/or assist students in completing their high school diploma or equivalency.

### English as Second Language (ESL)

There are more than 35,000 potential ESL students. This includes the population 18 years and older who speak English "less than very well." Adult education courses targeting this population will offer classes for adult English language learners, vocational English as a Second Language (ESL), and citizenship courses.

### Adult with Disabilities

There are more than 25,000 adults with disabilities in the VVAERC region. This population consists of those 18 to 64 years old with a verified disability such as: hearing, vision, or cognitive disability, self-care difficulty, or independent living difficulty. Adult education courses targeting this population offer services and programs that are meant to support educational goals and increase independence.

### Career & Technical Education (CTE):

There are more than 168,600 potential CTE students. These adult education courses are meant to provide specific training and education to expand and improve employment opportunities, to assist students in completing their college degree, or to help them move into a career pathway.

Victor Valley Adult Education Regional Consortium include developing programs and resources to:

- assist students in completing high school diploma or equivalency
- develop citizenship programs
- expand English as a Second Language courses
- meet the needs of adults with disabilities
- improve access to career and technical education

## Figure 2: Top Occupations in VVAERC

Top 10 Occupations with the Most Job Openings:
- Combined Food Preparation and Service
- Waiters and Waitresses
- Janitors and Cleaners
- Personal Care Aides
- Cashiers
- Retail Salespersons
- Stock Clerks and Order Fillers
- Office Clerks, General
- Heavy and Tractor-Trailer Truck Drivers
- Laborers and Freight

Top 10 Fastest Growing Occupations:
- Personal Care Aides
- Nursing Assistants
- Social and Human Service Assistants
- Home Health Aides
- Electrical Power-Line Installers and Repairers
- Physical Therapist Assistants
- Solar Photovoltaic Installers
- Helpers-Pipelayers, Pipefitters, and Steamfitters
- Occupational Therapy Assistants
- Health Technologists and Technicians, all others

Using this information, VVAERC will be able to determine which potential CTE courses will benefit the populace the most, by helping open the door for students to enter either occupations that are growing the fastest, or an occupation that has ample job openings.

### TOP 10 OCCUPATIONS WITH THE MOST JOB OPENINGS

| SOC | DESCRIPTION | TOTAL JOB OPENINGS | MEDIAN HOURLY WAGES | MEDIAN ANNUAL WAGES |
|---|---|---|---|---|
| 35-3021 | COMBINED FOOD PREPARATION AND SERVICE | 50,367 | $11.28 | 23,464 |
| 35-3031 | WAITERS AND WAITRESSES | 22,287 | $11.52 | 23,961 |
| 37-2011 | JANITORS AND CLEANERS | 15,011 | $13.86 | 28,828 |
| 39-9021 | PERSONAL CARE AIDES | 56,991 | $11.32 | 23,541 |
| 41-2011 | CASHIERS | 43,317 | $11.41 | 23,723 |
| 41-2031 | RETAIL SALESPERSONS | 37,789 | $12.16 | 25,286 |
| 43-5081 | STOCK CLERKS AND ORDER FILLERS | 25,506 | $12.10 | 25,169 |
| 43-9061 | OFFICE CLERKS, GENERAL | 18,533 | $16.33 | 33,958 |
| 53-3032 | HEAVY AND TRACTOR-TRAILER TRUCK DRIVERS | 23,947 | $20.75 | 43,170 |
| 53-7062 | LABORERS AND FREIGHT | 62,498 | $13.52 | 28,114 |

### TOP 10 FASTEST GROWING OCCUPATIONS

| SOC | DESCRIPTION | 2017 JOBS | 2017-2027 CHANGE | 2027 JOBS | MEDIAN HOURLY WAGES | MEDIAN ANNUAL WAGES |
|---|---|---|---|---|---|---|
| 39-9021 | PERSONAL CARE AIDES | 552,622 | 261,988 | 814,610 | $12.75 | 26,511 |
| 31-1014 | NURSING ASSISTANTS | 103,345 | 27,682 | 131,054 | $22.39 | 46,578 |
| 21-1093 | SOCIAL AND HUMAN SERVICE ASSISTANTS | 58,419 | 14,598 | 73,017 | $29.52 | 61,401 |
| 31-1011 | HOME HEALTH AIDES | 31,461 | 35,789 | 67,329 | $14.99 | 31,175 |
| 49-9051 | ELECTRICAL POWER-LINE INSTALLERS AND REPAIRERS | 7,250 | 1,979 | 9,263 | $57.12 | 118,811 |
| 31-2021 | PHYSICAL THERAPIST ASSISTANTS | 5,114 | 2,596 | 7,710 | $38.49 | 80,063 |
| 47-2231 | SOLAR PHOTOVOLTAIC INSTALLERS | 4,224 | 4,024 | 8,286 | $26.49 | 55,109 |
| 47-3015 | HELPERS--PIPELAYERS, PLUMBERS, PIPEFITTERS, AND.. | 3,026 | 1,347 | 4,411 | $25.29 | 52,601 |
| 31-2011 | OCCUPATIONAL THERAPY ASSISTANTS | 1,955 | 1,135 | 3,209 | $40.30 | 83,832 |
| 29-2099 | HEALTH TECHNOLOGISTS AND TECHNICIANS, ALL OTH.. | 24,221 | 9,010 | 33,231 | $37.56 | 78,130 |

In order to continue to grow CTE course options for students, VVAERC also analyzed which industries had the highest growth rate and openings in order to create career pathways, beyond just a single CTE course. Figure 3 and Figure 4 below, help determine best choices.

Job Openings by Industry:
- Government
- Health Care and Social Assistance
- Retail Trade
- Transportation and Warehousing
- Accommodation and Food Services
- Construction
- Wholesale Trade
- Other Services (Except Public Administration)
- Unclassified Industry

Projected Job Openings by Top 10 Major Occupational Group:
- Office/Administrative
- Transportation
- Food Prep/Service
- Sales
- Personal Care and Service
- Production
- Construction and Extraction
- Installation, Maintenance, and Repair
- Building and Grounds Maintenance
- Health Care Support
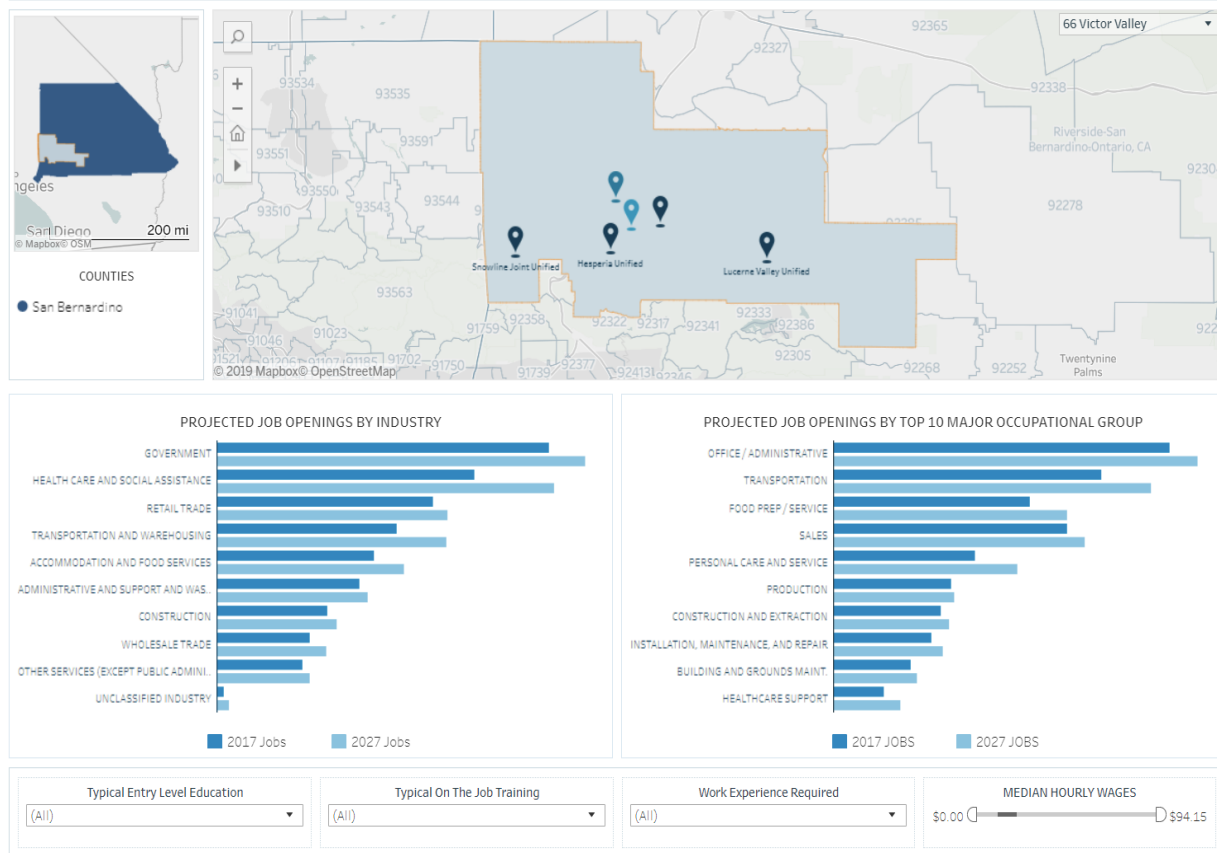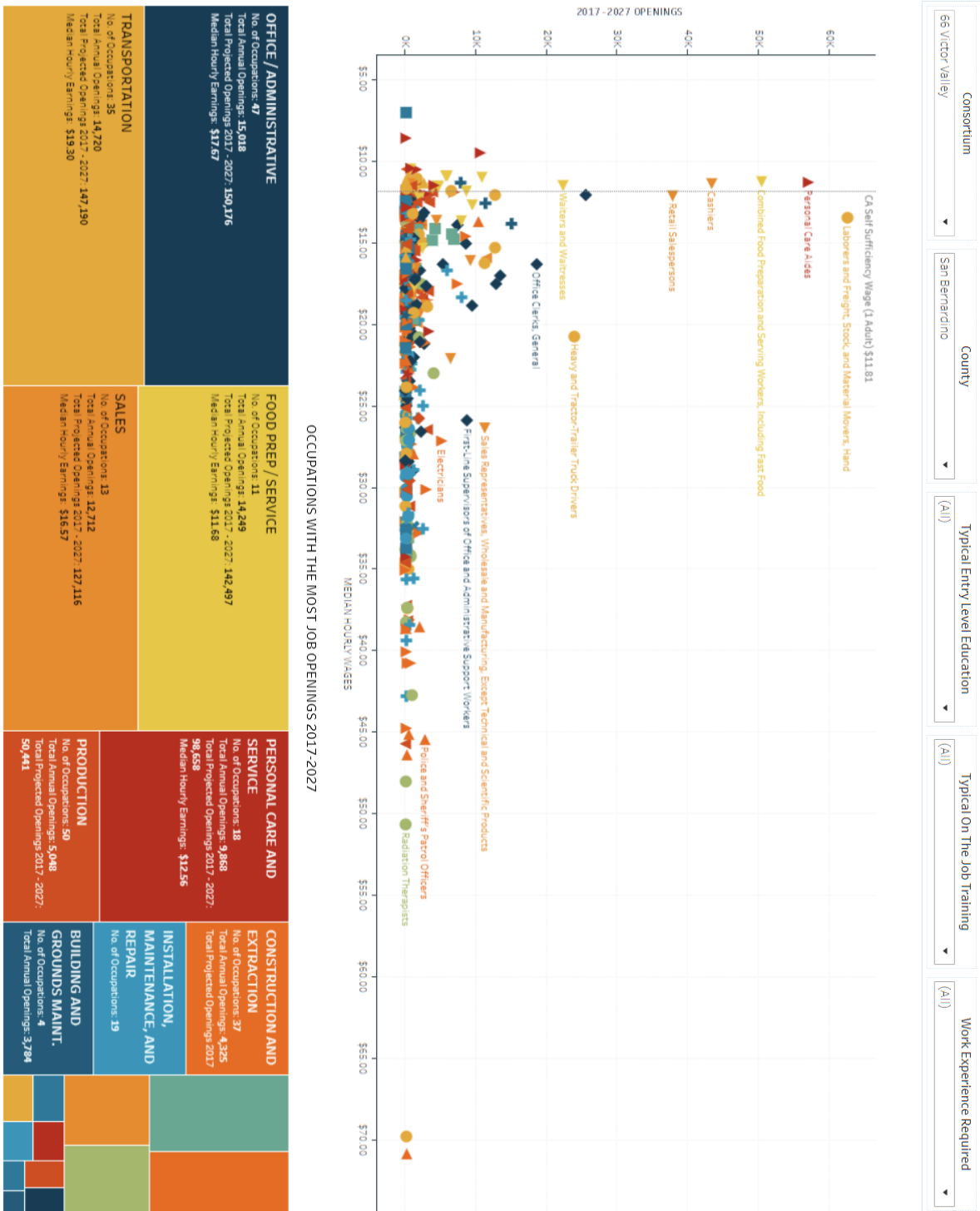
## Figure 3: Labor Market Outlook:

# Figure 4: Occupations with the Most Job Openings in 2017-2027



All information was sourced from the CAEP Fact Sheet for VVAERC at: caladulteddev.scoe.net/2019FactSheets

## 2.4 Identifying Goals and Strategies

| Goal 1: Improve Transitions to Post-Secondary | |
|---|---|
| **Activities:** | **Inputs Needed to Accomplish Activities:** |
| <ul><li>Identify graduates and conduct follow up</li><li>Provide more Supportive Services</li><li>Promoting job center's workshops that are hosted at VVC to adult ed students</li><li>Understand student academic barriers by using CASAS</li><li>Transition Counselor to develop Preliminary Educational Plan with graduating adults</li><li>Curriculum development to close gap</li><li>Professional development on best practices for closing achievement gap</li><li>Explore the use of Rambassadors</li><li>Work closely with VVC to determine data effectiveness and accuracy</li></ul> | <ul><li>Analyze data from CASAS</li><li>Create a qualitative follow up survey to assess effectiveness of program activities</li></ul> |
| **Outputs Expected:** | **One-Year Outcomes:** |
| <ul><li>Identify graduates and coordinate transition plans</li><li>Ensure students entering VVC have a career goal</li><li>A sustainable model across region to provide academic and career advising, guidance, and college counseling</li></ul> | <ul><li>Increase number of students transitioning to college</li></ul> |
| **Second- Year Outcomes:** | **Three to Five Year Outcomes:** |
| <ul><li>Improve transition services provided</li><li>Increase number of students transitioning to college</li></ul> | <ul><li>Increase goal completion</li><li>Increase college retention</li></ul> |
| **SMART Progress Indicator #1:**<br>By June 2022, we will increase enrollment at VVC classes and programs by 5% as measured by transition to post-secondary education. | |

## Goal 2:    Improve Transitions to Workforce

| Activities: | Inputs: |
|---|---|
| <ul><li>Assist clients with soft skill attainment</li><li>Assist with CalJOBS applications</li><li>Establish regular visits with transitional counselor</li><li>Work on establishing implementing and tracking the best practices for transition with our VVC counselor and support staff</li><li>Connect with Union Organizations (e.g. Carpenters and Pipefitters Union) to establish transitions into their training programs</li><li>Work collaboratively with MDCP to connect our adult students with workforce opportunities (e.g. ComAv and General Atomics)</li><li>Create non-credit CTE programs at VVC</li><li>Create Workforce Readiness elective course</li></ul> | <ul><li>Access to a computer lab and skilled assistance to help all learners access platforms</li><li>Transition Specialist for workforce</li><li>Curriculum writer</li><li>Faculty</li><li>Facilities</li></ul> |
| **Outputs:** | **One-Year Outcomes:** |
| <ul><li>Increased entrance to workforce and higher wage gains</li></ul> | <ul><li>Increased entry to entry-level jobs</li></ul> |
| **Second- Year Outcomes:** | **Three to Five Year Outcomes:** |
| <ul><li>Increased entry to post-secondary training</li></ul> | <ul><li>Decreased dependence on entitlements.</li><li>Increased prosperity for our clients</li></ul> |

SMART Progress Indicator #2:

By June 2022, we will increase employment rates by 5% measured by end of year DIR.

## Goal 3: Develop Pathway to Citizenship

| Activities: | Inputs: |
|---|---|
| <ul><li>Provide citizenship preparation classes, training or partner with agencies that do, such as TODEC and Catholic Charities.</li><li>Professional Development for staff to provide good preparation curriculum.</li><li>Provide our students with community opportunities to participate in government forums (e.g. Town Hall meetings, Community Service meetings, visit Post Office, Library, etc.)</li><li>VVC to offer Vocational ESL course</li></ul> | <ul><li>Faculty</li><li>Facilities</li><li>Transportation (van and/or bus)</li></ul> |
| **Outputs:** | **One-Year Outcomes:** |
|  | <ul><li>Increased partnership with agencies that provide citizenship assistance.</li></ul> |
| **Second- Year Outcomes:** | **Three to Five Year Outcomes:** |
| <ul><li>Increased number of students taking naturalization process</li></ul> | <ul><li>Increased enrollment of EL learners in VESL classes.</li><li>Increased employment and transitions to post-secondary schools by new citizens.</li></ul> |

SMART Progress Indicator #3:
By June 2022, we will increase the number of students enrolled in citizenship programs by 5% as measured by citizenship class enrollments.

## Goal 4: Develop and implement a continuous quality improvement cycle for curriculum, data, and accountability

| Activities: | Inputs: |
|---|---|
| ● Include adult education faculty to curriculum alignment meetings with high school and college faculty<br>● Quarterly data meetings<br>● First year WASC, pilot at Snowline & Victor | ● Overtime for faculty or sub costs for faculty to attend meetings<br>● Conference attendance<br>● WASC facilitator |
| **Outputs:** | **One-Year Outcomes:** |
| ● More casas payment points met | ● Less gaps in data |
| **Second- Year Outcomes:** | **Three to Five Year Outcomes:** |
| ● New intermediate course offerings | ● Articulated agreements for K-12, adult schools, and VVC |

SMART Progress Indicator #4:
By June 2020, we will increase DIR benchmarks by 10% as measured by completion rates.

## Goal 5:  Develop Marketing and Outreach Plan

| Activities: | Inputs: |
|---|---|
| ● Website at the consortia level maintained with links to social media.<br>● Add referral form to website<br>● Advertising needs to be marketed through WIOA partner agencies, libraries and public transportation.<br>● Develop radio and print advertisements.<br>● Attend community events to showcase adult education | ● Costs for marketing efforts - newspaper, mailers, cards, posters, etc.<br>● Referral forms for eligible adult school students. |

- Work closely within our districts to capture the non-completers who are eligible for adult school program

| Outputs: | One-Year Outcomes: |
|---|---|
| ● Consortium Marketing Plan<br>● Marketing materials<br>● Data collection and analysis on marketing efforts | ● Increased enrollment in HSE/ABE/ESL and CTE programs |
| **Second- Year Outcomes:** | **Three to Five Year Outcomes:** |
| ● Increased enrollment in HSE/ABE/ESL and CTE programs<br>● Expand programs in CTE with increased enrollment | ● Solid enrollment into all programs |

SMART Progress Indicator #5:
By June 2022, enrollment will increase by 5% across program areas as measured by CTE enrollment.

## Goal 6: Offer Adult Education and Non-Credit CTE

| Activities: | Inputs: |
|---|---|
| ● Establish at least 1 CTE course per adult school.<br>● Work with VVC to develop career pathway<br>● Hold regular meetings to discuss options and outline shared resources<br>● Work with MDCP to share resources to not duplicate efforts | ● Faculty<br>● Facilities<br>● Industry equipment & supplies |
| **Outputs:** | **One-Year Outcomes:** |
| ● CTE courses<br>● Clear career pathways with timeline | ● Propose an adult education CTE course for schools without one |

| Second- Year Outcomes: | Three to Five Year Outcomes: |
|---|---|
| ● Establish different CTE courses throughout the region to cross refer interested students to | ● Improve access to CTE courses at each school in the region |

SMART Progress Indicator #6:
By January of 2021, each adult school will have one CTE course to help the successful transition to VVC and/or career.

## SMART Progress Indicators

1. By June 2022, we will increase enrollment at VVC classes and programs by 5% as measured by transition to post-secondary education.

2. By June 2022, we will increase employment rates by 5% measured by end of year DIR.

3. By June 2022, we will increase the number of students enrolled in citizenship programs by 5% as measured by citizenship class enrollments.

4. By June 2020, we will increase DIR benchmarks by 10% as measured by completion rates.

5. By June 2022, enrollment will increase by 5% across program areas as measured by CTE enrollment.

6. By January 2021, each adult school will have one CTE course to help the successful transition to VVC and/or career.

## 2.5 Piloting and Implementation

VVAERC will be piloting and implementing the following new strategies and services to help achieve our goals and address gaps in service:

1. VVAERC will be aligning ESL curriculum and assessments between adult schools and Victor Valley College

VVAERC will conduct quarterly staff meetings with Victor Valley College and local Adult Education ESL programs to determine the need of our ESL students in terms of levels, curriculum, and length of classes to be offered. Align articulation between existing programs. Target populations to concurrently enroll students in CTE programs to accelerate them into a career and/or citizenship preparation pathway. Leverage existing relationships with workforce, nonprofits, and Community-Based Organizations to increase entry into ESL and citizenship programs.

2. Transitioning High School Diploma students to Victor Valley College

VVAERC will implement this strategy in order to meet the goal of helping students attend college and to assist in that process. VVC Transition Counselor will be scheduled to meet with Adult Education students who are interested in becoming a VVC student. The counselor will have scheduled visit days/times at each adult school. Scheduled visits will consist of individual appointments and informational workshops. Counselor will explain "Steps to Enrollment" and the matriculation process (application, online orientation, placement and educational planning). Students will then have the opportunity to discuss with the counselor their goals and what programs they would like to pursue at the college. Follow-up appointments will be made with the student to meet again at the adult school or at the counselor's office at the VVC campus. Follow-up appointments at the VVC campus provide an opportunity for students to become familiar and more comfortable with the college. Counselor will follow-up with students to provide information about college services, connect students with support programs, and follow up on their progress.

3. Leverage Victor Valley College resources

VVAERC will continue to participate in the Adult Education Night at Victor Valley College, open houses, college and program tours, community resource partner events, and utilize VVC staff including counselors, financial aid officers, instructors, and Rambassadors. This usage will be based on student attendance for equity.

4. Expand concurrent enrollment opportunities between Victor Valley College and adult schools

According to the California State Legislature, research has shown dual enrollment can be an effective means of improving the educational outcomes for a broad range of students. Benefits of dual enrollment include reducing dropouts, increasing the number of community college students who transfer and complete a degree, shortening the time to completion of educational goals, and improving the level of preparation of students to successfully complete for-credit, college-level courses (Ed Code 76004).

Victor Valley College in partnership with Victor Valley Adult Education Regional Consortium will develop, expand, and encourage dual enrollment opportunities on both the college and adult school campuses. Dual enrollment partnerships provide critical support for underachieving students, those from groups underrepresented in postsecondary education, those who are seeking advanced studies while completing a high school diploma, and those seeking a career technical education credential or certificate.  The effectiveness of the strategy will be assessed in both a qualitative and quantitative manner looking at access and leading indicators in both the short term and long term.

5. Offer articulated CTE courses at adult schools

Currently, Snowline Adult School has a Beginning Medical Terminology that is articulated with Chaffey Community College. VVAERC will implement a strategy to increase articulated CTE courses at all adult schools, which will create more career opportunities for our adult students and make stronger connections with our region's employers.  Luckily, we can leverage the resources of the Mountain Desert Career Pathways Region Consortium (MDCP) - mdcareerpathways.com – which has made numerous connections with industry.  Since, three of our adult school administrators participate in this consortium, we will be able to access and utilize this database to our advantage.  Also, the MDCP solidifies all articulation efforts with Victor Valley College (VVC) and a MOU is in place that states when a K-12 CTE course is articulated with VVC, then the same Adult School CTE course is also articulated.

Another local resource available for Adult School CTE courses is to use the K-16 Bridge Program to track students who take a CTE course in an adult school and then continues their CTE pathway at VVC. Using both resources, MDCP and K-16 Bridge gives our consortium an avenue to build and/or expand adult school CTE offerings.

Offering the right CTE courses to teach is a huge piece of any successful program, therefore, VVAERC will align our CTE course offerings to meet local labor market demands. Through the efforts of the California Community College Chancellor's Office Economic Indicators and Labor Market Research has identified CTE courses needed to meet labor market demands (doingwhatmatters.cccco.edu)

In conclusion, VVAERC will undertake the following: Adult CTE courses will work with MDCP to articulate CTE courses with VVC, adult schools will work towards taking advantage of these already articulated courses for the K-12 schools and offer these courses for our adult students, and tracking will take place through using an adult education platform in our region's K-16 Bridge Program.

## APPENDIX:

- Victor Valley Report - BW Research Partnership
- Table 2: Funding for Adult Education Programs and Services – VVAERC
- Table 2: Funding for Adult Education Programs and Services – Apple Valley
- Table 2: Funding for Adult Education Programs and Services – Hesperia
- Table 2: Funding for Adult Education Programs and Services – Lucerne Valley
- Table 2: Funding for Adult Education Programs and Services – Snowline
- Table 2: Funding for Adult Education Programs and Services – Victor Valley College
- Table 2: Funding for Adult Education Programs and Services – Victor Valley Union
- BIOL-30 Medical Core Articulation Agreement

# Industry, Economic, and Workforce Analysis

Victor Valley Adult Education Regional Consortium

March 2019

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## INTRODUCTION

BW Research Partnership Inc. (BW Research), an independent research firm, was commissioned by the Victor Valley Adult Education Regional Consortium (VVAERC) to complete research that supports the consortium's adult education strategic planning efforts. The purpose of this research is to accomplish the following objectives:

- Develop a comprehensive profile of the area's *potential adult education students by different program segments*. This includes demographic, educational, socio-economic, and geographic data on potential adult education students in the area. This is a regional supply-side assessment of potential adult education students in the VVAERC region.

- Produce a regional analysis of the VVAERC regional economy and demand-side employment profile to better understand the need for training, education, and career pathways for adult education students. The employment profile includes an assessment of the area's *industry sectors and occupational pathways*. This includes an examination of relevant career pathways, job quality, and specific evaluations of key industries and vocational jobs that could be supported by adult education programming for VVAERC regional employment.

The report is organized into the following six sections;

1. **Regional Economic & Workforce Profile**, this initial section provides an introductory framework to the world of work in the VVAERC region.

2. **Victor Valley Adult Education Potential Student Assessment**, this second section examines the concentration and distribution of potential adult education students in the VVAERC region.

3. **Regional Job Quality Analysis**, this third section analyzes the quality of the jobs in the VVAERC region.

4. **Victor Valley Adult Education Industry Cluster Profile**, this fourth section identifies and describes the industry clusters in the VVAERC region.

5. **Regional Occupational Analysis,** this section highlights fourteen living-wage occupations that have education requirements obtainable for most adult education students.

6. **Regional Job Volatility Analysis**, this final section assesses the potential for changes to the region's occupational profile due to automation and technology.

## KEY FINDINGS

The following key findings from the research, include;

### Regional Economy

**Since 2013, jobs within the Victor Valley region have grown at a faster rate than the national average and just above the California average.** That being said, Victor Valley remains a large exporter of talent, with more than a 50,000 person gap between the those that live in the region and work (~136,000) and the number of available jobs in the region (~85,000). Over the five-year time period (2013 – 2018) the growth in employment has been strongest in Tier 3 (lower-paying, lower skilled occupations) occupations which typically pay less, have less career pathway opportunities and are less sustainable as the cost of living continues to increase in California. The region also has a relatively low labor-force participation rate (54%, about 10 percent lower than the California and national averages) and a higher than average unemployment rate, this indicates if the economy slows down the region will likely be impacted with higher unemployment and a lack of employment opportunities for local workers.

*What this means for Adult Education and the VVAERC*: Given the large resident population in comparison to the relatively small number of higher-paying tier 1 and 2 jobs, adult educators should look at employment and career pathways that are available in the region (Healthcare and Building and Design) as well as those outside of the region (Information & Communication Technologies – ICT and Biotechnology & Biomedical Devices - B &BD) as they consider training and course options for current and future adult education students.

### Potential Adult Education Student Assessment

**One half of resident adults (18 and older) that live in the region have a High School Diploma or Equivalency as their highest level of education** and approximately one in five residents has not even received their HS diploma. The Victor Valley region has educational attainment levels that are well below that California and national average. Within the region, the areas around Hesperia (Southern & Central part of the region) and Victorville (Central part of the region) showed the highest number of potential adult educational students for Basic Skills and English as Second Language.

*What this means for Adult Education and the VVAERC*: The region has a strong need for adult education services for a relatively high percentage of residents who live in the region. The central part of Victor Valley in particular (Hesperia & Victorville) has a larger population that can benefit from adult education courses and programs.

## Victor Valley Adult Education Regional Consortium (VVAERC)
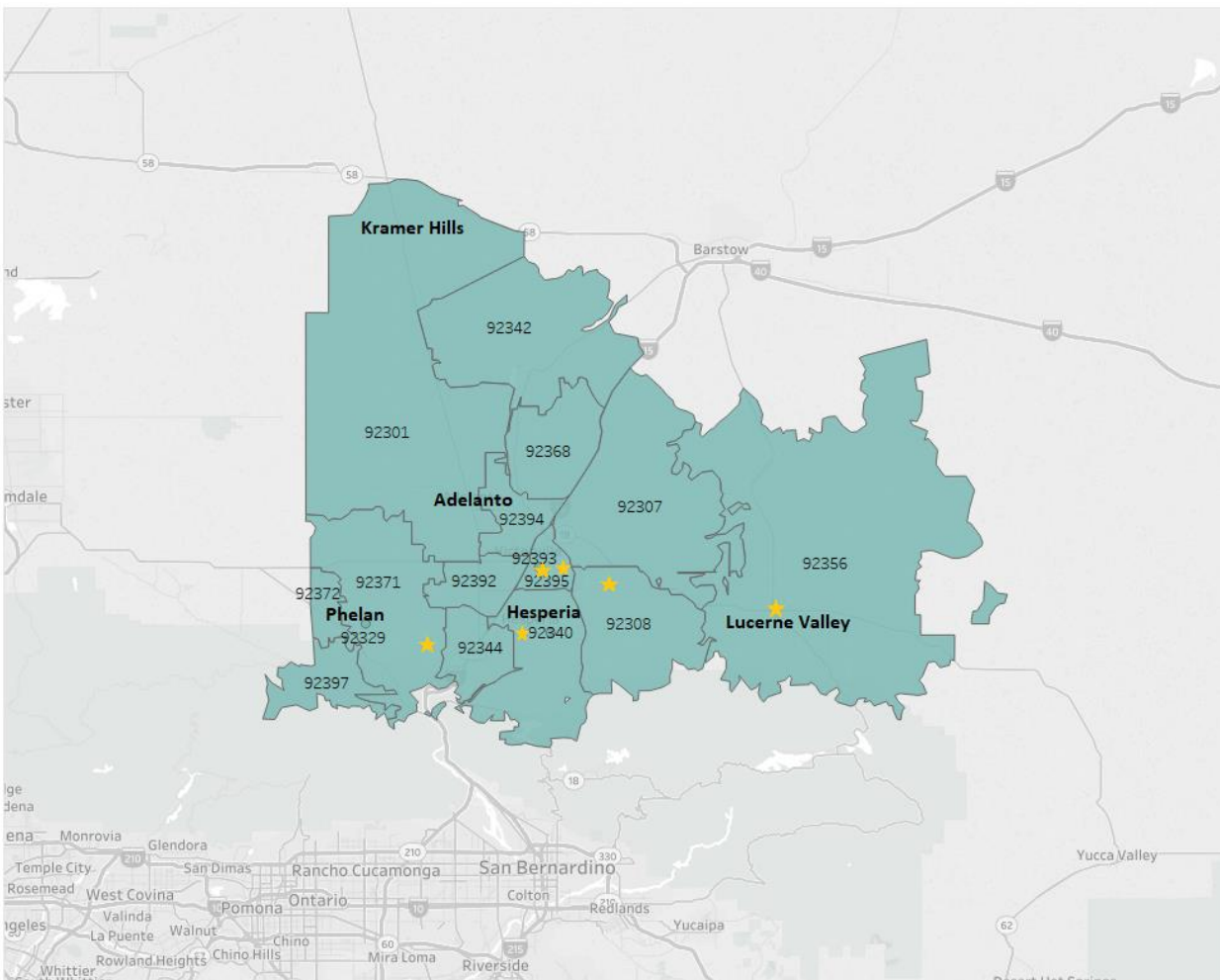


### VICTOR VALLEY ADULT EDUCATION REGIONAL CONSORTIUM SERVICE AREA
The Victor Valley Adult Education Regional Consortium (VVAERC) service area is comprised of 17 zip codes in San Bernardino County. The VVAERC region ranges from Kramer Hills in the north, to Lucerne Valley in the Southeast and near Phelan in the southwest.

REGIONAL ECONOMIC & WORKFORCE PROFILE

## EMPLOYMENT & ECONOMIC ACTIVITY

There are a total **85,648 jobs** in the Victor Valley Adult Education Regional Consortium (VVAERC) region.[1]  Since 2013, the number of jobs in the region has increased 13%, or by an additional **9,651 jobs**.  Average wages per job in VVAERC ($60,435) are below both the state and national averages.

Since 2013, employment in the VVAERC region has increased at a faster rate than state (12%) and national (8%) averages (Figure 1). The industries with the largest job creation since 2013 include restaurants and other eating places (1,753 additional jobs), education (local government) (1,242 additional jobs), general warehousing and storage (825 additional jobs), local government (excluding education and hospitals) (725 additional jobs), and ready-mix concrete manufacturing (357 additional jobs).

### Economic Profile Analysis Summary

With a total of **85,648 jobs** in 2018, the VVAERC region has grown at a **faster rate** than the state and national averages. Conversely, the average wage per job in the VVAERC region are lower than the state and national averages.

### Why is this Important?

Overall employment growth is a general indicator of the economic health of a region. Understanding the region's employment trends can help support efforts to effectively grow the economy.

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[1] Victor Valley Adult Education Regional Consortium or VVAERC will be used interchangeably throughout this report.

Figure 1. Total Employment Growth, 2013-2018[2]
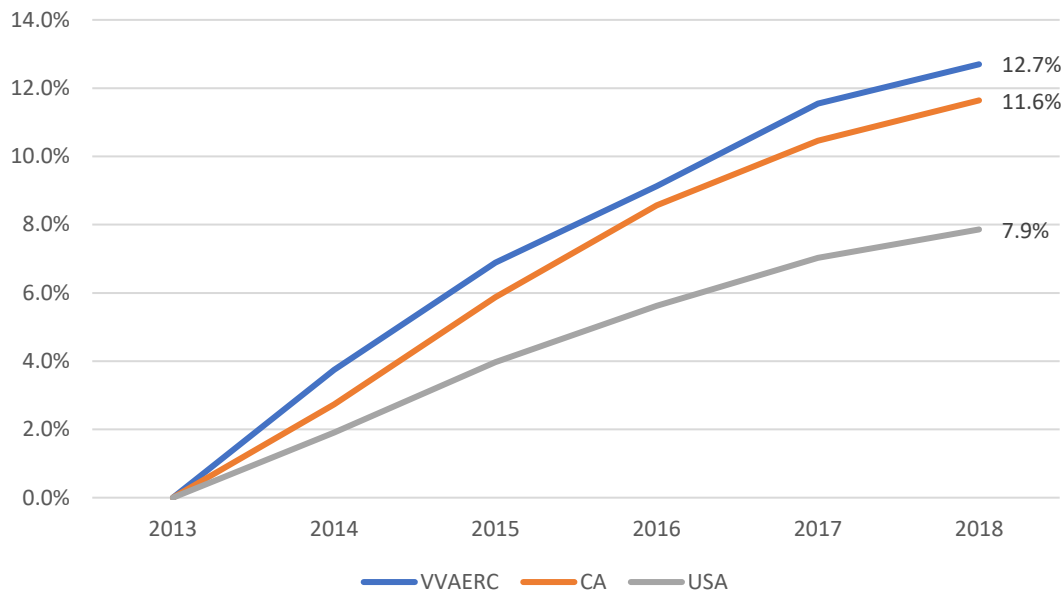


## Unemployment

Approximately 53.8% of the population 16 years and older is in the labor force. The labor force participation rates in California and the U.S. are higher, at 63.5% and 63.4%, respectively. The **unemployment rate** in the VVAERC region is approximately **5.7%**[3], which is higher than the state (4.4%)[4] and national rates (3.8%)[5] (Table 1).

### Economic Profile Analysis Summary

The relatively low labor force participation rate and relatively high unemployment rate suggest that the VVAERC region is experiencing a "loose" labor market, where there are relatively fewer people in the labor market and a lower proportion of those with jobs. This likely hampers economic growth in the region and may make finding employment relatively more difficult.

### Why is this Important?

Just like with overall employment growth, the unemployment rate is another way to measure the economic health of a region. A low unemployment rate is a sign of a tight labor market, which means more job opportunities than the available workforce can fill.

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[2] EMSI 2019.1. QCEW and non-QCEW workers

[3] State of California EDD Unemployment and Labor Force data. VVAERC region approximated using the regions of Adelanto city, Apple Valley town, Hesperia city, Mountain View Acres CDP, Victorville city, and Wrightwood CDP.

[4] Source: CA Employment Development Department, Labor Force and Unemployment Rate, February 2019.

[5] Bureau of Labor Statistics. Unemployment rate- February 2019, Current Population Survey

Table 1: Labor Force Participation (2017)[6] and Unemployment Rate (2019)[7] by Region

| Region | In labor force | In labor force - Unemployed |
|---|---|---|
| VVAERC Region | 53.8% | 5.7% |
| California | 63.5% | 4.4% |
| U.S. | 63.4% | 3.8% |

## *Resident Workforce vs. Local Workforce*

The VVAERC region's workforce includes all residents in the labor force 16 years and older who may work in or outside the region. In this workforce analysis, the research team assessed how the region's workforce intersects with the local availability of jobs. To do so, the research team compared the number of people in the residential workforce to the number of local jobs in the same occupational clusters.

In the VVAERC region there are approximately **136,217 people** in the resident workforce and only **84,539 jobs**[8] in the region (armed forces jobs not included). This means that there is a net surplus of approximately 51,678 people who need to leave the VVAERC region to go to work. This resident workforce surplus is found across all occupational clusters, though the occupation cluster of management, business, science, and arts occupations has the largest surplus (Figure 2). About 45% (16,100) of the residents in these occupations must leave the VVAERC region for work.

### Workforce Analysis Summary

The VVAERC region is a net-exporter of talent across all occupational clusters. The largest gap between the residential workforce and regional jobs available occurs within the higher-paying occupational cluster of management, business, science, and arts occupations. This means that in the largest occupational cluster, in which over 35,600 VVAERC residents work, there are not enough jobs in the area to meet the needs of the resident workforce. Service occupations are evenly matched between those living and working in the VVAERC region.

### Why is this Important?

In addition to the overall economic and workforce analysis, this analysis is important as it has significant implications for transportation and commuting, housing, and employment opportunities. The fact that the VVAERC region is a **net-exporter** of talent in all occupational clusters illustrates the availability of talent in the region and the opportunity for further economic development.

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[6] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.
[7] Unemployment Rates: Unemployment Rates for California: California Economic Development Department, December 2018 estimates.
[8] 2017 jobs used to match the resident workforce numbers (where most recent available data is 2017).

Figure 2: VVAERC Region Workforce[9] vs. People Working in the VVAERC Region[10]
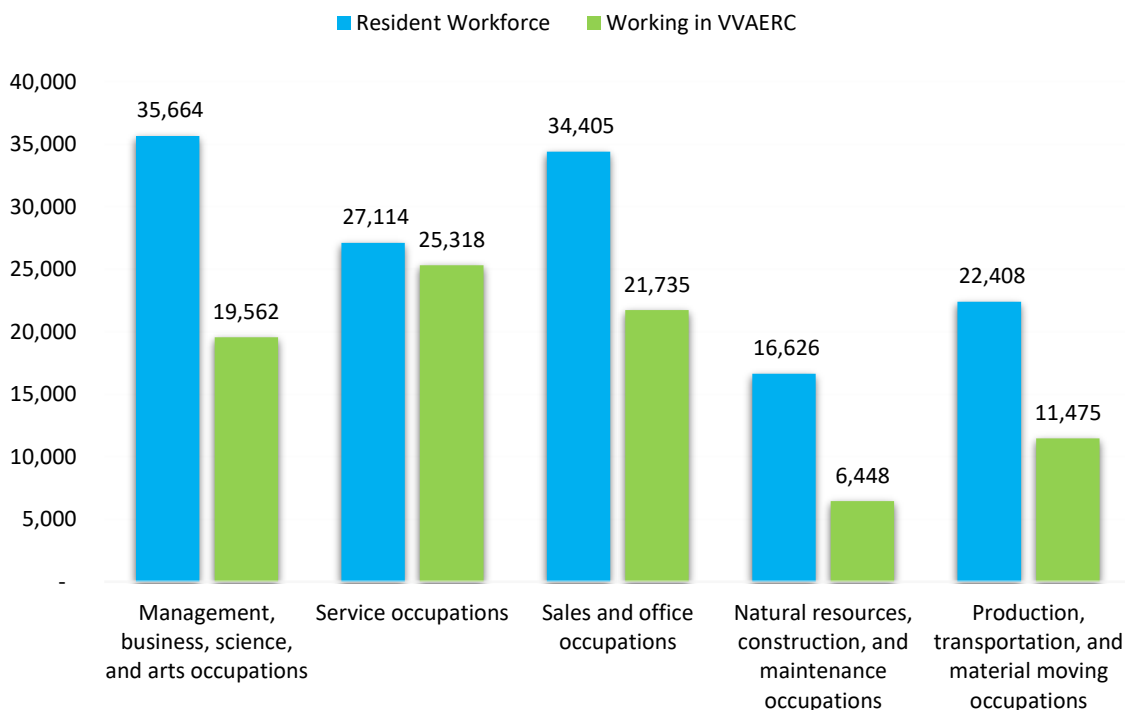
## REGIONAL DEMOGRAPHIC OVERVIEW

### *Total Population*

The VVAERC region area had a total population of **406,760** people in 2018.[11]  This represents an increase of 5% since 2013. This growth rate is slightly greater than California's population growth rate of about 4% during the same time period.

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**Population Analysis Summary**

Total population in the VVAERC region service area is over **406,760 people**, a 5% increase since 2013, which is slightly greater than the 4% growth rate experienced in California.

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Figure 3: Victor Valley Adult Education Regional Consortium Total Population, 2017[12]



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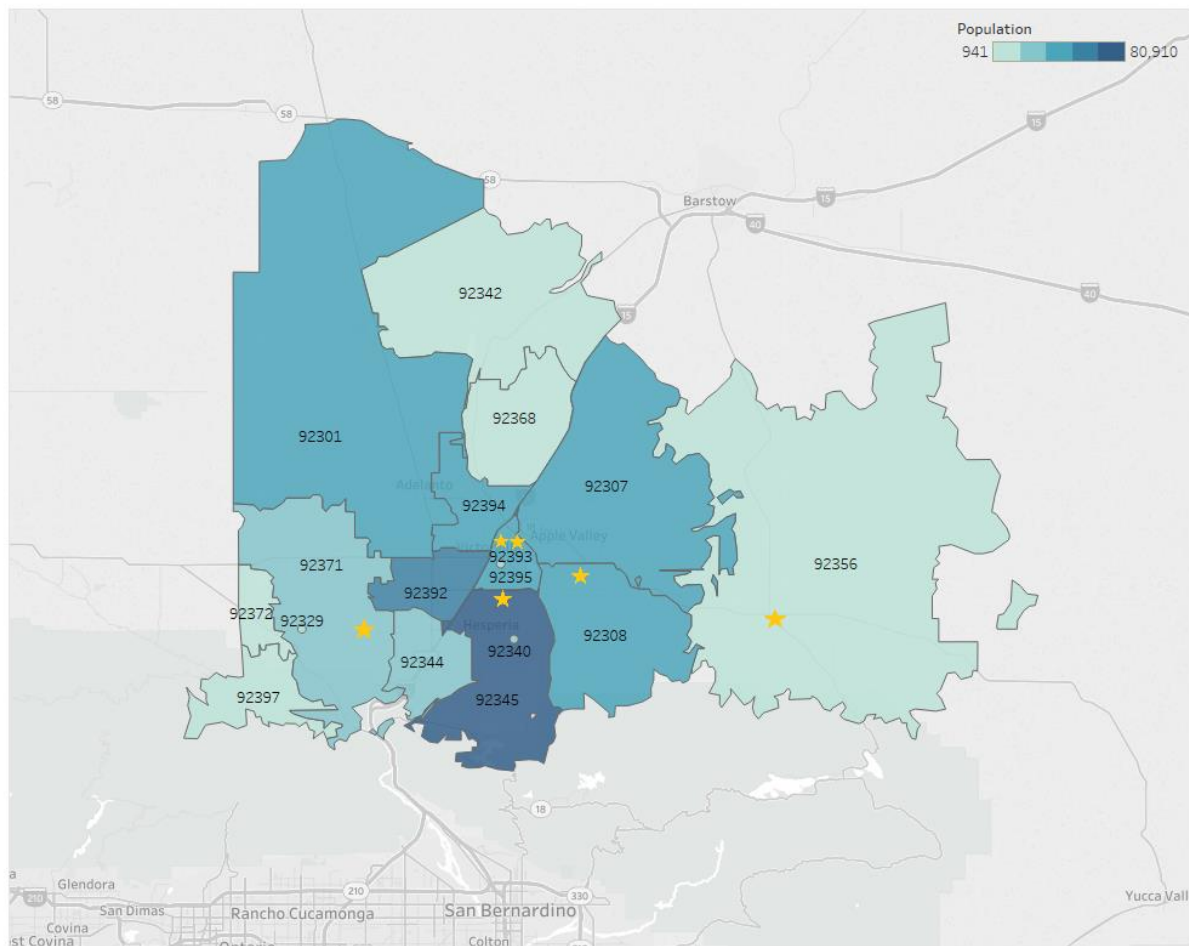
[11] Emsi 2019.1
[12] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

## *Educational Attainment*

Educational attainment in the VVAERC region is significantly lower than in statewide and national rates. While just under 3 out of every ten adults in California (29%) and in the country (28%) have a bachelor's degree or higher, the rate is only 11% among adult residents 18 years of age and older in the VVAERC region. Conversely, about half of residents in the VVAERC area have a highest-level of education as a high school diploma or lower, compared to 37% statewide and 39% nationally (Figure 4).

### Educational Attainment Summary

VVAERC residents have a notably higher percentage of those who have attained a high school diploma or less, and lower percentages of residents pursuing bachelor's degrees or more advanced degrees.

### Why is this Important?

Metrics such as population growth, income, and educational attainment provide a better understanding of the region's potential workforce and talent pipeline. These population characteristics have an impact on the regional workforce availability and help us understand where education and training resources can be focused.

Figure 4: Educational Attainment by Region, 2017[13]



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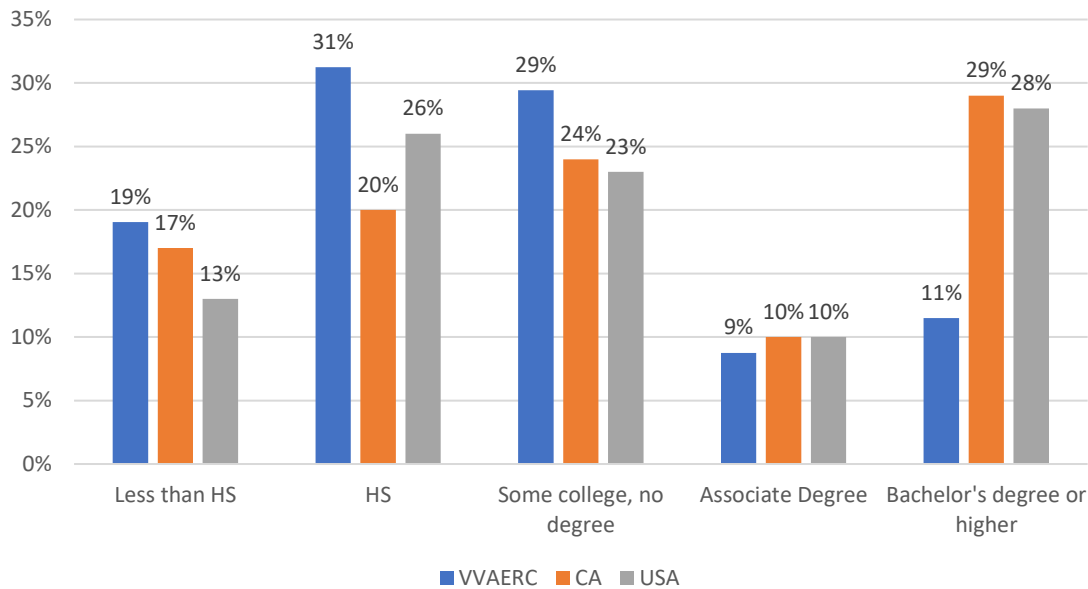
[13] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

Table 2. Adults who have less than a High School Diploma or Equivalent by zip code (2017)[14]

| | Number of Adults with less than a HS Diploma or Equivalent | % of Adult Population with less than a HS Diploma or Equivalent |
|---|---|---|
| 92301 | 7,124 | 33.4% |
| 92307 | 3,041 | 10.9% |
| 92308 | 4,891 | 15.7% |
| 92342 | 473 | 9.0% |
| 92344 | 2,164 | 13.1% |
| 92345 | 12,847 | 22.9% |
| 92356 | 623 | 12.5% |
| 92368 | 193 | 28.9% |
| 92371 | 2,664 | 19.7% |
| 92372 | 693 | 13.6% |
| 92392 | 7,376 | 18.8% |
| 92394 | 5,152 | 21.7% |
| 92395 | 5,550 | 18.9% |
| 92397 | 165 | 5.2% |

## *Income*

The median household income in the VVAERC region is $51,068.[15] About one quarter (25%) of households have an income of less than $25,000 and more than four-in-ten households have an income between $25,000 and $75,000.  Only 19% of households have an income of $100,000 or higher, compared to 34% across the state (Figure 5).  Examining broader trends, VVAERC households tend to have lower rates of income than the state average.

**Income**

Median household income in the VVAERC region is lower than the statewide median. (Figure 5).

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[14] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.
[15] Household income refers to the income of those workers living in the Victor Valley Adult Education Regional Consortium region, regardless of where they work. This differs from the average wage per job, which refers to the income of those working in the VVAERC region, regardless of where they live.

Figure 5: Median Household Income Distribution, 2017[16]
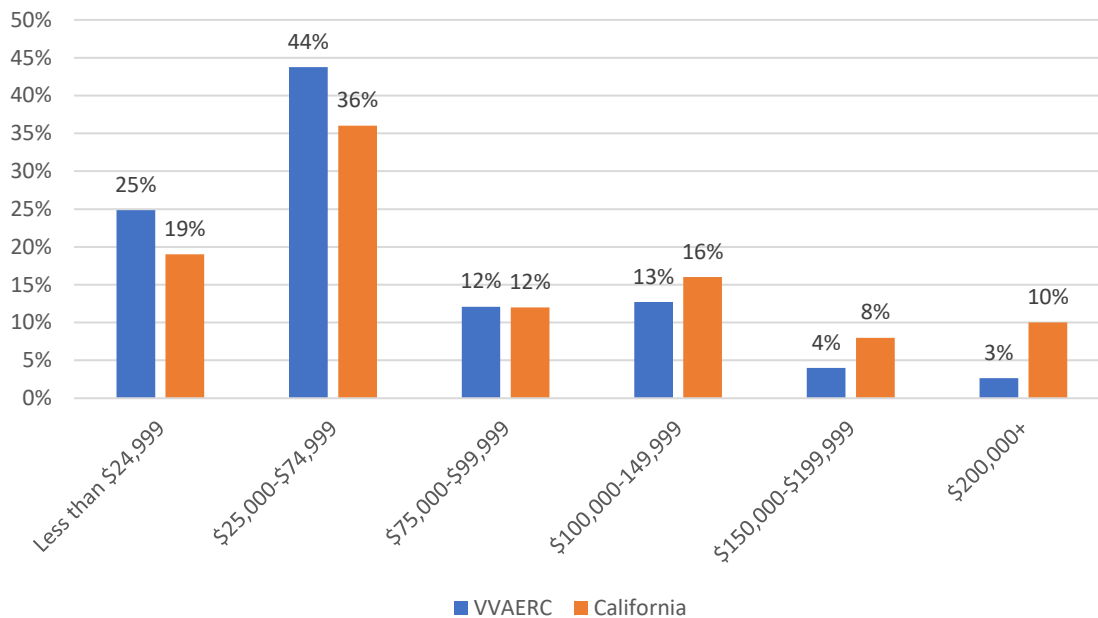


16 U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

Within the region, the zip codes with the highest median household incomes are 92344 (near Hesperia) and 92342 (near Helendale). There are three zip codes with median household incomes below $40,000 a year; they are 92301 (near Adelanto), 92368 (near Victorville), and 92356 (near Lucerne Valley), which have a median household income below $30,000 per year. For more than half of the region's zip codes, the median household income dips below the sustainable living wage in San Bernardino County of $54,780 a year for a family of four[17] (Figure 6).

Figure 6: Median Household Income, 2017[18]
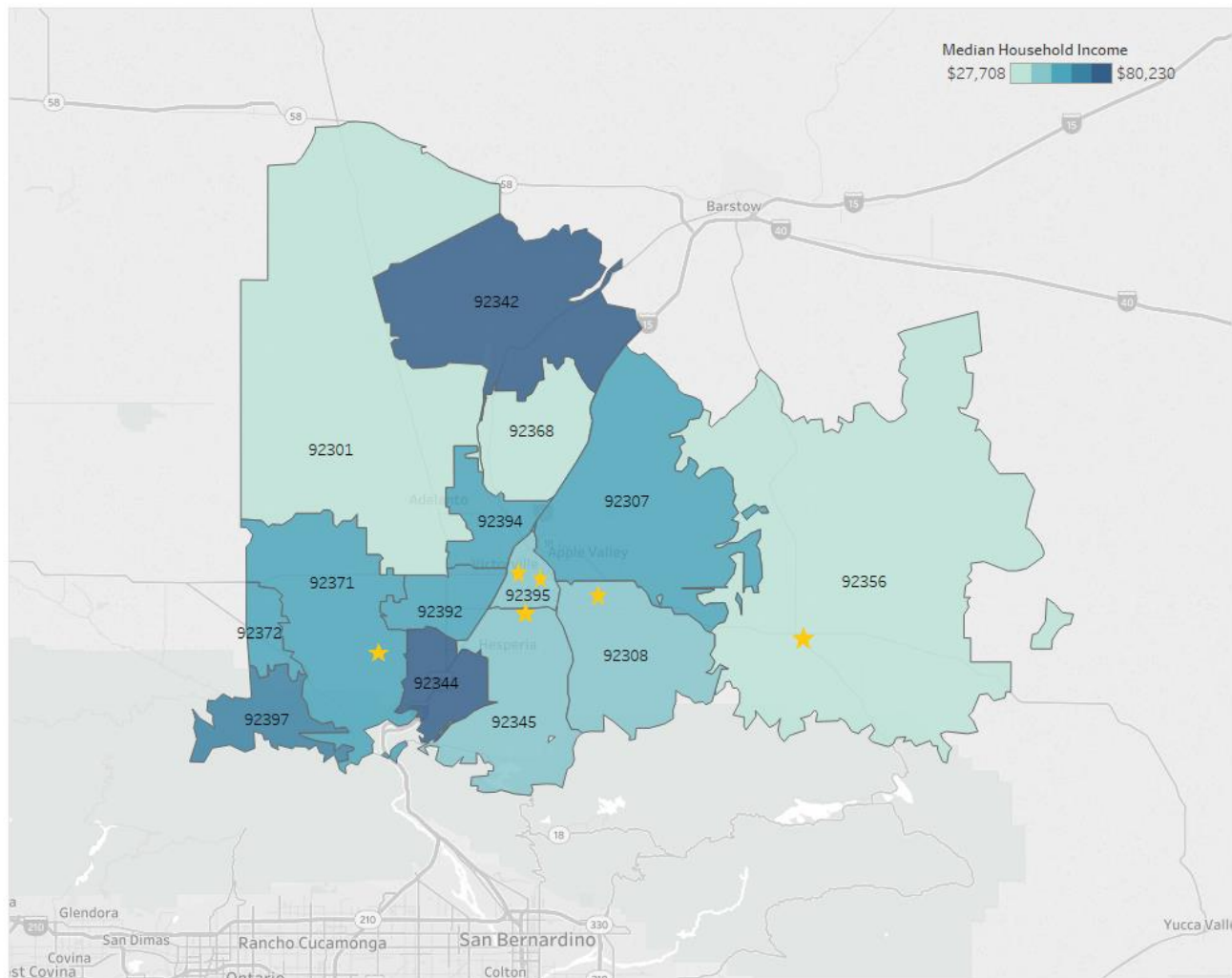


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## VICTORY VALLEY ADULT EDUCATION POTENTIAL STUDENT ASSESSMENT

The potential Victor Valley Adult Education Regional Consortium adult education student population is delineated into four categories:

### Students Needing Elementary & Secondary Basic Skills
There are nearly 53,000 of these potential students who have a less than a high school diploma (or high school equivalency). Adult education courses targeting these students are meant to build a solid foundation of vocabulary, reading, and writing skills, and/or assist students in completing their high school diploma or equivalency.

### English as Second Language (ESL)
There are more than 35,000 potential ESL students. This includes the population 18 years and older who speak English "less than very well." Adult education courses targeting this population will offer classes for adult English language learners, vocational English as a Second Language (ESL), and citizenship courses.

### Adult with Disabilities
There are more than 25,000 adults with disabilities in the VVAERC region. This population consists of those 18 to 64 years old with a verified disability such as: hearing, vision, or cognitive disability, self-care difficulty, or independent living difficulty. Adult education courses targeting this population offer services and programs that are meant to support educational goals and increase independence.

### Career & Technical Education (CTE):
There are more than 168,600 potential CTE students. These adult education courses are meant to provide specific training and education to expand and improve employment opportunities, to assist students in completing their college degree, or to help them move into a career pathway.

The following population segments were selected for further emphasis as these programs and courses are the foundation of adult education.  The following sections and maps illustrate the geographic spread of the potential adult education student population (Figure 7).

## *Basic Skills*

In total, the VVAERC has nearly 53,000 potential basic skills students.  The largest number of potential Basic Skills students reside in the zip code 92345, near Hesperia, where there are more than 12,800 potential basic skills students.  The zip codes 92392 (near Victorville) and 92301 (near Adelanto) each have more than 7,100 potential basic skills students (Figure 7).

Figure 7: Population 18 Years Old and Older with Less than a High School Diploma (or equivalent)[19]



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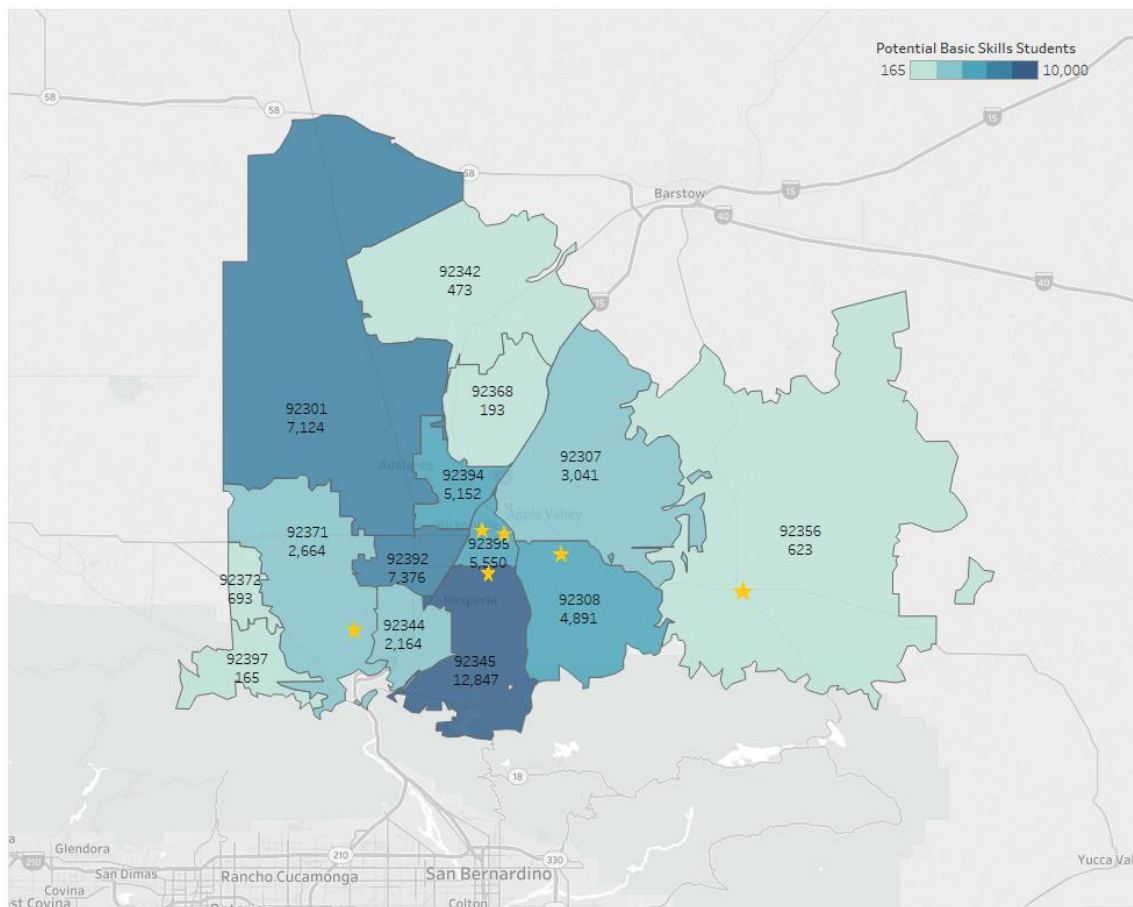
[19] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

## *English as a Second Language*

This population includes adults 18 years and older who speak English less than "very well." There are more than 35,000 potential ESL students in the VVAERC region. The highest numbers of these individuals reside in the zip codes 92345 (near Hesperia) and 92392 (near Victorville). As was the case with potential basic skills students, the largest populations of potential ESL students reside along a central band of zip codes in the region (Figure 8).

Figure 8: Adults 18 Years Old and Older, Speaking English Less than "Very Well"[20]



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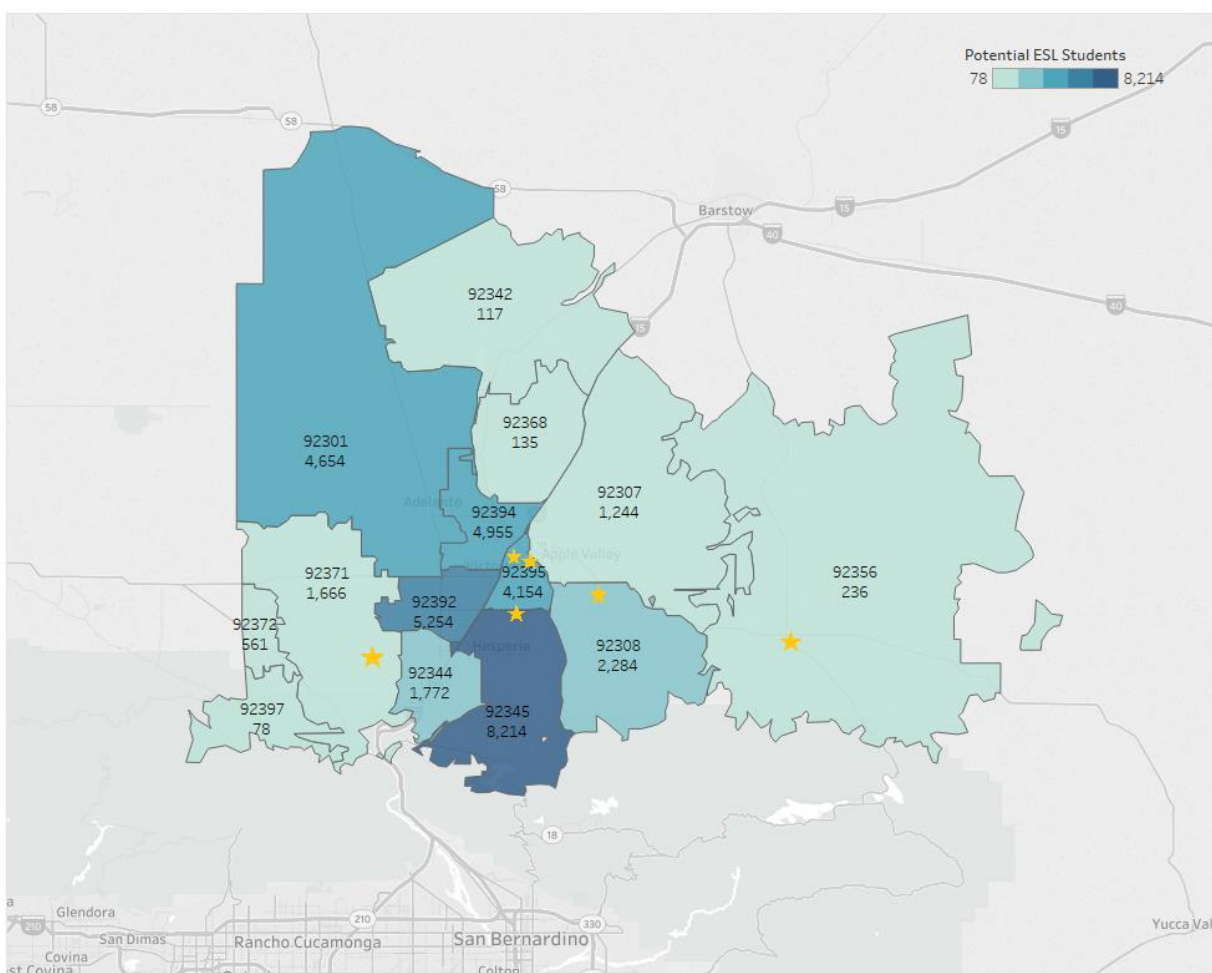
[20] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

## *Career & Technical Education (CTE)*

Career & Technical Education courses are meant to provide specific training and education to expand and improve employment opportunities and move student into career pathways. These potential students include workers trying to get a degree or certificate, get a job, get a better job, or get promoted with their current employer. Developing strong CTE classes and programs will include identifying technical and non-technical skills demanded in growing industry clusters to better prepare students to complete a degree, enter the workforce, select career pathways, and/or move up in the career lattice. For these classes, two population segments were identified: (1) adults with a high school diploma and (2) adults with some college, no degree.

### a.   Adults with a High School Diploma (or equivalent)

There are more than 86,800 adults whose highest educational attainment is a high school diploma in the VVAERC region.  Most of these potential CTE students can be found in the zip codes surrounding Hesperia, Victorville, and Apple Valley.  The zip code 92345, near Hesperia, has more than 19,300 potential CTE students alone (Figure 9).

Figure 9: Population 18 Years and Older with a High School Diploma (or equivalent) [21]



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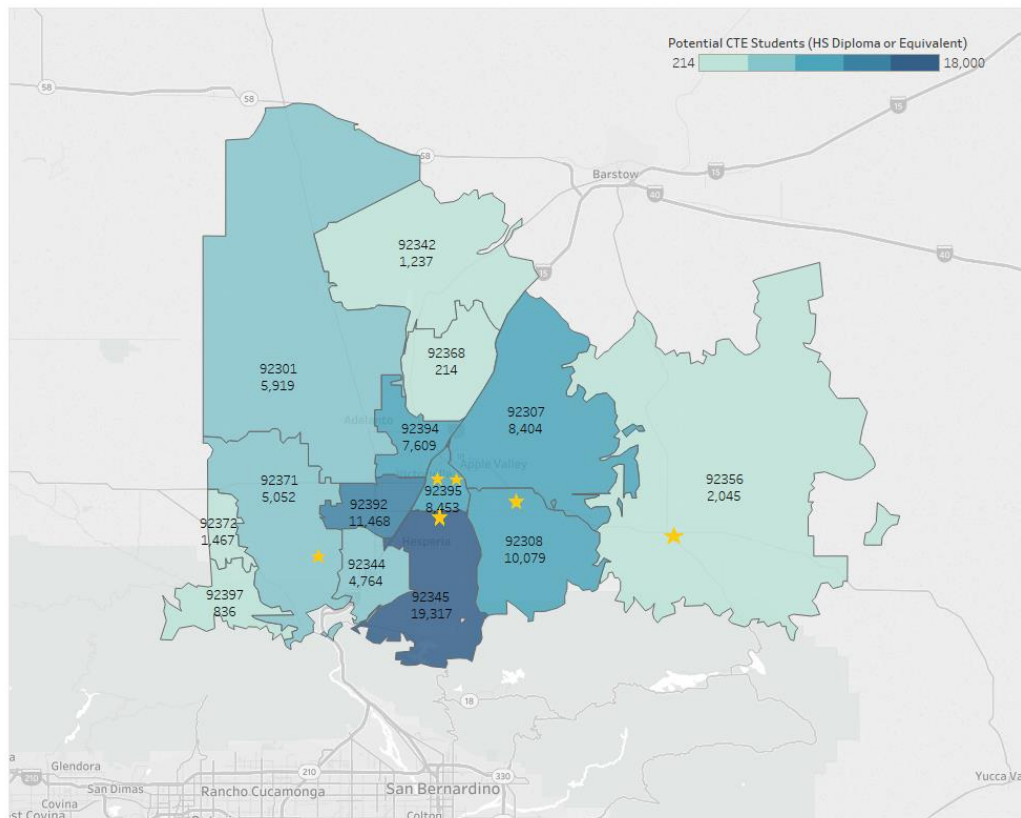
[21] U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates.

### b. Adults with some College, no Degree

There are over 81,800 potential CTE students who attended some college but did not receive a degree.  The zip codes with the largest populations of those who have attended some college but received no degree are concentrated in the central southern portion of the VVAERC region, around Hesperia.  Between the three zip codes with the largest populations (92345, 92392, and 92308) there are more than 36,500 potential CTE students. (Figure 10).

Figure 10: Adults 18 Years and Older with Some College, No Degree[22]
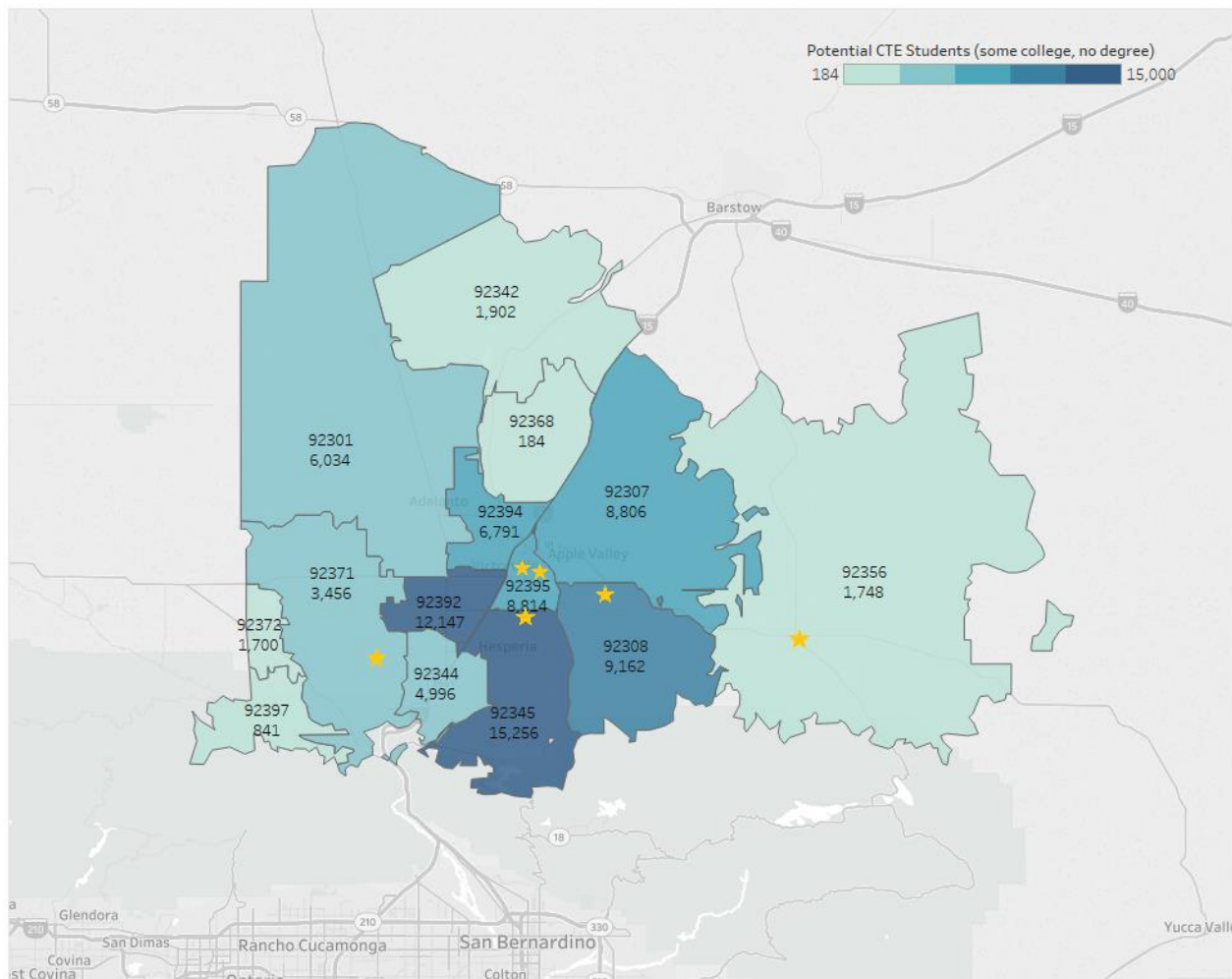
## Courses for adults with disabilities

There are more than 25,000 adults aged 18-64 with disabilities in the VVAERC region. Most of this population resides around the zip codes 92345, 92308, 92392, and 92307 that encompass Hesperia and Apple Valley.  There are also sizable populations in the zip codes 92301 (near Adelanto) and 92392 (near Victorville) (Figure 11).

Figure 11. Non-institutionalized adults (ages 18-64) with a disability[23]
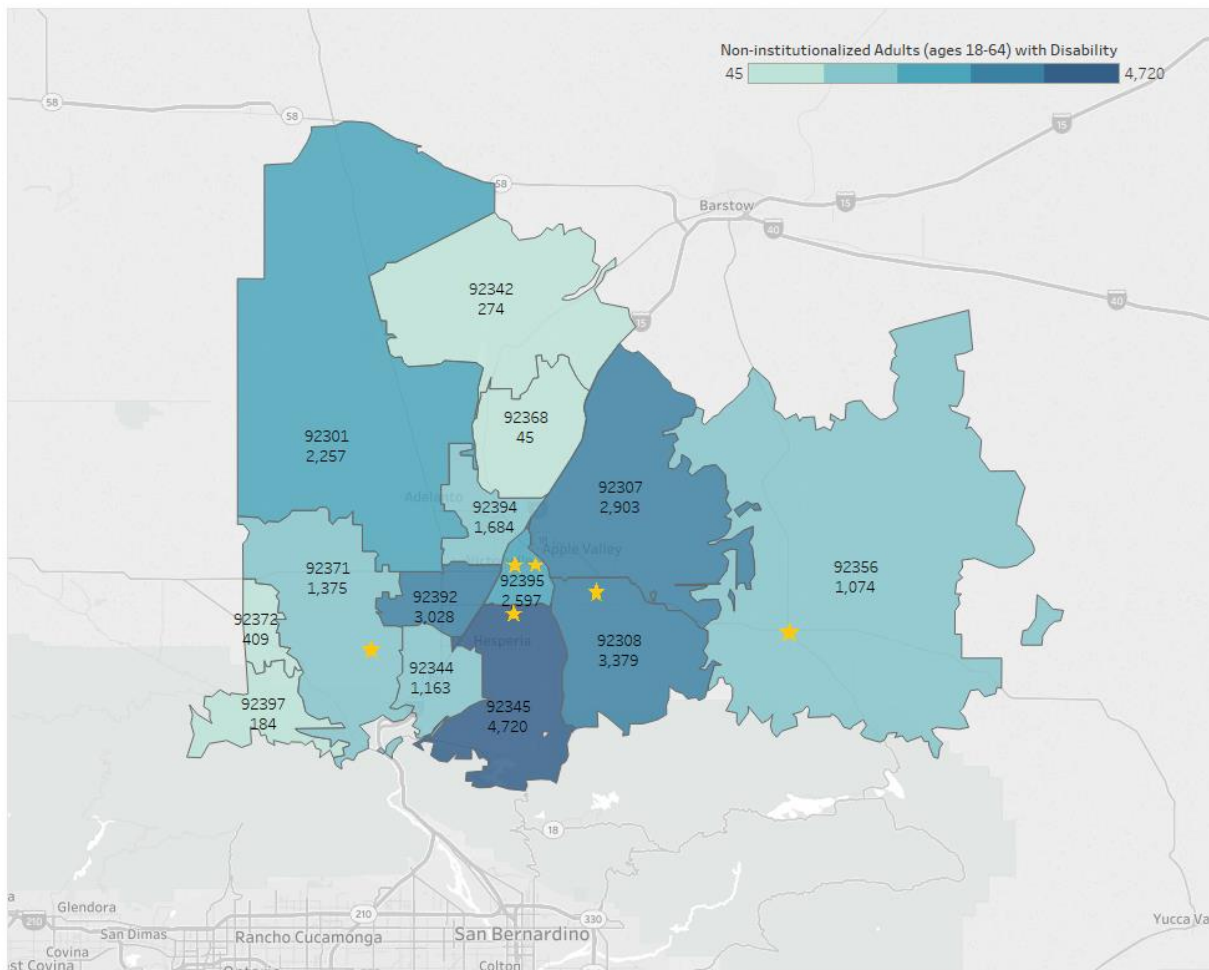
## REGIONAL JOB QUALITY ANALYSIS

Employment trends and economic snapshots are important in understanding the quantity of jobs in a given area, but they typically fall short in providing a strong understanding of job quality. Educational attainment, training, and experience are often associated with employment opportunity, career growth, and potential earnings. Based on these elements, most occupations can be categorized into one of three occupational tiers that will provide more insight into job quality.

The three-tiered system used in this study is largely defined by current wage data, general educational attainment, and skills requirements. They are as follows:

### Job Quality Analysis Summary

The VVAERC region has a higher proportion of Tier 3 jobs. These lower-skill, lower-paying jobs have also seen the highest recent growth among all jobs. These two factors suggest that job quality in the region is relatively lower than state and national averages, and that this quality has continued to decline.

### Why is this Important?

Job quality represents a critical metric in understanding economic sustainability. Since tier 3 employment does not typically provide enough income for people to afford to live in the area, to improve job and life quality, the number of tier 1 and tier 2 jobs should increase so that more people are able to live and work in the VVAERC region.

**Tier 1 Occupations** are typically the highest-paying, highest-skilled occupations in the economy. In 2018, the median annual wage for Tier 1 occupations in the VVAERC region is approximately $85,509 a year. This occupational category includes positions such as managers (e.g., Chief Executives and Sales Managers), professional positions (e.g., Lawyers and Physicians) and highly-skilled technology occupations, such as scientists, engineers, computer programmers, and software developers.

**Tier 2 Occupations** are typically the middle-skill, middle-wage occupations. In 2018, the median annual wage for Tier 2 occupations in the VVAERC region is approximately $50,402 a year. This occupational category includes positions such as technicians, teachers, and office and administrative positions (e.g., Accounting Clerks and Secretaries), and manufacturing, operations, and production positions (e.g., Assemblers, Electricians, and Machinists).

**Tier 3 Occupations** are typically the lowest-paying, lowest-skilled occupations that have historically provided the largest portion of employment in the region. In 2018, the median annual wage for Tier 3 occupations in the VVAERC region is approximately $28,484 a year. These occupations include positions such as security guards, food service and retail positions, building and grounds cleaning positions (e.g., Janitors), and personal care positions (e.g., Home Health Aides and Child Care Workers).

Since 2013 the concentrations of occupational tiers have remained relatively constant, though Tier 2 jobs have lost one percentage point while Tier 3 jobs have gained one percentage point in relative share of occupations in the region.  Tier 1 jobs have accounted for a relatively unchanged proportion of jobs in the VVAERC region (Table 3).

Table 3: Occupational Tier Share of Jobs in Victor Valley Adult Education Regional Consortium Region[24]

| Tiers | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
|-------|------|------|------|------|------|------|
| Tier 1 | 16% | 16% | 16% | 15% | 15% | 16% |
| Tier 2 | 34% | 34% | 34% | 33% | 33% | 33% |
| Tier 3 | 50% | 50% | 51% | 51% | 51% | 51% |

Job quality in the VVAERC region has a higher percentage of Tier 3 jobs relative to the state and national averages.  Much of this difference is accounted for in Tier 1 jobs, where the share of Tier 1 employment in the VVAERC region is 5 and 7 percentage points lower than the national and statewide averages, respectively (Figure 12).

Figure 12: Job Composition by Region[25]
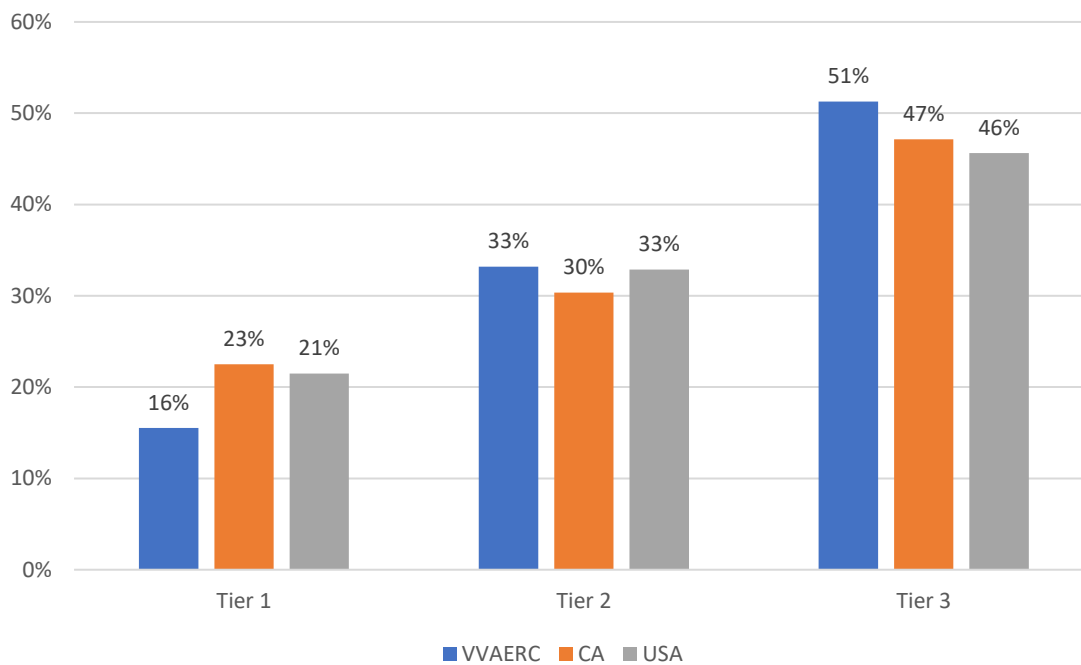


Tier 1 and Tier 2 jobs are critical to increase job and life quality in the area, as tier 3 employment does not typically provide enough income for families to be able to afford

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[24] Emsi 2019.1 QCEW and non-QCEW
[25] Emsi 2019.1 QCEW and non-QCEW

living in the area. In San Bernardino County, [26] a family of 2 adults (one working) and 2 children needs 1.09 tier 2 jobs and 1.92 tier 3 jobs to meet self-sufficiency[27] (Table 4).

Table 4: Number of Jobs a Family of 2 Adults (One Working) and 2 Children Need to Meet Self-Sufficiency in San Bernardino County[28]

|  | Median Annual Wage | Number of Jobs to Meet Family Self-Sufficiency |
|---|---|---|
| Tier 1 | $85,509 | 0.64 |
| Tier 2 | $50,402 | 1.09 |
| Tier 3 | $28,484 | 1.92 |

Tier 3 jobs increased by a greater percentage than Tier 2 and Tier 1 employment (Figure 13). Looking at specific occupations, tier 3 job growth was particularly strong among fast food and counter workers (+831 jobs), hand laborers and material movers (+696 jobs), and personal care aids (+559 jobs). The highest growth Tier 2 occupations include elementary and middle school teachers (+275 jobs), driver/sales workers and truck drivers (+246 jobs), and secondary school teachers (+151). Tier 1 occupations experiencing the largest increase in workers include registered nurses (+201 jobs) and postsecondary teachers (+173).[29]

[26] Self-sufficiency data could only be found at the county level.
[27] Self-sufficiency takes into account costs of living such as food, housing, transportation, and other regionally-specific costs.
[28] Living Wage Calculator - http://livingwage.mit.edu/counties/06071
[29] EMSI 2019 Q1, QCEW and non-QCEW

Figure 13: Employment Growth in the VVAERC Region by Occupational Tier, 2013-2018[30]
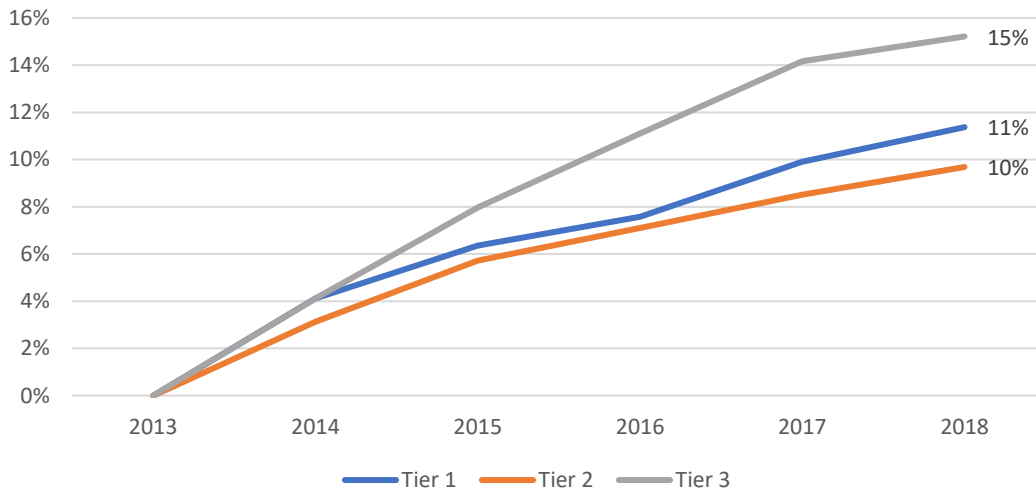


Tier 3 employment in the VVAERC region increased at a faster rate than in both California and the country (Figure 14). VVAERC also runs counter to state and national patterns where Tier 1 growth is the highest, followed by Tier 3 and Tier 2. Strong growth in Tier 3 is indicative that job quality in the region is declining and may make it harder for even those with jobs to sustain themselves and their families.

Figure 14: Employment Growth by Occupational Tiers and Region, 2013-2018[31]



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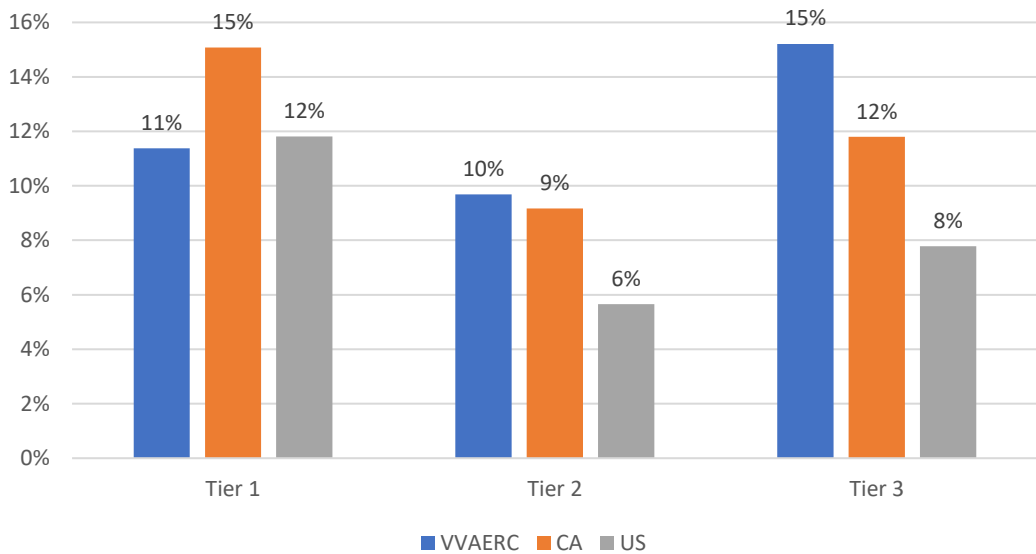
[30] EMSI 2019 Q1, QCEW and non-QCEW
[31] EMSI 2019.1. QCEW and non-QCEW workers

## VICTOR VALLEY EDUCATION REGIONAL CONSORTIUM INDUSTRY CLUSTER PROFILE

### INDUSTRY CLUSTERS

Industry clusters are geographic concentrations of labor and capital that share a common market and exchange supporting goods and services. Unlike the classical industry sectors, clusters are comprised of interrelated industries complementing various elements of the supply chain and create a local ecosystem of industries. Industry clusters are also a useful framework for identifying relevant focal points for workforce development, outlining local economic drivers, and emphasizing job growth and quality.

The research team analyzed 18 standardized industry clusters for consideration for adult education students in the VVAERC region. Overall, these clusters account for **84,762 jobs in the VVAERC region or 99% of all jobs in the region**. The industry clusters with the largest number of jobs include education and knowledge creation, and retail (Table 5).

### Industry Clusters Analysis Summary

Some of the region's largest industry clusters have seen consistent growth over the past five years, while other industries have seen substantial growth. Education and Knowledge Creation, the region's largest industry cluster, increased by more than 10% between 2013 and 2018. Other, smaller industry clusters like building and design and other manufacturing increased by more than 37%.

### Why is this Important?

These industry clusters offer opportunities for training and workforce development as we look for economic and workforce opportunities in the region.

Table 5: Traditional Industry Cluster Profiles for the Victor Valley Adult Education Regional Consortium[32]

| | 2018 Jobs | 2014 - 2018 Change | 2014 - 2018 % Change | Avg. Earnings Per Job | 2018 Location Quotient |
|---|---|---|---|---|---|
| Education and Knowledge Creation | 14,286 | 1,376 | 10.7% | $71,869 | 0.75 |
| Retail | 12,990 | 707 | 5.8% | $38,821 | 1.06 |
| Tourism, Hospitality, and Recreation | 10,896 | 1,921 | 21.4% | $24,865 | 0.80 |
| Healthcare | 10,663 | 913 | 9.4% | $63,142 | 0.82 |
| Public Services and Infrastructure | 10,220 | 920 | 9.9% | $97,120 | 1.13 |
| Logistics | 4,817 | 1,150 | 31.4% | $63,573 | 0.74 |
| Building and Design | 4,299 | 1,234 | 40.3% | $76,712 | 1.85 |
| Professional and Business Services | 4,044 | (179) | -4.2% | $55,359 | 0.75 |
| Other Services | 3,532 | 549 | 18.4% | $36,119 | 1.07 |
| Other Manufacturing | 3,191 | 872 | 37.6% | $73,524 | 1.34 |
| FIRE | 2,331 | 180 | 8.4% | $68,283 | 0.45 |
| Energy | 892 | (214) | -19.3% | $131,870 | 0.53 |
| ICT | 814 | 57 | 7.5% | $82,141 | 0.24 |
| Agriculture and Food | 788 | 93 | 13.4% | $49,698 | 0.24 |
| Information and Communications | 349 | (30) | -7.9% | $34,679 | 0.17 |
| B&BD | 242 | (85) | -26.0% | $61,024 | 0.19 |
| DATM | 207 | 25 | 13.7% | $64,269 | 0.24 |
| Water | 201 | 30 | 17.5% | $88,701 | 1.41 |

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[32] EMSI 2019.1. QCEW and non-QCEW workers
Note: Location Quotient (LQ) is a way of quantifying how concentrated a particular industry or industry cluster is in a region as compared to the nation. An LQ of 1 means the concentration of jobs in the region is equal to the national average, higher than 1 means the job concentration is higher than the national average, and an LQ of less than 1 means the job concentration in the region is below the national average.

**Retail and Tourism, Hospitality, and Recreation**

While the Tourism, Hospitality, and Recreation and Retail industry clusters provide a large and growing number of jobs in the VVAERC region, they are not profiled in this report because of the lack of sustainable career pathways they offer.

It is important to note that these industry sectors provide numerous opportunities for entry-level workers to gain **on-the-job training and experience** and to develop important skillsets—customer service and communication skills—that transfer into nearly all other industry clusters.

**Career Lattice** is a framework in which employees can move through a variety of positions across different industries, provided they acquire the appropriate, transferable skillsets. A lattice allows for more flexibility and growth, as individuals are not simply moving upward, but instead can move outward and design their own pathways based on the skills they have gained in previous positions.

Building upon these areas of expertise provides entry-level workers with greater opportunity to transition into more sustainable careers. With more than 23,800 workers in VVAERC region and an average 13.6% employment growth since 2013 between the two industry clusters, these industry sectors could be seen as a useful stepping stone or **career lattice** into other industry clusters.

## *Regional Clusters Analysis*

From the 18 standard industry clusters, **five** were selected because of their overall employment, job concentration, growth potential, provision of sustainable wages, and strong career pathways opportunities in the area. These regional industry clusters include education and knowledge creation, healthcare, building and design, other manufacturing, and finance, insurance, banking, and real estate (Figure 15).

Figure 15: Selected Industry Clusters in the Victor Valley Adult Education Regional Consortium region[33]
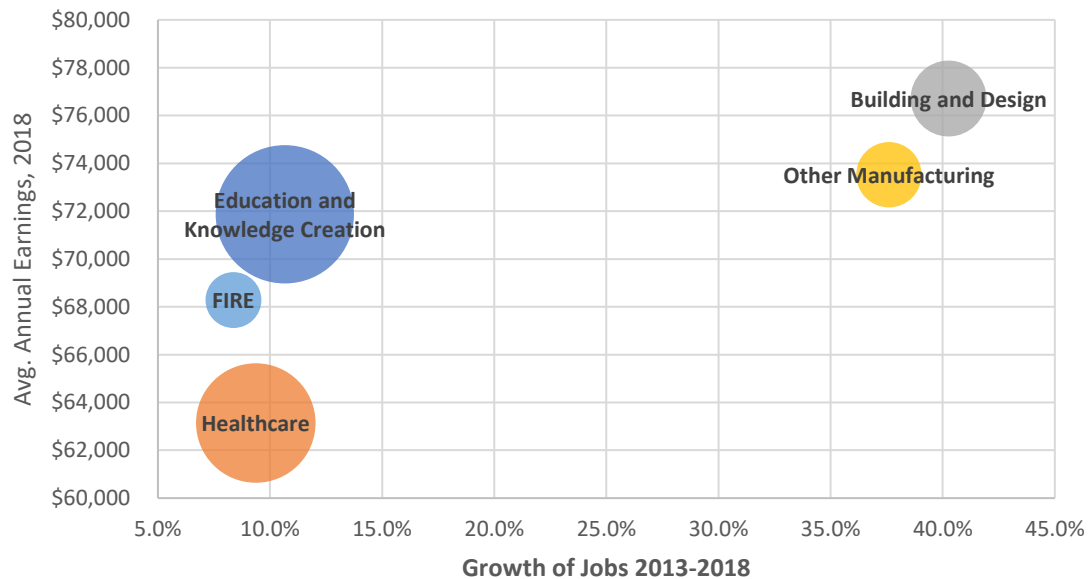


*The size of each bubble is relative to the number of jobs in the given industry.

## Clusters with Higher Wages

## Building and Design

Building and Design occupations account for **4,299 jobs** in the VVAERC region.  The industry has grown 40% between 2013-2018, adding an additional 1,200 jobs during that time.  Since 2013, the top five occupations in terms of employment grew by 30% or more (Table 6). Typical educational requirements for these occupations are between a high school diploma and a postsecondary nondegree award.

Table 6: Top Building and Design Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2013-2018 | Median Hourly Earnings |
|---|---|---|---|
| Carpenters | 353 | 38% | $22.32 |
| Construction Laborers | 288 | 30% | $18.32 |
| Heavy and Tractor-Trailer Truck Drivers | 199 | 64% | $22.45 |
| Plumbers, Pipefitters, and Steamfitters | 145 | 56% | $24.34 |
| Electricians | 143 | 54% | $28.96 |

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[33] Emsi 2019.1 QCEW and non-QCEW

Nearly two-thirds of all building and design jobs are tier 2 occupations. Tier 3 jobs (24%) and tier 1 jobs (15%) account for a much smaller share (Table 7).

Table 7: Occupational Tier Distribution in Building and Design

| Industry Cluster | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| Building and Design | 15% | 61% | 24% |

## Other Manufacturing

The other manufacturing industry cluster provides the second-highest average annual earnings among all five selected clusters, with workers receiving approximately $73,524 per year. With a total of **4,299 jobs** in the VVAERC region, the job concentration for this clusters about 34% greater than the national average. Since 2013, total employment increased by 37.6% – for a total of 872 jobs created. The top five occupations in this cluster have all increased by at least 35% since 2013 (Table 8).

Table 8: Top Five Other Manufacturing Occupations in the VVAERC region[34]

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings |
|---|---|---|---|
| Assemblers and Fabricators | 191 | 45% | $13.06 |
| Hand Laborers and Freight, Stock, and Material Movers | 146 | 72% | $13.47 |
| First-Line Supervisors of Production and Operating Workers | 111 | 39% | $26.78 |
| Heavy and Tractor-Trailer Truck Drivers | 105 | 62% | $22.45 |
| Machinists | 89 | 35% | $18.40 |

Nearly all other manufacturing occupations fall under Tier 2 or Tier 3. Only about one in ten occupations are Tier 1 (Table 9).

Table 9: Occupation Tier Distribution in Other Manufacturing[35]

| Industry Cluster | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| Other Manufacturing | 11% | 42% | 47% |

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[34] Emsi 2019.1 QCEW and non-QCEW
[35] Emsi 2019.1 QCEW and non-QCEW

## Education and Knowledge Creation

The education and knowledge creation industry cluster is the largest in the VVAERC region; there are about **14,286 workers** accounting for 16.7% of the region's total employment. This industry cluster has above average wages of about $71,869 per job. Four out of the five most-common occupations grew by 16% or more between 2013-2018 (Table 10).

Table 10: Top Five Education and Knowledge Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings |
|---|---|---|---|
| Elementary School Teachers (except Special Education) | 2,009 | 16% | $41.80 |
| Teachers Assistants | 1,854 | 23% | $15.94 |
| Secondary School Teachers (except special and career/technical education) | 1,073 | 17% | $37.47 |
| Postsecondary Teachers | 996 | 19% | $35.34 |
| Substitute Teachers | 620 | -1% | $15.80 |

Tier 2 jobs account for nearly half of all education and knowledge creation jobs.  As was the case with other manufacturing, Tier 1 jobs account for fewer than two in every 10 education and knowledge creation jobs in the VVAERC area (Table 11).

Table 11: Occupational Tier Distribution in Education and Knowledge Creation

| Industry Cluster | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| Education and Knowledge Creation | 15% | 44% | 41% |

## Medium Wages

## Finance, Banking, Insurance, and Real Estate (F.I.R.E.)

The region's F.I.R.E. industry cluster employs over **2,300 workers** and has grown by 8.4% since 2013. This amounts to about 2.7% of the VVAERC regional workforce and reflects a concentration of employment that is about 55% lower than the national average. Each of the five largest occupations in F.I.R.E increased by at least 22% between 2014 and 2018 (Table 12).

Table 12: Top Five F.I.R.E. Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings |
|---|---|---|---|
| Insurance Sales Agents | 245 | 1% | $17.78 |
| Tellers | 199 | 7% | $13.61 |
| Securities, Commodities, and Financial Services Sales Agents | 153 | 39% | $18.47 |
| General Maintenance and Repair Workers | 137 | 26% | $18.51 |
| Loan Officers | 110 | 8% | $29.79 |
| Counter and Rental Clerks | 99 | 43% | $13.60 |

Nearly half of F.I.R.E. jobs in the VVAERC region are Tier 2 occupations.  (Table 13).

Table 13: Occupational Tier Distribution in F.I.R.E.

| Industry Cluster | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| F.I.R.E. | 27% | 45% | 28% |

## Healthcare

The healthcare industry cluster is the fourth-largest in the VVAERC region and employs **10,663 workers**.  This represents 12.4% of all jobs in the area. Since 2013, healthcare has grown by 9.4%, or an additional 913 jobs.  Despite these rates, Healthcare in the VVAERC region is about 18% less concentrated than the national average.

Four of the five most prevalent healthcare occupations have grown by at least 8% since 2014, with personal care aides growing by an impressive 29% during the same time (Table 14). The typical education level required for the top five occupations is between a high school diploma and a bachelor's degree.

Table 14: Top Five Occupations in Healthcare in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings |
|---|---|---|---|
| Registered Nurses | 1.524 | 12% | $45.09 |
| Personal Care Aides | 1,427 | 61% | $11.34 |
| Medical Assistants | 493 | -6% | $14.55 |
| Nursing Assistants | 487 | 3% | $14.50 |
| Licensed Practical and Licensed Vocational Nurses | 429 | 1% | $22.99 |

Nearly half of all healthcare occupations are tier 3.  The remainder are split relatively evenly between tier 1 and tier 2 (Table 15).

Table 15: Occupational Tier Distribution in Healthcare

| Industry Cluster | Tier 1 | Tier 2 | Tier 3 |
|---|---|---|---|
| Healthcare | 28% | 29% | 43% |

## CAREER PATHWAYS

### Building and Design

Table 16: Entry-Level Building and Design Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Entry-Level Education |
|---|---|---|---|---|
| Carpenters | 353 | 38% | $22.32 | High school diploma or equivalent |
| Plumbers, Pipefitters, and Steamfitters | 145 | 56% | $24.34 | No formal educational credential |
| Construction Laborers | 288 | 30% | $18.32 | High school diploma or equivalent |

Table 17: Mid-Level Building and Design Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Heavy and Tractor-Trailer Truck Drivers | 199 | 64% | $22.45 | Postsecondary nondegree award |
| Heating, Air Conditioning, and Refrigeration Mechanics and Installers | 89 | 51% | $21.73 | Postsecondary nondegree award |
| Architectural and Civil Drafters | 33 | 18% | $25.67 | Associate degree |

Table 18: Upper-Level Building and Design Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| General and Operations Managers | 98 | 34% | $47.40 | Bachelor's degree |
| Construction Managers | 74 | 35% | $40.26 | Bachelor's degree |
| Cost Estimators | 58 | 18% | $29.34 | Bachelor's degree |

### Other Manufacturing

Table 19: Entry-Level Other Manufacturing Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Entry-Level Education |
|---|---|---|---|---|
| Machinists | 89 | 35% | $18.40 | High school diploma or equivalent |

| | | | | |
|---|---|---|---|---|
| Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products | 80 | 51% | $27.07 | High school diploma or equivalent |
| First-Line Supervisors of Production and Operating Workers | 111 | 39% | $26.78 | High school diploma or equivalent |

Table 20: Mid-Level Other Manufacturing Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Heavy and Tractor-Trailer Truck Drivers | 199 | 64% | $22.45 | Postsecondary nondegree award |
| Bookkeeping, Accounting, and Auditing Clerks | 29 | 32% | $18.94 | Some college, no degree |
| Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic | <10 | 33% | $30.03 | Postsecondary nondegree award |

Table 21: Upper-Level Other Manufacturing Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| General and Operations Managers | 61 | 39% | $47.40 | Bachelor's degree |
| Industrial Production Managers | 33 | 32% | $46.94 | Bachelor's degree |
| Sales Managers | 22 | 38% | $41.70 | Bachelor's degree |

## Education and Knowledge Creation

Table 22: Entry-Level Education and Knowledge Creation Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Entry-Level Education |
|---|---|---|---|---|
| Secretaries and Administrative Assistants, Except Legal, Medical, and Executive | 507 | 11% | $17.62 | High school diploma or equivalent |
| Childcare Workers | 403 | 6% | $11.96 | High school diploma or equivalent |
| Office Clerks, General | 330 | 6% | $16.24 | High school diploma or equivalent |

Table 23: Mid-Level Education and Knowledge Creation Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Teacher Assistants | 1,854 | 23% | $15.94 | Some college, no degree |
| Preschool Teachers, Except Special Education | 235 | 16% | $14.23 | Associate degree |
| Human Resources Assistants, Except Payroll and Timekeeping | 17 | 21% | $18.92 | Associate degree |

Table 24: Upper-Level Education and Knowledge Creation Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Elementary School Teachers, Except Special Education | 2,009 | 16% | $41.80 | Bachelor's degree |
| Secondary School Teachers, Except Special and Career/Technical Education | 1,073 | 17% | $37.47 | Bachelor's degree |
| Education Administrators, Elementary and Secondary School | 215 | 16% | $60.58 | Master's degree |

## Finance, Banking, Insurance, and Real Estate (F.I.R.E.)

Table 25: Entry-Level F.I.R.E. Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Entry-Level Education |
|---|---|---|---|---|
| Insurance Sales Agents | 245 | 1% | $17.78 | High school diploma or equivalent |
| Tellers | 199 | 7% | $13.61 | High school diploma or equivalent |
| Customer Service Representatives | 91 | 2% | $16.96 | High school diploma or equivalent |

Table 26: Mid-Level F.I.R.E. Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Bookkeeping, Accounting, and Auditing Clerks | 47 | 2% | $18.94 | Some college, no degree |

| | | | | |
|---|---|---|---|---|
| Computer, Automated Teller, and Office Machine Repairers | <10 | 0% | $17.40 | Some college, no degree |
| Human Resources Assistants, Except Payroll and Timekeeping | <10 | 0% | $18.92 | Associate degree |

Table 27: Upper-Level F.I.R.E. Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Securities, Commodities, and Financial Services Sales Agents | 153 | 39% | $18.47 | Bachelor's degree |
| Loan Officers | 110 | 8% | $29.79 | Bachelor's degree |
| Personal Financial Advisors | 51 | 16% | $42.93 | Bachelor's degree |

## Healthcare

Table 28: Entry-Level Healthcare Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Entry-Level Education |
|---|---|---|---|---|
| Personal Care Aides | 1,427 | 61% | $11.34 | High school diploma or equivalent |
| Medical Secretaries | 414 | 0% | $16.18 | High school diploma or equivalent |
| Social and Human Services Assistants | 80 | 11% | $18.44 | High school diploma or equivalent |

Table 29: Mid-Level Healthcare Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Dental Hygienists | 128 | 17% | $42.40 | Associate degree |
| Nursing Assistants | 487 | 3% | $14.50 | Postsecondary nondegree award |
| Licensed Practical and Vocational Nurses | 429 | 1% | $22.99 | Postsecondary nondegree award |

Table 30: Upper-Level Healthcare Occupations in the VVAERC region

| Occupations | 2018 Jobs | % Change 2014-2018 | Median Hourly Earnings | Typical Education |
|---|---|---|---|---|
| Registered Nurses | 1,524 | 12% | $45.09 | Bachelor's degree |

| | | | | |
|---|---|---|---|---|
| Substance Abuse, Behavioral Disorder, and Mental Health Counselors | 98 | 48% | $19.32 | Bachelor's degree |
| Medical and Health Services Manager | 125 | 13% | $53.75 | Bachelor's degree |

## REGIONAL JOB VOLATILITY ANALYSIS

The world of work is continually changing and many of the jobs of today will not look the same as the jobs of tomorrow. BW Research recently (2017 data) completed a national analysis of job volatility by occupational segment and industry cluster to better understand how the employment landscape could change over the next three to ten years. The analysis focused more specifically on the impact that technology and automation is likely to have on employment opportunities into the future. The examination of occupational skills was built upon an assessment of the likelihood of that skill being automated and its relative importance for the position.[36]  The analysis looked to:

o        Assess occupations and industry employment patterns based on current job skills and the likelihood that those skills could be replaced by technology or some related advancement in automation;
o        Evaluate and better understand the magnitude of change that is likely to occur in employment composition by industry and occupational segment over the next three to ten years; and,
o        Measure the potential job volatility within a given region, such as VVAERC region, and the impact it could have on the region's industry clusters.

Nationally, 21% of employment currently falls under the five most volatile industries according to our analysis. Approximately 23% of current VVAERC region employment falls into the same five most volatile industries. These findings indicate that nearly one in four jobs in the area will likely be impacted by automation and technology in the next three to 10 years, changing the skills and training required for the position or changing the position and title altogether.

The VVAERC region has a low relative concentration (about 75% fewer jobs than the national average for a territory the same size) of Agriculture and Food industry positions, which is the most volatile industry according to our analysis.  In total, this industry accounts for about only about 0.9% of all jobs in the VVAERC region.  Other relatively volatile industries like Logistics and Tourism, Hospitality, and Recreation, are less

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[36] Automation assessment included information and analysis from the following study: https://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf

concentrated in the VVAERC region.  Water and Other Manufacturing are about 41% and 34% more concentrated than the national average, respectively.

Table 31: Five Industries Most Likely to Experience Volatility

| Five Most Volatile Industries | 2018 Jobs in VVAERC Region | Percent of Total Jobs in VVAERC Region |
|---|---|---|
| Agriculture & Food | 788 | 0.9% |
| Logistics | 4,817 | 5.6% |
| Water | 201 | 0.2% |
| Other Manufacturing | 3,191 | 3.7% |
| Tourism, Hospitality & Recreation | 10,896 | 12.7% |
| Total | 19,893 | 23.2% |

Some of the highest-risk occupations for experiencing volatility are outlined in the table below.  In total, they represent about 4,270 jobs in the region (Table 32).  Most of the occupations are physically and mentally repetitive, which are some of the main characteristics that make them most susceptible to advancing technology and automation.

Table 32: High Risk Occupations:

| High Risk Occupations | 2018 Jobs in VVAERC Region |
|---|---|
| Packaging and Filling Machine Operators and Tenders | 122 |
| Laborers and Freight, Stock, and Material Movers, Hand | 2,024 |
| Coating, Painting, and Spraying Machine Setters, Operators, and Tenders | 36 |
| Stock Clerks and Order Fillers | 2,015 |
| Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic | 73 |

The Healthcare industry is the fifth-largest industry cluster in the VVAERC region, employing more than 10,600 people (12.4% of the workforce). It is also the third least volatile industry overall according to our analysis.  Technological advancement is likely to help this industry, as developments in imaging and predictive healthcare benefit patients and practitioners alike.  Given the levels of complex problem solving and emotional intelligence required for many Healthcare occupations, it is more likely that healthcare practitioners will work more effectively with the help of robots rather than be replaced by them.

Table 33. Five Industries Least Likely to Experience Volatility

| Top Five Industries Least Likely to Experience Volatility | 2018 Jobs in VVAERC Region | Percent of Total Jobs in VVAERC Region |
|---|---|---|
| Healthcare | 10,663 | 12.4% |
| Education & Knowledge Creation | 14,286 | 16.7% |
| Information & Communication Technologies (ICT) | 814 | 1.0% |
| Financial & Banking, Insurance, Real Estate (FIRE) | 2,331 | 2.7% |
| Information & Communications | 349 | 0.4% |
| Total | 28,443 | 33.2% |

Education and Knowledge Creation is the largest industry cluster in the region, employing about 14,286 individuals.  Overall, about 33.2% of occupations, or about 28,443 employees, in the VVAERC region fall into the five least-volatile industry clusters.

## APPENDIX A: METHODOLOGY

BW Research conducted secondary data analysis using data sources such as Economic Modeling Specialists Intl. (EMSI), the Census Bureau's American Community Survey, California Economic Development Department, and the Federal Reserve to understand the regional labor market and population demographics.

## RESEARCH OBJECTIVES

Prior to beginning the project, BW Research discussed with the Victor Valley Adult Education Regional Consortium (VVAERC) to determine the research objectives for this study. Some of the questions that drive this research include:

o   How is the world of work changing in the VVAERC region?

o   What industry clusters are growing and should be the focus of workforce development efforts and which ones are in decline?

o   What is the VVAERC region's current job quality profile?

o   What types of workers is the VVAERC region importing and exporting and are there opportunities to develop job prospects for local workers?

o   How can the Victor Valley Adult Education Regional Consortium work with its partners across the county to facilitate workforce and economic development strategies that connect with the needs and objectives of local job-seekers and businesses?

o   How can the Victor Valley Adult Education Regional Consortium best support regional employers who are looking for talent?

## SECONDARY DATA COLLECTION

Employment, population, workforce, income, and educational attainment data for the VVAERC region were defined the region's zip codes. Industry clusters were defined using the North American Industry Classification System (NAICS) codes.
Employment data were compiled from the Economic Modelling Specialists Intl. (Emsi) 2019.1 QCEW and non-QCEW for the zip codes of the VVAERC region. Additional employment datasets were also extracted from the Bureau of Labor Statistics (BLS), California Economic Development Department, the Federal Reserve, and the regional living income from the M.I.T. Living Wage Calculator. Population and workforce statistics were compiled from the Census Bureau's American Community Survey (ACS), 2017 5-year estimate.

| Member Name: | Victor Valley Adult Education Regional Consortium | | |
|---|---|---|---|
| **Source and Type of Funds** | **Funding Estimates FY2019-20** | **Funding Estimates FY2020-21** | **Funding Estimates FY2021-22** |
| **State / Federal Funding** | | | |
| **AEP** | $2,219,245 | $2,219,245 | $2,219,245 |
| **CalWORKs** | $28,553 | $38,853 | $38,853 |
| **CCD Apportionment** | $0 | $0 | $0 |
| **Corrections** | $0 | $0 | $0 |
| **LCFF / District Funds** | $0 | $0 | $0 |
| **Perkins V** | $0 | $0 | $0 |
| **WIOA II** | $409,564 | $371,343 | $371,343 |
| **Other Funding** | | | |
| **Hiset** | $714 | $1,000 | $1,000 |
| **Total** | **$2,658,076** | **$2,630,441** | **$2,630,441** |

| Member Name: | Apple Valley Unified School District | | |
|---|---|---|---|
| **Source and Type of Funds** | **Funding Estimates FY2019-20** | **Funding Estimates FY2020-21** | **Funding Estimates FY2021-22** |
| **State / Federal Funding** | | | |
| **AEP** | $404,312 | $404,312 | $404,312 |
| **CalWORKs** | $15,000 | $15,000 | $15,000 |
| **CCD Apportionment** | $0 | $0 | $0 |
| **Corrections** | $0 | $0 | $0 |
| **LCFF / District Funds** | $0 | $0 | $0 |
| **Perkins V** | $0 | $0 | $0 |
| **WIOA II** | $122,136 | $122,136 | $122,136 |
| **Other Funding** | | | |
| **Hiset** | $714 | $1,000 | $1,000 |
| **Total** | **$542,162** | **$542,448** | **$542,448** |

| Member Name: | Hesperia Unified School District | | |
|---|---|---|---|
| **Source and Type of Funds** | **Funding Estimates FY2019-20** | **Funding Estimates FY2020-21** | **Funding Estimates FY2021-22** |
| **State / Federal Funding** | | | |
| AEP | $699,771 | $699,771 | $699,771 |
| CalWORKs | $13,853 | $13,853 | $13,853 |
| CCD Apportionment | $0 | $0 | $0 |
| Corrections | $0 | $0 | $0 |
| LCFF / District Funds | $0 | $0 | $0 |
| Perkins V | $0 | $0 | $0 |
| WIOA II | $206,523 | $206,523 | $206,523 |
| **Total** | **$920,147** | **$920,147** | **$920,147** |

| Member Name: | Lucerne Valley Unified School District | | |
|---|---|---|---|
| Source and Type of Funds | Funding Estimates FY2019-20 | Funding Estimates FY2020-21 | Funding Estimates FY2021-22 |
| State / Federal Funding | | | |
| AEP | $64,753 | $64,753 | $64,753 |
| CalWORKs | $0 | $0 | $0 |
| CCD Apportionment | $0 | $0 | $0 |
| Corrections | $0 | $0 | $0 |
| LCFF / District Funds | $0 | $0 | $0 |
| Perkins V | $0 | $0 | $0 |
| WIOA II | $0 | $0 | $0 |
| Total | $64,753 | $64,753 | $64,753 |

| Member Name: | Snowline Joint Unified School District | | |
|---|---|---|---|
| **Source and Type of Funds** | **Funding Estimates FY2019-20** | **Funding Estimates FY2020-21** | **Funding Estimates FY2021-22** |
| **State / Federal Funding** | | | |
| AEP | $257,177 | $257,177 | $257,177 |
| CalWORKs | $0 | $0 | $0 |
| CCD Apportionment | $0 | $0 | $0 |
| Corrections | $0 | $0 | $0 |
| LCFF / District Funds | $0 | $0 | $0 |
| Perkins V | $0 | $0 | $0 |
| WIOA II | $38,221 | $0 | $0 |
| **Total** | **$295,398** | **$257,177** | **$257,177** |

| Member Name: | Victor Valley College | | |
|---|---|---|---|
| **Source and Type of Funds** | **Funding Estimates FY2019-20** | **Funding Estimates FY2020-21** | **Funding Estimates FY2021-22** |
| **State / Federal Funding** | | | |
| AEP | $357,239 | $357,239 | $357,239 |
| CalWORKs | $0 | $0 | $0 |
| CCD Apportionment | $0 | $0 | $0 |
| Corrections | $0 | $0 | $0 |
| LCFF / District Funds | $0 | $0 | $0 |
| Perkins V | $0 | $0 | $0 |
| WIOA II | $42,684 | $42,684 | $42,684 |
| **Total** | **$399,923** | **$399,923** | **$399,923** |

| Member Name: | Victor Valley Union High School District | | |
|---|---|---|---|
| **Source and Type of Funds** | **Funding Estimates FY2019-20** | **Funding Estimates FY2020-21** | **Funding Estimates FY2021-22** |
| State / Federal Funding | | | |
| AEP | $435,993 | $435,993 | $435,993 |
| CalWORKs | $0 | $10,000 | $10,000 |
| CCD Apportionment | $0 | $0 | $0 |
| Corrections | $0 | $0 | $0 |
| LCFF / District Funds | $0 | $0 | $0 |
| Perkins V | $0 | $0 | $0 |
| WIOA II | $0 | $0 | $0 |
| **Total** | **$435,993** | **$445,993** | **$445,993** |

**Chaffey College**
**Career Transitions**
**5885 Haven Ave**
**Rancho Cucamonga, CA 91737**

## Articulation Agreement

**Statement of Intent**
This agreement enables students to receive college credit and/or a waiver of a prerequisite for coursework at the secondary level comparable to courses offered by Chaffey College. Course Articulation is based upon achievement of competencies through a course, or courses, as defined herein, which specifies the conditions of the course's articulation agreement.

**Terms of Agreement**
This agreement shall remain in force for three years but shall be reviewed for consideration every two years and/or upon significant changes to either course(s). This review will include an examination of up-to-date course outlines and discussion of current teaching methodologies and stated competencies. Either party to the agreement may terminate this agreement at the close of any school year by proper written notice delivered to the President of Chaffey College District or to the Superintendent of the secondary or ROP educational institution.

Chaffey College will accept the completion of:

Medical Core I
_____
*(Name and course number of high school or ROP course)*

from:   Snowline Joint Unified School District taught at Snowline Adult School
*(Name of district with high school(s) teaching or ROP district with location(s) where taught)*

For the comparable Chaffey Courses:

BIOL 30: Beginning Medical Terminology 3 Units, (48-57 Hours). Applied medical etymology including the origin, correct spelling, pronunciation, meaning, and current usage of common medical terms, disorders, and medical treatments in the context of body systems. Application of relevant vocabulary to clinical records and reports, emphasizing roots, prefixes, infixes, suffixes, medical abbreviations, symbols, and terms common in patients' records and laboratory reports

Snowline Joint Unified School District- Adult School and Chaffey College faculty have agreed to the specific criteria shown below and/or attached. It is agreed that student will receive:

☐ Credit by examination          ☒ Placement credit          ☐ Other

**Required Course Content for Articulation:**

- A. The nature of the medical vernacular.
- B. Techniques used in developing a medical vocabulary.
- C. Naming of anatomical parts including organs and organ systems
  - 1. Integumentary System
  - 2. Musculoskeletal System
  - 3. Cardiovascular System
  - 4. Lymphatic System
  - 5. Respiratory System
  - 6. Nervous System
  - 7. Endocrine System
  - 8. Gastrointestinal System
  - 9. Urinary System
  - 10. Reproductive Systems
- D. Naming of disease process
  - 1. Inflammation
  - 2. Infection

- 3. Neoplasia
- 4. Paralysis
- E. Naming of medical treatments
- 1. Incisions
- 2. Surgical punctures, fractures and repairs
- 3. Excisions
- 4. Sutures
- F. Identifying medical abbreviations and symbols

**At the conclusion of this course, the student should be able to:**
- A. Know the meaning and the current medical usage of the most commonly encountered Greek and Latin root words, roots, combining forms, stems, prefixes, infixes, suffices and inflections.
- B. Recognize Greek and Latin word roots, combining forms, stems, prefixes, infixes, suffixes and inflections when contained in medical terms and analyze the meaning of medical terms compounded from them.
- C. Recognize medical abbreviations, symbols and terms common to patients' records and laboratory reports.
- D. Know how to correctly spell, pronounce and define common medical terms.
- E. Understand medical vocabulary associated with anatomical pathology and medical interventions.
- F. Understand the syntax of common medical terms and the context in which they are used.
- G. Acquire memorization skills for improving the ability to retain and recall medical vocabulary.

**Measurement Methods (include any industry certification or licensure):**
- A. Lecture
- B. Observations
- C. Clinical applications
- D. Internet instruction
- E. Collaborative Group Work
- F. One-on-one tutorials
- G. Simulations
- H. Small group or directed class discussion
- I. Study groups
- J. Computer assisted instruction

**Procedures and/or Criteria for Course Articulation:**
1. The high school/ROP teacher will initiate participation in the articulated course through the CATEMA online database via the Career Transitions website.
2. Students will complete the Chaffey College online application and enroll in the course via CATEMA.
3. When the student has passed and earned a grade of "B" or better, the high school/ROP teacher will recommend students for credit on CATEMA.
4. Pass approved comprehensive written exam with 70% or better

**Sample Textbooks or Other Support Materials (including Software):**
Texts:
1. Gylys, B.A. and Wedding, M.E. . Medical Terminology: A Body Systems Approach. (7th /e). FA Davis Company, 2012.
2. Canfield Willis, Marjorie. Medical Terminology: A Programmed Learning Approach to the Language of Health Care. (2nd/e). Lippincott Williams and Wilkins, 2007.
3. Jansen Cohen, Barbara. Medical Terminology: An Illustrated Guide. (8th/e). Lippincott Williams and Wilkins, 2016.

Supplemental:
1. Science, Nature, The Journal of American Medical Association, New England Journal of Medicine.
2. 2. Stedman's Medical Dictionary llustrated in Color; 28th Edition; Lippincott Williams and Wilkins; 2006; ISBN: 0781764505.
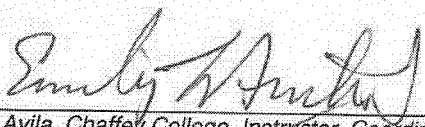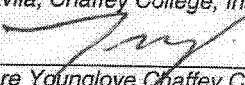
| [Office use only.] | [Office use only.] |
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| **TOPs Code:** | **Internal Tracking Number:** |

**Signatures:**
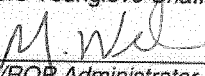
_Emily Avila, Chaffey College, Instructor, Coordinator_                          2017: BIO-30 (Snowline JUSD-ADULT SCHOOL)

_Date_  9/18/17

_Theodore Younglove Chaffey College, Dean, School of Mathematics and Science_

_Date_  9/20/17

_District/ROP Administrator_

_Date_  10/10/17

_Joy Haefens, Chaffey College, Articulation Officer_

_Date_  10/4/17

This agreement was based on Statewide Career Pathways Project template.