



MONTANA REGISTERED
APPRENTICESHIP PROGRAM REPORT

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STATE OF MONTANA

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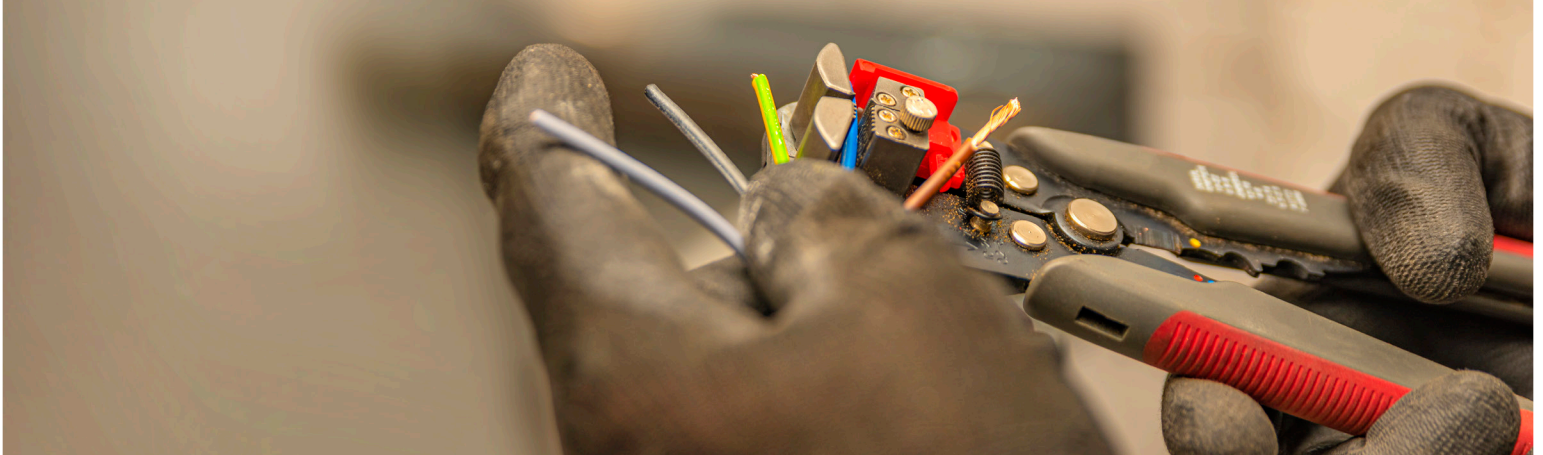
EXECUTIVE SUMMARY



The Montana Registered Apprenticeship Program is a critical workforce training tool in addressing the state's workforce shortage. Through apprenticeship, workers can access high-quality training while earning wages to support their households. Apprenticeship couples on-the-job training with traditional education to pass skills to the next generation of workers and translates directly into quality employment opportunities.

For many trades like electrical, plumbing, and carpentry, the Montana Registered Apprenticeship Program continues to be the primary mode of training. Efforts to expand apprenticeship opportunities are leading to apprenticeship training opportunities in new fields. In 2024, the Montana Registered Apprenticeship Program is training nearly 3,000 workers in over 60 high-demand occupations – including registered nurses, childcare providers, radiologic technicians, and computer programmers.

PROGRAM PARTICIPATION HIGHLIGHTS



- Apprenticeship programs are being utilized now more than ever before.
 - Montana has nearly 3,150 active apprenticeships at the end of September 2024, a 25% increase over five years ago.
 - Montana added nearly 1,100 new apprenticeships in 2023, a record high. Another 770 apprenticeships were started in the first nine months of 2024.
 - In 2024, there were over 680 Montana businesses utilizing apprenticeship to train their workforce—a record-high for business engagement.
- Registered apprenticeship programs are active all across Montana.
 - In 2023, 45 Montana counties had active registered apprenticeship programs training local workers.
 - About 4 out of every 5 apprenticeships are in Montana’s most populous counties – Yellowstone, Missoula, Flathead, Lewis and Clark, Gallatin, Silver Bow, and Cascade.
- Some of the fastest growing apprenticeships are training workers to become health education specialists, industrial engineering technologists, and medical assistants.
- New apprenticeship programs have been developed for nearly 30 high-demand occupations since 2019, including the popular registered nurse apprenticeship.
- Montana Registered Apprenticeship Programs successfully reach older workers. Over 50% of apprentices were 25 and older in 2023, compared to less than 30% for Montana University System students.

The Montana Department of Labor & Industry’s Registered Apprenticeship Program partners with union and non-union sponsors to establish registered apprenticeship programs across the state. A registered apprenticeship program provides the on-the-job and classroom training required to meet the national requirements for an industry-recognized certificate through a curriculum customized to meet the employer’s needs. Once an apprentice completes a registered apprenticeship program, they obtain an industry-recognized credential demonstrating to employers in all 50 states that they are qualified and trained.

WORKFORCE OUTCOME HIGHLIGHTS



- Apprenticeships help retain skilled workers in Montana. Approximately 86% of apprentice graduates were still working for a Montana employer five years later.
- The Montana Registered Apprenticeship Program graduates more apprentices each year than the average two-year or community college in the Montana University System. From 2019 to 2023 an average of 302 apprenticeships have been completed each year.
- Apprenticeship graduates earn high wages with their credentials. One year after graduation, apprentices earned an average annual salary of \$69,000—\$13,100 higher than the statewide average wage.
- Five years after graduation, apprenticeship completers earned \$22,750 more than those who did not complete their apprenticeship program.
- Completion rates are comparable to average rates across Montana’s University System, with 47% of each year’s cohort completing an apprenticeship.

The Montana Registered Apprenticeship Program has become an essential component of Montana’s workforce development system. Occupations able to be apprenticed account for over half of projected job openings over the next ten years, suggesting further room for growth. With the increasing popularity of the apprenticeship model and continued strong demand for skilled workers in Montana, apprenticeships will be relied upon by employers to train skilled workers and by workers to gain valuable skills for high-quality jobs.

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INTRODUCTION

Montana's strong job market has outpaced worker supply, leaving employers looking for training that addresses skill gaps without sacrificing worker supply. The apprenticeship training model offers a solution to this challenge. The Montana Registered Apprenticeship Program couples on-the-job training that keeps workers in the labor force with classroom training that meets the national requirements for an industry-recognized certificate. This training model delivers skills customized to meet the employer's needs while leading to a nationally recognized credential the worker takes with them through their career. In 2024, the Montana Registered Apprenticeship Program is training nearly 3,150 workers in 58 high-demand occupations – including electricians, registered nurses, childcare providers, plumbers, and computer programmers.

The Montana Registered Apprenticeship Program plays an important role in the development of Montana's workforce, ensuring that the labor force has the skilled workers businesses need for continued growth. This report details utilization of the Montana Registered Apprenticeship Program to better understand the program's foundations and areas experiencing growth. Additionally, an analysis of workforce outcomes for apprenticeship completers in the years following their program is included to highlight the strong employment and wage outcomes that result from apprenticeship programs.

UNDERSTANDING THE MONTANA REGISTERED APPRENTICESHIP PROGRAM

Registered apprenticeships involve an employee, called an apprentice, participating in a structured work-based learning program that involves both technical instruction and on-the-job practical training. A registered apprenticeship program must meet national standards for curriculum and training under the monitoring of the Montana Department of Labor & Industry (MTDLI). The U.S. Department of Labor maintains a list of all eligible occupations for registered apprenticeships. Montana's Registered Apprentice Program (MRAP) is a recognized State Apprenticeship Agency by the U.S. Department of Labor, allowing the Department to monitor apprenticeship programs and award apprenticeship credentials.

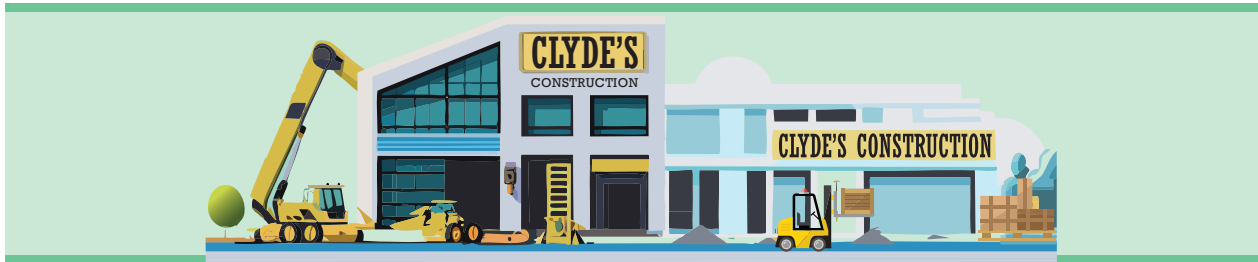
After completing a registered apprenticeship, the participant receives a national industry-recognized credential. Many states, including Montana, require a registered apprentice certification for state licensing in trade occupations such as plumbers or electricians. In many instances, the participant may also earn a simultaneous post-secondary degree.

MTDLI works with employers to help them set up customized programs that follow the recommended curriculum per national standards. MTDLI monitors program progress to ensure that the apprentice and business sponsor meet program goals. The Department can help businesses find potential employees to fill apprenticeship positions, but the employer completes the hiring process. Over 660 Montana businesses are serving as active apprenticeship sponsors in 2024.

Most apprenticeships require 8,000 hours of on-the-job experience, taking approximately four years. However, the training for some occupations can be as short as one year. The training costs, such as tuition payments, books, or supplies, are typically paid by the apprentice, although sponsors may choose to cover these costs. Sponsors must pay the apprentice a wage, create a mentorship with existing staff to provide on-the-job guidance, and allow additional time for training while completing a job. In exchange, employers benefit from having an employee trained to meet the exact needs of their business. Starting in the 2018 tax year, eligible sponsors also receive a tax credit for sponsoring an apprentice.

APPRENTICESHIP TERMINOLOGY EXPLAINED

SPONSORS Are **BUSINESSES** that sponsor Apprenticeship Programs.



PROGRAMS Are based on **OCCUPATION** type. A business may sponsor multiple programs.



APPRENTICESHIPS Are the actual **JOBS** or positions available within a program.



APPRENTICES Are the **PEOPLE** filling the apprenticeship positions.



APPRENTICESHIP PARTICIPATION

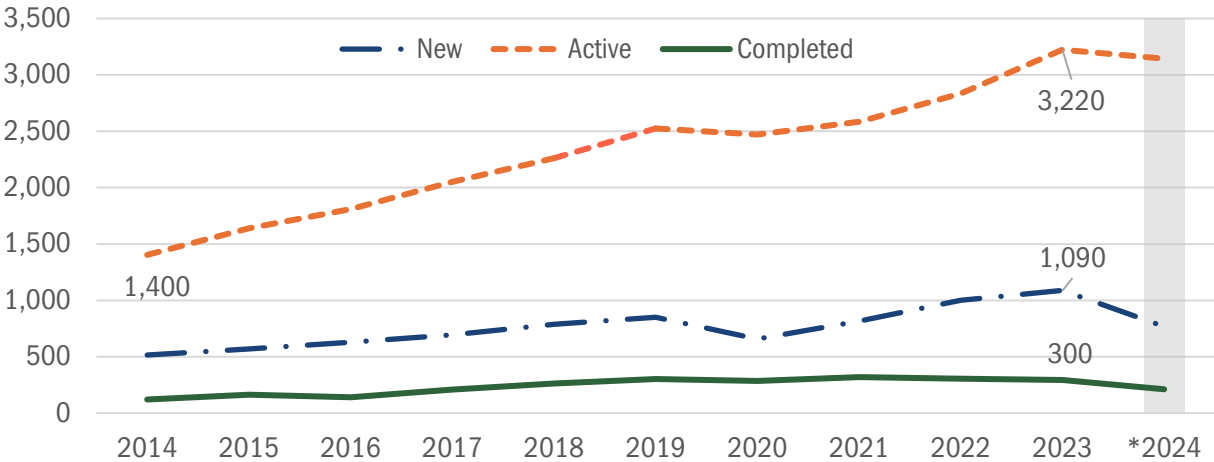
The Montana Registered Apprenticeship Program (MRAP) has trained over 13,700 apprentices in more than 110 occupations since 2000. While apprenticeships have always played an important role in Montana’s workforce development efforts, the MRAP has grown significantly over the last ten years and is now more popular than ever before. Figure 1 shows the number of new, active, and completed apprenticeships per year since 2014.

In 2024, Montana has 3,142 active apprenticeships through the first 9 months of the year— more active apprenticeships than any year other than 2023 and more than double the number of active apprenticeships 10 years ago. Following an update to regulations that increased the allowable ratio of apprentices to sponsor mentors, a record 1,100 new apprenticeships were added in 2023. Another 767 apprenticeships were started in the first nine months of 2024.

In 2022, regulations governing the allowable ratio of journeyman mentors to apprentices were updated from 2:1 to 1:2, creating the opportunity for existing sponsors to train more apprentices. Following this change, Montana reached a record of over 3,200 active apprentices in 2023.

An average of 302 people completed their apprenticeship programs each year between 2019 and 2023. Completions in 2024 are on track to be lower than recent years, a delayed effect from the dip in new apprenticeships that occurred in 2020. The average apprenticeship duration is nearly four years, and most completers in 2024 started their programs in 2020.

Figure 1: New, Active and Completed Apprenticeships



Source: MTDLI Registered Apprentice Program. *Data for 2024 includes activity through September 30. Data rounded to nearest ten apprenticeships.

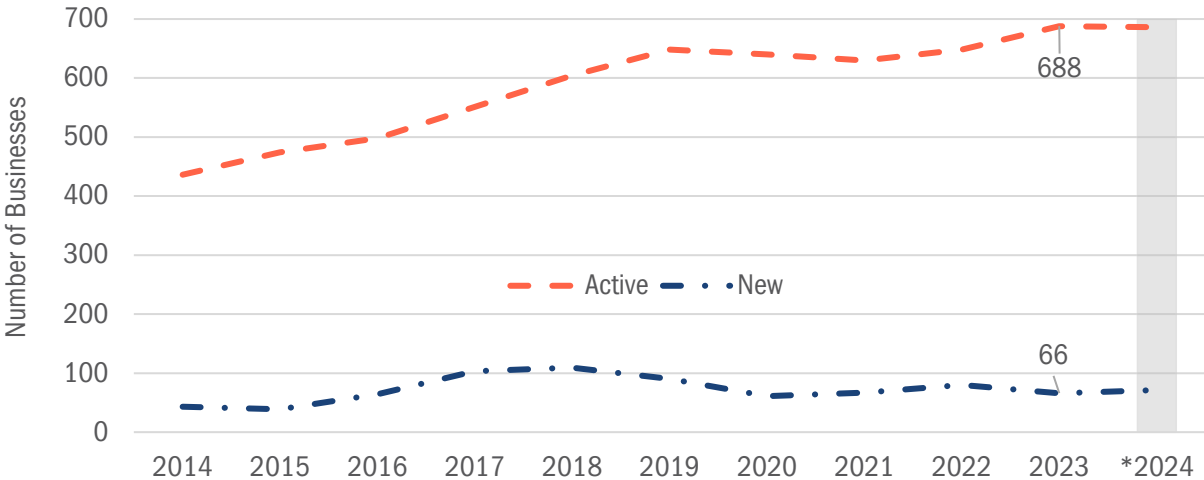
BUSINESS SPONSORSHIP

Business engagement is an essential element of a successful registered apprenticeship program. Businesses are active partners in developing and administering an apprenticeship program, helping identify key proficiencies in program design and administering on-the-job training to participants. Businesses sponsoring an apprentice in a program pay the apprentice a wage and create a mentorship with existing staff to provide on-the-job guidance. In exchange, businesses benefit from having a specifically trained worker to meet the exact needs of their business.

688 Montana businesses were active sponsors of a registered apprenticeship program in 2023 – a record-high level of business engagement.

There were 688 Montana businesses using a registered apprenticeship program to train their employees in 2023. Figure 3 shows the number of businesses in the state with an active apprenticeship program and the number of new business sponsors in each year since 2014. Over the last ten years, the number of business sponsors has increased by 58% as more Montana businesses have utilized the apprenticeship training model to help address their workforce needs. Over 70 new businesses have become sponsors in 2024 so far.

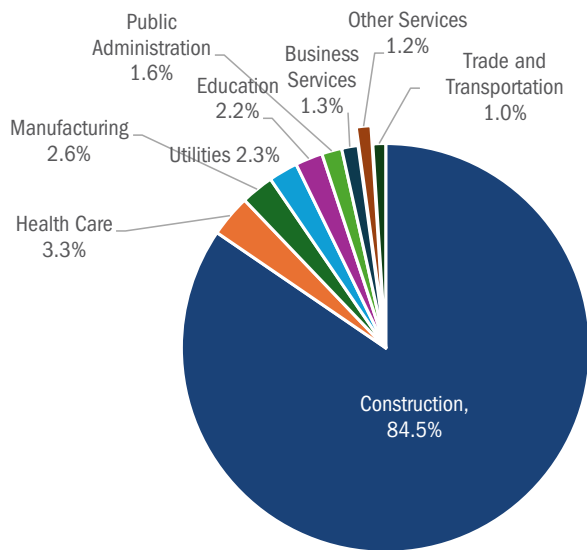
Figure 2: Active and New Apprenticeship Business Sponsors



Source: MTDLI Registered Apprentice Program. *Data for 2024 includes activity through September 30

Most business sponsors are in the construction industry (85%). The healthcare and social assistance industry has the second most business sponsors with over 20 in 2024. Figure 3 shows apprenticeship sponsors by industry. A list of the number of business sponsors by industry can be found in Figure A.2 of the appendix. Over the last five years, the Montana Registered Apprenticeship Program has grown in popularity among non-construction industry businesses. About 28% of all new business sponsors since 2019 have come from outside the construction industry. In particular, many new sponsors have been added in the business services, healthcare, and manufacturing industries.

Figure 3: Active Business Sponsors by Industry, 2024



Source: MTDLI Registered Apprentice Program, Data from January 1, 2024 through September 30, 2024

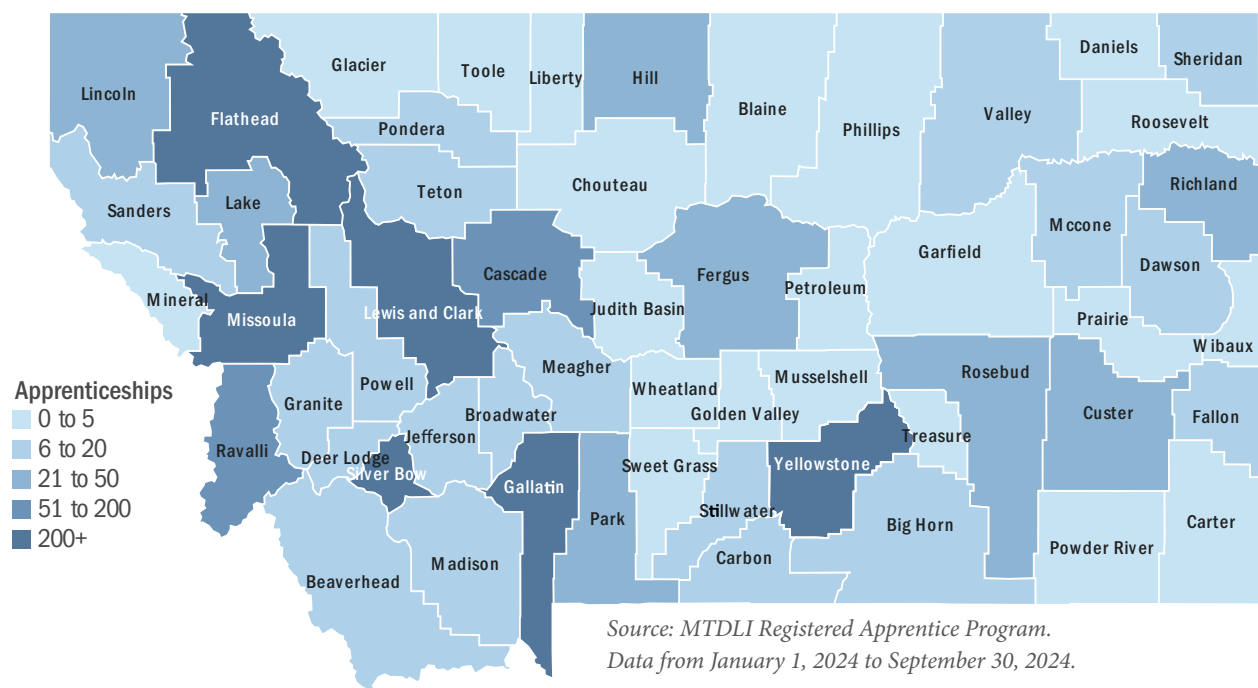
Apprenticeship Tax Credit

The 2017 Legislature passed HB308, which created a tax credit for employers that employ apprentices. The first year that businesses were eligible to claim this credit was in 2019 for apprentices hired in 2018. The credit is either \$750 or \$1,500 per apprentice, depending on the apprentice's veteran status. The tax credit is available to employers for apprentices that have completed their probationary training period.

In 2023, 665 businesses were eligible for tax credits. A total of 2,312 apprentices were eligible, 188 of which were veterans. The combined tax credits available for all eligible employers was \$1,875,000 in tax year 2023.

The Montana Registered Apprenticeship Program coordinates with businesses to train workers throughout the state. Currently, workers are training in apprenticeships in 45 counties. Figure 2 shows the number of active apprenticeships by county in 2024. Approximately 79% of apprenticeships are concentrated in Montana's most populous counties – Yellowstone, Missoula, Flathead, Lewis and Clark, Gallatin, Silver Bow, and Cascade. However, many rural counties are training more than thirty workers through apprenticeship programs – including Lincoln, Lake, Fergus, Hill, Ravalli, Richland, Custer, and Rosebud counties. County-level data on the total number apprenticeships and completed apprenticeships can be found in Figure A.1 of the appendix.

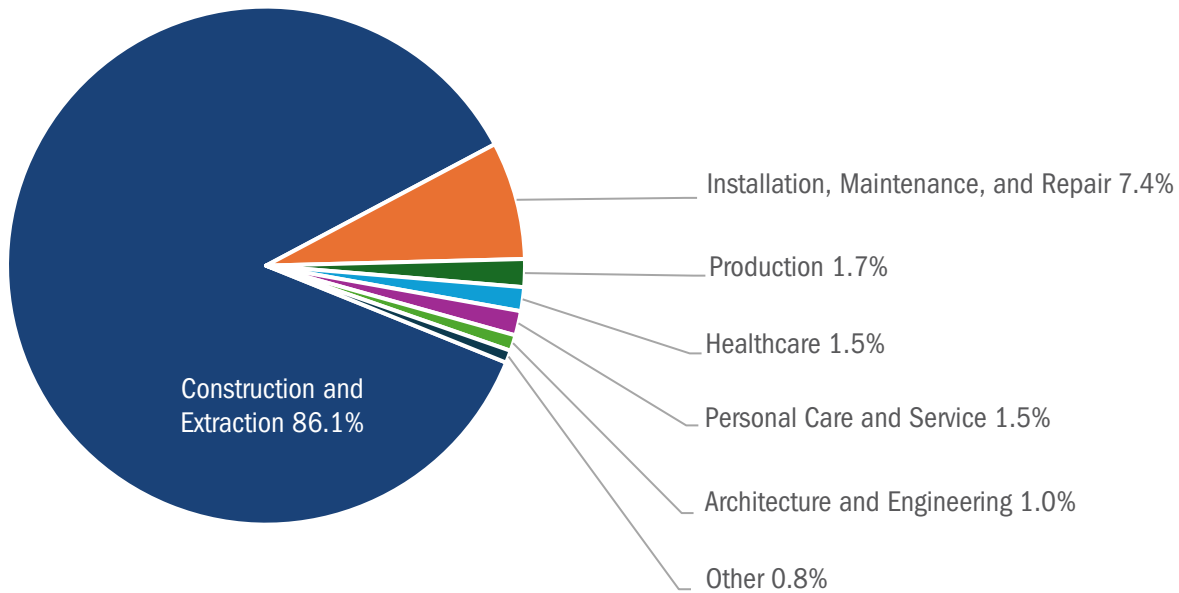
Figure 4: Number of Apprenticeships by County in 2024



APPRENTICESHIP BY OCCUPATION

The Montana Registered Apprenticeship Program has trained workers in 119 occupations in the past decade. Construction and extraction occupations formed the cornerstone of the Montana Registered Apprenticeship Program over the last two decades, representing over 80% of all apprenticeships in the state. Installation, Maintenance and Repair constitute an additional 7%. Figure 5 shows the distribution of apprenticeships by occupation type in 2023.

Figure 5: Apprenticeships by Occupation Group



Source: MTDLI Registered Apprentice Program. Data from 2023.

Currently, registered apprenticeship programs are training nearly 3,150 Montanans to work in almost sixty high-demand occupations. Electricians and plumbers are the most common occupations among apprenticeships, due in large part to the registered apprentice certification requirement for state licensing. There are over 1,200 active electrician and around 900 active plumbing apprenticeships. Some of the fastest growing apprenticeships are training workers to become industrial machinery mechanics, industrial engineering technicians, registered nurses and health education specialists. Figure 6 shows top twenty occupations with the most active apprenticeships in the past five years. A complete list of occupations with active apprenticeships can be found in Figure A.3 in the appendix.



Figure 6: Top 20 Occupations by Active Apprenticeships

ONET	Occupation	2020	2021	2022	2023	2024
47-2111	Electricians	840	969	1097	1283	1285
47-2152	Plumbers, Pipefitters, and Steamfitters	599	661	749	894	893
47-2031	Carpenters	190	191	267	258	227
47-2211	Sheet Metal Workers	85	108	104	120	104
47-2221	Structural Iron and Steel Workers	76	77	96	94	90
49-9021	HVAC Mechanics/Installers	48	50	53	71	66
49-9051	Electrical Power-Line Installers/Repairers	41	43	65	68	65
47-2073	Operating Engineers/Equipment Operators	21	22	25	32	34
21-1091	Health Education Specialist	10	7	3	25	21
47-4021	Elevator and Escalator Installers/Repairers	18	13	17	25	21
49-9041	Industrial Machinery Mechanics	19	9	14	25	23
49-9052	Telecommunications Line Installers/Repairers	26	24	23	22	19
39-9011	Childcare Workers	30	28	29	21	28
29-1141	Registered Nurses	5	7	14	20	22
47-2061	Construction Laborers	12	13	14	18	18
31-9092	Medical Assistants	16	9	6	16	27
47-2021	Brickmasons and Blockmasons	18	21	17	16	15
17-3023	Electrical/Electronic Engineering Technicians	0	0	13	13	3
49-2096	Electronic Equipment Installers/Repairers, Motor Vehicles	11	14	14	12	14
17-3026	Industrial Engineering Technologists/Technicians	6	5	5	11	17

Source: MTDLI Registered Apprentice Program. Data from 2020 to September 30, 2024. Occupations listed according to the number of active apprentices in 2023.

Workers in registered apprenticeships constitute a significant portion of total employment for several high-demand occupations in the state. For example, half of all plumbers, pipefitters and steamfitters are training in an apprenticeship program. Additionally, 45% of electricians, and 41% of structural iron and steel workers are apprentices in the Montana Registered Apprenticeship Program. Figure 7 shows the top ten occupations by active apprenticeships, with the percent of total employment in 2023 included. In total, apprentices comprise about 4.4% of employment in apprenticed occupations.



Figure 7: Number of Active Apprenticeships as a Percent of Total Employment in 2023 by Occupation

ONET	Occupation	Active Apprenticeships	Total Employment	Percent of Total Employment
47-2111	Electricians	1283	2,890	45%
47-2152	Plumbers, Pipefitters, and Steamfitters	894	1,820	49%
47-2031	Carpenters	258	4,330	6%
47-2211	Sheet Metal Workers	120	420	29%
47-2221	Structural Iron and Steel Workers	94	230	41%
49-9021	HVAC Mechanics/Installers	71	1,340	5%
49-9051	Electrical Power-Line Installers/Repairers	68	580	12%
47-2073	Operating Engineers/Equipment Operators	32	3,670	1%
21-1091	Health Education Specialists	25	300	8%
49-9041	Industrial Machinery Mechanics	25	900	3%

Source: MTDLI Registered Apprentice Program 2023. Total Employment from BLS Occupational Employment Statistics 2023.

*Excludes apprentices and jobs that are confidential in the BLS OES 2023 data.

Over the past five years, new apprenticeship programs have been developed to train workers in almost twenty occupations. Figure 8 lists the new apprenticeship programs that have been added since 2020 and the number of active apprenticeships in those programs. The newest programs added in 2024 are veterinary technicians, veterinary assistants, and metal and plastic machine operators.

Figure 8: New Apprenticeship Programs Added By Year, with Number of Apprenticeships, 2020-2024

Year Added	ONET	Occupation	Total Apprenticeships
2024	51-4072.00	Metal and Plastic Machine Operators	2
2024	29-2056.00	Veterinary Technologists and Technicians	1
2024	31-9096.00	Veterinary Assistants and Laboratory Animal Caretakers	1
2022	51-8031.00	Water and Wastewater Treatment Plant and System Operators	15
2022	11-3013.00	Facilities Managers	6
2022	15-1212.00	Information Security Analysts	4
2022	39-2011.00	Animal Trainers	4
2022	11-3012.00	Administrative Services Managers	3
2021	37-3013.00	Tree Trimmers and Pruners	5
2021	51-3092.00	Food Batchmakers	4
2021	51-9071.00	Jewelers and Precious Stone and Metal Workers	1
2020	29-1141.00	Registered Nurses	32
2020	51-9081.00	Dental Laboratory Technicians	3
2020	47-2121.00	Glaziers	2
2020	49-3041.00	Farm Equipment Mechanics and Service Technicians	2
2020	51-2041.00	Structural Metal Fabricators and Fitters	2
2020	23-2011.00	Paralegals and Legal Assistants	1
2020	27-1013.00	Fine Artists, Painters, Sculptors, and Illustrators	1
2020	35-2014.00	Cooks, Restaurant	1

Source: MTDLI Registered Apprentice Program. Total apprenticeships since program creation.

CHILDCARE WORKERS

The Montana Early Childhood Apprenticeship (MECA) program has been training professional childcare workers for over two decades in Montana. Over 180 people have completed the Early Childhood Apprenticeship program since its inception in 2000. Currently, there are 28 active apprentices working in 11 different childcare facilities across the state – putting the MECA program among the top 15 largest apprenticeship programs in the state. The MECA program also stands out for having trained the largest number of women apprentices in Montana.

On average, apprentices complete the MECA program in less than two years. Since 2019, an average of four participants have completed the program each year. Completers of the MECA program continue to work in Montana at high rates, with 81% still working in Montana three years after completion and 73% after 5 years. MECA apprentices earn an average wage of \$30,490 five years after completing, slightly higher than the state average of \$29,830 for childcare workers.

Licensed childcare in Montana is undersupplied, meeting only 44% of estimated demand.¹ Lack of available childcare is driven in-part by a shortage of well-trained caregivers. To help address the childcare worker shortage, the Montana Department of Labor and Industry is expanding apprenticeship opportunities through the development of a Child Development Associate (CDA) pre-apprenticeship program in partnership with the Montana Department of Health and Human Services and the Early Childhood Project. The first cohort of fifteen pre-apprentices began in the fall of 2023. Those who complete the CDA pre-apprenticeship program will be eligible to register for the Child Development Specialist Registered Apprenticeship Program to continue career development.

Top Five Apprenticeship Programs Among Women

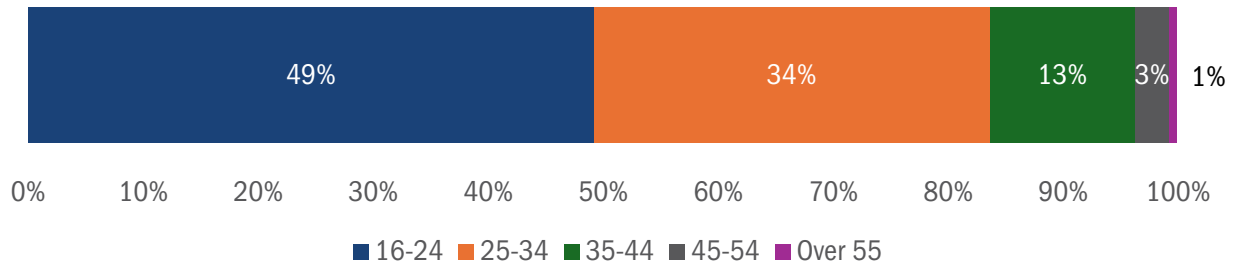
1. Childcare Workers
 2. Electricians
 3. Plumbers, Pipefitters and Steamfitters
 4. Boilermakers
 5. Operating Engineers/Equipment Operators
-



DEMOGRAPHICS OF APPRENTICES IN MONTANA

Apprenticeship programs primarily serve workers in the early stages of their career who are seeking to get credentialed in a new occupation. Despite this, Montana Registered Apprenticeship Programs serve a higher share of older workers than traditional post-secondary education institutions. Over half of Montana apprentices are older than 24, compared to less than 25% of Montana University System students in 2024.²

Age Distribution of Apprentices

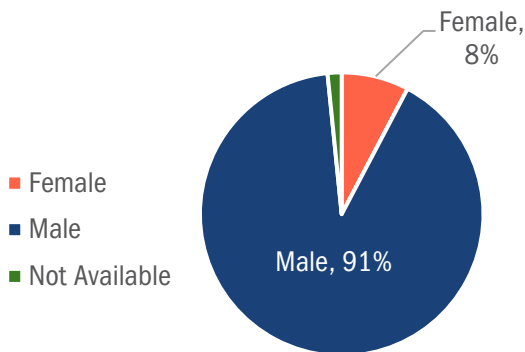


Source: MTDLI Registered Apprenticeship Program, 2024.

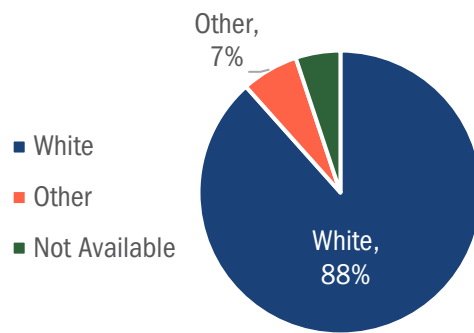
Historically, apprentices have predominantly been male due to the high share of apprentices in fields like construction and transportation that have a male-dominated workforce. The expansion of apprenticeship into childcare and healthcare occupations has drawn more women into apprenticeship programs. However, over 90% of apprentices in 2024 are men.

The racial composition of apprentices mirrors that of the statewide population. In 2024, 88% of apprentices were white.³ 7% were non-white, and most non-white apprentices are Native American. The proportion of veteran apprentices is similar to the share of veterans in the overall state population.⁴

Apprentices by Gender



Apprentices by Race



8% of Montana Apprentices are Veterans



MTDLI Registered Apprenticeship Program, 2024

APPRENTICESHIP OUTCOMES

Over the past two decades, the Montana Registered Apprenticeship Program has grown to become one of the primary workforce training systems in the state. An average of 302 apprenticeships have completed their programs each year for the past 5 years. The Montana Registered Apprenticeship Program graduates more apprentices per year than the average two-year or community college in the Montana University System.⁵ Apprentices who complete their programs remain employed in Montana long after completing their programs, earning high wages.

The Montana Registered Apprenticeship Program **graduates more apprentices each year** than the average two-year or community college in the Montana University System.

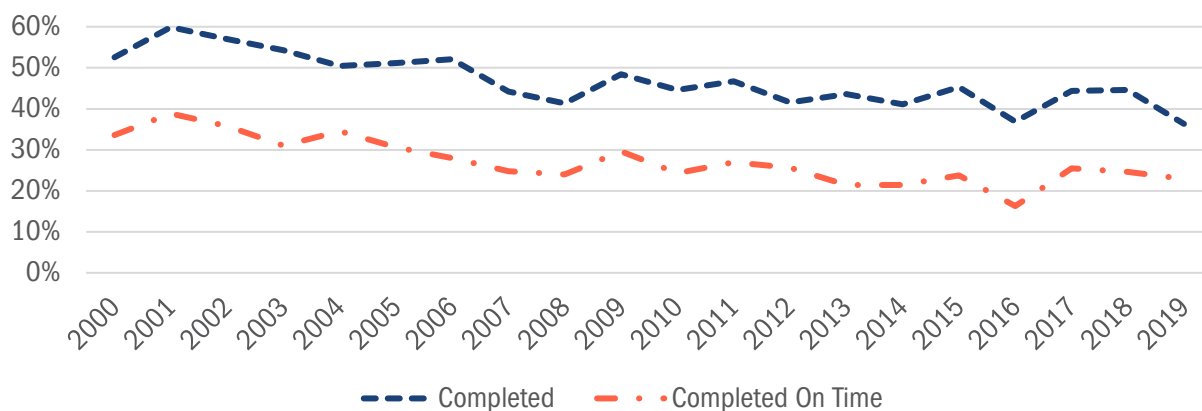
TIME TO COMPLETION

Most apprenticeships require training for approximately 8,000 hours or four years. Some, such as firefighters and childcare workers, only require approximately two years of training (4,000 hours). Across all apprenticeship programs, the average completed program lasted 41 months. Nearly 60% of apprentices who complete their programs do so within the recommended timeframe.

On-time completion rates in apprenticeship are higher than MUS 4-year graduation rates, with 27% of all apprentices completing within program length compared to 23% of students graduating in four years.⁶ When considering completions by cohort regardless of whether they are completed on-time, an average of 46% of apprentices complete their program. The overall completion rate for apprenticeships is slightly lower than the long-term graduation rate for MUS students.⁷ Figure 9 shows the percent of apprentices that complete an apprenticeship by start year of their program, as well as those that completed their program on time.

46% of apprentices complete their program, with 60% of completers doing so within the recommended length of time.

Figure 9: Percent of Apprentices Completed by Start Year



Source: MTDLI Registered Apprenticeship Data 2000 to 2019.

Completion rates and program length vary by occupation. While the average time to completion across all apprenticeships in Montana is 41 months, there are over 30 programs with a historical completion time of less than 2 years. Larger programs with shorter average completion times include nursing assistants (13 months), childcare workers (19 months), and operating engineers/equipment operators who complete apprenticeships at an average rate of two years.

Apprenticeship programs with high completion rates include programs for firefighters, medical assistants, power plant operators, and telecommunications equipment and line installers. Figure 10 shows the apprenticeship programs where more than 50% of participants complete their program.

Figure 10: Apprenticeship Programs with Completion Rates Above 50%

ONET	Occupation	Completion Percent
33-2011	Firefighters	95%
51-8013	Power Plant Operators	89%
49-9041	Industrial Machinery Mechanics	88%
49-2095	Electronics Repairers, Powerhouse/Substation	88%
51-8012	Power Distributors and Dispatchers	83%
31-9092	Medical Assistants	81%
49-9051	Electrical Power-Line Installers/Repairers	79%
49-2098	Security and Fire Alarm Systems Installers	75%
51-8021	Stationary Engineers/Boiler Operators	75%
49-9052	Telecommunications Line Installers/Repairers	71%
49-2022	Telecommunications Equipment Installers/Repairers	70%
47-2211	Sheet Metal Workers	53%
39-9011	Childcare Workers	51%
49-3021	Automotive Body and Related Repairers	50%

Source: MTDLI Registered Apprentice Program. Data for individuals starting an apprenticeship before January 1, 2020.

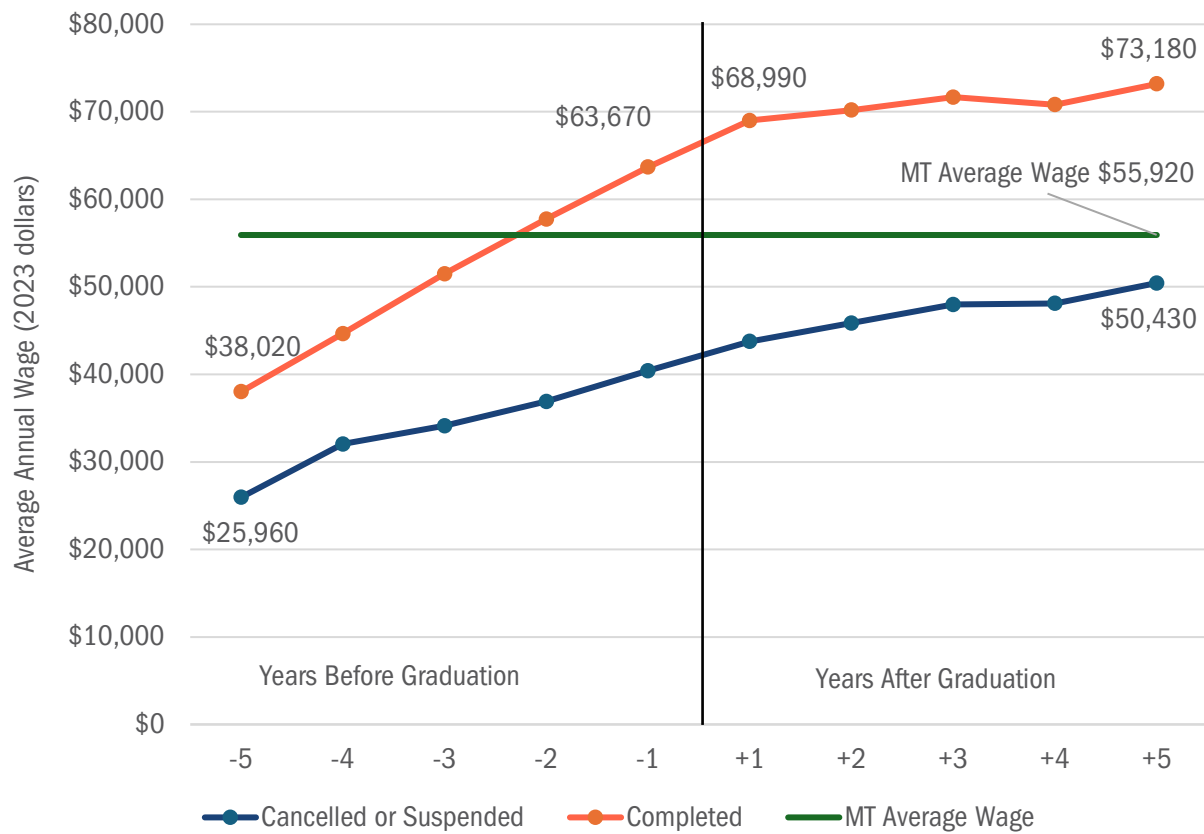
Not all apprenticeships end in completion. From 2019 to 2023, an average of 431 apprenticeships per year ended in cancellation. Cancellations of an apprenticeship can be initiated by the sponsor or apprentice if the job match is unsuitable. Program cancellations due to the apprentice leaving to accept another employment opportunity are the most common, at 30% of cancellations. An apprentice being discharged by the employer accounts for 22% of cancellations. Apprentices begin their program with a probationary period equal to 25% of the program's length, or one year, whichever is shorter. Of those that were canceled, 47% of apprenticeships are canceled within their probationary period.⁸ The average canceled apprenticeship lasts 17 months.

WORKFORCE OUTCOMES OF APPRENTICES

Most (85%) of Montana Registered Apprenticeship Program completers work for a Montana employer five years after completing their program – making them more likely than non-completers to work in the state. In addition, apprentices who complete their programs show better wage outcomes than those who participate but do not finish. Figure 11 shows apprentice wages before, during, and after the program by completion status.

86% of Montana Registered Apprenticeship Program completers work for a Montana employer five years after graduation.

Figure 11: Wages Before and After Apprenticeship by Completion Status



Source: MTDLI Registered Apprentice Program Data matched to UI Payroll Wage Data 2007 to 2024 Q1. US BLS QCEW.



Many apprenticeships earn high wages for their occupation one year after graduation. Figure 12 shows the top fifteen apprenticeships by average wage in their first year after graduation, along with typical entry-level wages for the occupation. In almost every occupation, apprentices are making above entry-level wages one year after completion with many also earning above the average occupational wage.

Figure 12: Top 15 Apprenticeships by Average Wage in First Year After Graduation

ONET	Occupation	Apprentices	Graduated Apprentice Avg Wage	Entry-Level Wage	MT Average Wage
51-8021	Stationary Engineers/Boiler Operators	67	\$137,650	\$67,110	\$85,250
49-9041	Industrial Machinery Mechanics	63	\$119,610	\$51,750	\$66,110
49-9051	Electrical Power-Line Installers/Repairers	156	\$118,610	\$86,710	\$99,530
33-2011	Firefighters	60	\$89,960	\$47,070	\$57,980
47-2152	Plumbers, Pipefitters, and Steamfitters	859	\$70,900	\$59,000	\$73,730
47-2111	Electricians	1168	\$65,260	\$49,000	\$64,940
47-2011	Boilermakers	78	\$63,460	\$74,980	\$75,800
47-2073	Operating Engineers/Equipment Operators	40	\$60,510	\$49,400	\$60,000
47-2211	Sheet Metal Workers	170	\$58,490	\$48,100	\$59,000
47-2031	Carpenters	76	\$49,720	\$44,650	\$51,810
47-2021	Brickmasons and Blockmasons	33	\$47,110	\$49,100	\$62,860
29-2072	Medical Records Specialists	22	\$47,080	\$41,130	\$49,020
47-2221	Structural Iron and Steel Workers	84	\$44,710	\$52,360	\$60,160
31-1131	Nursing Assistants	108	\$35,060	\$35,960	\$40,800
39-9011	Childcare Workers	83	\$27,050	\$24,040	\$29,830

Source: MTDLI Registered Apprenticeship Program and UI wage match. OEWS wage data from May 2023. Excludes occupations with less than 10 apprentice graduates. Entry-level wage defined by 25th percentile of distribution.

High wages for MRAP completers suggest apprentices are getting a good return on their investment, consistent with other apprenticeship research. One study found that apprenticeship training returns exceed the return on investment for other training types, with the long-term gains or apprenticeship training of about \$266,000 over the worker's career compared to only \$130,000 for a community college degree.⁹ The Montana Postsecondary Workforce Report finds Montana's Registered Apprenticeship Program completers have more than double the wage earnings of those earning an associate or bachelor's degree after one year.¹⁰



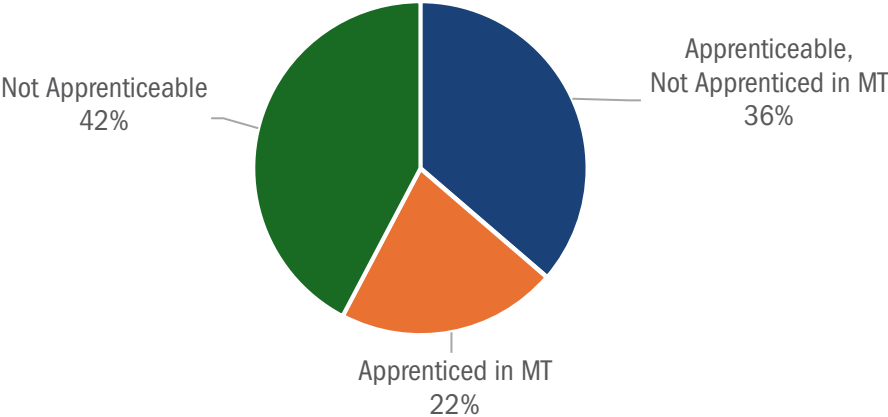
FUTURE DEMAND FOR APPRENTICEABLE JOBS

The Montana Department of Labor & Industry’s employment forecasts for 2023-2033 estimate the demand for apprenticeable jobs. Nationally, there are over 420 occupations that can be trained through apprenticeship, with over 110 being apprenticed in Montana.¹¹ Figure 13 shows that approximately 58% of Montana’s projected job openings over the next ten years will be in occupations that can be trained through apprenticeship. Montana’s current apprenticed occupations account for 15,300 projected openings, 21% of total projections. Occupations not yet apprenticed in Montana make up another 26,000 openings, 37% of total projections, suggesting opportunities to expand apprenticeship to more occupations such as correctional officers, business analysts, dental assistants, and human resource specialists.

58% of Montana’s projected job growth over the next ten years will be in apprenticeable occupations.

15,300 annual job openings are projected for occupations trained through existing Montana Registered Apprenticeship Programs.

Figure 13: Share of Projected Job Openings for Apprenticeable Occupations



Source: MTDLI Registered Apprentice Program. Dept of Labor Apprenticeable Occupations and MTDLI 2023-2033 Occupational Employment Projections.



Figure 14 shows the forecasted annual job openings for the next ten years for some of Montana’s most popular apprenticeship programs. Many of the occupations are in high demand with 745 annual job openings for registered nurses, followed by construction laborers (698), carpenters (668), and childcare workers (490). Most also earn high wages with all but one making more than \$49,000.

Figure 14: Job Openings for Select Apprenticed Occupations

ONET	Occupation	Annual Job Openings	Montana Average Wage
29-1141	Registered Nurses	745	\$82,950
47-2061	Construction Laborers	698	\$49,130
47-2031	Carpenters	668	\$51,810
39-9011	Childcare Workers	490	\$29,830
47-2073	Operating Engineers and Other Construction Equipment Operators	433	\$60,000
47-2111	Electricians	383	\$64,940
47-2152	Plumbers, Pipefitters, and Steamfitters	270	\$73,730
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	164	\$56,960
49-9041	Industrial Machinery Mechanics	100	\$66,110
17-3011	Architectural and Civil Drafters	74	\$60,320
49-9051	Electrical Power-Line Installers and Repairers	62	\$99,530
47-2021	Brickmasons and Blockmasons	38	\$62,860
49-9052	Telecommunications Line Installers and Repairers	38	\$57,500
47-2211	Sheet Metal Workers	33	\$59,000
21-1091	Health Education Specialists	28	\$52,450

Source: MTDLI Registered Apprenticeship Program. OEWS wage data from May 2023. Excludes occupations where projections were not discloseable.

CONCLUSION

Over the past two decades, the Montana Registered Apprenticeship Program has become a vital piece of the state's workforce training landscape. The MTDLI projects that over half of Montana’s forthcoming job growth will be in apprenticeable occupations, indicating that the Montana Registered Apprenticeship Program will continue to be an important workforce training system for the state. Offering specialized training in areas like electricians, registered nurses, childcare providers, plumbers, and computer programmers, apprenticeships are tailored to meet the surging demand for skilled labor. Apprenticeship not only enhances the competence of Montana's workforce but also strengthens local businesses and the overall economy. Apprenticeships are crucial in ensuring the state's sustained prosperity by equipping both workers and enterprises to thrive in the face of increasing workforce demands.

APPENDIX

DATA TABLES

Figure A.1: Total and Completed Apprenticeships by County Since 2019

County	Total	Completed	County	Total	Completed
Lewis And Clark	1,182	323	Granite	18	0
Gallatin	1,014	224	Sanders	18	1
Yellowstone	858	196	Powell	17	4
Flathead	656	110	Fallon	13	3
Missoula	599	131	Mccone	13	6
Silver Bow	516	181	Sheridan	13	2
Cascade	422	82	Meagher	12	0
Custer	238	125	Musselshell	12	0
Ravalli	207	55	Phillips	12	4
Park	134	47	Blaine	10	3
Fergus	90	11	Toole	9	0
Rosebud	86	41	Chouteau	8	2
Lake	72	18	Glacier	7	0
Hill	66	21	Liberty	7	4
Richland	63	12	Powder River	7	2
Lincoln	61	9	Sweet Grass	7	1
Jefferson	54	10	Roosevelt	5	1
Valley	51	26	Wheatland	5	2
Beaverhead	37	7	Garfield	4	0
Madison	30	6	Prairie	3	3
Stillwater	29	10	Daniels	2	2
Carbon	28	7	Judith Basin	2	0
Big Horn	25	8	Carter	1	0
Dawson	24	7	Wibaux	1	1
Deer Lodge	21	4	Golden Valley	0	0
Mineral	20	11	Treasure	0	0
Broadwater	19	3	Petroleum	0	0
Pondera	19	6	Not Available	7	1
Teton	19	1	Total	6,853	1,734

Source: MTDLI Registered Apprentice Program. Data from January 1, 2019 to September 30, 2024.

Figure A.2: Business Sponsors and Apprenticeships by Industry in 2023

NAICS	NAICS description	Apprenticeships	Business Sponsors
22	Utilities	149	16
23	Construction	2665	585
31-33	Manufacturing	49	18
42	Wholesale Trade	29	5
44-45	Retail Trade	1	2
48-49	Transportation & Warehousing	2	0
51	Information	29	2
53	Real Estate & Rental & Leasing	3	1
54	Professional, Scientific, & Technical Services	15	4
56	Administrative Support & Waste Management	9	2
61	Educational Services	110	15
62	Health Care & Social Assistance	95	23
81	Other Services (except Public Administration)	16	8
92	Public Administration	50	11
Total		3,222	692

Source: MTDLI Registered Apprentice Program. Data includes active apprenticeships in 2023.



Figure A.3: New Apprenticeships and Total Apprenticeships Since 2000 by Occupation

ONET	Occupation	2020	2021	2022	2023	2024*	Total Since 2000
47-2111	Electricians	200	330	382	415	298	4802
47-2152	Plumbers, Pipefitters, and Steamfitters	150	209	270	311	199	3402
47-2031	Carpenters	85	54	103	54	68	831
47-2221	Structural Iron and Steel Workers	28	29	41	43	38	623
47-2211	Sheet Metal Workers	27	38	23	39	17	491
39-9011	Childcare Workers	10	10	11	7	15	407
31-1131	Nursing Assistants	32	21	0	0	0	334
49-9051	Electrical Power-Line Installers/Repairers	11	9	34	17	18	326
47-2011	Boilermakers	0	2	4	0	6	276
49-9021	HVAC Mechanics/ Installers	13	20	15	32	12	215
47-2073	Operating Engineers/Equipment Operators	5	10	12	13	13	174
51-8021	Stationary Engineers/Boiler Operators	0	3	5	4	5	139
49-9041	Industrial Machinery Mechanics	15	3	8	13	2	129
47-2181	Roofers	2	7	1	3	4	126
47-2021	Brickmasons and Blockmasons	6	10	4	3	2	119
47-2061	Construction Laborers	4	2	7	6	4	118
47-4021	Elevator and Escalator Installers/Repairers	2	3	5	10	1	87
49-2022	Telecommunications Equipment Installers/Repairers	2	3	2	6	1	81
29-2072	Medical Records Specialists	0	1	0	0	0	54
31-9092	Medical Assistants	3	5	1	16	11	52
21-1091	Health Education Specialists	5	0	0	25	7	45
49-9052	Telecommunications Line Installers/Repairers	6	2	2	4	2	44
49-2098	Security and Fire Alarm Systems Installers	0	0	0	3	0	39
49-2096	Electronic Equipment Installers/Repairers, Motor Vehicles	3	5	7	2	3	35
49-2095	Electronics Repairers, Powerhouse/Substation	2	0	0	5	2	33
17-3011	Architectural and Civil Drafters	0	4	3	1	2	32
29-1141	Registered Nurses	5	4	7	8	8	32
49-3021	Automotive Body and Related Repairers	2	5	1	0	2	30
51-8013	Power Plant Operators	4	1	5	2	0	30
17-3026	Industrial Engineering Technologists/Technicians	4	1	0	11	6	28
47-2082	Tapers	5	4	3	7	0	27
49-3023	Automotive Service Technicians/Mechanics	3	2	0	4	1	24
49-9044	Millwrights	0	1	0	0	0	20
51-3021	Butchers and Meat Cutters	0	0	0	5	0	19
17-3023	Electrical/Electronic Engineering Technologists/Technicians	0	0	13	1	1	16

ONET	Occupation	2020	2021	2022	2023	2024*	Total Since 2000
49-9071	Maintenance and Repair Workers, General	0	1	0	0	0	15
51-8012	Power Distributors and Dispatchers	0	2	1	0	0	15
51-8031	Water and Wastewater Treatment Plant and System Operators	0	0	5	6	4	15
29-2061	Licensed Practical and Licensed Vocational Nurses	0	0	1	0	3	14
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1	2	0	0	0	14
47-2141	Painters, Construction and Maintenance	0	0	0	2	1	12
51-4041	Machinists	0	0	2	0	0	12
15-1232	Computer User Support Specialists	0	1	2	0	1	10
11-9111	Medical and Health Services Managers	1	0	0	0	0	9
51-9012	Still Machine Setters/Operators	3	1	1	0	0	9
31-9097	Phlebotomists	5	0	0	0	0	7
47-2132	Insulation Workers, Mechanical	0	0	1	0	2	7
49-2011	Computer, Automated Teller, and Office Machine Repairers	0	0	2	0	0	7
51-4121	Welders, Cutters, Solderers, and Brazers	0	1	2	2	0	7
11-3013	Facilities Managers	0	0	5	1	0	6
29-2042	Emergency Medical Technicians	0	0	0	0	0	6
29-2099	Health Technologists and Technicians, All Other	0	0	0	0	0	6
41-3041	Travel Agents	0	0	0	0	0	6
51-6041	Shoe and Leather Workers and Repairers	0	0	0	0	0	6
37-3013	Tree Trimmers and Pruners	0	4	0	1	0	5
49-9094	Locksmiths and Safe Repairers	1	1	0	1	0	5
13-1031	Claims Adjusters, Examiners, and Investigators	0	0	0	0	0	4
15-1212	Information Security Analysts	0	0	4	0	0	4
27-2042	Musicians and Singers	1	1	1	0	0	4
29-2043	Paramedics	0	0	0	0	0	4
31-9095	Pharmacy Aides	0	0	0	0	0	4
39-2011	Animal Trainers	0	0	2	1	1	4
49-2092	Electric Motor, Power Tool, and Related Repairers	0	0	0	0	1	4
51-3092	Food Batchmakers	0	4	0	0	0	4
51-6093	Upholsterers	1	0	0	0	0	4
11-3012	Administrative Services Managers	0	0	1	2	0	3
29-2012	Medical and Clinical Laboratory Technicians	0	0	0	0	0	3
29-2052	Pharmacy Technicians	0	0	0	0	1	3
29-2053	Psychiatric Technicians	0	0	0	0	1	3
49-3022	Automotive Glass Installers and Repairers	0	0	1	0	0	3
51-9081	Dental Laboratory Technicians	1	1	0	1	0	3

ONET	Occupation	2020	2021	2022	2023	2024*	Total Since 2000
51-9199	Production Workers, All Other	0	0	0	0	0	3
15-1251	Computer Programmers	0	0	0	0	0	2
27-1025	Interior Designers	0	0	0	1	0	2
29-1171	Nurse Practitioners	0	0	0	0	0	2
47-2121	Glaziers	2	0	0	0	0	2
49-3041	Farm Equipment Mechanics and Service Technicians	2	0	0	0	0	2
51-2041	Structural Metal Fabricators and Fitters	2	0	0	0	0	2
51-4072	Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	0	0	0	0	2	2
11-9199	Compliance Managers	0	0	0	0	0	1
13-1151	Training and Development Specialists	0	0	0	0	0	1
23-1022	Arbitrators, Mediators, and Conciliators	0	0	0	0	0	1
23-2011	Paralegals and Legal Assistants	1	0	0	0	0	1
27-1013	Fine Artists, Painters, Sculptors, and Illustrators	1	0	0	0	0	1
29-2056	Veterinary Technologists and Technicians	0	0	0	0	1	1
31-9096	Veterinary Assistants and Laboratory Animal Caretakers	0	0	0	0	1	1
35-1011	Chefs and Head Cooks	0	0	0	0	0	1
35-2014	Cooks, Restaurant	1	0	0	0	0	1
49-3053	Outdoor Power Equipment/Other Small Engine Mechanics	0	0	0	0	0	1
51-9071	Jewelers and Precious Stone and Metal Workers	0	1	0	0	0	1
53-3032	Heavy and Tractor-Trailer Truck Drivers	0	0	0	0	0	1

Source: MTDLI Registered Apprenticeship Program. Data from 2000 to September 30, 2024.

ENDNOTES

1. Watson, Amy. MTDLI. January 2024. “Child Care Deserts: An Analysis of Child Care Supply and Demand Gaps in Montana”. https://lmi.mt.gov/_docs/Publications/LMI-Pubs/Special-Reports-and-Studies/ChildCareDesertsWhitePaper-FINAL.pdf Demand is defined as the number of children under age six who live in households where all available parents are in the labor force.
2. MUS age distribution based on Spring and Fall 2024 enrollment. <https://mus.edu/data/dashboards/headcount.html>
3. 4% did not provided a race.
4. 9% of Montana’s adult population are veterans. 2023 American Community Survey 1-Year Estimates.
5. Watson, Amy. October 2022. “Montana Postsecondary Workforce Report” MTDLI. https://lmi.mt.gov/_docs/Publications/LMI-Pubs/Special-Reports-and-Studies/MTCollegeReport2022.pdf
6. Based on the average of MUS 4-year graduation rates for F2002-F2018. Apprenticeship calculation uses years 2000-2018.
7. Based on the average MUS 8-year graduation rates for cohorts from F2006 to F2013 from the MUS graduation rates dashboard at <https://mus.edu/data/dashboards/graduation-rates.html>. Apprenticeship calculation includes years 2000-2017.
8. The probationary period cannot exceed 25 percent of the length of the program, or one year, whichever is shorter.
9. Lerman, Robert. 2012. “Can the United States Expand Apprenticeship? Lessons from Experience” American University and the Urban Institute. Available at <http://ftp.iza.org/pp46.pdf>
10. Watson, Amy. “Montana Postsecondary Workforce Report.” October 2022. MTDLI.
11. Occupations based off ONET occupation codes. There are over 420 apprenticeable occupations based on the occupation list from the U.S. Department of Labor’s Office of Apprenticeship.