

Career Pathways Annual Report – HB15-1274: Construction & Infrastructure, and Agriculture & Natural Resources

Career Pathways 2022 - 2023

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Career Pathways Overview

In Colorado, industry-driven, competency-based career pathways ensure that education, training, and workforce systems stay attuned and responsive to the needs of the labor market in order to:

- Ensure businesses have access to an appropriately skilled talent pipeline.
- Prepare students and workers with the skills and credentials they need for jobs and careers.

For additional information on career pathways as a strategy please refer to this webpage: <https://cwdc.colorado.gov/strategies/career-pathways>. All of our industry career pathways are published on a free statewide resource [My Colorado Journey](#).

Executive Summary

The Career Pathways Annual Report for 2022-2023 focuses on two major industries in Colorado, namely updated Construction pathways with the addition of Infrastructure pathways, and new Agriculture & Natural Resources pathways. The report outlines career pathways informed by labor market data and driven by industry experts to equip students and workers with the skills and credentials they need to succeed in the state's labor market.

The report highlights key themes that emerged from discussions with industry experts (employers), public partners, education and workforce systems. The report details competencies, certifications, and critical occupations derived from both our quantitative and qualitative analysis. Several of the occupations in this year's report can be linked to climate climate action and are tagged as “green jobs” on [My](#)

[Colorado Journey](#). The report emphasizes the importance of a skilled talent pipeline to meet the demands of the industry and ensure economic growth in Colorado. Overall, the report is meant to guide and inform the development of career pathways systems in the state of Colorado.

Construction & Infrastructure Industry

Construction career pathways and occupations were originally published in 2017 with quantitative data updated annually. This year 2022-2023, we updated the qualitative data with our industry partners, added occupations, and pathways in the Infrastructure industry. Employers, public partners, the Colorado Workforce Development Council, the Colorado Community College System, and Career and Technical Education partners identified top jobs and critical occupations to build the new career pathway maps in the Construction & Infrastructure industries. These career pathway maps are published and publicly available on [My Colorado Journey](#).

Construction & Infrastructure Pathways

The published career pathways present information collected and edited as “tidbits” to students and job seekers. These are intended to encourage a deeper exploration of occupations in the industry. The following “tidbits” are presented on My Colorado Journey based on discussions with industry employers and public partners from July 2022 to June 2023.

Building and Infrastructure with Skilled Trades

- There is a lot of opportunity in this pathway! You can get a job in the industry without experience with the opportunity to prove yourself ready to become

an apprentice/assistant and work your way to a Skilled Tradesperson, Foreman, and Superintendent.

Broadband Infrastructure

- Broadband not only enables our everyday activities, but also improves society through economic development, healthcare, public safety, government services, and education.
- Between 2023-28, the country will see the largest ever investment in broadband by the federal government of over \$100 billion nationwide with Colorado expected to receive \$500 - \$900 million in funding, resulting in thousands of jobs to be filled.

Construction & Infrastructure Occupations

The published occupations present information collected and edited as “occupational summaries” to students and job seekers. The following “occupational summaries” are presented on My Colorado Journey based on discussions with industry employers and public partners from July 2022 to June 2023.

Pre-construction and Professional

- Civil Engineering Technician and Civil Engineer were identified as in demand to design and deliver large infrastructure projects across the state.
- Civil Engineering Technician the job tasks include reading/modifying designs and plans and evaluating and verifying the work as completed. These jobs are Also Known As Field Engineer, Civil Designer, Civil Engineering Assistant, Design Technician, or Transportation Engineering Technician

- Civil Engineers are also known as Structural Engineer, Bridge Engineer, Transportation Engineer, Architectural Engineer, and Wastewater Engineer.
- Construction and Building inspectors are also known as Quality Inspector, Architectural Inspector, Bridge Inspector, Building Inspection Engineer, or Energy Auditor. A credential is valued by some employers for this job. For Energy Auditors, the BPI EA or BA (<https://www.bpi.org/certified-professionals/energy-auditor>) certifications are valued. An Energy Auditor is responsible for conducting residential energy audits as part of weatherization energy efficiency programs. Primary duties include interviewing clients about their homes, delivering client education regarding energy use, conducting thorough home inspections and documenting the existing condition of each home, running a computer model of pre- and post-energy use, identifying improvements, and building a scope of work according to program guidelines, clearly communicating the scope of work to a crew via written and oral instructions, and keeping accurate paperwork and documentation of each job.
- Construction and Building Inspector, Energy Efficiency Tech, and First-Line Supervisors of Mechanics, Installers, and Repairers: Training opportunities exist, including certifications, if you join the Weatherization Assistance Program network.
- Electrical and Electronic Engineering Technician: A certification could be expected for this job, such as a Journeyman certification from the state of Colorado, Electronics Technicians Association certification, or the International Society of Certified Electronics Technicians certification.

- **Surveying and Mapping Technicians:** Surveyors and Surveying Technicians often work as a small team to prepare for a bigger construction project. Both jobs are in high demand in the Construction and Broadband industries. Jobs as Field Stakers are sometimes available on big construction projects. It helps to have previous construction experience as well as experience reading construction plans. Surveying jobs are evolving, incorporating technology like rovers, GIS, and GPS.
- **Surveyors:** Surveyors and Surveying Technicians often work as a small team to prepare for a bigger construction project. Both jobs are in high demand in the Construction and Broadband industries. Surveying jobs are evolving, incorporating technology like rovers, GIS, and GPS.
- **Architectural and Civil Drafters:** The need for CAD expertise is high in many industries, including Construction projects that could impact our natural resources. Drafting jobs are evolving, incorporating technology like rovers, GIS, and GPS.

Building and Infrastructure with Skilled Trades

- **Construction Laborer, Apprentice, and Assistant** can work in the service industry, such as in apartment maintenance. While using a lot of the same skills as constructing buildings, these jobs often build a diverse set of skills because you could work on different types of repairs on different days. Remodeling existing buildings is an additional opportunity. There are many training and pre-apprenticeship programs to prepare you for a job in Construction. Many are free!

- Heavy and Tractor-Trailer Truck Drivers: getting a CDL is a good starting point with many Transportation and Construction employers seeking CDL drivers. A CDL can be a great starting point that leads to owning your own truck and running a business or operating heavy equipment (potentially including a CDL Class A endorsement) in the Construction industry.

Broadband Infrastructure

- Surveying and Mapping Technicians are also known as Locator, Field Staker, Geospatial Analyst, Photogrammetric Technician, and Stereoplotter Operator.
- Architectural and Civil Drafters are also known as Architectural Designer, Civil Drafter, Computer-Aided Design Designer (CAD Designer), Computer-Aided Drafting and Design Drafter (CADD Drafter), and Drafting Technician.
- Flagger and Crossing Guards are also known as Construction Flaggers, Traffic Control, Road Crossing Guards, and School Crossing Guard.
- Telecommunications Equipment Installers and Repairers are also known as Fiber Optic Technician, Telecommunications Technician, Broadband Technician, Field Technician, and Outside Plant Technician.
- Telecommunications Equipment Installer and Repairer and Radio, Cellular, and Tower Equipment Installer and Repairer: Aerial towers, underground, outside, and indoors - these jobs are needed in a variety of locations.
- Safety Leads are also known as Occupational Health and Safety Specialist, Industrial Hygienist, Chemical Hygiene Officer, Safety Consultant, and Safety Officer.

Construction & Infrastructure Critical Occupations

In the Talent Pipeline Report labor market projections are utilized to identify the “Top Jobs” in Colorado. These jobs meet three criteria; projected high net annual openings; above average growth rate over 10 years; and a good wage. A detailed description of these criteria and a complete list of top jobs can be found in the annual Talent Pipeline Report. Top jobs provide the quantitative base for career pathway maps and tagged as “op Jobs” in My Colorado Journey.

Critical Occupations do not meet all three criteria for a top job however, they are identified by the industry as occupations for which the industry may be facing shortages; have difficulties in hiring or retention; or are occupations needed for a comprehensive career pathway map. The following jobs received votes for Critical Occupations within the industry.

- Construction Laborer, Apprentice, Assistant and Operating Engineer, Equipment Operator, and Compliance Manager were identified as in demand on big infrastructure construction projects as well as maintaining infrastructure, such as at the Colorado Dept of Transportation (CDOT).
- Flagger and Crossing Guard: There is a high need for flaggers on big infrastructure construction projects. This is a great way to begin a career in construction.
- Surveying and Mapping Technicians are in high demand in the Construction and Broadband industries.
- Safety Leads were identified as Critical Occupations within the Broadband industry.

Construction & Infrastructure Competencies

The following items were identified as being valued by employers. A competency is the capability to apply a set of related knowledge, skills, and abilities to successfully perform functions or tasks in a defined work setting. Competencies often serve as the basis for skill standards that specify the level of knowledge, skills, and abilities needed for success, as well as potential measurement criteria for assessing competency attainment. My Colorado Journey presents competency information to students and job seekers to help them prepare for success in a job and career.

- The five most common competencies identified across Construction & Infrastructure occupations are communication, reading, problem solving and decision making, mathematics, and having the physical abilities to complete the work.
- Math skills are important to understand elevation changes and site maps for Surveyors and Architectural and Civil Drafters.

Construction & Infrastructure Certifications Valued

The following certifications were identified as valued by employers:

- Landscape Architect: A Landscape Architect License (<https://dpo.colorado.gov/LandscapeArchitects/Applications>) is highly valued by some employers.
- Surveyors: Some jobs require a Professional Land Surveyor (<https://dpo.colorado.gov/AES/LandSurveyorApplications>), which includes two years as a Land Surveyor Intern.

- Safety Lead: The Registered Environmental Health Specialist (<https://www.neha.org/professional-development/credentials/rehsrs-credential>) certification is valued by employers. A Certified Industrial Hygienist (<http://www.abih.org/about-abih/cih-caih>) is valued for some jobs by some employers.

Agriculture & Natural Resources Industry

This year 2022-2023, we created new industry pathways in Agriculture & Natural Resources. The following overview information was identified by employers, public partners, the Colorado Workforce Development Council, the Colorado Community College System, Career and Technical Education partners, and from the Office of Economic Development & International Trade. These new industry pathways are published on [My Colorado Journey](#). These published pathways present information collected and edited as “tidbits” to students and job seekers. This is intended to encourage a deeper exploration of occupations in the industry. The following “tidbits” are presented on My Colorado Journey based on discussions with industry employers and public partners from July 2022 to June 2023.

- Abundance: Colorado has a strong Agricultural heritage and abundant natural resources, as well as great depth in natural and organic foods, craft beverages, and great restaurants using local produce
- Significant: Agriculture in Colorado contributes \$47 billion annually to our economy and employs more than 195,000 people.
- Connection: The Agriculture and Natural Resources industry is linked with several other key industries including hospitality, tourism, energy,

manufacturing, and bioscience because of the similarity in some production processes, raw materials used, and environmental impact.

- Specialized: There are a wide variety of specialized agriculture products in Colorado, created on farms, ranches, and in greenhouses as well as leveraging our Natural Resources. Colorado's forests and farms can also provide a helpful carbon sink, reducing GreenHouse Gases.

Agriculture & Natural Resources Pathways

The newly developed and published Agriculture & Natural Resources career pathways present information collected and edited as “tidbits” to students and job seekers. This is intended to encourage a deeper exploration of occupations. The following “tidbits” are presented on My Colorado Journey based on discussions with industry employers and public partners from July 2022 to June 2023.

Animal Systems

- Colorado is a national leader in livestock animal care and productivity.
- Colorado is a Top 5 state in raising cattle and packing/processing beef with 2.7 million head of cattle in the state. We also have strong dairy, poultry, sheep, and hog industries.
- What types of organizations do you work for? Many ranches are owned/run by small business owners, but there are also jobs with corporations (such as in livestock production and supply) and with government agencies.
- Who likes to work in this industry? Those that enjoy the outdoors and love to help things grow and see land flourish. While some have grown up on a farm

or in rural areas, there is also a growing number of people getting into the industry that grew up in a city.

Plant Systems

- Colorado grows a wide variety of plants, providing many of the fruits and vegetables in our stores while also being used to make products such as clothing, beer and wine.
- Colorado annually exports about \$2 billion in agricultural products, giving people around the world a taste of Colorado.
- What types of organizations do you work for? Many farms and landscaping companies are run by small business owners, but there are also jobs with corporations (such as in farm supplies/implements), with government agencies and utilities companies.
- Who likes to work in this industry? Those that enjoy the outdoors and love working with animals. While some have grown up on ranches or in rural areas, there is also a growing number of people getting into the industry that grew up in a city.

Natural Resources Systems

- These jobs manage Colorado's abundant water, land, wildlife, forests, wildland fire and the use of natural resources through parks and recreation. A deeper dive on each of these areas is available at Green Pathways (<https://greenpathways.org/career-clusters>).
- There is a shortage of workers for many jobs in this pathway, including Foresters and a wide variety of jobs

<https://prezi.com/view/BN2PSJY21Z4pk11TWGry/>) fighting wildland fires.

- What types of organizations do you work for? Many Natural Resources jobs are with federal, state or local governments and institutions of higher education, but there are also corporations that create products based on the natural resources and non-profit organizations focused on the appropriate use of natural resources. In addition, you can work in a variety of settings – from offices, laboratories and museums to parks and forests.
- Who likes to work in this industry? Those that enjoy the outdoors and want to see it thrive. The diverse jobs are being filled by a more diverse workforce that have the opportunity to work in a field that fits their passion.

Environmental Systems

- Environmental jobs support many different industries as they reduce their impact on the environment, such as Energy, Utilities, Transportation, Construction, and Agriculture.
- Large infrastructure investments are being made across Colorado, significantly increasing the need for skilled workers to manage the impact on our Natural Resources.
- What types of organizations do you work for? Some Environmental Systems jobs are with federal, state or local governments, but there are a wide variety of corporations that are constructing or leveraging natural resources in an environmentally sensitive manner.
- Who likes to work in this industry? Those that want to develop a deep understanding of how water, forests, wildlife and other natural resources

thrive and then implement solutions to protect them.

Agribusiness and Technical Support

- Use your business and technical skills to help bring good, affordable and nutritious food to our tables or protect our natural resources.
- There are many business opportunities supporting the journey of agriculture products from farms, ranches, feedlots, or dairies to consumers.
- What types of organizations do you work for? There are many small businesses and large corporations supporting farms, ranches, feedlots, or dairies and the processing and shipping of agriculture products. There are also many non-profit and government organizations with business-minded people protecting our agriculture and natural resources.
- Who likes to work in this industry? These jobs need the same business skills as other industries, but a job in Agriculture uses those skills in organizations that create our food and protect our animals and environment.

Agriculture & Natural Resources Occupations

The published Agriculture & Natural Resources occupations present information collected and edited as “occupational summaries” to students and job seekers. The following “occupational summaries” are presented on [My Colorado Journey](#) based on discussions with industry employers and public partners from July 2022 to June 2023.

Animal Systems

- Veterinary Technologists and Technicians: Vet Techs operate under the supervision of a veterinarian.
- Animal Caretakers are also known as Animal Care Giver (ACG), Kennel Attendant, Kennel Technician, Pet Groomer, and Zookeeper. Some of these jobs focus on keeping livestock healthy and growing on farms/ranches or in a feedlot.
- Agriculture Equipment Operator: Many equipment operators begin to learn how to maintain the equipment, leading to a full or part-time job as a mechanic. Many Future Farmers of America programs help students learn/practice how to use agriculture equipment.
- Agriculture Technician: By analyzing data gathered from sensors, tractors and satellites, today's farmers are able to track crop health, make planting decisions and guide fertilizer use to improve the efficiency of their businesses. The trend towards precision agriculture is expanding the use of technologies such as GIS, drones, and satellite data.
- Agriculture Inspector: These jobs help identify the quality of the food we eat. Think Grade AA! Some of these jobs will inspect the safety of agriculture products for the government while others will work with farmers/ranchers/businesses to create healthy products.
- Animal Scientist: Ag Extension offices employ many Animal Scientists that support ranchers, feedlots, and dairies on the health/safety of their animals. Animal Scientists conduct important research to help ranchers prevent

disease, improve the health of their animals, and improve the safety of the food produced.

- Farming, Fishing, and Forestry Supervisor and Farmer, Rancher, and Other Agricultural Manager: Farmers and Ranchers are small business owners with diverse skills in animal/plant care and production, land management, food safety, etc. There are also Agriculture Supervisors and Managers with leadership roles running large farm, dairy or ranch operations and even more urban horse operations with a leader that runs riding classes and boarding operations. There are a wide variety of specialized agriculture products in Colorado, created on farms and ranches and in greenhouses.
- Veterinarian: Vets can be a generalist (which is often needed in rural communities) or a specialist in areas such as small/large animals, horses, and livestock. Education loan repayment programs exist for vets that work in certain parts of the state, such as rural areas where there is a shortage of vets. Vets can own their own practice, work for a corporation (such as in livestock production), work for the government, or for non-profit organizations (such as to address animal cruelty).

Plant Systems

- Pesticide Handler, Sprayer, and Applicator, Vegetation: Some of these jobs will be in cities (such as lawn/tree care) and some will be on farms helping crops grow.
- Soil and Plant Scientist: Ag Extension offices employ many Soil and Plant Scientists that support farmers on the health/safety of their produce. Soil and Plant Scientists use their knowledge to find out which crops grow best in

which soils, what fertilizers to use, the best methods of plowing and planting, and ways to improve the safety of the food produced. These jobs often have a good mix of being in a lab or in the field.

- Arborist: You can advance to Master Arborist, Registered Consulting Arborist, begin to sell services to customers, and/or start your own business, increasing your pay and responsibility. Arborists are valued in many industries: municipal government (in urban forests/parks), the private sector (improving plant health), utilities (clearing trees from electrical lines), and natural resources (forest health and fire mitigation).
- For Landscape Architect, Forest and Conservation Technician, Forester, Conservation Scientist, and Surveyors: A lot more information, including opportunities to explore jobs and gain experience, are at Green Pathways (<https://greenpathways.org/career-clusters>) under "The Field of Forestry" and "The Field of Land Management".

Natural Resources Systems

- Firefighter: Information about wildland firefighting, including opportunities to explore jobs and gain experience, are at Green Pathways (<https://greenpathways.org/career-clusters>) under "The Field of Forestry".
- Fishing and Hunting Worker: If you love fishing and hunting, you can prepare for this job by increasing your knowledge of the business side of what you already enjoy doing.
- Forest and Conservation Worker : A lot more information, including opportunities to explore jobs and gain experience, are at Green Pathways (<https://greenpathways.org/career-clusters>) under "The Field of Forestry".

Visit the Society of American Foresters

(<https://careercenter.eforester.org/jobs/>) for a listing of forestry jobs available at private companies and USAJOBS.gov (<https://www.usajobs.gov/>) for federal government jobs.

- Forest and Conservation Technician: You can prepare for this job by working with the Conservation Corps (<https://rmconservancy.org/work-with-us/conservation-corps/>). Forestry jobs include recreation specialists, fire and fuels managers, environmental/land use planners, and conservation, watershed, and wildlife managers.
- Forester: There are opportunities to advance to managing an entire national forest! Forestry jobs include recreation specialists, fire and fuels managers, environmental/land use planners, and conservation, watershed, and wildlife managers.
- Fish and Game Warden: A lot more information, including opportunities to explore jobs and gain experience, are at Green Pathways (<https://greenpathways.org/career-clusters>) under "The Field of Wildlife and Fisheries".

Environmental Systems

- Hydrologic Technician: A lot more information, including opportunities to explore jobs and gain experience, are at Green Pathways (<https://greenpathways.org/career-clusters>) under "The Field of Water Management". Water management applies physical, chemical and biological sciences along with math, technology, engineering, economics, and law to make decisions about both water quality and quantity.

- Environmental Scientist/ Specialist: One focus of these jobs is protecting the watershed from disruption or pollution, nourishing our agriculture production and natural resources and providing clean drinking water. A lot more information, including opportunities to explore jobs and gain experience, are at Green Pathways (<https://greenpathways.org/career-clusters>) under "The Field of Wildlife and Fisheries". You could research the status and distribution of animal populations or animal habitat requirements, putting into practice solutions that improve fish and wildlife populations.
- Hydrologist: Water ownership, use, and conservation is a critically important topic in Colorado - mountain snow runoff must be balanced for agriculture, residential, and industrial usage. Managing stormwater is a critical part of the design of a big construction project and some employers are struggling to find Hydrologists for this work. A lot more information, including opportunities to explore jobs and gain experience, are at Green Pathways (<https://greenpathways.org/career-clusters>) under "The Field of Water Management".
- Biologist: These jobs are required to understand and mitigate the potential impacts on some construction projects.

Agribusiness and Technical Support

- Farm Equipment Mechanic and Service Technician: Some rural Community Colleges have Farm Equipment Mechanic programs.

Agriculture & Natural Resources Critical Occupations

In the Talent Pipeline Report labor market projections are utilized to identify the “Top Jobs” in Colorado. These jobs meet three criteria; projected high net annual openings; above average growth rate over 10 years; and a good wage. A detailed description of these criteria and a complete list of top jobs can be found in the annual Talent Pipeline Report. Top jobs provide the quantitative base for career pathway maps and tagged as “Top Jobs” in My Colorado Journey.

Critical Occupations do not meet all three criteria for a top job however, they are identified by the industry as occupations for which the industry may be facing shortages; have difficulties in hiring or retention; or are occupations needed for a comprehensive career pathway map. The following jobs received votes for Critical Occupations within the industry.

- Arborists were identified as Critical Occupations in the Landscaping industry.
- Foresters were identified as Critical Occupations in the Natural Resources industry.

Agriculture & Natural Resources Competencies

The following items were identified as being valued by employers. A competency is the capability to apply a set of related knowledge, skills, and abilities to successfully perform functions or tasks in a defined work setting. Competencies often serve as the basis for skill standards that specify the level of knowledge, skills, and abilities needed for success, as well as potential measurement criteria for assessing competency attainment. [My Colorado Journey](#) presents competency information to students and job seekers to help them prepare for success in a job and career.

- Feedback from employers identifies the following competencies for Landscaping and Groundskeeper jobs (such as Landscaping and Groundskeeper Worker; Pesticide Handler, Sprayer, and Applicator, Vegetation; Tree Trimmer and Pruner; Arborist; and Landscape Architect):
 - Love outdoors and physical work and okay with heights: Part of the joy of this job is being outdoors.
 - Being safety-minded and having attention to detail: Working with equipment safely requires focus.
 - Problem Solving
 - Teamwork
 - Math/Science/Physics: The science of plant healthcare and calculations/understanding of where a tree will fall are practical uses of this knowledge.
 - Mechanically minded: Machines are an integral part of the job, as is being able to drive, operate, and fix them.

- Good communication and teamwork skills were identified as important for most Natural Resources jobs (such as Forest and Conservation Worker and Forester).

- Environmental Science and Protection Technician/ Inspector, Environmental Scientist/ Specialist, and Environmental Engineering Technician: Effective communication, such as writing reports and presenting ideas, is important to communicate research and findings.

- Effective communication, such as writing reports and presenting ideas, is important to communicate research and findings for Hydrologic Technician, Conservation Scientist, and Hydrologist.

Agriculture & Natural Resources Certifications Valued

The following certifications were identified as valued by employers:

- Veterinary Technologists and Technicians: You will need a Veterinary Technician license (<https://dpo.colorado.gov/Veterinary/Applications>) that includes a certification (<https://www.cacvt.org/credential-by-exam>) from the Colorado Association of Certified Veterinary Technicians. You will need to complete a Veterinary Technician Associate's degree program accredited by the American Veterinary Medical Association (<https://www.avma.org/education/center-for-veterinary-accreditation/veterinary-technology-programs-accredited-avma-cvtea#colorado>).
- Veterinarian: You will need a Veterinarian license (<https://dpo.colorado.gov/Veterinary/Applications>) that includes passing the North American Veterinary Licensing Examination. A Doctor of Veterinary Medicine from a school accredited by the American Veterinary Medical Association (AVMA) is required.
- Pesticide Handler, Sprayer, and Applicator, Vegetation: One of 3 pesticide certifications (<https://ag.colorado.gov/qualified-supervisor-certified-operator-private-applicator-licensing-information>) is required. Start as a Qualified Applicator and move to Supervisor or Operator.

- Tree Trimmer and Pruner; Pesticide Handler, Sprayer, and Applicator, Vegetation; Landscaping and Groundskeeper Worker: A CDL Class B with Air Brake certification is not required, but it is valued by employers, even providing additional opportunities, because of the use of equipment on the job.
- Arborist: Journeyworker Arborist and ISA Certified Arborist (<https://www.isa-arbor.com/Credentials/Types-of-Credentials/ISA-Certified-Arborist>) credentials are valued.
- Landscaping and Groundskeeper Worker and Tree Trimmer and Pruner: No previous work experience is required. Without experience, some employers value the completion of this free safety course (<https://freecourses.tcia.org/>) to demonstrate your interest.
- For Tree Trimmer and Pruner, Landscaping and Groundskeeper Worker and Arborist, more information about careers and certifications is available from TCIA (https://www.tcia.org/TCIA/TCIA/Education_Events/Education/Career_Pathways.aspx) and ISA (<https://www.isa-arbor.com/certification/benefits/careerpaths>) both of which are valued by employers. A Certified Treecare Safety Professional (CTSP) is an example of a valued certification.

Agriculture & Natural Resources Work Experience and Education

The following work experience and/or education were identified as valued by employers:

- Environmental Science and Protection Technician/ Inspector: An Associate's degree is expected for most Natural Resources jobs, but some Public Health jobs expect a Bachelor's degree.
- Environmental Scientist/ Specialist: A Bachelor's degree is expected for most Natural Resources jobs, but some Public Health jobs expect a Master's degree.
- Forester: No previous work experience is required, though experience as a Forest Technician or with the Conservation Corps (<https://rmconservancy.org/work-with-us/conservation-corps/>) is valued. Bachelor's degrees are required, with some jobs requiring a degree from a program certified by the American Society of Foresters.
- Forest and Conservation Technician: No previous work experience is required, though similar experience is valued, such as on a trail crew, campground maintenance or as a wildland firefighter. This experience is valued when looking for a permanent job.
- Soil and Plant Scientist: Most have at least a Bachelor's degree in biology, chemistry, agronomy, engineering or environmental studies.
- Landscaping and Groundskeeper Worker: Start here and advance to Tree Trimmer or Arborist through an apprenticeship. Search (<https://socgov13.force.com/apprenticeshipdirectory/s/>) for those.
- Tree Trimmer and Pruner and Arborist: Become a Tree Trimmer or advance to Arborist through an apprenticeship. Search (<https://socgov13.force.com/apprenticeshipdirectory/s/>) for those. Many connect to (<https://www.frontrange.edu/programs->

[courses/apprenticeships/students/arborist.html](https://www.frontrange.edu/courses/apprenticeships/students/arborist.html)) at Front Range Comm College.

Summary and Opportunities

Construction & Infrastructure and Agriculture & Natural Resources are two essential industries in Colorado with opportunities that span and overlap additional industries. Pathways work completed in 2022-2023 served to update construction pathway information previously published on MyColoradoJourney with infrastructure pathways, and add new industry pathways for agriculture & natural resources.

While the majority of top jobs and related information in Construction & Infrastructure remained consistent, important new information related to infrastructure and broadband occupations was added to reflect current and future investments and demand in these sectors. Pathway mapping in Agriculture & Natural Resources identified five pathways that represent a broad cross-section of fields and highlight the intersectionality these occupations have in other industries such as business and advanced manufacturing. Several of the occupations in this year's report can be linked to climate climate action and are tagged as "green jobs".

Beyond presenting quantitative data, stakeholder feedback was essential in accurately representing pathways, occupations, competencies, certifications, work experience, education, and critical occupations, in a qualitative and meaningful way for students and job seekers.

Opportunities remain in the following areas:

- Promoting these career pathways to students and job seekers

- Building connections between funding, legislation, and employer demand for talent
- Mapping top job and critical occupation hiring demand to education and training program availability

We would like to thank our public and private sector stakeholders for their invaluable contributions to the creation of these Colorado, industry-driven, competency-based career pathways. Together we are enabling our education, training, and workforce systems to be attuned and responsive to the needs of the labor market in order to ensure businesses have access to an appropriately skilled talent pipeline and prepare students and workers with the skills and credentials they need for meaningful careers.