



CAREER PROFILE

Surveyor

JOB OUTLOOK²

Overall employment of surveyors is projected to grow slower than the average for all occupations. Surveyors will continue to be needed for tasks such as identifying and legally certifying boundaries, as well as preparing land for mining and construction projects. However, the use of drones and other innovations will increase productivity and limit employment growth in this occupation. The employment outlook for surveyors may also vary with economic trends. Surveyors are in demand during periods of demand for real estate, construction, and resource extraction, but less so when these activities slow down.

SALARY RANGE¹

\$61,640 – \$73,220

WHO ARE THEY?^{1,2}

Surveyors are precision-minded professionals who conduct research and use measurement tools to exactly locate key features of areas of land and water on the Earth's surface. They are able to utilize sophisticated instruments to conduct precise measurements and collect data about places. These innovations include Global Positioning Systems (GPS), which identify the precise location of reference points, and Geographic Information Systems (GIS), which facilitate visual presentation of spatial information. Surveyors are able to synthesize information they collect to generate maps and reports that might be used to create legal property documents, such as deeds and leases, as well as identify features that might affect construction or mining projects. They have the physical stamina to walk long distances and work long hours outdoors regardless of climate conditions.

WHAT DO THEY DO?^{1,2,3}

Surveyors make careful and precise measurements of the Earth's surface to determine property boundaries and collect data used for construction projects, mapmaking, and engineering tasks, such as mining and laying pipelines. While most of their work is completed in the field and requires travel, surveyors also conduct background research and analyze land and survey records and land titles to identify current and previous boundary lines. Once on site, surveyors use reference points to pinpoint the precise locations of important features, such as drilling and well locations. They measure distances and angles between locations on, above, and below the surface of the Earth, record survey results, and ensure the accuracy of their work. After they make measurements and compile information, surveyors create maps, reports, and plots to present their findings to their clients and government agencies. Agencies will use this work to establish official property boundaries for legal documents, such as deeds and leases. Surveyors also may be called upon to provide expert testimony in court to settle disputes over boundaries and usage rights. Surveyors fulfill a variety of needs in different industries, including defining legal property lines, determining location-related restrictions and parameters for building structures, determining characteristics of bodies of water and shorelines, and mapping mines and pipeline routes.



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EDUCATION/ TRAINING

- Bachelor's degree in surveying, although degrees in related fields such as civil engineering and forestry are also often acceptable.
- Approximately four years of on-the-job training with a licensed surveyor that includes instruction on use of GIS and GPS.

HOW DO I BECOME ONE?¹

Most surveyors will need a bachelor's degree, with coursework that includes training on how to use sophisticated tools like GPS and GIS, as well as math applications for making measurements and compiling data. Some institutions of higher learning offer programs that prepare students to become licensed surveyors. Most states require surveyors to complete four-year apprenticeship programs working with licensed and experienced surveyors. To find success in this career, individuals will need to be detail-oriented, have strong communications skills, physical stamina, time-management skills, and be able to visualize changes to the locations they study. Math skills will be very important.

¹ "Occupational Outlook Handbook." U.S. Bureau of Labor Statistics. <https://www.bls.gov/ooh/architecture-and-engineering/surveyors.htm#tab-2>.

² "What are Gas and Oil Well Surveys?" D.G. Smyth & Co., Inc. <https://smythsurveyors.com/2018/03/what-are-gas-and-oil-well-surveys/>.

³ "Oil & Gas Market" Landpoint. <http://www.landpoint.net/markets/oil-gas/>.