

# Surveying and Mapping Technicians

SOC: 17-3031 • Career Profile Report

## ■ Key Facts

\$51,940

Median Salary

59,400

Employment

+5.0%

Growth Rate

## ■ Requirements & Salary Range

Education: High school diploma

## ■ Automation Risk Assessment

**Low Risk** - 18.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

## ■ Work-Life Balance

**8.6/10** - Excellent work-life balance

## ■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	8.2/10	Investigative	8.8/10
Artistic	6.4/10	Social	5.2/10
Enterprising	5.8/10	Conventional	6.6/10

## ■ Top Skills Required

Communication skills, Decision-making skills, Detail oriented, Physical stamina, Problem-solving skills

### ✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

### ■ Challenges

- Burnout Risk
- Rapid Technological Change

## ■ What They Do

Surveying and Mapping Technicians assist surveyors, cartographers, and engineers in **collecting data and creating maps of the earth's surface**. They use measuring instruments, GPS, and computer software to gather and process geographic information. Their work is critical in construction, land development, engineering, and environmental planning.

This career is well suited for individuals who enjoy outdoor work, precision measurement, and working with technology and geographic data.

## What Do Surveying and Mapping Technicians Do?

These professionals collect, record, and analyze data to support surveying and mapping projects.

Common responsibilities include:

- Measuring distances, elevations, and angles using surveying instruments
- Collecting and verifying geographic and topographic data
- Creating maps, charts, and plots using computer-aided design (CAD) or GIS software
- Assisting surveyors and engineers in construction and land development projects
- Maintaining and calibrating surveying equipment
- Conducting fieldwork in various terrains and environmental conditions
- Ensuring accuracy, completeness, and compliance with regulations

## Key Areas of Surveying and Mapping

Technicians may focus on specific techniques, tools, or project types:

- Land and Boundary Surveys: Collecting data for property lines and land ownership
- Topographic and Geographic Mapping: Creating maps of natural and built environments
- Geospatial Data Analysis: Using GIS and CAD software to process survey data
- Construction and Engineering Support: Assisting with site planning and development
- Equipment Operation and Maintenance: Using total stations, GPS, levels, and other tools

## Skills and Abilities Needed

These professionals combine technical, analytical, and observational skills.

### ***Core Professional Skills***

### ***Personal Qualities That Matter***

## Education and Career Pathway

This role typically requires technical education and field training:

- High School Diploma or GED (minimum): Courses in math, science, and technology
- Technical or Vocational Training: Surveying, mapping, or geographic information systems (GIS)
- On-the-Job Training: Practical experience in surveying, data collection, and mapping
- Certification (optional but recommended): Credentials in surveying, GIS, or mapping technologies
- Continuing Education: Staying updated on technology, software, and surveying methods

## Where Do Surveying and Mapping Technicians Work?

They are employed in organizations involved in land development, construction, and geospatial analysis:

- Engineering and Construction Firms
- Government Agencies
- Surveying and Mapping Companies
- Environmental and Planning Organizations

- Utility and Infrastructure Companies

Work environments include outdoor field sites, offices, and laboratory or mapping facilities.

## Is This Career Difficult?

This career requires technical accuracy, attention to detail, and the ability to work outdoors in varied conditions. Technicians must ensure precise measurements and data integrity.

## Who Should Consider This Career?

This career may be a strong fit if you:

- Enjoy working outdoors and with geographic data
- Have strong technical and analytical skills
- Are detail-oriented and precise
- Can operate specialized surveying and mapping equipment
- Want a career supporting engineering, construction, and environmental planning

## How to Prepare Early

- Take courses in mathematics, physics, and computer technology
- Participate in vocational programs or internships in surveying or GIS
- Gain experience with surveying instruments and mapping software
- Develop skills in data collection, analysis, and visualization
- Explore certifications or advanced training in GIS, CAD, or surveying techniques

**Surveying and mapping technicians support accurate data collection and mapping, enabling effective land development, construction, and environmental planning.**

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Source: <https://www.bls.gov/ooh/architecture-and-engineering/surveying-and-mapping-technicians.htm>