



WHAT IS TRANSPORTATION ENGINEERING?

Transportation engineers are civil engineers with specialized training in transportation who engage in the planning, design, operation, and management of transportation systems. They are responsible for providing safe, reliable, and sustainable means for the movement of people and goods throughout communities and around the world. The transportation system

is a multimodal network of roadways and traffic-control technologies that accommodate travel by motor vehicles, pedestrians and bicyclists; mass transit systems that include subways, light rail and buses; inland waterways and seaports; pipelines; and infrastructure supporting air travel.



JOB PROSPECTS

Transportation engineers find a wide range of engineering job opportunities in private industry and all levels of government. They may also work as transportation planners, and as transportation systems and environmental analysts.

According to the Bureau of Labor Statistics, employment of civil engineers (which includes transportation engineers) forecasts an increase of 6.3% in new civil engineering jobs 2018-2028:

- U.S. News ranked civil engineer (including transportation engineer) as No. 2 in Best Engineering Jobs in 2020
- Bureau of Labor Statistics: 2020 median salary \$86,640
- Unemployment rate 0.9 %

Transportation engineers apply principles of civil engineering, computer science, economics, and behavioral science to understand society’s travel needs and create solutions that promote economic growth while preventing injuries and fatalities caused by vehicle crashes, improving public health by reducing exposure to harmful vehicle emissions and providing safer and more attractive options for active travel, and minimizing harm to environmental resources and the earth’s climate.

Sample job titles: Transportation engineer, transportation planner, traffic engineer, railroad engineer, transportation analyst, transportation specialist, travel demand modeler.



DEGREES OFFERED

- » BS Civil Engineering
- » MS Civil Engineering - Transportation
- » MENG - Transportation
- » PhD Civil Engineering - Transportation

WHAT TYPE OF EDUCATION DO YOU NEED?

- » Jobs in transportation engineering require a bachelor of science degree in civil engineering. Course work includes studies in transportation system design, travel behavior, transportation economics and policy, urban and regional transportation planning, traffic engineering, and environmental analysis.
- » Training in transportation engineering also prepares students for transportation planning, transportation modeling, transportation analyst, and environmental analyst jobs.
- » A graduate degree may be required for job advancement.
- » Many transportation engineers choose to get licensed as a professional engineer by graduating from an



accredited program, earning four years of professional experience and passing both the Fundamentals of Engineering and the Professional Engineering exams.

WHAT WILL YOU DO IN A DAY?

- » Design new roadways, transit systems and other transportation infrastructure for growing communities
- » Design sea ports and freight rail facilities to support global trade
- » Re-design urban and rural streets to encourage walking and bicycling and reduce the risk of traffic crashes
- » Apply new technologies to optimize the flow of traffic in congested urban areas
- » Evaluate and model the environmental and climate impacts of proposed transportation projects and existing transportation systems
- » Forecast future travel behavior and the use of new transportation technologies such as electric and



autonomous vehicles

- » Create plans to maintain the transportation system in a state of good repair