Is a Career in Transportation for You?

The University of Minnesota offers undergraduate and graduate programs to help you start your career in transportation. Look inside for a taste of what’s possible!
Roadway and Bridge Engineering

Common job titles:
Bridge engineer
Chemical engineer
City or county engineer
Civil engineer
Construction manager
Geotechnical or soil engineer
Infrastructure systems engineer
Pavement or materials engineer
Structural analyst or designer
Surveyor

Where you might work:
State or federal department of transportation
City, county, or regional transportation agency

What you might do:
Design the structure of a new bridge
Determine the best pavement mixture for a county road
Develop pavements that last longer
Manage the construction of new roads
Plan harbor needs and maintenance
Prepare specs for a retaining wall or tunnel

At the U of M:
Department of Civil Engineering
Department of Chemical Engineering and Materials Science

“The University of Minnesota provided me with a deep understanding of the fundamentals of engineering as well as real-world examples and mentorships that were key in opening up the door to work in the public sector. As an engineer with the City of Golden Valley, my duties are very diverse. Project management, stormwater management, municipal engineering design, and development plan review are my main day-to-day tasks. There is no greater reward than getting the opportunity to serve the general public and give back to a community!”

– Mitchell Hoeft (BCE ’09), engineer, Golden Valley, MN
Traffic Engineering, Analysis, and Safety

Common job titles:
City or county engineer
Computer scientist or programmer
Electrical engineer
Safety engineer or manager
Traffic engineer
Traffic systems analyst
Transportation engineer or planner

What you might do:
Analyze a problem intersection to reduce crashes
Design a freeway expansion to reduce congestion
Develop signing and striping plans
Forecast travel demand
Plan bus routes and operations
Plan facilities for pedestrians and cyclists
Program the timing of ramp meters

Where you might work:
City, county, or regional transportation agency
State or federal department of transportation
Transportation consulting firm

At the U of M:
Department of Civil Engineering
Department of Computer Science and Engineering
Department of Electrical and Computer Engineering

“My two years of graduate study provided me with a multidisciplinary education and opportunities for leadership, research, and networking. I chose the transportation program at the U of M so I could be involved in the expansion of public transportation networks, and now I have spent the first four years of my career on the consultant team designing a new local light-rail line. Courses in engineering as well as planning provided a smooth transition into a team that works on projects during all phases, from long-range planning through construction.”

– HunWen Westman (MS ‘07), Transportation Planning and Traffic Operations Group, Kimley Horn and Associates, Inc.
**Vehicle Design and Engineering**

**Common job titles:**
- Aerospace engineer
- Automotive engineer
- Computer engineer
- Cognitive psychologist
- Electrical engineer
- Human factors scientist or engineer
- Industrial engineer
- Mechanical engineer
- Safety engineer
- Vehicle dynamics engineer

**Where you might work:**
- Airline or aerospace company
- Energy company
- Insurance company
- Research lab
- Vehicle company

**What you might do:**
- Design electric or hybrid vehicles
- Design engines that get better mileage
- Design a vehicle that drives itself
- Develop technology that prevents crashes
- Evaluate vehicles for safety
- Use a simulator to study driver distraction

At the U of M:
- Department of Aerospace Engineering and Mechanics
- Department of Bioproducts and Biosystems Engineering
- Department of Computer Science and Engineering
- Department of Electrical and Computer Engineering
- Department of Human Factors and Ergonomics
- Department of Mechanical Engineering
- School of Kinesiology

“As a student at the University of Minnesota, I gained valuable experience through my graduate research and student activities. Coming from a recognized program and having had those experiences helped me land the job I wanted in vehicle safety research. I now get the unique opportunity to research cutting-edge safety systems based on vehicle-to-vehicle communication.”

– Shawn Brovold (MS ‘06), product development engineer, Active Safety Research and Innovation, Ford Motor Company
Planning and Policy

Common job titles:
Aviation analyst or planner
Bike planner
City manager
City, town, or regional planner
Community development coordinator
Economist
Geographer
Health specialist or policy manager
Policy/regulatory analyst
Safety coordinator or manager
Transportation planner
Transit director

Where you might work:
State or federal department of transportation
City, county, or regional transportation agency
Nonprofit or advocacy group
Transportation consulting firm

What you might do:
Analyze the economic impacts of a new transit line
Coordinate safety programs and training
Develop bike and pedestrian facilities
Ensure that a project preserves a community’s scenic and historical resources
Organize public meetings and participation
Plan a region’s road or transit system
Promote land use that spurs access to jobs
Promote sustainable land use and development
Plan ways to meet the needs of people who don’t drive

At the U of M:
Department of Applied Economics
Department of Civil Engineering
Department of Geography
Department of Landscape Architecture
Hubert H. Humphrey School of Public Affairs
Urban Studies Program

“While attending the Humphrey School, I worked as a research assistant and met numerous professionals working in transportation, including my current employer. Today, I work for MnDOT as a transportation planner. I work on projects ranging from bicycle parking at Target Field to long-range planning for transit investment in Greater Minnesota to research collaborations promoting nonmotorized transportation.”

– Fay Simer (MURP ’09), transportation planner, Minnesota Department of Transportation
"The city planning program at the Humphrey School gave me the specific skills and knowledge to succeed in planning plus general process, communications, and reasoning skills that are transferable to any field. Those skills prepared me to transition quickly into my current position at a nonprofit advocating for transportation options that reduce oil dependence. I’m doing what I love and I couldn’t have gotten here without the U of M."

– Ethan Fawley (MURP ’09), coordinator, Minnesota Complete Streets Coalition

**Common job titles:**
- Bike planner
- Biofuels or low-carbon fuels specialist
- Carbon offset manager or consultant
- Conservation programs coordinator
- Environmental engineer or program manager
- Forester/arborist
- Hydrologist
- Industrial ecologist
- Landscape architect
- Roadside vegetation specialist
- Sustainability engineer or manager
- Water resources engineer

**What you might do:**
- Design bike and pedestrian facilities
- Develop alternatives to road salt
- Develop biofuels for cold climates
- Evaluate environmental products and processes
- Maintain infrastructure to reduce stormwater runoff
- Monitor air quality and pollution
- Plan a corporation’s environmental strategy
- Recommend plants that thrive along roadsides
- Reduce energy use and greenhouse gas emissions

**Where you might work:**
- City, county, or regional transportation agency
- Energy company
- Environmental agency, department, or consultant
- Nonprofit or advocacy group
- Private company
- State or federal department of transportation
- Transportation consulting firm

**At the U of M:**
- Department Agronomy and Plant Genetics
- Department of Bioproducts and Biosystems Engineering
- Department of Civil Engineering
- Department of Forest Resources
- Department of Horticulture Science
- Department of Mechanical Engineering
- Humphrey School of Public Affairs

www.cts.umn.edu/Education
Supply Chain and Freight Management

Common job titles:
Carrier or fleet manager
Freight operations manager
Economist
Freight research manager
Freight specialist
Industrial engineer
Logistics analyst or manager
Supply chain manager or director
Supply/demand planner
Transportation coordinator

What you might do:
Coordinate shipping with multiple carriers
Find ways to reduce your firm’s carbon footprint
Manage distribution for a global corporation
Negotiate rates and contracts
Oversee inventory and quality control

At the U of M:
Curtis L. Carlson School of Management
Department of Applied Economics
Industrial and Systems Engineering Program
Technological Leadership Institute

Where you might work:
Carrier: truck, rail, ship, barge, airline
Retailer or wholesaler
Transportation consulting firm
State or federal department of transportation

“During my studies at the Carlson School of Management, I was able to make strong connections with my peers and the staff so that I always felt supported. My degree helped me connect with companies and launch my career in exciting directions. I am currently using my triple major in Supply Chain, Operations, and Marketing to support a consulting company that provides supply chain consulting services to companies across the nation.”

– Lisa Luhman (BSB ’09), solution consultant, MEB Consulting
Top ten signs a career in transportation might be for you:

- You like to solve puzzles and problems.
- You like to help people.
- You can’t wait for the latest technology.
- You care about the environment.
- You like learning new things and ideas.
- You think it’s fun to plan your family’s vacation route.
- You like being part of a team effort.
- You wonder why potholes pop up where they do.
- You treasure your collection of toy planes, trains, and automobiles…and bikes, buses, and boats.
- You want to make the world a better place.

For more information:

**U of M Admissions**
Undergraduate: [http://admissions.tc.umn.edu](http://admissions.tc.umn.edu)
Graduate: [www.grad.umn.edu](http://www.grad.umn.edu)

**Earnings and job prospects**
Minnesota Department of Employment and Economic Development: [www.deed.state.mn.us](http://www.deed.state.mn.us)

**Additional transportation-related resources**
Center for Transportation Studies, the focal point for transportation research, education, and outreach at the University of Minnesota

200 Transportation & Safety Building
511 Washington Ave SE
Minneapolis, MN 55455
Phone: 612-626-1077
E-mail: cts@umn.edu
[www.cts.umn.edu/Education](http://www.cts.umn.edu/Education)

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Design: Adam Babel
Editing: Pamela Snopl
Photography: Jonathan Chapman, Matt Miranda, featured alumni
Cover Photography: Erika Gratz, Patrick O’Leary