

Career Profile: Highway Engineer

Highway Engineers plan, design and maintain safe, efficient roads, highways and public transit systems. They specialise in analysing population and growth statistics, traffic patterns and volume to project future requirements. Highway Engineers work closely with government officials and other specialists to help design efficient and safe traffic systems. Highway Engineers also study roadway and embankment design, highway interchanges and the maintenance of facilities such as culverts and overpasses.

Also known as: Transport Engineers

What would my working day look like?

Some of the tasks you may complete are:

- ▶ Work on the research, design and construction phase of highways, roads and public transport systems
- ▶ Investigate and research sites to determine the most suitable site and foundation for the proposed construction project
- ▶ Conduct and oversee feasibility studies
- ▶ Prepare engineering calculations for the design of projects and drafting of plans
- ▶ Organise the delivery of machinery, materials and equipment required
- ▶ Liaise with and advise the client to ensure the proposed construction project suits requirements and purpose
- ▶ Work with other Engineers, Architects, Environmental Scientists and Construction Workers
- ▶ Oversee the construction of the project through to completion
- ▶ Ensure the project fulfils legal and environmental requirements
- ▶ Ensure minimal pollution and wastage because of the project
- ▶ Oversee the testing and commissioning of completed projects
- ▶ Work to government and environmental guidelines when preparing design
- ▶ Use computer software to create 3D models of a project

I might enjoy this job if:

- ▶ I like studying Design and Technology, Geography, Maths, Science, Engineering, Chemistry and Physics
- ▶ I prefer a mixture of working indoors and outdoors
- ▶ Enjoy working with others and can work unsupervised
- ▶ I have good attention to detail
- ▶ I enjoy practical and creative work
- ▶ I can handle stress and stressful situations with a level head and can meet deadlines

Working conditions and hours

You will mostly work in an office but will be required to make site visits during the project and you may be required to consult with external stakeholders on occasion. As a Highway Engineer you can expect to use computer aided design (CAD) software for planning and design of roads and highways and you will also need to be familiar with traffic and software to predict traffic flows. You will generally work full-time (generally 43 hours per week).

How do I become a Highway Engineer?

To become a qualified Highway Engineer, you will need to complete Year 12 to enable entry into a degree program in Engineering, majoring in civil engineering and then completing postgraduate studies in transportation engineering.

Contact individual university engineering schools to check if they have any pre-requisites before selecting your Year 11 subjects and before applying to a program. Your school careers advisor can help you with information on how to enrol at university.

Future pathways and opportunities

Highway Engineers are employed by large or boutique engineering firms, Government agencies, contractors and consultants. Consulting and contracting engineers often travel for their work – both interstate and overseas. You may also like to set up your own consulting firm. With further experience your career could lead you to be the Lead Engineer on a transport project, overseeing Junior Engineers.

Average Pay

Up to **\$1,962** per week

depending on your qualifications and experience.

(Source: Job Outlook)

What skills and personal qualities do I need?

- ▶ Have good oral and written communication skills
- ▶ Able to identify, analyse and solve problems
- ▶ A careful, thorough and accurate approach to work
- ▶ Be able to work as part of a team and on my own unsupervised
- ▶ Be safety conscious and have a mature responsible approach to my work and work colleagues
- ▶ Have good maths and technology skills
- ▶ Good time management skills to meet deadlines



Next Steps

Further information can be found at:

- ▶ Jobs and Skills WA – www.jobsandskills.wa.gov.au
- ▶ The Good Universities Guide – www.gooduniversitiesguide.com.au
- ▶ Job Outlook – www.joboutlook.gov.au
- ▶ Engineers Australia – www.engineersaustralia.org.au/