

Environmental Engineers

A guide for newcomers to British Columbia



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1. Working as an Environmental Engineer

Job Description

Environmental engineers help maintain clean and healthy surroundings through the protection of air, soil, and water quality.

Working as an **Environmental Engineer** you perform the following duties:

- Assess industrial sites to determine if they satisfy environmental quality criteria.
- Design waste-treatment and pollution-control plans.
- Monitor sites and procedures to confirm that private and public operations are in compliance with environmental regulations.
- Design safe solid waste transfer and disposal sites, water distribution and treatment systems, and wastewater collection and treatment systems.
- Recommend procedures to clean up sites that have been contaminated with harmful materials.
- Advise governments or companies of steps necessary to clean up sites and design cost-effective procedures for site remediation.
- Write and evaluate environmental impact statements

Sources:

- WorkBC, Career Profile for Civil Engineers,
<https://www.workbc.ca/careers/2131>
- Career Cruising (profile of environmental engineer)
<http://www.vpl.ca/digital-library/career-cruising>
Available from the VPL Digital Library | Explore our Digital Library page
- ECO Canada, Environmental Engineer Career Profile

Industry Overview

Environmental engineering is a new type of engineering that is related to civil engineering, chemical engineering, environmental sciences, and other related disciplines. People with this job must understand the sustainable – or green – elements related to how a project will affect the environment. Project plans need to address sustainability, the impact of the project on the environment and how it will affect the community where it is being built. Many people in the field design and run waste and water treatment systems. They may work on water filtration plants or sewage treatment systems. Some work in the management of solid waste. They may design composting systems or landfills. Others figure out ways to get rid of or store toxic materials.

Job Outlook in BC

In British Columbia, environmental engineers are considered to be a specialization within the field of civil engineering.

Job prospects for Civil Engineers (NOC 2131)

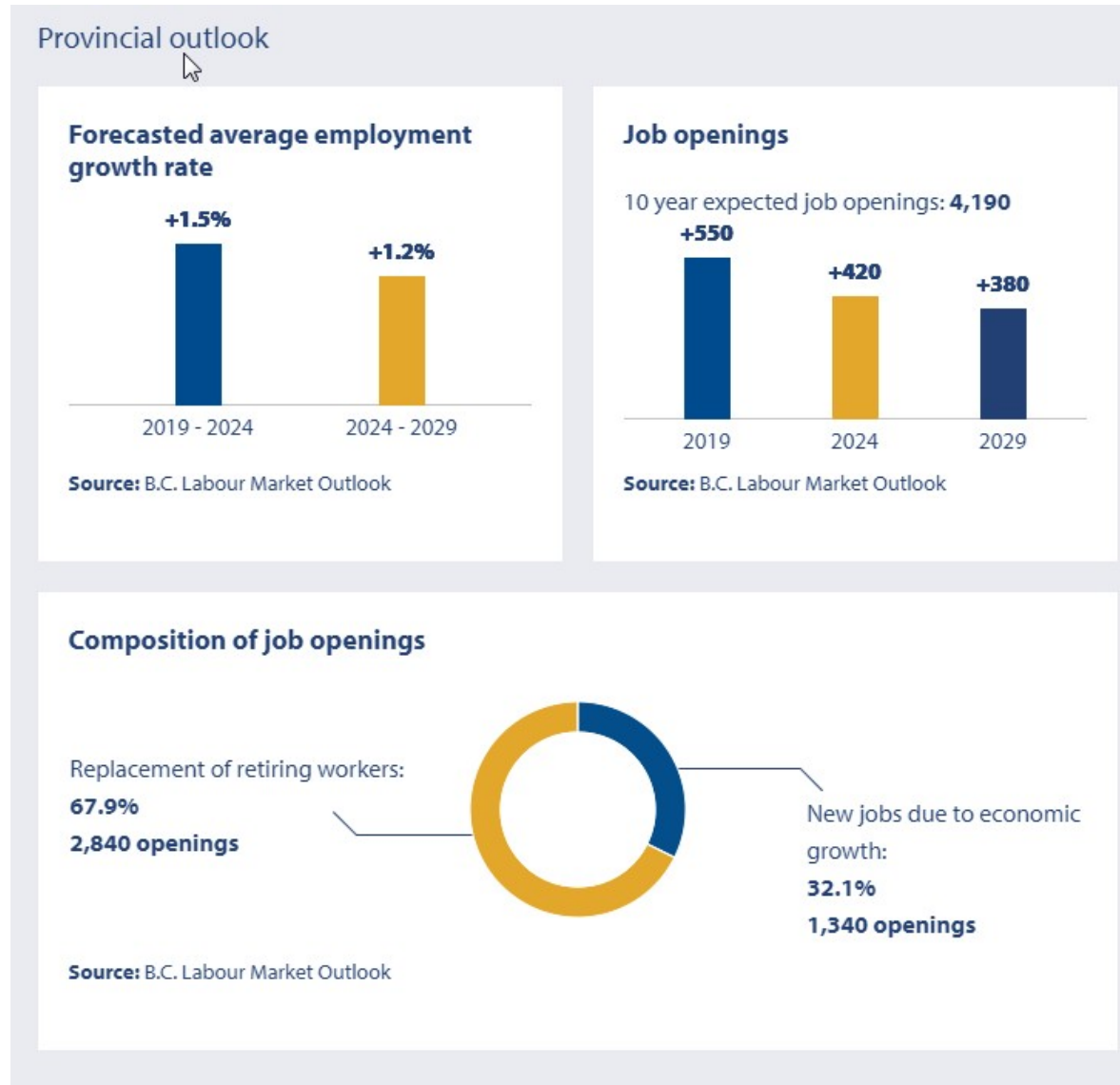


Chart from WorkBC, <https://www.workbc.ca/careers/2131>

For Regional Outlooks, see:

<https://www.workbc.ca/careers/2131#earnings-and-outlook>

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You can learn more about working as an environmental engineer from:

- WorkBC, Career Profile for Civil Engineers,
<https://www.workbc.ca/careers/2131>
- ECO Canada, Environmental Engineer Career Profile
<https://www.eco.ca/training/career-profiles/environmental-engineer/>
- Career Cruising (profile of environmental engineer)
<http://www.vpl.ca/digital-library/career-cruising>
Available from the VPL Digital Library | Explore our Digital Library page

Types of Employers

Environmental engineers work for:

- Federal, provincial/territorial, and municipal government departments
- government agencies
- engineering consulting firms
- companies in resource industries such as forestry, mining, petroleum, and pulp & paper
- environmental companies that deal with problems such as oil spills and toxic chemical leaks
- property development/management companies

Salary

In BC, the median annual salary for civil engineers (including environmental) is \$92,246. Senior engineers or those in management positions may earn more. Experience and level of responsibility can affect income. Education is also a key factor. People who have a graduate degree tend to have higher earnings than those with a Bachelor's degree. Income varies according to the employer – if you work for the government or large private companies you may earn more than others.

In addition to your salary, full-time engineers often receive benefits such as pension plans, dental coverage, sick leave, and paid vacations.

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Job Bank Canada provides average salaries in BC regions where you can expect to earn:

Hourly Wages – Civil Engineers, including Environmental Engineers NOC 2131

Community/Area	Wages (\$/hour)		
	Low	Median	High
British Columbia	30.22	44.23	64.42
Cariboo Region	28.00	42.86	56.41
Kootenay Region	30.22	44.23	64.42
Lower Mainland–Southwest Region	30.77	44.23	64.42
Nechako Region	N/A	N/A	N/A
North Coast Region	N/A	N/A	N/A
Northeast Region	N/A	N/A	N/A
Thompson–Okanagan Region	30.22	44.23	64.42
Vancouver Island and Coast Region	29.81	40.00	67.58
Canada	25.48	41.03	62.98

Source: Job Bank, Wage Report http://www.jobbank.gc.ca/wage-outlook_search-eng.do?reportOption=wage

In its **2016**** *Report on Members' Compensation and Benefits*, Engineers & Geoscientists British Columbia (formerly APEGBC) provides these salary figures:

	Mean	Lower Quartile	Median	Upper Quartile
Engineering Consulting – Environmental	\$92,399	\$65,000	\$75,000	\$115,500
Bachelor's degree – Base salary – Environmental Engineer	\$87,446		\$85,000	

***latest edition available*

Source: Engineers & Geoscientists British Columbia <https://www.egbc.ca/Careers/Compensation-Survey>

Engineers work between 8 and 10 hours a day, 40 to 50 hours a week. Most engineers have regular schedules. They work 8 to 10 hours a day, and 40 to 50 hours a week. They may have to put in longer hours in a crisis situation.

2. Skills, Education and Experience

Skills

- Critical thinking and problem solving
- Oral communication and public speaking
- Planning and organizing
- Team project work
- Project management
- Proposal writing and financial management
- Committee work- industry ethics

Education and Experience

- Bachelor's degree in environmental engineering or related engineering discipline is required
- Master's degree or doctorate in a related engineering discipline may be required

Qualifications

This occupation is regulated in British Columbia

If you are working as an engineer you must either:

- be registered by the Engineers & Geoscientists British Columbia EGBC, <https://www.egbc.ca/> (formerly the Association of Professional Engineers &

Geoscientists BC -APEGBC) in order to practise as a *Professional Engineer (P.Eng)*

OR

- work under the direct supervision of someone who is registered as a Professional Engineer in BC

Licensing Requirements for Civil Engineers

You must be licensed by **Engineers & Geoscientists British Columbia** (formerly APEGBC) to use the title “Engineer.” This allows you to approve engineering drawings and reports and to practise as a professional engineer (P.Eng.).

Registration requires:

- graduation from an accredited educational program - four year full-time bachelor’s degree
- four years of supervised work experience in engineering
- successfully passing the professional practice examination
- completion of the law and ethics seminar

Source:

<https://www.egbc.ca/Registration/Individual-Registrants/How-to-Apply/Professional-Membership-and-Licence/Engineer-First-Time-Applying-in-Canada>

For more information:

- **Engineers & Geoscientists British Columbia - Become a Member**
<https://www.egbc.ca/Registration/Individual-Registrants/About>
- **Engineers & Geoscientists British Columbia Online Resource for Internationally Trained Engineers and Geoscientists :**
 - Self-assessment tool: <http://engtechnbc.ca/>
 - Job Mentoring Programs:
<https://www.egbc.ca/For-Members/Mentoring-Program>
- **Engineers Canada: A Roadmap to Engineering in Canada.**
<http://newcomers.engineerscanada.ca/>

- **Engineers Canada:** Information for Internationally Trained Engineers
<https://engineerscanada.ca/become-an-engineer/for-internationally-trained-engineers>
- **International agreements** between professional engineering associations
<http://www.engineerscanada.ca/mobility-international>

3. Finding Jobs

You'll find job advertisements in local newspapers, trade journals, and electronic sources, as well as through professional associations' publications.

Local Newspapers

You can look at the *Vancouver Sun & the Province* at Vancouver Public Library for free. Check the job postings daily, the careers section in the *Vancouver Sun* on Wednesdays and Saturdays and in *The Province* on Sundays.

Job White Pages

Available in print at the Central Library or online at

JOB Freeway.com

<http://www.vpl.ca/digital-library/jobfreewaycom>

Available from the VPL Digital Library | Explore our Digital Library page

NOTE: Access at VPL locations only

Online Job Postings

- **Indeed.com**
http://ca.indeed.com/advanced_search
- **Engineer Jobs.com**
<https://www.engineerjobs.com/jobs/canada/british-columbia/>
- **TechJobs.ca**
<https://www.techjobs.ca/en/>
- **Civic Jobs.ca (municipal jobs)**
<https://www.civicjobs.ca/>
- **Neuvoo.ca** <http://neuvoo.ca>

- **BC JobConnect**
<https://www.bcjobconnect.ca> **must have permanent resident **number****
newcomers can post their skills, education and work experience to
BC employers looking for workers

Professional Associations' Career Resources

- **Association of Consulting Engineering Companies British Columbia (ACEC-BC)** <https://acec-bc.ca/resources/>
- **Engineers & Geoscientists British Columbia Employment Centre**
<https://www.egbc.ca/Careers/Career-Listings>
- **Engineering Institute of Canada**
<http://www.engineeringcareers.ca/>

Identifying the Right Position

When you browse job advertisements, you'll find a wide range of different job titles that are relevant.

For Environmental Engineers, look for these related job titles:

- Environmental Consultant
- Municipal Engineer
- Water and Sewer Engineer
- Irrigation and Drainage Engineer
- Ocean Engineer
- Pollution Control Engineer
- Public Health Engineer
- Systems Treatment Engineer

Creating a List of Potential Employers

You can use directories to produce lists of employers in Vancouver or the Lower Mainland. Contact them directly to find out if they're hiring.

- **BC Environment Industry Association Members Directory**
<https://bceia.com/membership-directory/>
- **Association of Consulting Engineering Companies British (ACEC-BC),**
Directory of Member Firms
https://www.acec.ca/business_search.html
- **Engineers & Geoscientists British Columbia**
<https://www.egbc.ca/Registrant-Directory>
- **Business in Vancouver. Book of Lists.**
Biggest Engineering Firms in BC
Available at the Central Library 338.9711 B97b and online at
<http://www.biv.com/lists>
- **Canadian Construction Association Membership Directory**
<https://www.cca-acc.com/membership/corporate-members-directory/>
- **Reference Canada**
<http://www.vpl.ca/digital-library/reference-canada>
Click on "Start Search" beside Canadian Businesses, then select the "Advanced Search" button. Select both "Keyword/SIC/NAICS" under Business Type and "City" under Geography. In the top search box enter "***environmental engineering***" and click SEARCH. Select the appropriate headings. Lower down, select the Province, choose the cities, and click the "View Results" button.

Available from the VPL Digital Library | Explore our Digital Library page

NOTE: You can access this database from a Library computer. If you are using a computer from outside the Library, you will need a Vancouver Public Library card to login to this database. After clicking on the database name, you will be asked to enter your library card number and PIN (usually last four digits of your telephone number).

4. Applying for a Job

In Canada, employers usually expect to receive a resume or curriculum vitae and a cover letter that identifies the position you are applying for and summarizes your relevant experience.

Use the library catalogue, <http://vpl.bibliocommons.com/> to find books on writing resumes and cover letters specific to your industry.

To learn about applying for jobs in Canada, use the following pathfinders which are available in print at the Central Library or online at <http://skilledimmigrants.vpl.ca/>.

- **Writing Resumes and Cover Letters**
Go to <http://skilledimmigrants.vpl.ca>
[Search Writing Resumes and Cover Letters]

- **Getting Canadian Work Experience**
Go to <http://skilledimmigrants.vpl.ca>
[Search Getting Canadian Work Experience]

- **Networking for Employment**
Go to <http://skilledimmigrants.vpl.ca>
[Search Networking for Employment]

- **Learn More About Working in BC and Canada**
Go to <http://skilledimmigrants.vpl.ca>
[Search Learn More About Working in BC and Canada]

5. Getting Help from Industry Sources

Industry Associations

Associations for professional engineers in BC and Canada provide information & assistance. Registration and fees are required for membership.

- **BC Environment Industry Association**
<http://www.bceia.com/>
- **Association of Consulting Engineers Companies of British Columbia**
<http://www.acec-bc.ca/>
- **Engineers & Geoscientists British Columbia**
<https://www.egbc.ca/>
- **Engineers & Geoscientists British Columbia - Environmental Professionals Division**
<https://www.egbc.ca/About/About-Us/Divisions/Environmental-Professionals-Division>
- **Canadian Society for Civil Engineering**
<https://csce.ca/>
- **Engineering Institute of Canada (EIC)**
<http://www.eic-ici.ca/>
- **Engineers Canada, Canadian Council of Professional Engineers (CCPE)**
<http://www.engineerscanada.ca/>
- **Society of Punjabi Engineers and Technologists of British Columbia**
<http://www.speatbc.org/>
- **Association of Chinese Canadian Engineering Professionals and Technologists (ACCEPT) BC**
<https://www.acceptbc.ca/>
- **Iranian Engineers of British Columbia Association**
<https://www.iebca.ca/>

Industry Journals & Books

Search the Vancouver Public Library catalogue for journals or books related to your profession. Examples at Central Library:

- **Canadian Environmental Resource Guide**
Available at VPL Central Library 363.70025 C21
Canada's most complete listing of environmental associations and organizations, government regulators, product and service companies.
- **Canadian Consulting Engineer /**
Association of Consulting Engineers of Canada, ACEC news
Available at the Central Library, 620.5 C212 and online at:
<http://www.canadianconsultingengineer.com/>
- **Environmental Science and Engineering Magazine**
Available at VPL Central Library 620.805 E61 and online at:
<https://esemag.com/magazine/>
- **Innovation /** Association of Professional Engineers & Geoscientists of BC
Available at the Central Library, 620.5 B86 and online at:
<https://www.egbc.ca/Resources/News-and-Publications/Innovation-Magazine/Innovation-Past-Issues>

***Questions? Please ask the Information Staff in the Central Library,
Vancouver Public Library or telephone 604-331-3603.***

Please note that the information in this guide is also available online through the Skilled Immigrant InfoCentre website at <http://skilledimmigrants.vpl.ca>

