

Civil Engineering



Liz Staten, PE
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Best Jobs in America

- CNN Money Magazine ranked Civil Engineering as the 4th best job in America

What do you know about Civil
Engineering?



What makes ASCEville, "Greenville"?
Click here to play the SCAVENGER HUNT.



CIVIL WHAT?!

JUST FOR FUN

FIND YOUR DREAM JOB

WELCOME TO ASCEVILLE

skyscraper

water

EDUCATORS
PARENTS AND
ENGINEERS

NATURAL GAS

RECYCLING

CINEMA

MARKET

SCHOOL

transportation

NEXT

Civil Engineering Specialties

- Structural (Buildings/Bridges)
- Transportation
(Roadway/Traffic/Railroad/Airports)
- Water/Waste Water
- Storm Water
- Environmental
- Geotechnical
- Planning

How do you become a Civil
Engineer?

Education

- Relevant High School Classes
- College Engineering Curriculum
 - BS required - ~5 years
 - MS recommended - ~30 credit hours
- ABET Accredited
- ASCE
- EI/PE

Education

- ABET Accredited Programs

- NMSU

- UNM

- CSU

- CU

- AFA

- Colorado School of Mines



Extra Curricular Activities

- Steel Bridge Competition
- Concrete Canoe



Education Costs

■ In State Tuition

- ~\$8,000 - \$10,000 per year
- Typically fully funded for graduate school

■ Scholarships

- Women in Engineering Scholarships
- ASCE

■ Salaries

- ~\$40,000 entry level
- \$40,000 - \$120,000 pay range over a career
- **Zero or minimal school debt**

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Water/Waste Water



Source Water



Filters



Distribution Pumps



Wastewater Treatment Plant



Primary Clarifier

Storm Water



Storm Event



Inlet



Inside of Storm Manhole



Culverts



Channel

The Engineering Profession

- Idea or Problem
- Funding
- Public Involvement
- Evaluating Solutions
- Project Design
- Construction

The Engineering Profession

Idea or Problem: Small water district has an old concrete potable water tank that needs repairs.



The Engineering Profession

Idea or Problem: A city has too much traffic congestion on the roadways.



The Engineering Profession

Funding:

- Engineer's Cost Estimate
- Evaluate Client's Finances – can they afford these improvements
- Evaluate Possible Funding Sources
 - Grants
 - Loans
 - Taxes
 - Rate Increases

The Engineering Profession

Public Involvement:

■ Public Meetings

- Present Project Concept/Alternatives Analysis
 - Technical, Financial, Feasibility
- Allow for Public's Questions and Comments
- Public Approval/Informed Consent
- Could be Multiple Meetings for 1 Project
- Revise Plans Based on Public Comments

The Engineering Profession

Project Design:

- Surveying
- Design of Improvements
- Construction Drawings
- Specifications
- Cost Estimate



[illegible]

The Engineering Profession

Construction:

- Bidding on Design
- Construction Management
- As Built Drawings



The Engineering Profession

Summary:

- Civil Engineers are Problem Solvers
- Our Solutions MUST be
 - Cost Effective
 - Address Public Concerns
 - Realistic



Questions?

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Engineering Problems and Solutions

