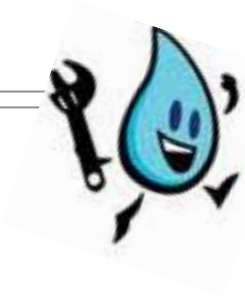

Task: Stormwater Engineers



PART 1 (60 minutes)

Student Directions:

Your assignment:

Engineers are a key to problem solving in our environment. You will watch two informational videos about stormwater management and read the job description for a stormwater engineer, taking notes on these sources. Then you will respond to three research questions and write an article explaining the important work of a stormwater engineer.

Steps you will be following:

In order to plan and write your essay, you will do all of the following:

1. Watch two videos and read a job description for a stormwater engineer.
2. Answer three questions about the sources.
3. Plan and write your article.

Directions for beginning:

You will now watch two video and read a job description, taking notes from these three sources. You may use these note in responding to the three questions and in writing your article. You can refer back to any of the sources as often as you like.

Source Information:

Source #1: Video #1	Stormwater Runoff 101 (3 min. 7 sec.) http://www.youtube.com/watch?v=eozVMJCYHCM
Source #2: Video #2	Water Resources Engineer (4 min. 51 sec.) http://www.youtube.com/watch?v=jJGblbKm5U
Source #3 Reading	City of Maple Valley Stormwater Engineer Job Posting

Task: Stormwater Engineers



NOTE TAKING TOOL

Video #1: Stormwater 101

Video #2: Water Resource Engineer

Reading #1: Job Posting

What stormwater is	Why stormwater is a problem	Ways to manage stormwater
What a Stormwater Engineer does	Why this job is important	Key Qualifications



City of
Maple Valley, Washington

POSITION DESCRIPTION

POSITION TITLE: *Surface Water Management/NPDES Program Manager (Stormwater Engineer)*

DEPARTMENT: **PUBLIC WORKS**

REPORTS TO: **Public Works Direction**

DATE: **June 2011**

SALARY RANGE: **\$64,776 to \$85,356**

DESCRIPTION

The Stormwater Engineer is responsible for designing solutions to complex stormwater management problems. The employee will engineer, review, and assure the quality of project designs for County stormwater management. This includes managing surface water runoff, designing green and gray infrastructures, and reviewing all proposed contracts including cost. The Stormwater engineer will be responsible for quality control on all stormwater management projects and support other programs within the Watershed Management Division, including watershed planning, stormwater facility maintenance planning, and stream restoration maintenance.

CANDIDATE QULAIFICATIONS

Knowledge of:

- Stormwater engineering principles, practices and methods, including but not limited to storm drainage systems, streets, and erosion control
- Principles, practices and methods of permit processing and engineering plan review
- Pertinent Federal, State and local laws, codes, and regulations related to civil engineering stormwater designs
- Knowledge of 2009 King County Surface Water Design Manual, 2005 Washington State DOE Stormwater Design Manual or equivalent
- Basic knowledge of streams and lakes water quality chemistry
- General computer applications, and stormwater software, computer aided drafting and design software, and Geographic Information Systems (GIS)
- Principles of environmental science

- Local, State, and Federal codes and regulations governing environmental protection and source control Best Management Practices (BMPs), including NPDES, water quality standards, critical area protection, Maple Valley Construction Standards, the Endangered Species Act, etc.
- Water sample collection and testing methods
- Website development and software techniques
- Erosion and sediment control (ESC) Best Management Practices (BMPs) for construction projects
- Low Impact Development (LID) methods relating to stormwater water quality designs
- Pollution sources and pollutants pertaining to surface water
- Modern office practices, procedures, and equipment including personal computers and related software such as word processing and spreadsheet programs
- Knowledge of typical office software such as Outlook, Word, Excel and PowerPoint
- Municipal government policies, procedures, and structure; and applicable local, State, and Federal laws, codes, regulations, an ordinances

Skills and abilities include:

- Strong analytical abilities as they relate to stormwater infrastructure design, construction and mitigation
- Exceptional communication and interpersonal skills, both written and verbal
- Ability to represent the City in a highly professional manner at community and council meetings
- Ability to read and interpret civil engineering plans and designs
- Ability to creatively problem solve and have the ability to work as part of a team

Education and experience:

- Bachelor's Degree in civil engineering, environmental science/studies, OR the incumbent may possess any combination of relevant education, training and experience which would demonstrate the individual's knowledge, skill and ability to perform the essential duties and responsibilities listed above
- Two years prior experience in a municipal or related public works or stormwater environmental department

Preferred:

- Washington State PE registration or Engineer In Training (EIT) registration preferred but not required

Task: Stormwater Engineers



You have 70 minutes to review your notes and sources, and plan, draft, and revise your article. You may also refer to the answers you wrote to the questions in part 1 but you cannot change those answers. Now read your assignment and the information about how your essay will be scored.

Your assignment:

You have been asked by the City of Maple Valley to write an article for hiring a stormwater engineer. Your article should explain what a stormwater engineer does and why this job is important to the wellbeing of the environment. Include the following information:

- Problems we face from stormwater
- Role of the engineer in solving these problems (stormwater solutions)
- Important qualities a stormwater engineer needs to be successful in the job

Essay Scoring

How your essay will be scored:

The people scoring your essay will be assigning scores for

- 1. Statement of Purpose/Focus** – how well you clearly state and maintain your controlling idea or main idea
- 2. Organization** – how well the ideas progress from the introduction to the conclusion using effective transitions and how well you stay on topic throughout the essay
- 3. Elaboration of Evidence** – how well you provide evidence from sources about your topic and elaborate with specific information
- 4. Language and Vocabulary** – how well you effectively express ideas using precise language that is appropriate for your audience and purpose
- 5. Conventions** – how well you follow the rules of usage, punctuation, capitalization, and spelling

**Word-processing
tools and spell
check are
available to you.**

Now begin work on your essay.

Manage your time carefully so that you can:

- plan your essay
- write your essay
- revise and edit for a final draft

Task: **Stormwater Engineers**



PLANNING MY ESSAY

Introduction—Statement of Purpose:

Problems we face from stormwater:

Role of the engineer in solving these problems (stormwater solutions):

The most important qualities a stormwater engineer needs to be successful in the job:

Conclusion: