

# The Environmental Challenge A Competition for University Students

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*University students, can you solve...*

## **The Environmental Challenge A Competition for University Students**

Florida Section A&WMA 46<sup>th</sup> Annual Conference  
South Seas Island Resort  
October 4 – 6, 2009  
Captive Island, Florida

### **THE PURPOSE**

The Environmental Challenge gives teams the opportunity to develop solutions to a mock environmental problem and have the experience of presenting their solution to a panel of environmental professionals. We do not give you a lot of numbers to crunch. We are more interested to hear about the issues involved, how you interpreted the problem, how you got to your conclusions, and how well you can communicate your thoughts. We want you to have fun! This exercise gives us all a chance to participate and gets the professionals of tomorrow to interact with the professionals of today.

### **THE PROBLEM**

The year is 2015 and the Orange County Class I landfill will soon be at capacity and closing. The landfill is co-located adjacent to the Orlando Utilities Commission (OUC) Stanton Energy coal-fired power plant and the Orange County wastewater treatment plant. The property south of the landfill is vacant for about 4 miles.

The owner of the property, Greedy & Company, has decided to build a state-of-the-art solid waste management facility (including a new landfill) just south of the existing landfill that will be able to process waste for the next 50 or more years. The location is desirable to Orange County's engineer, Ms. Stuckin Mud, because of the co-located utilities and the compatibility with current adjacent land use zoning. The area is surrounded by \$200,000 to \$500,000 homes and 3 golf courses. There are occasional odor issues from the landfill). Greedy & Company has the full support of local government, their staff engineers and scientists because the government is desperate for a long-term solution to the area's solid waste disposal needs.

The property being considered is home to several listed species including bald eagles, gopher tortoise, black bear as well as several plant species. Environmental groups have successfully stopped past attempts by the owner to construct a road that would connect Alafaya Trail to the Beachline Expressway (SR 528). This property is considered an important ecological connection and wildlife corridor from

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Boggy Creek to the St. Johns River. The site includes wetlands that are important for area flood protection. Environmental groups are completely against the project.

### **Site and Project Background**

Greedy and Company have tried for years to extend Alafaya Trail and connect it with SR 528 but, due to the environmental sensitivity, have been successfully blocked by local environmental activists. This alternate land use has been proposed by the land owner, who is prepared to fully fund this project, in part as a means to cultivate environmental support. The owner is proposing a comprehensive solid waste management project to include the following elements:

- A) Materials Recycling Facility (MRF)
  - 75% Recycling of Construction Debris (LEEDS Facility);
  - Household hazardous waste collection with used paint blending/recycling, fuels blending and lead battery recovery;
  - Land-clearing waste recycling and wood fuel processing for waste-to-energy project;
  - Composting;
  - Metals, glass and paper recycling; and
  - Industrial non-hazardous and universal waste recycling.
  
- B) Waste-to-Energy Facility (residuals management in the new landfill)
  - Fuels shall include biosolids and .land clearing waste
  
- C) New aerobic and/or anaerobic landfill

### **YOUR ASSIGNMENT**

The project teams are hired to address the preliminary design and permitting of this innovative facility. Your project team is preparing for the “big” public hearing with intense media interest where you will present your project to the general public and the role players for initial comment and hopefully, preliminary approval. You must address the operations proposed above in a comprehensive manner, being certain to include discussion of the ability to handle the county’s solid waste for at least the next 50 years.

In summary, the project team must:

1. Identify each of the regulatory agencies and significant issues that will be involved in environmental permitting and compliance of the site.
2. Prepare a general facility design considering the significant pollutants, including a flow-diagram that illustrates where the various waste-streams come into the facility, how and where they are processed, any wastes that will be generated and any pollutants emitted. Note this flow diagram shall represent an accurate “mass-balance” around the facility.
3. Research the current site maps and identify current information sources of the area and prepare a general site plan that shows how the new facility will be co-located near the existing landfill.

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Include traffic patterns for access into and out of the new facility and how their impacts on the surrounding home and property owners can be minimized.

In addition, the following items shall be specifically addressed:

- Construction, operation costs;
- Job opportunities;
- Project timeline(s); and
- Any other potential environmental and socio-economic impacts.

## **THE EXPECTATION**

You will be required to present your thoughts in a public forum. Clarity of vision and logic of presentation are critical. Remember you can come up with assumptions, but they need to be able to pass the straight face test. This is like the real world!

We have expectations with regard to the Proposal (see below) and the Presentation (see below). The **Proposal** expectations include identifying team member by name and the role that they are going to have in the presentation (e.g., “Rusty Steele” is going to be engineer and will address waste issues, “Noah Lott” is going to be your air expert, “Seymour Greene” is going to be your ‘planner’, and “Laura Order” is going to be your attorney etc, - you put in the disciplines that you think you need). In the proposal you should have an outline of the approach that you are going to take and the issues that you will be discussing. **Remember - you will have a maximum time of 20 minutes to present your plan and you have a two page limit for the proposal submittal.**

For the **Presentation**, your team will need to demonstrate your understanding of the issues that you addressed in your proposal. **While guidance may be provided by your faculty advisor, we encourage the student team members to present an approach to solving this problem based on your own research.** Sustainable approaches for these and other site issues are of great interest to the owners. Winning will hinge on approach, clarity, and creativity.

## THE PROPOSAL

Each team will develop a proposal for problem solution to be submitted no later than of September 28<sup>th</sup> to Max Lee ([mlee@kooglerassociates.com](mailto:mlee@kooglerassociates.com)). The proposal should include key elements such as areas of expertise, issues to be addressed, and the general approach to the project. The proposal should be in summary form and limited to two pages. The proposal will be a factor in the competition.

## THE PRESENTATION

Presentation of the team solutions to the problem will be held on Tuesday morning, October 6, 2009. When we know how many teams will be presenting we will develop a schedule, but plan on the presentations beginning at **7:45 AM**. We will have a projector and a laptop (w/Microsoft Power Point). Please bring a data stick or disk so we can transfer your presentation to the laptop. **Plan on a 20 minute presentation with 10 minutes of questions and answers.**

## THE TWEAK

No matter how much you do and know, in real life things that are unexpected can and do occur. There might be some late breaking information that might alter your approach and/or require your plan to evolve. **On October 1, 2009**, such late breaking news (i.e., a tweak) may be posted on the [flawma.com](http://flawma.com) website. The problem and the tweak will require that you find and talk to “experts” and attend the sessions for answers and important information.

You can email your questions regarding the Assignment and tweak.

Max Lee ([mlee@kooglerassociates.com](mailto:mlee@kooglerassociates.com))

Significant questions and answers will be posted at [www.flawma.com](http://www.flawma.com)

**APPENDIX A**

**THE PLAYERS**

In order to grasp a complete understanding of the project in its entirety your team must acknowledge that there is a large amount of interest in this project.

The following panel will be addressed by each project team:

1. Ms. Stuckin-Mud – Orange County Director of Engineering;
  2. Mr. Weazil Wordsmith – Attorney representing the landowner;
  3. Ms. Tumini-Rules – Environmental Regulator; and
  4. Mr. Savitall – Environmental Activist
- \* media personnel may be present