

Maryland Envirothon 2004—Oral Problem

The Clippermore Watershed consists of a mixture of developed, agricultural and forested land, draining into the Clipper Bay. The upstream reaches of the watershed are mostly agricultural land, with some forest and a recreational trout stream. Some of the other streams in this area have been degraded. In the middle of the watershed is Lake Clipper, an important source of drinking water and recreation for metropolitan Clippermore. The lower part of the watershed comprises the city of Clippermore.

The Clippermore Watershed currently has a population of about one million and is expected to grow to about 1.2 million over the next 20 years. However, the city of Clippermore itself has declined in population by about 100,000 people over the past 50 years. The abandoned industrial and residential areas in Clippermore detract from the city's quality of life, cost millions of dollars each year in lost tax revenue, and contribute to increased growth pressure in the middle and upper portions of the watershed.

Within the watershed, about half of the population, mostly in the City of Clippermore itself, has sewer and water service. The remainder get their water from wells, and their waste is disposed via septic tanks. Growth in the area is projected to be evenly split between those on sewer and water service and those on septic and wells. This forecasted growth will put a strain on the reservoir and the aquifers in the area, and threatens the rural character of the upper watershed.

Clean water, conservation of natural resources, urban revitalization and economic growth are important issues to the people of Clippermore watershed. However, the projected population growth and further development pressure will further strain the environmental resources these communities are striving to protect. A comprehensive plan is needed to balance the environmental, social, economic and political issues throughout the watershed.

Your team has been hired by a coalition of local governments, businesses, farmers, environmental groups and developers. Using your knowledge of forestry, soils, wildlife, aquatic, and urban resources, your task is to evaluate the environmental problems of the watershed and to develop a comprehensive, 20-year management plan to protect the Clippermore watershed. Your organization has an initial budget of \$50 million. You may view this as "seed money"; in other words, if you can demonstrate how your expenditures will result in savings for a specific project at the end of the 20-year period, you may utilize that savings to further fund that project. However, these funds will only become available 5 years after the project's initial implementation. Keep in mind that you may not have sufficient funds to implement every imaginable program; your best solution may be to partially fund a variety of projects, ensuring that you equitably address the various stakeholders' needs. Your plan shall include the following:

1. Provide an assessment of the environmental conditions in the watershed, and determine the possible source of these problems.
2. Based on your assessment, develop specific solutions to these environmental problems.
3. Work within the financial constraints of your budget and determine how funds will be allocated.
4. Provide a rationale and justification of your decision making process.