For your case study, be sure to examine alternative actions, and describe WHY the recommended action is best. This list is a starting point for selecting a case study topic:

1. New York State’s Adirondack Park area gets a lot of snow in the winter. Along with plowing, sand and salt are used to make roads passable for people who live there or who come for winter recreation. This protects people from accidents and helps the local economy. However, the sand and salt can end up in streams and affect the reproductive success of trout, which are important for summer recreation as well as to the ecology people expect in Adirondacks streams. What are the pros and cons of using more sand and less salt for winter snow and ice removal? Of using more salt and less sand? (It may be infeasible to quantify changes in ecological impacts related to different strategies for keeping the roads clear. But it is feasible to estimate costs for each “treatment” strategy, perhaps for a specific portion of the Adirondacks.) Would the best choice differ if winters in the Adirondacks were more like winters in Pennsylvania (i.e., under a warmer climate)?

2. On Cape Cod, Massachusetts, the electricity supply for hospitals and other important infrastructure is at risk from extreme storms. One way to make the electricity supply more reliable is to bury electrical lines rather than using phone poles. What are the benefits and costs of burying these lines (perhaps for a town on Cape Cod)? How do these benefits and costs compare with providing generators for each crucial facility?

3. The US Environmental Protection Agency requires states to determine Total Maximum Daily Loads (TMDLs) for water bodies so that their water quality will meet “designated uses.” In the Hampton Roads, VA area, many small coastal watersheds have been designated for shellfish growing waters. The primary need is to reduce fecal coliform. Some scientists question whether the designated uses could be met. What are the benefits and costs of setting TMDLs so stringent that these coastal waters can support shellfish?

4. In the Hampton Roads, VA area, coastal erosion damages property. Sea-level rise is expected to be greater because of global warming. What are the benefits and costs of different types of defensive actions, particularly as related to different types of land use (so that property values differ now because of differing land use)? (If several students are interested in this topic, some might examine Baltimore, Boston, Washington DC, or Philadelphia, too.)

5. In Pittsburgh (and in many other urban areas), individual municipalities manage water supplies (and sewage treatment). Combining efforts (to supply water or sewage treatment) across communities (called “regionalization”) could lead to economies of scale. What would be the changes in taxpayer costs and benefits, and in environmental costs and benefits, of a regional approach for supplying water (or sewage treatment—choose one)? (Probably would be best to choose a specific location within the urban area, identifying the individual municipalities, and how their benefits and costs would change if they acted together rather than each taking separate action.)
6. Plans to raise the height for some of the flood walls on the North Branch of the Susquehanna River will provide additional protection for communities behind those flood walls, but increase flooding downstream. Does this action make sense? How would the recommendation change if planners expected 10% more rainfall on average, with some of it expected to come in heavy storms?

7. Recent studies suggest that biodiversity declines substantially when more than 5 percent of an area has impervious surfaces. What are the pros and cons of policies to limit impervious surfaces? (Choose a specific area, such as the Highlands area of NJ, where the legislature in June restricted development.)