Case Study 2
Pollution in a Factory Town

**Background:** Smalltown, Indiana relies on a handful of factories (all engaged in the burning of coal, either for electricity production, steel smelting, or coal-to-gas conversion for energy production). These factories together account for more than 80% of the town’s employment and thus, the vast majority of its tax base. Recently, the American Lung Association rated Smalltown near the lowest in terms of air quality and therefore rates it as an undesirable place to live and work. In addition, investigators from the EPA found the town’s air quality violated Clean Air Act maximum pollution level standards on more than 80% of sampled days. The diminished quality of life in Smalltown due to air pollution, moreover, makes it harder for local employers to attract qualified talent to work in their various plants and factories.

The Town Council and mayor, who are politically elected representatives, desperately want to reduce the town’s pollution levels to improve the quality of life for its citizens. However, it seems any solution they consider opens a Pandora’s Box. Foreign competition in steel and energy has trimmed margins for all US producers, including those in Smalltown. Thus, the costs of pollution reduction may be that “marginal push” that could cause some of the factories either to curtail employment sharply, or some may even close down entirely. Aside from raising unemployment rates in the town, such actions will also diminish the tax base on which the town relies to fund its public services (schools, fire houses, etc.). That reduction in the tax base may in turn cause increases in unemployment in areas not directly related the factory employment (e.g., teachers, public works employees, etc.). That seems likely to make the city leaders very unpopular.

**Analysis:** You are an economic analyst who works for a private consulting firm. You and your firm have been contracted by the Smalltown Town Council to propose an economically sensible set of alternatives for the Council to consider. In short, you have been asked to recommend a course of action that the town leaders should follow to maximize the social welfare of the townspeople. Specifically, they have asked you to provide at least 2 alternative plans the town’s leaders could consider that would lower pollution at the lowest overall social cost. Be sure to support your alternatives and analysis with sound economic reasoning and model(s).