

#4 Mapping Exercise

After analyzing the blood lead levels of the other nine children from the playgroup, public health officials decide to look for a common source using GIS. Geographic Information Systems are computer-based software to create, view, and analyze geographic databases. GIS link data and geography digitally for the purpose of making maps. The health officials obtained addresses of each child and displayed them on a map of Dade County. Possible health risks, provided by interviews of the parents, were also plotted including: a lead smelting plant, hazardous waste site, a gun range, a playground on the Miami River, and a battery plant.

Directions: Using the following table, simulate GIS mapping by plotting each child's home and the risk factors using the (x, y) grid. Use your own symbols/labels to indicate each child/object. Remember to include a legend as a reference.

| Child (BLL) | (x,y) |
|------------------|---------|
| Peterson (16) | 24,26 |
| Hernandez (24.5) | 21,23 |
| Pierre (19) | 25,27 |
| Wendy (4) | 26,30.5 |
| Lora (7) | 23,32 |
| Gustavo (10) | 21,30 |
| Paula (3) | 17,28 |
| Susana (13) | 25.5,22 |
| Dominick (8) | 20,20 |
| Joseph (5) | 16,21 |
| Diane (6) | 19,22 |
| Ken (9) | 16.5,13 |

| Possible Risk Site | (x,y) |
|---------------------------------|---------|
| Bulletproof Lead Smelting Plant | 18,21 |
| Stinky's Hazardous Waste Site | 18,27 |
| Commando Gun Range | 20,30.5 |
| Catherine De Medici Playground | 21,27 |
| Batteries R Us Battery Plant | 16,14.5 |

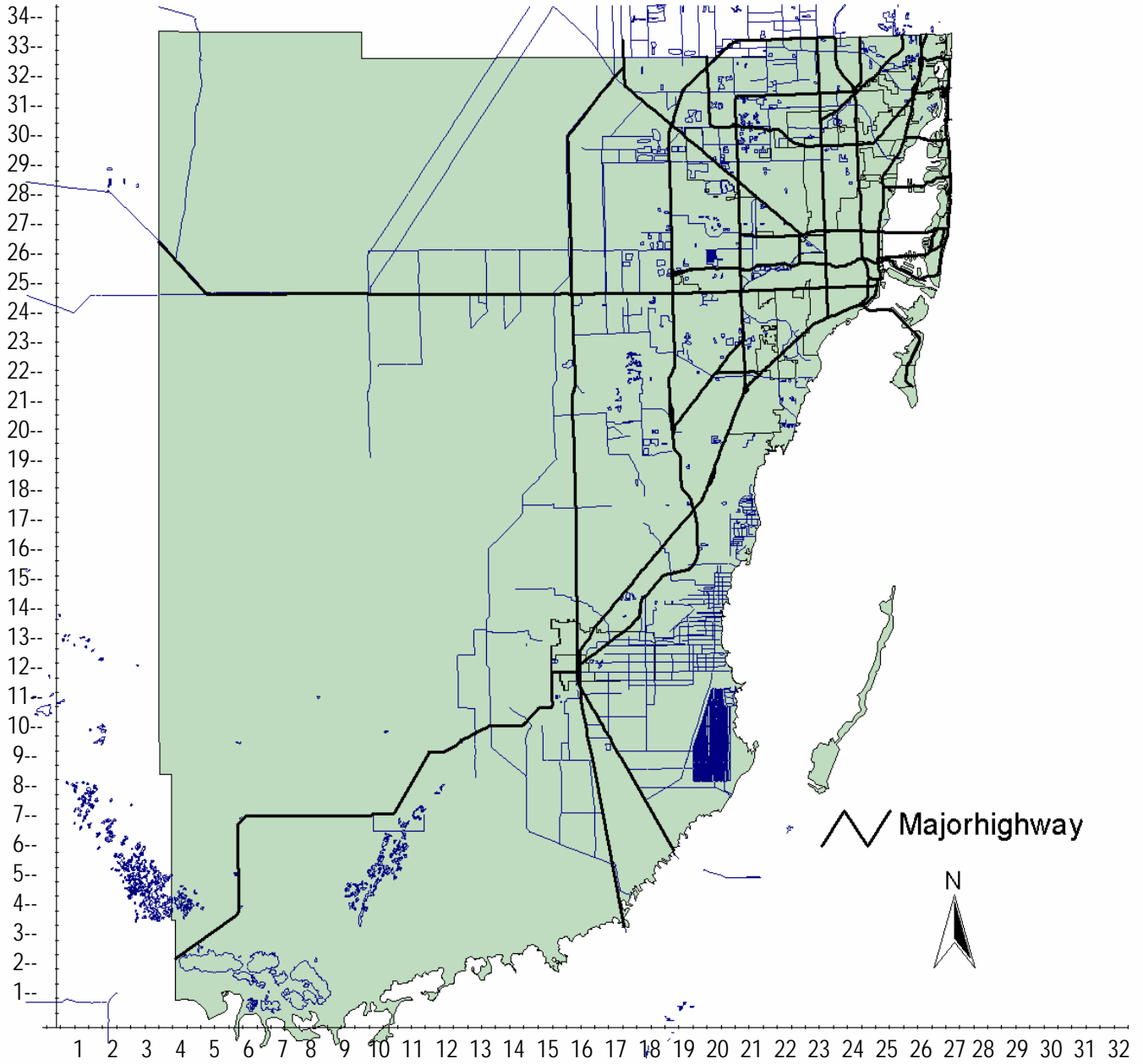
Interpret the results.

Questions:

Comparing the children's blood lead levels to the spatial data, can you identify any common source to the three original cases? What about the others? If not, are there any other sites you would like to locate to explain the geographic distribution of the cases?

As a public health official, what would be the next step to verify your hypothesis?

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