



## Case study: Environmental Justice Web Map

Jackson owns and operates a small software development firm that specializes in web mapping. He is a certified GIS Professional. A non-profit organization called "environmentaljustice.org" has approached Jackson's firm with a request for bid for a custom web mapping application to be hosted at its web site. The web map is to show the spatial association of (a) industrial sites known to have discharged of toxic substances into the environment with (b) the locations of what the organization calls "communities at risk." Environmentaljustice.org defines the latter as areas characterized by high rates of families below poverty, low-income families, non-high school graduates, people of color, working class people, renters, and children in poverty.

The web map will be freely available to anyone who has access to the Internet through a properly configured web browser. All of the data layers the map will combine are public records that have not been combined before at a national scale and in such an interactive format. For example, data compiled by the Environmental Protection Agency pinpoint Superfund sites and other industrial sites known to have discharged toxic substances. Population data needed to delineate communities at risk are available from the U.S. Census Bureau. The organization's goal is to promote public awareness and concern about what it considers to be the unjust exposure of underprivileged people to the risks associated with industrial pollution. Because of a benefactor's very large donation, the organization is able to offer Jackson a very lucrative contract.

Meanwhile, a large firm that produces glass fiber has learned about the planned web mapping project, and is already considering legal action to block it. The firm is concerned that the web map is likely to be misinterpreted by novice viewers, and that the firm will be among those accused of exploiting communities at risk. Lawyers are prepared to argue that thematic maps of this kind reveal spatial relationships, but cannot prove causation or intention. The firm and others like it feel that it is libelous to promote the notion that they locate factories near neighborhoods that have the least political influence. Furthermore, they are concerned with the accuracy and completeness of the data that will be mapped. For example, some toxic release information is confidential (EPA 2007), while some companies do not accurately report the number, types and volumes of pollutants released. Honest companies (such as this glass fiber firm) will be penalized unfairly, they believe.

Environmentaljustice.org has presented the project concept at public meetings around the country. The project has attracted endorsements from some communities, including one that blames a disproportionate incidence of lung and stomach cancers on toxic releases of a nearby chemical plant. Residents of this and other neighborhoods welcome the visual evidence that they hope will compel court action against local industrial polluters. However, other community groups are skeptical of the planned web map because they fear the implications of lost jobs and tax revenue if employers are forced to shut down.

Jackson is ambivalent about submitting a bid for the lucrative project. He knows that his small firm is qualified to create the web mapping application, that the necessary data exists, and that the contract would benefit the company, its employees and their families substantially. On the other hand, Jackson knows that his small firm would be vulnerable to legal action by a large

corporation, that the glass fiber firm's concerns about data quality and potential misinterpretation are valid, and that his reputation could suffer if the project is discredited. When weighing risks and rewards brings him no closer to a decision, he realizes that the choice boils down to an ethical decision. If you were Jackson, how would you decide the right thing to do?

## References

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## Resources for educators

Suggested discussion points, relevant GISCI Rules of Conduct, and further resources related to this case study are available on request. Send request to David DiBiase ([dibiase@psu.edu](mailto:dibiase@psu.edu)) along with contact information (including your position and affiliation) and a brief description of how you plan to use the case.

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