

UC Santa Barbara

Guide to the Geographic Approach

Title

Guide to the Geographic Approach Student Template for GIS Ethical Case Studies

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<https://escholarship.org/uc/item/03f5b3b0>

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Publication Date

2025-09-30

Student Template for GIS Ethical Case Studies

Created August 2025



Objective

This document is intended as a template learners can use to structure their analysis of ethical case studies presented in the [Guide to the Geographic Approach](#)¹. The approach uses a seven-step framework, first adopted by the GIS Professional Ethics Project² and initially developed by Davis³. The approach also directly incorporates key ethical obligations identified in the GISCI Code of Ethics⁴ and conceptual lenses on ethics presented by Boenig-Liptsin et al⁵.

Step 1: State the Problem

What learners should do:

Clearly articulate the ethical dilemma and identify who is involved in the situation. Identify what makes this situation uncomfortable or problematic. Ask questions such as:

- Who are the stakeholders involved?
- Why does this situation feel ethically problematic?
- What values or principles are in conflict?

What learners should Create:

Write a paragraph that clearly states what the ethical problem is in this case.

Step 2: Check the Facts

What learners should do:

Gather all relevant information about the situation from the case study, or related materials (e.g., provided links or documents). Verify your assumptions and carefully separate facts from opinions. For example, you might identify:

- What are the actual facts of the case (not assumptions)?
- What laws, regulations, or policies apply?
- What professional standards are relevant?
- What are the potential consequences of different actions?

What learners should create:

Write a list of facts about the case study that are relevant to the ethical problem you identified in step 1.

Step 3: Identify Relevant Factors and Questions

What learners should do:

Based on your list of facts, identify the factors relevant to this case and the questions that need to be considered to make a decision. It may be necessary to conduct research on the laws, regulations, and policies you identified earlier. Consider also the four types of obligations presented in the [GISCI Code of Ethics](#) (Appendix B):

- **Obligations to Society** - Consider impacts on society as a whole.
- **Obligations to Employers and Funders** - Consider your responsibilities to your employer/client.
- **Obligations to Colleagues and the Profession** - Consider impacts on other professionals.
- **Obligations to Individuals in Society** - Consider impacts on individual people.

What learners should create:

List out the factors/questions that you identified. For each factor/question, briefly describe the relevant information and discuss which obligations from the code of conduct are relevant. Are any of those obligations in conflict with one another?

Step 4: Develop a List of Options

What learners should do:

Brainstorm multiple possible responses to the ethical problem (aim for 3-4 options). Be creative and avoid "either/or" thinking. Consider who you might consult, what you might say, how you might modify the situation. For example, some of the different types of actions you might consider are:

- Direct compliance - do what's requested
- Direct refusal - refuse the request
- Modification - suggest alternative approaches
- Consultation - seek guidance from others
- Compromise - find middle ground
- Escalation- involve higher authorities

After you have developed a list of options, examine each of those alternatives by considering:

- Positionality – how are the options you developed shaped by your own experiences? Are your circumstances and experiences leading you to unconsciously only consider some options?
- Power – who has the capacity to influence decisions and outcomes in this case.
- Sociotechnical Systems – How are the options you developed constrained or enabled by relationships between the people involved in the situation and the technologies involved in the situation?
- Narrative – What beliefs about the world structured the options you developed? Did you miss any options because you simply assumed they were not possible or desirable?

Thinking in this way can be challenging. An additional set of questions is provided for each of the lenses presented above (Appendix C). Use those questions to help you think about each of your options.

What learners should create:

Write a list of the different options you have developed to address this problem.

Step 5: Test the Options

For each of the options on your list, apply the ethical tests that appear to be most relevant from the list below. As you think about each test, consider the professional obligations you identified in step 3 and the different perspectives/lenses you used in Step 4.

- **Harm Test** - Does this option do less harm than alternatives? Who might be harmed and how seriously?
- **Publicity Test** - Would I want my choice published on the internet? Would I be comfortable if this became widely known?
- **Defensibility Test** - Could I justify this to my peers? Would my professional association support this decision?
- 1. **Reversibility Test** - Would I still think this was a good choice if I were adversely affected?
- 2. **Colleague Test** - What do my trusted colleagues say about this option?
- **Professional Test** - Does this option comply with the GISCI Code of Ethics?
- **Organization Test** - Would my employer support this decision?

What learners should create:

For each of the options you identified in Step 4, write 1-2 sentences related to each of the ethical tests that you applied.

Step 6: Make a Choice Based on Steps 1-5

What learners should do:

Review your analysis from the previous steps. Choose the option that you can best defend. Recall that the GISCI Code (3) suggests that "Obligations to society shall be paramount when there is conflict with other obligations."

What learners should create:

Write down the option you selected. Briefly document your reasoning for future reference.

Step 7: Review Steps 1-6

What learners should do:

Reflect on what you could do to make it less likely you'd face such a decision again. Consider what precautions you can take as an individual. Identify ways to change organizational practices if needed. Think about how to have more support next time

What learners should create:

Write a paragraph that looks forward and identifies how similar situations could be anticipated or avoided in the future.

References

1. Guide to the Geographic Approach. <https://www.guidetothegeographicapproach.com/> (2025).
2. GIS Ethics Project. Ethics Case Studies. <https://sites.psu.edu/gisethics/> (2025).
3. Davis, M. *Ethics and the University*. (Routledge, London, UK, 1999).
4. GIS Certification Institute. A GIS Code of Ethics. <https://www.gisci.org/Ethics/Code-of-Ethics> (2025).
5. Boenig-Liptsin, M., Tanweer, A. & Edmundson, A. Data Science Ethos Lifecycle: Interplay of Ethical Thinking and Data Science Practice. *Journal of Statistics and Data Science Education* **30**:3, 228-240 (2022), DOI: [10.1080/26939169.2022.2089411](https://doi.org/10.1080/26939169.2022.2089411)

Appendix A.

Quick Reference Checklist

Before making any ethical decision, ask yourself:

- ✓ Have I clearly identified the ethical problem?
- ✓ Do I have all the relevant facts?
- ✓ Have I considered all four types of professional obligations (GISCI)?
- ✓ Have I examined the situation through all four conceptual lenses?
- ✓ Have I tested each option against ethical tests?
- ✓ Can I defend my chosen course of action?
- ✓ Have I considered how to prevent similar dilemmas in the future?

Appendix B.

The GISCI Code of Ethics (3) identifies four obligations of GIS professionals that can be used to analyze ethical problems. Complete details and additional questions that can be used to examine each of the sub-obligations presented here are available at [GISCI Code of Ethics](#).

Obligations to Society

1. Do the Best Work Possible
2. Contribute to the Community to the Extent Possible, Feasible, and Advisable
3. Speak Out About Issues

Obligations to Employers and Funders

1. Deliver Quality Work
2. Have a Professional Relationship
3. Be Honest in Representations

Obligations to Colleagues and the Profession

1. Respect the work of others
2. Contribute to the Discipline to the Extent Possible

Obligations to Society

1. Respect Privacy
2. Respect Individuals

Appendix C.

The four lenses (4) work together to provide a holistic understanding of ethical issues. Use them to uncover the "thickness" of the social and technical world in which your GIS work takes place.

Positionality Lens

Key questions:

- What assumptions do I bring based on my personal experiences, education, and cultural background?
- What identities are represented among my data subjects, partners, and stakeholders?
- How are these identities linked to privilege and disadvantage?
- Whose perspectives might be missing from this analysis?
- How does my position of power as a GIS professional affect my view of this situation?

Power Lens

Key questions:

- Who has influence over this work and who is affected by it without having a voice?
- Who gets to decide if the work is valid or valuable?
- Whose power is increased through this work and whose is diminished?
- How might this project redistribute power among stakeholders?
- What are the motivations of those providing data or funding this work?

Sociotechnical Systems Lens

Key questions:

- What social constructs or assumptions are embedded in my data and tools?
- What actions are enabled by my GIS work and what actions are constrained?
- Who or what is held responsible when something goes wrong?
- How does my project seek to modify existing sociotechnical arrangements?
- What unintended consequences might emerge from the interaction of technical and social factors?

Narratives Lens

Key questions:

- What narratives motivated the creation of this data and this project?
- What underlying beliefs inform the idea that GIS approaches are appropriate here?
- What kind of change is this work intended to bring about?
- Whose visions of the future are being privileged or marginalized?
- How might this work reinforce or challenge dominant narratives about technology and society?