



# GEO 447 PRINCIPLES OF GIS

- GIS & Society
- Legal Issues & Context

Created by JDG 2000

Class slides are based on readings, the current NCGIA Core Curriculum for GIS(ystems) and GIS(cience), Kemp & Goodchild (1991), the NCGIA Core Curriculum Project at UBC, and Foote & Heubner's *The Geographer's Craft*

# GEO 447 PRINCIPLES OF GIS

## GIS & Society

- Movement in geography to philosophically ‘take back’ GIS by engaging the technology from various epistemological perspectives
- Epistemological Implications
  - creation of Technocracy
- Begins with publication of Pickle’s (1995) Ground Truth & Special GIS & Society Issue of *CAGIS*
- Culminates in NCGIA’s 1996 research initiative *I-19 The Social Implications of How People, Space, and Environment are Represented in GIS*
  - Also considered a natural extension of NCGIA *I-16 Law, Public Policy and Spatial Data Bases*)

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# GEO 447 PRINCIPLES OF GIS

## GIS & Society: 3 Parts

- Socio-History of GIS Technologies
- Access, Surveillance, and Privacy
- Alternative GIS Applications
  - empowerment
  - participation

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## 1. Socio-History

- Education, Commercial, Government
  - What is the role of educators today and yesterday?
  - How will the consolidation of software companies impact development & control?
  - What data should the government release & not release?
  - How much data does the government have?
  - Should marketers have access to our data?

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## 2. Representation, Access, and Surveillance & Privacy

- How is race, gender, environmental degradation represented on a map? In a table?
  - Ethically, what should we map and not map?
- Who controls the data?
  - Does the Internet increase access to all or only the middle class
- What is the purpose of data collection
  - military & policing context
- How is data obtained & controlled
  - geo-demographic footprint

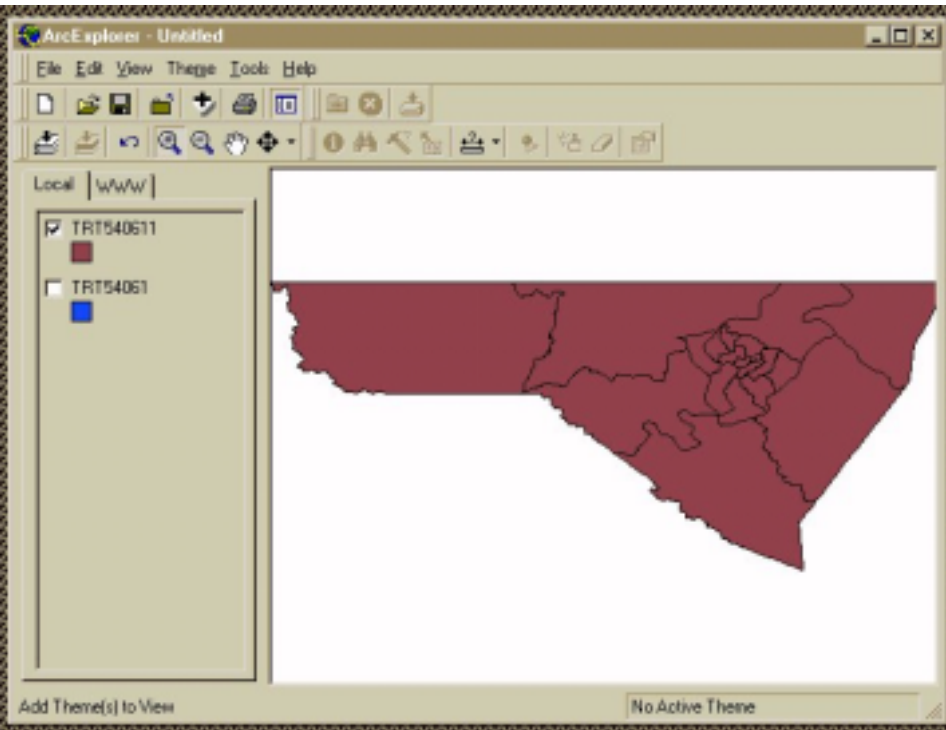
# GEO 447 PRINCIPLES OF GIS

## 3. Alternative Applications: Grassroots GIS?

- Technological Parity
- Increased Legitimacy
  - participation provides ownership of decisions
- Integration of Local Knowledge
- New Vehicle for Participation--expanding grassroots constituencies
  - Environmental Justice Issues
  - Broad NIMBY & “Siting” Debate
  - Slow Growth/Anti-Development Initiatives

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## Access to GIS Data & GIS-Lite Applications: Promote Grassroots Applications?



*Census Tracts in Monongalia Co, WV*  
Free TIGER Download and .shp Translation  
Displayed in Free ArcExplorer Software  
Total Download, Install, & Prep Time less than 45 minutes

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## Examples of Grassroots GISs

- Power Line Siting Controversy in Southern WV
- Information Sharing Initiatives (e.g., Ohio Urban Affairs Project)
- Mon Valley/Morgantown GreenSpace Coalition
- Preservation of Third Nation Sacred Lands in Canada
- Preservation of Native American sites in WV

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## Summary of GIS & Society

- I-19 Leads to several debates
  - Epistemological
  - Policy Implications
  - Political Practice

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## Basic Legal Context

- Actions & Responsibilities are framed by
  - statute
  - administrative policy
  - common law
  - professional practices & ethics
    - AAG Rules & Ethics

# GEO 447 PRINCIPLES OF GIS

## Basic Legal Context

- Data can be conceptualized as a commodity and is subject to relevant rules, regulations, & strictures
  - Who owns information? Property Rights.
  - Who can trade the data commodity?
- Data can be conceptualized as a public property and its use within the public domain
  - Planning is a public good
  - Road Maps & Tax maps are a public services
- How is data valued?
  - Balance commodity & public interest

# GEO 447 PRINCIPLES OF GIS

## Basic Legal Context

- Data can be conceptualized as evidence
  - paper maps are used in ownership disputes
  - spatial data might be used to resolve other conflicts
    - modeling the migration of toxic waster underground
- Maps aren't always objective
  - creator has no control over end use
  - errors must be assumed
  - intent might have been entirely opposite
    - a soil map created by soil conservation office used for taxation purposes?

## Legal Liability

- What if the data is not correct?
- What if the model picks the ‘wrong’ site?
- Types of Liability GIS professionals face
  - contract
  - product
  - negligence

## Contract Liability

- Intended to allocate responsibilities between producer & consumer
  - should define users intent & ‘production’ standard
- Often a concern for contract GIS-ers
- Standards for performance
  - what is the producer didn’t digitize as the correct scale?
  - What if the user uses the product for another intent

## Negligence

- When a person fails to exercise the standard of reasonable care normally expected of someone in the same situation, and harm results
  - GIS-ers are often covered by this type of standard
    - what is a point is haphazardly digitized?
    - Typos in a RDMS
- GIS presents additional problems so-called "computer error"
  - what if you're not a computer programmer, how to you take reasonable care to prevent such error?

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## Examples

- Unintended Use
  - Zinn vs State
    - using a 1:12,500 topo to define High Water Mark--not appropriate
- Representations of Error Free Data
  - Aetna Casualty and Surety Company vs Jeppeson and Company
    - aeronautical map used improper scale for tower
- Location error
  - Reminga vs United States
    - pilot ran into a tower that didn't exist on a map
  - Indian Towing Co. vs United States
    - Lighthouse on government map--but didn't exist, resulting in accident

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## Current Possibilities

- On-Star Navigation
- Hertz Rental Car Maps
- Making Auditors GISs ‘legal’
  - today, digital auditor tax maps are not official

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## Product Liability

- Assumes product isn't dangerous
- Not a real concern for GIS per se

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