The Elements of Successfully Controlling a Flood of Data

Meredith Beswick, PE, GIT
Jacob Weber, GIS Analyst
Presentation Outline

1. Introduction to Data Management Using GIS
2. Advantages of GIS Data Management
3. Challenges and Overcoming the Challenges
4. In Summary
1. Introduction to Data Management

- **Data Management**: is the process of controlling the information generated during a project.

- **Database**: Rows of data organized into related tables that can be queried and analyzed in multiple ways.

- **Geographic Information System (GIS)**: A specialized database that allows the data to be visualized and analyzed spatially – spatially enabled data.
1. Introduction: GIS Database Uses

- Investigation planning and data collection
- Analysis of data
- Deliverable data source
2. Advantages of GIS Data Management

- Stores a ton of spatially-enabled data
- Compilation of multiple forms of data
- Improves efficiency and effectiveness of analysis
2. Advantages of GIS Data Management

- Stores a ton of data and spatially-enables it
2. Advantages of GIS Data Management

- Ability to compile multiple forms of data
2. Advantages of GIS Data Management

- Improves efficiency and effectiveness of analysis
3. Challenges of GIS Data Management and How to Overcome Them

a. Database Inaccuracies

b. Not Used or Maintained

c. Complex
3a. Database Inaccuracies

- Challenges:
  - Inputting Survey Data vs Georeferencing vs Digitizing
  - Scale of Data, Units, Datums
  - Misclassification or Dual Classifications

- Solutions:
  - Identify project needs and possible future need
  - Create project standards and workflow
  - Set-up project QC/QA system
3b. Not Used or Maintained

- **Challenges:**
  - Necessary Fields Missing
  - Data Never Filled Out
  - Outdated information

- **Solutions:**
  - **Project Standards:**
    - Database manager
  - **Project QC/QA:**
    - Database versioning
    - Archiving and Editor Tracking

3c. Complex

- Examples:
  - Require a Level of Expertise on both sides
  - Necessary Collaboration

- Solutions
  - Include GIS professionals from the beginning (pre-proposal)
  - Implement project controls prior to project commencement
  - Budget for team collaboration (all team members)
5. In Summary

- Advantageous in organizing data and enhancing efficiencies and analysis methods.

- Challenges exist in compilation, review, and analysis.

- Overcoming these challenges require collaboration and planning with key staff along with over communication.
Questions