Pro's and Con's of Standard Operating Procedures in Geospatial Quality Assurance Documentation

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Approaches to Quality Assurance Project Plans

- Generally three ways to document QA Project Plans:
  - G-5 Formatted QAPP
  - A Quality Integrated Work or Research Plan (QIWP)
  - Standard Operating Procedures (SOP)

G-5 Formatted QAPP

- Straightforward presentation of Quality Information (QI)
  - Follows a “Table of Contents”
  - Easier to find specific QI
  - No “doubt” about what the Q-Plan contains
- QI is out of “context”
- May take more time & effort to write

Quality Integrated Work or Research Plan (QIWP)

- QA & QC information is “sprinkled” throughout the work or research plan.
  - Quality Information (QI) may not follow the G-5 order
  - Specific QI may be more difficult to find
- QI may make more sense in context
- QI may take less time and effort to write

Standard Operating Procedures (SOP) -Pro-

- When properly written
  - Ideal for routine or repetitive operations
    - Routine or repetitive operations **do** exist in research & development
  - Write once, use many times
  - Relatively easy to find & audit

Standard Operating Procedures (SOP) –Cons-

- May take considerable time and effort to write
- Deviations known prior to or during planning must be documented
- Deviations taken during implementation must be documented
- …….Are those really a “Con”?

Standard Operating Procedures (SOP)

- ….It Depends…
- Above all…….
- SOPs must be followed
- Deviations must be documented
- Failure to do so may lead to “problems”

Brocklesby vs. US (1983)

- Jeppesen makes navigational maps
- Brocklesby followed the map while flying
- Brocklesby crashed the cargo plane

Brocklesby vs. US

- Brocklesby cited Jeppesen for the crash
- Jeppesen cited the US Government for bad spatial data
- Government had limited liability
- Court thoroughly examined the role of spatial data in maps

Brocklesby vs. US

- Court determined that maps should be in the “product-tort” liabilities categories
  - If the final product has a bad component, the manufacturer of the final product is held liable .

- How does that involve geospatial data, QA & SOPs?

Brocklesby vs. US

- Jeppesen has procedures to check any data it obtains.
- Jeppesen did not follow their procedures.
  - If they did, they would have noted the errant data received from the FAA.

Case Impact on GIS

- When other court's use the logic applied in Brocklesby vs. US
  - Data quality components become critical from a liability perspective
    - Especially *data lineage*
  - What are the data quality components?

Case Impact on GIS

- To minimize liability, one must check the:
  - Positional Accuracy
  - Attribute Accuracy
  - Logistical consistency
  - Resolution
  - Completeness
  - Timeliness
  - Lineage
  - …and more

SOP Coverage & Use

- If one chooses to use SOPs in Quality Planning, then SOPs should be in place for:
  - Acquisition
  - Processing
  - Storage
  - Use…etc
- Most importantly……

SOP Use

- The SOPs must be used!
- Deviations must be documented!
- SOPs must be reviewed and revised (if needed) on an annual basis (as a minimum)

For more information…

- EPA Geospatial Quality Council website

  http://www.epa.gov/nerlesd1/gqc/default.htm

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