Geog 464 Learning Objective Outline

LOO 06 Decision Situation Assessment

06.1 How might you characterize the difference between closed systems decision problems and open systems decision problems?
06.2 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a general level perspective?
06.3 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a phase level perspective?
06.4 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a phase-construct level perspective?
06.5 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a phase-construct-aspect level perspective?

06.1 How might you characterize the difference between closed systems decision problems and open systems decision problems? RUGIS Chapter 4 Section 4.1

If we could enumerate all parts of a system, then we would have a *closed* system. If we cannot enumerate all parts of a system then we have an *open* system. The two types of problems are intertwined. The water flow and quality conditions are at the core of the water planning problem. Content, structure, process, and context of the water decision problem are all part of a location decision problem, whether planning for a single or multiple areas. We can consider those components to help differentiate simple, difficult, complicated, and complex systems problems.

See **Table 4.1** (new slides) for components of a decision problem viewed from a "systems" perspective

06.2 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a general level perspective? *RUGIS* Chapter 4 Section 4.2.1

We can undertake assessment at four levels of detail; each level should be customized to your "need to know" more about the decision problem. Let's consider the water plan you are developing for King (Green) County WRIA?

A **general level assessment** considers the three major concerns (**See Figure 4.1**).

- What are the concerns about convening a decision situation?
- What are the concerns about the process involved in a decision situation?
- What are the concerns about the outcomes of a decision situation?

06.3 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a phase level perspective? *RUGIS* Chapter 4 Section 4.2.2

A **phase level assessment** considers the three general categories of **constructs** – phase-input constructs, phase-process constructs, and phase-outcome constructs - for each of the phases within a workflow process, e.g. any one of the phase-steps previously discussed**.**
Imagine using the phase-steps in the geodesign framework (new slides). What about the same consideration for an adaptive management workflow (new slides)?

06.4 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a phase-construct level perspective? *RUGIS* Chapter 4 Section 4.2.3

A **phase-construct level assessment** considers all eight constructs **for each phase-step**. However, as that would involve substantial work, an analyst might only select this strategy for one or more selected phase(s). **See Figure 4.1 and Table 4.2 for description of constructs.**

06.5 How do we use decision situation assessment to improve our understanding of GIS-based workflow from a phase-construct-aspect level perspective? *RUGIS* Chapter 4 Section 4.2.4 – 4.4

A **phase-construct-aspect level assessment** considers detailing all the aspects for each of the phases. Clearly, this is a significant effort, so an analyst might only perform this assessment for certain of the constructs in one or two of the phase-steps. Which ones? The ones for which nnot much (nothing?) is known. **See Figure 4.2 and Tables 4.3 and 4.4**

Which assessment approach are you to choose for any given decision support problem?
The best approach is to start simple, and then add more detail if the decision situation warrants that detail in order to make the decision tasks, hence GIS project tasks, more understandable. Remember, your decision work is based on a “need to know”. If tasks are unclear, then move to the appropriate level of detail to make them clearer in you mind.

Talk with others about the tasks, particularly the stakeholders, as they might know something about what you need to know to be successful.