DOCUMENTATION METHODOLOGY

Background:

The U.S. Army Corps of Engineers Institute for Water Resources (IWR) has issued a task order to Dr. James Creighton, Creighton & Creighton, Inc. to provide expertise on collaborative decision-making processes in support of the Corps' National Cooperative Modeling Demonstration Program (NCMDP) and Collaborative Planning and Management Program (CPMP). These programs are focused on methodological advances in computer-aided collaboration and assisted negotiations, and application of these approaches through demonstration studies. Demonstration studies include the Willamette Basin in Oregon, and the James River basin in Virginia.

Creighton's role will be to document the collaboration process on these two case studies, identify process issues that arise, and propose alternative techniques for either these studies or future uses of computer-aided collaboration and assisted negotiations. The final result will be two detailed case studies, looking at the collaboration process, coupled with recommendations for changes or improvements.

This paper describes the methodology that will be employed to document the two cases.

Methodology

Two kinds of information need to be gathered:
- o A straight-forward chronology of the steps in the process
- o Evaluations from participants to get their perceptions of each of those steps

The primary methodology for gathering this information will be several rounds of interviews targeted at key project participants coupled with several rounds of questionnaires target at a broader audience of model users, validators, decision-makers, and interested public.

IWR has developed a concept called "circles of influence" to describe the different participants in processes such as these. The idea is that there is a set of interlocking teams of people ("circles") that play different roles, have differing levels of involvement, and also have differing levels of influence. These differing teams are portrayed as a set of concentric circles. Those circles in the middle have the most intense involvement, and are likely to have the greatest influence. Outer circles have less personal involvement but also have somewhat more limited influence.

In both the Willamette and James River cases, these circles can best be described as:

Circle A: Model Building Team

Circle B: Model Users, Validators

Circle C: All Interested Parties

Circle D: Decision Makers

The Model Building Team consists of the technical experts who will actually construct the hydrologic models that will be developed in these two studies (Circle A). But the model-building effort is supported and surrounded by other technical experts who contribute expertise to the model builders, technical staff of agencies that may use the model for future decision making, and staff of organized stakeholders whose understanding of the model-building process is important for the credibility of the model (Circle B). People in Circle B may even be organized into some sort of steering committee that advises the model builders. Because results from the model may have an influence on future river operations, there is always a broader audience of individuals and groups that need to be kept informed of the model-building process in order for the model to retain credibility, and who may want to comment on the assumptions used in developing the model (Circle C). Finally, there is a group of decisionmakers, typically senior management of agencies making decisions that affect river operations, who may be using the model to evaluate alternatives in future decision making (Circle D). These decision makers need to be kept informed throughout the process, and may provide direction to the process from time to time.

The relationship between these circles of influence is shown in Figure 1.

In this study, interviews will be conducted with members of Circle A. Questionnaires will be sent to members of Circle B, and may be followed up with interviews where appropriate. Questionnaires will be distributed periodically to a selected sample of stakeholders from Circle C who are not directly involved in model building or validation to assess perceptions of the process. The purpose of periodic interviews and questionnaires is to identify process issues for the case studies, and catch process issues before they get larger so they can be acted upon.

Circle A and Circle B are defined as:

	Willamette River	James River

Circle A: Model Builders	• Terry Buchholz, David Evans & Assoc. • Hal Cardwell, IWR • Vince Tidwell, Sandia • Tom Lowry, Sandia • Gillian Ockner, David Evans & Assoc.	• Hal Caldwell, IWR • Alexy Voinov, IWR • Bill Cox, Virginia Tech
Circle B Model Users, Validators	• David Primozich, Willamette Partnership • Matt Rea, Portland District, USACE • Other modelers [need names] • Other people from Willamette Partnership?	• Scott Kudlas & Terry Wagner, Virginia Dept. of Environmental Quality • Nick Kochuba, Norfolk District, USACE Regulatory • Regina Poeske, US Environmental Protection Agency Region III

Figure 1
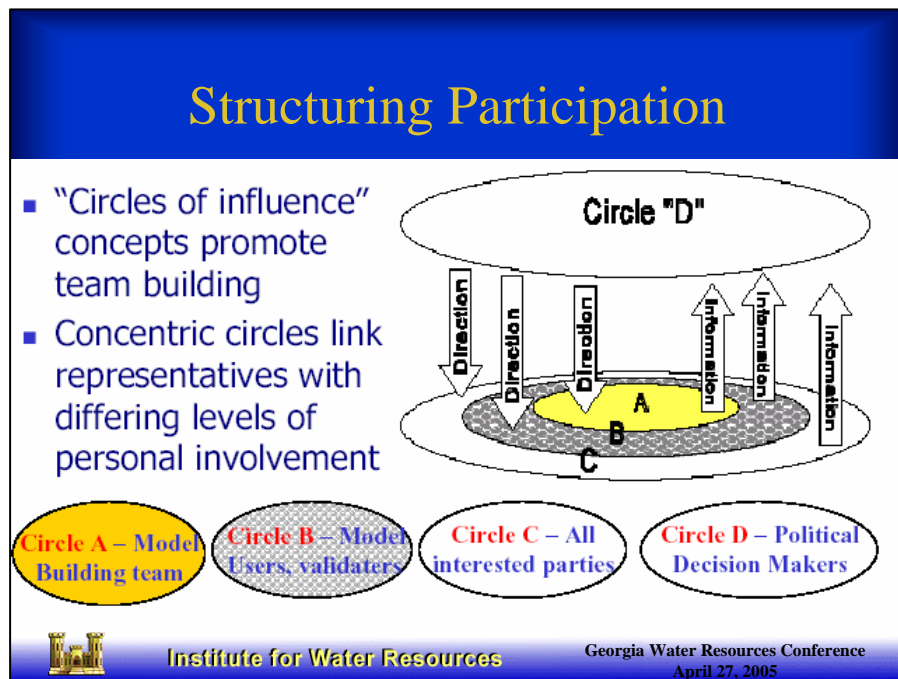
The key junctures for interviews and questionnaires - keyed to the Shared Vision Planning steps -- are:

- o *Build a team and identify problems* -- Interviews with Circles A & B to create a baseline of expectations and identify process assumptions. Send questionnaire to selected Circle C.

- o *Develop objective & metrics for evaluation* -- No interviews or questionnaires planned at this stage

- o *Describe the status quo; what will the future look like if we do nothing* -- Interviews with Circles A. Questionnaire to Circle B. Probably no questionnaire to Circles C unless there is a high level of controversy during this step, or this step requires extended duration of time.

- o *Formulate alternatives to the status quo* -- Interviews with Circles A; questionnaires distributed to Circles B and selected members of Circle C.

- o Evaluate alternatives and develop team recommendations -- Interviews with Circles A; questionnaires distributed to Circles B and selected members of Circle C.

- o *Institutionalize the project or plan* -- Final interviews with Circles A & B; Questionnaires distributed to Circles.

- o *Exercise and update (adaptive management* -- Occurs after task order is completed.

<u>Contents of Consultant Report</u>

Creighton will produce a draft report addressing the following topics:

- o Overview
  - ▪ Shared Vision Planning
  - ▪ Purpose of this study
  - ▪ Methodology used
- o Willamette River Case
  - • Description of the case
  - • Description of process used
  - • Process issues that arose
  - • How process issues were resolved
  - • Recommendations for addressing these process issues on future projects
- o James River Case
  - • Description of the case

- Description of process used
- Process issues that arose
- How process issues were resolved
- Recommendations for addressing these process issues on future projects
- Consultant Recommendations

Upon receiving comments from IWR, Creighton will revise the report and submit a final version.

QUESTIONS FOR INTERVIEWS

<u>BUILD A TEAM AND IDENTIFY PROBLEMS</u>

1) Please describe how the project came about.

2) How is decision-making allocated between agencies/sponsors/model developers?

3) How are tasks allocated between agencies/sponsors/developers?

4) How was agreement reached on the overall purposes/use of the model?

5) Is the ultimate use of the model linked to another decision-making process [e.g. TMDL, state plan, etc.]? Follow-up: How is it linked?

6) What are the basic steps/schedule for the process?

7) What unique challenges does the study face?

8) What level of stakeholder involvement is anticipated for model credibility?

9) How were potential stakeholders identified?

10) Are there different levels of involvement, e.g. core team, advisory group, policy group, etc.?

11) What mechanisms will be used to involve each of these levels during the process?

12) How have stakeholders influenced decision-making so far?

<u>After DESCRIBE THE STATUS QUO</u>

1) Please describe the major events since the last interview.

2) How were stakeholders involved in confirming the purpose of the model?

3) Did stakeholders confirm the purpose of the model?

4) How did stakeholders participate in identifying data sources/relationships/ assumptions used in the model? Which stakeholders?

5) How were stakeholders informed about how their questions will be addressed by the model?

6) Will the model be able to accommodate all the questions that stakeholders wanted answered? If not, were there any problems that occurred as a result of that?

7) How were stakeholders involved in characterizing the status quo and the assumptions used for the status quo?

8) Did stakeholders accept the characterization of the status quo and the assumptions used?

9) Did stakeholder participation add value?

After FORMULATE ALTERNATIVES TO THE STATUS QUO

1) Please describe the major events since the last interview.

2) How were stakeholders involved in formulating alternatives to the status quo?

3) What controversies arose over relationships/assumptions used, or the range of alternatives considered?

4) How were these controversies resolved?

5) Were stakeholders satisfied with the range of alternatives to be considered?

6) Do you believe that stakeholders consider the model to be credible?

7) Did any of the decision-makers participate during model development?

8) Do you believe the decision makers believe the model is credible?

After EVALUATE ALTERNATIVES AND DEVELOP TEAM RECOMMENDATIONS

1) Please describe the major events since the last interview.

2) What kinds of changes have been made in the model since the last interview/questionnaire?

3) What prompted those changes?

4) Were stakeholders involved in validating/testing the model? How? Which stakeholders?

5) Did stakeholder involvement impact the evaluation of alternatives?

6) Do you believe that stakeholders consider the model to be credible?

6) How was the model used in developing team recommendations?

7) How were decisions made within the team, e.g. by mutual agreement, voting, one agency deciding, etc.?

After INSTITUTIONALIZE THE PROJECT PLAN

1) Please describe the major events since the last interview/questionnaire.

2) Has the model been used for decision-making?

3) What was the nature of the decision being made?

4) Who was involved in making the decision?

5) How was the model used in the decision-making process?

6) How did the results from the model influence decisions?

7) What problems (if any) occurred during the workshop using the model?

8) What questions or challenges were raised about the model?

9) What did participants report they learned from using the model?

10) Was there a larger public participation process to review/comment on their decisions made by the decision-making group?

11) Will the model be used on a continuing basis? For what kind of decision-making processes?

12) Who (what institution) will house/maintain/update the model?

QUESTIONNAIRE

Please indicate with an X how well each statement below reflects your opinion.

1) I believe that the _____ project seems to be going very well.

| | | | | |
| Strongly
Agree | Agree | Neutral | Disagree | Strongly
Disagree |

Please note any concerns about how the project is going:

2) Participants in the process are representative of the key interests and concerns in the affected area.

| | | | | |
| Strongly
Agree | Agree | Neutral | Disagree | Strongly
Disagree |

Please note any problems with the representation of the key interests and concerns in the affected area:

3) I have sufficient opportunity to present my ideas and raise questions.

| | | | | |
| Strongly
Agree | Agree | Neutral | Disagree | Strongly
Disagree |

Please note any suggestions you have for better ways for you to present your ideas and raise questions:

4) The modelers are responsive to my concerns and questions.

|				
Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Please note any suggestions for what modelers can do to be more responsive to your concerns and questions:

5) I believe that the model will/does capture the key trends in the affected area

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Please note any changes needed in the model to capture the key trends in the affected area:

6) I believe the outcome of this project will be extremely valuable.

Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
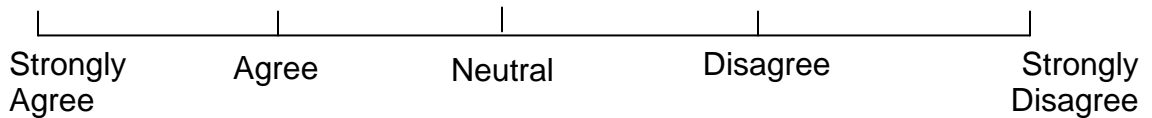
Any other comments about the project or model?

PROCESS ISSUES

What would we want to know about a case to understand the process dynamics? The issues below are keyed to the steps in Shared Vision Planning.

STEPS IN SHARED VISION PLANNING

1. Build a team and identify problems
2. Develop objectives and metrics for evaluation
3. Describe the status quo; what will the future look like if we do nothing?
4. Formulate alternatives to the status quo
5. Evaluate alternatives and develop team recommendations
6. Institutionalize the project or plan
7. Exercise and update the plan (adaptive management)

Build a team and identify problems

o How was decision-making allocated between agencies/sponsors/model developers?
o How were tasks allocated between agencies/sponsors/developers?
o How was agreement reached on the overall purposes/use of the model?
o Was the ultimate use of the model linked to another decision-making process [e.g. TMDL, state plan, etc.]?
o What was the basic steps/schedule for the process?
o What unique challenges did the study face?
o What level of stakeholder involvement was anticipated for model credibility?

Develop objectives and metrics for evaluation

o How were potential stakeholders identified?
  – What interests/stakeholders needed to be consulted for the model to have credibility?
  – What interests/organizations needed to have an opportunity to review/comment upon the model for it to be credible?
  – What interests/organization need to be informed for the model to be credible?
o How were stakeholders involved in confirming the purpose of the model?
o Did stakeholders confirm the purpose of the model?

- o What questions did stakeholders need answered by the model?
- o Was the model able to accommodate stakeholder questions?
- o How were stakeholders informed about how their questions were addressed?
- o How satisfied were stakeholders with the involvement process?
- o How did the stakeholder involvement influence decision-making during this step?

Describe the status quo; what will the future look like if we do nothing?
- o How did stakeholders participate in identifying data sources/relationships/assumptions used in characterizing the status quo?
- o Did their participation add value?
- o What controversies arose over relations/assumptions used?
- o How were these controversies resolved?

Formulate alternatives to the status quo
- o What process was followed to get stakeholder input into the range of alternatives considered?
- o Were stakeholders satisfied with the range of alternatives considered?
- o Were stakeholders involved in validating/testing the model? How? Which stakeholders?
- o Did stakeholder involvement impact the assessment of validity?
- o Was the evaluation of alternatives part of another decision-making process [e.g. TMDL, state plan, etc.]?
- o Who was involved in evaluating alternatives? In what forum?
- o What did stakeholders report they learned from using the model?
- o If the group participating in "what if" scenarios was a limited group, was there a larger public participation process to review/comment on their conclusions?
- o How did the results from the model influence decisions?
- o Was the "decision making group" able to reach an agreement? If not, what were the barriers to reaching agreement

Institutionalize the project or plan
- o Was the model used in multiple decision-making processes? How? When?
- o What problems did the group have using or understanding the results from the model?
- o What problems arose in using the model that require changes?

- How did stakeholders participate in identifying and making those changes?
- What role did stakeholders play in reviewing changes once they were made?
- Will the model be used on a continuing basis? For what kind of decision-making processes?
- Who (what institution) will house/maintain/update the model?