



Guiding Principles for the Use of Technology in ECR Processes

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The following principles are designed as a general guide for facilitators, technologists, process sponsors, and others working to integrate emerging technologies (e.g., visualization tools, decision-support systems, internet polling, collaborative authoring tools) into environmental conflict resolution (ECR) processes.

The guidelines are based on generally accepted foundational principles of alternative dispute resolution and ECR, and the premise that the use of technologies should not compromise these foundational principles.

The guidelines also serve to highlight where the ECR and technology disciplines intersect and the resulting implications including: new responsibilities for practitioners; budget considerations for project sponsors; and stakeholder engagement considerations for technologists.

While the principles outlined in this document are tailored toward process practitioners (e.g., facilitators and mediators), the majority of issues addressed (e.g., inclusivity, impartiality, timeliness, privacy, transparency, accountability) are equally applicable to process sponsors, technologists, and others working to effectively use new technologies in ECR processes.

Definition of ECR

The term "ECR" encompasses a range of assisted negotiation processes and applications. These processes directly engage affected interests and agency decision makers in conflict resolution and collaborative problem solving.

ECR is formally defined as third-party assisted conflict resolution and collaborative problem solving in the context of environmental, public lands, or natural resources issues or conflicts.¹

While ECR refers specifically to collaborative processes aided by a third-party mediator or facilitator, there is a broad array of partnerships, cooperative arrangements, and unassisted negotiations that are commonly included in the less formal definition of ECR, and to which these guiding principles also apply.

Technology Categories

There is a growing suite of technologies and tools that are increasingly being applied to enhance ECR processes. These technologies fit broadly into three categories:

Decision support technologies that help model complex systems, synthesize often incommensurate information, generate alternative scenarios, understand and integrate differing perspectives and values, and support stakeholders in analyzing the basis, assumptions, and implications of decisions.

¹ On November 28, 2005, the Director of the Office of Management and Budget, and the Chairman of the President's Council on Environmental Quality issued a policy memorandum on ECR. This policy statement defined ECR (see above) and directed federal departments and agencies to increase the effective use of ECR.

Visioning technologies that help stakeholders think creatively and conceptualize project options to support shared solutions to environmental conflict and challenges.

Collaboration and communication technologies such as collaborative authoring, videoconferencing, and internet polling, that help stakeholder groups work together effectively in-person and remotely.

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Overarching Guidance

- Principled conflict resolution is built on process impartiality. Whether a process is facilitated by a third-party neutral, or is self-organized, the process itself should offer equal consideration to all parties and should not offer advantages to any one party over another, nor should it be biased to a particular outcome. In these processes, therefore, sponsoring parties, third-party neutrals and others providing process assistance should ensure that the use of technology does not give unfair advantage to certain parties at the expense of others.

Guidance for Consideration during Process Design and Convening Phases

- Encourage process participants to work collaboratively to determine if the use of technology tools could be beneficial to achieving the goals of the ECR process.
- Encourage process participants to work collaboratively to define clear objectives of the technology application.
- Ensure that process participants have a general understanding of the strengths and limitations of technology options, how a technology will be used to assist with the process deliberations, and the extent to which technology products will be used in decision-making.
- Ensure that process participants and sponsors understand the time and cost implications of using technology tools in their process, and can dedicate the resources necessary to accomplish the desired goals.
- Encourage process participants to work collaboratively to select the technology provider.
- Ensure full disclosure of any relationships between the technologist and the process convener and/or other participants/stakeholders.
- Choose a technologist² with an appreciation of the working principles of ECR, or a commitment to gaining an appreciation of the working principles prior to the initiation of the process.
- Ensure the process facilitator has the skills and time needed to interface with the process technologist and effectively guide the technology-enhanced process.
- Define and ensure clear understanding by all (i.e., the participants, convener, facilitation and technology team) of the role of the technologist, technology/facilitator team, and technical experts or advisors, if applicable.

² In this context, a technologist is defined as a specialist in the creation and/or use of electronic or digital products or systems that analyze information, create visualizations, facilitate communication, or otherwise support collaborative problem-solving.

- Strive to match the level of complexity of technology with the necessary products for a successful process.
- Ensure that the process participants, sponsors, and the technology team agree upon protocols for data acquisition, security, privacy, confidentiality, access, monitoring, reporting, dissemination and ownership of all relevant inputs and outputs.

Guidance Principles for Consideration during a Collaborative Process

Effective Engagement

- Ensure that technologists engage with participants and introduce products in ways that are consistent with ECR principles of increasing participants' understanding of each other's views and perspectives; helping build trust among participants; and identifying options and solutions that meet the needs of all participants.
- Explain technology inputs, processes, uncertainties, and products using everyday terms and language understandable to all participants.
- To the extent possible, ensure that technology interfaces (e.g., user screens, reports) are user friendly, or compensate with user assistance and tutorials to ensure all participants are effectively engaged.
- Ensure the design of technology applications (e.g., models and simulations) and technology products (e.g., resource maps, fly-over visualizations) reflect balanced representation of all affected interests and concerns.
- Continually evaluate and take measures to mitigate the impact of differences in stakeholder understanding and comfort levels with the technology component of the process and related products.
- Work to ensure the participants level of engagement related to the technology component of the process does not create a barrier to achieving the overall goals of the collaborative effort.

Data and Model Specifications

- Ensure all data are accompanied by standard metadata³ as well as transparent documentation of the methods of collection and analysis, assumptions, biases, resolution, definitions of technical terms, and an assessment of quality, uncertainty, and known confidence or error levels associated with input data and output products.
- Ensure that all technology applications considered for an ECR process are accompanied by full documentation (e.g., software specifications, model parameters), including disclosure of any known limitations (e.g., the number of variables a modeling program can accommodate or the potential impact of the resolution of one or more data inputs on all associated outputs).

³ Metadata is data that serves to provide context or additional information about other data. For example, information about the title, subject, author, typeface, enhancements, and size of the data file of a document constitute metadata about that document. It may also describe the conditions under which the data stored in a database was acquired, its accuracy, date, time, method of compilation and processing, etc. (BusinessDirectory.com). Whenever possible metadata should meet government standards (i.e., Federal Geographic Data Committee standards for spatial data <http://www.fgdc.gov/metadata>), and if not possible, the standards used should be documented and openly available to all participants.

Technology Products and Uses

- Work to ensure that process participants commit to consider technology products in good faith with an open mindset to meeting the common goals of the group.
- Prompt participants to evaluate the strengths and limitations of technology products to ensure the products are used appropriately.
- If key decisions or recommendations are based on technology products, work with the participants to ensure they have the materials (e.g., design documents, methods, products) needed to effectively brief their constituents and leadership.
- Consider when it may be appropriate to use technology tools (e.g., project websites, RSS feeds) for reporting and product dissemination throughout the lifecycle of the project, and ensure that all reporting and information dissemination follows any protocols agreed upon by the process participants.
- Throughout the process, ensure that process participants understand the relationship between technology products and process outcomes (e.g., will a preferred alternative generated by a collaboratively developed and employed decision-support system be automatically adopted as the process outcome, or are technology products informational resources to inform deliberations and decision-making).
- Prompt process participants to discuss and agree upon appropriate measuring and monitoring activities if applicable, including the role of technology.
- Consider engaging participants in “lessons learned” debriefings on how future technology-enhanced ECR processes could be improved. Document and make debriefings available as a resource to others.

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For more information on the Technology and ECR Coordinating Committee visit <http://ecr.gov/Resources/TechnologyInECR.aspx>.