# Public Participation in Watershed Management Planning: Views on Process from People in the Field

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## *Abstract*

*Watershed planning is an important focus of environmental protection efforts in many states. Still, how to involve the public in watershed planning remains controversial. This paper reports on research that used Q methodology to study how experienced watershed management planners and activists perceive the proper way to involve the public in decision-making. Four perspectives about how best to involve the public in watershed planning emerged. One emphasizes that a good process is credible and legitimate and that it maintains popular acceptance for outcomes. A second sees a good process as one that produces technically competent outcomes. A third focuses on the fairness of the process. A fourth perspective pays attention to educating people and promoting constructive discourse. Differences among these views suggest an important challenge for those responsible for designing and carrying out public participation processes. Conflicts may emerge about process designs because people disagree about what is appropriate in specific contexts.*

*Keywords: public participation, Q methodology, watershed planning*

## Introduction

Policy makers and stakeholders widely accept that members of the public should be involved in environmental planning, such as watershed planning (Creighton, Delli Priscoli and Dunning 1998; National Research Council 1996; Fiorino 1990; Woolley, McGinnis and Herms 1998; Nature 2000; Wondolleck and Yaffee 2000). Just how to involve them, however, remains controversial. Researchers and practitioners have searched for principles that characterize "good" public participation processes. It is a persistent issue for researchers in Human Ecology.[1] Much of the literature seems to assume that principles of good public participation are universally accepted and not contentious. Who would disagree that a good process should be, for example, fair and competent (Renn, Webler and Wiedemann 1995)? Despite their widespread appeal, fairness and competence may not be the only features of a participatory process that matter to people. Participants and planners often disagree about what constitutes a good process. In other words, there may be no single definition of a good process, either in the abstract or in context-specific cases. Conflicts about how to best "do" public participation create significant design obstacles for those entrusted with decision-making authority in environmental policy arenas.

In this paper, we report the results from our inquiry about how active and experienced people in watershed planning think about the public's role in producing a watershed management action plan. We used Q methodology to learn participants' views. Four perspectives about good process emerged. Differences among these perspectives highlight different principles important in public participation processes. The results illustrate how people can disagree about the best ways to conduct a participatory watershed planning process. These disagreements have important implications for the ways that planners can go about designing "good" processes.

## A Review of Public Participation Theories and Approaches

"Public participation" means many things to many people. In the past, the term was often used to refer to opportunities for providing comments at public hearings, voting in referenda, or being a member of a social movement. More recently, "public participation" refers to a variety of proce-

dures for enabling diverse members of the public to be active participants in deliberations about preferred policy options, and in some cases decision-making. Procedures are used that allow members of the public to have voice and influence. An evolution away from technocratic-based environmental and risk decision-making has emerged during the last twenty years, as the belief grows stronger that many policy initiatives fail when they follow 'top-down' or technocratic approaches that attempt to separate assessment of technical information from discussion of values and policy (National Research Council 1983). Pressures arise from publics' demands to be included in more open, transparent processes, and from government agencies seeking legitimacy and credibility. These pressures have occurred simultaneously with increased calls generally for 'civic discourse' and openness in government (Gutman and Thompson 1996).

These are reasons that address *why* public participation in environmental and risk decision-making should occur. They are forcing decision-makers to experiment with various approaches to policy planning based on democratic principles: the question of "how." The "social experiments" include, for example, the use of advisory boards, water quality councils, informal roundtables, and "living room" meetings. They have been implemented in a variety of policy domains, ranging from the cleanup of nuclear weapons facilities to ecosystem management, species and habitat restoration, and the siting of hazardous facilities.

Knowledge from practitioners, lay people, and university participant-observers has accumulated from these "social experiments." Research and practitioner oriented literatures are rapidly growing with a variety of suggested procedures, guidelines and evaluation criteria (Chess and Purcell 1999; Creighton, Delli Priscoli and Dunning 1998; Kasperson 1986; Webler 1997; Wondolleck and Yaffee 2000; Rowe and Frewer 2000; Carnes et al., 1998; McDaniels, Gregory and Fields 1999; Daniels and Walker 1996). At the same time, there has been growing attention to conceptual approaches for understanding "best practices" for public participation (Dietz and Stern 1998; Chess, Dietz and Shannon 1998; National Research Council 1996; Shindler and Creek 1997; Webler 1995).

For example, a stream of conceptual thought in the public participation literature concerns issues of fairness, or procedural justice. Procedural justice is considered an important element in people's satisfaction with decisions, perceptions of fairness, and support for authorities (Lind and Tyler 1988; Thibaut and Walker 1978). A variety of criteria have been proposed, including use of accurate information, representativeness, participation in decision-making, and suppression of bias. Researchers have also concerned themselves with relationships between procedural justice, distributive justice,

support for outcomes, trust, and other variables (Brockner and Siegel 1996). The role of how people perceive the procedural fairness of public participation processes and environmental decision-making forms a growing body of empirical research (Lauber and Knuth 1997; Smith and McDonough 2001; Renn, Webler and Kastenholz 1996).

Political theories of democracy have also been used to identify fundamental principles for public participation. This is represented by an earlier conceptual piece by Nelson Rosenbaum (1978) as well as the more recent work of Daniel Fiorino (1990) and Frank Laird (1993) — both of who derived criteria from democratic theory and used these to evaluate generic techniques of participation. Fiorino based his principles on a conception of participatory democracy, while Laird added a parallel analysis based on liberal democratic theory.

In 1996, a committee of the National Research Council tackled the question of how to advise federal agencies to do public participation (although it was initially asked to address a different question). The approach developed by the committee was innovative. The report, *Understanding Risk: Informing Decisions in a Democratic Society* (National Research Council 1996), developed the concepts of analysis and deliberation and constructed a model of participatory decision-making that sought to integrate the need for lay and expert knowledge to inform a deliberative, adaptive, and iterative policy-making process. Several scholars have taken interest in the analytic-deliberative approach (Apostolakis and Pickett 1998; Dietz and Stern 1998; Jasanoff 1996; Webler and Tuler 1999; Chess, Dietz and Shannon 1998; Bradbury 1998; Stern 1998). Two recent National Research Council reports advocated more use of the analytic-deliberative approach in issues of biodiversity (NRC 1999a) and watershed planning (NRC 1999b). However, there has been little development of the central ideas of this approach and no attempt to link it to other theoretical understandings of public participation.

Another stream of theoretical work relevant to the field of public participation began with Jürgen Habermas's theory of universal pragmatics (1979) and his theory of communicative action (1984, 1987). The work of Ortwin Renn (1992); Thomas Dietz (1987); Judith Innes (1998); John Forester (1993); Ray Kemp (1985); and Frank Fischer (1985) fall into this category. In this vein, a theory of fair and competent citizen participation has been advanced by Thomas Webler (1995, Webler and Tuler 2000). The theory proposes a definition of "good" or "right" public participation. That is, it proposes a normative theory of public participation in western developed democracies. Following Habermas, Webler used the concepts of validity claims and their corresponding modes of discourse together with the ideal speech situation

and communicative competence to reason out criteria of a fair and competent public participation process (Webler 1995, 81-86). A key distinction was that Habermas defined competence in terms of individual capabilities while Webler defined competence in a procedural sense — that is, the use of the best available techniques for resolving validity claim disputes (which are disputes about correctness, appropriateness, and truthfulness of assertions). This theory has been invoked to evaluate models of environmental decision-making (Renn, Webler, and Wiedemann 1995). The theory was used more recently by Coenen, Huitema, and O'Toole (1998) and Rowe and Frewer (2000).

Closely associated with the theoretical literature on public participation is a large literature on evaluating public participation processes (Bradbury and Branch 1999; Carnes et al. 1998; Chess and Purcell 1999; Rowe and Frewer 2000; Shindler and Creek 1997). This literature occasionally draws on theoretical literatures, but more often it is empirical. Its purpose is to create criteria and measurable indicators to evaluate the design or performance of participation processes.

Judith Bradbury, Kristi Branch, and their colleagues have been making progress toward a theory of public participation through empirical evaluation research of chemical and nuclear weapons policy issues (Bradbury et al. 1994, Bradbury and Branch 1999). In their studies of chemical weapons disposal they discovered that public acceptance of policy rested on four central criteria, which they suggest a public participation process should endeavor to meet: (1) technical competence, (2) fair decision process, (3) accountability of decision-makers, and (4) trust and caring relationship between agency and publics. In their studies of DOE site-specific advisory boards they identified six factors that contribute to effective processes: community context; board composition; purpose, goals, and commitment to consensus; internal process and functions; public engagement; and DOE and regulator engagement.

In a recent effort to explore the universality of principles for good participation, we studied a forest planning process (Tuler and Webler 1999, Webler and Tuler 2000, Webler, Tuler and Krueger 2001). We found five competing social discourses about "good" policy processes (Webler, Tuler and Krueger 2001). Discourses are shared, structured ways of speaking, thinking, interpreting, and representing things in the world, and they can have different degrees of stability. Though there is a growing effort to study discourses about environmental and risk issues (Dryzek 1997; Gamson 1989; Satterfield 1996), much less attention has been given to different discourses about *process*. One perspective emphasized that a good process acquires and maintains popular legitimacy through a consensual democratic process. A second saw a good process as one that facilitates an ideological discussion among a core of stakeholders. A third focused on the fairness of the process, paying special attention to creating high quality democratic deliberation and to achieving participation by all segments of society. A fourth perspective conceptualized participatory processes as a power struggle. The fifth perspective highlighted the need for leadership and compromise in combination with collecting insights and fostering deliberation among a wide range of the public. A primary insight from this study for theorists of public participation is that it is inappropriate to expect that criteria will be universally held. Many theories implicitly or explicitly assume such universality (e.g., Webler 1995). Another interesting result is that different participants chose to emphasize different normative aspects of the process. Some focused on illegitimate relations of power, some on the role of experts, others focused on how outreach efforts were conducted. The study reported here continues this line of inquiry in a different policy area using similar methods.

## Methods

During a workshop for watershed planners and activists from across Massachusetts, twenty-one individuals completed a Q sort exercise. The sort occurred just after the individuals completed a constructivist educational module that encouraged the attendees to contemplate and critique different scenarios for involving the public in watershed planning. People reported that they enjoyed doing it. They mentioned that it was innovative, fun, moderately difficult, and that it stimulated their thinking.

Q method is especially suitable for this type of analysis. It allows a respondent to express his or her own point of view and preserves subjectively determined meanings during the statistical analysis (Brown 1986; McKeown and Thomas 1988; Stephenson 1953). Unlike survey methods that ask a respondent to express a view on isolated statements, in a Q study individuals react to statements in the context of all statements included in the study as each statement is ranked in relation to the others. An "inverted" factor analysis is used to identify patterns of relationships among statements and across the individuals who participated in the study. The analysis maintains an individual's responses as a whole rather than dismembering his or her responses according to various traits. The researchers interpret factors to represent underlying perspectives within the social discourse. The approach has been around for over fifty years and its use in policy and planning literature is expanding (Brown 1986; Dryzek 1996; Focht and Lawler 2000; Woolley, McGinnis and Herms 1998; Kalof 1998, 2000; Pelletier et al. 1999; Webler, Tuler and Krueger 2001).

Statements for a Q study are constructed by the researcher, lifted from publications, or extracted from interviews. For this study, we took statements that were used in a previous project on public participation in forest policy making (Webler, Tuler and Krueger 2001). The statements were edited to ensure they were appropriate to this context.[2] It is essential that the statements represent the full *breadth* of opinions associated with the topic. At the same time, people can be expected to sort only 4-5 dozen statements. Therefore, each statement has to be chosen carefully.

The research literature on public participation clearly demonstrates that context matters to how people define a "good" process. The purpose of this study was to test how multiple perspectives can exist in regard to a single process rather than to test how perspectives vary across different contexts (although this is also an area in which additional research would be of benefit). Thus, a hypothetical watershed planning case was used to frame the context of the Q sorting exercise. A Watershed Community Council (WCC) that was legally charged with the responsibility of producing a watershed management action plan was described (Table 1). The condition of instruction was:

> *Imagine that you are designing a public participation process for the watershed described in the case description. Sort the statements according to what you believe should be the most important to least important ideas guiding the design of the process.*

MQMethod program was used to analyze the data.[3] To obtain factors we used centroid extraction with judgmental rotation. Any factor analysis requires a certain amount of judgment in determining the relevant factors. Factors were selected based on four criteria: (a) explanatory value was > 7%, (b) at least two subjects loaded significantly, (c) the factor was theoretically important, and (d) inter-factor correlations were less than 0.5.[4]

To validate the interpretation of factors six individuals who loaded highly on different factors were consulted. They reviewed narrative descriptions of each factor and they commented on the overall meaning and subtle wording in the narratives. Based on their comments we made small changes to the factor narratives, which are presented in the next section. Overall, people felt strongly that the narratives were satisfactory descriptions of their thinking about this issue.

## Results

Four factors were identified in the Q analysis. Table 2 presents the statements and their scores for each factor. A factor corresponds to a particular arrangement of the statements on the Q sort board. The numbers from "+5" to "-5"

*Table 1.* Hypothetical case description for the Beane River Basin.

*Physical characteristics:*
Drainage area: 602 square miles
River length (in Massachusetts): 37 miles
Tributaries: 4
Acres of ponds, lakes, and reservoirs: 3540
Hydrofacilities and dams: 4
State ownership: 15%, 3 large contiguous state forests, 2 state parks

*Demographics:*
Number of towns and cities in watershed: 20
Total year-round population: 159,000
Three cities have populations greater than 40,000
Summer population increases by 35,000
The watershed cuts across the cusp of a larger metropolitan area. Two of the larger cities are suburbs of the metropolitan area. One of these cities is economically depressed and has a Laotian immigrant community.

*Economic:*
Median income: $26,000
History of manufacturing industries, but importance declining
Employment by economic sector:

| | |
|---|---:|
| agriculture (crops and livestock) | 2% |
| education (1 community college and 1 4-year college) | 5% |
| government | 10% |
| forest products industry, including 2 mills | 12% |
| tourism (3 seasons; summer, fall, winter) | 8% |
| non-tourist service | 22% |
| self-employed | 18% |
| manufacturing | 7% |
| other | 16% |

*Social:*
• Growing conflicts in some towns between full-time residents and second home-owners (e.g., taxes, services, congestion, land use practices).
• Participation rates at town meetings and volunteer civic activities have been declining significantly for the last 6 years.
• There is little knowledge or appreciation for the environmental problems in the watershed. There is high concern about social problems.
• There are numerous organizations and groups, including a watershed protection group. Many environmental groups are represented at the college campus.

*Ecology:*
Endangered species: 3 MA listing, 1 Federal listing
• One endangered flowering plant that grows in habitat along one of the tributaries. It is endangered by agricultural practices along a few miles of the tributaries.
• Two amphibians are endangered as a result of water pollution in ponds from faulty septic systems from poor second home construction.
• Depleted native fish stocks in rivers and many ponds and lakes are common due to water pollution, overfishing, and dams.

represent the placement of each statement on the board, where "+5" means most important and "-5" means least important. The loading scores presented in Table 3 represent loading coefficients that depict how closely an individual's sort matched each of the factors (where +100 means complete agreement and -100 means complete disagreement).

*Table 2.* Q statements and factor arrays.

| Statements | | Factors | | |
|---|:---:|:---:|:---:|:---:|
| *The process should...* | *A* | *B* | *C* | *D* |
| 1 Allow people to talk with one another | 1 | -4 | 0 | 2 |
| 2 Attempt to build trust and respect among the different participants. | 0 | 0 | 2 | 2 |
| 3 Be consistent in how information is evaluated. | -2 | 3 | 1 | 1 |
| 4 Be cost efficient. | -2 | -2 | -3 | 0 |
| 5 Be designed so that all groups and individuals have equal status regardless of how affected they believe they are. | 2 | -4 | -1 | -1 |
| 6 Be designed so that if someone makes a compelling case for something it should change the course of the outcome. | -4 | 0 | 5 | -2 |
| 7 Be totally open at every single step. | 4 | -3 | 4 | -4 |
| 8 Build credibility for the Watershed Community Council. | 4 | -4 | -1 | -2 |
| 9 Defuse future conflict which might prohibit future planning processes. | -2 | -2 | -1 | -4 |
| 10 Develop a spirit of cooperation. | 3 | -1 | 3 | 1 |
| 11 Educate people about the range of issues confronting the watershed. | 5 | 4 | 2 | 3 |
| 12 Enable citizens to feel they are part of the project. | 2 | 1 | 3 | 1 |
| 13 Enable long-term collaboration. | 4 | 0 | -2 | -2 |
| 14 Encourage participants to speak in professional, friendly, and courteous ways. | -3 | -1 | 2 | -1 |
| 15 Engage participants with information so that they make more informed decisions. | 2 | 5 | 0 | 4 |
| 16 Ensure that all of the different view points are represented in the process. | 0 | 4 | 5 | 0 |
| 17 Ensure that all points of view have an equal opportunity to be expressed. | 0 | 3 | 4 | 2 |
| 18 Ensure that every decision made in the process is justified with evidence. | -5 | 5 | 0 | -1 |
| 19 Ensure that everyone involved has an equal chance to put his/her concerns on the agenda. | -3 | 2 | 5 | 2 |
| 20 Ensure that local knowledge used in decision-making is critically evaluated. | 0 | 0 | 2 | 0 |
| 21 Ensure that opportunity isn't an empty shell; there need to be opportunities to be heard but there also has to be some way for the public to see that the decision-makers are listening. | 0 | 3 | -2 | 4 |
| 22 Ensure that there is peer review of expert knowledge used to make decisions. | -2 | -2 | -5 | 0 |
| 23 Give land owners special representation. | -5 | -5 | -5 | -5 |
| 24 Guarantee full disclosure of information at all times. | -1 | -1 | 3 | -5 |
| 25 Have a clear plan for public involvement. | -1 | 2 | 3 | 4 |
| 26 Have meetings at times and locations convenient for working people. | 2 | 1 | 2 | 3 |
| 27 Have skilled facilitators to keep a constant flow and to keep things on center. | -1 | 1 | -1 | 1 |
| 28 Have strictly enforced rules about what are acceptable behaviors at meetings. | -5 | -2 | 0 | -5 |
| 29 Involve as many members of the general public as possible in all stages of the process. | -1 | 2 | 4 | -3 |
| 30 Involve mainly stakeholders and scientists in defining the problems and designing action plans. | 0 | -1 | -4 | -4 |
| 31 Involve the publics in deciding what technical information should be gathered and how it should be gathered. | -1 | -3 | -4 | -3 |
| 32 Leave people with a better understanding of each other's languages, approaches, viewpoints, and so forth. | -2 | -4 | -2 | 3 |
| 33 Limit topics that can be discussed to avoid quagmires. | -4 | -5 | -4 | -1 |
| 34 Not tilt toward any one interest group. | 2 | 0 | -2 | 0 |
| 35 Overcome apathy by educating the general public about the problem. | 1 | -3 | -4 | -2 |
| 36 Produce an action plan that is politically feasible. | 1 | 1 | 0 | -1 |
| 37 Produce an action plan that is technically competent. | 3 | 5 | 1 | -3 |
| 38 Promote a constructive discussion about the problem. | 0 | 0 | 1 | 5 |
| 39 Promote a regional awareness and a regional sense of place. | 5 | -3 | -1 | 1 |
| 40 Reach out in a number of different ways through different mechanisms to different communities on different issue points throughout the process. | 1 | 4 | -3 | 5 |
| 41 Rely mainly on consensus to make important decisions. | -1 | -1 | -5 | 0 |
| 42 See the problem through the eyes of the public before drafting action plans. | 3 | 0 | 0 | 0 |
| 43 Seek approval from the publics for its action plan. | 3 | 4 | -2 | -1 |
| 44 Seek out and value expert/scientific knowledge. | 1 | 3 | -3 | 3 |
| 45 Seek out and value local knowledge and experiences. | 5 | 2 | 0 | 5 |
| 46 Select Watershed Community Council members partly on the basis of their personalities and willingness to work with others. | -3 | -2 | -4 | -2 |
| 47 Set up a situation that encourages people to listen and reflect on what they hear. | 1 | 1 | 1 | 4 |
| 48 Stick to the timetable and produce the goods on time. | -4 | -1 | 1 | 1 |
| 49 Strengthen democracy and rebuild people's faith in government. | -3 | -5 | 1 | -4 |
| 50 Substantiate its assumptions. | -4 | 1 | -2 | -3 |
| 51 Treat the publics with respect. | 4 | 2 | 4 | 2 |

*Table 3.* Reordered factor matrix.

| Factors / Name | A | B | C | D |
|---|---|---|---|---|
| *Factor A* | | | | |
| Wigham | **.62** | .60 | -.90 | **.61** |
| Stacy | **.61** | .80 | .30 | .27 |
| Clinton | **.61** | -.70 | .25 | .80 |
| Faurague | **.48** | .80 | .40 | .37 |
| Listof | **.48** | .00 | .10 | .36 |
| Jannson | **.46** | .16 | .15 | .80 |
| Hughes | **.43** | .80 | .50 | .14 |
| *Factor B* | | | | |
| Pickels | .15 | **.67** | .40 | .20 |
| Sontag | .13 | **.67** | .14 | .31 |
| Austin | -.40 | **.48** | .10 | -.10 |
| Reno | -.28 | **.47** | .38 | .38 |
| Minau | .22 | **.49** | .26 | .21 |
| *Factor C* | | | | |
| Kinsey | .50 | .18 | **.62** | .00 |
| Garcia | .21 | .70 | **.48** | .16 |
| Vaughan | .41 | .16 | **.42** | .30 |
| *Factor D* | | | | |
| Smith | .15 | .26 | .19 | **.59** |
| Christianson | .18 | .50 | .14 | **.52** |
| McGough | .32 | .39 | .10 | **.46** |
| West | .90 | .20 | -.80 | **.45** |
| Moore | .21 | .11 | .12 | **.45** |
| Non-loaders | | | | |
| Stern | .29 | .21 | .15 | .29 |

All highlighted numbers are significant at $p < 0.001$, two-tailed, critical value = 0.429.

The names listed in Table 3 are pseudonyms. As the reordered factor matrix in Table 3 shows, only one person did not load significantly on any factor. Only one person loaded on more than one factor. This is a very clean factor matrix which suggests that people had well-formed and distinct opinions about how the public should be involved in watershed planning. Now we turn to a description of each perspective. In the descriptions, the numbered statements from Table 2 appear as numbers in parentheses.

## Factor A: A good process is credible and legitimate

At the heart of this perspective lies a deep concern for ensuring the process is widely seen as credible and legitimate (8).[5] Policies are more implementable if they are popularly accepted and only a credible and legitimate process can acquire this level of support. In this perspective, a credible and legitimate process validates itself through process features such as being respectful to the publics (51) and open at every step (7). It shows respect and an authentic willingness to learn from the public by seeking out and valuing local knowledge and experiences (45). And, the WCC should see the problem through the eyes of the public before drafting the

action plan (42) and it should not be biased toward any one group (5). This may take time and effort, and the process should be flexible enough to meet these needs even if it means abandoning the original timetable (48). Finally, the WCC should seek public approval for the final action plan (43) before it moves into the implementation stage.

In addition to these process design features, a good process acquires public support for watershed planning through education and outreach. Of foremost importance is that people have an awareness of the watershed, its problems, and the policies being implemented (11). Watershed planning is greatly furthered when publics have a sense of awareness of the watershed (39) and a good process takes care to establish this perception. According to this perspective, these are two important ends that a good process should strive to achieve.

An appropriate process is also one in which the official decision-making authority does not shirk from its obligations. It is important to elicit public input, but it would be irresponsible for the WCC to turn over the decision to the parties who are participating in the process. In other words, decision-makers should not give up control over the agenda (19). Decision-making requires a good degree of judgment and discretion. Consequently, decision-makers must reach beyond the immediacy of the process in order to make decisions that are socially and environmentally responsible for the long-term. Compelling arguments from the public, for example, only oblige the decision-makers to consider the speaker's point, not to react with specific decisions (6). Moreover, it is not wise to require that every decision be justified with evidence (18) or that every assumption be substantiated (50). As one participant who loaded high on this factor remarked, "Lack of data should not delay action on very important problems."[6] Sometimes, when the problems are serious enough it is necessary to take action even though data are not conclusive. Clearly, decisions cannot merely be information-driven. They must involve a great amount of judgment and consideration.

## Factor B: A good process is competent and information-driven

From this perspective, the role of quality information in the process is central. The focus is on producing an action plan that is technically competent (37). For this to happen, not only does every decision need to be justified with evidence (18), but also the process needs to engage its participants with information so that people are making better decisions (15). This necessarily involves educating people about the watershed and its problems (11). One way that a good process engages people is by seeking out local knowledge (45). Of course, scientific knowledge is also sought out (44)

and all information brought into consideration is evaluated in consistent ways (3). Substantiating assumptions is also considered important; it was ranked higher on this factor than any other (50).

Information cannot by itself, however, drive a decision. Information needs to be interpreted by people. Competent decisions are aided by democratic and fair processes. Thus, it is critical for all people to have a fair and just opportunity to participate and be heard (16, 17, 21, 19) and for the public to endorse the final action plan (43). For all these reasons there needs to be a clear plan for doing public participation (25) which includes a substantial outreach effort (40) that involves as many people as possible (29).

According to this perspective, the WCC needs to pay utmost attention to how the publics inform and communicate with the watershed planning project. Of lesser importance is the communication that goes on among participants (1), the consequences the experience has for people's understandings of each other (32), or the effects that this process has on macro issues such as reinforcing values of civil society (49). This factor differs strongly from Factor A in its de-emphasis on public acceptability, as illustrated by its low rankings for the credibility for the WCC (8) and promoting regional awareness of the watershed (39). Instead, the emphasis is on producing an action plan that is justified by evidence (18), something Factor A ranked as least important.

### Factor C: A good process fosters fair democratic deliberation.

The two previous perspectives emphasized process legitimacy and competence. Factor C emphasizes the theme of fair democratic deliberation. According to this view, fair democratic deliberation is related to issues of power and equity in the process. These issues are reflected in three of the most highly ranked statements on this factor (16, 19, 6). Accordingly, giving people representation in the process (16), influence in agenda-setting (19), and influence over outcomes (6) are all key to understanding the meaning of equal power in this perspective.

As with the first perspective, the publics' sense that they feel part of the project matters (12). However, the reason for why this matters could not be more different. In Factor A, the motivation for including the public was strategic — to gain legitimacy so that policies will be implementable. Here, participation should be meaningful because it is morally right to give people affected by decisions a chance to participate in shaping them. The publics should be involved in the process (29), not just stakeholders (30).

In contrast to Factor B, the role of information and evidence in the process is not emphasized (44, 45, 50). It is striking to see that this factor gave the lowest ranking to the idea of having peer review of expert knowledge drive decisions (22). This reflects the intersection of two beliefs: a resistance toward the idea of an elitist process and a de-emphasis of the role information should play in the process.

According to this perspective, discussions that take place inside the process are not primarily about information or scientific reports. People are engaging in democratic deliberation and strengthening democratic values (49).[7] Toward this end, relating in a civil manner is important (51,14). Openness is essential for this kind of talk to prosper. Therefore, the process must be open at every single step (7) and it must fully disclose all information at all times (24).

Despite the endorsement of a democratic approach this perspective does not believe in turning the process over to the public will. There is a strong resistance to relying on consensus in decision-making (41) and to letting the publics participate in defining what technical information is gathered (31). Still, a compelling case made by someone should change the course of the outcome (6). This represents a realistic view of how the public should be involved in watershed planning. Supporters of this perspective know that consensus can become an excuse for stalling. They clearly differentiate the roles of the experts and the publics in the process. Still, they argue that outcomes should be rational and based on the best argumentation available.

### Factor D: A good process emphasizes constructive dialogue and education

More than any other, this perspective highlights the need for decision-makers to pay attention to educating people and creating constructive dialogue (38, 15, 11). Outreach is of primary importance (40, 45). Interestingly, the number of participants is a poor indicator for these conditions (29). In other words, the goal of the outreach is to involve people who really can participate meaningfully and constructively (38), not to merely create large turnouts.

In the public participation process envisioned by this perspective, the WCC listens and reflects on what is said (47). Creating opportunities for people to speak is not enough; they need to be heard by the decision-makers (21). Yet, the decision-making power clearly resides with the WCC and not the public according to this view. As with Factor A, promoting quality interaction should not undermine the authority of the decision-makers. The decision-making body is presumed to retain responsibility and authority for the final outcomes. Unlike factor C, just because someone makes a compelling case for something the WCC is not obliged to adopt it into the action plan (6). Furthermore, the final action plan should not focus only on being technically competent (37) or having substantiated assumptions (50). Both of these items point to the need for leadership to be free to exercise

judgment in decision-making under uncertainty. Leaders should not rely on public approval for the action plan (43).

This is a perspective that visualizes an enlightened leadership that does its best to draw people into an informed constructive dialogue. It engages participants with information (15), although the focus here is clearly on more than just information. A quality experience is one in which talk is rich with local knowledge and experiences (45) and people talk with one another directly (1). Skilled facilitators can be useful to move things along (27). The goal is a constructive discussion (38) which leaves people with better understandings of each other's viewpoints and about issues (32, 11) and which builds trust and respect among the participants (2).

WCC decision-makers should focus on creating a rich dialogue and not be dragged down by pie-in-the-sky goals like fostering long-term collaboration (13), avoiding long-term conflict (9), or strengthening civil society (49). While these are not necessarily unimportant, they are simply less important than fostering a learning, reflective deliberative process.

According to this view, decision-makers have a responsibility to listen to the public and take their concerns into consideration. However, they ought not turn over responsibility to those people who participate. Guaranteeing full disclosure of information (24) or having a process open at every step (7) is not consistent with this goal. Furthermore, if the quality of the interaction is excellent and the decision-makers are listening then there would no need for the public to confirm that the decision-makers have acted appropriately (43). It is also interesting to note that having strictly enforced ground rules for behavior is not seen as the appropriate way to realize the important principle of quality talk (28).

### Consensus Items

We found consensus on several of the statements across all factors. That landowners should *not* receive any special representation in watershed management processes (23) was strongly emphasized in all four factors. This violated some peoples' democratic principles of equity and was viewed as a threat to the policy-making process. The idea that publics should be involved in deciding what technical information to be gathered (31) was ranked low in each of the factors. Paradoxically, involving lay publics in designing the parameters and direction for technical studies is strongly advocated by the National Research Council in their recent report on America's watersheds (National Research Council 1999b). Another point of consensus across factors was a low ranking for the suggestion that WCC members be selected in part on the basis of their personalities and willingness to work with others (46). The people who participated in this research felt that the process has to be able to accommodate all types of people. Those implementing the process should not be selective about who participates. Finally, the lack of enthusiasm for consensual based decision-making is worth noting (41). Many public participation theorists and practitioners endorse consensus because it is assumed to protect all interests equally. This population, however, focused more on the possibility that consensus would be misused for strategic ends at the expense of protecting the environment.

## Implications for Practice

This study relied on participants that were watershed planners and activists in Massachusetts. Missing are the points of view from many other stakeholders whose participation in watershed planning matters. Thus, caution is necessary lest the results be over-interpreted. For example, we expect that individuals with strong opinions about the protection of private property rights will have a different view about what constitutes a good process. Similarly, other stakeholders might believe that consensus is important in order to overcome the possibility that decisions will be contested in court. However, this study does capture perspectives from a wide variety of individuals who are normally *leading* watershed protection efforts in Massachusetts. The views of these people are important to consider when designing a participatory planning process.

What should organizers and participants of watershed planning processes take from these results? First, experienced and knowledgeable people in watershed planning have different expectations about what a public participation process should look like and what it should achieve. Clearly, different people highlight different attributes of a public participation process. For some, the process's legitimacy and ability to implement the plan it produces were paramount. Others focused their attention on the role information plays in informing the discussion and driving the outcomes. A third group concentrated more on issues of fairness and equity. They were aware that different people wield different amounts of power and influence and that these amounts are not always compatible with the degree of affectedness. Finally, some people felt that it was most important to consider the quality of the deliberative experience.

Second, the differences among these perspectives may reflect differences in deeply held values. For example, the motivation for including the public was a strategy to gain legitimacy for the implementation of policies in Factor A. If public involvement becomes a hindrance to gaining legitimacy, then involving the public may not continue to be a priority for those holding this perspective. However, in Factor C participation was viewed as a moral right because people affected by decisions should have a chance to shape them.

The need for the public to be involved arises from a different set of values about democracy. Similarly strong, and potentially contentious, differences arise in regard to the role of information and evidence in the process and the importance of creating an informed public (through education and outreach). However, it is important to note that not every difference may be deep or irreconcilable.

Thus, our third point is that organizers of public participation processes should strive to understand the differences and what underlies them. While some differences may pose difficult challenges planners should strive to meet them. They should seek to implement processes that are credible and legitimate while also being technically competent, democratically fair, and experientially pleasing and efficacious. Planners should not sacrifice one goal for another. If compromises are not possible because irresolvable differences do exist, planners should know why and carefully consider the implications of alternative process designs. The literature on public participation suggests that a good process is adaptive and responsive to the will of its participants. Planners should take the time to inquire about what participants want the process to achieve or manifest. They should not rely on assumptions about what they think that participants want. For example, while we found consensus against consensus this belief might not be held in all cases.

## Conclusions

A persistent problem for planners and activists involved in watershed planning is how to construct a process that meets the needs and goals of planners, affected stakeholders, and the general public while producing implementable and effective policy outcomes in a cost efficient manner. Recent literature is full of advice for how to conduct a participatory policy making process in environmental planning contexts. Without challenging this advice, we suggest that conflicts can emerge about the goals of a participatory planning process. Our findings indicate that some may reflect differences in deeply held beliefs and values. Moreover, the differences can be used strategically (e.g., to disempower other participants or raise questions about the legitimacy of a process that promotes undesirable outcomes). If the conflicts over process go unaddressed (e.g., about lack of adequate opportunities to participate and the role of technical information in decision-making) they can exacerbate existing tensions.

Some of the research and evaluation literature on public participation focuses on identifying models or techniques for public participation and evaluating how well these techniques work for different decision arenas. This refers to the question of how best to match method with purpose. The results from this study suggest that the answer to this question will be complicated by the existence of multiple perspectives about "good" process within a particular decision-making arena. Chess and Purcell (1999) argue, moreover, that methods (e.g., use of advisory boards, public hearings) are frequently adapted and that the way a method is applied may have a substantial, even determining effect on the performance of the process. Planners, then, have both challenges and opportunities as they seek to meet the needs of participants with different views about "good" process and as they seek to design a process that meets shared needs.

An important question is the degree to which our results in this study are dependent on the context of the watershed planning process or are universally held. We asked people to base their replies as if they were designing a process for the hypothetical watershed outlined in Table 1. A cursory comparison of the results of this study with the earlier study of forest planning suggests some important similarities and differences among the discourses about process. A more systematic comparison of the discourses is beyond the scope of this article. These two studies provide useful fodder for generating hypotheses for further work on developing theory of public participation. For example, our understanding of public participation will be furthered by more research that uncovers perspectives about process both *within* specific policy domains and *across* policy domains. The ways that contextual features of a decision arena are related to beliefs about process is also an important need for future research.

## Endnotes

1.  For example, the *Human Ecology Review* has been a forum for articles about public participation in a variety of policy arenas. A 1998 Forum on public participation in environmental decision-making highlights many of the complexities of defining "good" process (see, for example, Raffensperger 1998, Bradbury 1998, Chess et al. 1998, Pritikin 1998, Stern 1998, Webler 1998).
2.  In the forest project statements were extracted from interviews with participants of the policy making process.
3.  This program is available on the web at http://www.rz.unibw-muenchen.de/~p41bsmk/qmethod/index.htm.
4.  Interfactor correlations below 0.5 are considered acceptable in Q studies. Our interfactor correlation matrix was:

    |   | B | C | D |
    |---|---|---|---|
    | A | 0.2726 | 0.2196 | 0.4001 |
    | B |  | 0.3392 | 0.4586 |
    | C |  |  | 0.1836 |

5.  Numbers in parentheses refer to statements listed in Table 2.
6.  McGinnis and Woolley (2000) report finding this same result in their recent study of watershed activists in California.
7.  This statement ranked near the bottom for all other perspectives, but ranked 19th for this factor.

# Acknowledgments

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## Author's Erratum

Thomas Webler and Seth Tuler's article published in HER 8(2), 29-39, 2001 (Public Participation in Watershed Management Planning: Views on Process from People in the Field) had an error in Table 3 on page 34. The corrected table is reprinted below.

*Table 3*. Reordered factor matrix.

| | Factors | | | |
|---|---|---|---|---|
| **Name** | **A** | **B** | **C** | **D** |
| **Factor A** | | | | |
| Wigham | **.62** | .06 | -.09 | .61 |
| Stacy | **.61** | .08 | .03 | .27 |
| Clinton | **.61** | -.07 | .25 | .08 |
| Faurague | **.48** | .08 | .40 | .37 |
| Listof | **.48** | .00 | .01 | .36 |
| Jannson | **.46** | .16 | .15 | .08 |
| Hughes | **.43** | .08 | .05 | .14 |
| **Factor B** | | | | |
| Pickels | .15 | **.67** | .04 | .20 |
| Sontag | .13 | **.67** | .14 | .31 |
| Austin | -.04 | **.48** | .10 | -.01 |
| Reno | -.28 | **.47** | .38 | .38 |
| Minau | .22 | **.49** | .26 | .21 |
| **Factor C** | | | | |
| Kinsey | .05 | .18 | **.62** | .00 |
| Garcia | .21 | .07 | **.48** | .16 |
| Vaughan | .41 | .16 | **.42** | .03 |
| **Factor D** | | | | |
| Smith | .15 | .26 | .19 | **.59** |
| Christianson | .18 | .05 | .14 | **.52** |
| McGough | .32 | .39 | .01 | **.46** |
| West | .09 | .20 | -.08 | **.45** |
| Moore | .21 | .11 | .12 | **.45** |
| **Non-loaders** | | | | |
| Stern | .29 | .21 | .15 | .29 |

All numbers in bold type are significant at $p < 0.001$, two-tailed, critical value = 0.429.