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Public Participation in Environmental Decision Making

Even though public participation is fundamental to the planning process, practitioners struggle with low levels of participation and with developing methods to broaden the public's voice in local decision making. I conducted a study to examine why some people participate in planning processes while others do not. Factors motivating participation were identified from the planning and political science literatures and their effects were empirically assessed using data from a survey of 341 residents in four North Carolina communities facing environmental decisions involving toxic waste sites. The results reveal that participation is limited by a lack of awareness of public meetings and that participation is more common than planners recognize because residents find ways to participate other than by attending formal meetings. These results challenge planners to reconsider their views of what participation entails and to consider policies proposed here to increase participation.

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Findings from Communities Facing Toxic Waste Cleanup

Lucie Laurian

Planning academics and practitioners call widely for public participation—the involvement of citizens—in planning decisions (e.g., Friedmann, 1973; Healey, 1997; Sandercock, 1998; Yiftachel, 1998). There are theoretical and practical reasons for this emphasis on public participation. In the communicative planning paradigm, for example, participation is at the core of deliberations among agencies, stakeholders, and the public at large (Forester, 1999a). In practice, participation is fundamental to the democratic process (e.g., Friedmann, 1992; Healey, 1992). It forces agencies to be accountable to the publics they serve, enables the inclusion of lay knowledge in decision making (e.g., Forester, 1999b), improves public support for policies, and improves planning outcomes (e.g., Bickerstaff & Walker, 2001). Public participation also has the potential to strengthen the planning profession by increasing the visibility and value of planning in the public's eye. Finally, participation is also valuable *per se* as a political goal (Pateman, 1970) because it increases social capital (Bickerstaff & Walker, 2001; Putnam, 1998; Temkin & Rohe, 1998) and empowers citizens as they seek a stronger voice in decisions that affect their lives (Zimmerman & Rappaport, 1988). A desirable public participation process is thus one that enables citizens to shape planning decisions and outcomes while increasing their levels of social and political empowerment.

In response to this call, planning agencies across the country devote considerable resources to mandate, provide for, and incorporate community input in planning processes as they respond to urban, social, and environmental issues. While empirical studies find that planning practice is often participatory (e.g., Innes, 1995; Ozawa & Seltzer, 1999), others dispute that participation is meaningful (e.g., Flyvbjerg, 1998; Kaminstein, 1996; Redburn et al., 1980; Tauxe, 1995). Practitioners consistently struggle with the issue of low and unrepresentative participation (e.g., Thomas, 1995), leaving fundamental questions unanswered: Why do some people participate while many others do not? Could some levels and forms of participation remain unobserved because they are informal or noninstitutionalized?

The key contributions of this study are (1) its focus on *both* participation and nonparticipation; (2) the investigation of participatory methods outside the traditional planning domain of public meetings; and (3) the use and extension of the *exit, voice, loyalty* model of responses to stress¹ to predict participation (Hirschman, 1970). Few, if any, of these issues have been addressed directly and simultaneously in the planning literature.

The fundamental objective of the study was to examine why some people participate in planning processes and others do not. Four questions guide the research:

1. How many residents participate in planning decisions?
2. What formal and informal mechanisms are used for participation?
3. Why do some residents participate?
4. Why do many others not participate?

These questions will be examined in the context of environmental decisions as they play out in neighborhoods and communities affected by toxic waste sites. There are three reasons why these cases are well suited to the analysis of public participation. First, toxic waste sites affect millions of Americans in hundreds of neighborhoods that are exposed to environmental contamination. For example, Superfund sites² are the most toxic in the nation, and two million Americans live within 1 mile of a Superfund site (Greenberg & Schneider, 1996, p. 134). Second, such sites pose local social, environmental, and land use problems that require direct public involvement because they generate environmental and health risks, affect property values (e.g., Kolhase, 1991; Nelson et al., 1992), pose land use and reuse problems, and stigmatize communities. Because of these substantial potential effects, public participation in making decisions affecting these sites tends to be high. Third, given the scope of these problems and the high cost of cleaning up such sites, cleanup decisions involve federal, state, and local government agencies, all of which are officially committed to increasing public participation in planning.

The next section of this article examines citizen participation in environmental decisions by drawing on literatures that deal with responses to perceived environmental risks and political participation. In the third section, I present the methods used to empirically identify residents' participatory and nonparticipatory responses, as well as the factors motivating participation. The fourth section presents the findings of a survey of 341 residents in four com-

munities located near Superfund sites in North Carolina. Issues addressed in the analysis include attendance at public meetings versus the use of other public participation channels, whether personal resources or concerns promote participation, the influence of communitywide factors, and whether nonparticipation is due to residents' lack of interest. I conclude with policy recommendations for planners striving to increase public participation in decision-making processes.

Background and Conceptual Model

Since the decision to participate in a planning process is made at the individual level, I focus on individuals' responses to issues affecting them. Specifically, this work considers participatory and nonparticipatory responses to environmental risks related to toxic waste sites. Individuals perceive risks such as threats to health and environmental quality and negative effects on property values. To explain individuals' responses, I use and add to theories of responses to perceived risks and theories of political participation.

Responses to Perceived Risks

The environmental psychology literature (e.g., Bell, 1996; Evans & Jacobs, 1982; Singer & Baum, 1983) indicates that when individuals respond to risks, their coping mechanisms are either accommodative (passive) or manipulative (active; Bachrach & Zautra, 1985). To define these active and passive responses conceptually, I build upon a reformulation of the most widely used model of responses to stress: *exit, voice, loyalty, neglect* (Rusbult et al., 1982; see also Lyons & Lowery, 1986). Voice, or participation, involves some form of activism to improve local environmental conditions. It is a political response defined as the expression of dissatisfaction by individuals with the intent of changing the situation (Hirschman, 1970). The three other responses in this model are nonparticipatory. Exit is characterized by leaving or planning to leave. Loyalty is a passive response based on trust that the situation will improve (e.g., that a toxic waste site will be properly cleaned up). Neglect, or apathy, is characterized by lacking interest or concern and accepting that the situation will not improve.

Based on theories of political alienation and disempowerment (e.g., Herring, 1989a, 1989b), I consider another potential response: resignation. Some individuals may be passive and resigned to an unsatisfactory situation without being apathetic. In such a case, individuals may have

concerns about the situation yet respond with pessimism, not trusting public agencies to resolve the problem.

Figure 1 presents the conceptual model that guides my analysis of participation in the cleanup planning process. It draws upon concepts raised in the research literature to identify the potential responses to the perceived risks of toxic waste sites and the factors affecting participation. This model presents the choices of individuals who live near toxic waste sites. They can work to improve the situation (the voice response) by participating in the cleanup process (e.g., attending public meetings, signing petitions, etc.) or they may choose not to participate, in one of four ways. They can plan to leave the area (the exit response), which is nonparticipatory but active—and costly. They can trust that government agencies will clean up the site (the loyalty response). They can decide not to participate because they are not interested in the issue (the neglect response). Finally, they can feel concerned about the contamination yet doubt that the site will be cleaned up and simply accept the situation (the resignation response).

Responses to perceived risks (outcomes)

Participatory responses

- Voice:
 - Attending a public meeting
 - Attending other meeting where the site was discussed
 - Signing or circulating a petition
 - Contacting an elected official
 - Joining a local environmental group
 - Attending a march or rally

Nonparticipatory responses

- Exit: Planning to leave
- Loyalty: Being interested and trusting the cleanup process
- Neglect: Not being interested
- Resignation: Being interested, not trusting the cleanup process, and accepting the state of affairs

Factors Affecting Participation

Given the five responses discussed above, this article focuses on participation and the factors that affect it, as well as on nonparticipation. Because participation is a political response, I build on political science theories to identify its determinants. The key factors that affect participation (see right side of Figure 1) are described below.

Sociodemographic Characteristics. The first factors shown in Figure 1 are sociodemographic characteristics. Participation is costly because of the time, effort, and money required. For this reason, those with more resources are more likely to bear the cost of participation (Lyons & Lowery, 1986). High-income and upper-middle-class citizens frequently participate in local politics and are the most effective interest groups (Cox, 1982; Junn, 2000; Orbell & Uno, 1972; Verba et al., 1995, p. 188).

In terms of race, however, the (limited) literature focusing specifically on ethnicity and environmentalism provides mixed conclusions on the effect of race on environmental concerns. For instance, Morrissey and Manning (2000) found few differences in environmental values and ethics by race. Dietz et al. (1998) found that African Ameri-

Factors affecting responses (determinants)

Sociodemographic characteristics

- Household income
- Race
- Gender
- Age
- Education
- Employment status

Individual motivations

- Information about the site
- Risk perceptions
- Community attachment

Local social context

- Social networks
- Mobilized community groups

Trust in government agencies

- General trust in agency
- Trust in cleanup process

Figure 1. Conceptual model of responses to perceived risks in toxic waste site cleanup processes.

cans have slightly higher absolute environmental concerns than Whites (but that their environmental concerns are lower than Whites' relative to other social issues), and Arp (1994) found that African Americans are slightly more concerned about the environment because their exposure to environmental hazards is higher than that of Whites. Despite mixed findings concerning the effect of race on public participation, most studies find that minorities tend to participate less than Whites (Junn, 2000). Verba et al. (1995), for instance, found that in general, African Americans are slightly less politically active than Whites. This holds especially for environmental issues, where these authors find that Whites are more likely to perform environment-related political activities than non-Whites (Verba et al., 1995, p. 248). Earlier, Taylor (1989) found lower levels of environmental concern and activity for African Americans than Whites. However, these findings may have been due to a narrow definition of what constitutes "environmental" activism. African Americans may be involved in actions concerning urban environments (such as illegal waste dumps or building code enforcement) that are usually not considered "environmental" actions. Arp and Kenny (1996) proposed that African Americans are not less likely to become engaged in local environmental issues, but that as any other group, "[B]lacks become concerned and active when it is clearly in their interest to do so" (p. 269; e.g., in the presence of clear local environmental threats). For African Americans, as for any other group, "... when the environment becomes more salient . . . the potential benefits from concern and participation are much more direct and tangible and hence may outweigh the cost of activity" (p. 269). Finally, in terms of gender, Verba, Schlozman, and Brady (1995) found that women perform fewer political activities than men (p. 255).

Individual Motivation. The second factor affecting participation is the individual's motivation to participate (Verba et al., 1995). According to public choice theory, individuals participate in local decision-making processes when outcomes are relevant to them and when the potential benefits of participation outweigh the costs. Community attachment and feelings of belonging to a place thus also increase the likelihood of community involvement (Wandersman & Giamartino, 1980). For instance, homeowners are more likely to participate than renters (Cox, 1982), and duration of residency is positively correlated with participation (Greenberg & Lewis, 2000). The most highly motivated residents know about the environmental risks, are more concerned than others about these risks (i.e., perceiving the risks as acute, feeling threatened by

a toxic site, or being concerned about the way it is managed), and are most attached to or invested in the area. No study has looked at the effects of residents' information levels on participation, but logically, as residents are more informed about local issues, they should be more likely to participate.

Local Social Context. The third factor of participation is the individual's local social context. Wandersman and Giamartino (1980) found that integration in social networks is related to community involvement and, according to Verba, Schlozman and Brady (1995), social networks function as networks of recruitment. They found that participation often springs from rich interpersonal networks, and that the most active citizens become involved because they were "recruited" by people they personally know (Verba et al., pp. 133, 141). Residents integrated in social networks are more likely to participate because they are invited to do so more often than those outside such networks.

In addition to social networks, community groups provide opportunity structures that may facilitate participation. The existence of mobilized community groups increases individual participation by reducing the costs involved. This occurs because it is easier to join a group than participate individually. Furthermore, groups increase the potential benefits of participation by increasing the likelihood that action will be successful. Participation is effective if those expressing dissatisfaction have enough power to induce change, and individuals are more likely to be heard when they organize in interest groups and exert collective pressure on decisionmakers (e.g., Berry, 1997, 1999; Wilson, 1973). Participation is thus least costly and potentially most beneficial for the individual if active community organizations are in place.

Trust in Government Agencies. Finally, trust in government agencies may influence participation. While trust is crucial to the process, the concept of trust is complex and often ill defined. According to Carnevale (1995), trust is "... one of the most meaningful and least understood variables in organizational life" (p. 6). Thomas (1998) noted that trust is a multifaceted concept with cognitive, emotional, and behavioral components that operate on interpersonal and institutional levels. His review of the public administration, management, and policy literatures found that trust is often seen as an important factor in the relationship between public agencies and the general public. Public trust in government implies that "... citizens must place their trust in government agencies and their employees to act in their interest" (Thomas, 1998, p. 171).

Participation may also be affected by the public's negative perceptions of government. Gamson (1968) indicated that the optimum condition for political mobilization is a combination of high political efficacy³ and *low trust*—“. . . a belief that influence is both possible and necessary” (p. 48). Accordingly, grassroots activism and residential neighborhood associations are viewed as alternative power structures, ideologically based upon distrust in government (Greenberg & Lewis, 2000; Hain, 1976). In the case of toxic waste sites, if government agencies are not trusted, citizen passivity is expected to yield worse outcomes and, comparatively, the potential benefits of participation will be higher. In other words, individuals trusting the government may have less incentive to participate and are more likely to remain passive.

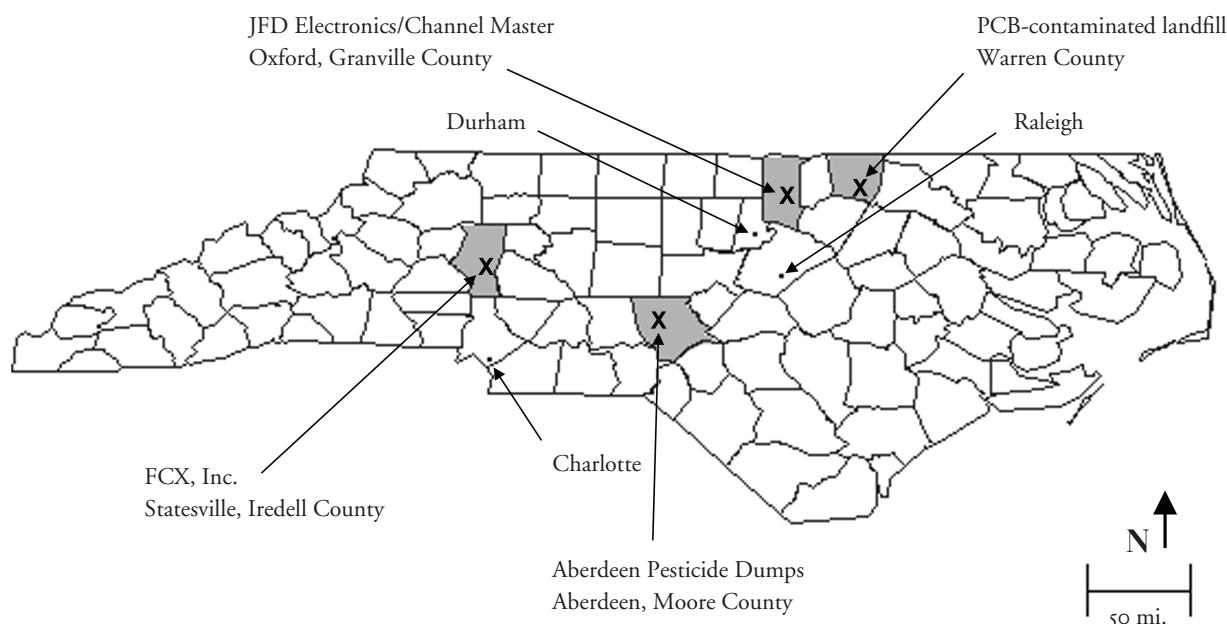
In contrast, some argue that trust in government agencies is essential and fosters higher levels of participation (Docherty et al., 2001; Gopalan, 1997). Lyons and Lowery (1986) argue that this occurs because participation is more effective when people think their actions matter. This means that in the case of toxic waste sites, the public is more likely to participate if government agencies are receptive to their actions (e.g., if the Environmental Protection Agency is believed to be responsive to citizens).

Method

Study Communities and the Survey

A survey was conducted in 2000 in four North Carolina communities located near toxic waste sites (see Figure 2). Three sites are currently on the Superfund National Priority List (NPL), and the fourth is a landfill built to contain soils extracted from a former Superfund site. All sites are nonfederal toxic waste facilities undergoing cleanup. At all sites, the soil and groundwater contamination is significant enough to warrant a cleanup, but the actual health effects are uncertain. The study communities were selected so that two of the four are mobilized (have active citizen groups), while the other two are not.

Warren County and Aberdeen are the two mobilized communities. Warren County is a rural area whose population is two thirds African American. The toxic waste site is a landfill built in 1982 to hold PCB-contaminated soils from a Superfund site. The decontamination of the site had not begun at the time of this study. The community has been active since the early 1980s when it organized to oppose the siting of the landfill. Warren County is known as the birthplace of the national environmental justice movement, and its residents remain actively involved in



Map of NC counties by U.S. Census Bureau, 1990

Figure 2. Study communities and their toxic waste sites in North Carolina.

local environmental issues. The second community consists of residents living around the Aberdeen Pesticide Dumps in Aberdeen, a town of about 3,000 in Moore County, which is mostly White (80%). The site has been on the Superfund NPL since 1989, and its cleanup is underway (contaminated soil has been removed and groundwater is being treated). The Aberdeen community group has obtained an EPA Technical Assistance Grant and has been actively involved in cleanup decisions.

The communities of Statesville and Oxford, both in counties that are mostly White, were not mobilized. The Statesville community consists of residents living around the former FCX, Inc. pesticide packaging plant in Statesville, a town of about 23,000. While the site has been listed on the NPL since 1990, the cleanup had not started at the time of this study. A citizen group had previously mobilized but was no longer active. The fourth community is located in Oxford, a town of 8,000 residents, around the JFD Electronics/Channel Master site, a former TV antenna manufacturing plant. This site was listed on the NPL in 1989. At the time of this study, contaminated soil had been removed but the groundwater treatment had not begun. The residents of Oxford have not organized. While the site in Warren County is in a rural area, those in Aberdeen, Statesville, and Oxford are located at the industrial edges of towns in working- and lower-middle-class neighborhoods.

In each community, a random sample of residents living around the site were interviewed by telephone in February 2000. The sample was constructed using telephone listings of residents located within a 0.5-mile radius of each site. A total of 478 adults over age 18 were contacted, and 341 interviews were completed, for a response rate of 71%.⁴ More than one third of all respondents are African Americans, and more than half live in households earning less than \$30,000 per year, a larger share than the state average African American and poor populations. This supports claims that minority and poor populations are more likely to live near toxic sites than Whites and wealthier segments of society (e.g., Bullard, 1990; Heitgerd et al., 1995).⁵ The analysis of responses to the survey presented here includes only residents who were aware of the site at the time of the survey (80% of respondents, or 272 cases).

Questions asked in the survey were used to separate responses into broad categories of "participation" and "nonparticipation," then more narrowly into subcategories listed in the model presented in Figure 1. *Participation* was defined as the respondent having ever performed one of

the following acts in relation to the site: signing and/or circulating a petition, attending a meeting about the site or its cleanup, writing or calling an elected official regarding the site, joining a local environmental group, attending a march or rally regarding the site, or performing some other action in relation to the site. *Exit* was defined as planning to move away from the neighborhood in the next 2 years. *Loyalty* was defined as being passive (choosing neither participation nor the exit response) and believing that the site will be completely cleaned up. *Neglect* was defined as being passive and not feeling concerned about the site. *Resignation* was defined as being passive, being concerned about the site, but not believing that it will ever be completely cleaned up. The survey questions used to determine responses to perceived risks are listed in the Appendix.

Analysis

The analysis followed three steps. The first focused on participants and the modes of participation they had used (residents were classified as participants if they had performed any participatory act as defined above). Participation in formal public meetings was compared to informal modes of participation (such as signing a petition or contacting an elected official) by examining descriptive survey data. The second step identified the factors affecting participation using a logit model that predicts the likelihood of participation or nonparticipation. The model is specified using the factors affecting participation presented in Figure 1 and identified using the survey data. The third step focused on nonparticipation. Using descriptive data analysis, I evaluated whether nonparticipation was due to apathy or other, more complex causes.

Results

Participation and Its Mechanisms

Although the majority of residents displayed non-participatory responses, 41% had performed some participatory act. Table 1 presents the proportion of residents who had participated and the mechanisms they used. While few had attended formal public meetings concerning the cleanup of the sites, many found alternative ways of expressing their concerns. As expected, in Warren County, the most mobilized community, residents were the most likely to have participated, and in Oxford, the least mobilized community, residents were the least likely to have participated. The proportions of participants in Statesville and Aberdeen were quite similar, most likely because

	All communities (N = 272)	Mobilized communities		Nonmobilized communities	
		Warren County (n = 108)	Aberdeen (n = 57)	Statesville (n = 61)	Oxford (n = 46)
Respondents participating (%) (all acts included)	41	55	35	39	17
Most common participatory mechanisms (%)					
Attending a public meeting about the cleanup	13	15	9	20	2
Attending another meeting where the cleanup was discussed	23	39	18	23	4
Signing or circulating a petition	21	34	13	23	2
Calling or writing elected officials	11	14	4	15	4

Table 1. Participation and the most common participatory mechanisms by community.

Statesville used to be mobilized and its residents had participated in the past.

The most common mechanisms of participation were attending meetings and signing petitions (23% and 21% of respondents, respectively). Only 13% had attended a formal public meeting that dealt with the cleanup, while 23% had attended other meetings where the site was discussed, such as meetings of neighborhood groups and/or church organizations. One fifth of residents had signed petitions. Another 11% had called or written to elected officials, 7% had circulated petitions, six individuals had written to a newspaper regarding the site, and five individuals had joined a local environmental group.⁶

Even though public meetings are held mainly to foster participation and provide citizens a voice in the cleanup process, few respondents had attended these meetings. To raise attendance at public meetings, practitioners need to understand the cause of this low turnout. Among those who did *not* attend, a staggering 81% reported not knowing about any meeting (from 72% and 78% in Aberdeen and Warren County to 83% and 98% in Statesville and Oxford). Among those who knew about a meeting but did not attend, *two thirds* reported that the timing of the meeting prevented attendance, and one fifth reported not having time to attend meetings (mostly because of family responsibilities). Only 9% of respondents indicated that they failed to attend because of their perceived inability to contribute. In other words, the key reason for low attendance at public meetings was not residents' lack of interest;

it was that they *could not* attend, most often due to a lack of awareness.

Predictors of Participation

The logit model presented in Table 2 identifies the predictors of participation. The dependent variable is dichotomous and identifies whether or not residents had performed any participatory action. The actions considered were signing or circulating a petition, attending a meeting about the site or its cleanup, writing or calling elected officials regarding the site, joining a local environmental group, and attending a march or rally regarding the site. The factors affecting participation are presented, focusing on sociodemographics, motivations, social context, trust in government agencies, and community mobilization.

Economic resources were correlated with participation. Members of higher-income households were more likely to have participated than poorer individuals. Other individual characteristics, however, were not crucial factors. The race, gender, age, education level, and employment status of respondents had no significant effect on participation. That is, once income was controlled for, African Americans were as likely to have participated as Whites, in contrast with the findings of some studies cited earlier.

Individual motivations (knowledge, perceptions of environmental risks, and attachment to the community) were the principal factors affecting participation, confirming the hypothesis that the expected net benefits of participation are key determinants (Verba et al., 1995). The

Variable	Parameter estimate	p value
Sociodemographic characteristics		
Household income (logged)	0.906**	0.026
Gender (0=male, 1=female)	0.526	0.184
Age (in years)	-0.010	0.620
Race (0=White, 1=other)	0.038	0.936
Education (6 categories)	-0.187	0.332
Employment status (0=not employed, 1=full or part time)	-0.751	0.111
Individual motivations		
Information about the site (index) ^a	1.236***	0.000
Risk perceptions (0 to 10) ^b	0.229***	0.001
Home ownership (0=rent, 1=own)	-0.438	0.463
Years of residence in the area	0.470**	0.023
Neighborhood satisfaction	-0.067	0.466
Local social context		
Following what goes on in the community	0.510*	0.095
Degree of interaction with neighbors	0.249*	0.088
Knowing people/groups involved with the cleanup (0=no, 1=yes)	0.253	0.586
Trust in government agencies^c		
General trust in the agency responsible for the cleanup	-0.391**	0.033
Believing the site will ever be completely cleaned up	0.020	0.907
Community mobilization^d		
Warren County	-0.114	0.895
Aberdeen	0.508	0.459
Statesville	0.145	0.824
Control variables		
Children under 13 in the household	-0.214	0.492
Adults over 60 in the household	0.021	0.949
Perceived distance to site	0.439*	0.023
Intercept	-16.571	0.000
Summary statistics		
N=272		
-2 Log likelihood: 215.7 (<i>p</i> = 0.001)		

p* < 0.1, *p* < 0.05, ****p* < 0.01

- a. The level of information index is based on two objective and two subjective elements (each standardized and given identical weight): how long residents have known about the site, whether they know which agency is responsible for the cleanup, how well informed about the site they feel, and how well informed about the cleanup they feel.
- b. Risk perceptions, or levels of concern, were subjectively measured using the question: "I would like to know how you feel about the site today. On a scale of 0 to 10 where 0 means that you are not concerned at all and 10 means that you are very concerned, how concerned would you say you are?" The average concern score for the whole population is 7.56.
- c. Before being asked about the site, respondents were asked how much they trust the EPA and the State as sources of information. They were also asked whether they think the site will ever be completely cleaned up. The correlation between these two measures of trust is 0.31, which is significant but not large enough to introduce a strong collinearity in the model.
- d. Oxford is omitted.

Table 2. Predictors of participation, logit model.

longer residents had lived in the area, the more likely they were to have participated. This reflects the importance of residency and sense of community as they affect participation (Greenberg & Lewis, 2000). Long-time residents may be more likely to participate because they have more knowledge about participation channels and may be more attached to the area and care more about its environmental quality.

The effects of social networks were partly observed here. Those who followed what went on in the community and maintained close contacts with neighbors were more likely to have participated. Knowing people or groups organized around the issue of cleaning up the site, however, was not associated with participation. Nonetheless, another study I conducted (in the same communities) showed that relationships with mobilized individuals or groups indirectly fostered participation as they increased the degree to which residents were informed about the site (Laurian, 2002).

Finally, participation was motivated by a general *dis-trust* of public agencies. The *less* residents trusted the agency responsible for the cleanup (the EPA or the State), the more likely they were to have participated. Distrust thus motivates participation by increasing its potential net benefit. Believing that the site will someday be completely cleaned up, on the contrary, was not found to affect participation.

In sum, when residents had the necessary financial resources, the decision to participate was driven mainly by the expected benefits. These benefits were driven by individual motivations and distrust of public agencies. The costs of participation—increased by barriers created by race

or low education levels or decreased by existing participatory structures—were not significant factors.

Nonparticipation and Its Causes

Nonparticipatory responses, presented in Table 3, accounted for 59% of all responses. Nonparticipation is explained mainly by trust in government agencies and resignation to an unsatisfactory situation.

The leading reason given for not participating was trust in government agencies (the loyalty response) with nearly one fourth of respondents (22%) considered passive and loyal. The highest proportion of loyalty was found in Aberdeen (44%), where the cleanup was well underway and where the citizen group has had success in working with the EPA (e.g., by obtaining a Technical Assistance Grant). The lowest proportion of loyalty was found in Warren County (13%), whose residents were least likely to believe that the cleanup will ever be conducted, given the unfulfilled promise of the North Carolina governor to detoxify the landfill. Overall, White respondents were more likely to be loyal than African American respondents (28% vs. 14%). This difference is not due to the presence of more African Americans in Warren County, since it persists when Warren County respondents are excluded from the sample. Perhaps African Americans place less trust in government agencies than their White counterparts because historically they have had more reason to distrust government in general (Abney & Hutcheson, 1981).

The second most commonly reported reason for not participating was resignation. Almost one fifth of respondents were resigned to the situation (19%). Overall, lower-

	All communities (N = 272)	Mobilized communities		Nonmobilized communities	
		Warren County (n = 108)	Aberdeen (n = 57)	Statesville (n = 61)	Oxford (n = 46)
Respondents not participating (%)					
(all reasons)	59	45	65	61	83
Reasons for nonparticipation (%)					
Loyalty	22	13	43	18	24
Resignation	19	20	4	20	33
Exit	10	5	14	11	17
Neglect	8	7	4	12	9

Table 3. Nonparticipation and its causes by community.

income residents were more likely to be resigned (25% of those with household incomes under \$15,000, vs. 19% of those with incomes between \$15,000 and \$30,000 and 14% of those with incomes above \$30,000). The proportion of resigned residents was highest in Oxford (30%), the least mobilized community, most likely because residents were not aware of opportunities to participate. The high level of resignation in Warren County (20%) may be explained by the fact that many residents knew about past unsuccessful community efforts to oppose the siting of the landfill and to have it detoxified. This may explain the resignation and pessimism of some respondents, who, however, remain concerned about the site. The lowest level, in Aberdeen (only 4%), may be explained by the fact that the cleanup had started in this community, so residents were more optimistic about the future.

Intent to relocate (exit) was not a common response (only 10%). It is important to keep in mind that the high cost of leaving may preclude this option for many residents. Also, those who had wanted to move may have already done so, and thus were not interviewed. However, 60% of the respondents had lived in their area for more than 20 years (they were already living there when the contamination was discovered and have stayed), and 75% had lived there for 10 years or more despite the site. These communities are thus very stable, and few residents have moved away because of the toxic waste sites.

Finally, neglect was the least common reason for not participating, despite planners' common belief that low participation is due to a lack of interest. Only 8% of the respondents were not concerned about the site near them nor interested in its cleanup. Respondents in the lowest income groups were more likely to be apathetic than more wealthy respondents (33% vs. 5%). It is possible, however, that very few respondents reported low levels of concern because they felt they were expected to care about such an important local matter.⁷

Discussion and Conclusions

The objectives of this study were to determine why some people participate in planning processes while others do not and, based on this knowledge, to recommend policies to increase participation. These objectives were addressed by identifying the factors that influence participation and by empirically assessing their effects.

The key findings of this study are two-fold. Foremost, attendance at public meetings was limited severely by the

public's lack of awareness that meetings were being held, especially in the least mobilized communities. Publicity for public meetings thus clearly needs to be improved. Nonetheless, many residents found alternative participation channels, such as discussing the issue at various community meetings, signing petitions, or contacting elected officials. Despite the low attendance at public meetings, participation was more common than planners usually perceive it to be (Thomas, 1995).

Second, the study identifies the factors affecting participation and reasons for nonparticipation. Individual motivations were the key factor (especially level of concern, information, and duration of residence in the area). Dis-trust in public agencies was found to further increase participation, most likely because it fosters a perception that influencing agency actions is necessary. Level of financial resources was an important factor in that low-income residents participated less often than their more wealthy counterparts. Integration in local social networks also fostered participation, perhaps by increasing access to information about participation channels. It is surprising, however, that community mobilization did not directly affect the participation of individual residents. It affected participation indirectly, however, to the extent that it correlated positively with higher levels of concerns and had a strong positive effect on residents' levels of information about the site (Laurian, 2002).

The nonparticipation of a majority of residents was caused in most cases either by their trust in government agencies to resolve the issue (reducing incentives to participate) or by a sense of resignation, supporting the inclusion of this response in models of responses to stress. The resignation of lower-income residents suggests that while they are concerned about the situation, participation appears impossible or not likely to have a significant effect on decisions.

Implications for Planners

The implications of this study are useful for planners striving to increase participation in local decision-making processes. Even though I examined participation in the context of decisions regarding toxic waste sites, the findings are applicable to a broad range of planning decisions for several reasons. First, the sites targeted in this study are broad in scale and scope, affecting many segments of local communities. Second, the study sites bring to the forefront social, economic, health, and environmental issues that surface often in a variety of planning situations. Finally, the analysis focuses on cases in which various

levels of government (federal, state, and local) have vested interests.

This research identifies five ways by which participation in local planning decisions can be increased. First, the fact that the public has little awareness about meetings speaks loudly for change: Public agencies must find ways to publicize meetings more effectively. In the study communities, announcements were published in local newspapers; additional information should be distributed through other channels such as mailings, local radio and television announcements, churches, schools, or community events. Since neighborhoods near the sites are affected the most, posting fliers in nearby locations is another effective way to inform residents about public meetings. This ensures that the most affected residents have an opportunity to participate in decision-making processes.

Second, planners should reconsider their understanding of public participation, with the aim of broadening its scope. For example, the study found that while few attend formal public meetings, many find alternative ways to participate. Thus, planners should widen their views concerning what participation entails. Methods to gather public input should be adjusted to the reality of public participation in planning decisions. Planners and public agency staff should attend informal meetings and community events where the site is discussed. They should develop systematic procedures to take into account concerns and preferences expressed through informal channels such as petitions, communications to elected officials, or reports by members of citizen groups who have had discussions with residents. This should not replace but supplement traditional hearings and meetings, which provide valuable communication tools to inform the public about the planning issues at hand and about relevant agency staff and procedures.

Third, the findings suggest that the benefits of participation should be emphasized to residents. Planners should focus on increasing residents' levels of motivation, information, and awareness of local planning issues and processes. Supporting mobilized community groups will also increase levels of information and concern (Laurian, 2002) and thus indirectly foster participation. Efforts to increase participation will further benefit from approaching new and long-time residents differently, increasing newer residents' awareness of the site and providing opportunities for a first involvement while informing long-time residents about the status of the situation. Planning education curricula should thus include training in public participation, through courses or seminars, to ensure that planners have the tools and skills to promote participation.

Fourth, reaching out to low-income segments of the population will likely lead to their empowerment and help them overcome feelings of resignation, thereby increasing their participation. This may be accomplished by providing resources for participation. For example, low-income populations should be informed about meetings, child care should be provided during meeting times, meetings should be scheduled at times and places convenient for low-income residents, and planners could encourage employers to offer time off work to attend local meetings. Resignation can be addressed by promoting the view that officials are responsive to residents' concerns and pressures, and that participation in local decision-making is possible, meaningful, and effective. Increasing participation in local matters—through the schools, churches, electoral processes, or other existing institutions—would diminish the existing sense of disempowerment and resignation, and would increase participation in local planning decisions.

Finally, the analysis shows that trust in public agencies decreases motivation and incentives to participate. Thus, as agencies strive to increase public trust, they indirectly discourage participation. Government agencies need to foster trust while emphasizing and encouraging participation (i.e., by decreasing residents' sense of resignation). For instance, residents should be made aware of how participation has affected agency decisions in other communities, and they should be reminded that government agencies are responsive to sustained community pressure. While they are essential to planning processes, issues of trust and distrust are extremely complex and difficult to address. Extensive conceptual and empirical research is needed to better understand the effect of trust in public agencies on public participation.

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Notes

1. This model was developed by Hirschman (1970) to be applied to organizational stress.
2. Superfund sites are hazardous sites classified by the Environmental Protection Agency (EPA) on a National Priority List. They fall under the Comprehensive Environmental Response, Compensation, and Liability Act, enacted in 1980 and amended in 1986 by the Superfund

- Amendments and Reauthorization Act. The EPA is responsible for organizing their cleanup.
3. Participants' political efficacy is high when they have resources and believe that their actions are likely to be effective.
 4. The population surveyed is representative of the population of the local census tracts for most sociodemographic characteristics except gender: The proportion of women among respondents is larger than among the whole population. This is a common trend in telephone surveys, and in the present case it can be explained by women's greater availability to answer the telephone and/or by women's greater interest in local environmental issues. Potential bias resulting from women's greater likelihood to be surveyed was reduced by asking whether *any person in the household* had attended public meetings.
 5. In these four North Carolina communities, the population is composed mainly of Whites and African Americans, with very few members of other minorities. Race is thus expressed in terms of White vs. African American.
 6. A majority of residents (57%) had talked with their neighbors about the site. Although talking with neighbors has the potential to inform residents about the site and raise their awareness, it is not included in the analysis as a participatory act because discussions per se do not seek to improve the situation.
 7. To minimize the risk of underestimating the neglect response, it was important to encourage an honest response to the question about current level of concern. This question followed questions about how respondents first found out about the site and their concerns about the site at that time. Respondents thus had the possibility to indicate that they had been very concerned at first, but were not anymore, without fear of disappointing the interviewer's potential expectations.

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Appendix

Survey questions used to determine responses to perceived risks from the toxic waste sites. (Questions used to measure all other variables are available from the author upon request.)

Participatory acts performed

“Have you or another adult in your household attended any public meeting about the cleanup of the site?” (Follow-up questions: “Did you know about any meeting?” “What is the reason you didn’t attend?”)

“I will read you a list of activities a person might take in relation to the site. For each one, please tell me if you have ever done it: Circulated petitions regarding the site; signed petitions regarding the site; called or wrote your elected official; attended a community meeting regarding the site; joined a local environmental group; attended other group meetings; attended a march or rally about the site; other types of involvement.”

Plans to leave

“How likely is it that you will move out of this area in the next 2 years?”

Belief in the cleanup of the site

“How likely is it that the site will ever be completely cleaned up?”

Concerns about the site

“I would like to know how you feel about the site today. On a scale of 0 to 10, where 0 means that you are not concerned at all, and 10 means that you are very concerned, how concerned would you say you are?”