

This is a paper published in *Environmental Practice*. This paper has been peer-reviewed and includes the final publisher proof-corrections and journal pagination.

Citation for the published paper:

Hylmö, K. (2005) Improving the Road Planning Process: A Case Study of Stakeholder Comments on Two Swedish Road Projects. *Environmental Practice*. Volume: 7 Number: 1, pp 44 - 53.  
<http://dx.doi.org/10.1017/S1466046605050040>

Access to the published version may require journal subscription.  
Published with permission from: Cambridge University Press.



Epsilon Open Archive <http://epsilon.slu.se>

## Improving the Road Planning Process: A Case Study of Stakeholder Comments on Two Swedish Road Projects

Kajsa Hylmö

Two Swedish road projects were studied to find ways to shorten the time spent in the road planning process. The results indicated that the road projects developed very differently. One planning project developed rather smoothly, while the other received an escalating flood of letters. Concerns about the environment and landscape were present in the majority of these letters, pointing to the importance of involving the expertise of landscape planners or environmentalists in the management of road development projects. This article's conclusion stresses the importance of inviting early submission of viewpoints and of responding to people's questions in order to achieve acceptance of a project; it also stresses the significance of keeping communication open with affected sectors of the public from the very beginning of a project.

*Environmental Practice* 7:44–53 (2005)

The Department of Landscape Planning at Alnarp, Sweden, was contacted by the Royal Swedish Academy of Engineering Sciences (Kungliga Ingenjörsvetenskapsakademien, or IVA) to identify ways to decrease the amount of time spent planning and developing new roads. According to Dittmar (2000), early public involvement saves both time and money. The assumption made by researchers at Alnarp was that the amount of time spent in the road planning process would be determined by how quickly the project manager could achieve general acceptance. Achieving general acceptance can be understood as meeting expectations for the project in the eyes of official authorities as well as among the general public (National Research Council, 1989). If general acceptance is necessary for project

success, is an understanding of how to meet expectations also necessary? The present study discusses the fulfillment of expectations necessary to the acceptance process.

I begin this article with an overview of road planning processes and expectations in Sweden. Next, I describe the results from the IVA/Alnarp study of communication processes during different phases of road planning and development in Sweden, focusing on perceptions of acceptability among state and government officials and the general public. Finally, I discuss practical implications of these results for future road planning projects.

### Road Planning in Sweden

The Swedish Road Administration (SRA) follows a sequence of stages. Table 1 shows the different stages of the planning process and what is to be determined at each stage (Vägverket Publikation, 2002a). During the initial stage, the prefeasibility phase, no commitment to build or improve a road is taken. Decisions are made at the end of the prefeasibility stage by the SRA's head office (as opposed to investigators at the regional offices). If the results of the prefeasibility stage are favorable and receive approval, the next stage, the feasibility phase, is initiated. During the feasibility phase, corridors for possible location of the road are defined. Material supporting the decision is brought forward, and the decision itself is postponed until after the planning phases' investigations are completed. The head office identifies its preferred alternative and presents its recommendation to the Swedish government, which makes the final decision. The prefeasibility and feasibility stages taken together comprise the umbrella road planning phase. One particularly significant report produced during the road planning phase is the environmental impact report (EIR), which basically contains the same information as an EIR in the United States. The EIR is continued during the sub-

---

*Affiliation of author:* Department of Landscape Planning, Swedish University of Agricultural Sciences, Alnarp, Sweden

*Address correspondence to:* Kajsa Hylmö, Landscape Architect and Planner, Department of Landscape Planning, Swedish University of Agricultural Sciences, PO Box 58, SE-230 53, Alnarp, Sweden; (fax) +46 40 46 54 26; (e-mail) kajsa.hylmo@lpa.slu.se.

© 2005 National Association of Environmental Professionals

**Table 1.** The stages of Swedish road planning and road design phases (Vägverket Publikation, 2002a)

Stage		Finding Out. . .
Road planning	Prefeasibility study Feasibility study	IF the road should be built WHERE to locate the road
Road design	Preliminary design plan Construction plan	WHAT the physical needs for the road are HOW to build the road

sequent road design phases, where the layout of the road and the EIR are finalized (Vägverket Publikation, 2002b).

Before the planning phases are concluded, Swedish law requires the SRA to hold public meetings and exhibitions to facilitate the public’s participation in the planning process (Vägverket, 2001). Texts and illustrations of the work based on collection of basic data, analysis, and synthesis, in addition to all conclusions made, are published and presented to the general public. People are to be given the opportunity to reflect on the material and to write any submissions within a set period of time, usually not less than a month following such an exhibition. It is the responsibility of the SRA to respond to written submissions in writing (Vägverket, 2001).

## Methodology

I examined the acceptance process as it developed during the planning stages. Two similar road projects were selected for me by the SRA, which asked me to provide a study.

### Road Projects

Both roads are located in the county of Skåne in southern Sweden (Figure 1). One is the road, Väg 17, at Marieholm (Vägverket Skåne, 2003b), and the other is the road E22 between Hörby Norra and Kristianstad (Vägverket Skåne, 2003a). In both cases, bypasses around the towns were planned. According to the investigator in charge, an expansion of E22 had been discussed for 40 years.

The two projects were comparable in many ways. They were both in the same part of the country; the processes ran almost simultaneously; they affected similar categories of people (e.g., farmers and commuters); and both projects concerned areas with strong environmental preservation and protection values. Furthermore, both bypasses were difficult to plan because of passages through land contain-

ing sensitive environmental areas—natural habitats, sites of cultural heritage, and valuable grounds for recreation and open-air activities.

Despite the similarities between the two projects, there were also differences. For example, one important difference was that E22 is part of the comprehensive European road system, whereas Väg 17 is a connector road between the east and west coast of southern Sweden. A fair amount of traffic passes through all the towns involved. This is particularly true of Väg 17, because the town of Marieholm is still spread out along the road, an old cultural pattern common in southern Sweden (Emanuelsson et al., 1985).

### Time Frames

The current study was initiated in 2001 and encompassed the road planning process of both roads. The two road projects were already underway at the outset of the study,



**Figure 1.** The two roads studied in this article, Väg 17 and E22, are located in Skåne, southern Sweden.

but the material gathered was derived from the entire planning stage (see Table 1). Material was gathered from the beginning of the prefeasibility phases of the two projects, through the feasibility phases, and ending with the official period allowed for submission of comments on exhibitions and documents (including the EIRs). Project Väg 17 was initiated in 1996 and completed in the summer of 2002. The E22 project started in the summer of 1998, ending the feasibility phase and its EIR in the spring of 2001.

## Methods

The present study of the acceptance processes among the general public in the context of road planning and development employed several methods. Meetings and interviews were arranged with professionals in the road planning field, interviews with project managers and people from the general public were conducted, official meetings were attended and, perhaps most important, submissions to the SRA were studied.

The first contact was established in an initial meeting with the SRA and professionals involved in road planning. The SRA commissioners (mainly technicians) and university people from disciplines in sociology, biology, and landscape planning were part of the group. (In Sweden, landscape architects and planners are specialists similar to professionals in environmental fields in the US.) This group met for a full day on seven occasions, evenly dispersed over the study period. In addition, half-day interviews with both project managers were conducted at the SRA. The interviews were designed to identify project management's perception of how information was exchanged with the general public at the outset of the project, as well as the perceived extent to which the general public was invited to and took the opportunity to communicate their information and opinions to the project leaders.

Second, all incoming letters sent to the SRA were analyzed to identify patterns of interaction between project management, local and state government, and the general public. Three hundred and thirty-five letters were registered at the SRA: 271 were sent by laypeople and 64 by community and government officials. Each letter was categorized according to the time period during which it was sent: the prefeasibility phase, the feasibility phase, or the period allowed for submissions after the feasibility exhibition.

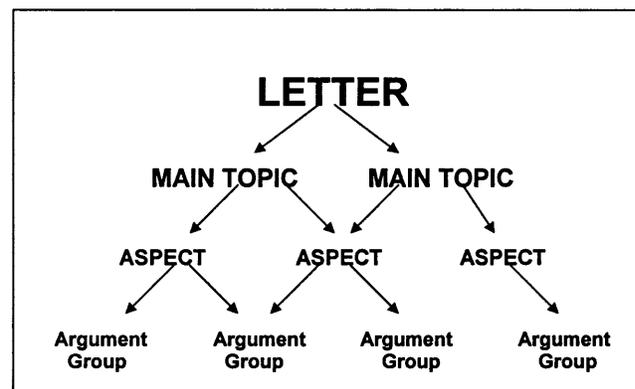
Third, the letters were examined to identify key points of controversy presented by the letter writers. Each individual letter typically dealt with several issues, and commonly

each issue was justified by a number of arguments. The issues, "Main Topics," and their justifications, "Arguments," were sorted and entered into Microsoft Excel for processing. Arrangement of data in levels helped establish connections between the diversity of elements that appeared (see Figure 2). On the lowest level, the data formed many small clusters, here called "Argument Groups." Various connections could be established between the Argument Groups, and a number of groupings called "Aspects" formed. Three overarching categories formed "Main Topics": the road, communication, and analysis. Positive and negative statements were easily distinguished, because people submitting their written arguments clearly stated their opinion as to what they felt was good or bad regarding the road project.

Additionally, informal interviews and conversations with laypeople were included to substantiate the results derived from the written letters. Field notes were continuously taken during all interviews. The notes consisted of people's conceptions of the SRA, their response to what was going on, the information they had received, the source of that information, and their levels of satisfaction with the project. These notes were used to support findings in the letters.

## Results

The study of acceptance processes during road planning and development explored whether differences in communication or perceptions of project-related risks—based on the extent to which project leaders collect and respond to information and opinions from the public—may lead to



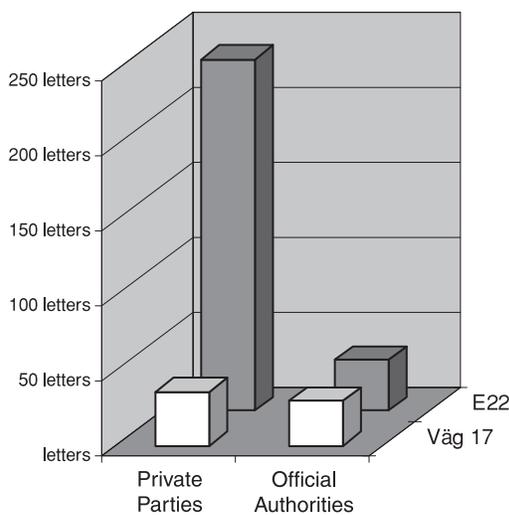
**Figure 2.** All arguments in the letters were sorted into Main Topics, Aspects, and Argument Groups. Typically, each letter contained one or two Main Topics, several Aspects, and many Argument Groups.

different project outcomes. Analysis of the number of letters in the different time periods showed an imbalance. The contents of the letters indicated three important themes, or Main Topics: the physical object, the dialogue, and analysis. These themes pointed to major differences between the two otherwise very similar road projects.

### All Letters

Well over 300 documents, containing a total of 3,729 arguments, were registered with the SRA during the planning process. Overall, E22 received four times more registrations than did Väg 17 (Figure 3), suggesting initially that E22 had four times more neighboring inhabitants than did Väg 17. Based on official statistics from the Swedish government, however, the population along the bypass at Väg 17 is 1.5 times denser than that along the bypasses of E22 (Statistiska Centralbyrån, 2004). Considering the lengths of the roads, 23 km for E22 versus 9 km for Väg 17, the number of people does not account for the large number of letters generated by E22 neighbors.

The numbers of letters from the official authorities, including governmental and community officials, were somewhat evenly distributed between the two projects: 30 letters for Väg 17 and 34 for E22. The incoming letters from private parties (encompassing individuals and groups of people) concerning Väg 17 amounted to 36 letters. The private party submissions for E22, however, represented a deviation.



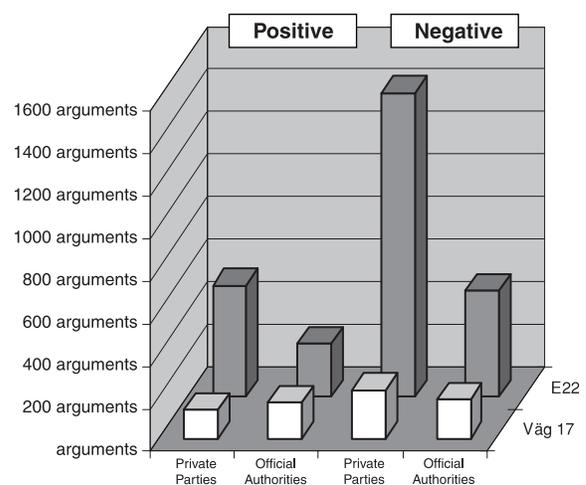
**Figure 3.** Incoming letters. The private parties of E22 have been extremely active: of 335 letters, they sent 235.

tion. As a group, private parties sent 235 letters concerning E22, seven times more than any other group. If we control for the slightly larger population along E22, no more than 60 letters would have been anticipated. The E22 project received four times as many letters as expected. Why was this group so much more prolific than the equivalent Väg 17 group? That question led to a closer examination of the arguments presented in the letters.

### Arguments

The written arguments clearly exposed a strong and vigorous debate. As these arguments were examined more closely, it was found that the letters concerning Väg 17 contained a total of 832 arguments and the letters concerning E22 a total of 2,897 arguments. Although a first look at the numbers of questions and viewpoints in each letter suggested similarities between the projects, the close to 3,000 arguments concerning E22 were substantially greater than those concerning Väg 17. There had to be reasons for this.

Analysis of the two road projects revealed a clear distinction between private party arguments concerning Väg 17 and those concerning E22. In project Väg 17, official authorities and private parties each held a fair balance between positive and negative arguments (Figure 4). In contrast, submissions related to project E22 contained a larger portion of negative arguments. The clear contrast between the two projects was further explored.



**Figure 4.** Negative arguments prevailed in project E22. Project Väg 17 had a more even spread of positive and negative arguments.

For both road projects together, private parties produced more than twice as many negative arguments (1,404) as positive arguments (654). The official authorities also used more negative (544) than positive (394) arguments. Concerning E22, arguments from official authorities ran almost twice as many negative (429) as positive (236), whereas private parties sent 1,269 negative and 521 positive arguments. The NIMBY (Not in My Backyard) effect was evident, however; almost all positive arguments given by the private parties concerning E22 seemed to discuss positive effects of the road in potentially alternative locations. With respect to Väg 17, the official authorities delivered a fairly equal amount of negative (115) and positive (158) arguments; private parties gave 133 negative and 135 positive arguments. More analysis was warranted.

### Main Topics in the Letters

The many arguments discussed in the letters could be combined into aspects and topics that helped identify connections between them (refer to Figure 2). Through this procedure, three main topics were clearly identifiable:

- Concerns about the *Physical Object*—the road and its surroundings, including the overall landscape, encompassing people's uses of the landscape and their need to find solutions to social issues that are dependent upon the lay of the land.
- Concerns about the *Dialogue*—the exchange of information between the SRA and others, including frequency of contacts, design, and wording of information.
- Concerns about the *Analysis*—comprehension of evaluations and syntheses conducted and presented by the project managers, as understood by laypeople.

All groups exhibited a genuine interest in the road projects. It is noteworthy, however, that so many letters contained remarks on the way the work had been carried out (Analysis, 63 arguments) and the way the dialogue had been conducted (Dialogue, 74 arguments), as compared to the appearance of the road itself (Physical Object, 133 arguments). High counts of negative comments on the SRA's dialogue and analysis were predominant in relation to project E22, where such comments were found in more than half of the submissions. Based on my observations, interviews, informal interactions with laypeople, and analysis of the letters, responses to the E22 project gave the obvious impression of irritation with the road project in general and with presented information in particular. The negative comments on dialogue and analysis raised an additional question: *Why* did these topics receive such negative criticism?

I started by looking at the physical object itself (the road and its surroundings) and then went on to consider the dialogue and analysis.

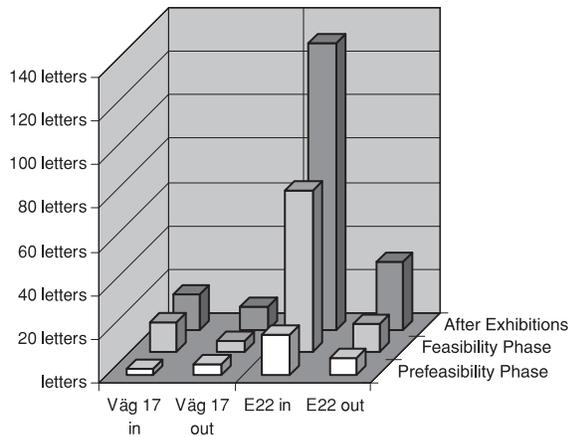
### Arguments Regarding the Topic "Physical Object" (Road and its Surroundings)

Most of the arguments on the "road" topic concerned ecology, encompassing the biological system of living creatures (frogs, bats, birds) and their surroundings. The visual landscape comprised the second most frequent position. The third most frequent argument regarding E22 was hydrology (encompassing surface and ground water) and, regarding Väg 17, accessibility (possibilities for persons to move around in a space or from one place to another). In both projects, arguments on law and pedagogy stirred the least interest. Comments concerning law include arguments resting on legal claims or stating that the law should provide a subject field; pedagogy refers to anything pertaining to education, either as a source of information and/or inspiration or as a place in which education is performed. No clear difference was found in the tone or type of concerns put forward in the letters concerning the two projects.

Because the composition of laypeople's concerns is one important factor when appointing people to project management, the arguments presented under the topic "Road and its Surroundings" were further analyzed. The arguments could, based on their affiliation, be assembled into groups or aspects. The aspects were used to identify argument frequency. Of the aspects, "landscape qualities and uses" was the largest group found. It encompassed 52% of all arguments. The arguments "land use" (5%) and "air and noise" (4%) as environmental issues together made up 9%. "Social and recreational activities" were 11% and, as stated in the letters, dependent on the overall landscape context. "Continued work" was 8% and mainly mentioned in connection with the environment. In a broad sense, then, 80% of the arguments made environment and landscape the issue. Remaining were economy (6%), and traffic, transportation, and technique (14%), which together amounted to barely one-quarter of all arguments about the road. The numbers clearly pointed to the importance of management's environmental and landscape knowledge.

### Arguments Regarding the "Dialogue" Topic

The topic "Dialogue" received a substantial number of arguments and was an interesting subject for analysis. With regard to dialogue, the major difference between the two projects was the number of incoming letters from private



**Figure 5.** Letter exchange between the Swedish Road Administration (SRA) and private parties.

parties (Figure 5). This substantial divergence necessitated an examination of the nature of the correspondences, who sent the letters, why and when the letters were sent, and to whom.

For the Väg 17 project, twice as many items of correspondence were sent out from the SRA than came in during the prefeasibility phase. Most of the outgoing letters contained answers to questions, but for Väg 17 the earliest outgoing letters contained invitations to take part in the process and to submit comments on and concerns about the project. During the feasibility phase, almost three times more letters were registered incoming than outgoing. The final phase, from the start of the feasibility/EIR exhibition until its closing, yielded one and a half times as many incoming as outgoing letters. This distribution of letters seemed to mean that the manager of Väg 17, by inviting people's participation, had been able to keep correspondence down.

During the prefeasibility phase of E22, the records at the SRA showed that twice as many letters were received from private parties as were sent to all groups by the SRA. During the feasibility phase, almost six times more letters were registered incoming than outgoing. Following the feasibility/EIR exhibition, close to four times as many incoming letters as outgoing were registered. This disparate distribution of letters indicated that while the manager of Väg 17 handled his exchange of letters effectively, the manager of E22 generated an increasing amount of complaints and work.

Many submissions regarding E22 pointed to people feeling left out, especially due to incidents surrounding the *Intresse-*

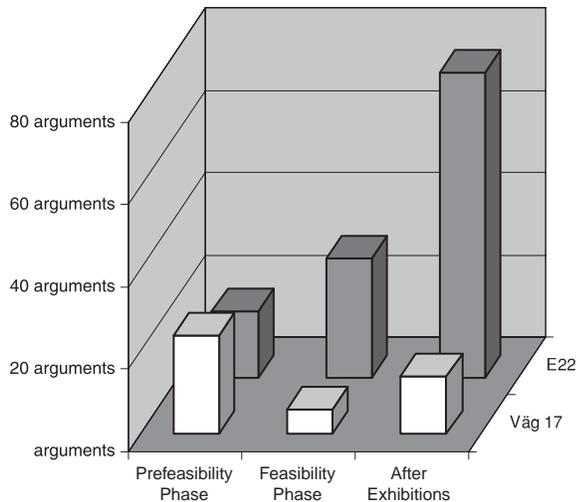
*gruppen*, a group formed in an attempt by an early project manager to involve the public. During an early public meeting, an announcement had been made to engage "active and interested villagers" (Vägverket Skåne, 1999). A group of laypeople present at this early meeting formed a special interest group that they called the *Intressegruppen*, which focused on the road project. The aim was for group members to receive and provide special information, thus acting as a link between the SRA and the townspeople. Unfortunately, it was later claimed in letters by other townspeople that information about the opportunity to take part in the group had been inadequate. It was apparently impossible to join the group once it had been formed; thus the group became a closed unit characterized by sadly lopsided recruitment, as most of its members came from the north side of the towns. The group therefore never came to be the positive feature it was originally intended to be. The information given at the meetings stayed within the group and was not presented to other members in the community. Accordingly, many townspeople were upset and the community split into several camps with different standpoints.

When interviewed, the E22 project manager indicated a desire to obtain laypeople's approval by asking them to submit their opinions in writing. At the same time, however, he also told people, "Due to orders from above, laypersons' viewpoints will be considered with the lowest priority after the government, the county administrative board, and the municipalities' standpoints have been considered" (translated by author). The statement meant that there would be little or no possibility for individual laypersons' points of views to be included in the road program; people were told to "get organized," because groups were to be considered before single individuals. All this made people feel confused and ignored: On the one hand, people were asked to take part and on the other, they felt they should not expect to be heard.

#### Arguments Regarding the "Analysis" Topic

The topic "Analysis" received a substantial number of arguments and was therefore itself an interesting topic for analysis. The topic contained 169 arguments (or 23% of all arguments), very few of which (6) were positive. All positive feedback came from official authorities; private parties did not give any positive feedback.

The private parties' critiques of the analysis for E22 were heavy and were 50% of all negative arguments (see Figure 6). For Väg 17, arguments from private parties were fewer in number, with only 7% of all negative arguments



**Figure 6.** The “Analysis” topic of E22 received many more comments than that of Väg 17. Overall, most comments came from private parties, and all of those were negative.

focused on analysis. From state and local officials, Väg 17 and E22 received 20% and 23% of the negative comments, respectively.

Overall, E22 received seven times more negative complaints regarding the analysis as Väg 17. The dispersion between the numbers from local officials and private parties was similar, with 2.5 times more from laypeople in both projects.

Interestingly, over time, the two projects displayed diversified patterns. Only very few more negative statements were received from government and local officials concerning E22 than concerning Väg 17, but E22 received most of its negative comments in the latest stage, after the exhibition of the documents and the EIR, whereas Väg 17 received its largest number at the beginning of the project. For Väg 17, a look across the different phases shows that the proportions of negative critique of the analysis changed for the better, whereas for E22 the change over time was for the worse. It seems as though the project manager of Väg 17 responded to early critique from the authorities, taking that critique in and correcting his analysis. Recognition of the increased negativity toward E22 on the part of laypeople is key to discussing ways of improving the process.

### Summary of Results

The correspondence relating to the two road projects showed different patterns. Väg 17’s manager was able to win the

laypeople’s approval by inviting early participation. He also received heavy critique from local officials on the analytical work in the prefeasibility phase and took note of this, thus receiving their approval during later phases. The manager of E22 formed the closed and lopsided *Intressegruppen* and told laypeople there was little chance that their arguments would have any bearing on the project. Consequently, a flood of letters and negative arguments hit the E22 project.

## Discussion

The study of the acceptance process revealed important differences between the projects. The analysis shows great discrepancies, both in the numbers of letters and in the development of the arguments. Over time, the number of negative arguments concerning E22 showed an increasing opposition on the part of the laypeople. Project Väg 17 apparently achieved better acceptance, as the number of negative arguments did not escalate over time. Factors found to underlie acceptance included communication pertaining to the project and its handling, along with people’s actual feelings.

### The Acceptance Process in General

When Righter (2002) defines *landscape*, he starts by commenting on the human relationship to it: “Human beings are sensitive to landscapes.” And Schwahn (2002) reports that people have an inner and personal image of their homeland (local landscape) and that that image is at risk when major projects are planned. He adds that anxiety is easily evoked among the general public when it faces rapid changes in the landscape and that developers must deal with this most important problem of overcoming that anxiety. Given people’s images of and sensitivities to landscape, it follows that in trying to achieve acceptance for landscape changes, it is not enough merely to follow the law, make documentation available to the public, and hold public meetings: it is also necessary for managers to acknowledge people’s feelings by including them in the planning phases.

Righter (2002) also has argued that “landscape architects must employ their skills in seeking compatibility between nature and technology, while the engineer must create designs which [*sic*] are reliable.” Righter’s argument has merit—road planning and design compatibility must be sought—but we also need to *show* our landscape architectural ability to all involved; otherwise, our fellow human

beings will not appreciate that we are indeed caring for *their* landscapes.

The human aspect of landscape represents not only what we as professionals see as beneficial for society but also the need to ensure the existence of spaces and places for all individual needs, as has been explored by Grahn (1991), among others (Grahn and Stigsdotter, 2003). It is often the case that both individuals and groups are somehow adversely affected by the new placement of, for example, a road. Typically, those who profit from a project are not the same individuals as those who suffer from it (Schwahn, 2002). Schwahn's statement is in good accordance with the two studied road projects reported here. For example, people living close to a new road may not necessarily use it, but may instead have to give up values such as peace and quiet or easy access to their property. There are ways to make as many people as possible come to understand and accept the project, however (National Research Council, 1989; Palm and Windahl, 1996). My belief is that by showing quality of workmanship and by ensuring open communication regarding that work, it is possible to reach stakeholders at the most important levels.

### The Communication Process

Working to counteract the *angst* of losing valued landscapes, a way chosen by the manager of Väg 17, was an example of good communication. The way in which actual communication is realized may vary, depending on the desired outcome. Palm and Windahl (1996) present a possible three-step process. First, managers may simply spread information in oral, written, or picture form, as in the documents that included the EIR. Second, managers may expect to affect the receiver of the message—thus, contact has been established, allowing the public to express their opinions. Third, managers may wish to establish two-way communication in which they give and take information (Palm and Windahl, 1996), providing honest responses to all factual arguments (US Department of Energy, 1998). According to these definitions, E22 reached the second level but was not successful at reaching the third, whereas Väg 17 successfully reached the third level.

For communication of planning projects to be successful, the amount as well as the accuracy of information conveyed must increase over time. Successful communication also means making stakeholders feel adequately informed within the limits of available knowledge. But even good communication cannot ensure total agreement, as people do not share the same interests and values (National Research

Council, 1989). Examples were found in E22, where people would argue about the same benefits from opposite locations of the new road. Successful communication with those involved should be considered achieved when managers have raised the level of understanding of relevant issues or actions, when they have adequately informed involved parties within the limits of available knowledge, and when such parties are satisfied with project communication (National Research Council, 1989). Communicative rationality aims at achieving consensus by vigorous exchange of opinions with all affected by the project (Dayton, 2002). For managers to reach consensus in communication, all issues considered as belonging to the project by the affected public or by officials have to be included and answered.

Conducting research with people is a key to inclusion (McClintock, Isonand, and Armson, 2003). The present study shows that in project Väg 17 the planning process was facilitated by the project manager's openness to two-way information even in the beginning phases of the pre-feasibility stage. The E22 managers did not grasp that opportunity, causing communication problems that proved hard to repair later on.

### Why Citizens Felt the Way They Did

The ultimate goal of public involvement should be successful project implementation that engages the public, listens to stakeholder concerns, and is responsive to such concerns. . . . If there is a perception that decisions have not been made objectively, and without a reasonable degree of public input, projects may be blocked politically or experience legal challenges. (Zang, 2003)

At the time of this writing, political blockage has stopped the less successful project E22, where many laypeople expressed the feeling they had not been listened to, but project Väg 17 has been cleared to continue.

In Sweden, but using a tactic also recommended by others, e.g., the US Department of Energy (1998), the manager of Väg 17 asked people at the very beginning of the project to provide facts and comments that he could use in his investigation. The results show that by being invited to participate, people were made to feel a part of the project. Based on the information given to them, they knew how the project was to be carried out and how the project leader would be handling and using the information provided by various parties. Such early communication made people feel at ease with the project, minimizing their need to submit opposing opinions.

Concerning the E22 project, those affected had quite a different view. The officers in charge invited them to put their opinions down on paper, only to subsequently ignore their statements. Formation of the *Intressegruppen* was obviously most upsetting to the general public, as it did not constitute a forum in which they could speak, impeding true two-way communication.

### Limitations and Future Research

The focus of the current study has been solely on the behavior of two project managers and their stakeholders. A related study shows the project managers' and the consultants' very different approaches in the two studied projects, a fact that may also explain some of the differences between the general public's reactions to the two projects in question (Hylmö and Skärbäck, in review).

It is important to recognize the limited generalizability of any conclusions based on two case studies, particularly because both projects were located in only one of seven regions under the Swedish Road Administration. It would be valuable to study the extent to which the project made use of existing research and recommendations.

Newspapers and rumors may have discussed the road projects long before the official projects started. Such early pre-project information, of course, may have had a bearing on people's reactions. It would therefore be interesting to study how such information affected the beginnings of the two studied projects and, in turn, the findings of this study.

### Improvement of the Acceptance Process

The present study has shown that, by handling external questions among the general public swiftly, proficiently, and with empathy, the Swedish Road Administration's time involvement can potentially decrease. The public needs time to develop acceptance of proposals and implementations of new projects. Early invitations to participate in the decision-making process will help involved parties achieve acceptance and will most likely reduce the time spent by SRA personnel and their consultants.

An early invitation to the public to engage in two-way communication is beneficial, but follow-up must be continuous. Merely giving out information is not enough and does not satisfy public expectations.

Another significant conclusion of this study is that it is important to recognize the wide-ranging roles of project

management. Project leaders must be assertive and understanding of the individual needs of the public. Further, because landscape plays such an important role in the eyes of the public, project leaders must have a genuine understanding of various environmental and landscape issues. Such a broad understanding includes mastering the communication of all issues that emerge between people and the landscape. It is important for stakeholders to feel that their viewpoints have been heard and that their concerns have received attention. Such feelings build confidence and pave the way for acceptance of the project. In short, taking in and showing appreciation for people's statements during the earliest stages of the planning process will facilitate acceptance and contribute to smooth running of the future project, including a reduction in the time spent on the project itself.

### Acknowledgments

This research was funded by the Royal Swedish Academy of Engineering Sciences and the Swedish Road Administration. The author is grateful for the scientific support of Professor Erik Skärbäck and the Department of Landscape Planning at Alnarp, Sweden, and also for the science writing support of Annika Hylmö, PhD, Loyola Marymount University, Los Angeles, California. I also thank Karen Williams, M.Sc., of Pronuncia Konsult HB for reviewing a preliminary draft of the manuscript.

### References

- Dayton, D. 2002. Evaluating Environmental Impact Statements as Communicative Action. *Journal of Business and Technical Communication* 16(4):355–405.
- Dittmar, H. 2000. *Interest Based Convening: Toward Participatory Decision Making in Transportation Investment*. <http://www.transact.org/report>. Accessed November 9, 2004.
- Emanuelsson, U., C. Bergendorff, B. Carlsson, N. Lewanand, and O. Nordell. 1985. *Det Skånska Kulturlandskapet [The Cultural Landscape of Scania]*. Bokförlaget Signum, Lund, 248 pp.
- Grahn, P. 1991. *Om Parkers Betydelse [On the Significance of Parks]* (PhD dissertation). Sveriges Lantbruksuniversitet, Alnarp, 410 pp.
- Grahn, P., and U. A. Stigsdotter. 2003. Landscape Planning and Stress. *Urban Forestry and Urban Greening* 2(1):1–18.
- Hylmö, K., and E. Skärbäck. In review. What Constitutes a Good Environmental Impact Report: A Case Study of Analysis and Transparency to Build Confidence in Two Road Projects.
- McClintock, D., R. Isonand, and R. Armson. 2003. Metaphors for Reflecting on Research Practice: Researching with People. *Journal of Environmental Planning and Management* 46(5):715–731.
- National Research Council. 1989. *Improving Risk Communication*. National Academy Press, Washington, DC, 331 pp.

- Palm, L., and S. Windahl. 1996. *Kommunikation—Teorin i Praktiken [Communication in Theory and Practice]*. Konsult Förlaget i Uppsala AB, Uppsala, 98 pp.
- Righter, R. W. 2002. Exoskeletal Outer-Space Creations. In *Wind Power in View: Energy Landscapes in a Crowded World*, M. J. Pasqualetti and R. W. Righter, eds. Academic Press, San Diego.
- Schwahn, C. 2002. Landscape and Policy in the North Sea Marshes. In *Wind Power in a Changing World*, J. M. Pasqualetti, J. Martin, and R. W. Righter, eds. Academic Press, San Diego.
- Statistiska Centralbyrån [Statistics Sweden]. 2004. *Folkmängd efter Region och Tid [Population by Region and Time]*. <http://www.ssd.scb.se>. Accessed December 7, 2004.
- US Department of Energy. 1998. *Effective Public Participation under the National Environmental Policy Act*. Office of NEPA Policy and Assistance. <http://www.eh.doe.gov/nepa>. Accessed November 9, 2004.
- Vägverket [The Swedish Road Administration]. 2001. *Vägverkets Författningssamling 2001:18 [The Swedish Road Administration's Ordinance]*. Stockholm.
- Vägverket [The Swedish Road Administration] Publikation. 2002a. *Miljökonsekvensbeskrivning inom Vägsektorn, Del 2 Metodik [Environmental Impact Report within the Road Sector, Part 2 Methods]*. Vägverket Publikation, Borlänge.
- Vägverket [The Swedish Road Administration] Publikation. 2002b. *Miljökonsekvensbeskrivningar inom Vägsektorn, Del 1 Regler och Bestämmelser [Environmental Impact Report within the Road Sector, Part 1 Rules and Regulations]*. Vägverket Publikation, Borlänge.
- Vägverket Skåne [The Swedish Road Administration, Scania]. 1999. *Samrådsmöte med Allmänhet [Stakeholder Meetings with the Public]*, K. Åkesson, ed. Skåne.
- Vägverket Skåne [The Swedish Road Administration, Scania]. 2003a. *Utredning av Väg E22 Hörby Norra-Vä [Official Report on Road E22 Hörby Norra-Vä]*. [http://www.vv.se/regioner/vsk/mapp\\_region/Investeringar/E22/Horby\\_va/oversikt.htm](http://www.vv.se/regioner/vsk/mapp_region/Investeringar/E22/Horby_va/oversikt.htm). Accessed November 12, 2004.
- Vägverket Skåne [The Swedish Road Administration, Scania]. 2003b. *Väg 17 Förbifart Marieholm [Väg 17 Past Marieholm]*. [http://www.vv.se/vag\\_traf/vagproj/skane/vag17\\_marieholm/den\\_nya\\_vagen.html](http://www.vv.se/vag_traf/vagproj/skane/vag17_marieholm/den_nya_vagen.html). Accessed November 12, 2004.
- Zang, D. K. 2003. When Should Preferred Alternatives Be Disclosed in Transportation Environmental Impact Statements? *Environmental Practice* 5(2):146–153.

Submitted April 27, 2004; revised December 2, 2004; accepted December 11, 2004.