

---

**AC 2011-766: TRAINING CIVIL ENGINEERS TO COMMUNICATE EFFECTIVELY**

**Maria Dawn Blevins, University of Utah**

Department of Communication PhD Student CLEAR Consultant for University of Utah School of Engineering

# **Training Civil Engineers to Communicate Effectively in the Public Participation Process**

## introduction

Civil engineers are responsible for designing many of the public works projects sponsored by local, state, and federal agencies. They make sure all technical requirements of the project are satisfied and all safety and efficiency standards are met. Additionally, the Environmental Policy Act <sup>1</sup> (NEPA), requires governmental agencies to perform a public scoping process that includes making plans available for public review, sponsoring dedicated time for public comment, and holding at least one public meeting. As such, engineering professionals who work for both government agencies and private firms are responsible for facilitating and participating in public meetings at some point during their career. To prepare for this eventuality, civil engineers must be able to facilitate effective, productive public meetings. The research and curriculum development presented in this paper is a first step to preparing new engineers for this important task.

Research indicates that the execution of effective public meetings can have a great effect on public policy and projects. Tepper <sup>2</sup> found that well-run public meetings can have a positive impact. Dewey <sup>3</sup> postulated that keeping a watchful, critical eye on public officials is a key aspect of the democratic process. The public meeting is central to effective governmental processes, and civil engineers are expected to lead and participate in this forum. However, this skill set is not prioritized in engineering curriculum, making presenting to a potentially angry public difficult for a new engineer. Thus, a curriculum that teaches students how to lead public meetings will benefit both the individual students and the civil engineering program as a whole. This specific style of public speaking requires careful audience analysis, good listening skills, subtle persuasive tactics, and savvy handling of questions. In short, developing the communication and interpersonal skills necessary for conducting public meetings is crucial in preparing civil engineers for this important aspect of their jobs.

This project synthesizes information about effectively conducting public meetings. Through a review of public meeting literature, observations of public meetings, and interviews with engineers who conduct meetings as part of their jobs, an innovative curriculum was designed to teach best practices for public meeting facilitation. This paper is separated into four major sections: the first presents background information regarding public participation and engineering; the second presents the results of a qualitative assessment of engineers that have facilitated public meetings; the third offers an overview of an in-class learning module in which students were instructed in effective communicative practices when facilitating public meetings; the fourth and final section summarizes the student evaluation of the trainings.

## effective communication in public meetings

Many of the public works projects of the early part of the twentieth century were created through a traditional scientific planning approach in which experts identify a

problem and solution and sought funding through Congress for projects. After approval, the project engineers' only responsibility was to see the project through to completion; no input from the community was needed and social effects of the project did not need to be considered to make decisions<sup>4</sup>. Under this method of decision making, a large public works program came into being and the United States designed and built some of the most spectacular dams, bridges, and highways the world had ever seen. The scope of these projects was often very large and sometimes required the aggressive arguing for funds from government agencies. Once the project was approved; however, the general public had no say in how project planning and design took place. With the passage of NEPA in 1970, technocratic decisions had to give way to a more collaborative approach in which agency decision makers were forced to create opportunities for citizens to have a say in the planning of projects.

Over the last forty years, decision-making expectations of government agencies have changed and today's citizens have come to expect agencies to make decisions using a collaborative model and hold them accountable to this expectation through lawsuits. This transformation has not been easy, as changing the organizational culture from technocratic to collaborative has been difficult. One particularly troublesome aspect of adapting the collaborative model is how to hold meaningful public meetings in which citizens feel that they are being given a chance to speak and feel genuinely listened to. Although meetings that are conducted effectively are viewed as a positive experience in which information is shared and problems are solved,<sup>5</sup> good meetings take a great deal of work to organize and plan, while ineffectual meetings are tedious and a waste of time for the attendees and facilitator.

NEPA requires an interdisciplinary approach to land management and the states that both social and natural sciences need to be consulted when making decisions that affect the environment; however it is difficult to incorporate the voices of many people. While NEPA does require that the public has a say in any policy or project the government proposes, it does not specify how this should come about. Cvetkovich & Earle<sup>6</sup> broadly define public involvement as the process in which citizens provide input on policy decisions. It traditionally manifests itself in public meetings, written comments, and discussion work groups.<sup>7</sup> Unfortunately, after being involved in these processes, citizens often feel unsatisfied, and that their voice was not heard.<sup>8</sup>

The benefits of holding public meetings that fulfill the requirements of NEPA includes avoiding lawsuits and keeping public works projects on a timely schedule. Additionally, research shows that effective meetings do a great deal to help build effective public works projects and create a space for shared understanding<sup>9</sup>. Civic engagement or deliberative democracy creates a space in which engineers can present ideas and get feedback that can help make the project better. Tepper<sup>2</sup> shows that meetings can change the way a problem is framed, present new ideas or research, and develop a community where creative ideas can be presented, debated, and embraced. Grigg<sup>10</sup> recommends that focusing on bringing people together to develop a creative solution will minimize adversarial relationships with the public. A collaborative approach to planning public works can also inspire the discussion that includes creative and diverse

ideas, and can allow public meetings to be a fun opportunity to promote building community.<sup>7</sup>

The foundational step in any successful collaborative process is building relationships, which seems easy but is actually a time intensive task that takes skills to facilitate. Thompson, Kray & Lind<sup>11</sup> found that group cohesion is important to solving problems and that friends are more likely to find solutions with other friends than with a group of strangers. The idea of reciprocation also comes into play, and Whatley, Webster, Smith, & Rhodes<sup>12</sup> suggest that if one party member of a dispute demonstrates a willingness to display cooperative behavior, the other party will also reciprocate those social norms. Dagget<sup>13</sup> outlines the necessity of finding commonalities between people with different view points so that they can be used for starting places in negotiation. Once relationships are built, then a group can concentrate on building community. Stone<sup>14</sup> describes policy as a the guidelines by which a community decides what its goals are, who belongs to the community, and what is achieved by the behavior of those that live together. Ultimately, for collaboration to work, a group of loosely connected people need to first build relationships in order to have a foundation in which they can define what they want their community to look like.

Collaboration is a method in which many stakeholders with varying opinions come together to create policy. Daniels & Walker<sup>4</sup> define collaborative learning as a process that combines conflict resolution, learning theory, and organizational behavior. In their definition, events are designed to inspire creative thinking and dialogue to solve problems. McKinney & Harmon<sup>15</sup> discuss collaboration as means for consensus-building forums that incorporate inclusive participation, informed-decisions, and deliberative dialogue. Collaboration is seen as a more effective way to limit conflict,<sup>8</sup> however it is time intensive and takes skills that many agency staff do not possess.

In addition to creating a space for fresh thoughts, collaborative meetings help strengthen relationships with community members so they will be more likely to support the agencies' activities in the future.<sup>16</sup> However, meetings will only have a positive outcome if the participants feel that it is an effective opportunity for dialogue. Shimada<sup>17</sup> notes that meetings fail because a specific strategy for facilitating meetings was not enacted. Specifically, McComas<sup>18</sup> found that formal meetings full of technical language, held at the end of a decision that did not give an opportunity for questions and discussion, were perceived as less effective. The sponsoring agency was perceived as less competent or credible. The research indicates that public meetings can be effective tools to build support for projects, create good working relationships with community members and help to strengthen a project. The following section of the paper will outline suggestions from the literature and interviews on planning and executing effective meetings, including the importance of the timing of the meeting, agendas, leadership and communication styles, and giving participants the opportunity to be heard.

Snider<sup>19</sup> (23) stated that “the democratic quality of public participation is often directly proportional to the timeliness, accuracy, and distribution of a meeting agenda.” Research indicates that if the public perceives that a meeting is being held at the end of

the decision making process, the meeting is more likely to have conflict and dissatisfied participants.<sup>18</sup> Additionally, if the meetings are held by an agency on a voluntary basis, rather than mandatory, participants perceive open communication. Similarly, the engineers that I interviewed warned that the meeting should not have the appearance of a forgone conclusion or participants will be unhappy. It is important for meetings to be scheduled at the beginning of a decision making process, and if the agency can afford to do so, it would be optimal to hold meetings throughout the entire design process.

In addition to holding meetings early in the decision making process, meeting facilitators are advised to create agendas before the meetings starts. The way that information flows is related to the amount of trust that is being experienced in a meeting.<sup>19</sup> Hence, it is important that individuals know at the beginning of the meeting how the meeting will proceed, and most importantly, when they will be given an opportunity to speak. Therefore, it is important for the leader to set the tone of the meeting.<sup>5</sup> In fact, one of the engineers I interviewed recommended making the agenda public by putting it on the website days before the meeting is held. Because not every citizen is familiar with the way public meetings function, it is helpful to have someone at the beginning of the meeting introduce people and how the meeting will be run, explaining what will happen throughout the meeting and what the protocol is.

The same engineer also advised that not only is an agenda advisable, it is also good to have someone visibly taking notes of the meeting and take time to this person at the beginning of the meeting. The note taker will accomplish a few things, first he or she will make sure that what happens at the meeting is documented. Second, and more importantly, the meeting participants will know that they are being listened to and that what they say will be on record after the meeting. Having a note taker in the room and introducing that individual gives a nonverbal indication that what participants say will be listened to and noted. As with the agenda, it is a terrific idea to post the notes of the meeting on the organization's web page.

All of the research I conducted indicated that the way the leader of the meeting communicated with the participants had an important impact on how individuals perceived the meeting. Specifically, how the leader prepares for the meeting, communicates, and behaves throughout the meeting has a dramatic impact on meeting effectiveness and sets the overall tone<sup>20</sup>. The following recommendations came from professionals that I interviewed advising how a meeting leader can create the ethos, which will help the meeting progress in a productive manner. These are techniques for effective meeting facilitation that I learned from engineers and policy makers that informed the instructional module later created for civil engineers.

The first recommendations concern the arrangement and set up of the room. It is wise for the meeting facilitator to visit the site of the meeting before the day of the meeting so that they will know what the room set up looks like, what technology is available, and how many people can comfortably fit. On the day of the meeting the leader should arrive early so the room can be appropriately arranged and make sure that all technology is working properly. The way the room is arranged is an important part of

the way communication happens. If the chairs all face the front looking at one or two speakers it will send the message that communication will occur with one speaker and everyone else listening. If the chairs are in a circle it will signify that everyone will be speaking and listening. Arriving early and making sure the room is arranged and that technology is working will communicate to the audience that the leaders have worked hard to prepare for the meeting. Additionally early meeting set up will ensure that the leader has time to greet people as they arrive, making introductions, and becoming familiar with the participants before the meeting starts.

Once the meeting starts the leader is responsible for demonstrating what communicative behaviors will be utilized in the meeting. Assuming that the leader is encouraging an open exchange of ideas, the leader needs to indicate with body and spoken language that he or she welcomes ideas and dialogue. This can be demonstrated by a few nonverbal actions such as smiling and making eye contact with the audience. This demonstrates that the speaker is happy to have people there and engaging in ideas.

When presenting information at a meeting it is important for the facilitator to be familiar with the subject matter. The presenter should be careful to craft a message that is well rehearsed and communicates the intended meaning. Practicing the presentation before the meeting makes sure the leader is communicating the message they intend. It is important that the presentation is free of technical language and jargon. McComas<sup>18</sup> warns that using inaccessible language makes people feel that they can not understand the information being presented. This will make the audience more hostile to the message. In addition to not using overly technical language the speaker does not want to be overly familiar with the audience.

Another mistake that can be made at public meetings is when the public thinks everything regarding the project has been decided. Participants become frustrated when they perceive that their contribution will have no impact. The leaders should use respectful and professional language. In addition to choosing words carefully, it is important to keep the presentation part of the meeting as concise as possible. Usually people come to public meetings to be heard, so it is best to give them an opportunity to participate. When concluding the presentation, make sure to end with a look ahead, so the audience has a clear understanding of the project timeline.

Throughout the meeting it is a good idea to ask many questions of the audience and actively listen to their answers. Active listening means that the respondent is given as much time as they need to speak, eye contact is made, and when they are done speaking you repeat what you heard back to them. When answering questions it is important to remember that the meeting leader is not expected to know everything. If the leader does not know the answer to a question, it is best to collect the contact information of the asker, and contact them with an answer later. Lastly, if someone points out that the presenter has made a mistake somewhere in the process of presenting the information, the speaker should genuinely apologize and commit to fixing it. By attempting to cover up mistakes the audience will become more upset.

In the end, participants come to public meetings because they have a vested interest in the decisions that are being made. Public participation is an important part of the democratic process, so even though it can be frustrating for a public official to listen to everyone that wants a voice, it is essential for democracy to be effective. If meetings are organized with highly formatted speeches and little time for public comment, the process won't seem democratic.<sup>21</sup> Some participants may be so invested in the project you are working on that they will feel that they have to speak "loudly, angrily and repeatedly to develop clear positions" (437). As one city manager put it, "Let those that want to get crazy get crazy, to the point that they look ridiculous, and once that happens the moderates can be moderate and quality discussion can happen." Although it is not easy, when people are upset, it is important to let them say their piece and remind yourself that what they are saying is not a personal attack against you, they are just frustrated, and working on government projects is hard.

By reviewing literature about communicating technical communication in public meetings, and by interviewing professionals in the field, I was able to identify that public meetings are a difficult process, but if managed correctly, can offer terrific opportunities for the betterment of projects. Having a clear agenda of what will happen at the meeting, setting up the meeting space in advance, presenting the material in a clear way, dealing with questions effectively, and giving participants the chance to speak are all important aspects to leading successful meetings. The next challenge of the project was to create a training in which these lessons could be presented to civil engineering students.

#### training session

After gathering information about leading public meetings, I developed an applied learning module to teach civil engineering students best practices for conducting public meetings. The training begins with a thirty-minute lecture that educates the students about what a meeting leader can do to create the best possible public meeting, followed by role-playing scenarios in mock meetings.

The lecture section of the training starts with information about how to create a warm working climate for a group. Instruction includes information on creating a tone for the meeting ranging from hostile to welcoming. From that point, the class discusses what they know about effective public speaking, conflict resolution, and NEPA. After a discussion about how these three different subjects come together in public meetings, I teach them specific techniques to lead an effective meeting. The subject matter for the lecture includes:

- NEPA
- Going to the public early and keeping them aware of how the project is progressing
- Inviting important stakeholders
- Checking out the venue before the day of the meeting
- Arranging the room for the meeting
- Creating an agenda
- Providing and introducing a note taker
- Assuring the audience a chance to speak

- Sharing information with people to foster a trusting relationship
- Creating a strategy for structuring participation
- Using good public speaking skills
- Being aware of body language and making sure to smile
- Using active listening skills
- Being prepared to answer difficult questions
- Being prepared for some hostility and fear, and allowing people to be heard
- Admitting when you are wrong
- Creating good working relationships with community members <sup>22</sup>

When the discussion/lecture was complete, the class then divided into four groups to prepare a role play that would be presented in front of the class. The role play enacts a meeting of projects that are beyond the initial scoping phase. The four role play activities involved two public meeting scenarios in which one public official does everything wrong and another uses good meeting management skills. The complete instructions for this activity can be found in Appendix 1 and Appendix 2. After the role-playing scenarios were presented in front of the class, they were analyzed to determine what made specific behaviors effective or ineffective. By the end of the session, students had been exposed to some concepts that would make public meetings more effective and had an opportunity to practice some meeting facilitation skills, while critically evaluating what works and what does not.

results of training session

At the beginning of the training each student completed a pre-test survey. The survey consisted of three questions to gauge if students felt that public meetings were important and what skills and preparation were necessary for them to be successful.

Results of the pre-training survey

<b>Pre-Test Question</b>	<b>Pre-Test Answers:</b>
1. If they thought they would have to conduct public meetings in their civil engineering career and why.	- 22 students (every student in the class) answered that working with the public would be part of their job - The why section of the question was answered because stakeholders in projects need to be kept informed about the progress of projects.
2. What skills are important when leading public meetings?	Communication 9 Public Speaking Skills 6 Confidence 7
3. What could you do to prepare for public meetings?	Know the subject matter 17 Know the audience

	6 Practice 6 Anticipate questions and answers 4
--	---

The pre-test indicated that the students were aware that facilitating public meetings would be an important part of their job and that good communication skills, knowledge of the subject, and knowing the audience would be important parts of leading effective meetings. In the interest of finding out if knowledge was gained during the training and if the students found it useful, a post-test/evaluation was given at the end of the training. By asking a follow up question about why public participation is important to civil engineering, I could gauge if the students changed their opinion about why it was important. Although each of the students felt that meetings were important to their job before the training started, they were now able to be more specific about why, they were more expressive that it is the law (NEPA specifically), and they understood that it was important to be aware of how projects would affect the community.

A marked difference from the pre-test to the post test was the list of skills that students thought would be important for leading public meetings. Although confidence and good communication skills were still important, skills such as listening, empathy, and smiling ranked higher, or just as high as good communication. Additionally, when asked what skills from the workshop will be important in their careers, the students stated empathy, active listening, and using non defensive language as important. When asked what they would like to learn more about, the leading answers were being more empathetic and handling questions effectively.

The following are the most common student identified skills that are important for leading a meeting:

<b>Pre-Test Answers</b>		<b>Post-Test Answers</b>	
Communication	9	Listening	10
Public Speaking Skills	6	Empathy	8
Confidence	7	Patience	3
		Confidence	3

The following are the most common student identified things to do to prepare for a public meeting:

<b>Pre-Test Answers</b>		<b>Post-Test Answers</b>	
Know the subject matter	17	Be familiar with the venue	10
Know the audience	6	Practice questions and answers	6
Practice	6	Prepare	5
Anticipate questions and answers	4	Know the material	5
		Know the audience	4

The training also increased the students' recognition that logistical details would be an important part of meeting management. In the post test, a majority of the class

indicated that it was important to be familiar with the meeting space and technology that will be available for the meeting. Additionally, many students noted that it would be important to set the room up so that effective dialogue could occur. Some students even noted that bringing snacks for the participants might be a good way to set a friendly tone to the meeting. Functional aspects of meeting facilitation such as the importance of room arrangement were learned in the training. By the end of this experience the students indicated that the interpersonal aspects of meeting management were as important as knowing the material. When asked what students would change or what would they like to learn more about, most felt the training was fine and would not change it. A few students offered helpful suggestions such as adding more real life examples, more information about being empathetic, and how to develop effective listening skills. They also requested more practice and information about fielding difficult questions.

In my personal reflection about the training, I would do two things differently. First, I would give the training at least 30 more minutes, and second I would find out about the specific class activities the students are involved in and make sure I was using those as a starting place for the lecture and role play activity. I think that if the students could relate the lesson directly to the project they were involved with that semester it would be even more applicable and effective.

#### conclusion

McComas<sup>18</sup>, (181) states that citizens are most satisfied when they feel they have been involved in a meeting that was “inclusive, participatory, informative and meaningful.” The hope for this training session for future civil engineers is that they can aim for their meetings to have those characteristics so that their projects can benefit from the added creativity and community support which comes along with successful meetings. To facilitate a successful meeting is challenging and it is necessary that the meeting facilitator has an understanding of the logistical, technical, and interpersonal skills necessary to manage the task.

This paper has outlined the concepts about facilitating public meetings that foster an environment for collaboration and educational dialogue. Helping students understand the concepts that are key in building a trusting and empowering meeting environment was the goal of the training. The educational foundations used to create the class came from literature about public meetings and interviews with engineers who have led meetings. As young engineers leave university and are working their first jobs, hopefully that necessity to sometimes be involved with a public process will not be surprising. Instead, the hope is that these students remember skills they learned and practiced in this workshop.

## References

1. National environmental policy act. (1970, January 1). Retrieved (2010, February 18) from <http://ceq.hss.doe.gov/>
2. Tepper, S.J. (2004). Setting agendas and designing alternatives: Policymaking and the strategic role of meetings. *Review of Policy Research*, 21, 523-542.
3. Dewey, J. (1927). *The public and its problems*. New York: Henry Holt and Company.
4. Daniels, S.E., & Walker, G.B. (2001). *Working through environmental conflict*. Westport, Connecticut: Praeger.
5. Gautschi, T.F. (1989, August 21). Meetings: how to make them better. *Design News*, 210.
6. Cvetkovich, G., & Earle, T.C. (1994). The construction of justice: A case study of public participation in land management. *Journal of Social Issues*, 50 (3), 161-178.
7. Koontz, T.M. (1999). Administrators and citizens: Measuring agency officials' efforts to foster and use public input in forest policy. *Journal of Public Administration Research and Theory*, 9 (2), 251-280.
8. Whitworth, P.M. (2003). Effects of method of public involvement and collaboration on agency-stakeholder relations in natural resource planning processes. Unpublished doctoral dissertation, University of Utah, Salt Lake City.
9. Barnes, R. (2007). Formulations and the facilitation of common agreement in meetings talk. *Text & Talk*, 27(3), 273-296.
10. Grigg, N.S. (1996). *Water resources management: principles, regulations, and cases*. New York: McGraw-Hill.
11. Thompson, L., Kray, L.J., & Lind, E.A. (1998). Cohesion and respect: An examination of group decision making in social and escalation dilemmas. *Journal of Experimental Social Psychology*, 34, 289-311.
12. Whatley, M.A., Webster, J.M., Smith, R.H., & Rhodes, A. (1999). The effect of a favor on public and private compliance: How internalized in the norm of reciprocity? *Basic and Applied Social Psychology*, 21 (3), 251-259.
13. Dagget, D., & Dusard, J. (1998). *Beyond the rangeland conflict: toward a west that works*. Flagstaff, AZ: The Good Stewards Project.
14. Stone, D. (2002). *Policy paradox: the art of political decision making*. New York: W.W. Norton & Company.
15. McKinney, M., & Harmon, W. (2004). *The Western confluence: a guide to governing natural resources*. Washington: Island Press.
16. McComas, K. A., Trumbo, C.W., & Besley, J.C.. (2007). Public meetings about suspected cancer clusters: the impact of voice, interactional justice, and risk perception on attendees' attitudes in six communities. *Journal of Health Communication*, 12, 527-549.
17. Shimoda, T.A. (1995). The art of communication: presentations and meetings. *Journal of Management in Engineering*, 14-18.
18. McComas, K.A. (2003). Citizen satisfaction with public meetings used for risk communication. *National Communication Association*, 31(2), 164-184.
19. Snider, J.H. (2003). Should the public meeting enter the information age. *National Civic Review*, 92(3), 20-29.
20. Sessler, R. (2007). The public overran your meetings?. *American School Board Journal*.
21. Tracy, K. (2007). The discourse of crisis in public meetings: Case study of a school districts multimillion dollar error. *Journal of Applied Communication Research*, 35, 418-441.
22. Schaub, L. (2010). Cooperative group solutions. *Community*, 147, 10-12.

## APPENDIX 1: Mock Public Meeting A

### Part 1: Doing Everything Wrong

**Activity:** The objective of this class activity is to recreate the question answer session of a public meeting. The context of the meeting is outlined and a list of characters or participants that should be included in the mock meeting are outlined in this paper.

**Context:** A Civil Engineer is facilitating a public meeting in a neighborhood that is having a highway that runs through the town widened. The most cost effective result of this project is that the widened road will need to go through a graveyard that has been in the neighborhood for over a hundred years. The bodies will be removed to another “final resting place” however this project as caused major controversy in the neighborhood and people are upset about the project.

**Directions:** In this mock meeting the participants outlined below should be represented in a 5-7 minute public meeting. To prepare for the mock meeting I would like your group to identify how each of these characters will be represented and what their actions will be. Additionally, your group will discuss the concepts presented in class and how they can be applied in this meeting.

#### Characters:

Anyone that is not going to play a character will help the characters develop the questions and statements.

**The Civil Engineer:** This individual will answer all the questions doing everything the opposite that we talked about in class. The engineer will be defensive, use jargon and technical language and will give bad and wrong answers.

**The Angry Citizen:** This citizen is mad about the bodies being moved, perhaps they have a loved one buried in the graveyard. This person will use language and actions that will appeal to emotions.

**The Offensive Citizen:** This person makes crazy and offensive statements, will perhaps insult the presenter.

**The Corrector:** This person will present the fact that the engineer has given some incorrect information

**The Hard Questioner:** This person asks a question that the engineer does not know the answer to.

### Part 2: Using the Lessons We Learned Today

**Activity:** The objective of this class activity is to recreate the question answer session of a public meeting. The context of the meeting is outlined and a list of characters or participants that should be included in the mock meeting are outlined in this paper.

**Context:** A Civil Engineer is facilitating a public meeting in a neighborhood that is having a highway that runs through the town widened. The most cost effective result of this project is that the widened road will need to go through a graveyard that has been in the neighborhood for over a hundred years. The bodies will be removed to another “final resting place” however this project as caused major controversy in the neighborhood and people are upset about the project.

**Directions:** In this mock meeting the participants outlined below should be represented. To prepare for the mock meeting I would like your group to identify how each of these characters will be represented and what their actions will be. Additionally, your group will discuss the concepts presented in class and how they can be applied in this meeting.

**Characters:**

Anyone that is not going to play a character will help the characters develop the questions and statements.

**The Civil Engineer:** This individual will answer all the questions doing everything we talked about in class. The engineer will be empathetic, patient, and willing to admit when they are wrong.

**The Angry Citizen:** This citizen is mad about the bodies being moved, perhaps they have a loved one buried in the graveyard. This person will use language and actions that will appeal to emotions.

**The Offensive Citizen:** This person makes crazy and offensive statements, will perhaps insult the presenter.

**The Corrector:** This person will present the fact that the engineer has given some incorrect information

**The Hard Questioner:** This person asks a question that the engineer does not know the answer to.

## Appendix 2: Mock Public Meeting B

### Part 1: Doing Everything Wrong

**Activity:** The objective of this class activity is to recreate the question answer session of a public meeting. The context of the meeting is outlined and a list of characters or participants that should be included in the mock meeting are outlined in this paper.

**Context:** A Civil Engineer is facilitating a public meeting in a neighborhood that is considering building a new train line for public transportation through town. This would mean using eminent domain to purchase some buildings and homes to create the proposed route. Although citizens recognize the importance of the new train route, there are business and home owners that do not want to move.

**Directions:** In this mock meeting the participants outlined below should be represented in a 5-7 minute public meeting. To prepare for the mock meeting I would like your group to identify how each of these characters will be represented and what their actions will be. Additionally, your group will discuss the concepts presented in class and how they can be applied in this meeting.

#### Characters:

Anyone that is not going to play a character will help the characters develop the questions and statements.

**The Civil Engineer:** This individual will answer all the questions doing everything the opposite that we talked about in class. The engineer will be defensive, use jargon and technical language and will give bad and wrong answers.

**The Questioner:** This individual does not understand the technical information being presented and asks for clarification.

**The Misunderstander:** This person might understand what is going on, but is using misunderstanding as his/her way to make the point they are against the project. This person asked questions that are not relevant to make the meeting process more difficult than it needs to be.

**Micro-Detail Person:** This individual is missing the big picture and is focusing on one small detail of the project and is obsessed with that one detail.

## Part 2: Using the Lessons We Learned Today

**Activity:** The objective of this class activity is to recreate the question answer session of a public meeting. The context of the meeting is outlined and a list of characters or participants that should be included in the mock meeting are outlined in this paper.

**Context:** A Civil Engineer is facilitating a public meeting in a neighborhood that is considering building a new train line for public transportation through town. This would mean using eminent domain to purchase some building and homes to create the proposed route. Although citizens recognize the importance of the new train route, there are business and home owners that do not want to move.

**Directions:** In this mock meeting the participants outlined below should be represented in a 5-7 minute public meeting. To prepare for the mock meeting I would like your group to identify how each of these characters will be represented and what their actions will be. Additionally, your group will discuss the concepts presented in class and how they can be applied in this meeting.

### Characters:

Anyone that is not going to play a character will help the characters develop the questions and statements.

**The Civil Engineer:** This individual will answer all the questions doing everything we talked about in class. The engineer will be use language that is accessible, empathetic, patient, and willing to admit when they are wrong.

**The Questioner:** This individual does not understand the technical information being presented and asks for clarification.

**The Misunderstander:** This person might understand what is going on, but is using misunderstanding as his/her way to make the point they are against the project, This person asked questions that are not relevant to make the meeting process more difficult then it needs to be.

**Micro-Detail Person:** This individual is missing the big picture and is focusing on one small detail of the project and is obsessed with that one detail.