

---

**CITIZENS JURY ® ON  
COMPARING ENVIRONMENTAL RISKS**

**FINAL REPORT**

**October 14 through 18, 1996  
Minneapolis, Minnesota**

---

---

The Jefferson Center  
364 Century Plaza  
1111 Third Avenue South  
Minneapolis, MN 55404

Phone: 612-333-5300  
Fax: 612-344-1766

## TABLE OF CONTENTS

The Jefferson Center	1
Executive Summary	2
Charge to the Jury	5
Results and Conclusions	6
Agenda	11
Jury Demographics	15
Jurors	16
Project Staff	17
Witnesses and Presenters	18
Juror Evaluations	19
Juror Comments	20
Appendix 1: Human Health, Ecological Health, and Quality of Life Averages	22
Appendix 2: Overall Tallies	23
Appendix 3: Sample Scoring Sheet	24

The Jefferson Center would like to thank:

- The jurors for their time, thoughts, and dedication
- The witnesses and presenters for sharing their time and knowledge
- Lynne Kolze for initiating this project and devoting countless time and patience to coordinating efforts at the MPCA
- Ed Delhagen for his guidance and input into the planning of this project
- Katharine Krueger, Ed Delhagen and Gayle Zoffer for sharing their moderating skills
- Tim Scherkenbach for supporting everyone's efforts and helping us out on last minute needs

Citizens Jury® is a registered trademark of the Jefferson Center.

## THE JEFFERSON CENTER AND THE CITIZENS JURY® PROCESS

The Jefferson Center was founded in 1974 with the purpose of doing research and development on democracy. Its initial work concentrated on a method for people to explore their own values in a group setting, a method of clarifying differences between experts on public policy questions and the Citizens Jury® process. It is the latter which turned out to be the most effective new democratic process and therefore a trademark was taken out on the name to ensure its proper use.

In a Citizens Jury project a group of citizens is selected at random and stratified so as to be a microcosm of the community from which they are drawn. These people then attend hearings lasting four or five days during which they hear testimony from a variety of points of view. Great care is taken to conduct the hearings in a fair and neutral way and the jurors are always given a chance to evaluate how well the staff has done in meeting this goal. To date the Jefferson Center has conducted or overseen 21 Citizens Jury projects.

The great advantage of the Citizens Jury process is that it yields citizen input that comes from a group which is both informed and representative of a community. Public opinion polls are representative, but often yield opinions which are ill-informed. Most lobbyists are well-informed, but rarely are lobbyists as a whole representative of the general public. It is virtually impossible for conscientious public officials to extrapolate from polls and lobbyists what the public would want if they were well informed on a particular issue. The Citizens Jury process comes as close to yielding this information as any process of which we are aware.

The idea of a Citizens Jury was created by Ned Crosby in 1971. In 1994 the Institute for Public Policy Research of London became interested in the idea. As of late 1996 the British have conducted nine Citizens Jury projects and have four more planned by early 1997. The process has received extensive commentary in journals ranging from the London Times and the Guardian to the British Medical Journal.

Recent projects have been conducted by the Center on the topics of the Minnesota State Budget in the year 2001 and on the seriousness of environmental risks. The former was conducted in conjunction with the Humphrey Institute of Public Affairs and Minnesota Extension Service, building on a 1993 project on the federal budget which received national attention. The environmental project was conducted at the request of the Minnesota Pollution Control Agency in order to help them to set environmental priorities for the agency.

The Center has conducted projects in Minnesota, Pennsylvania, and Connecticut and held nation-wide juries in Washington, D.C.

## **EXECUTIVE SUMMARY**

### **Background**

The Minnesota Pollution Control Agency approached the Jefferson Center in 1995 with an interest in learning how they could incorporate the Citizens Jury process into their planning process for the setting of environmental priorities. The Environmental Protection Agency had provided them with the funding to conduct a project to gain citizen input on the risks associated with a number of different environmental issues. A Citizens Jury project would yield the views of “average” citizens and would provide the MPCA with the public perceptions and social values that are needed to make good decisions.

The project has developed over the past year under the guidance of Lynne Kolze at the MPCA and an advisory committee consisting of the following individuals: Pam Shubat, Ron Jacobson, Barb Toren, Karen Studders, and Ken Sexton. We have also received guidance from the Green Mountain Institute for Environmental Democracy, an organization established by the EPA to assist states which are conducting projects of this type. Ed Delhagen, a policy associate with the Institute, has contributed to our planning process by sharing information about the projects conducted in other states and making sure we adhere to the guidelines established by the EPA.

One important guideline for the project was that the jurors should not try to set priorities for the environmental issues, but rather should evaluate the seriousness of the risks associated with the issues and compare those risks to one another. In other words, they should not try to weigh the benefits of a certain activity, or the costs of addressing a certain activity, against the risks in order to determine how the PCA should allocate their resources. Instead, the jurors should blend the information they receive from the experts with their own values to evaluate the relative seriousness of a number of issues with regard to human health, ecological health and quality of life.

The results of the Citizens Jury project will form one component of information contributing to the MPCA’s decisions regarding environmental priorities.

### **Need for a Pilot Project**

We at the Jefferson Center felt confident that the Citizens Jury process could be used effectively in order to give average citizens a good understanding of an environmental issue. For example, Citizens Jury projects were successfully conducted on hog farming in 1995, and agricultural impacts on water quality in 1984. However, the PCA had identified 15 issues that they wanted the jurors to examine in light of their impacts on human health, ecological health and quality of life. We were not sure that a group of jurors would be able to review this many environmental issues in one week and make sound judgments about their importance.

Because this was a new use of the Citizens Jury process, we decided to conduct a test. Thus, on August 24 and 25, we brought together 18 jurors from four counties to test the agenda for the October jury. The jurors examined five issues in regard to human health, ecological health, and quality of life. The agenda was structured by area, so that first they examined the human health risks associated with all five issues, then the ecological risks associated with all five issues, and so on.

On the afternoon of the second day, all those who had participated in the test jury - jurors, staff, some witnesses, PCA representatives, and moderators - gathered to discuss what had worked, what didn't work, and what should be changed for next time. The conclusions drawn from this discussion guided our planning for the October jury. The most important conclusion was that the task the PCA had proposed, with a few changes, was manageable in the eyes of the jurors. In light of these results, the Jefferson Center and the Minnesota Pollution Control Agency decided to go ahead with a full Citizens Jury project.

### **Overview of the project.**

The Citizens Jury® on Comparing Environmental Risks was conducted over a five day period, October 14 - 18. During this week the jurors evaluated the relative seriousness of the effects associated with 12 environmental issues. The agenda was structured by issue, so that the jurors examined two or three issues a day addressing the human health effects, the ecological health effects, and the quality of life effects.

Part of the charge proposed to the jury was for each individual juror to score each issue on a scale of 1 to 5 in terms of the relative seriousness of the effects associated with them. Each issue was to be scored in the areas of human health, ecological health, and quality of life. Appendix 3 contains an example of a scoring sheet.

Because of the large number of issues to be examined during a short time, in the mornings the jurors split up into two or three committees, each examining a separate issue. In the afternoons the jurors rejoined and presented the information they had just learned.

In each committee a MPCA scientist provided much of the background information. This was followed by commentary from representatives of both industry and environmental groups, or a neutral presenter. After the presentations, the jurors gave three scores for the issue addressing each of the three areas of concern. They then discussed these scores and explained the reasons supporting their scores. We tallied the results to be presented in the afternoon to the rest of the jurors.

In the afternoon one juror from each committee presented the factual information about the issue and the tally of the committee scores, along with the reasons for giving these scores. During these group presentations, the jurors had a chance to discuss the issues with each other as well as to clarify the information with the MPCA presenters. After the information had been

presented, the jurors gave scores to the issues the other groups provided information on. We once again tallied the results and presented them to the jurors for yet another discussion of all three issues examined that day.

The jurors found that the most effective way for the late afternoon discussion to occur was in small groups. Thus, for the last three days of the project they split up into three groups, each examining one area of concern addressing all three issues. The groups rotated in such a manner that they all got a chance to discuss all three issues of the day in all three areas. If the jurors wished, they could change the scores they had given earlier that day. They also were encouraged to compare the scores they had given to the issues on the previous days and change them if they found it necessary.

On the last day, the jurors combined what they had learned about the twelve issues regarding the three areas and gave one overall score for each issue. We then calculated the average score the jurors gave for each issue and rank ordered them based on these averages. The jurors' final task was to draw two divisions in the list of averages of all overall scores. By drawing these lines the jurors divided the twelve issues into three categories: "More Serious," "Serious," and "Less Serious."

## CHARGE TO THE JURY

**Purpose:** To evaluate and compare the relative seriousness of the effects associated with 12 environmental issues important to the Minnesota Pollution Control Agency.

**Step 1:** Listen to the presentations from the MPCA, witnesses, and neutral presenters, and consider the facts, opinions and discussions you have heard. Then, as an individual, score each issue on a scale of 1 to 5 in terms of the relative seriousness of the effects associated with them. Each issue will be scored in the areas of (A) human health, (B) ecological health, and © quality of life. Please provide reasons for the scores you give.

As you score the issues, please do this with regard to the *effects which remain*, given that the MPCA currently has rules, regulations, programs or management practices in place to address the issues. (This is sometimes referred to as “residual risk”.)

**Step 2:** After considering the score you gave to each issue for each of the three areas, combine what you have learned about those three areas into one overall score for that issue and give the reasons for your score.

**Step 3:** Look at the jury’s *average overall score* for each of the 12 issues. As a group, arrive at consensus on which issues should be termed “more serious,” which should be termed “serious,” and which should be termed “less serious.”

## RESULTS AND CONCLUSIONS

### Preface

These Results and Conclusions differ from most Citizens Jury projects in that usually the jurors spend a significant amount of time on the afternoon of the last day preparing and reviewing the recommendations which will appear in the report. For this project, the jurors did review what appears under "Main Results," but the conclusions drawn in the "Overall Reasons" section were compiled by Jefferson Center staff and not reviewed by the jurors. In addition, information in the appendices was also assembled only by Jefferson Center staff.

### Main Results

As described in the Executive Summary, we determined the averages of all jurors' overall scores to develop a rank-ordering of the issues, and presented this list to the jurors on the afternoon of the last day<sup>1</sup>. The jurors were then asked to collectively draw divisions between those issues they felt were "more serious," those which were "serious" and those which were "less serious." The jurors also had the opportunity to move issues up or down, though they did not do so. The results are as follows:

#### *"More Serious"*

- 1 Industrial Sources of Air Pollution
- 2 Mobile Sources of Air Pollution
- 3 RCRA Hazardous Waste
- 4 Area Sources of Air Pollution

#### *"Serious"*

- 5 Superfund Sites
- 6 Spills and Emergencies
- 7 Wastewater Discharges
- 8 Nonpoint Source Runoff
- 9 Solid Waste
- 10 Feedlots

#### *"Less Serious"*

- 11 Storage Tanks Management
- 12 Septic Systems

Please refer to the appendices for additional information.

---

<sup>1</sup>Note: One of the jurors was absent on the final day of the proceedings, and therefore, the averages were based on the scores of 19 jurors.



## **Overall Reasons**

### *Spills and Emergencies*

Jurors who scored this issue as a four or five overall cited the following reasons: six people recognized acute and chronic effects on human beings, five people stated that spills can get into the drinking water and effect our health, and many expressed concern about the danger to plant and animal life and the effects throughout the food chain. Others expressed concern about the “unknown effects” on humans, the environment and peace of mind, as well as a concern that they occur most in populated areas and that immediate hazards can result from spills.

Jurors who scored spills as a three gave a variety of reasons, such as the effects on humans, plant and animal life, the food chain, and drinking water. However, they also noted that spills are localized, effect a small percent of the population, and can be contained quickly. Those who scored this issue as a one or two also stressed that although spills and emergencies are serious, they are localized and can be contained quickly.

### *Mobile Sources of Air Pollution*

Jurors who scored mobile sources as a four or five gave the following reasons: five jurors recognized that mobile sources are the largest contributor to cancers, three jurors noted that they are also the largest contributor to smog, three were concerned with the fact that 300 to 700 Minnesotans die each year from heart and lung diseases due to air pollution, and that large populations are affected, especially the elderly and children.

Those who gave mobile sources a three cited many of the same reasons as those who scored it a four or five, but over half also noted that global warming is uncertain. Three reasoned that mobile sources contribute 30% to temperature changes and temperature changes harm crops which affects the food chain. Three others expressed concern about the impact of smog on quality of life. The individual who scored this as a two stated that “changes are being made.”

### *Industrial Sources of Air Pollution*

Jurors who scored industrial sources as a four or five cited the following reasons: seven jurors stated that it affects large populations, eight were struck by the highly uncertain data, and six noted that industrial sources posed more cancer risk than spills. Many recognized that it affects everyone (illness, work, price of food); others noted that it causes birth defects in animals, and that acid rain is a global issue.

Those who scored this issue as a three gave similar reasons, again stressing that respiratory illness from all air sources can affect everyone at some level, but also that industrial sources have a high impact on special populations. One individual scored this issue as a two, noting that industrial sources are being regulated.

### *Solid Waste*

Jurors who scored this issue as a four or five noted the unknown chronic effects of exposure to mercury, and the ecological health impacts due to the fact that mercury from incinerators and air pollution can travel hundreds of miles. Quality of life concerns related to the fact that taxpayers may be liable for existing waste treatment facilities, even if those waste treatment facilities are out of state.

The most common reason provided by those who scored this issue as a three was that solid waste effects all ground water and has impacts on plants and animals. However, many observed that lining landfills takes care of some problems, and that there have been great advances in containing, venting and burning methane. Also, many of the trickle-down effects, such as ground water impacts, are known by the public and can be addressed. Those who scored the issue as a two recognized the impacts of mercury on ground water, etc., but generally felt that the "MPCA has a good handle on the issue."

### *RCRA Hazardous Waste*

The most common reason provided by those who scored this issue as a four or five was that household hazardous waste is still unregulated - exact amount is not known but is significant (about 7 pounds per person per year in Minnesota). Others were concerned that mercury/PCB's cause unknown exposures, that not enough data has been collected to know the long-term effects of hazardous waste on ecological health, and bio-accumulation occurs throughout the food chain. In addition, three of the jurors were concerned about maintaining the current level of regulation.

Of those who scored RCRA a three, four were also concerned that household hazardous waste is still unregulated, but four also reasoned that companies are required to comply with RCRA in Federal, State and county laws. Others pointed out the "unknowns," such as mercury/PCB exposures and ground and surface water contamination. Those who scored this issue as a two again referred to the fact that there are so many unknowns.

### *Storage Tanks Management*

Three out of the four jurors who scored this issue as a four or five found it significant that of 9,000 reported leaks, 66% are closed; some were closed with little or no cleanup and 44 % are monitored. Three also cited the estimation of 75,000 people exposed to contaminated drinking water due to storage tanks. Other reasons included the fact that 17,000 tanks still need to be replaced, of which 30 to 50% are leaking, and eight to ten drinking wells are contaminated annually.

Those who scored this as a three also were concerned with the statement that 17,000 tanks still need to be replaced of which 30-50% are leaking. Three jurors cited the fact that of all release sites, 28% effect ground water and 72% effect soil, and three reasoned that chemicals cause cancer, birth defects and learning/behavioral disorders. Jurors who scored this as a two were satisfied with the fact that of 9000 reported leaks, 66 % are closed and 44% are monitored. They also recognized that wildlife, soil and water are effected, but that the intensity depends on

the severity of the release. In addition, effects are mostly localized.

#### *Abandoned Hazardous Waste/ Superfund sites*

Those who scored this issue as a four or five were concerned with the potential effects of the unknown sites, of which there are an estimated 7,000. Also, jurors noted that no real studies have been done on the effects of abandoned hazardous waste on the ecosystem. Others cited that it affects our health through air, skin absorption and food.

Jurors who scored this as a three again stressed the potential effects of the unknown sites and the effects on our health through air, skin absorption and food. They also noted that most sites are localized, so overall in Minnesota, this is not as serious in all areas (does not apply to airborne hazardous waste). In addition, sites may not be major causes of surface water contamination. Those who scored this as a two felt encouraged that most sites are localized.

#### *Nonpoint Source Runoff*

Over half of those jurors who scored nonpoint as a four or five expressed concern that there are many unknown factors related to chemicals. Those who scored this as a three also recognized the unknown factors, but also cited that nitrogen and phosphorous contribute to aging in water bodies and bacterial illnesses are found in contaminated water. Other factors mentioned for scoring this as a three include cancer risk from chemicals that enter the water via nonpoint sources of pollution and loss of recreation. Those who scored this as a two were influenced by the level of unknown factors.

#### *Wastewater Discharges*

Five of the seven jurors who scored this issue as a four or five were struck by the unknown issues in wastewater treatment in years to come, affecting future generations. Four cited the fact that 1.3 million Minnesotans drink treated water from lakes and streams, four noted that 25 million pounds of suspended solids are discharged annually which harms aquatic habitat, and 4 other jurors stated that 16 million pounds of organic compounds are discharged annually which depletes oxygen in water thereby harming aquatic life.

Those who scored this as a three were also struck by the unknown factors as well as the number of Minnesotans who drink treated water, but four of them also expressed concern about the accumulation in the food chain of toxins such as PCB's and mercury. Three jurors also pointed out that Minnesota is more stringent in monitoring wastewater. The individual who scored it as a one also referred to this point.

#### *Area Sources of Air Pollution*

Jurors who scored this issue as a four or five most commonly referred to ozone depletion - 77 % of contributing sources to the ozone depletion in Minnesota are area sources. Others cited a concern for human illness, as well as crop damage and damage to other wildlife. Those who

scored it as a three had similar concerns, as well as a concern for odor, too many pollutants in the air causing diseases and the need for more study. But, six of the jurors who scored this as a three also didn't feel that area sources were as important as mobile or industrial sources.

### *Feedlots*

Jurors who scored this as a four or five were most influenced by the fact that nitrogen released from manure is equivalent to the amount of nitrogen released from the waste of 77 million people, and that feedlots are polluters of 16 of 37 Minnesota watersheds. Other concerns were for groundwater contamination and odors.

Six of the nine jurors who scored feedlots a three overall again referred to the amount of nitrogen released from manure. Five were concerned with groundwater contamination by phosphorous and nitrates, from which possible effects include birth defects and cancer. There was also a concern for the effects on plants and animals up through the food chain, and sickness caused by odor. Those who scored feedlots as a one or two highlighted the following reasons: studies are underway for expanding the uses of manure and Minnesota has among the strictest feedlot regulations.

### *Septic Systems*

Septic systems did not receive any fours or fives from the jurors. Those who scored this issue as a three most commonly were concerned with potential loss of recreation space. Others referred to the fact that bacteria and parasites have the potential for human health impacts, but are localized, and that plumes can affect people's drinking water. Those who scored this as a one or two overwhelmingly had confidence in current regulations and new septic systems. Over half also suggested that it is difficult to link septic systems in some cases to the pollution; the impacts are hard to assess and the number of disease cases caused by septic systems is uncertain.

## AGENDA

### **DAY 1: Monday, October 14**

- 8:30a.m. Welcome and Introductions  
Description of process, charge, agenda, rules of procedure  
**Tim Scherkenbach, MPCA**  
The purpose of the project  
**Project Directors: Jen Romslo & Sandra Matisone**  
Description of the Pilot Project  
BREAK  
Playground Exercise  
**Neutral Expert: Ed Delhagen, Green Mountain Institute**
- 11:45a.m. LUNCH
- 12:35p.m. **Neutral presenter: Fardin Oliaei, MPCA**  
Presentation on how pollutants move  
**Neutral presenter: Maureen Schwehr, MPCA**  
Slide show of issue one - *Spills and emergencies*  
Initial Scoring of Issue One
- 1:10p.m. - 3:15p.m. **Spills and Emergencies**  
**MPCA presentation: John Aho**  
**Commentary by Industry and Environmental Representatives**  
Witness from Industry: **Roy McIntyre, Crown, Cork and Seal**  
Witness from an Environmental Group: **Alden Lind**
- 3:05p.m. Review of the presentations and scoring  
BREAK
- 3:35p.m. Dialogue lead by moderators  
Rescoring
- 4:30p.m. Adjourn

### **DAY 2: Tuesday, October 15**

- 8:30a.m. Breakfast and Review of previous day
- 8:50a.m. **Neutral presenter Maureen Schwehr, MPCA**  
Slide show of issues 2 through 4 - *Mobile Sources of Air Pollution*  
*Industrial Sources of Air Pollution*  
*Solid Waste Management and Disposal*  
Initial Scoring of issues two through four and Reading Time  
Split up in three groups
- 9:25a.m. - 12:20p.m. **ISSUES TWO THROUGH FOUR**  
**MPCA presentation**  
**Commentary by Industry and Environmental Representatives**

***Mobile Sources of Air Pollution***

Witness from Industry:

Witness from an Environmental Group: **Barb Hughes**, American Lung Assoc.

***Industrial Sources of Air Pollution***

Witness from Industry: **Sherry Munyon**, Chamber of Commerce

**Lee Eberley**, NSP

Witness from an Environmental Group: **Carol Wiessner**

***Solid Waste Management and Disposal***

Witness from Industry: **Mary Ayde**, Minnesota Waste Assoc.

Witness from an Environmental Group: **Andy Castellano**

Group Discussion

12:20p.m.

LUNCH

1:05p.m.

Groups report back to each other

Individual scoring of three issues and reasons

BREAK

Dialogue

Rescoring of four issues

4:30p.m.

Adjourn

**DAY 3: Wednesday, October 16**

8:30a.m. Breakfast and Review of previous day

8:50a.m. **Neutral presenter: Dale Thompson**, MPCA

Slide show of issues 5 through 7 - ***Hazardous waste Management (RCRA)***

***Storage Tanks Management***

***Abandoned Hazardous waste sites (Superfund)***

Initial Scoring of issues 5 through 7 and Reading Time

Split up in three groups

9:25a.m. - 12:20p.m. **ISSUES FIVE THROUGH SEVEN**

**MPCA presentation**

**Commentary by Industry and Environment Representatives  
or a Neutral Presenter**

***Hazardous Waste Management (RCRA)***

Witness from Industry: **Joan Miller**, Ashland Chemical

Witness from an Environmental **Perspective: Lee Holden**, Ramsey Co.

***Storage Tanks Management***

Witness from Industry: **Rick Katterhenry**, Williams Pipeline Co.

Witness from an Environmental Group: **Ginny Yingling**, Clean Water Action

***Hazardous Waste/Superfund Sites***

Neutral Presenter: **Joe Zachmann**, Braun Intertec.

Group Discussion

12:20p.m.

LUNCH

1:05p.m.	Groups report back to each other
	Individual scoring of three issues and reasons
	BREAK
	Dialogue
	Rescoring of seven issues
4:30p.m.	Adjourn

### DAY 4: Thursday, October 17

8:30a.m. Breakfast and Review of previous day

8:50a.m. **Neutral presenter: Dale Thompson, MPCA**  
Slide show of issues 8 through 10 - *Nonpoint Source Runoff*  
*Wastewater Discharges*  
*Area sources of air pollution*  
Initial Scoring of issues 8 through 10 and Reading Time  
Split up in three groups

9:25a.m. - 12:20p.m. **ISSUES EIGHT THROUGH TEN**  
**MPCA presentation**  
**Commentary by Industry and Environmental Representatives**  
**or a Neutral Presenter**  
*Nonpoint Source Runoff*  
MPCA Presenter: **Joe Otte**  
Witness from Industry: **Zack Fore**, Cenex/Land O'Lakes  
Witness from an Environmental Group: **Char Brooker**, Izaak Walton League  
*Wastewater Discharges*  
MPCA Presenter: **Craig Affeldt**  
Neutral Presenter: **Bryce Pickart**, Met Council  
*Area Sources of Air Pollution*  
MPCA Presenter: **Fred Adams / Gregory Pratt**  
Neutral Presenter: **Mike Valentine**, Braun Intertec

Group Discussion

12:20p.m. **LUNCH**

1:05p.m. Groups report back to each other  
Individual scoring of three issues and reasons  
**BREAK**  
Dialogue  
Rescoring of ten issues

4:30p.m. **Adjourn**

**DAY 5: Friday, October 18**

8:30a.m. Breakfast and Review of previous day  
8:45a.m. **Neutral presenter Maureen Schwehr, MPCA**  
Slide show of issues 11 and 12 - *Feedlots*  
*Septic Systems*  
Initial Scoring of issues 11 and 12, and Reading Time  
Split up in two groups  
9:10a.m. - 11:30a.m. **ISSUES ELEVEN AND TWELVE**  
**MPCA presentation**  
**Commentary by Industry and Environmental Representatives**  
**or a Neutral Presenter**  
*Feedlots*  
MPCA presenter: **Dave Wall**  
Witness from Industry: **Marlin Pankratz**  
Witness from an Environmental Group: **Ginny Yingling**, Clean Water Action  
*Septic Systems*  
MPCA presenter: **Rita O'Connell**  
Neutral Presenter: **Jim Anderson**, University of Minnesota  
Group Discussion  
12:05p.m. LUNCH  
12:50p.m. Groups report back to each other  
Individual scoring of three issues and reasons  
BREAK  
Dialogue  
Rescoring of twelve issues and complete overall scoring with reasons  
BREAK  
Averages/Rankings presented and Dialogue about which issues are  
"more serious," "serious," or "less serious."  
Evaluations  
4:30p.m. Adjourn



## JURY DEMOGRAPHICS

One of the key ingredients of any Citizens Jury is its demographic balance. The group is selected to be representative of the community as a whole. We therefore first assess the demographics of the community (in this case the state of Minnesota) and balance the jury on up to six demographic characteristics. Our standard variables are age, race, gender, education level, and geographic location. The sixth variable is usually an attitudinal response to the issue at hand. In this case we decided to balance on jurors' response to the question: "Do you think Minnesota is currently doing too much, about the right amount, or too little to protect our environment and natural resources?" to ensure a group of jurors with a diversity of opinions on the Jury.

<u>Issues Stratified On</u>	<u>% in the Region</u>	<u>% on the Jury</u>	<u>Goal</u>	<u>Jurors</u>
Gender:				
Male	50%	50%	10	10
Female	50%	50%	10	10
Age:				
18-39	47%	50%	9	10
40 & above	53%	50%	11	10
Race:				
White	94%	94%	18	18
African-American	3%	3%	1	1
Native American or Asian	3%	3%	1	1
Education:				
High School or less	50%	50%	10	10
Some College	28%	30%	6 (5)	6
College and more	22%	20%	4 (5)	4
Geographic Region:				
South	21%	20%	4	4
Central	16%	15%	3	3
North	11%	15%	3	3
Metro (13 Counties)	52%	50%	10	10
Opinion about the state's involvement in dealing with our environment:				
Too much	7%	5%	1	1
About right	43%	35%	9	7
Too little	45%	55%	9	11
Don't know	5%	5%	1	1

## JURORS

Donna Andstrom	Nursing, retired	60	Fergus Falls
Mary Bina	Beauty Consultant	30	Foley
Rosie Dummer	Service Professional	53	New Ulm
Nikk Gilbert	Manager	29	Rochester
Cyril M. Illies	Metal Fabrication	59	Elrosa
Kenneth Joyce	Sprinkler Fitter, retired	56	Blaine
Arlene Krogh	Accounting Clerk	28	Brooklyn Center
Kurt Lintelman	Placement Coordinator	50	Round Lake
Robert E. Michaelson	Van Driver, disabled	48	St. Paul
Camilles Parks	Target Clerk, retired	76	Fridley
Brenda Raffelson	Bridal Consultant	38	Austin
Leonard Ritchey	Laboratory Technician, ret.	76	Carlton
Jeremy Sankey	Student	18	Fridley
Violet Smith	Motivational Speaker	33	Brooklyn Park
Kara Torgerson	Factory Worker	23	Stillwater
Mike Van Boxel	Back Hoe Operator	33	Rosemount
Jeanne Ward	Student	40	Minneapolis
Leonard Weiss	Courier	66	Hastings
Aaron Wieneke	Graduate Student	23	Duluth
Debra Williams	Painter, Cook, Ceramic Maker	38	Grand Rapids

## **PROJECT STAFF**

<b>Project Directors</b>	Sandra Matisone, Jefferson Center Jen Romslo, Jefferson Center
<b>Moderators</b>	Katharine Krueger, Krueger and Associates Ned Crosby, Jefferson Center
<b>Facilitators</b>	Gayle Zoffer, Independent Consultant Ed Delhagen, Green Mountain Institute
<b>Assistants</b>	Bruce Manning, Jefferson Center Lynette Uetz, Jefferson Center
<b>Project Coordinator</b>	Lynne Kolze, Minnesota Pollution Control Agency

## WITNESSES AND PRESENTERS

Mary Ayde, *Minnesota Waste Association*  
Charlotte Brooker, *Izaak Walton League*  
Andy Castellano, *Minneapolis Recycling Association*  
Lee Eberley, *Northern States Power*  
Zack Fore, *Cenex/Land O'Lakes*  
Lee Holden, *Ramsey County*  
Barbara Hughes, *American Lung Association*  
Rick Katterhenry, *Williams Pipeline Company*  
Alden Lind, *Duluth, MN*  
Roy McIntyre, *Crown, Cork and Seal*  
Joan Miller, *Ashland Chemical*  
Sherry Munyon, *Minnesota Chamber of Commerce*  
Marlin Pankratz, *Con-Fed Inc.*  
Carol Weissner, *Minnesota Center for Environmental Advocacy*  
Ginny Yingling, *Clean Water Action Alliance*

### Neutral Presenters

Jim Anderson, *University of Minnesota*  
Bryce Pickart, *Metropolitan Council*  
Mike Valentine, *Braun Intertec Corporation*  
Joe Zachmann, *Braun Intertec Corporation*

### MPCA Presenters

Fred Adams, *Area and Industrial Sources of Air Pollution*  
Craig Affeldt, *Wastewater Discharges*  
John Aho, *Spills and Environmental Emergencies*  
Barbara Jackson, *Mobile Sources of Air Pollution*  
James Joslyn, *Storage Tanks Management*  
Pat Matuseski, *Hazardous Waste*  
Rita O'Connell, *Septic tanks*  
Fardin Oliaei, *How pollutants disperse and move in the Environment*  
Joe Otte, *Nonpoint sources of pollution*  
Gregory Pratt, *Industrial and Area sources of air pollution*  
Larry Quandt, *Hazardous waste*  
Maureen Schwehr, *slide show*  
Dale Thompson, *slide show*  
Dave Wall, *Feedlots*  
Doug Wetzstein, *Solid waste*

## JUROR EVALUATION

1. In general, how do you feel about your experience with the Citizens Jury on Comparing Environmental Risks?

Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
<u>8</u>	<u>12</u>	<u>0</u>	<u>0</u>	<u>0</u>

2. How do you feel about different parts of the project (how useful were they to you)?

	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Monday's background information	<u>8</u>	<u>11</u>	<u>1</u>	<u>0</u>	<u>0</u>
Playground Exercise	<u>9</u>	<u>10</u>	<u>1</u>	<u>0</u>	<u>0</u>
Presentations by MPCA Staffers on issues	<u>10</u>	<u>9</u>	<u>1</u>	<u>0</u>	<u>0</u>
Presentations by Environmental Reps.	<u>7</u>	<u>11</u>	<u>2</u>	<u>0</u>	<u>0</u>
Presentations by Industrial Reps.	<u>7</u>	<u>11</u>	<u>2</u>	<u>0</u>	<u>0</u>
Presentations by Neutral Experts	<u>7</u>	<u>12</u>	<u>1</u>	<u>0</u>	<u>0</u>
Committee Discussions	<u>10</u>	<u>9</u>	<u>0</u>	<u>0</u>	<u>0</u> NA=1
Afternoon Deliberations Tues., Wed., and Thurs.	<u>9</u>	<u>10</u>	<u>1</u>	<u>0</u>	<u>0</u>
Friday's Overall Deliberations and Scoring	<u>11</u>	<u>9</u>	<u>0</u>	<u>0</u>	<u>0</u>

3. One of our aims is to have staff and volunteers of the Jefferson Center conduct the project in an unbiased way. How satisfied are you with their performance in this regard?

<u>11</u>	Very Satisfied
<u>9</u>	Satisfied
<u>0</u>	Neutral
<u>0</u>	Dissatisfied
<u>0</u>	Very Dissatisfied

## **JUROR COMMENTS**

I believe that as a whole, the process was good to be involved in. I am thankful for the opportunity to be of some service to the MPCA (however small). I feel that I am a better informed citizen now and will be more involved in my community. I am intrigued by the information that was given and will be doing some personal research in quite a few of these areas.

**Mary Bina**

I have enjoyed this and would really enjoy doing more of it. It has helped me to be more vocal in a group.

**Rosie Dummer**

I felt that the MPCA presenters did not present the facts that we needed, to make a fair decision about what was important or not important. I also felt that there was, on the part of MPCA, too much information.

My overall experience was great. I have learned a great deal from this experience about the environment, as well as how to appreciate and value different opinions. I will miss meeting with everyone. The staff provided a welcoming environment for us to be able to speak our minds without feeling intimidated. You ran fair and unbiased meetings. **Violet Smith**

I thought this was a wonderful process which made us aware of the role of the MPCA and the issues that are of concern. **Aaron Wieneke**

The Citizens Jury was an interesting experience. A lot of material was covered in one short week. Thanks for a job well done. **Leonard Ritchey**

The Citizens Jury built confidence in me as a citizen. Gladly do it again!

**Brenda Raffelson**

The presentations were very well presented. If more people had the opportunity to hear the same type of information on pollution, they would be more awake about the problems in today's society. The project was very well done. **Michael Van Boxel**

I think a further extensive study on all of these topics is needed. I also think that any way of educating the public would be wonderful. I have learned so much in the last five days. This project has greatly impacted my life in two ways. First, I am more aware of the chemicals and pollutants that are hazardous in many ways. Second, I would like to pursue a career in ecological well-being. (Maybe becoming a DNR officer, participate in studies, or just research cause-effect to wildlife). **Kara Torgerson**

I found the entire experience not only informative and educational, but very enjoyable, as well. Everyone of the staff, the MPCA and the other witnesses seemed to be very motivated and interested in every aspect of the activity. The hotel was great and the location was excellent. I generally had a very good time.

**Nikk Gilbert**

The project was very well done. Education will help.

***Kenneth M. Joyce***

What a great learning experience. I felt like opinions mattered. I liked the opportunity to let “big business” know how I felt about the issues that are important to me. ***Arlene Krogh***

Thank you for the opportunity to participate in this process. It has made participative democracy a reality for me. This is the best type of participative format I have ever been associated with.

***Kurt Lintelman***

## APPENDIX 1

### Human Health, Ecological Health and Quality of Life

As described above, the jurors examined and scored each issue in terms of their impact on human health, ecological health and quality of life. The final scores given to each issue in each area were summed and divided by the number of jurors to create an average score for each issue in each area<sup>2</sup>. Below, we have rank-ordered the issues within each area based on these averages.

#### Human Health

1 Spills and Emergencies <sup>3</sup>	(4.00)
2 Industrial Sources of Air Pollution	(3.68)
3 Mobile Sources of Air Pollution	(3.26)
4 Area Sources of Air Pollution	(3.11)
5 RCRA Hazardous Waste	(2.93)
6 Storage Tanks Management	(2.89)
7 Feedlots	(2.79)
8 Superfund Sites	(2.78)
9 Wastewater Discharges	(2.68)
10 Solid Waste	(2.47)
11 Nonpoint Source Runoff	(2.37)
12 Septic Systems	(2.37)

#### Ecological Health

1 Spills and Emergencies	(3.78)
2 Industrial Sources of Air Pollution	(3.37)
3 Wastewater Discharges	(3.05)
4 Mobile Sources of Air Pollution	(3.00)
5 Nonpoint Source Runoff	(2.95)
6 Feedlots	(2.95)
7 Solid Waste	(2.74)
8 Superfund Sites	(2.74)
9 Area Sources of Air Pollution	(2.68)
10 RCRA Hazardous Waste	(2.58)
11 Septic Systems	(2.32)
12 Storage Tanks	(2.05)

#### Quality of Life

1 Spills and Emergencies	(3.38)
2 Industrial Sources of Air Pollution	(3.37)
3 Mobile Sources of Air Pollution	(2.95)
4 Superfund Sites	(2.89)
5 Nonpoint Source Runoff	(2.79)
6 Area Sources of Air Pollution	(2.74)
7 Wastewater Discharges	(2.68)
8 Feedlots	(2.58)
9 Septic Systems	(2.56)
10 Solid Waste	(2.53)
11 RCRA Hazardous Waste	(2.26)
12 Storage Tanks	(2.11)

---

<sup>2</sup> One juror was absent on the final day of the proceedings, and therefore the averages are based on the scores of 19 jurors.

<sup>3</sup> One of the juror's set of scores was missing when the averages for Spills and Emergencies were calculated, and so this number is based on the scores of 18 jurors.



## APPENDIX 2

### Overall Tallies

Several discrepancies have occurred in the calculation of the tallies and averages of the overall scores for the following reasons: First, when we calculated the averages on the final day, we were very pressed for time (approximately 20 minutes) and thereby could have made errors in our calculations. Second, the scores were often unclearly written by the jurors. As a result, they were interpreted differently depending on who read them. Third, some of the jurors seemed to have changed their scores after the averages had already been calculated and presented to the group for review. Finally, when we recalculated the scoring sheets after the project, we discovered that one scoring sheet was missing, in addition to the missing sheet from the juror who was absent on the final day. For these reasons we are unable to present accurate tallies and averages of scores. The following table depicts the calculations done after the project based on the 18 available scoring sheets. Thus, the rank order of issues in the appendix does not correspond with the order presented earlier in the report.

Issue	"5"	"4"	"3"	"2"	"1"	Average
Industrial Sources	9	4	4	1	0	(4.17)
Mobile Sources of Air Poll.	5	4	8	1	0	(3.72)
Spills and Emergencies	4	6	4	3	1	(3.50)
RCRA Hazardous Waste	4	3	8	3	0	(3.44)
Superfund Sites	3	2	11	2	0	(3.33)
Area Sources of Air Poll.	2	3	11	2	0	(3.28)
Wastewater Discharges	0	7	9	1	1	(3.22)
Nonpoint Source Runoff	0	5	9	4	0	(3.05)
Feedlots	1	3	9	4	1	(2.94)
Solid Waste	1	2	9	6	0	(2.88)
Storage Tanks Mgmt.	0	4	8	5	1	(2.83)
Septic Systems	0	0	6	7	5	(2.06)

### APPENDIX 3: Sample Scoring Sheet

<b>DAY FIVE</b>	<b>SEPTIC SYSTEMS</b>		<b>FEEDLOTS</b>	
Human Health	Initial Score:  Reasons:	First Score:	Initial Score:  Reasons:	First Score:
	Changes in Score/Reasons:		Changes in Score/Reasons:	
Ecological Health	Initial Score:  Reasons:	First Score:	Initial Score:  Reasons:	First Score:
	Changes to Score/Reasons:		Changes to Score/Reasons:	
Quality of Life	Initial Score:  Reasons:	First Score:	Initial Score:  Reasons:	First Score:
	Changes in Scores/Reasons:		Changes in Scores/Reasons:	