

# **Communicating on drought surcharges**

**By  
MARY WYATT TIGER**

A paper submitted to the faculty of the  
University of North Carolina at Chapel Hill  
in partial fulfillment of the requirements for the degree  
Master of Public Administration

The attached paper represents work done by UNC Chapel Hill Master of Public Administration student as a class project. It is not a formal report of the School of Government, nor is it the work of School of Government faculty.

## **Executive Summary**

A drought threatens both water supply and a utility's primary source of revenue. Consequently, many utilities explore the use of surcharges, which temporarily increase water rates during drought, as a way to stabilize revenues and promote conservation while keeping in mind the need for affordable water. Such was the case for Charlotte-Mecklenburg Utilities during the 2007-08 drought. The purpose of this research is to gauge common themes of customer and City Council member perspectives on a proposed drought surcharge in Mecklenburg County. Insight from this research can help utilities in their consideration, development and communication about drought surcharges in their own communities.

## Introduction

In times of drought, a water utility needs the help of its community to extend its resources. In many cases, the utility compels that help through mandatory restrictions. While outdoor water-use restrictions are effective in conserving a dwindling supply, utilities that rely on consumption for a significant portion of their revenue can suffer financially when sales drastically decline<sup>1</sup>.

Such was the case with Charlotte-Mecklenburg Utilities (CMU) during 2007-08 drought. In spring of 2008, to recover revenues lost from conservation, CMU requested, and the Charlotte City Council approved, a permanent utility rate increase that was greater than previously projected. The City could have avoided this by having a temporary and automatic surcharge triggered by the drought's severity. A drought surcharge can help the utility regain lost revenue in a timely manner without having the City Council review rates on a case-by-case basis<sup>2</sup>. In addition to stabilizing utility revenues, well-designed surcharges have the potential to send a strong conservation message without disproportionately punishing those using water just to meet basic needs<sup>3</sup>.

The success of the surcharge in promptly achieving the goals of financial stability, conservation and equity, depends a lot on City Council and customer understanding of the rate structure and its intent<sup>4</sup>. Utility customers might not be as likely to conserve water if they do not understand how the surcharge affects them. Further, they might even perceive the surcharge as unfair and remonstrate. And while City Council members may be attracted to a temporary surcharge that could avoid large, unanticipated rate increases, they may be wary of relinquishing rate setting control.

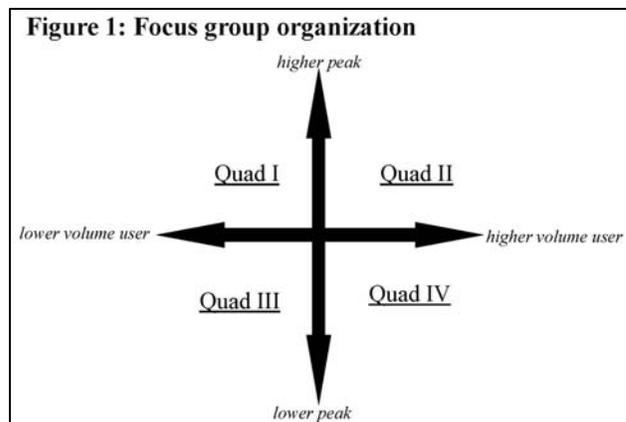
This study provides managers with increased insight related to community and City Council understanding by answering the following questions:

- 1) What information do residents and City Council members need to have in order to understand drought surcharges?
- 2) Does understanding of drought surcharge rates lead to greater acceptance (as measured by support)<sup>5</sup>?
- 3) What other trends, such as water usage patterns, may influence/underlie the concerns of residents and City Council members?

## Methodology

The research bases its analysis on questions, reactions and stories told by utility customers in four focus groups and by City Council members in two personal interviews. The focus group format allowed for direct interaction with a cross-section of citizens and for them to put the surcharge into their own context and words. Given that drought surcharges are a relatively new idea in the Southeast, many participants were exposed to this concept for the first time in this forum. The format allowed the researcher to manage their exposure to and record their immediate opinions of the topic. Few utilities go beyond a brochure or Web site to communicate their rates, and even fewer request feedback through a survey. Data from the focus groups, underscored with billing records, allowed for a deeper understanding of how people relate to their utility and its rates.

Six to eight participants attended each of the four focus groups. Utility customers were categorized into four groups (or quadrants) based on average monthly household water use and peaking habits (Figure 1) in Fiscal Year 2008 (FY07-08). Twelve utility customers from each quadrant were recruited equally from low-, mid- and high-income zip codes



in close proximity to the library location of the focus group. Water usage patterns guided the establishment of the groups because it was anticipated that conservation behavior and the financial impact of a drought surcharge would be shared among participants within a given quadrant. And this would in turn influence focus group discussion. Participants received \$75 payment for their anonymous involvement in the two-hour event.

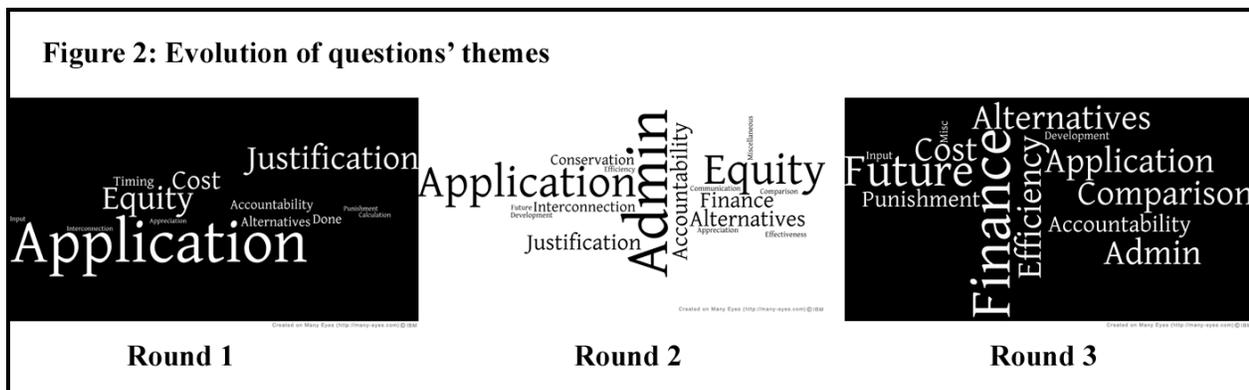
The moderator led focus group participants through four structured segments (Appendix A). First, participants anonymously answered multiple choice questions about their water use, income, opinions of their utility and other water-related issues (Appendix B). Then, the moderator prompted them with a headline stating, “CMU considers surcharge that would increase water rates during a drought.” Participants were asked to raise issues and provide feedback based on this limited exposure (Round 1). Following discussion, the moderator passed a rate schedule and described in detail how much the rate would go up, how it would be applied and other administrative details. The group was again asked to raise issues and make comments (Round 2). The final question and discussion section followed a presentation on the utility’s justification for the surcharge and the potential impact on water bills given the group’s water usage patterns (Round 3). At the end of each round, participants ranked their support for the drought surcharge on a scale from one to seven. The structure was established to emulate the process that a utility might use to communicate to its customers about a rate change, testing what level of information might influence customers’ perception of the surcharge. Questions, reactions and stories were recorded by both the moderator and a third-party note taker and later classified into common themes (Appendix C).

This methodology did have some limitations inherent in its structure and context. Focus groups tend to foster “group think,” in which group opinion and highly verbal participants may unduly influence more reticent participants. The focus groups were conducted after an entire year of drought-time communication from the utility and news media, as well as following many years of an active conservation campaign by the utility (i.e. home conservation audit program, general conservation outreach, etc.). In addition, CMU already had conservation-oriented rates in place at the time; the proposed drought surcharge only intensified the disparity of the blocks. Results might differ for utilities with less or different outreach, education and/or rate structure.

Data from the focus group were supplemented with interviews of Charlotte City Council members. Councilmember Edwin Peacock (R) and Nancy Carter (D) serve as the chair and vice-chair of the Environmental Committee, respectively, and were interviewed for their questions, opinions and concerns regarding a drought surcharge.

## Results and Analysis

Understanding and Support: The study attempted to gauge participant understanding of the drought surcharge by soliciting questions at the beginning of each round. Although the number of questions remained fairly constant from one round to the next, the nature of the questions evolved from specific to broad (Figure 2). Upon exposure to a short “headline” of information, participants predominantly wanted

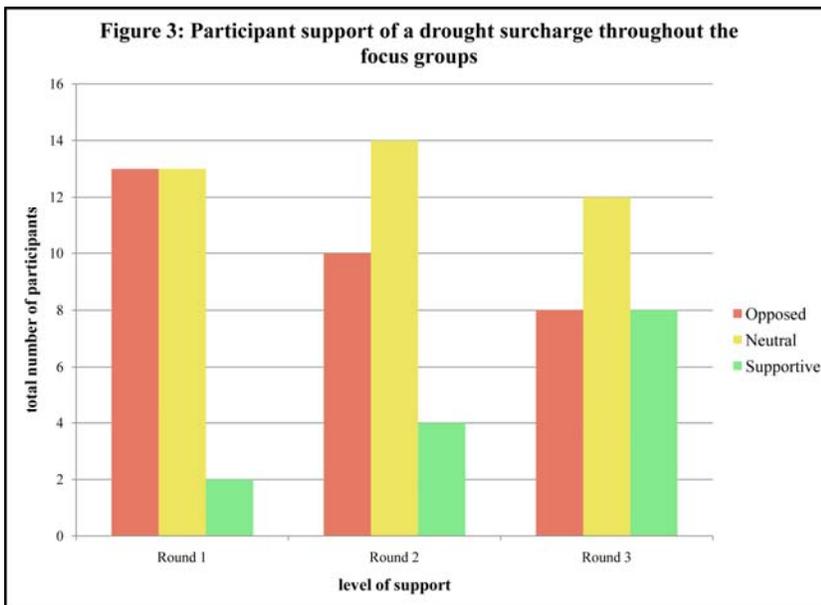


to know how the surcharge would be applied, why was it needed and how the rate would account for the equitable treatment of citizens. Some participants asked that the surcharge be coupled with a financial aid program. Council Member Carter asked that the surcharge not be regressive. Equity questions extended to include how the rate would apply to businesses and/or well-users.

Equity and application questions lingered through the next round, but many more administrative (Admin) questions arose. Administrative questions covered everything from, “What is a ccf (100 cubic feet)?” to “What is an irrigation customer?” These questions revealed that some people did not understand how their utility bill was currently calculated, before even considering how a drought surcharge would change that calculation. In the third round, the questions broadened extensively to cover everything from utility finance, efficiency and accountability to alternatives to the drought surcharge and comparisons to other communities, suggesting that as participants became more informed about the surcharge they began to consider its broader implications.

As the focus group progressed, there was a slight trend of decreased opposition with more knowledge and discussion about the surcharge (Figure 3). As anticipated, very few participants were positive at the outset about increased water rates. However, after an explanation of the rate structure, the utility’s rationale and

bill impacts, more participants seemed to recognize the need and reluctantly supported (or did not oppose) the proposed drought surcharge. In the words of one participant, “I’m beginning to see this and lean more towards support.” Over the course of the focus group, this particular individual went from opposed (2) to somewhat supportive (4) to supportive (5). Only two participants out of twenty-eight reported a decrease in support after learning of the utility rationale and the impact on their bill. Nine participants increased their level of support in Round 3. Eleven participants did not



change their support level throughout the entire focus group; five of these eleven stayed very opposed (1). In addition to connecting awareness to support, the structure of the focus groups and interviews detected common themes that participants repeatedly discussed in association with the drought surcharge.

**Conservation:** Focus group participants from Quadrants 1 and 2 took the opportunity of discussing a drought surcharge to also discuss conservation. Both of these groups had at least three months of water usage that were significantly higher than their annual average. This fact suggests (and is supported by pre-round questioning) that they have discretionary water uses and, therefore, consumption areas where they can more easily reduce. In both groups, participants shared stories of their own conservation efforts during the drought and suggested conservation programming ideas for the utility. Phrases like, “you’ve got to hit them in the pocketbook” embodied the thought that an economic signal would change personal and community behavior. In addition, both City Council members drew an immediate connection between the drought surcharge and conservation.

Not everyone, especially those with consistent high usage (Quadrant 4), was convinced that a drought surcharge would cause conservation in their household. “I still have to take baths, and I’m still going to

drink water,” one Quadrant 4 participant said. A few other participants in this group felt that the surcharge was punishment for something they had no control over. These participants came from households of four people, on average. They stressed that a drought surcharge was not fair to large families that could not easily conserve their way under a surcharge. At the same time, five out of eight of these participants reported regularly or frequently watering their lawn.

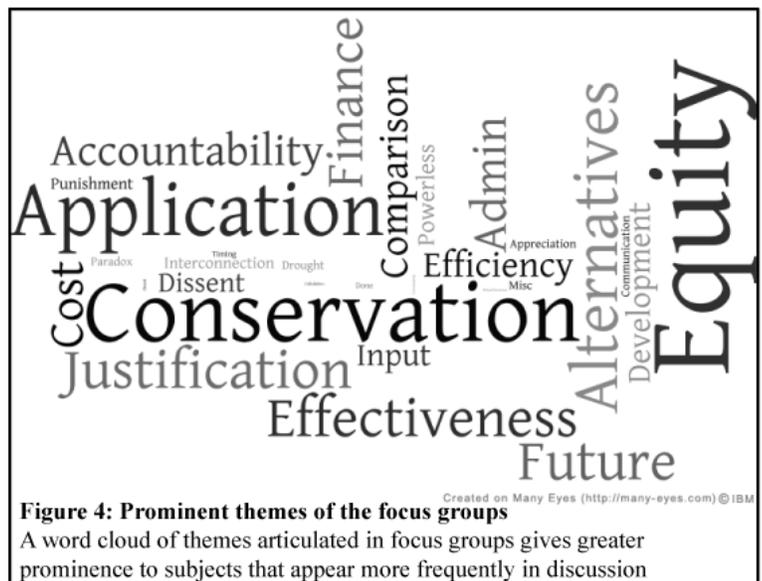
Paradox: A few participants in the low-usage, low-peaking group insisted that it did not seem to matter if they were charged before or after a drought because they would still have to pay more if the community conserved water (Paradox). They used vivid phrases like “the paradox of conservation” and “double-edged sword” and were almost offended at masking the surcharge as a conservation measure. Others made the point that a drought surcharge could not make it rain (Effectiveness).

Future: Without prompting, participants put the drought surcharge in the context of the future and environmental protection. They asked questions about why the utility was not looking into the cause of the drought. “Was it global warming?” they wondered. They (especially those in Quadrant 2) discussed development and growth in the county and what kind of impact that was having on water resources. They also expressed concerns about the utility’s infrastructure and the future of green lawns.

#### Utility Accountability and Finances:

Common questions and concerns about the management of the drought surcharge came up, especially towards the end of the focus group sessions. Many participants’ comments addressed the utility side of the transaction, with phrases such as:

- Will the surcharge ever go away? (Application)
- Where will the money go and how will it be used? (Accountability and Finance)
- Is the utility efficiently using the money it already has? (Efficiency)
- What other alternatives does the utility have to a drought surcharge? (Alternative Resources)



## **Recommendations and Conclusion**

### Effective communication about surcharge is imperative.

In a November 2008 Environmental Committee meeting, Council Member Carter voiced the need for effective communication about a drought surcharge, a point she raised again in the interview. “The public needs to be given adequate warning of a rate increase, so that the surcharge is not punitive.” Participants in the focus groups, especially those with consistent high usage (Quadrant 4), also discussed the need for advanced notice of the drought surcharge directly from the utility (Communication). One participant said, “I just want a personalized letter from the utility telling me about the adjustments and how it would impact me.”

The following are important conclusions about communication from this research:

- Language matters. The term “surcharge” does not resonate well with people. Most participants felt this was vague and sent a negative signal.

- Let customers know that the surcharge is one of many tools to manage the drought. Customers wanted to know what the utility was doing to avoid rate increases and promote conservation in both drought and non-drought times. It was not explained to any focus group that CMU planned to only recover 50% of a revenue shortfall caused by drought-time conservation. This information could have helped address their concerns of utility efficiency and accountability.
- Communicate how droughts will be determined and revenues will be spent. Participants were concerned that once applied, the surcharge would not go away when the drought was over. More participants offered support of the surcharge if connections could be made between drought surcharge revenues and conservation programs/supply capacity.
- Give customers context for the surcharge by explaining the need and providing other examples of drought rates. Council Member Peacock stressed a need to communicate more about utility financing and the reasoning behind a drought surcharge.
- Tailor communication to the specific audience. Drought surcharges can be difficult to understand, especially for customers with a limited understanding of how a utility functions and operates. Further, customers with different usage patterns are concerned about different issues. Customer understanding will be bolstered if the communication considers a customer's water usage and addresses these particular concerns.

#### A drought surcharge is not the only answer.

In some form, every focus group and both City Council members noted that a drought surcharge cannot be Charlotte-Mecklenburg Utilities' only drought-management tool (Alternative Resources). Some participants felt that a surcharge was the "easy way out" and began brainstorming about alternatives such as conservation programs, utility interconnections, desalinization or better growth management. Council Member Carter said that implementing a drought surcharge is a proactive and responsible action within a portfolio of other actions to help ensure adequate water supply.

#### **Conclusion**

A utility's goals for a drought surcharge are revenue stability, conservation and equity, but the community will interpret rate setting within a larger context of utility management, development and the environment. If people do not understand a temporary rate increase, the surcharge can fall short of sending a strong economic signal for conservation and could create excess revenue. This may appear punitive. However, with a proactive and tailored communication campaign, a utility can answer questions, address community concerns and help customers understand the rate enough to make behavior change, in light of the economics.

---

<sup>1</sup> Manuel, John (2008) Drought in the Southeast: Lessons for water management. Environmental Health Perspectives, 116, 4, April 2008.

<sup>2</sup> Chestnutt, Thomas W. & Janice A. Beecher (1998) Conservation rates in the real world. Journal AWWA, 90 (2), 60-70.

<sup>3</sup> Smith Jr., William James & Young-Doo Wang (2008) Conservation rates: the best "new" source of urban watering during drought. Water and Environment Journal, 22, 100-116.

<sup>4</sup> Olmstead, Sheila M., W. Michael Hanemann, Robert N. Stavins (2007) Water demands under alternative price structures. Journal of Environmental Economics and Management, 54 (2007) 181-198.

<sup>5</sup> Campbell, Margaret C. (1999) "Why did you do that?" The important role of inferred motive in perceptions of price fairness. Journal of Product & Brand Management, Vol. 8 No. 2 1999, 145-152.

## **Appendix A: Details on Methodology**

### **Residential focus groups**

#### **Methodology purpose:**

I will collect data for this study by conducting four focus groups with Charlotte-Mecklenburg Utilities residential customers. Each focus group will be comprised of participants who had similar water-usage patterns during the 2007-08 drought, as identified from CMU's billing system. The goal of each focus group will be to detect major themes of customer understanding and support of a drought surcharge.

While somewhat similar studies have used survey methodology to study customer response to conservation rates and water usage, I chose focus groups because:

- 1) The concept and details of a drought surcharge will most likely be unfamiliar to residential customers and will require explanation.
- 2) The focus group structure allows participants to express their perception of a drought surcharge in their words and will allow the researcher to capture initial reactions and questions of participants.

The goal will be to have 6-8 participants in each focus group, for a total of 24-32 participants. The size of the group should be small enough to lend itself to open conversation.

In addition to a classic moderator-led discussion, I will also collect data on the participants' current understanding of CMU rates, their water usage and demographics through survey-like methods using TurningPoint hardware. TurningPoint hardware allows participants to answer questions anonymously with a remote and immediately see the trends of the group on a PowerPoint slide. Within the focus group, participants answers to the multiple choice questions will be aggregated; no one will be able to associate an answer with an individual.

However, TurningPoint will track answers back to specific remotes in its internal analysis. I will assign specific remotes to specific participants and link responses to each participant. I will aggregate this data and trends in presentation to Charlotte-Mecklenburg Utilities.

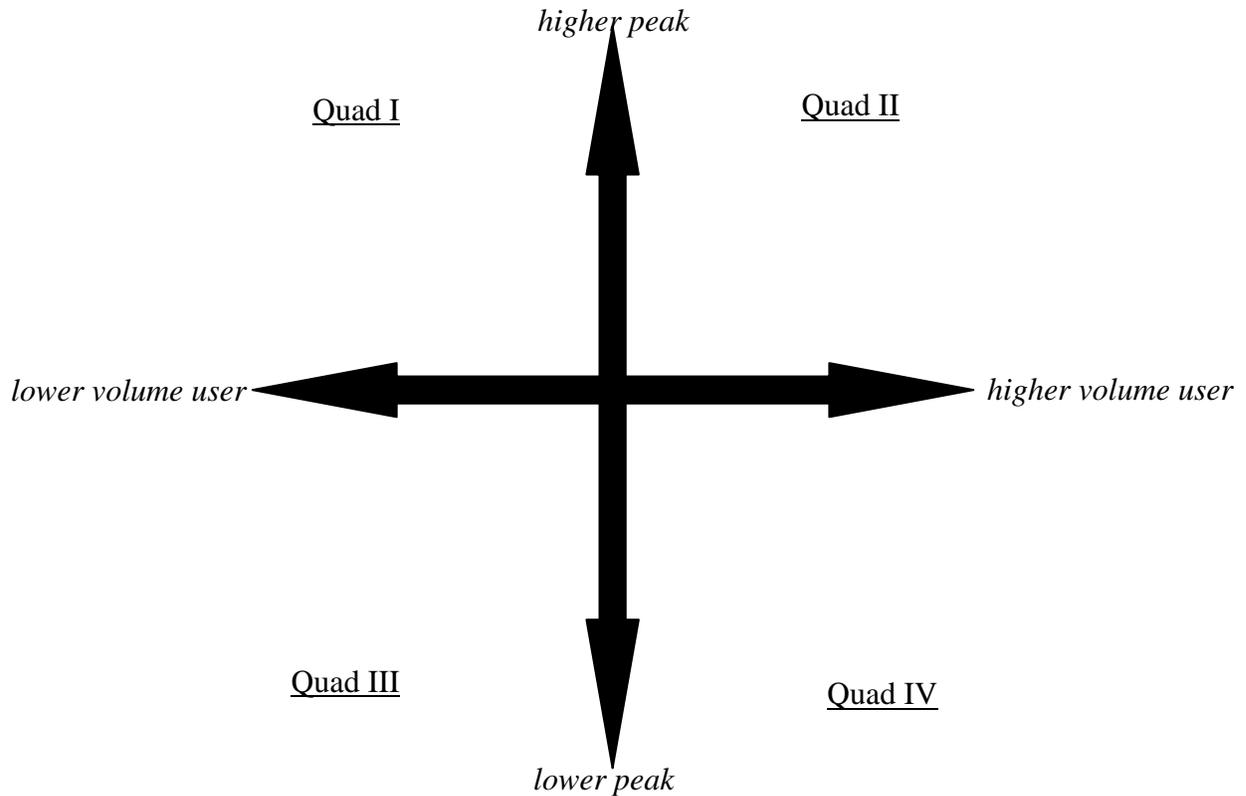
#### **Assumptions:**

The focus groups will be grouped by consumption during the FY07-08 drought under the assumption that a drought surcharge will impact their utility bill similarly, and subsequently their attitude towards the surcharge.

#### **Participant selection:**

1. Charlotte-Mecklenburg Utilities will provide the Principal Investigator with a randomly chosen list of customers (all those customers with premise numbers ending in "77") including their name, address, phone number and past year of water consumption.

2. The researcher will organize CMU residential customers based on:
  - a. Water consumption during the 2007-08 drought  
The customer will be broken into four groups:



- i. Y axis: average of the premise's 3 highest months of usage is 2.0 times > or < than the average of that premise's 3 lowest, non-zero months of usage
- ii. X axis: annual average of premise is > or < the sample's annual average

3. I will then order each category of customers by zip code and attempt to recruit equally from low-, mid- and high-income zip codes in close proximity to the location. The location of customers within a category will help decide which of the four locations to use for their focus group.

**Recruitment:**

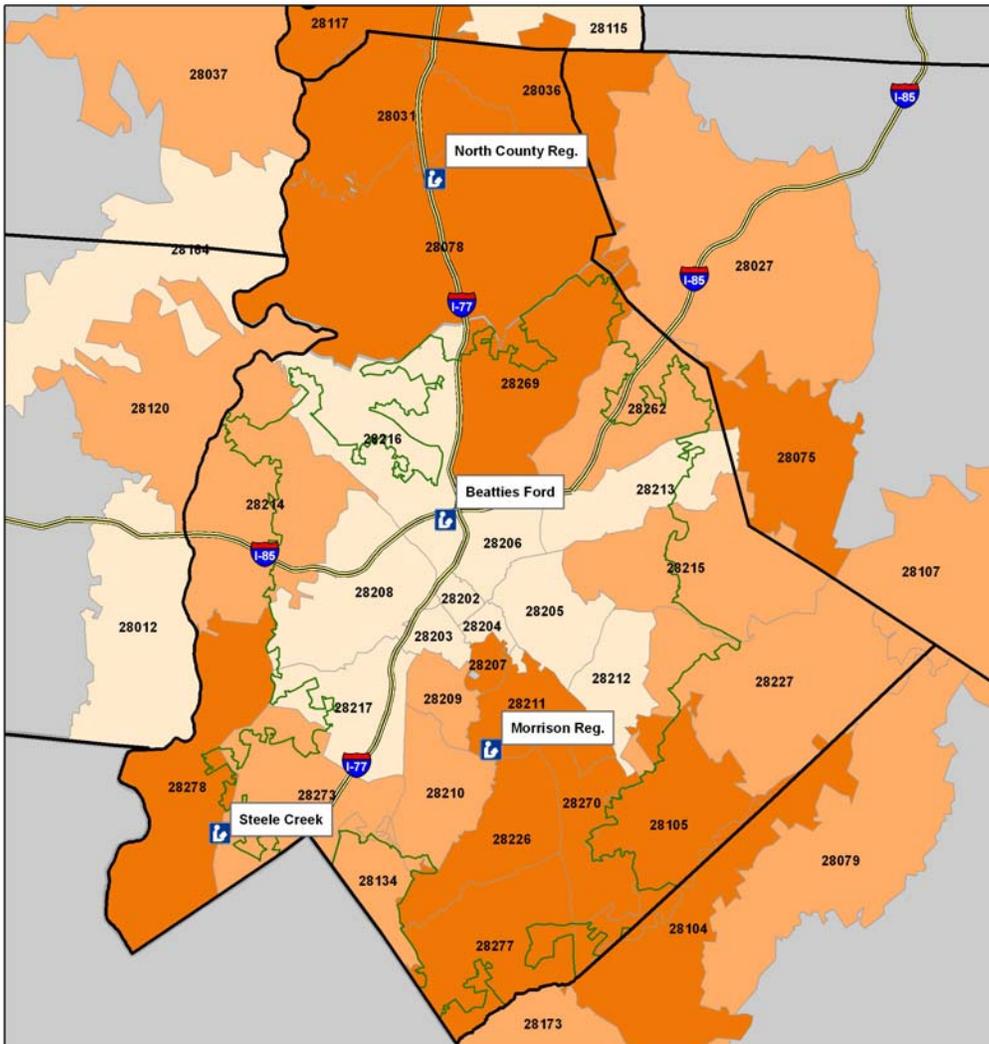
I will recruit 12 participants with the goal of getting 6-8 show up to the focus group.

1. The initial contact with potential participants will be made by telephone.
2. I will follow-up with a letter confirming attendance to focus group, date and time. The letter will also include directions to focus group location.
3. Two days prior to the focus group, I will call to remind the participants of the focus group location and time.

## Time and place:

The following libraries are spread out across the county and located within varying median household income levels (see map). There was no scientific method to choosing the location. I considered availability, location within the county, income level of zip code and conference room size.

## Mecklenburg County, NC Zip Codes



**Quad 4: Tuesday,  
November 11, 2008  
at 6:00pm**  
Steele Creek Library

**Quad 1: Thursday,  
November 13, 2008  
at 6:00pm**  
North County  
Regional (North)

**Quad 3: Monday,  
November 17, 2008  
at 6:00pm**  
Beatties Ford  
Road(Central)

**Quad 2: Monday,  
November 24, 2008  
at 6:00pm**  
Morrison Regional  
(South)

 Focus Group Location

 Charlotte

### Median Household Income in 1999

 \$25663 - 42212

 \$42213 - 59337

 \$59338 - 86713

## **Focus group administration:**

Moderator: Mary Tiger plus one assistant (per focus group)

Focus group will take place with participants and moderator facing each other (at a round, square or oval table)

Materials needed:

- Two flip charts that have tacky backs
- Markers
- Laptop
- Projector
- TurningPoint materials
- Magazine advertisements
- Presentation
  - Water usage slide
  - Past utility bill slide
  - Utility bill with drought surcharge slide
- Envelopes for each participant
  - Consent forms
  - TurningPoint remote
  - Meeting agenda
- Cash from UNC
- Handouts with drought surcharge rate structure
- Pizza
- Napkins
- Plates
- Soda and Water
- Post-it notes
- Name plates

I will set up two flip-charts on either side of the table where all participants can see them. One will be used for support/dissent statements, and one will be used for questions.

## Residential focus groups: Structure

5:45-6:10	Administration	<ul style="list-style-type: none"> <li>• <u>Welcome and thanks</u></li> <li>• <u>Pass out materials</u> (TurningPoint remote, informed consent forms) Participants read and sign consent forms.</li> </ul>
6:10-6:30	Introduction	<ul style="list-style-type: none"> <li>• <u>Logistics</u> (location of bathroom and food, audio taping)</li> <li>• <u>Moderator introduction</u></li> <li>• <u>Assistant introduction</u> (first names, affiliation and, role in the study) Assistants introduce themselves</li> <li>• <u>Participant introductions and icebreaker</u> (first name, hometown and famous hometown food) Participants introduce themselves.</li> <li>• <u>Purpose and rules of focus group</u> (respect, ability to leave at any point, involvement in discussion)</li> </ul>
6:30-6:40	Pre-round: All about you and water	<ul style="list-style-type: none"> <li>• Multiple choice questions regarding conservation, personal demographics, knowledge of the utility and water us.</li> </ul>
6:40-6:42	Round 1: Introduction to drought surcharge	<ul style="list-style-type: none"> <li>• <u>Headline: Charlotte-Mecklenburg Utilities considers a drought surcharge that would increase water rates during a drought.</u></li> </ul>
6:42-6:55	Magazine exercise	<ul style="list-style-type: none"> <li>• <u>Questions?</u> Individuals go around the table and pose their outstanding question. Focus group assistant writes questions on flip chart. Moderator probes as necessary.</li> <li>• <u>Comments?</u> In this portion of the focus group, participants chose a magazine article from a stack and gave it a title to express their opinion of the drought surcharge. Individuals around the table share their picture and title. Focus group assistant writes titles on flip chart. Moderator probes as necessary.</li> <li>• <u>Likert scale</u> Participants use TurningPoint remotes to indicate support. Results display on screen.</li> </ul>
6:55-7:00	Round 2: General details of drought surcharge	<p>Moderator passed out a sheet of paper for each participant that has a rate schedule. Participants take 2-3 minutes to take a look at the drought surcharge structure.</p>

## Hypothetical drought surcharge rate structure

The drought surcharge that Charlotte is considering would temporarily increase rates for residents, businesses and irrigators during a drought. The rate increase would depend on consumption. Households that used a lot of water would see steeper increases than those that use less. In fact, households with very low water use would not see a rate increase at all. As the drought worsened, the rate would increase. The rate could be structured as follows:

### Residential water customers

All residential customers pay \$1.80 water administration charge plus:

Drought phase	Tier 1 0-4 ccf	Tier 2 5-8 ccf	Tier 3 9-16 ccf	Tier 4 > 16 ccf
Phase 1 (voluntary conservation)	\$1.38	\$1.56	\$2.56	\$5.05
Phase 2 (2 day/week watering)	\$1.38	\$1.56	\$2.56	<b>\$6.54</b>
Phase 3 (no watering)	\$1.38	\$1.56	<b>\$3.97</b>	<b>\$7.83</b>
Phase 4 (emergency)	\$1.38	<b>\$3.36</b>	<b>\$5.52</b>	<b>\$10.88</b>

### Non-residential water customers

All non-residential customers pay \$1.80 water administration charge plus:

Phase of drought	Water rate (per ccf)
Phase 1	\$1.94
Phase 2	<b>\$2.51</b>
Phase 3	<b>\$3.01</b>
Phase 4	<b>\$4.18</b>

### Irrigation water customers

All irrigation customers pay \$1.80 water administration charge plus:

Phase of drought	Tier 1 0-16 ccf	Tier 2 >16 ccf
Phase 1	\$2.56	\$5.05
Phase 2	<b>\$3.32</b>	<b>\$6.54</b>
Phase 3	<b>\$3.97</b>	<b>\$7.83</b>
Phase 4	<b>\$5.52</b>	<b>\$10.88</b>

\*1 Ccf = 100 cubic feet or 748 gallons of water.

7:00-7:15	Group discussion on drought surcharge	<ul style="list-style-type: none"> <li>• Questions? Individuals go around the table and pose their outstanding question. Focus group assistant writes questions on flip chart. Moderator probes as necessary.</li> <li>• Comments? Roundtable discussion of participant's opinions and concerns</li> <li>• Likert scale Participants use TurningPoint remotes to indicate support. Results display on screen.</li> </ul>
7:15-7:30	Round 3: Presentation on drought surcharge rationale and bill impact	<p>The facilitator presented the following statements regarding Charlotte-Mecklenburg's rationale for the drought surcharge:</p> <ul style="list-style-type: none"> <li>• Charlotte-Mecklenburg Utilities is not-for-profit</li> <li>• CMU's budget for the year based on population and water consumption projections</li> <li>• In a drought, expenses tend to go up and revenue goes down</li> <li>• As a result, the Utility must raise rates permanently to maintain service</li> <li>• A drought surcharge would help avoid permanent rate increases and promote customer conservation</li> </ul> <p>The facilitator then presented the group with the following graphs regarding the impact of the surcharge on their bills:</p> <ul style="list-style-type: none"> <li>• Average water consumption of the group for July 2008-June 2008</li> <li>• Corresponding water bill under existing rates</li> <li>• Potential impact of drought surcharge on last year's water bill</li> </ul>
7:30-7:45	Group discussion on drought surcharge	<ul style="list-style-type: none"> <li>• Questions? Individuals go around the table and pose their outstanding question. Focus group assistant writes questions on flip chart. Moderator probes as necessary.</li> <li>• Comments? Roundtable discussion of participant's opinions and concerns</li> <li>Likert scale Participants use TurningPoint remotes to indicate support. Results display on screen.</li> </ul>
7:45-7:55	Summary	Moderator recaps the participants' input, verbally.
7:55-8:00	Conclusion, thanks and money distribution	

## **City Council Member Interviews**

### **Methodology purpose**

I will interview two members of the City Council's Environmental Committee one-on-one about their understanding and support of a drought surcharge for CMU customers/citizens. I chose to conduct formal interviews in order to get the individual reaction of the Council members and to have the opportunity to probe their statements.

### **Assumptions**

Council members serving on the Environmental Committee will have a better understanding of Utilities financing. Their insight will be a more in-depth than other Council members.

### **Participant selection**

I will interview the Chair (Edwin Peacock, Republican, newly elected, Council Member at large) and Vice-Chair (Nancy Carter, Democrat, fifth term, represents District 5) of the Environmental Committee following the October 20<sup>th</sup> CMU staff presentation on rate methodology. If for some reason one or both of these Charlotte city council members is unavailable for interview, I will contact other members of the council until I am able to interview two current members of the city council.

### **Recruitment**

Through Doug Bean, CMU Key Business Executive, I will set up a half-hour meeting with each Council member individually.

### **Time and Place**

Following an Environmental Committee meeting in the Charlotte-Mecklenburg Government Center, where they were introduced to the proposed drought surcharge.

## Appendix B Focus Group Multiple Choice Questions

	Quad 1	Quad 2	Quad 3	Quad 4	Total
<b>1. Please choose yes for any use of tap water in your house; choose no if you do not use tap water for that purpose (yes/no)</b>					
<i>Essential</i>					
Drinking and cooking	7/0	7/0	6/0	8/0	28/0
Bathing and hygiene	7/0	7/0	6/0	8/0	28/0
Laundry	7/0	7/0	6/0	7/0	27/0
Recreation	4/3	2/4	1/5	3/5	10/17
Car washing	4/3	6/1	2/4	4/4	16/12
<i>Discretionary</i>					
Indoor plants	6/1	7/0	3/3	5/2	21/6
Outside plants	6/1	6/1	4/2	5/3	21/7
Lawn watering	5/1	3/4	3/3	4/4	15/12
<b>2. Do you regularly (not in drought times) irrigate your lawn?</b>					
Yes, I regularly irrigate my lawn.	2	1	1	1	5
Yes, I irrigate my lawn when it needs it.	2	2	1	4	9
I rarely irrigate my lawn.	1	1	1	1	4
No, I never irrigate my lawn.	2	3	3	2	10
<b>3. What services do you purchase from Charlotte-Mecklenburg Utilities? (Correct answer: water, sewer and stormwater)</b>					
Sewer, trash and recycling	3	0	2	3	8
Water, sewer and power	1	0	0	2	3
Water and sewer	1	1	1	1	4
Water, sewer and stormwater	0	6	3	1	10
Water and trash	1	0	0	1	2
<b>4. What do you think is CMU's primary source of revenue? (Correct answer: water use (rates))</b>					
Taxes	2	1	1	6	10
Water use (rates)	3	5	4	1	13
Developer fees	2	1	1	1	5
Ticket sales	0	0	0	0	0
<b>5. What is your primary method of paying your water bill?</b>					
Physically drop off the check	0	1	0	3	4
Mail in payment	4	3	4	2	13
Pay online with debit or credit card	2	2	1	2	7
Automatic draft from bank account	1	1	0	0	2
Don't pay my bill	0	0	0	0	0
<b>6. How many people, on average, lived in your house from July 1, 2007 to June 30, 2008?</b>					
1	2	0	3	0	5
2	2	3	1	1	7
3	1	2	2	1	6
4	2	2	0	3	7
5	0	0	0	3	3
6	0	0	0	0	0
7	0	0	0	0	0
8	0	0	0	0	0
>8	0	0	0	0	0
<b>7. What is your annual household income?</b>					
\$0-40K	1	1	3	1	6
\$40 - 80K	2	1	2	2	7
\$80-120K	3	4	0	4	11

>\$120K	1	1	0	1	3
8. How well do you think CMU informs its citizens of water issues?					
Very well	1	1	1	NA	3
Well	2	2	1	NA	5
Okay	3	4	2	NA	9
Poor	1	0	1	NA	2
Very poor	0	0	0	NA	0
9. How well do you think CMU implements policies to protect the environment and encourage conservation?					
Very well	0	0	0	NA	0
Well	2	1	2	NA	5
Okay	4	5	3	NA	12
Poor	0	0	0	NA	0
Very poor	1	1	0	NA	2
10. How well do you do feel CMU handles its billing services?					
Very well	3	1	2	NA	6
Well	1	4	3	NA	8
Okay	1	1	0	NA	2
Poor	2	1	1	NA	4
Very poor	0	0	0	NA	0
11. Overall, how do you feel your household managed the drought?					
Very well	4	3	2	5	14
Well	3	4	1	1	9
Okay	0	0	3	2	5
Poor	0	0	0	0	0
Very poor	0	0	0	0	0
12. Please choose yes for any conservation measures you took during the drought; choose no if you do not use tap water for that purpose (yes/no)					
Follow water restrictions	6/0	7/0	6/0	7/1	26/1
Stop lawn watering all together	2/2	2/5	3/2	6/2	13/11
Take shorter showers	3/4	2/5	3/3	0/8	8/20
Turn water off when brushing your teeth	5/1	6/1	2/4	1/7	14/13
Purchase water saving devices	0/7	3/4	2/4	2/6	7/21
Reuse water in the house	2/5	2/5	2/3	1/7	7/20
Anything else to save water	2/3	1/5	4/2	2/5	9/15
13. Overall, how well do you feel your community managed the drought?					
Very well	1	0	0	3	4
Well	1	4	2	1	8
Okay	3	3	3	4	13
Poor	1	0	1	0	2
Very poor	0	0	0	0	0



**Ideas:** Conservation programming ideas for the utility (besides education)

**Cost**

Questions and comments about the cost of a drought surcharge

**Development**

Statements about Mecklenburg County growth and development

**Done**

Expression that Charlotte-Mecklenburg Utilities had already implemented a drought surcharge

**Dissent**

Outright objection to the drought surcharge

**Drought Severity (drought)**

Anecdotes about how bad the drought was

**Effectiveness**

Comments about how well the drought surcharge would promote conservation and/or recover revenue for the utility, broken into two categories

**Overall:** Statements on how the drought surcharge would affect others and/or CMU

**Personal:** Anticipated household impact/reaction to drought surcharge

**Equity**

Questions and comments regarding the fair application of the drought surcharge; it also includes questions and comments regarding the unfair water usage of others during a drought

**Future**

Statements about the future of water supply

**Input**

Expressions about customer contribution and control over the rate setting and other utility processes

**Interconnection**

Comments about CMU's sale and purchase of water from other communities

**Justification**

Questions and comments regarding the reasoning and calculations behind a drought surcharge; also includes sentiments of understanding

**Paradox**

The idea that drought surcharges are not for conservation, if they were they would only keep going up and up

**Powerless**

Comments that implied a sense of subjection and/or contradictory messages from other organizations

**Punishment**

Questions and comments that conveyed a sense that a drought surcharge is retribution for conservation in drought time

**Utility Accountability (Accountability)**

Questions and comments about where the additional revenue from the drought surcharge were actually going : in general, these statements were rooted in a lack of trust of the utility

**Utility Efficiency (Efficiency)**

Questions and comments about how economically the utility uses the funds it has

**Utility Finance (Finance)**

Questions and comments about the finances of the utility

**Quadrant 1**

<b>Round 1: Headline</b>					
Person	Questions	Themes	Opinions	Themes	Support
1-1	Why is it going up?	Justification	All along you told me you could change the world, turns out you are right. We might not want to do it, but we might have to if we want water. I think it is unfair that some might cut on watering lawns and others are not. Neighbors grass is green and I didn't water all summer, and that ticks me off! We have the resources for water, the ocean. They are trying to find ways to remove the salt from ocean water. We haven't put as much development into that as they should. Develop other sources.	Future; Equity; Alternative Resources	3
1-2	If one uses a lot of water, would it vary what the surcharge would be? (Does the surcharge vary in level based on consumption)	Application	Get our supply from local areas. We can get water locally. I also saw on TV that they are recycling water from our toilets. Let's do that.	Alternative Resources; Conservation (Idea)	6
1-3	Why?	Justification	Tomorrow begins today. We need to come up with better solutions than to raise rates. We find solutions that would be better than digging into our pockets for these solutions. Is there something else we could do? We need long term solutions instead of an impulse or a tax on something temporary. Add to his title: need to go to the school system and educate the students on water problems. Have an ex student who developed a project on water and sanitation in developing countries. We need to go to schools to come up with new ideas - ask the students to develop ideas. Students can be creative.	Future; Alternative Resources; Conservation (Education)	2
1-4	How much would it go up? Is that not illegal? Is that not a hidden tax? Is it for profit?	Cost; Utility Accountability	Surcharge is not going to make it better as far as water is concerned. If we educate while younger, we get them while young and train them to conserve	Effectiveness; Conservation (Education)	1
1-5	How much would it go up?	Cost	Savor the quality of life -- I know that if the water levels go too low, we would have to pay more for electrical and might even be cut off, which is what I am worried about. I would rather pay more to prevent being cut off from electricity or other services.	Drought severity	5
1-6	Can they charge others besides the homeowner? Maybe developer?	Equity	They did discuss this and they said they we are not using enough water and that the utility is losing money, so that's the reason behind a drought surcharge. Governor had commercials on TV with kids about conserving water	Justification; Conservation (Education)	2
1-7	No questions		Picture of crowds, overpopulation. We cannot conserve enough because population is growing and resources are steady. Education is important but when you start affecting the pocket, it is more effective than education alone. Related example: one store in Charlotte called Aldi - you don't see any shopping cart anywhere in the parking lot. Because you have to spend a quarter if you don't return the cart. Other shops don't charge and carts are everywhere. In Aldi, everyone, rich or poor, return the cart JUST for the quarter!! Spend more money on water, automatically start saving. If you send a big truck to pick up small boxes - why not tell the people to come and drop off the recycling and pay them for doing that, instead of driving those big trucks everywhere and less expensive than doing that. Send the customer incentive (financial) to go and recycle themselves. Education isn't alone, because smart or not people in Aldi all return the carts back. Reward the customers that are conserving the most. Put the charge o the people using the most.	Development; Effectiveness	1

**Quadrant 1**

<b>Round 2: Rate Structure</b>					
Person	Questions	Themes	Opinions	Themes	Support
1-1	You don't have to pay for well water right?	Equity	The meter readers drive by and don't even get out, and read the meter (in response to Sandy's question about the meter). I have plastic flowers and people were asking me how my flowers were still alive. I said I don't know! I had plastic flowers!! No watering at night! Idea for conservation: Can also put slate on the roof	Miscellaneous; Conservation (Personal)	5
1-2	No questions	No questions	Companies are getting off cheap and I think they can be charged more because you KNOW that big plants use a lot of water. Companies, big users, commercial. Use Astroturf grass. So green, looks so beautiful! I didn't know it wasn't Astroturf!! Cut off peak water use.	Equity; Conservation (Idea)	6
1-3	How would you stop them [from watering] unless you have water police? Don't "they" sell water to Cabarrus County? CMU should make them pay the surcharge.	Miscellaneous; Interconnection	Even neighborhoods do that too (water their lawns). Homeowners HOAs, etc. If you don't follow the watering restrictions, you get fined. People were looking for creative ways to circumvent the rules. We were told to use creative ways to keep lawns green. That means before I shower I have to ask do I want to buy water for my shower?	Powerless; Effective (Personal)	4
1-4	What does the average household use? Or IS there an average? Does CMU have to publically publish its balance sheet?	Admin; Utility Accountability	This year they were asking for outdoor conservation, but government buildings outside were irrigating. It's hard to conserve when you see that. Some people had well water versus city water and they are not under the same restrictions as the people with city water and that is causing some animosity. One neighbor has city and neighbor has well water, and one can water and one doesn't. How do you know who has well water or city water? One person was told I know you are all on well water but you have you conserve too because everyone else is doing it too. I think you have to get back to educating people. I use water out of the cooler. Normally it's nasty. But if water is not coming out of the faucet what are your choices? I lived here all my life and I have NEVER seen the lake as bad as it was last year. It was AWFUL!!	Equity; Conservation (Education); Drought severity	3
1-5	ccfs are what unit? Is \$1.80 something everyone pays? Are we in phase 1 all the time? Doesn't water get turned off after three violations?	Admin	No comment	No comment	6
1-6	Is the tier 1, tier 2 the amount of people in the household? Is there a meter you can use to see how much you are using? Why can't they sell rain barrels and other things? People would buy them!	Admin; Conservation (Idea)	Take a look at people living on the water, see if they are pumping water from the lake. They restrict in other places. You're taking water out of the lake, and I can't get my boat on the lake! You don't get any satisfaction or motivation without hitting them in the pocket book.	Equity; Effectiveness (Overall)	3
1-7	Who policies CMU's efficiency? Why are they charging users more? Are they going to increase CMU's efficiency? Why don't we invest money in why we have the drought? (i.e. global warming)	Utility Efficiency; Justification; Future	They have a meter that emits signals so you don't have to get to anymore (in response to question re: meters). I have a pump on the water and there are restrictions as well. I don't want my yard to be green. I stopped watering even though I had a right to pump, but I stopped anyway because of being a good neighbor. One method that's possible - maybe if the situation gets bad - gauge the water. Put restrictions on the line and you buy 1 cm per hour, or 2, so everyone has to have a reservoir to get water. You don't waste water that way! It's not rationing. Have it all the time, but you cannot take from the line without paying for it.	Conservation (Personal); Conservation (Idea)	5

**Quadrant 1**

<b>Round 3: CMU Rationale and Bill Impact</b>					
Person	Questions	Themes	Opinions	Themes	Support
1-1	Why don't they hire me to write tickets on cheaters of conservation? Do they sell water to someplace? Cabarrus county or something? Make OTHER counties pay the surcharge!	Utility Finance; Comparison		No comment	6
1-2	I watched a special on TV and they salt the clouds and they create rain! Why don't we send airplanes to do that?	Alternative Resources	We had a water break two years ago. Took them a week to fix it, such a waste. They said they were too busy. You would think that they would be able to cut the water off. They need to be more efficient. Water is very cheap here!! I am concerned about other places! Compared to other places I saw, I was pleased with my water bill here!! Look at other states and see how rates compare. If they raise rates across the board slightly it will cover it, and they won't need a drought surcharge.	Utility Efficiency; Comparison; Cost	6
1-3	No question	No questions	I'm leaning more towards support. Beginning to see it.	Justification	5
1-4	Are they going to increase efficiency in the office? Today in the news said people were getting increased bonuses. Are they still going to get big bonuses and big increases while they billing us extra money? Duke Power and natural gas - they have peak at times - does that work with water?	Utility Efficiency; Alternative Resources	I see reasons behind it but need a lot more to agree with it. If family is large and doesn't have enough money, they should document it and they should get an exception to the drought surcharge. Don't need to take money from them. I hate to think large families cant take a bath, but family of 2 might be able to take a bath. goes back to education. Back then no choice. Now we have a choice. Turn faucet on, water comes out. Different than before.	Justification; Dissent; Equity	5
1-5	Who polices the efficiency of the utility?	Utility Efficiency		No comment	5
1-6	Isn't there a way for them to cut the water off when its leaking (in response to leak response time)? If they are not-for-profit, do they have to post their revenues and expenses for public to see?	Utility Accountability	I am sure they are audited. Something must be posted somewhere. Even if non profit they must be audited. In other states, they are paying all the travel from the Hudson or Colorado river. So other states might be different. Rates depends on the locality. As long as people make effort, even if have large family, put a brick in toilet tank, new washers, cost efficient, etc., I don't think you are penalizing people if they have 18 kids. Give allocation per person in the house. Make it fair.	Utility Accountability; Comparison; Equity	3
1-7	If we didn't have the drought, I could have enjoyed the water and spent it on something else? Why don't we invest money in why we have the drought? Is it global warming?	Future	They are non-for-profit ; that's part of the problem. United way is nonprofit, and you find that someone is making 1.4 million., You say its nonprofit, but in truth they are really inefficient. If not-for-profit, they should be volunteer or nearly volunteer. Not pay managers lots of money. nonprofit but you have 10 people going out there to fix a leak and all you need is 2 people. There are eight guys smoking cigarettes! Do they show how much CMU is spending compared to another area/utility that is comparable, so we can see charts of their efficiency. If they make more money, they will raise their salary too! Re: large families: If they have limited money, they shouldn't have many kids. I don't think that's fair. I hate that argument.	Utility Efficiency; Comparison; Equity	5

**Quadrant 2**

**Round 1: Headline**

Person	Questions	Themes	Opinions	Themes	Support
2-1	Didn't that happen? Is there a cap on the surcharge? How long would it go on?	Didn't that happen?; Cost; Timing	"My home--my own beautiful resort." We have an irrigation system but can't it because of drought. I understand that rates have to go up, but I don't like it.	Conservation (Personal); Justification; Dissent	5
2-2	Would it be temporary? Are there any other options?	Application; Alternative Resources	"Finite" Most Americans don't get it. How come we keep wasting it? We have water, so we use it. It's a mentality. Needs to change habits	Future; Conservation	4
2-3	Who defines a drought?	Application	Everyone comes together. Don't like the rate increases but we need them. Better, happier, cleaner place. Want to be able to drink the water. Money well spent if water is clean. Have stones instead of yards. Lush green grass mentality. People sell water rights--that shows you how bad it is. Many industries need water. They should be more conscientious of what they are doing.	Community; Dissent; Effectiveness (Overall); Comparison; Conservation	4
2-4	What's the difference between a drought surcharge and raising rates?	Justification	Whether in a drought or not, the more you use, the more you pay.	Cost	2
2-5	Didn't they raise rates already?	Didn't that happen?	Importance of nature in everyday life. We need to conserve today, provide balance. We want water, but we need to conserve. We have changed our habits. Wish they only gave one trash can to people. Some neighbors don't recycle. Astronauts recycle urine and sweat--couldn't do that?	Future; Conservation (Idea)	6
2-7	Is there a vote, or does utility do it unilaterally? Will there still be tickets for drinking water restrictions if there is a surcharge?	Input; Application	Doesn't matter how fresh the pickle is, some people will think it stinks. Some people won't be happy if they charge more money. Pay more for stormwater if there is a big downpour. Does it matter if we support the surcharge?	Dissent; Input	5
2-8	How do they determine the surcharge--how is it calculated? What if they don't catch you doing something. How is it applied?	Calculation; Application	I see people washing cars every day. If everyone had the mindset of a child, we would conserve water	Equity; Conservation	5

**Quadrant 2**

<b>Round 2: Rate Structure</b>					
<b>Person</b>	<b>Questions</b>	<b>Themes</b>	<b>Opinions</b>	<b>Themes</b>	<b>Support</b>
2-1	What is a water admin charge? What is it ccf per month? How does this compare to what other cities are doing?	Admin; Comparison	If they use it, they need to pay more (in reference to those with variances). Great to be eco-friendly, but utility needs to make their money. If we stop using water, where do they get their money? Development leads to higher infrastructure costs and more runoff.	Equity; Utility Finance; Development	5
2-2	How do you ensure that your rates are not effected by the number of days counted on a meter? If they read it at 33 days instead of 29, that pushes it into a higher tier. Has a fiasco every July, August, September. Have they explored other possibilities than drought surcharge? Other than a rate? Water cap? Get money from general taxes?	Utility Accountability; Alternative Resources	Should be able to plan for it. Worries that they don't consider future water use, and then there is a shortage. His neighbor had just put in lots of sod and got to water during the drought. Doesn't like it. Some people can afford it and won't care. Don't plant fescue--can't have green grass 12 months a year. Taxes should go down after appraisal next year, rate should go down, but probably won't. Their cost is down if we use less water. They have not done the efficiencies they need to do. The way cities are now built, we waste more runoff. Now we collect that runoff and try to collect more of it.	Future; Equity; Utility Efficiency; Utility Finance; Conservation (Idea)	3
2-3	No question		<u>They</u> won't have the staff if we don't pay. There may be reasons outside of our control for the surcharge. Irrigation should be higher; it is unnecessary. Is it seller's fault for not planting less water-intensive trees. Against well drilling--no fees. Thinks tap fee for outside meter is substantial. Likes the Colorado landscape model. Water department could educate public about water-dependent grass and trees. Dissatisfied with amount of conservation information in bills. How many treatment plants do we have? Can we make it more localized? We don't have one fire station.	Justification; Equity; Conservation (Idea); Conservation (Education); Utility Efficiency	5
2-4	What is an irrigation customer? How do you define temporary?	Admin; Application	No opinion		3
2-5	Is an irrigation system not drinking water?	Admin	Didn't know that there are different days per cycle, and that annoys her. It's a monopoly--what choice do we have? If you don't protect property (by watering), it hurts to resell. Wells are draining our water table. Economic downturn will fix the problem of development. If you have new grass/shrubs/&c, you have permission to water more. Had to do it to close the house, but why did they put the grass in? In Atlanta, they were cutting water off if people violated restrictions. Do we go to that extreme?	Admin; Input; equity; Development; Comparison	6
2-7	No question		If you follow restrictions, you won't pay more. In cynicism, developers decide and council says yes. Rate structure like this is a step towards conservation w/o shutoffs. Could communicate about water-wise turf in a bill insert.	Effectiveness (Overall); Development; Conservation (Education)	6
2-8	How are people charged for irrigation? Is it golf courses or private homes? When they are building all of these houses, they know people will want lawns. Who decides on how many homes are built in a certain time? When they build water parks, is the water recyclable?	Admin; Development	Nothing said		3

**Quadrant 2**

<b>Round 3: CMU Rationale and Bill Impact</b>					
Person	Questions	Themes	Opinions	Themes	Support
2-1	No questions		We had a leak at the street for months; I caught it because we were conserving, but it didn't change our bill.	Utility Efficiency	5
2-2	How does development fees compare to others?	Comparison	Thought it was extremely dry in June. Didn't they reapply the restrictions again? Had big jump in bill from one month to next. Utility promised someone out to check for a leak in 10-14 days. But there was a delay because of high number of complaints. Eventually, it was fixed. Had a meter issue. There was a lack of confidence in the system and is afraid people won't trust the surcharge. In other places in world, developer has to pay more of infrastructure. Do they pay their fair share today? Skeptical. If they paid more, water bills should go down. Doesn't believe that expenses go up during drought and wants to see evidence. Concerned about the capability of people in charge--not happy with them. Surcharges are an easy solution.	Utility Accountability; Development; Utility Finance	3
2-3	No questions		Six months out of year, doesn't effect the bill. So it is tied to usage. If it were permanent, it might bring down my consumption. We can't hog all of the water that goes downstream into SC and GA. If we're in a drought, we can't send enough to SC, who doesn't have enough to send to GA, who doesn't have enough to send to FL. We can live w/o oil but not water. But no one wants to pay high prices.	Effectiveness (Personal); Interconnection	6
2-4	When did they go to 2-day a week watering? Who oversees the utility business efficiency? When does this go into effect?	Admin; Utility Efficiency; Application	Because they are a not-for-profit, they can hire who they want and we have to pay for it. If it was not a monopoly, they would have to pay attention to shareholders. Need to refine the technology for desalinization.	Input; Alternative Resources	3
2-5	Who is putting checks on the water rates? Doesn't Duke Power own the water? Do they make decisions, or the city?	Utility Accountability; Admin	Doesn't trust anything with financial markets either. Worried about decaying infrastructure of water system. Joked about bringing in water from space.	Misc.; Future	6
2-7	How much control does utility have over development?	Development	Thinks we should implement a national pipeline system to redistribute water.	Alternative Resources	6
2-8	Do they have teams or task forces for CMU that comes up with ideas of how to keep charges down?	Input	No comment		4

**Quadrant 3**

<b>Round 1: Headline</b>					
<b>Person</b>	<b>Questions</b>	<b>Themes</b>	<b>Opinions</b>	<b>Themes</b>	<b>Support</b>
3-1	Why would there be a drought surcharge?	Justification	"Dazed and Confused and Dizzy." Didn't understand because they want to punish you because you conserved so well.	Punishment	1
3-2	How much?	Cost	A little girl and a plant. Which would require water. Being on a tight budget it would force me to conserve water. "Belt tightening now brings payoffs later."	Effectiveness (Personal)	3
3-3	How can they justify increasing the rates during a drought when they are selling water to their neighboring counties? Is it water usage increase or does sewer figure in someway? How will the charge be broken across the three different charges? Who will pay the rates? Will it be in a base charge or volumetric charge?	Interconnection; Application	"Enjoy it, protect it. Will rates go up if water level goes down? Always increase." Picture of a lake. "Water levels down? Rates up? Always conserve!"	Conservation; Application	4
3-4	How long will it last and under what constraints. Based on fixed timeframe or on amount of scarcity? Will it last forever?	Application	Green and green house because it would take a lot of water. Because it will take a lot more water, it will force everyone else to pay more for me to keep my big yard. Big surcharge increase takes a lot to water. One green lawn affects everyone.	Equity	2
3-5	How is the rate increase justified/calculated?	Justification	A pickle "Surcharge has less to do with conservation than company trying to get rate increase and more company trying to get Utility Finance; its business requirements. Already government mandate to conserve so that is [covers] the conservation. Pickles taste sour. Dissent		2
3-6	How will they justify it across different consumers - one with a yard vs. one in an apartment? And will it apply to both city and county? Or just one? Will commercial be included?	Application; Equity	Picture of starbucks - A million bucks - the higher cost of water will trickle up.	Cost	1

**Quadrant 3**

**Round 2: Rate Structure**

Person	Questions	Themes	Opinions	Themes	Support
3-1	Have a brother who comes home for the summer. How often would it be applied? If it is on there is it on there? When is the season over?	Application	No comments		2
3-2	What are irrigation water customers? They are charging more how is that going to make water? Shouldn't the focus be on conservation.	Admin; Effectiveness (Overall); Conservation	No comments		3
3-3	Who would be exempt and would there be exemptions? Fixed incomes? Using water out of necessity? Who is going to get the money? Utility department or general fund money? What about well water users or people who directly source surface water?	Equity; Utility Finance	Same with issue of selling water to neighboring counties. Similar to California issues. If the money goes to the utilities then I am okay with it. If it goes to the general fund it is not okay. No positive incentive to conserve; only a negative signal with drought surcharge.	Interconnection; Comparison; Utility Finance; Paradox	4
3-4	No questions		The rate seems to be broken down pretty good that if you don't use the water then you don't have to pay more. The structure seems fair. The extra money is going for the big pipes that go down the middle of the city streets. That is why they are charging the rate, we want them to bring the rate back down when the lakes fill back up.	Justification	2
3-5	Where did this number come from? Why 1.39 versus a dollar or something else? Are they trying to make a profit? Is the rate for the drought or for the infrastructure?	Justification; Utility Finance	<u>They</u> are not concerned about conservation because if we conserve more without the drought then they still want to charge us more. The drought is a natural cause. But if we conserve water then we will create the same situation for the utilities. The restrictions are necessary. Duke power has a program because people are conserving less to charge them more. It is ABSURD!	Paradox; dissent	2
3-6	Don't like that so many homes on the lakes in the county that do water and try to apply restrictions, but use the water from lake to water their lawns. Would they have to pay?	Equity	<u>They</u> can't say no to the builders.	Development	1

**Quadrant 3**

**Round 3: CMU Rationale and Bill Impact**

Person	Questions	Themes	Opinions	Themes	Support
3-1	They charge for paying the bill on the phone. Why? What's up with that? Could they offset the fee with the surcharge.	Admin; cost	I would rather have a permanent rate. I don't like the variability and surprises. Laundry for big families - see how they are going to be affected. Showers and so on are a necessity. Shouldn't be punished. Even though they are conserving. They would use more water than me if I water my grass.	Cost; Equity	3
3-2	No questions	No questions	If the drought surcharge sends a conservation signal, then CMU will have to raise rates anyway.	Paradox	3
3-3	No questions	No questions	There should be a positive incentive to conserve not a negative penalty when you don't. The higher, the better because people will conserve. But big concern is people on fixed incomes.	Effectiveness (Overall); Equity	4
3-4	No questions	No questions	No comments		2
3-5	No questions	No questions	The company should diversify and go find other sources of revenue.	Alternative Resources	7
3-6	No questions	No questions	Doesn't care about watering grass but hates to see the trees die. Need trees for oxygen. Lawn = Luxury	Misc.	1

**Quadrant 4**

**Round 1: Headline**

Person	Questions	Themes	Opinions	Themes	Support
4-1	How will we know when the surcharges go back down? How can we predict their reduction?	Application	If we don't protect water resources now, what will be left to enjoy in the future?	Future	5
4-2	Why, if we conserve, do we have to pay more?	Punishment	"I think [surcharges] are terrible!" What would I do without water? I don't have a choice to go elsewhere.	Dissent; Powerless	1
4-3	Will rates go back down?	Application	I chose the pocket protector image because I need something that save me from my rates going up.	Powerless	4
4-4	Will there be financial aid for people who can't pay their water bill?	Equity	CMU puts customers in a pickle with these surcharges.	Dissent	1
4-5	Why not apply for federal emergency grants to help city get through drought instead of raising rates? Why aren't there incentives in place for those people whose usage didn't go up?	Alternative Resources; Appreciation	For some people water use is a necessity, others use it for luxury purposes, CMU should distinguish between those types of usage. People should plant less flowers and more trees [to conserve water].	Equity; Conservation (Idea)	4
4-6	We were all supposed to conserve, so where were commercial washers getting their water from?	Equity	Joke - Let's all go to the beach [to take a vacation from rising rates and to get to a place with a lot of water].	Powerless	1
4-7	Will there be financial aid for people who can't pay their water bill?	Equity	Will we still have our beautiful lawns in the future?	Future	4
4-8	Can they monitor for leaks [in the distribution system]?	Utility Accountability	We need to think about the future for our children's sake.	Future	1

**Quadrant 4**

**Round 2: Rate Structure**

Person	Questions	Themes	Opinions	Themes	Support
4-1	Would low water users be affected by surcharge? Also, as before, would surcharge continue indefinitely or be discontinued at some point in the future?	Application	Surcharge is not fair to large families.	Equity	1
4-2	What about large families? Why should they be penalized? If it starts raining will we get a check from CMU?	Equity; Appreciation	The surcharge is not fair to large families. Why can't we participate in the rate setting process?	Equity; Input	1
4-3	Will households receive sufficient advance warning when rates are going up? Who makes determination of drought levels?	Communication; Application	We're between a rock and a hard place (with regard to water). We have to buy it, regardless	Powerless	4
4-4	Are there fines for different phases [of the drought]?	Application	There's plenty of water, why do they make such a big deal? They're just holding water for recreational uses (like whitewater rafting). We vote against rate increases, but they act anyway	Drought Severity; Input	1
4-5	How will they distinguish luxury from necessity? Since drought is restricted to only some states, why not get federal assistance?	Equity; Application; Alternative Resources	When there is drought every year, you need to access federal assistance.	Alternative Resources	4
4-6	What are surcharge revenues used for? Do they take into account whether you have a lot of children? Is there really a water shortage: I mean, if you can pump gas across the state, why not water? Why use a surcharge instead of just increasing the bill?	Utility Finance; Equity; Interconnection; Alternative Resources	Why can't we participate in the rate setting process? Surcharge doesn't seem intuitive[ly justifiable].	Input; Justification	1
4-7	How will they measure your baseline: past 3 month usage? Last year? Otherwise?	Justification	If they're going to give surcharge on water, can they lower some other utility rate at the same time?	Cost	1
4-8	Who are "they"? Who makes the call as to drought phases?	Utility Accountability	No comments		1

**Quadrant 4**

**Round 3: CMU Rationale and Bill Impact**

Person	Questions	Themes	Opinions	Themes	Support
4-1	No comments		No opinions this round		6
4-2	If CMU is a non-profit, why do we pay bills? Why are we penalized for doing well [conserving water]? Do they have a plan to get more water if things are worse than last time?	Utility Finance; Punishment; Future	Will it affect me, then I'll make the call? I want some recognition for my efforts to conserve and for paying the surcharge.	Effectiveness (Personal); Appreciation	1
4-3	What does their non-profit status mean? And why does it cost more for stormwater/wastewater than drinking water?	Utility Finance; Cost	We are between a rock and a hard place. [It would be better if] they send me a personal letter telling me what my bill will be if I make these adjustments (e.g. giving examples of how turning off the tap when I brush my teeth could lower my bill, etc.)	Powerless; Communication	4
4-4	Don't they have drought predictors? Why can't they predict these shortages? How is it in other cities? Can they tax the HOA when the neighborhood doesn't conserve?	Future; Comparison; Alternative Resources	Surcharge is just going to be used to give the staff a raise. "Why do us lowly people have to pay to help those who help themselves?"	Utility Accountability; Equity	1
4-5	Why do we get punished for doing well on conservation?	Punishment	They are raising rates just so a private system can take over and charge more. Charlotte wants out of the water business.	Utility Accountability	2
4-6	If they are non-profit, why do they charge \$40 to cut your water meter back on? (this question generated widespread agreement) Also, if there is a drought, why does it cost more? Unrelated: If they are not metering, how do they know how much wastewater you use?	Utility Finance; Misc.	We are still going to take baths, still going to drink water. Surcharge just makes me want to use more water (I pay more, so therefore I should use more)	Effectiveness (Personal)	1
4-7	Is it possible to run out of water completely? So our bills are only going to go up \$5 to \$10?! If non-profit, where do they get their money from? Aren't lakes at the normal level now?	Future; Cost; Utility Finance; Application	The surcharge wouldn't affect my behavior. If we know that surcharge is going to be used to protect water and make it cleaner, we'll [at least] feel better.	Effectiveness (Personal); Communication	7
4-8	Is surcharge going to go away? If you're a business [referring to utility], why not cut costs? How do expenses go up during a drought?	Application	Why don't we go elsewhere to get water? If behaviors don't change as a result of surcharges, why charge more?	Alternative Resources; Effectiveness (Overall)	1

## **Appendix D: References**

### Charlotte-specific data

Charlotte-Mecklenburg Utilities (2008) Rate methodology summary. Internal city staff and consultants evaluation water and sewer rates.

Marketwise (2008, August 14) 2008 Market Research on City Services. PowerPoint presentation presented to City Council.

Ord. No. 2274, § 4(23-130), 2-24-2003. Charlotte city ordinance on water conservation.

UNC-Charlotte (2007) UNC-Charlotte Urban Institute Annual Survey. October 3 – November 3, 2007.

### Customers and water rate awareness

Pumphrey, Ronald Gary (2006) Public attitudes toward municipal water conservation on the Texas Southern High Plains and Rolling Plains. A dissertation in land-use planning, management and design submitted to and accepted by the Graduate Faculty of Texas Tech University, May 2006.

### Relevant research on drought and drought surcharges

Chestnutt, Thomas W. & Janice A. Beecher (1998) Conservation rates in the real world. *Journal AWWA*, 90 (2), 60-70.

Howe, Chuck. (2002). Manager to manager article: Effectiveness of water rate increases following watering restrictions. *Journal AWWA*, October 2002, 28-32.

Manuel, John (2008) Drought in the Southeast: Lessons for water management. *Environmental Health Perspectives*, 116, 4, April 2008.

Olmstead, Sheila M., W. Michael Hanemann, Robert N. Stavins (2007) Water demands under alternative price structures. *Journal of Environmental Economics and Management*, 54 (2007) 181-198.

Raucher, Robert S., David Chapman, James Henderson, Marca Hagenstad & John Rice (2005) *The Value of Water: Concepts, estimates and applications for water managers*. AWWA Research Foundation, Denver, Colorado.

Smith Jr., William James & Young-Doo Wang (2008) Conservation rates: the best “new” source of urban watering during drought. *Water and Environment Journal*, 22, 100-116.

Wang, Young-Doo, John Byrne, Jae-Shuck Song, & Yingxia Chen (1998) *The 1992-1997 Panel Study of Residential Water Conservation Impact: Persistence of Conservation Performances of Demand-Side Management Program*. Sponsored by Artesian Water Company, Inc. Center for Energy and Environmental Policy, University of Delaware. Accessed online at: [http://ceep.udel.edu/publications/water/reports/water\\_residential\\_water\\_conservation/reswater.htm](http://ceep.udel.edu/publications/water/reports/water_residential_water_conservation/reswater.htm).

Wang, Young-Doo, William James Smith, Jr. and John Byrne. (2005) *Water conservation-oriented rates: strategies to extend supply, promote equity, and meet minimum flow levels*. Denver, CO: American Water Works Association.

### Customer satisfaction focus groups

Homburg, Christian, Wayne D. Hoyer and Nicole Koschate. (2005) Customers' reactions to price increases: Do customer satisfaction and perceived fairness matter? *Journal of the Academy of Marketing Science*, Winter 2005, 36-49.

Krueger, Richard A. (1994) *Focus groups: A practical guide for applied research*, Second Edition. Thousand Oaks, CA: Sage Publications.

Miller, Warren (President of Fountainworks). Personal interview. 29 August 2007.

### Customer perception of fairness

Campbell, Margaret C. (1999) "Why did you do that?" The important role of inferred motive in perceptions of price fairness. *Journal of Product & Brand Management*, Vol. 8 No. 2 1999, 145-152.

### Communicating utility rates

AwwaRF/CH2MHILL (1995) *Public involvement strategies: A manager's handbook*.

Foster, Henry S. & Bruce R. Beattie (1981) On the specification of price in studies of consumer demand under block price scheduling. *Land Economics*, 57 (4), 624-629.

### Social marketing

McKenzie-Mohr, Doug & William Smith (1999) *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*. New Society Publishers, Gabriola Island, BC, Canada.

Syme, Geoffrey J., Blair E. Nancarrow and Clive Seligman (2000) The evaluation of information campaigns to promote voluntary household water conservation. *Evaluation Review*, 24, 539-578.

## Appendix E: Appreciation

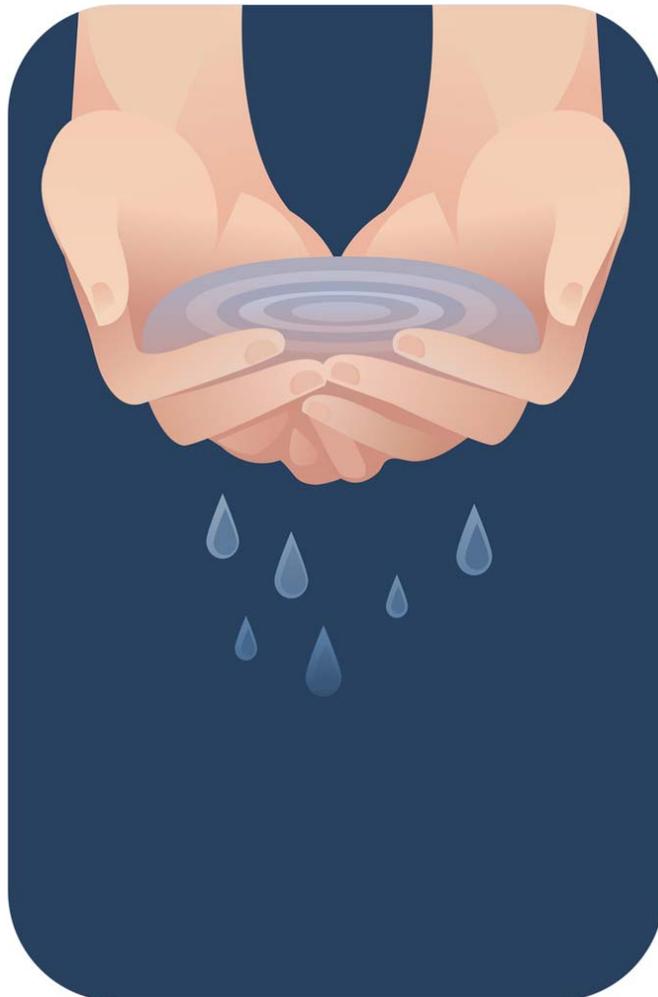
I would like to thank my committee members for their support, advice and feedback.

- Jeff Hughes, Chair
- Richard Whisnant
- Douglas Bean

I would also like to thank the “guys” at the Environmental Finance Center for their superior note-taking skills.

- Andrew Westbrook
- Glenn Barnes
- Shadi Eskaf
- Sean Hughes

And of course, I would like to thank my husband, James Tiger, for challenging me in the first practice focus group session and supporting me later (after some communication).



Thank you