

Community Report: Opelika Water Crisis

CPLN 6970 Community Engagement Methods

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I. Introduction: Why & What?

An ongoing issue in Opelika, Alabama concerns the water quality and taste. There had been talk among locals about an odd smell and taste from the tap water, but recently some reports have come out about it in the local news. The cause for this has been stated as coming from a seasonal algae bloom in Saugahatchee Lake, which is Opelika's water source. (Elston, 2019) This is a yearly problem due to the seasonal bloom occurring every year in the fall months of the year. You'd think that there is a solution for this, but it's not as simple as you might think. Opelika sources all of their water from this lake and because of this, their options are limited. The algae are very hard to remove, and it is a very detailed and costly process.

"It's very very difficult to remove," says Opelika Utilities General Manager, Dan Hilyer. "We don't have the technology here at this plant to remove it at this point in time, but we are working toward that. This technology are very, very expensive. None of them are cheap. We're looking at reverse osmosis. We're looking at granule activated carbon filters and we're looking at ozone."

They even noted that since the process would be so costly, that everyone involved would feel the impact. Citizens water bill would go up anywhere from \$5-\$10 dollars a month or more. When the article I looked at was published, in June 2019, they said that it could take a year or more to fix the issue or begin to. While the water is safe to drink, it is very unpleasant to people with sensitive taste buds. Also, during certain times of the year it seems to go away, but inevitably returns when the fall rolls back around.

This issue is interesting and important to me because I love Opelika and I spend a lot of my free time in the downtown Opelika area. Many of my close friends work in these downtown businesses and they have customers complain about the water quality daily. It puts pressure on the restaurant industry to pay extra for fancy water filters, which still don't cut out the peculiar tastes in the water. Some local bars and restaurants have even given in to using only jugged or bottled water due to customer complaints. I'm curious whether the majority really minds it or not, as I mainly hear it from friends who work in the service industry and cannot control the issue, but hear the blunt of the complaints. It is interesting to see whether or people would feel validated paying the extra money on their water bill to have clean and fresh water.

The goal of this community report is to ask the big questions concerning this issue regarding the city opinion on water quality and whether or not Opelika citizens would feel validated paying extra on their water bill to clear up the issue. This is an important issue, because it affects everyone in Opelika in their daily life, whether they realize it or not because it is affecting their service industry.

II. Research Questions

1. How do citizens of Opelika feel about the water issues in Opelika?
 - This question would seek to pinpoint, or get a general idea, about how an average citizen in Opelika feels about the water issues present there. I want to get an idea on how many people notice or if it's a topic in casual conversation.
2. How does the water odor/taste affect the citizens of Opelika daily life?
 - This would help us get a better idea of how it affects people on the daily. By answering this question this would tell us whether or not people actually notice the water taste in their everyday life and if it is a problem, or if it is just a select few talking about it and it's not as large of an issue as people might think.
3. Why do you think the water tastes the way that it does?
 - This question would allow me to see if people are aware of what causes the water to taste the way it does and whether or not they realize that it's not impacting their health. I would like to see what the people of Opelika think the issue is.
4. How would citizens of Opelika feel about paying extra on their water bill for better tasting water? Positive/Negative?
 - This is my most important question, as I'd like to know if people care enough about the issue to warrant a \$10-20-dollar water bill increase, as this is what it what it would take to solve the issue.

III. Research & Literature Review

In order to look into my topic of water quality and tastes in Opelika, AL, I chose to look for peer-reviewed academic journal articles related to the water tastes of cities in relation to algae blooms. I chose to take this route with my research, as my topic has a very narrow focus and it would be difficult to find information exclusive to somewhere like Opelika, Alabama. I also looked for articles related to water prices and customer satisfaction.

I was able to find a select few articles that fit my topic and what I was aiming for. These articles helped me understand the reasoning behind the peculiar taste and why some communities spend more money to fix the root of the problem and why some let it be. While it does not answer my questions regarding how citizens feel about the water issues, they can answer some questions that relate to the economic and efficiency aspects of this water issue.

a. A Costly Endeavor: Addressing Algae Problems in a Water Supply – C. Dunlap, K. Sklenar, & L. Blake

The peer-reviewed academic journal article, *A Costly Endeavor: Addressing Algae problems in a Water Supply* by C. Dunlap, K. Sklenar, and L. Blake, focuses on the city of Waco, Texas and the issues it has faced with algae blooms affecting their water supply. The aim of this article in particular was to help water utility managers understand the costs associated with this particular kind of issue in relation to nutrient loading and algal blooms in drinking water. During the period of 2002-2012, “the city incurred an estimated cost of \$70.4 million in addressing tap water taste and odor problems and potentially lost between \$6.9 million and \$10.3 million in revenue, partly as a result of decreased water sales to neighboring communities. (Dunlap, Sklenar, Blake, p. 1, 2015).

Waco was receiving complaints of a peculiar water taste and odor as early as the 1960s. The water from Lake Waco was treated, as it normally is in most cities, at water treatment plants through coagulation, flocculation, sedimentation, and filtration. Chlorine gas as well as ammonia was also added to the water to disinfect it before distribution.

“During taste and odor events, powdered activated carbon (PAC) was added to the water as it entered each treatment plant to remove algae-produced compounds, including geosmin and MIB (Smalley, 2012). Aside from the PAC, which ranged in dosage from 0.1 to 21 mg/L, no other treatment steps were in place to address the taste and odor problems. (Dunlap, Sklenar, Blake, p. 1, 2015).

In response to the complaints even after this process, Waco issued bond money for treatment plant upgrades.

This new plant that was built was the first of its kind. It uses DAF for clarification and to control the odor or tastes issues present in the water supply. The DAF process entails microscopic air bubbles binding with the algae, and other particles, to help with their removal. These bubbles rise to the surface and are removed by skimming the surface. The leftover particles are then disposed of by being taken away from the DAF plant to reduce contamination. While this process is the most effective, it is extremely expensive to implement. Waco, TX made the move to spend the money due to a growing population and the potential to continue growing.

The costs associated with the DAF process requires more than one might think. There is routine water monitoring that must take place to monitor the levels of algae or other particles in the water. Many studies were also funded to quantify the historical, current, and potential water

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quality conditions of Lake Waco presently and in the future. They were also used to come up with alternate strategies to diminishing the algae blooms without further polluting the water supply. The chemicals involved in the DAF process are also costly. “Between 2002 and 2012, the city spent \$1,357,729 on PAC, copper sulfate, and liquid oxygen. (Dunlap, Sklenar, Blake, 1, p. 2015). Also, plant upgrades and the energy costs of the plant are that much higher in relation to past expenses.

It is interesting to note that before the DAF water system upgrades, that many residents chose to drill down for their own well water, opposed to purchasing the water from Waco, TX with the odor and tastes issues. I thought this was interesting, because I had not considered this an option for the people of Opelika. I am now curious as to whether or not a personal well is even an option for Opelika citizens and whether or not they would rather incur those costs instead of paying a higher water bill. Waco, TX has an above average water bill. In summary:

“From 2002 to 2012, the City of Waco incurred an estimated cost of \$70.4 million to address taste and odor problems associated with algae in its water supply (Table 5). Most (92%) of the costs are attributed to the treatment plant upgrades (Table 5). In addition to the \$70.4 million in expenditures, it was estimated that the city may have lost \$6.9 million and \$10.3 million in revenue from decreased water sales to neighboring communities prior to the upgrades. (Dunlap, Sklenar, Blake, 1, 2015).”

This article and its finding are relevant, as Opelika is currently debating and settling on a decision regarding what to do with their own water crisis. Opelika will decide whether or not costs are worth it and see if they will lose potential revenue. Water is a staple, some would even call it a right, and if personal wells are not an option in Opelika, I don't foresee the people of Opelika having any other choice than to pay whatever price the water authorities of the city decide upon.

b. Cuckoo for COCOFAFF – G. Miner

The peer-reviewed journal article, Cuckoo for COCO FAFF by Gary Miner, explains in depth how DAF is normally used for municipal and industrial wastewater, but is more recently being used to treat water for clarification and algae removal. This article coincides with the previously mentioned article, A Costly Endeavor: Addressing Algae problems in a Water Supply by C. Dunlap, K. Sklenar, and L. Blake, with DAF being the center of attention. While the previous article focused heavily on the cost's aspect, this article focuses on DAF technology being used for decades in Europe and South Africa.

The full text is rather short and to the point. It explains that DAF stands for dissolved-air flotation and is being used increasingly across the world for water treatment. This article was written in 2001, and it is interesting to note that Miner says it had been yet to be used in North America yet. I chose to include this short article, as it is crucial to note how new this water treatment process is to the United States. Miner said,

“Although COCODAFF has not yet been used in water treatment in North America, the technology offers potential benefits for utilities that rely on lakes and reservoirs as sources of supply. (Miner, 1, 2001).”

I feel that Miner was ahead of the curve and spot on in his view of its future use. New technology almost always comes with a price, and I think this is partially why the process is so expensive to implement in the United States currently. It is such a new process that the costs are high.

c. Who Smells? Forecasting Taste and Odor in a Drinking Water Reservoir – M. Kehoe, K. Chun, H. Baulch

The peer-reviewed journal article, Who Smells? Forecasting Taste and Odor in a Drinking Water Reservoir by M. Kehoe, K. Chun, and H. Baulch, focuses on how taste and odor problems can impede public trust in drinking water, which leads to major costs for water utilities and treatment plants. Again, this article is short, but very relevant, because it points out that even though the water in Opelika is safe to drink it can lead the public to question the truth behind this. They focused on a very quantitative study on the forecasting model, opposed to a qualitative study to

The writes of the article discuss forecasting and how it could have a positive effect on the public in issues such as the ones Opelika is facing. For example,

“The ability to forecast taste and odor events in source waters, in advance, is shown for the first time in this paper. This could allow water utilities to adapt treatment, and where effective treatment is not available, consumers could be warned” (Kehoe, Chun, Baulch, 1, 2015).

This is particularly relevant to Opelika, as the type of algae bloom that causes the peculiar taste and odor in the water occurs twice a year and is predictable in certain times of the year.

The example used is sourced from Saskatchewan, Canada. They used forecasting over a 24-year period to see patterns, so that they could be able to predict odors in the water. In theory, a water system could adapt their treatments during certain times of the year in order to cut costs when possible and appropriately handle any odors or issues that arise.

d. Biological Solutions for Treating Sludge Can Aid Wastewater Treatment – Jerffery Pizzino

This peer-reviewed article, Biological Solutions for Treating Sludge Can Aid Wastewater Treatment by Jerffery Pizzino, gives insight into an option for this algae odor and taste issue that it not DAF, as previously mentioned. I thought this was important to note, as they think that there are effective and less costly methods that could possibly solve the issue without going to such lengths as to build a new water treatment plant. Up until this point, every solution had pointed to DAF, so it was relevant to see what other options are out there, as the city of Opelika is most likely also looking at the same options.

The suggest the use of liquid biostimulants to improve the process of minimizing and controlling sludge and algae growth at the source. The author writes that, “the biostimulant biologically dredges lagoons and treats water by creating a better carrying capacity in the water column for the load it's given. Thus this aerobic, biological treatment is more efficient and cost-effective than facility upgrades and dredging that can run into the millions of dollars. The company claims its product line can treat wastewater for as little as one tenth the cost of the engineered solutions” (Pizzino, 1, 2012).

In summary, every option should be explored as many cities and town face these water issues and are likely seeking answers that will not bankrupt their local government.

IV. Research Methods

a. Community Participation Event Design

When thinking of the options available to hold the community participation event for my topic, I felt limited by only choosing one possible event. Due to the nature of my topic and the scope of outreach I chose to hold two events; one being web-based and one being in person. My topic is about the water “crisis” in Opelika, which details why the water tastes and smells the way it does and some potential solutions that the city could implement to remedy this. As citizens tax dollars, or even a potential raised water bill, could be what pays to fix the issue it is very important to hear opinions from across the board on whether or not the citizens are aware and care about this enough to do something about the issue.

The first idea I had was to hold an online live video forum through Facebook where people could ask me or whomever else is involved questions through the chat and receive live answers. I would need to broadcast that the meeting is taking place well before hand, so I’m not just attracting people who might be online in that instance, but people who would hopefully log on just for my event. Hopefully, this live chat feature would attract an audience to our page, where we could then post the survey that we created on the previous assignment and have people answer our questions after we had answered theirs! This is all a what if scenario, so I would be hoping to catch more of the younger generations with this tactic. This event would take place first and we would advertise our second event throughout the first event, so that it might garner some more attention.

The second event I would ideally like to hold to gather information from the community would be to hold an in-person event with a discussion/forum. This event would be more planned out and my goal would be to attract all age groups, but specifically the older generation that might not be active on social media. I would attract them with a potential guest speaker and urge them to use their voice by filling out our survey.

Who Is Invited & How?

For the online event, everyone in Opelika would be “invited” and encouraged to view and interact with the live discussion and post live survey. We would need to target this area of people by potentially paying for sponsored post in that area, as well as hopefully being able to access and use the City of Opelika Facebook page to reach out to people. On Facebook you can create events, so we would use this feature to advertise the live forum as well as the later on in-person event. Also, as some people don’t have internet access, we would post flyers for it in the library where people could use their computers to potentially log on and be engaged. We would also run a newspaper article bringing attention to both events.

The in-person event would be advertised to everyone in Opelika. We could accomplish this by the online advertising, newspapers, flyers, mailers, as well as just word of mouth. We would hope for attendance from all demographics! We would want everyone to know about our event and be able to plan ahead to be there and engage in the conversation.

Where Event Takes Place

The online event would obviously not have a physical meeting place, but we would use Facebook’s live video feature as well as Fakebook’s survey tool to accomplish our goals. We could potentially broadcast off of the City of Opelika Facebook page to have a larger and more direct audience. If this was not available, we could create our own Opelika Water Information page to post off of and hold the forum and survey.

The in-person event would take place in downtown Opelika, as this is a common meeting space and hub for activities. There is a courtyard with a large foundation and benches that would be ideal. There would be tents for shade set up, as well as tables and chairs for people to fill out the survey and listen to the guest speaker.

Description of Activities

For the online forum, it would be an open discussion where people could ask questions on why this matters or is an issue. We could lightly discuss the issue and direct people to answer the survey questions online to voice their opinion. It would not be as in-depth of a discussion as the in-person event, simply due to the nature of social media.

The activities for the in-person event would be more detailed. We would have a set time for people to show up and listen to a guest speaker. Ideally, the guest speaker would be a water specialist who is able to describe the algae problem and give some insight to the safety of the issue as well as maybe some alternatives that other cities with the same algae bloom have implemented. Our people, as well as the guest speaker, would have a panel for any and all questions people want to ask. We could conclude the question portal either 30 minutes later, or naturally as the questions stop being asked. We would have tables set up for people to fill out their survey before they leave and drop them in an enclosed box. We could serve water throughout the event, with the option of tap water or bottled water. We would keep a tally of how many people preferred what, and at the end of the meeting before the surveys are filled out, present to the crowd how many people picked bottled water over the Opelika tap water, or vice versa. This could just be a tactic to get people thinking about their own daily life and choices.

Explanation of Beneficial Data

As both events would be using the survey that we created, we would obviously be getting a lot of information from that survey alone. We would also be getting extra information and opinions that we might have missed out of if we had simply mailed out the survey. Having citizens ask questions and offer their thoughts out loud might bring some points to the table that we would not have seen or thought about. The survey questions cover water, satisfaction, taste and odors, algae, as well as money topics. All of these topic questions would offer tremendous insight and we would be able to gather more citizens answers for data by attacking this issue from both an online and in person event.

Plus, we could take all of that extra information and create a document of any other ideas, so if we chose to improve upon our survey later on, we could fill those gaps!

Why This Way & Anticipated Challenges

As discussed, a web-based and in-person dual approach would suit this issue best, as it might allow for us to reach more age groups and social classes. Many people do not have access to the internet, so an event in downtown Opelika might be an option to capture the opinions and data from that group of people.

There would be challenges with both approaches. Firstly, there is always the possibility of having technical difficulties during the live stream. We would prefer to have an IT professional on scene to remedy any issues we may run into. We could do our best to prove adequate video and sound quality. There is also the potential that people outside of Opelika feel the need to give their input. This could skew our data. To eliminate this issue, the first question of our survey is "Are you an Opelika resident?". This question would allow us to throw out answers provided by people outside of our target audience.

Another potential challenge for our in-person event would be finding and paying a speaker. This could be paid for by donors, fundraisers, etc. Ideally, the guest speaker would be a

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volunteer, but still very credible. It would be worth checking with Auburn University to see if any of their staff has expertise in any of our topics.

b. Observations

I chose to conduct my two observations at Café 123 and Side Track Coffee, which are both located in downtown Opelika. I chose to conduct my observations on these two establishments, as they both small and had a bar or sitting area that I could sit in and overhear conversations from. It is worth noting that my topic is on the water and odor taste in Opelika's water supply, but this taste is brought about from algae growth. There are really only a couple of times a year that the odor and taste is especially noticeable, and as we are in the colder months of the year right now it is not as prominent of an issue.

It was my goal to sit in these service establishments and listen for any complaints or comments from local citizens on the water quality, as both places use tap water heavily in their daily use and both are within the downtown area of Opelika. While my observations at Side Track Coffee were less successful, my observation at Café 123 yielded more comments. I believe this is due to the nature of the establishment, which is a more high-end fine dining restaurant in their night hours. The clientele of Café 123 tends to be a higher class than one might be used to, so I knew I might be able to hear some pickier comments from their patrons than in the coffee shop. Since this study is qualitative, I was hoping to hear some comments on concerns from locals on the water quality which could contribute to my data on whether or not citizens care too much about it or would be willing to pay more on their water bill to have the problem fixed themselves.

FIELD NOTES:

Location: Café 123

Date: February 22, 2020

Time: 6:30 pm

Duration: 30 minutes

Preface: Café 123 is most busy on weekends and starts taking reservations at 6pm. I was a walk-in at 6:30 and chose to sit at the bar where I could overhear the staff and patrons alike.

Notes:

- ⇒ 6:30, arrived at café and sat at bar with notepad. There were 8 tables seated already, and 2 people seated at the end of the bar next to me. Of the 8 tables; 4 were doubles, 3 were groups of 4, and 1 had a group of six which appeared to be some colleagues out for dinner.
- ⇒ 6:38, a young couple walks in for a 2-top table.
- ⇒ 6:40, I notice that there are back servers who fill every seat with a glass of water in the back, regardless of what that person ordered to drink.
- ⇒ 6:45, I overhear one of the older couples from a 2-top ask the back servers if they fill the glasses with tap water or bottled water. The back server stated that they do not serve bottled water there. The couple was nice about it, but I heard them mention something about the water in Opelika tasting odd sometimes and that they should really consider switching to bottled water. Back server agreed and said they had considered this in the past, but due to the amount of people they serve it was unrealistic to fill every glass with bottled water.

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- ⇒ 6:48, another group of 4 enters the restaurant and is seated. No out of the ordinary comments overheard.
- ⇒ 6:53, I overhear one of the servers behind the bar discussing the older couples request with the back server. They agree they hear it on occasion, but it's unrealistic to provide bottled water.
- ⇒ 7:00, I end my observation.

*After my observation ended, I continued to sit there for quite a while and as I know some of the servers there, they asked what I was doing. I told them and they said they hear comments about the water on a regular basis, but definitely more in the summer months when it is hot out. They agreed that the class of people wining and dining at the café tend to complain more than anywhere else they have worked at in Opelika in the last few years. This is not a part of my observation, but just worth noting. *

Location: Side Track Coffee

Date: February 22, 2020

Time: 4:00 pm

Duration: 30 minutes

Preface: Side Track closes at 5pm on weekend, so I got there in time to catch people coming in to get their coffee before store hours ending and before the baristas started closing up.

Notes:

- ⇒ 4:00 I arrive and position myself in at a small table in a corner where I can oversee the coffee shop and its patrons. On arrival I see 7 people present. 3 appear to be a group of young friends having coffee together, while the other 4 are seeming to work from their laptops in different areas of the shop.
- ⇒ 4:08, I overhear the group of friends discussing the Griff Goods one-year celebration coming up.
- ⇒ 4:10 I overhear the baristas discussing how the rain has been affecting the amount of people coming into the shop lately.
- ⇒ 4:16, a couple walk in and begin discussing drink options with one of the baristas. They decide and settle into one of the nearby couches.
- ⇒ 4:22, one of the single people working from their laptop gets up and leaves
- ⇒ 4:25 a young woman comes in and orders a coffee to go and proceeds to linger in the shop for a few minutes.
- ⇒ 4:30, I end my observation.

*I chose this shop because I thought I might overhear something as I know many young professionals frequent the shop. They use the water to make their coffee drinks, cold brew, teas, etc. I didn't hear any complaints or anything useful here. No one asked me what I was doing either. *

c. Interview

I conducted one interview with an Opelika resident and citizen. They have been an Opelika resident for 10+ years, so they are very familiar with Opelika and the water quality over the years. I formulated my interview questions based upon my initial research questions and questions that might stem from the initial questions. I tried to keep all of the questions open ended in order to keep the conversation flowing and get more information for my qualitative study.

Where: Jefferson's

When: 3:00 PM

Who: Opelika Resident/Citizen 10+ Years

Interview Questions & Notes:

1. Q: What are your general feelings about the water quality in Opelika? Have you ever questioned the cleanliness and safety of it?

A: "I've never found myself questioning the safety of it, but over the years I have noticed a coming and going bad taste. Other than that, I've never questioned it. It's always looked pretty clear to me. It hasn't been something I've been worried about exactly."

2. Q: How often have you noticed any odd odors or tastes in the water in Opelika?

A: "Yeah like I said, it comes and goes. I don't smell it as much as I can taste it, but it's just an odd stale taste. It's kind of hard to describe and I don't notice it all the time."

3. Q: How does it affect your daily life?

A: "It doesn't impact me on an everyday basis, but when it comes and goes and is more noticeable, I buy bottled water more. I don't question the safety of it, but I'd rather not drink it if you know what I mean."

4. Q: Have you or have you heard others complain about this issue in public?

A: "I mean.. I have never complained about it in a public place while I was there, but I have friends who I know have complained about it in restaurants. We talk about it sometimes."

5. Q: Why do you think the water tastes the way it does?

A: "I've heard before that it's something to do with algae. Um, I don't really know the full details of why or if that's even true, that's just what I've heard. I'm not 100% sure."

6. Q: How do you feel about your current water bill?

A: "I mean I wish it were cheaper. It's around \$48 dollars a month right now and goes up if I use more. It could be worse, but it could also be better."

7. Q: How would you feel about an additional 15-20 dollar charge on your water bill every month for the water issues to be corrected?

A: "I would say no. I mean I'd just deal with the water taste when it happens. You add that money up over 12 months and you're looking at like what 240 dollars added to your

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bill. It doesn't seem like much, but it's enough for me to not want to do it. It doesn't bother me that much for that."

8. Q: What do you think could be done better in this situation?

A: I think the City of Opelika could communicate better about the issue. I feel like there's some uncertainty about the issue itself and what the cause is. And if it's safe or not. I'm sure it is, or something would be done about it, but still."

d. Survey

I chose to group questions of the same topic together and tried to go from general to more specific. The sensitive topics, I consider this to be the algae and money topics are at the end. If I were conducting this, I would include a brief explanation of what it is for and other details beforehand. The main topics I covered were water, satisfaction, taste & odors, algae, and money. I chose these topics based around my research questions. I broke my research questions down into smaller and easily answered questions. All of these questions help to gather data on the larger picture, which is the research questions outlined at the bottom of this document.

Ideally, I would like to issue this survey through social media, but as I would need access to an account with many followers in the Opelika area, such as the city of Opelika page, this would not be realistic. It is hard to get people on social media to complete a survey that is more than a few questions long, in my opinion. I would most likely resort to mailers and telephone calls! There is a large older population in Opelika that I feel would answer a mailer, and I would hope to target the younger population through phone calls and mailers.

Water

1. Are you an Opelika resident?
2. Do you pay for water in the city of Opelika?
3. How many gallons does your household use a month?
4. Do you prefer bottled water or do you drink from the tap?
5. Is there a reason you prefer either option?

Satisfaction

6. Are you generally satisfied with your experiences with Opelika water?
7. Are you satisfied with the cleanliness and safety of the water?
8. If there was an alternate way to receive water other than through the city, would you consider that?
9. Have you ever had or considered having well water?
10. Would you prefer well water or Opelika's water?

Taste & Odors

11. Have you noticed any taste or odors in your water?
12. Could you describe them?
13. Has it bothered you?
14. Does it impact your daily life?
15. Why or why not?

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Algae

16. Do you know where the odd taste and odor comes from?
17. Knowing it is caused from a harmless algae bloom, does this bother you?
18. Does this make you feel the water is unsafe?

Money

19. Do you feel your water bill priced fairly?
20. Would you be willing to pay more for special water treatment to remove the odd taste and odor?

V. Analysis of Data

The analysis of our data is very difficult, as it is very limited in its current state. Our primary data comes mainly from our two observations and the one interview, but we do also have some data from the literature reviews that serves as secondary data. The nature of this topic and the limitations of our efforts do cause a lack of analysis.

Gathered together, the overarching themes on our analysis were that Opelika citizens do care about the water quality and the odor of the water is a nuisance, but it is not enough of an issue to render an increased water bill necessary. It does affect the serving industry, but some people don't consider it a daily problem, which is understandable. This could be because some people aren't as sensitive to the odors, or even that some have well water instead of city water and the issues do not affect them, but this would require more data and, in particular, survey results.

It does seem that there is room for the city to offer more information on this topic to the citizens. While some are educated, they do not know the full story to where they can see the full picture, which can lead to a feeling of unease in a community. The literature review refers to this, as even if the water is clean the people still correlate the taste and odors with tainted water and it can cause some tension in the community.

VI. Findings

Part of our findings are to decide whether or not our initial research questions were answered. As of now, we only have our observation, interview, and literature data to go off of, so any further data would need to be added into this report in the future. Questions as followed:

1. How do citizens of Opelika feel about the water issues in Opelika?
 - From what we gathered, the citizens of Opelika are aware of the water issues and have strong feelings about the taste/odor, but are not willing to pay extra on their bill for a remedy.
2. How does the water odor/taste affect the citizens of Opelika daily life?
 - From what we gathered, the Opelika citizens are more likely buy bottled water due to the taste and odor of the water during the seasons that it is affected. Some seem more aware of the issues than other, so education on the topic could be helpful. It seems to be more of an issue in the service industry, where the water is being served as a beverage.
3. Why do you think the water tastes the way that it does?
 - Further data on this topic would be helpful, but from what we gathered we can say that while some citizens are aware of the issues, there does not seem to be a deep understanding. The limited availability of literature for this topic seems to point out that there is not a lot of casual articles about this topic and it does not seem to be talked about much, casually.
4. How would citizens of Opelika feel about paying extra on their water bill for better tasting water? Positive/Negative?
 - While the citizens do care about the water issue, they do not seem open to paying a higher water bill over it. The literature seems to back this up. People feel it is something the city should handle and not place the burden on consumers, as other options are not readily available.

While all of our starting research questions were answered, some more vaguely than others, there is room for improvement, but it is a good starting point. We would need the results from a mass issuing of the survey to get a really good grasp of the mindset of Opelika citizens. If we were to add a new research question, it would be to ask:

- If there was an alternate way to receive water other than through the city, would you consider that?

VII. Conclusion

In conclusion, in concurrence with the analysis, we believe that the city should invest more into educating the public on the issue. The community can read this report and understand why algae is the root of the issue, as well as see how it might affect some in their daily life. Also, they will be able to see that most people would most likely not be on board with a bill raise to fix the issue, but they would like to see it remedied. I think the community could read the literature section and then better understand why this is an issue and why there is not an easy fix for the city to implement.

Also, it was extremely hard to find academic studies related to my topic and the human side of the issue. I was able to find articles on the technical and quantitative side of things but finding articles that explored the qualitative side of the issue was difficult as there were slim to none. My potential study could offer some insight into how citizens really feel about the water issues and the true costs of them.

As I was reading over the literature I did find, I kept having thoughts for new research questions. This goes to show how broad the topic could reach, even though my study is on a small issue on a small scale, it is more common than people think and is an issue across the United States and the globe. My future recommendations for this study would be to ask more interview questions, prod more to get more information, interview more people, conduct more observations, and issue out the survey as a mailer to get as many answers as possible.

VIII. References:

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