The Effect of the Lead Water Crisis as a Focusing Event on Cooperation and Conflict Among Actors in Sebring, Ohio

An Honors Thesis presented to complete the Bachelor of Science in Environment and Natural Resources with Honors Distinction at The Ohio State University

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Abstract

At the same time the Flint water crisis made national news in late 2015 and early 2016, a local lead water crisis was taking place in Sebring, Ohio. This lead water crisis in Sebring was a focusing event that opened a policy window during which it was the opportune time to enact change. The environmental organization, the Ohio Environmental Council (OEC) worked with state lawmakers during this short window of time following the crisis to develop House Bill 512, a bill that established requirements governing lead and copper testing for community and non-transient water systems. Furthermore, these crises also influenced proposals by Ohio congressman, answering pleas from their constituents, for federal legislation. However, at the local level, decision-making was placed in the hands of the state government actors such as the Ohio Environmental Protection Agency and state lawmakers. While there were public meetings and the OEC interviewed Sebring residents, in the grand scheme, there was little action taken by Sebring citizens themselves. By using social network analysis in conjunction with actor interviews, one can better understand this crisis and the utilization of its subsequent policy window by the actors involved. Furthermore, by determining the structure and dynamics of the network for this crisis, one can determine potential ways to improve how actors attempt to solve similar crises in the future. It was found that the social network of the actors involved was factional, with various cliques disconnected from each other or comprised of connections based on disagreement. Sebring residents and technical experts were isolated from the network as a whole and cliques comprised of governmental actors had a disproportionate amount of power. However, it is important to note that due to the nature of social network analysis and the data collection methods, these results may not show the whole picture or be otherwise incomplete. Nevertheless, to bridge the gap between local residents and government decision makers at various levels, community based organizations
(CBOs) are a viable option. By shifting the structure from factional to coalitional through ties facilitated by CBOs, resources and information can flow freely within the network and power may redistributed more equally. With this coalitional structure and the advantages of CBOs, policy windows can be used to their full advantage and will lead to more positive change in the future following focusing events at the local level.

Introduction

The level of public outcry on water quality issues has grown since the lead water crisis in Flint, Michigan became national news in late 2015 and early 2016. Following the problems in Flint, during which 9,000 children six and under were exposed to lead and 19 months passed by while city officials knew about the potentially toxic water but chose to do nothing, another lead water crisis arose to public attention in the small town of Sebring, Ohio (Provenzano, 2017). According to CNN, in 2015 the Ohio Environmental Protection Agency (OEPA) received incomplete data from Sebring, Ohio’s water treatment plant regarding water quality, including the levels of lead in the water. In response, OEPA sent a concerned e-mail regarding the samples of lead and copper levels to the Sebring Water Superintendent, James Bates. Later, the OEPA asked for the missing documents from June-September 2015. Finally, Craig Butler of the OEPA sent a letter to the Sebring Village Manager, Richard Giroux, stating that the lead levels exceeded acceptable thresholds and that Sebring should inform the public through educational materials. Failing to fulfill this call to action by notifying the public, Sebring was subject to violations of the Safe Drinking Water Act enforced by the OEPA (Jorgensen & Sgueglia, 2016). By the end of January 2016, the OEPA revoked James Bates’ license and placed him on administrative leave (Stroshine, 2016). As of September 2017, James Bates is still awaiting trial on three counts of
misdemeanor charges regarding non-compliance with drinking water notification rules. He has pled not guilty to all three counts (Associated Press, 2017).

Although these two critical events in Flint and Sebring are different for a variety of reasons, they both remind people of the importance of drinking water safety in the United States. Handling public drinking water quality falls largely on the shoulders of local officials and policymakers. One may question how to address these problems from a local standpoint and want to understand how the relationships of stakeholders may eventually affect management outcomes. The goal of this research is to use social network analysis at the local level in Sebring, Ohio to identify the actors and organizations involved in the lead water crisis and identify areas of agreement and disagreement among those actors that can inform policymakers’ and stakeholders’ in their efforts to resolve the problem.

While plenty of research has been completed on technical fixes to water quality problems, very few researchers have tackled environmental crises using social network analysis to investigate the structure of interactions among actors in such situations. The most important related area of study is the relationship between focusing events and policy change after crises. According to Birkland (1998), a focusing event is a sudden, harmful or potentially harmful event that is geographically restricted (p. 54). In this case, the lead water crisis in Sebring acts as a focusing event. Focusing events often lead to the opening of a policy window, a short period of time following the focusing event during which policy makers are more likely to respond to advocacy for policy change to correct the problem(s). The increased, often negative attention, caused by the focusing event leads to claims of policy failure and an active search for solutions and increases the likelihood of policy change (Birkland, 1998, p. 56). Research on focusing events is found in various disciplines from ecological economics to the study of the ecologies of policy games.
Berardo, Olivier, & Lavers (2015), for example, researched how the focusing event of slash and burn practices that got out of control affected the complex governance system in the Paraná river delta in South America, and found that policy forums, venues where actors participate to influence policy making, became more active right after the focusing event took place. But despite some research on focusing events and political responses, there is still much to be learned about the effect that these focusing events have at a very local level. By collecting data on the relationships of stakeholders in Sebring, can build on previous research to offer further insight on how the interconnectivity between stakeholders is shaped after a focusing event takes place.

**Focusing Events, Collaboration Events, and Community-Based Organizations**

The main area of focus of this research on the lead water crisis in Sebring is the relationship between focusing events and relationships of collaboration and/or conflict in the presence of such events. The first person to explore how focusing events help open policy windows was John Kingdon (1984). He used case studies on the policy areas of transportation and health to determine why certain items are included in the United States’ political agenda and others are not (King, 1985). Kingdon (1984) also researched why decisions are made by the federal government through focusing events and policy windows. In addition, Thomas Birkland dedicated many works to specifically address focusing events and their ability to set agendas through policy windows at the turn of the 21st century. While in general, disasters lead to policy change, Birkland (1996) determined that different disasters have different outcomes. For example, there are considerable differences in the response following large hurricanes and earthquakes based on the political environment in which federal policy to address these disasters is made (Birkland, 1996). Furthermore, this relationship has been researched by multiple disciplines as ecological economics and the study of the ecologies of policy games. While economic perspectives are important to
understand the financial costs of focusing events such as the case of Hurricane Katrina (Farley et al., 2006), solving environmental problems may first require understanding the dynamic relationships among involved stakeholders. Clearly understanding the relationships among relevant stakeholders in the presence of a focusing event provides a stepping stone to understanding how to approach solving the problem in the first place. In order to solve environmental problems at a local or regional scale, multiple stakeholders are usually required to work cooperatively (Berardo, Olivier, & Lavers, 2015, p. 443). Getting multiple stakeholders to work together is a challenging endeavor, especially since there may be widespread disagreement over the benefits of potential policy responses to a problem and also a lack of information to understand people’s opinions or behaviors regarding the topic (Berardo et al., 2015, p. 450). In their study on the anthropogenic effects on the Paraná river delta, for instance, Berardo et al. (2015) studied how a focusing event affects the set of available policy forums where actors can participate to defend their policy interests. They hypothesized that “forums created to cope with the consequences of a focusing event should be more active (i.e. attract more participants) than forums that existed previous to the occurrence of the event” and “forums created to cope with the consequences of a focusing event increase the interconnectivity of the overall Ecology of Policy Games.” In simpler terms, they believed policy forums created following the focusing event will be active with more participants compared to previous forums and that these new forums will increase the interconnectivity and relationships between the various actors involved in the governance system. Their data and results supported both hypotheses. They found that even though new forums are short-lived, they are important in fostering stakeholder participation (Berardo et al., 2015, p.459).
On the other hand, some research suggests that not all policy windows are as productive as most people assume. While studying the cases of three regional planning organizations, the Bay Vision 2020 Commission, the Berkeley-Charleston Dorchester Council of Governments, and the South Carolina Coastal Council, it was found that recent natural disasters failed to change the mission or agenda of any of these organizations (Solecki & Michaels, 1994, p. 593). The authors identified three conditions that make policy windows more effective. First, those exploiting the policy window must fully conceptualize their management choice in a broader social context. Second, the organization addressing the issue must have institutional strength and flexibility. Third, policy advocates must be well placed within the organization and prepared. In the case of the three regional managing organizations, they either failed at least one or all of these necessary conditions to successfully use the policy window (Solecki and Michaels, 1994). Therefore, based on the results of this study, societal and organizational factors can limit the ability of focusing events to open a policy window and produce change.

In addition, CBOs play a key role in responding to crises. First, according to Green and Haines (2016), they assist in developing or repairing the seven community capitals in the face and wake of disaster. These seven community capitals are delineated as physical, natural, financial, political, social, cultural, and human. In particular, CBOs can facilitate relationships within a social network, allowing people to respond to crises by mobilizing resources through this network. Another way CBOs play a role in focusing events and their subsequent policy windows is by “[stimulating] democratic empowerment by providing an incubator for public participation” whereby citizens can gain experience “working through conflicts and different interests” (Green and Haines, 2016, p. 111-112). Therefore, CBOs can play a critical role in the aftermath of a focusing event and can take advantage of the policy window that may open as a result.
Overall, the conflicting evidence about the importance of focusing events in effecting policy change indicates that more research must be conducted to understand how focusing events affect the way actors tackle environmental problems. One way to accomplish this greater understanding is by conducting studies at a local level, where focusing events usually have the greatest impact. By conducting this case study on Sebring, I contribute to the current research about focusing events and their effects on policy change to tackle environmental problems. My initial hypothesis prior to this research was that due to the Sebring lead water crisis acting as a focusing event, local community leaders would advocate for policy change.

The Sebring Water Crisis in Historical Context

In 2010, the United Nations recognized access to clean water and sanitation as a human right (Groenfeldt, 2013, p. 68). Nevertheless, water injustices within the domain of water use for human consumption are numerous. A major water injustice includes “legacies of discrimination in land-use planning and housing that perpetuate water inequities, such as exposure to lead contamination in drinking water” (Christian-Smith et al., 2012, p. 56). Although the federal Safe Drinking Water Act (1974) requires all drinking water to meet U.S. Environmental Protection Agency (EPA) standards, violations still regularly occur (Christian-Smith et al., 2012, p. 57). Since 1986, lead plumbing materials have been prohibited. Yet, due to old infrastructure, water can still be contaminated with lead (Christian-Smith et al., 2012, p. 58). The lead water crises sweeping the nation have rejuvenated the movement for clean water in the United States. People throughout the United States are being affected at a local scale such as in the case of Sebring. These local crises are not only creating a public outcry, but also driving a movement for clean water in many communities. How much longer must people in the United States, such as the residents of Sebring,
continue dealing with these water problems that policymakers have been attempting to fix for decades?

To begin solving these water injustices, the first step is facilitating collaboration and compromise between the actors and organizations involved to create successful solutions. For this research, actors are defined as individual people involved in any way with the Sebring, Ohio lead water crisis. Likewise, organizations are defined as any group, formal or informal, that represents the collective interests of its members and/or constituents. This research on the lead water crisis in Sebring, Ohio is a case study on how such a crisis affects relationships of actors and organizations involved with the community. By discovering the dynamics at play between these actors and organizations, key leaders can be identified based on their impact on the social network of agreement and disagreement over discussions of water quality. Once this task is accomplished, one can evaluate who is central to the social networks involved with the lead water crisis in Sebring. Once this social structure is better understood, this information could be used when government officials or community leaders decide who to involve in the conversations to solve the problem. Community leaders are people who tend to have a lot of influence and ability to sway public opinion. These leaders also have bridging social capital, allowing them to network with others to gain favors or accomplish a task. If these key community leaders become more involved in the search for solutions, problem solving may become more effective. The findings of this research can be combined with natural science knowledge to forge a solution to the local natural resource problem and serve as a case study for similar problems both regionally and globally.

Methods

First, I collected the preliminary data from 36 different media sources including, but not limited to, newspaper articles, opinion pieces, press releases, newscasts, documentaries, published
legal documents, law reviews, and published interviews. Media sources are defined as anything publicly available regarding the lead water crisis in Sebring, Ohio. I identified media sources using the search engines Google, Newsbank, and LexisNexus. The key words Sebring Ohio lead water crisis for Google, Sebring AND lead AND water AND Ohio for Newsbank, and “Sebring” Ohio AND (lead or water quality) AND NOT racing for LexisNexus. Articles not related to the Sebring, Ohio lead water crisis were not included. Data was coded by hand into an excel sheet and each row contained information for individual actors, the people involved in the lead water crisis, mentioned in the articles (i.e. the individual actors are the units of analysis in this research). For each actor, I coded the following variables: names of other actors the actor agrees with, names of other actors the actor disagrees with, organizations the actor agrees with, organizations the actor disagrees with, the actor’s stance on regulating lead in water, stance on science in general, intent or lack thereof to cooperate, concern or lack thereof regarding the lead water crisis, and belief that there is a problem with current policy.

Next, based on this initial data, I identified key actors for potential in-depth interviews. These key actors were people that were either mentioned in more than one article or had at least one variable coded. I conducted two interviews with two respondents who offered significant insight to complement the data from the media sources. One respondent represents a political figure involved at the state level while the other respondent is an environmental advocate. Interview questions are located in appendix A.

Finally, using the software UCINET (Borgatti, Everett, & Freeman 2002) to create sociograms based on general actor connections such as shared organizations and explicit agreement or disagreement regarding the lead water crisis, I analyzed the collected data from the media sources and interviews in terms of the structure of the social network and power of its
individual actors. A sociogram is a graphic representation of the matrix of relationships that takes place among actors and I used them as a way to visually identify areas of cooperation and conflict in addition to the other network measures I use for this purpose, which include an assessment of the level of interconnectivity between stakeholders, the ratio of isolated actors the network, the density of the network, and the centrality levels (degree and betweenness) of the actors.

**Analysis**

Using general connections such as shared organizations as well as explicit agreement or disagreement from the media sources, I created the sociogram of the main actors involved with the Sebring, Ohio lead water crisis in figure 1. The first quality to note in figure 1 is that 32.56% of actors are isolated from the rest of the network with 50% of these isolates being individual citizens of Sebring. There are also four pendants, nodes with only one tie (Borgatti, Everett, & Johnson, 2013). Some cliques, closely interconnected groups of actors, are only connected to other cliques within the network through disagreement between actors. When a network is disconnected with many isolates and pendants, it is harder for information and resources to transfer between different groups of people within the network. Actors that connect different cliques offer bridging social capital, allowing information and resources to flow between cliques. However, if the only notable connection is disagreement between two actors, sharing information and resources is difficult because the actors’ relationship is negative. Thus, decision making for the whole network with a factional structure may be disjointed, misinformed, or ineffective. If different cliques disagree, they are less likely to share ideas and resources to address crises. On the other hand, if cliques agree and have members with ties to other cliques, these cliques are more likely to share information and resources to solve crises through these members and their influence. CBOs are one way to facilitate information and resource sharing across cliques by developing both bonding
and bridging social capital between the members of CBOs and other actors or organizations. In the case of the Sebring lead water crisis, there were no CBOs directly involved. The only group that did take part was the state-level advocacy organization, the Ohio Environmental Council.

**Figure 1.** A sociogram highlighting agreement and disagreement between actors involved in the Sebring, Ohio lead water crisis produced with NetDraw in UCINET.

What is more, it is also important to analyze the stance of each actor on the variables I have selected (regulating lead in water, science in general, cooperation, concern regarding the lead water crisis, and belief that there is a problem with current policies) in relation to disagreement and agreement. In figure 2, I have adjusted the network sociogram to include these additional details for each variable independently. The actors’ stance on these variables (yes, no, or unknown) is
based on explicit statements in the media sources or interviews. Those with an unknown designation do not have an explicit yes or no stance on the variable. First, no actor was considered anti-science while 23.26% are explicitly pro-science. Second, no actors were against regulating drinking water while 44.19% were explicitly pro-regulation and 2.33% had mixed opinions on regulation. Third, 34.88% of actors explicitly intended to cooperate with other actors to solve the lead water crisis. Finally, 37.21% of the actors believed there was a problem with current policies regarding lead in drinking water while 2.33% of the actors did not believe there was a problem with the policies at the time. While these data show that there are potential points of agreement between actors of each clique, there was a lack of explicit inter-clique agreement. Therefore, these potential points of agreement are an aspect that should be utilized to facilitate decision making and consensus between the actors involved when handling a focusing event in the future.

Figure 2. Sociogram of actors involved in the Sebring, Ohio lead water crisis with consideration to identified variables created in UCINET’s NetDraw.
In addition to the structure of the network, it is important to identify the actors with a greater number of ties and their position within this network. Actors who have more ties to other actors have higher levels of social capital. These ties, which consist of both bonding and bridging social capital, allow actors to access more resources and information within the network (Hanneman & Riddle, 2005). Degree centrality is a measure of how many ties a node has within a network. I calculated degree centrality for each actor in this undirected network using Freeman’s approach on UCINET, which uses the degree and centralization of the overall sociogram (Hanneman & Riddle, 2005). This calculation for non-isolate actors is in table 1. While it appears there are many well-connected actors, the high level of degree centrality can be misleading. Many of the actors with a degree of 5.000 or higher are all interconnected within their own clique and have very little connections, if any, with other actors. Thus, those cliques with many interconnected members may share resources and information with ease and hold power within the network while, in actuality, the network as a whole is disconnected with unequal distributions of power (Hanneman & Riddle, 2005).

### Table 1. Degree centrality of actors measured greater than 0.000 and with most central highlighted.

<table>
<thead>
<tr>
<th>Actor</th>
<th>Degree</th>
<th>nDegree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill Wharton</td>
<td>1.000</td>
<td>0.024</td>
</tr>
<tr>
<td>Brianna Wooten</td>
<td>1.000</td>
<td>0.024</td>
</tr>
<tr>
<td>Chris Maslo</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>Craig Butler</td>
<td>7.000</td>
<td>0.167</td>
</tr>
<tr>
<td>Dan Kildee</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>David Ditzler</td>
<td>1.000</td>
<td>0.024</td>
</tr>
<tr>
<td>Dennis O’Hara</td>
<td>1.000</td>
<td>0.024</td>
</tr>
<tr>
<td>Fred Upton</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>Heather Taylor</td>
<td>1.000</td>
<td>0.024</td>
</tr>
<tr>
<td>Heidi Griesmer</td>
<td>6.000</td>
<td>0.143</td>
</tr>
<tr>
<td>J. Michael Pinkerton</td>
<td>3.000</td>
<td>0.071</td>
</tr>
<tr>
<td>James Bates</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>James Lee</td>
<td>6.000</td>
<td>0.143</td>
</tr>
<tr>
<td>Joe Schiavoni</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>John Boccieri</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>John Kasich</td>
<td>6.000</td>
<td>0.143</td>
</tr>
<tr>
<td>Kenneth Flowers, Jr.</td>
<td>3.000</td>
<td>0.071</td>
</tr>
<tr>
<td>Marcy Kaptur</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>Melanie Houston</td>
<td>2.000</td>
<td>0.048</td>
</tr>
<tr>
<td>Mike Baker</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>Mike DeWine</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>Richard Giroux</td>
<td>3.000</td>
<td>0.071</td>
</tr>
<tr>
<td>Rick Snyder</td>
<td>1.000</td>
<td>0.024</td>
</tr>
<tr>
<td>Rob Portman</td>
<td>5.000</td>
<td>0.119</td>
</tr>
<tr>
<td>Ronald Fado</td>
<td>5.000</td>
<td>1.119</td>
</tr>
</tbody>
</table>
Another measure of power within a network is betweenness centrality. Betweenness centrality refers to a node’s direct position between other nodes. For example, if A is connected to both B and C, but, B and C are not connected, then A is advantaged and holds the power through its ability to broker (Hanneman & Riddle, 2005). A can easily contact B and C, but B or C must go through A to contact each other. I used Freeman’s approach for betweenness centrality in UCINET, which uses binary relations, to calculate it and placed the results in table 2. The higher the number, the higher the level of betweenness centrality. A score of 0.000 indicates that an actor is not between any other actors. The mean betweenness is only 5.070, making Sherrod Brown, Heidi Griesmer, Craig Butler, John Kasich, and Tim Ryan especially powerful as brokers within the network.

<table>
<thead>
<tr>
<th>Actor</th>
<th>Betweenness</th>
<th>nBetweenness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sherrod Brown</td>
<td>67.000</td>
<td>3.891</td>
</tr>
<tr>
<td>Heidi Griesmer</td>
<td>46.000</td>
<td>2.671</td>
</tr>
<tr>
<td>Craig Butler</td>
<td>36.500</td>
<td>2.120</td>
</tr>
<tr>
<td>John Kasich</td>
<td>32.000</td>
<td>1.858</td>
</tr>
<tr>
<td>Tim Ryan</td>
<td>22.000</td>
<td>1.278</td>
</tr>
<tr>
<td>James Lee</td>
<td>7.5000</td>
<td>0.436</td>
</tr>
<tr>
<td>Tim Ginter</td>
<td>4.000</td>
<td>0.232</td>
</tr>
<tr>
<td>Melanie Houston</td>
<td>3.000</td>
<td>0.174</td>
</tr>
</tbody>
</table>

Table 2. Betweenness centrality of actors with a score greater than 0.000.

Discussion

My initial hypothesis was that due to the Sebring lead water crisis acting as a focusing event, local community leaders would advocate for policy change. However, the findings did not provide support for this hypothesis. Instead of local community leaders, according to the interviews, it was advocates at the supra-national level who promoted initiatives to improve water quality. For instance, the Ohio Environmental Council (OEC) worked with Ohio lawmakers like Tim Ginter and John Boccieri to create policy changes at the state level such as House Bill 512, which became effective in September of 2016 and “established requirements governing lead and copper testing for community and non-transient noncommunity water systems, revised the law governing lead contamination from plumbing fixtures, and revised the laws governing the Water Pollution Control
Loan Fund, the Drinking Water Assistance Fund, and the Ohio Water Development Authority” (Addresses Copper, 2016). In addition, Senator Sherrod Brown was inspired by the lead water crisis in Sebring to sponsor related proposals in The Lead Testing in School and Child Care Drinking Water Act of 2016 bill package (WFMJ, 2016). There were not any local, community-based organizations (CBOs) advocating for intervention and change in Sebring. CBOs “make community action more effective for several different reasons” (Green & Haines, 2016, p.111). Among other things, they can bring people together and empower them to reach a common goal or vision. By bringing people together, CBOs make government officials more responsive to social demands. CBOs also create continuity, which can secure resources over time. While membership might change, the functions of the organization remain the same. Moreover, CBOs can connect local knowledge with technical expertise. Finally, CBOs “improve the ability of residents to respond to problems more quickly. Without organizations, residents would have to recognize and mobilize around new issues each time they develop” (Green & Haines, 2016, p. 111). While the OEC was able to fill the shoes of a CBO, change may have been more effective at the local level if there was a local CBO in Sebring. On one hand, there were public meetings and the OEC interviewed residents. Yet, on the other hand, an already existing CBO with ample resources and public involvement may have been able to mobilize quicker and use the policy window the lead water crisis opened to its full advantage. According to one interview, the policy window offered a short time frame of about five months in which the OEC and lawmakers could act.

CBOs could also facilitate bridging social capital between local community leaders, which are not necessarily political leaders but rather other active members of the community, and different levels of governmental leaders. One of the main characteristics of the social network surrounding the actors involved with the Sebring lead water crisis is that it has a factional structure.
with many isolates consisting mainly of Sebring citizens and university/research institution experts. Thus, the flow of information and resources within the network was hindered and power was disproportionately held by cliques consisting of government leaders. CBOs targeted at public health or environmental justice within Sebring could also balance the amount of influence and power within the network while transforming it to a coalitional structure that fosters inter-clique cooperation. Therefore, decision-making becomes more streamlined and holistic with the inclusion of CBOs that have appropriate resources and can develop social ties with leaders outside of the community.

**Conclusion**

First, due to the nature of social network research, data can be incomplete. Not all ties between actors can be found through public media sources. For example, a newspaper article may only directly quote what one actors thinks of another actor. However, there may be more agreement or disagreement below the surface that is not conveyed through the article. Thus, one-on-one interviews with the actors may divulge more in-depth information on actor relationships. However, since the interview response rate was so low, it is difficult to gauge any additional relationships that may have existed between the identified actors.

The factional structure of the social network of the actors involved with the Sebring, Ohio lead water crisis may have hindered the ability of information and resources to flow between various decision makers and stakeholders. While the lead water crisis was a focusing event that opened a policy window, the short time frame of five months was not enough to achieve satisfactory fixes to the greater issue of lead exposure in drinking water through the efforts of the OEC and lawmakers. Small communities such as Sebring may lack the technical expertise to act and must rely on organizations like the OEC to advocate for change. However, the OEC is a
statewide organization that cannot devote all of its time to one community. Therefore, if communities like Sebring are able to form issue-specific CBOs with the resources, networking capability, and influence necessary to enact change, they have the potential to act more quickly and effectively to facilitate policy change when similar policy windows open following focusing events in the future.

Finally, while this study provides a stepping stone for problem solving during local crises, more research is needed. I suggest the following potential hypotheses to guide this future work:

1) CBOs are capable of providing bridging social capital between communities and government leaders. Communities with issue-specific (public health, environmental justice, etc.) CBOs are more likely to enact policy change at a quicker rate than communities without CBOs.

2) Social networks at the local level that span toward the state and federal level are more effective at enacting policy change that impacts the local level if the structure is coalitional, with many ties of bonding and bridging social capital, rather than factional, which lacks bridging social capital between cliques.
References


Appendix A: Interview Questions

1. Do you think there is (or was) conflict over how to handle the lead water crisis in Sebring, Ohio?
   - If yes, do you think this conflict was due to policy or something else?
   - If no, why do you think it (or was) not a conflict?

2. How or why did you get involved?

3. What are the main points of disagreement? Who or what organizations are taking these positions?
   - Did/do you feel threatened by any of these positions and/or the people and organizations holding them?
   - Do you think other people feel threatened by the positions others are taking on this policy? If so, how and in what ways?
   - Were/are you willing to compromise on this policy? If so, how and in what ways?
   - Do you think other individuals or groups involved in this policy are willing to compromise?
   - Do you think compromise is important in resolving the lead water crisis or future, similar crises?

4. What are the main points of agreement. Who or what organizations are taking these positions?
   - Do you agree with these points?
   - Do you think those who agree are also willing to compromise with those who disagree?
   - Why do you think these are the points people/organizations agree about?
   - What actions or strategies are you taking to influence the policy regarding drinking water safety over time?

5. What are other people doing?
   - If they do not come up with examples, prompts to assist will include examples such as community coalitions, civil society organizations, going to the media, lobbying for change, etc.

6. How did this issue evolve over time?
   - i.e. probes could include, who got involved when, any related issues that emerged, how people interacted, what influenced any outcomes, etc.

7. What do you think are the outcomes of the lead water crisis and related policy?

8. Are you satisfied with these outcomes? Why or why not?