Cows, Colleges, and COVID: A Single Case Study into Northfield's Climate Action Plan Implementation During the 2020 Pandemic

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Table of Contents

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Abstract

The COVID-19 pandemic has precipitated unprecedented changes in global consumption patterns with decreased travel being an essential factor in the massive declines in greenhouse gas emissions. Scholarship has suggested that this moment could be a strategic time for governments to enact aggressive climate policy. In this study, we aimed to understand the impact of COVID on climate policy at the local level. Specifically, this project examines the relationships between city officials and whether the pandemic improved or impaired climate policy implementation. Interviews were conducted in the City of Northfield, MN, a town that adopted a climate action plan about four months before pandemic shutdowns began. We relied on the theoretical framework of collaborative public management to contextualize our methods and results. Climate action plan facilitators were interviewed in a semi-structured style and the data were analyzed using triangulation and discourse analysis. The results indicate that climate action planning and implementation have been severely impacted by hardships caused by COVID, namely the halt in communication and need to care for personal or familial well-being first and foremost. Isolation from city networks has been most detrimental to community engagement and participation, indicating pervasive inequities that have been heightened by the pandemic.

Introduction

The rapid transmission of COVID-19 that led to a global pandemic caused widespread shutdowns of businesses, services, and large events, leaving local governments reeling. With the onset of pandemic closures and restrictions, we saw reductions in fuel consumption and overall global emissions reductions (Le Quéré et al. 2020; Gillingham et al. 2020). Researchers have suggested that now is the time to leverage the declines in consumption by enacting environmental policy at the national and international scales. Disruptions to carbon-intensive economic industries, supply chains, and technologies present a strategy for phasing out these unsustainable practices more quickly than was anticipated before the pandemic began (Rosenbloom and Markard 2020). Examining these ideas at a national scale is a monumental task, so our research investigated these assertions by studying a locality that is accessible and relevant to us. The study area of Northfield, Minnesota adopted its Climate Action Plan (CAP) in November of 2019, causing most of its implementation thus far to take place during pandemic conditions. As a result, Northfield's unique characteristics and timeline make it an optimal location to use as a case study for this project.

Through our research, we intended to explore the ways in which the pandemic has affected climate action at the local level. Scholarship to date has largely focused on national policy and the impacts of COVID, while our work aims to discover whether the ideas posited by those such as Le Quéré et al. (2020) and Gillingham et al. (2020) apply to local policy adoption. The featured case study in this paper exemplifies the complex relationships between humans, policy, and COVID-19, demonstrating that environmental action at the federal level during this crisis is an idealized outcome that is not replicated at the local level. Northfield's government relies heavily on interpersonal relationships and informal interactions to develop effective policy.

Moving to online communication has significantly hindered these facets of local government, which has consequently created obstacles in the municipality's ability to broadly engage the Northfield community. Despite goals to address equity and inclusion, pandemic conditions have underscored some potential inequities within planning processes themselves. Yet, our research suggests that as normalcy returns, there is room to address these issues.

Study Area *(See Appendix A)*

Northfield, Minnesota is a small, rural city of 20,000 residents surrounded by agricultural lands that contains historical landmarks and lies approximately forty to fifty miles south of the Twin Cities, Minneapolis and St. Paul. The city is home to St. Olaf and Carleton Colleges whose campuses house an additional 5,000 students for a majority of the year. The Cannon River runs through Northfield geographically dividing the city nearly in half with tributaries (Heath Creek, Spring Creek, Rice Creek) flowing in and around the Cannon River. Northfield's size makes community involvement a key piece of the city's character and climate action work has come about in large part due the commitment of the citizens to sustainable practices in the community. As noted in the CAP, residents of Northfield are already experiencing the effects of climate change. More extreme temperatures and heavier precipitation that leads to severe flooding along the Cannon River are at the forefront of climate-related impacts that the City of Northfield and its citizens are currently facing (CAP p. 10).

Literature Review

Climate change is radically changing society, but government intervention can help constituents mitigate and adapt to the effects of climate (IPCC 2014). In order to most effectively adapt to the impacts of climate change, whether that be tangible extreme weather hazards or the more elusive issues of environmental inequities, it is critical to understand what policies are most

practical at each level of government. Climate change is a global problem that requires international cooperation and action. However, policies at a range of governmental levels are critical to fight climate change (Baker et al. 2012; O'Riordan and Jager 1996). The United Nations Conference on Environment and Development in 1993 further emphasized the importance of local policy to fight and adapt to climate change (United Nations 1993). An example of more localized climate action is the Cities for Climate Protection Campaign (CCPC). This coalition argues that cities contribute greatly to and are a major piece of the solution for climate change (Lindseth 2005). Because of this, the CCPC asserts that climate policy must come from municipalities and local governments, whether they are small or large, rural or urban.

Overarching Governmental Impacts

The impact of COVID-19 on the global economy resulted in the worst global recession since World War II (World Bank 2020). Organizations, businesses, and governments have expressed interest in a green economic recovery (GER) from COVID-19 alongside progress in vaccine development, raising prospects of a return to "normal" lifestyles that existed prior to the COVID-19 pandemic. This would essentially require an environmentally sustainable plan for recovering from such a downturn, which necessitates an in-depth evaluation of production and consumption that is informed by social, economic, and political backdrops. However, Taherzadeh (2020) points out that the current GERs being championed by governments and corporations are not as progressive as they should be. There is an assumption that improvements in technology and efficiency will decouple economic growth from environmental degradation; however, subsidies on fossil fuels, low taxes for polluters, and capital investments in older, inefficient infrastructure continue to persist through unambitious policy (Taherzadeh 2020). The governmental and corporational GER plans to be implemented should adopt a post-COVID-19

understanding of equity, sustainability, and climate change. The current lack of ambition in a GER would mean a return to what was the "status quo" of environmentalism before pandemic shutdowns, indicating that not enough progress will be made towards addressing the changing climate around us.

In discussing the status quo, the unprecedented factors of the pandemic and associated recession in creating and implementing climate policy can find an analog in the Great Recession of 2008. During the Recession, carbon emissions dropped by almost 10 percent but bounced back after 2013 to match the trends before the recession occurred (Gillingham et al. 2020). Gillingham et al. argues that investment in clean energy and focus on energy policy during this time of pandemic recovery is crucial for long-term decrease in emissions. Yet whether or not local government budgets will be able to handle COVID expenses alongside climate action expenditures remains unaddressed in Gillingham et al.'s paper.

Barriers to Climate Action within Local Government

A study by Maher et al. (2020) of local governments in Nebraska from early in the pandemic (April 2020) indicates that COVID is indeed having significant fiscal impacts on organizations and municipalities, but the full impact of COVID would not be known for another couple of budget cycles. Amidst the literature on the pandemic and on climate action policy, we are seeing emphasis on subnational governments and their ability to enact tangible change for local citizens. Klemun et al. (2020) describe the falling costs of low-carbon energy technologies, which were becoming accessible to local governments without the need for access to federal funds prior to COVID. These authors argue that, by enacting green technology-focused policy at lower cost, municipalities will be able to achieve higher returns on these investments and the communities will enjoy the co-benefits (Klemun et al. 2020). However, the economic effect from

the pandemic is a prominent barrier that cities will face when it comes to implementing climate policy. Information is still being revealed as to whether low-cost energy decarbonization technologies can be employed in municipal settings during this time.

In relation to the Northfield CAP, there should be a similar understanding of whether Northfield will return to this "normal," pre-COVID-19 state of sustainability or if the City may take advantage of opportunities to re-evaluate progress that can be made in advancing their work. Additionally, the measurement of urban climate change resiliency may help determine how significant an impact these efforts have had on cities (Solecki, 2020). Assessing these indicators and monitoring systems from the beginning of their implementation will be helpful in understanding how cities, like Northfield, can improve in the future.

As with any new project or policy, regardless of unprecedented pandemic conditions, there are a number of barriers that emerge in the planning and implementation phases of climate adaptation programs. Several structural and institutional barriers can block local governments from enacting effective climate policy (Baker et al. 2012). Baker et al. assert that organizational divisions often present in local government make it difficult to address an issue like climate change that touches so many sectors of governance. This is not entirely unique to local government, as environmental issues are extremely intersectional and interconnected; yet climate action at the local level is especially difficult due to the lack of committed funding and staff focused on sustainability. Other levels of government have more committed bodies working at environmental policy and regulation, and thus far, local governments seem to struggle in this area (Baker et al. 2012).

Furthermore, financial pressures on local governments appear to be increasing, as federal and state governments continue to delegate more responsibilities to local governments. For the

most part, state governments do not mandate local climate action, instead recommending consideration of climate impacts in planning processes or monitoring any ongoing climate adaptation plans and policies (Shi et al. 2015). However, state policy is not necessarily a predictor of a municipality's ability to adopt a climate action plan. Shi et al. found that "greater commitment by local elected officials, higher municipal expenditures per capita, and perceptions that the climate is already changing are statistically significantly associated with cities engaging in adaptation planning." This means that even when a city has resource constraints, strong leadership and a commitment to the action plan can overcome these issues. What is more, if survey respondents had observed climatic changes in the area, the odds of engaging in climate action tripled (Shi et al. 2015). The study also indicated that income per capita does not decide the success of adaptation planning, it is *municipal expenditures* per capita that does. Municipal expenditures per capita refers to the spending capacity of a city. While there is a direct correlation between these expenditures and probability of city engagement in climate adaptation planning, Shi et al. (2015) did not address unprecedented and unpredictable changes in a city's funding, such as that of COVID-related hardships.

Human Factors in Climate Action Work

Studies suggest that local governments have agency in adaptation planning through the human capital accessible to the governmental body. A paper by Levesque et al. (2016) compares discourse on larger municipalities to the findings of their study on small municipalities. According to this study, Northfield would fall into the category of small municipalities with its population of 20,000 residents. Levesque et al. (2016) emphasizes "the importance of assessing planning efforts in these municipalities in ways relevant to their size and context." In these smaller cities, commitment to climate action planning by town leaders and local interest groups,

along with growth pressures on the municipality inform the likelihood that climate adaptation plans are adopted.

Other barriers to municipal climate action include an absence of local leadership, lack of technological information, not enough staff time or financial support, and differences in values and beliefs (Hamin et al. 2014). Moreover, each of these barriers tend to be interconnected, meaning that a change to one will have an impact on another. For example, a lack of regulatory authority would result in less oversight for climate adaptation implementation. This planning could then be pushed to the side for another priority or demand that takes precedence over climate adaptation. However, the City of Northfield has an established Climate Action Plan with broad community support. Though Northfield has only one staff member who puts about half of their time toward climate work, there is a volunteer network dedicated to sustainability within city planning. Furthermore, the Northfield public has recently experienced the impact of climate change with heavy floods impacting local businesses and homes, which creates an incentive for prioritizing city-wide sustainability efforts. This extends beyond addressing current hazards, and instead takes into consideration future needs and resiliency of the city.

Northfield's CAP extensively lays out the need to adapt to the changing climate of Minnesota by improving the resiliency of city infrastructure and the ability of community members to prepare for emergencies. As has been demonstrated over the course of 2020, the globalized spread of COVID-19 has much in common with impending climate emergencies due to greenhouse gas emissions. Certain groups of people (the elderly, people in poverty, people of color, those with disabilities, and others) have been disproportionately harmed by the realities of the pandemic, and these same groups already are and will continue to be excessively affected by climate change (Manzanedo and Manning 2020; Taylor 2020; Heyd 2020). The Northfield

Climate Action Plan recognizes how particular, often marginalized, individuals in the community will be impacted by changing climate patterns in the city and lays out actions to address these disparities. The CAP did not, of course, predict the emergence of the novel Coronavirus, but the mental strain of coping with pandemic conditions is a new factor that must be considered. The psychological impacts of climate change, often revealed to be climate-related anxiety disorders, bear similar impacts to so-called COVID Stress Syndrome (Taylor 2020). Catastrophes at the scale of climate change and the COVID-19 pandemic can feel incredibly overwhelming and terrifying to an individual, which calls for strong leadership to foster community resilience (Taylor 2020). To alleviate such negative reactions, communities must have broad support for and trust in local officials and scientists who will push for preventative and risk averse policy (Manzanedo and Manning 2020; Heyd 2020). Furthermore, studies suggest that large scale problems such as the pandemic and global climate change require strong collective thinking and an acknowledgement of all stakeholders (Perkins et al. 2020; Eklund et al. 2020).

In analyzing the implementation of Northfield's CAP, it is critical to acknowledge that humans are responsible for making the CAP function. The ups, downs, and stressors of everyday life affect the implementation of the CAP because they affect those tasked with fulfilling the goals of the CAP. Studies have unsurprisingly shown that COVID has dramatically affected the mental health of workers across all industries, and that this could affect their morale at work and in turn their productivity (Tuzovic et al. 2020; Giorgi et al. 2020). Based on the literature, we do not yet know how these effects on humans could lead to differences in work outcomes, or specifically in climate action planning.

The literature regarding climate action plan adoption and implementation at the local level has yet to cover the specific impacts of the pandemic. Thus far, research has examined broad effects of the pandemic as it pertains to climate change or has focused on fiscal impacts. Scholarship has speculated how financial hardships will impact the ability of small governments to factor sustainability planning into COVID-19 recovery policies, though studies of the other adversities caused by the pandemic are still in development. By facilitating discussions with Northfield administrators and Climate Action Plan Committee members, our research examines how and to what extent the pandemic has impacted the first stages of implementing Northfield's CAP. This research also formulates an understanding of changes in planning processes for the Climate Action Plan from November of 2019 to January of 2021 in our interviews with those most involved in planning. The case study on Northfield provides insights and lessons regarding climate action plan implementation amidst a global pandemic at the local government level.

Theoretical Framework

To contextualize our findings in this project, we rely on one main theoretical framework. The collaborative public management model argues that the interactions of government, non-profit, and for-profit bodies combine to produce policy that would not be achievable by any one group on their own (Agranoff 2006). This model has not been addressed in scholarship until more recently, yet we believe it provides an especially useful framework to analyze our work.

Collaborative Public Management

To understand how policy for implementing the CAP will be adopted, we will rely on a framework that concerns the nature of informal networks in leading to policy adoption. In *Managing Within Networks: Adding Value to Public Organizations*, Robert Agranoff (2006) discusses collaborative public management and collaborative networks. These networks involve

the participation of non-governmental agencies, nonprofits, and for-profits and allow them to work together to provide public goods and services which are not achievable by one entity alone (Agranoff 2006). Bressers, O'Toole, and Richardson (1995) elaborate on this, saying:

> "No organization of government possesses sufficient authority, resources, and knowledge to effect the enactment and achievement of policy intentions. Instead, policies require the concerted efforts of multiple actors, all possessing significant capabilities but each dependent on multiple others to solidify policy intention and convert it into action. Indeed, it is often difficult for any one actor, or group of actors, to manage, or manipulate, the flow of problems and solutions onto the political agenda in the first place." (p. 4)

Collaborative structures aim to develop policy that solves conflict and increases benefits to the individual and community (Huang et al. 2020). City collaborative networks often encompass both horizontal and vertical relationships with a variety of entities, including other cities and counties, local non-profit organizations, and regional entities such as councils of governments (Hawkins et al. 2018; Agranoff and McGuire 2003). Often decentralized and dynamic, collaborative models rely on trust and familiarity to maintain stability without hierarchical power structures (Huang et al. 2020). The use of social capital to foster this trust and familiarity is crucial to form effective collaborative structures.

Huang et al. (2020) describe two forms of collaborative networks: formal and informal. Formal networks are set up by an authority figure such as a public manager, and members of the network are compelled or coerced to participate. Roles and responsibilities of actors are clearly defined, and actors often sign legal agreements to ensure their continued commitment over time (Huang et al. 2020; Yi et al. 2018). Informal networks are self-organized: actors have the freedom to enter and exit these networks as they wish. Informal forums and meetings are the venues for policy discussion in these systems where trust and familiarity take the place of legal agreements (Yi et al. 2018). Studies have shown that informal networks are particularly useful in

information and resource sharing, in addition to increasing collective action capacity (Hawkins et al. 2018). Furthermore, informal networks "nurture stronger interpersonal ties between participants, link more hierarchies of governments, and create greater faith in the procedural fairness of local policy," thus improving organizational performance (Schneider et al. 2003).

Collective action problems in governmental organizations can emerge from jurisdictional, administrative, and policy fragmentation across a region that can create positive and negative externalities and governmental stagnation (Hawkins et al. 2018). Analyzing this in terms of transaction costs can help determine the efficacy and efficiency of governments and governmental agencies. Transaction costs are defined as the costs associated with planning, decision making, changing plans, and resolving disputes (Williamson 1979). For example, groups or organizations with high transaction costs will struggle to follow through on their espoused goals. The diverse nature of these networks increases the potential for high transaction costs due to the wide array of groups and potentially differing values and strategies (Hawkins et al. 2018). Effective collaborative structures certainly can mitigate costs associated with collective action problems, and existing scholarship supports the idea that collaborative approaches can alleviate transaction costs through information sharing, trust, and familiarity. Furthermore, studies have highlighted the necessity and efficacy of collaborative networks in solving environmental issues (Imperial 2005).

These theories are easily applied to the adoption of environmental policy in local government and they can pertain to the current state of Northfield's CAP. Northfield had already taken the step to adopt and implement a climate action plan, but the introduction of COVID-19 has changed consumption patterns and access to goods. This in turn altered the way in which Northfield administrators must go about enacting policy to achieve the climate action goals.

Furthermore, actual policy is required to implement some aspects of the CAP. This policy adoption will likely require some level of collaboration both within the municipal government as well as with non-governmental partners.

Methodological Theory

The triangulation theory in qualitative research allows researchers to investigate a variety of perspectives on reality within a specific methodological approach (da Silva Santos et al. 2018). Our use of data triangulation in particular is well-suited for gathering data through interviews. According to Guion et al. (2002), "data triangulation involves different sources of information in order to increase the validity of the study." These sources offer different insights into and interpretations of the object of study, which for our research is the CAP implementation as portrayed by all of the various facilitators who made and continue to make climate progress in Northfield possible. Data triangulation is particularly important in our study because it provides an exhaustive approach to analyzing interview evidence, which can then describe the context of the study area completely. This contrasts with mixed methods research which typically focuses on the interplay between quantitative and qualitative methods, potentially glossing over some of the nuance present in stakeholder interviews (da Silva Santos et al. 2018).

Our research also emphasizes the importance of discourse analysis in properly contextualizing the ideas shared with us by interviewees. Researchers have used and expanded upon discourse analysis that is based in Michael Foucault's work on discourse. Foucault stressed that individual and institutional ideas and texts make up a complex system of discourse, reaching beyond conversations or written work (Bryman 2012). Analyzing rhetoric in this manner draws on the idea that language is intertwined in our social fabric and that the style and strategies a speaker uses matter at least as much as what is being said or written (Walton and Cleland 2017).

These ideas are important in our research because the interactions between individuals involved in the CAP, as well as within the institutional setting of city government, are the identifying factors in Northfield's community. The personalized interviews that were conducted with CAP facilitators each offered a new window into the dynamics of climate action planning in the context of Northfield during the COVID pandemic.

Methodology

We rely on qualitative methodologies in this study due to the lack of available quantitative data for 2020 emissions in Northfield at the time of this research. Interviews, data triangulation, and discourse analysis were employed in order to understand and interpret the impacts of COVID-19 on the Northfield Climate Action Plan facilitators as they continued CAP implementation during 2020. This approach allowed for a personalized, context-sensitive view of Northfield as the city navigates the simultaneous crises of the pandemic and climate change.

Eight semi-structured interviews were conducted on the video conferencing platform, Zoom, in December 2020 and January 2021 with individuals that are key players in the adoption of Northfield's CAP. Each of the interviewees are equipped with a particular background that guides their role in the creation and implementation of the CAP, as well as how they are adapting to pandemic conditions. The first interview was conducted with two representatives from the Great Plains Institute (GPI), a non-profit environmental organization that played an instrumental role in the creation of Northfield's plan. GPI partners with cities across Minnesota, as well as other neighboring Midwestern states, to create climate action plans with energy solutions that benefit the local economy and environment. The GPI representatives introduced us to the Sustainability Manager of St. Louis Park, a small suburb directly west of Minneapolis that adopted their climate action plan in early 2018, almost two years prior to Northfield's CAP

adoption. We use this interview as a comparative point, lending insight into regional approaches to mitigating future climate hazards, adapting to current climate change effects, and reducing greenhouse gas emissions under pandemic conditions.

Three interviews were conducted with Carleton College representatives who also fill roles as Northfield community members and climate action advisers for both the Northfield and Carleton CAPs. Carleton and St. Olaf Colleges are intertwined in the community structure of Northfield and both make up a significant part of Northfield's annual emissions. St. Olaf does not have a concentrated sustainability office, nor a point person employed as a sustainability manager that we could reach out to for this study. On the other hand, Carleton has a robust Sustainability Office and a focus on campus environmental solutions, giving the Sustainability Office representatives particular knowledge into the crossover between Northfield and Carleton.

The Manager of Campus Energy and Sustainability at Carleton College is also the head of the Northfield CAP Energy Subcommittee and was the lead author on Carleton's CAP. Her expertise delineates the energy emissions progress Carleton and Northfield have been seeing, especially in regard to the role of Xcel Energy as the provider of Northfield's electricity. Another Carleton employee, the Sustainability Program Coordinator, co-chaired the Northfield CAP Advisory Board and provided us with detailed information on the progress of campus sustainability programs. She brings a younger perspective to the Advisory Board as well, illuminating needs of different stakeholders in the community. One other member of the Carleton community, who fills roles as professor of Environmental Studies and Political Science, former Chair of the Environmental Quality Commission (EQC), and member of the Greater Northfield Sustainability Collaborative, further clarified the interrelated connections between different

sections of the Northfield community and the wide array of expertise that was needed for creating an in-depth climate action plan.

The final three interviews were conducted with long-term Northfield residents who have been involved in sustainability and environmental work in the city for many years and took on roles in guiding the CAP. The Program Coordinator for the Climate Action Plan as well as the Diversity, Equity, and Inclusion section in the city's Strategic Plan was an instrumental interviewee as she has a grasp on the CAP as it fits into other areas of Northfield governance more broadly. Lastly, we conversed with the team leaders of the Transportation and Food Subcommittees who both have particular understandings of the needs of the city. These interviews emphasized in our research the differences in individual community members' needs, as well as the necessity of recognizing how these individual experiences intersect to create the specific context in which Northfield is situated. The lead of the Transportation Subcommittee is a member of the Environmental Quality Commission and recently became the Chair of this community group. The Food Subcommittee leader chaired the Northfield-Area Community Solar program that was created to help people sign up for and subscribe to community solar projects. Both of these Advisory Board members are embedded in local environmental organizations and have years of experience from living in Northfield.

The use of semi-structured interviews allowed us to gain access to the breadth of knowledge each individual possesses. We relied on a set of baseline questions that were adjusted based on the interviewee's area of expertise. We conversed for about forty-five minutes with each individual, inserting follow-up and clarifying questions naturally into the list of predetermined questions. Based on their position or role, we asked certain interviewees more specific, probing questions in order to best leverage their knowledge about the CAP for our

project (See Appendix C). The more free-flowing aspect of semi-structured interviews allowed us to connect personally with our interview volunteers and to make the most of these conversations. Our baseline questions are as follows:

1. Please explain your role(s) in working on the CAP.
2. How did you get involved in Northfield's climate action plan process?
3. How have your past experiences influenced the work you did/are doing for the Northfield CAP?
4. What plans did your team have at the beginning of 2020 and how did that change? What methods did you use to cope with the realities of the pandemic?
5. How has COVID changed the relationship between you and Northfield Staff regarding CAP proceedings?
6. More generally, how has COVID affected your work on developing the climate action plan?
7. Are you seeing any areas where implementing climate action policy could be easier than it might have been before the pandemic?

Question four in particular varied depending on the interviewee's leadership position within the climate action work. The CAP working groups each focused on different areas of the overall plan, so this question was reworded for each interview to reflect the individual's role in creating the CAP. This question was also adjusted for the Carleton representatives who are reviewing the college's climate action plan to include a question about how the review process has shifted due to COVID-related conditions.

Our choice of semi-structured interviews presented challenges that we addressed by using data triangulation and discourse analysis. There can be more difficulty in using semi-structured interviews because our research relies on qualitative evidence. Interviews that are not structured can garner more information that is less relevant to the research question and make data triangulating a more arduous process. However, the important points made in response to the overarching questions were discerned in reviewing the interviews, and all of the answers to supporting questions provided examples unique to the individual and their role in the CAP. Data

triangulation was employed by extracting and listing the main points each interviewee made in response to the individual baseline questions. Each overall question was first categorized by interviewee then broken down into separate points made by that person. The rhetoric was then compared between the individuals and distilled into overarching themes, portraying the thoughts and feelings of the interviewees that overlapped the most.

Discourse analysis allowed us to contextualize interviewee responses based on the factors impacting the Northfield CAP and the interviewee's role in the plan. The additional, more specific questions we asked interviewees, aside from the baseline questions, were necessary in this investigation of the CAP. Semi-structured interviews played to our advantage in this case because we were able to leverage the lived experience of each person during 2020 to garner a full-bodied understanding of everyone's individual view of the pandemic and its impact on their climate action work. Our understanding of each interviewee's background, thoughts, and feelings on climate action planning in Northfield was used to evaluate the words, facial expressions, and body language of each person. This operated on a case-by-case basis and was somewhat subjective due to the limitations of Zoom interviews. We thus relied on our personal experience and learned knowledge of the community and the CAP to determine if there were underlying meanings in what our interviewees were saying.

It is worth noting that the researchers on this paper are all students at Carleton College and have been a part of the greater Northfield community for about four years. Living in the campus community gives us unique perspectives that both allows us to comprehend the interviewees points while simultaneously narrowing our experience of Northfield to those connected to the college in some way. We recognize that this impacts our discourse analysis as we work to put climate action planning into the context of Northfield amidst the COVID-19

pandemic. However, our intentions are to stay true to the thoughts shared by community members involved in the CAP and to keep personal views of Northfield out of the research methods as much as possible.

Without empirical data available from 2020, the case study on Northfield relied on a comprehensive data analysis of interviews that assisted in covering that which could not be portrayed through quantitative data. This process allowed us to delve deeply into the inner workings of the CAP development process and to generate conclusions and predictions specific to the Northfield area.

Results

Interpersonal Relationships

All of the interviewees stressed the importance of the interpersonal and informal relationships that are cultivated by walking around Northfield, going to coffee shops, farmers markets, and grabbing food with people. According to a former member of the City's Environmental Quality Commission, these kinds of passing connections are especially effective ways to govern in a small, well-connected town like Northfield. However, COVID has stopped all of this relationship-building and forced people to focus on a variety of new normals, such as learning technologies, taking care of children from home and going to school online, and surviving a pandemic in general. The former Chair of the Food Working Group highlighted the difficulty that online communication platforms, like Zoom, present in connecting with people because of different personality traits, such as introverts and extroverts. For example, people that identify as more introverted may end up turning their cameras off, which creates a feeling of disengagement. As for extroverts, they are not able to benefit from the energy they receive from people because there is a lack of enthusiasm. Similarly, the City's Program Coordinator brought

up the fact that when someone walks into your office and starts speaking with you, the conversation cannot be ignored, whereas emails can go unanswered much more easily.

Paused Projects

A number of projects have been paused as a result of COVID-19, which has further delayed their start or progress. The Chair of the Transportation Working Group provided one example wherein the group expressed interest in working with Northfield Public Schools to get students walking and biking to school this year, but COVID has delayed the project. Likewise, the Chair of the Food Working Group noted that one of their goals was for Supplemental Nutrition Assistance Program (SNAP) benefits and Electronic Benefits Transfer (EBT) cards to be accessible at Northfield Farmers Markets; however, the markets closed down before they could move forward with this initiative. Local key players were also brought together for collaborative food plans between the Main Street Project, Sustainable Farming Association Cannon River Chapter, Cannon Valley Grown, Cannon River Watershed Partnership, and independent farmers, but these organizations had to prioritize their own work first. This put the project on hold for the time being, although there are intentions to reconnect every three months to slowly start building these relationships again.

One last example of a paused project has been in-home energy assessments. These home energy audits allowed individuals to invite "Home Energy Squad" associates into their houses to help increase energy efficiency at the residential level. This project assisted families in identifying appliances and fixtures with high energy use and would present a range of ways to decrease in-home energy use. And yet, with the revaluation of plans and goals for the year, the negative outcomes of paused projects have consequently freed up time for officials to put efforts towards new and/or different projects and goals moving forward.

Budgetary Constraints

The financial uncertainties of COVID-19 have created budgetary changes in both city and private organizations. St. Louis Park's Sustainability Manager discussed that while the 2020 budget had been set pre-pandemic, cities are currently looking to save wherever possible because future revenues are prone to fluctuation. The Sustainability Manager was not able to hire a new staff person dedicated to climate action work and encouraged staff in her department to limit spending to only essential goods and services in case revenues fell below what was projected when the budget was set.

However, the City of Northfield's Program Coordinator for the CAP did not encounter these difficulties. In 2019, the city did not know how much to allocate for climate action in the coming year, so they set aside $20,000 and this has increased to $45,000 for the 2021 budget. The Program Coordinator is expecting an additional $75,000 will be made available by the end of this year, which was made possible through the approval of a city franchise fee that Xcel Energy is beginning to collect as of March 2021. This fee will mainly be used for local road repairs, though up to $100,000 of the annual fee revenues can go toward CAP implementation. For 2022, the Program Coordinator expects to have access to this full amount.

Long-term Changes

The Chair of the Transportation Working Group has noticed a decrease in vehicular transportation while riding his bicycle and hopes that this could signal a long-term decrease in car traffic. However, he also believes it is unclear whether this anecdotal evidence will be translated into real decreases in the data and if people's behavior will change in the long run. Interviewees employed by Carleton College talked about how, at Carleton, one area where they have made sustainability progress is the drop in paper consumption, which will probably be a

long-term change. Though, using a discourse analysis lens, these individuals have full-time jobs as on-campus sustainability managers and are potentially more primed to look for positive impacts and solutions to Carleton's waste and emissions. On the other hand, the CAP members who are not affiliated with Carleton volunteer much of their time to work on climate action in Northfield. This may influence their reiterations of the uncertainties of the times and cause them to emphasize COVID's negative impacts on CAP implementation now and into the future.

Those at the GPI discussed how temporary "pauses" in consumption of all sorts seem good for climate action at the moment, which have resulted in creative, unique policy approaches from some cities. However, it is difficult to know how much, if any, of this will actually stick in the long-term. It is further possible that there will actually be an "overshoot" in consumption or behavior patterns that would in essence make up for "lost time" and would erase any positive gains made during the pandemic.

Discussion

Based on our discussions with Northfield officials and our understanding of the governmental structures working to implement the CAP, we believe that the collaborative public management model is a useful tool with which to analyze the dynamics of policy formation in Northfield. Additionally, our findings stressed how important interpersonal relationships are for governing in Northfield. Under normal circumstances, one could normally count on seeing colleagues around the small city, presenting opportunities to discuss ideas in extremely informal settings, such as at coffee shops or in individuals' backyards. These networks rely on the trust and familiarity that the literature discusses, and the relatively small size of Northfield is conducive to forming and maintaining these connections. The collaborative model of public management acknowledges that the policy actors do indeed have human tendencies, recognizing

that policy makers are subject to social and political realities that affect their work. This is particularly critical to note given the realities of the pandemic. In their discussion of collaborative public management, Huang et al. (2020) state that difficulties in communication and cooperation can increase transaction costs, thus impairing a network's ability to function effectively.

The pandemic has made communication difficult in obvious ways. Meetings have moved online and connecting with people in our lives has become much more difficult. Not only does this affect our moods and well-being, but because policy makers are also subject to pandemic restrictions, the online environment in turn affects CAP implementation. The literature makes it clear that trust and familiarity are key to mitigating transaction costs and ensuring effective collaborative networks (Huang et al. 2020; Yi et al. 2018). While moving meetings to Zoom does not instantly erase all trust and familiarity, it does seem to reduce the connections between individuals in Northfield, thus maintaining higher transaction costs. Our interviews showed that it is difficult for those with different personalities to connect on this online platform, especially for those who tend to be more introverted. The ability to stay muted or turn the camera off in these online settings appears to further isolate individuals from one another. While scholarly articles have yet to back up this loss of connection, anecdotal evidence from several of our sources supports this notion.

Having any meetings at all assumes that most or all of the group members have internet access and are comfortable using it. This does not seem to be the case in our study. Due to the relatively older demographics of Northfield, it is unsurprising that our findings show limited internet availability and comfort using it among some environmental working groups. This severely limits the ability of these groups to meet. Because these working groups are often the

source of environmental policy that gets introduced to the city council, this increased transaction cost could have significant consequences.

The collaborative framework we have outlined is especially useful when thinking about environmental problems. These issues are interdisciplinary and are often difficult for one agency or group to solve alone. During the pandemic we have found that increasingly, people are consolidating the groups with which they meet, as the hours on Zoom build up. In the past, the city government has worked with Northfield High School and the Cannon River Watershed Alliance, among other groups. These collaborations seem to have dissipated during the pandemic. People are focusing their energy on their specific role and do not have the space nor freedom to divert their time and attention to competing interests. The collaborative public management framework would suggest that as these collaborations fall apart, the networks get weaker and this style of governance generally becomes less effective (Imperial 2005). We do not intend to claim that the current Northfield government is falling apart or has become significantly less effective. However, it is critical to acknowledge that the obvious effects of the pandemic are affecting the governing structure of small towns like Northfield.

Strained city budgets and financial hardships have been a major focus in pandemic relief efforts, but there is a budgetary cycle lag in which the full effects of economic downturn are probably yet to be seen (Maher et al. 2020). There are examples, such as St. Louis Park, where uncertainties about tax revenue and other city funding sources have caused on-the-ground setbacks to city sustainability. Our research indicates that Northfield did not see budget shortfalls because climate action work and implementation had already been prioritized for 2020 within the allocation plans that were finalized in 2019. Therefore, the financial aspect of climate action implementation faced little backlash in the face of pandemic adversity in 2020. In addition,

because the franchise fee was approved, funding for climate action will continue through 2021, which will hopefully accumulate in the years to come as the revenue from the fees will provide $100,000 annually for CAP needs. Although it appears that Northfield's financial situation is relatively stable, there is a lag in acquiring information on city finance data, which could change the course of CAP implementation if the recession leads to budget cuts.

While there are several negative impacts of COVID-19 on the City of Northfield's CAP, it is necessary to acknowledge the positive progress that has occurred despite the pandemic. One such example is the ongoing efforts for "greening the grid," which include support for projects that increase renewable energy usage, while decreasing use of coal and oil energy resources. The construction of electric vehicle charging stations aims to address this reliance on fossil fuels. Likewise, the development of bike lanes throughout the city have encouraged more carbon-free transportation options. Due to the stay-at-home orders associated with the pandemic and the lack of commuting out of Northfield, it seems likely that overall vehicular transportation decreased.

Yet, stay-at-home orders and social distancing protocols have had some serious adverse effects on community engagement. Northfield Farmers Markets experienced closures during their regular operating seasons, which likely put strain on vendors that traditionally relied on these events as sources of income. Other examples include city-wide celebrations, such as the Northfield Earth Day, which usually includes a week full of activities that focus on environmental education, outreach, and activism, among other community-building activities. COVID-19 forced this event to occur virtually in 2020, with the hope that community members could continue to stay engaged online. In addition, home energy assessments briefly paused, but were revived with new COVID protocols to ensure the safety of residents and auditors. Despite this, fewer citizens wanted to sign up to receive visits for energy evaluations in a pandemic.

The pandemic has made inequity blatantly obvious and though Northfield's CAP includes sections that address social justice, there have been difficulties in engaging with the community and cultivating public participation. This further exacerbates inequalities demonstrated by the pandemic as well as environmental justice work. The Minnesota Pollution Control Agency has found that people of color are more likely to be exposed to increased levels of pollution than those that identify as white (MPCA 2015). There are areas in the Northfield community where the percentage of people living below the poverty line overlaps with the area that has a non-white population of more than forty percent (CAP p. 46-47). Access to food and food security is also an issue for low- to moderate-income families. All of these overlapping areas of concern have been exacerbated by the pandemic and will continue to be worsened by climate change, as noted in the CAP.

Through our implementation of discourse analysis, it became clear that equity, inclusion, diversity, and justice were issues on the minds of Northfield officials. Communication both within the circle of Northfield officials and between city officials and the public has been compromised during the pandemic. Analyzing these processes showed that CAP implementation does not occur in a vacuum, and just as the realities of life in a pandemic have affected implementation, other societal realities, such as inequity and lack of diversity and inclusion, could also plague CAP implementation. The intention behind our investigations was to distill the impact COVID has had on CAP implementation and we focused on the changes that CAP facilitators have experienced due to the pandemic. Discussions of inequity and inclusion emerged from our conversations and research in the wake of our initial goals for this project. We cannot make many substantiated claims with respect to equity because our methodology did not include equity as one of the main topics. Research that concentrates on inequitable planning

processes within governmental spaces in the aftermath of the pandemic should be conducted as this is beyond the scope of our project.

Recommendations and Conclusion

The inequities that have been made abundantly clear over the past year will only continue to worsen as climate change impacts individuals and communities in the years to come. Based on our case study of Northfield, our research indicates that community engagement and public participation methods will be integral in the implementation of the CAP during 2021. Due to a number of converging issues discussed in the previous sections, it has been difficult for Northfield environmental groups to meet and collaborate in CAP implementation over 2020, thus impacting the amount of energy that can be put into the general public. We recommend that CAP administrators continue working to construct innovative ways to build community even though much of this participation has to happen through a computer screen. As pandemic conditions continue to improve, we urge Northfield administrators to design safe ways to engage the community with climate action and continue to provide exciting outreach programs. Our work has shown that community engagement is critical to the success of CAPs and that the strong sense of community here in Northfield is especially important to the government structure and policy creation. Thus, we believe it is key to nurture these relationships and connections however and wherever possible.

From the methods employed in our research, we are seeing that much of the work on climate action is happening in less formal spaces and for this reason there is a potential for such spaces to become more exclusive. Analyzing the Northfield CAP during the pandemic has highlighted the manner in which facilitators share ideas and interact, which we think could easily shift as more people are vaccinated and become involved in community work once again. Based

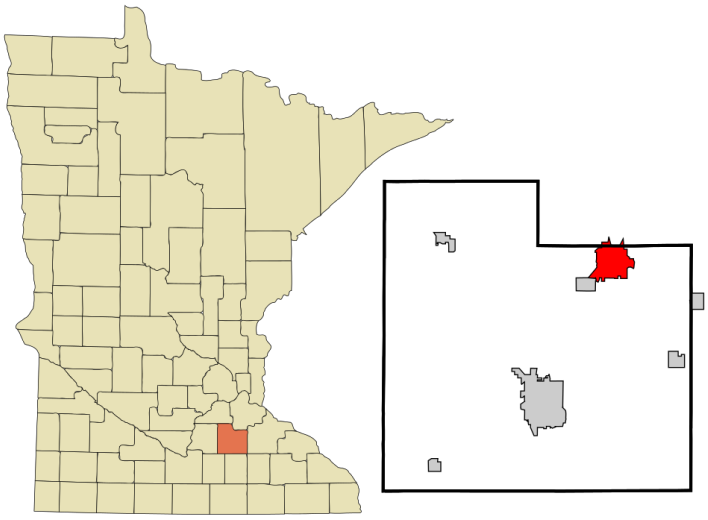
on our research, we would encourage Northfield administrators and CAP facilitators to consider where these meetings are happening, who is present, and who is not participating in the conversation. Asking and addressing such questions will help to ensure that goals of equity, diversity, and inclusion are being achieved. As task forces begin to reconvene and get back into the swing of things in the coming months, we would suggest making a concerted effort to reach out to groups and organizations that have previously not been involved in CAP planning in order to ensure that these informal networks reflect the city as a whole.

Our conversations for this research further demonstrate that creative solutions in the time of a pandemic can lead to innovative ideas in post-COVID years. For example, the annual Earth Day celebration could be more spread out over multiple city blocks and along the Cannon River. Citizens could participate at a distance or in their own neighborhoods through the use of stations with information sheets about Earth Day in Northfield, what the CAP means for the future of the city, and opportunities to join local environmental groups and committees. Some simple ideas would be to distribute kits that include vegetable seeds for starting a garden or sewing kits for learning to repair clothes. These could also include a guide to native plantings for backyards and recipe cards that list local, in-season fruits and vegetables or show how to reuse food scraps. There are plenty of additional ideas that could stem from these suggestions and we want to highlight that allocating time for this type of work is important. We also recognize that the CAP administrators spend much of their time wrestling with best practices in community-building during a pandemic. We believe that perseverance through the next few months of vaccinations will make worthwhile the effort of engaging the community in online settings, building stronger networks and camaraderie now so that public involvement is less jarring when normalcy returns.

While the pandemic seems to have created pathways for more aggressive climate action and has decreased human emissions, potentially making it easier to hit climate action goals, our work has shown that at the local level the effect of the pandemic is not so rosy. When one acknowledges lived experiences and what goes into climate policy creation at the local level, it is clear that governing in a pandemic is arduous. It is apparent that struggling to balance life amidst a pandemic has affected administrators in Northfield as much as anyone else. Additional Zoom calls and more online commitments on top of childcare, remote schooling, and tending to personal well-being are just a few of the stressors CAP facilitators are facing. In Northfield, we are still seeing progress in climate action work, which is a feat that deserves acknowledgement regardless, but especially so because of the various changes and challenges people are negotiating in their lives at this moment in time. Given that the pandemic is demonstrating the areas of society that need the most attention, municipal authorities and climate action planners can refocus efforts on these issues as they move forward.

Appendices

Appendix A: Location of the City of Northfield within Rice and Dakota Counties in the state of Minnesota (Arkyan 2007).



Appendix B: Interview Participants

Participant	Organization	Position Title
Bruce Anderson	• CAPAB Transportation Working Group	• Transportation Team Leader • Chair of EQC
Mary Jo Cristofaro	• CAPAB Food Working Group	• Food Team Leader
Abby Finis	• Great Plains Institute	• Senior Program Manager, Communities
Beth Kallestad	• City of Northfield, Minnesota	• Program Coordinator
Alex Miller	• Climate Action Plan Advisory Board (CAPAB) • Carleton College Sustainability Office	• CAPAB Co-Chair • Carleton Sustainability Program Coordinator
Martha Larson	• Carleton College Sustainability Office • CAPAB Energy Working Group	• Manager of Campus Energy and Sustainability • Energy Team Leader

Kim Smith	● Carleton College (Faculty)	● Professor of Environmental Studies and Political Science
Jessi Wyatt	● Great Plains Institute	● Energy Planner and Analyst
Emily Ziring	● City of St. Louis Park, Minnesota	● Sustainability Manager

Appendix C: Interview Questions

Great Plains Institute

1. How did GPI get involved in Northfield's climate action plan process and what contributions were they looking for from your organization?
2. How did work GPI has done on climate action plans in the past influenced the work you did for Northfield? Has Northfield's CAP influenced work you are doing for other cities/towns?
3. Is there a continued relationship between GPI and Northfield Staff regarding the CAP? If so, how has COVID impacted this work?

Carleton Sustainability Employees

1. How did work you've done on Carleton's CAP in the past influence the work you did for Northfield?
2. As Carleton's CAP is being reviewed, how has your work with the city of Northfield influenced Carleton's plans? How is COVID impacting these reviews?

City of Northfield Program Coordinator

1. How have past experiences influenced the work you did and continue to do for Northfield's climate action planning and implementation?
2. Has city funding for the CAP changed because of economic downturns due to COVID?
3. Have you encountered issues with developing the CAP, such as staffing or having initial pushback? Have these sorts of things become more prominent because of the pandemic?
4. We are expecting changes in energy, transportation, and potentially waste to be particularly important in our research. Have you seen notable shifts in these areas that will impact the CAP in the longer term?

Food Team Lead

1. How have past experiences influenced the work you did for Northfield's CAP?

2. What areas of food issues were you and your team intending to target during 2020? How did you cope with pandemic shutdowns and shifting these original goals to reflect the times?

Transportation Team Lead

1. How have past experiences influenced the work you did for Northfield's CAP?
2. With transportation and its related emissions being the most largely impacted by COVID shutdowns, how are you assessing these changes and can the drop in transportation emissions be leveraged to move further ahead in CAP implementation?

St. Louis Park Sustainability Manager

1. Please explain your role(s) in working on St. Louis Park's CAP.
2. What were SLP's main goals in implementation this year (before the pandemic hit)?
3. How have the past years of working on SLP's climate plan influenced your adaptation to climate work after pandemic shutdowns?
4. How has COVID changed the relationships you have with other SLP staff regarding climate action plan work?
5. Has SLP seen financial hardships this year that have prevented some plans from moving forward? More generally, how has COVID affected your work with the CAP and its implementation?
6. Are you seeing any areas where implementing SLP's CAP has been easier this year than it was before the pandemic?

Appendix D: City of Northfield Sustainability Website

To learn more about the City of Northfield's sustainability initiatives and review the Climate Action Plan, please visit their website at: https://www.ci.northfield.mn.us/1306/Sustainability

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