Fertile Lands, Empty Hands

A Comparative Case Study on How Rural School Districts Addressed Food Insecurity During the 2020 COVID-19 Pandemic

Submitted in partial fulfillment of the requirements for the degree of

BACHELOR OF ARTS in PUBLIC POLICY at the University of Chicago

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Thesis Presented to

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April 15, 2021

ABSTRACT

Millions of students have engaged in virtual learning since the onset of the COVID-19 pandemic in the Spring of 2020. For rural food-insecure students who primarily access federally subsidized breakfast and lunch programs, learning from home means that school districts must strategically meet their needs, be it by food pickup site, food distribution program, or otherwise. Building on McLoughlin, et. al.'s 2020 seminal study, I consider the successes and challenges two rural school districts faced when strategizing to support their food-insecure students during the Spring and Summer of 2020, specifically asking: How have rural school districts affected by COVID-19 strategized to distribute meals to their food insecure students, and to what extent were their strategies effective in promoting equitable food access? Using geospatial and document analysis, as well as surveys and interviews with school staff members, I examine staff perception of their districts' strategies, the logistics of food access in each district, and the equitability and accessibility of online promotional materials. I find that each school succeeded at: providing families and students participating in the program with a deep sense of community; providing somewhat accessible food pickup and delivery services to families; and utilizing promotional materials to advertise programming, all three of which amplified equity of access. Conversely, the districts faced challenges: navigating geographic span and a lack of transportation to food pickup sites; too short of time windows for easy food access; and a lack of promotion online about external partnerships. Based on my observations, I generate policy recommendations for rural school districts so that they might be better prepared to support food-insecure students the next time they cannot physically be in school.

ACKNOWLEDGEMENTS

I am so grateful to the entire Public Policy department, especially my preceptor Charlie Rollason, who have been extremely helpful in the production of this thesis. In addition, I am grateful to Dr. David W. Johnson of the University of Chicago Consortium for his expertise and support before this project even began. Thank you so much for brainstorming with me, teaching me, and supporting me each step of the way.

I want to thank each school district, staff member, and superintendent's role in this project as well. I am so fortunate to have had the opportunity to work with individuals so passionate about their work in the education field and willing to share their experiences in this production.

I would also like to include a special note of appreciation to one of my favorite high school teachers, Ms. Carol Brey, who was the catalyst in my interest for social science research. Ms. Brey, your words of encouragement and time mentoring me in my first-ever research project in my junior year of high school is something for which I will always be very grateful.

Finally, I would like to thank my friends and family for their endless love and support throughout my entire college career. Your words of encouragement and presence has made this an unforgettable experience, and I owe so much of this to you. Thank you for everything!

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INTRODUCTION

As novel coronavirus (COVID-19) cases reached record heights back in the Spring of 2020, millions of Americans felt COVID-19's impacts economically, socially, and health-wise. Almost 8.9 million Americans have been infected and 227,000 have died; in addition, according to the Bureau of Labor Statistics, 22.2 million Americans experienced job loss in March and April of 2020 alone[1], and as stay-at-home orders, social distancing regulations, and curfews affected most states, small businesses quickly went under. For those Americans already experiencing economic difficulties prior to the pandemic, the impacts of COVID-19 have only exacerbated these disparities. Of major concern in food insecurity. According to Eliza Kinsey in a study published in *The Journal of Urban Health* in June 2020, an estimated 14% of families with children identified as food insecure prior to the pandemic.[2] When factoring in economic hardship and health struggles, Kinsey predicts that this statistic will grow dramatically due to the impacts of COVID-19. Indeed, a later study by Northwestern University estimates that food insecurity has more than doubled as of September, reaching an estimated level of 23%.[3] That's nearly one in four families who either have difficulty putting food on the table or difficulty accessing food.

One of the most vulnerable populations within this statistic are the children in food insecure families -- especially students. As schools transitioned to remote learning in the Spring of 2020, nearly 57 million students were forced to adjust to learning virtually at home. Of these students, almost 30 million qualify for free and reduced lunch courtesy of the federally

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[1] Bartash, 2020
[2]Kinsey, Kinsey, and Rundle, 2020
[3] Silva, 2020

subsidized National School Lunch Program.[4] That means that nearly half of American students attending a public or private-nonprofit school received breakfast and/or lunch at a low cost or for free, taking a burden off families who already identify as low-income. As schools shut down, however, many states lacked protocol about how and whether to continue distributing meals to students. In addition, as unemployment levels continued to rise, food banks and grocery stores saw more bare shelves and longer wait times. For students, not having a full meal can significantly decrease their ability to learn, especially when food insecurity is compounded with the struggles of virtual learning.

To understand how urban schools were combating food insecurity during the Spring and Summer of the 2020 pandemic, Gabriella M. McLoughlin, et. al., published the study "Addressing Food Insecurity through a Health Equity Lens: A Case Study of Large Urban School Districts during the COVID-19 Pandemic." McLoughlin, et. al. examines the availability of grab-and-go free meals in four major cities across America and analyzes the degree to which emergency school meal service strategies were successful in each case. The study found that districts developed strategies to optimize meal provision which involved community partnerships and economic relief, as well as high densities of meal pick-up sites across the cities.[5] However, while this study produces noteworthy observations for urban contexts, it fails to consider the dramatically different barriers rural school districts face when it comes to addressing food insecurity during the pandemic. First, more rural communities face food insecurity compared to urban districts on average -- according to *Feeding America,* rural communities make up 83% of counties with the highest rates of food insecurity.[6] Geographically, many rural school districts

[4] DeGeurin, 2019
[5] McLoughlin, et al. 2020
[6] "Rural Hunger Facts: Feeding America" n.d.

are spread out, making the logistics of food access much more difficult -- often, rural communities have access to only one grocery store or gas station for miles, creating both food deserts and food swamps. And, poverty is worse in rural communities at a level of 13.3% in 2019 compared to 10% in urban areas, on average, heightening the risk of food insecurity. In short, food insecure students in rural communities often face different and potentially greater obstacles when it comes to accessing food compared to their urban counterparts.

Because of these districts' smaller size, rural districts are often overlooked by researchers. However, because of the vastly different challenges urban and rural communities face when addressing food insecurity, studying rural district response to meal distribution is essential if we are to develop effective policy and strategies to feed rural students when school shuts down. Modeling my approach off of the McLoughlin, et. al., study, I ask: how have rural school districts affected by COVID-19 strategized to distribute meals to their food insecure students, and to what extent were their strategies effective in promoting equitable food access? And, what policy recommendations arise from these observations that we might apply to future crises which prevent students from attending school?

In this paper, I attempt to answer the above research question. Using a four-pronged, mixed-methods approach consisting of a document analysis, a geospatial analysis, staff surveys, and interviews, I consider how accessible and equitable two Midwest rural school districts' emergency food distribution plans were between the Spring and Summer of 2020. To measure equity, I incorporate McLoughlin, et. al.'s "Getting-to-Equity" urban emergency food distribution model in my document analysis. In addition, I employ Fligstein's "Strategic Action Field Theory" to understand food access in the context of my geospatial analysis. In my findings section, I discuss how each school succeeded at: providing families and students participating in

the program with a deep sense of community; providing somewhat accessible food pickup and delivery services to families; and utilizing promotional materials to advertise programming, all three of which amplified equity of access. Conversely, the districts faced challenges navigating geographic span and a lack of transportation to food pickup sites; too short of time windows for easy food access; and a lack of promotion online about external partnerships. These observations, among others, inform my five main policy recommendations to increase equity in the two districts: (1) More partnerships with outside organizations to alleviate geographic distance; (2) Greater communication about alternate federal and state assistance; (3) Increased access to pick-up sites by broadening timing windows; (4) Frequent posting on multiple platforms to increase accessibility; and (5) Continued reliance on community. I conclude by addressing the implications of this paper's research, as well as areas for further study.

LITERATURE REVIEW

Historically, the concept of food insecurity is still a relatively novel topic. It was only in the late 1960s when the issue of hunger became prominent in the minds of Americans and policymakers. After Robert Kennedy's visit to the Mississippi Delta in 1967, the U.S. government enacted a number of federal programs and projects with the aim of reducing the effects of hunger in America.[7] However, at this point, the term "hunger" encompassed a wide range of identities, including malnutrition, food insecurity, and poverty. It wasn't until the 1990s that food insecurity as it is defined today-- a "lack of consistent access to enough food for an active, healthy life" --and a conceptual approach to measuring it was developed by the Life Sciences Research Office. [8] With food insecurity defined and quantified, the United States

[7] "What Is Food Insecurity in America?" 2017
[8] "What Is Food Insecurity in America?" 2017

government began to measure its impact in the mid-1990s, adding a series of food security questions to the United States Census. Following their example, other external organizations conducted their own research on food insecurity, such as USDA, Feeding America, the National Health and Nutrition Examination Survey, the Survey of Income and Program Participation, and others.[9] These surveys have provided scholars with data to examine the trends of food insecurity more deeply, and the opportunity to identify trends in food insecurity over time.

Food insecurity surveys and studies have more recently raised questions about equitable access to food, especially for those most vulnerable. In particular, recent scholarship examines the impact of food insecurity on children. According to Diana F. Jyoti, et. al, in their article "Food Insecurity Affects School Children's Academic Performance, Weight Gain, and Social Skills," children who identify as lower income and are of a racial or ethnic minority are more susceptible to food insecurity (Jyoti 2005).[10] Moreover, those who are food insecure are therefore at a higher risk of obesity and diabetes.[11] [12] But, as researchers discovered, food insecurity isn't simply a health risk -- in addition to the health complications caused by having inadequate access to food, researchers discovered that children performed worse in school when they were food insecure. Everything from consistent attendance, to graduating on time, to even making friends and being prepared for the workforce, is affected by food and nutrition.[13]

These discoveries were especially interesting for educational policymakers and government officials. Working with school districts, programs like the National School Lunch Program (NSLP) and the School Breakfast Program (SBP) aimed to reduce food insecurity for

[9] Wunderlich and Norwood, 2006
[10] Jyoti, Frongillo, and Jones, 2005
[11] Kaur, Lamb, and Ogden, 2015
[12] Seligman et al., 2007
[13] Stevens, 2015

students at school and therefore improve the quality of their academic performance. Today, almost 30 million students rely on both federal programs every day to supplement or eliminate the costs of their breakfast and lunch. According to Story, et. al., in their study "Schools and obesity prevention" (2009), these nutritional programs can make up almost 50% of a student's daily caloric intake. Moreover, studies show that students who receive these subsidized lunches and breakfasts ultimately consume more nutritious foods than if they did not have access to these meals.[14] [15] Ultimately, recent literature shows that a critical way America is addressing food insecurity is by partnering with schools, federal programs, and researchers to provide students with nutritious, accessible meals at least five times per week.

However, the effects of the COVID-19 pandemic have dramatically changed the way these institutions must address the problem of food insecurity. In the Spring of 2020, most K-12 schools closed their doors, quickly transitioning to online learning and forcing students to remain at home. Rapidly, America's unemployment rate skyrocketed, and its economy crumbled as working-class families experienced job loss and struggled to pay rent. In addition, essential workers experienced mounting health concerns as their contact with COVID-19 carriers increased. For food insecure students, the pandemic already exacerbated existing disparities. In response, schools scrambled to come up with emergency food distribution plans in response to the urgent need.

Gabriella M. McLoughlin, et.al.'s groundbreaking study "Addressing Food Insecurity through a Health Equity Lens" (2020) highlights how many major urban districts navigated the transition. This transition was facilitated by mobilizing hundreds of grab-and-go meal pickup sites across the city, accounting for health concerns and even dietary restrictions in some cases.

[14] Au et al., 2018
[15] Misyak et al., 2017

McLoughlin, et. al. states that while each district she studied had somewhat varying approaches, each one provided district families with an abundance of pickup options, materials in multiple languages, and clear instructions on where and when to access nutritious meals. While each district averaged serving about 80% of the meals they would normally serve in-person, thousands of students received food consistently. However, one factor which McLoughlin, et. al. admits allowed for this strategy to succeed is the relative closeness of food insecure families to the pickup locations. As I alluded to in the introduction, McLoughlin, et. al. writes that further research must be done to determine the strategies of less-densely-populated districts, specifically, rural districts which may have access to fewer resources and may be further from food insecure families.

To date, no research has examined the impact of the COVID-19 pandemic on rural districts. Indeed, smaller districts often draw fewer researchers given the lack of data readily available. However, the few studies which do examine rural food insecurity highlight troubling observations which are worth looking into. According to *Feeding America*, poverty is worse in rural communities at 13.3% compared to 10% in urban areas; likewise, 87% of communities with the highest rates of food insecurity are rural.[16] Geographically, scholars have discovered that rural areas are often susceptible to "food deserts," or areas where one's access to food or health food options is severely limited.[17] For many rural children, the nearest grocery store might be miles away by car, making it difficult to access food frequently. With the COVID-19 pandemic, logistically these accessibility problems became even more difficult--stores ran out of stock due to hoarding, and lines often went out the door between the Spring and Summer of 2020. For

[16] "Rural Hunger Facts: Feeding America," 2018
[17] "Food Deserts – Food Empowerment Project," 2017

families living miles away from the nearest grocery store, these obstacles could be detrimental for children attempting to learn virtually and live healthily.

Previous scholarship shows how rural communities with high food insecurity rates are incredibly vulnerable to hunger and malnutrition with the rise of COVID-19. In particular, children who once depended on school subsidized breakfast and lunch programs are at risk of going hungry during COVID-19 and other similar emergency situations. While research has focused on large urban school district strategies for feeding food insecure students during the COVID-19 pandemic, no research has been conducted to explain how rural districts with high rates of food insecurity are approaching meal distribution to their students. My research question therefore centers on these districts, asking how rural districts fed their students during the COVID-19 pandemic and to what extent it was effective, with the aim of expanding the body of knowledge about how these rural districts navigated feeding their students during COVID-19.

THEORY AND FRAMEWORKS

I depended on two noteworthy theories to better frame my research methodology. Following is an overview of the theories and their implications on my research. Both frameworks will be used in my Data and Methods sections.

Getting-to-Equity (GTE) Framework

Monica L. Wang's Getting to Equity (GTE) Framework is used in McLoughlin, et. al., to frame questions on equity in food distribution service. Indicating the framework's practical use, McLoughlin, et. al. states:

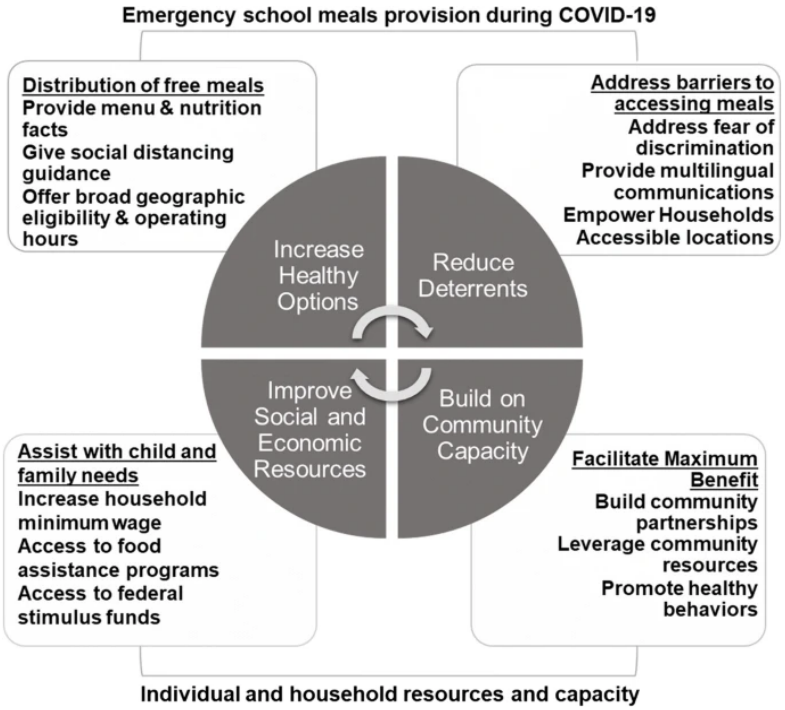
> The framework identifies opportunities for four key opportunities for intervention and action research that emphasize equity: (1) increase healthy options (e.g., increase access

to healthy food retailers), (2) reduce deterrents (e.g., address threats to personal safety), (3) improve social and economic resources (e.g., offer nutrition assistance programs), and (4) build on community capacity (e.g., build strategic partnerships).

Wang displays the framework in a four-quadrant circle, indicating the importance of each theme individually as well as their interconnectedness. A highly equitable program will therefore touch on each quadrant, with the most equitable programs having many examples of each theme.

In their own research, McLoughlin, et. al. builds on the GTE framework by narrowing specific questions and topics related to emergency food distribution. Topics like, "Does the school provide menu and nutritional information?", "Does the school empower households?", and "Are the healthy behaviors promoted?" are highlighted as examples from which more technical questions might be derived. Fig. 1 visually describes these quadrants as well as McLoughlin, et. al.'s proposed questions based on each theme.

Fig. 1: McLoughlin, et. al. interpretation of GTE framework



The GTE framework and McLoughlin, et. al.'s accessible application of its themes for emergency food distribution made the theory highly useful as I attempted to answer questions about equity for my own research in rural districts. Using McLoughlin, et. al.'s interpretation of the GTE framework, I edited the model to fit the context of a rural setting. One key change to note is that I omitted the topic, "Provide multilingual communications [to students, family, or otherwise]" to account for the fact that my chosen districts are nearly 100% English-speaking.[18] Besides that key change, I used the McLoughlin, et. al. interpretation of the GTE framework as-is throughout my research and analysis process and will build on its functions later in the paper.

Field Theory and Strategic Action Fields[19]

To understand the nature of "emergency food distribution" in a broader sense, it is critical to center this topic in field theory--specifically, how characterizing each school's program within a "strategic action field" (SAF) allows us to understand how and why food insecure families may access alternative forms of food rather than, or in addition to, their school's program and services. Doing so, as I will point out at the end of this section, will support my geospatial analysis, in which I identify other emergency and non-emergency food distribution locations that families might access during COVID-19. In short, understanding SAF theory in emergency food

[18] For more information on the school districts selected, please see the data and methods section.

[19] **Please note:** Content from this section is based heavily upon my final paper from the course, Organizational Theory, PBPL 23001, with Sorcha Brophy (2021). Certain phrasings and evidence may be duplicated from this prior paper, but the overall argument is restructured to be relevant to my thesis topic. I am required to note this as a response to the requirement from the Harris school, denoting: "Whatever is being used from previous work *should be disclosed and cited as such* in the thesis. Please note that failure to do so will be considered a violation of academic integrity (i.e., plagiarism)." A full citation of this work is provided in my bibliography.

distribution emphasizes the important influences of other food distribution stakeholders during COVID-19 in these communities.

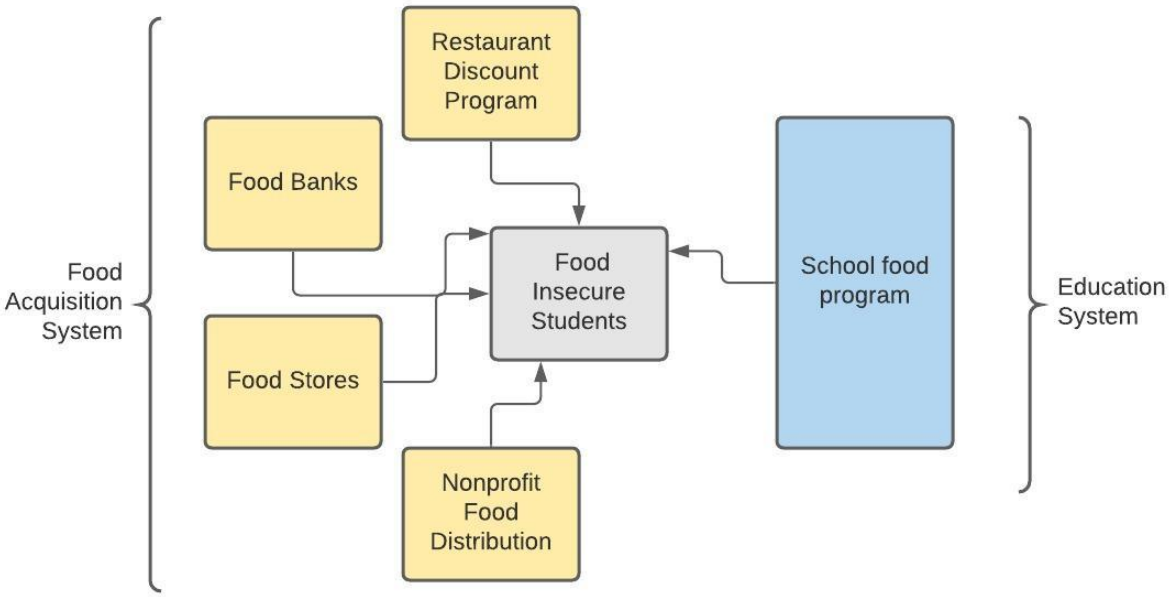
Neil Fligstein's 2013 paper defines a strategic action field as "the fundamental unit of collective action in society...a meso-level social order where actors (who can be individual or collective) interact with knowledge of one another under a common set of understandings about the purposes of the field, the relationships in the field (including who has power and why), and the field's rules" (Fligstein 2011).[20] A SAF, in other words, is a field in which actors act strategically to address a key purpose. Each actor having his or her own motivations therefore has different levels of power and influence in the field. In addition, actors within a SAF do not necessarily have to occupy the same system -- many times, these actors come from a variety of systems as they address a common goal.

Of particular importance in Fligstein's theory is the idea of collective action. Fligstein uses an example of a Russian doll, explaining how actors themselves are SAFs operating within larger SAFs. So, as an example, a restaurant might occupy a SAF which works to eliminate hunger, yet they also have their own internal SAF consisting of power struggles, varying motivations, and external entities which exert their influence on the restaurant. Perhaps a restaurant's employees are only interested in working for a paycheck, while its boss is interested in growing the business to other cities. These motivations and split interests can create power struggles within the restaurant's individual SAF. Likewise, the restaurant interacts with other restaurants in the same way, competing and sometimes collaborating with each other to occupy the field. In this way, Fligstein's SAF theory is both internal and external in relation to the organization or system.

[20] Fligstein, 2013

As students began learning virtually across the nation, a SAF developed in each of their communities. Nation-wide, we saw how food banks, nonprofits, grocery stores, and even some restaurants made valiant efforts to reduce hunger. As a result, students and families often have the option between a school-based food pickup program as well as many other players in the emergency food distribution system. In a sense, the pandemic merged the school food system with other players in the external food access system during COVID-19. We might diagram a simplified example as including both systems, as shown in Fig. 2 below.

Fig. 2: An Example of An Emergency Food Distribution SAF



Secondly, Fligstein emphasizes the importance of distinguishing between an emerging, or new, SAF, compared with an established SAF. Emergency Food SAFs arising from COVID-19 have been in existence for about a year, but there are other characteristics which make it

"emerging." Fligstein writes that:

> An emerging field is an arena occupied by two or more actors whose actions are oriented to each other, but where agreement over the basic conditions of the SAF has yet to emerge. One can conceive of emerging fields as a social space where rules do not yet exist, but where actors, by virtue of emerging, dependent interests, are being forced increasingly to take one another into account in their actions. (Fligstein 11)

Rules, in this case, might look like how the field is governed and directed. When addressing the issue of food insecurity, we might see an individual in power, such as the mayor, directing efforts towards this problem among strategic actors. However, it appears that each actor still retains their own systems of governance and rulebook. For example, schools are overseen by a board of education, indicating that its efforts are managed by this group. Meanwhile, food banks have no ties to the board of education, nor do they have ties to its rules or systems. They occupy the same SAF and target the same issue, yet both play by different rules.

Another key feature of emerging SAFs includes actors' awareness of other actors. Fligstein writes that an established SAF will include actors who are deeply aware of their power, their ability to exert influence, and their niche in the SAF. Yet, in an emerging SAF, actors are often scrambling to fill niches, competing with incumbents and new challengers to address their key goal and internal motivations. Furthermore, a 2014 article by Mikko Laamanen, et. al. establishes the SAF's "collective-conflictual values," in which strategic actors, especially in emerging SAFs, experience productive moments of collective action (working together towards a shared goal) and conflict (competing to address a shared goal or competing to fulfill individual

motives).[21] Laamanen, et. al. discusses the benefit towards assessing SAFs through this lens, explaining how understanding these strategic actor interactions can help us form a more accurate picture of the effectiveness of the SAF.

With a SAF lens applied, it is now possible to broaden our lens of emergency food distribution beyond the school-based food distribution program and incorporate other competing SAF actors, such as restaurants, food banks, nonprofits, and others, into the field. These actors will be essential to consider in the geospatial analysis, especially when determining where families might access food if not through the school directly. I will therefore reference SAF theory and the impact of strategic players in the field in the geospatial analysis section of the paper.

DATA AND METHODS

I examine two rural school districts in two Midwest counties with high rates of projected food insecurity during the pandemic as case studies. This section details the data, methods, and rationale for structuring the study as a mixed-methods, four-part case study analysis.

Rationale: Choice of Midwest Locations

I chose schools from the Midwest for two reasons. First, we can expect that school food distribution strategies could vary depending on the climate and weather of the state, especially if schools normally support students at outdoor food pickup sites. As schools enter into winter, I expect that Southern rural districts will use different strategies compared to Northern districts enduring snow and ice, such as setting up outdoor pickup sites compared to indoor ones. In addition, access to food could be more difficult during the winter given that COVID-19

[21] Laamanen, 2015

restrictions may prevent people from eating indoors, and because the cold could prevent restaurants from remaining open. Lastly, poor weather conditions can affect road travel, potentially forcing families indoors in the winter months, and potentially influencing their access to food from long distances away. By limiting my study to Midwest schools, I am ensuring that these weather-related variables are relatively held constant.

Secondly, states in the upper Midwest have had some of the most difficult times navigating COVID-19. In the Spring and Summer of 2020, the upper Midwest suffered a spike in COVID-19 cases especially in the Northern rural areas. Because of this spike, access to food safely is of even greater importance. I attempted to keep the experience of COVID-19 levels as consistent as possible with the districts studied, hence my choice of the Midwest.

The Districts

The districts I have chosen have at least 50% of student populations which depend on free and reduced lunch. They both have closed their doors during the Spring and Summer of 2020 and have both adapted in some way to support their food insecure students. I also examined districts with different student population sizes, as I predicted that factors like staff members support and resource access might differ and impact a school's ability to support their students. In all other respects, I tried to ensure that the districts were similar in the sense that they both served well over 50% of food insecure students, and that they were within extremely rural areas of their states. The following districts will serve as the case studies for my analysis. Each district's identifying information has been concealed with a pseudonym.

"Great Lakes School District"

The Great Lakes School District (GLSD) is located in a rural community in Michigan. With 1,563 students total, this is the larger district of the two. GLSD is in a rural area that had moderately high COVID-19 cases in mid-2020 and has high levels of food insecurity at approximately 23.2% across the county. About 70% of GLSD's student population receives free and reduced lunches, indicating a high level of need for meal support during the pandemic. GLSD offered food pickup for all community members, and occasionally offered delivery based on demand.[22]

"Plains School District"

The Plains School District (PSD) is located in a small rural community in Iowa, supporting only just over 170 students total at one location, and making it the smaller district in the study. Like GLSD, 61.8% of PSD's students rely on free and reduced lunch, and the county is majority low-income. In terms of COVID-19 cases, PSD's county did not experience a major spike in community cases until late 2020, yet shut school down along with the rest of the nation in the Spring of 2020 and into that Summer. PSD offered food pickup and delivery options for its community. [23]

Given that both the Plains and Great Lakes School Districts shut their doors between the Spring and Summer of 2020, I will focus my research between March 13, 2020 and September 1, 2020. After September, both schools used varying hybrid models which would not keep the school strategies consistent. As a result, the study will take place between these dates.

[22] Demographic data from Niche. Website redacted due to school district anonymity.
[23] Demographic data from Niche. Website redacted due to school district anonymity.

Why Case Studies?

Case studies themselves offer a broader and deeper understanding of the inner workings of a school district's strategy. Given that the strategic response to supporting food insecure students during COVID-19 was so widely different across the nation, and given the high likelihood of strategy change from district to district during the course of the pandemic, it makes sense to evaluate the specific successes and challenges within two districts rather than attempting to generalize across a state or nation.

In addition, unlike McLoughlin, et. al., I hope to understand the personal opinions, perspectives, and experiences of school staff in addition to a technical analysis of each district's strategy. Therefore, my research question is best answered by spending a significant amount of time researching two district's particular strategies and perspectives in the form of case studies. The following section details my data and methods plan in the context of this comparative case study.

Data and Methods Plan

I split my methodology into two distinct sections with the aim of identifying the logistical and technical accessibility of food within these communities, as well as the personal opinions, perspectives, and experiences from those individuals working at school during the pandemic. As a result, my data focuses on perceptions of staff, which I consider in surveys and interviews, and logistical and promotional strategies, which I investigate in a document and geospatial analysis. Both groupings of methodology attempt to answer my research question: how have rural school districts affected by COVID-19 strategized to distribute meals to their food insecure students, and to what extent were their strategies effective in promoting equitable food access?

Staff Perceptions: Surveys and Interviews

I distributed surveys to staff at each school via email correspondence to better understand: (1) their knowledge of what their school did to combat food insecurity and use of promotional media during the pandemic; (2) their perception of factors like effectiveness and equity in the school's strategy; and (3) their overall beliefs of the successes and challenges of their school districts' food distribution programs. In total, I received a total of 37 responses. Each survey was anonymous, and each participant had the opportunity to sign up for an interview at the end of the survey. I summarized, graphed, and analyzed survey data depending on the type of variable measured using STATA and thematic color-coding.

Interviews were conducted via phone and recorded in a 20-minute session to more deeply understand the successes, opportunities, and challenges of their district's strategies to combat food insecurity during the pandemic, and should be considered a supplement to my main body of survey research. Like the surveys, interviews were anonymous. My semi-structured interview questions included themes about the logistics of food distribution, perceptions of effectiveness and equity, and opinions about how the current strategy could be improved. In total, I interviewed two GLSD staff members.[24] Interviews were coded thematically using color-coding strategies.

Logistical and Promotional Strategies: Geospatial and Document Analysis

Beginning with the document analysis, I used data from each schools' social media, website, newsletters, and other online forms of communication to determine the frequency of

[24] I will expand on why I could only interview two GLSD staff in the Interview section of my Findings section.

communication about food pickup, delivery, and other food resources. I also evaluated the degree to which these promotional materials were accessible and equitable for students and their families, such as whether language use is inclusive and food pickup or distributive logistical information is clear using McLoughlin, et. al.'s modified GTE framework.[25] I used a "scale of success" based on the GTE framework to rank the frequency of postings and quality of content in each post to characterize how equitably GLSD and PSD promoted their strategies to the community. Finally, I compare and contrast each district's promotional strategies in my analysis section.

To determine logistical access of school pickup sites and other kinds of food pickup locations in the area, I conducted a geospatial analysis. Using the software ArcGIS, I drew on datasets from publicly available databases.[26] First, I map areas of high need (defined as "persons living in poverty" which correlates strongly with populations experiencing food insecurity[27]) with the locations of food distribution centers at the schools and mapped the average distance students and their families must travel to receive food in comparison to nearby grocery stores and fast-food restaurants. Then, I compared these distances with details from my document analysis about days and time of school pickup site availability and whether or not a site offered delivery to understand why food pickup sites were placed where they were, and how families might be accessing food when school sites were closed.

It is important to note that both districts and all staff members are anonymous. As a result, I edited the maps to limit any identifying information about the districts, and used

[25] See "Theory" section.
[26] See "Geospatial Analysis" section for citations of data.
[27] Feeding America, 2018

pseudonyms for all schools. For the document analysis, I concealed any identifying information from newsletters, images, or documents before sharing them in this work.

Data and Methodology Limitations

Of course, limitations exist in my methodology. Volunteer bias, for example, may mean that I received biased information from those who do decide to take my survey, as these individuals will be volunteering their insight, rather than myself randomly selecting participants. In the same way, interviews were volunteer-only, and could result in some bias. In addition, my survey sample size was somewhat smaller than expected, at N=37. A higher sample size across more schools would be needed to generate a bigger picture of these school's successes and challenges, but ultimately, it provides a general understanding for what went well and what did not for each district's food distribution program. Lastly, it is important to reiterate that this research is a case study. This means that results should not be generalized across all Midwestern rural districts, or even all rural districts in Michigan and Iowa. Rather, I hope my findings present some key observations and correlations that might be further researched in future studies with larger sample sizes.

FINDINGS

My research question asks how rural school districts affected by COVID-19 have strategized to distribute meals to their food insecure students, and to what extent their strategies were effective in promoting equitable food access. I attempt to answer this question through four-pronged methodology, beginning with an online document analysis, a geospatial analysis, and an assessment of common themes within staff surveys and interviews.

Document Analysis

I begin my document analysis by using a revised version of McLoughlin, et. al.'s "Getting to Equity in Obesity Prevention" (GTE) framework, as cited in the "Theory" section of my paper. Under the four quadrants of "increase healthy options," "reduce deterrents," "improve social and economic resources," and "build on community capacity," I ranked how well each school performed under each theme. Fig. 3 shows each question I evaluated as a part of the revised GTE framework.

Fig. 3: Questions used under modified GTE framework

Quadrant I: Increase Healthy Options	Distributed free meals?
	Accessible menu and nutritious food options?
Quadrant II: Reduced deterrents	Offer accessible locations?
	Offer flexible pickup time schedule?
	Offer COVID-19 safety precautions?
	Frequent, consistent pickup or delivery options?
	Sign up required?
Quadrant III: Build on community capacity	Build community partnerships?
	Leverage of community resources?
Quadrant IV: Improve Social and Economic Resource Access	Access to food assistance programs (nonprofits, federal and state programs)?
	Access to federal stimulus fund information?
	Contact information for food distribution leads/facilitators easily accessible?

Then, using the modified GTE framework, I evaluated the content from March 13, 2020 until the beginning of school, September 1, 2020. I used a descriptive measurement (++, +, /, -) to describe the frequency of the characteristics appearing in each post. In this case, "many" documents mean three or more, while "some" documents mean one or more. Fig. 4 provides an exact description of the meaning of each measurement.

Fig. 4: "Scale of Success" GTE framework

Descriptive	**Translation**
-	Did not appear in any documents; below GTE standards
/	Appeared in a limited number of documents OR appeared infrequently across many documents; meets GTE standards
+	Appears in many documents; meets/exceeds GTE standards
++	Appears abundantly across many documents; exceeds GTE standards

In the following document analysis, I begin by firstly evaluating the presence of food resources online, and secondly, by breaking down the content of all documents by GTE framework standards as discussed above.

Fig. 5: Assessment of Online Communication for PSD and GLSD

Online Mediums of Communication	**GLSD**	**PSD**	**Notes**
Facebook[28]	++	/	PSD - Posted about forms to sign up for food pickup and/or delivery. Very comprehensive explanation of logistics and requirements. However, no posting after March 18 about food support.

[28] See Appendix for examples of posts from both GLSD and PSD, including language use and media content

			GLSD - exceptional use of Facebook to communicate with families. Posts frequently and often with real-time updates regarding food pickup throughout spring and summer 2020.
Twitter	-	-	PSD - Not active GLSD - Not active
Website	++	+	PSD - Daily announcements: relayed information about pickup for lunches and breakfasts GLSD - Clearly labeled “food service” page with details on pickup instructions. Daily announcements feature food information.
Newsletters	+	+	PSD - Newsletters provided a comprehensive understanding of nutritional value of meals, as well as pickup location and times. Was only described early on in the pandemic (Spring) not summer. GLSD - A few sentences in spring and newsletters about food pickup. Not as comprehensive as other documents.

In Fig. 5, it is clear how GLSD and PSD utilized a wide range of media and correspondence to connect with students and families about food resources. However, while GLSD posted nearly once a week on its Facebook page about food pickup options throughout Spring and Summer of 2020, PSD posted only two times total in the month of March 2020 about how to sign up for services using an online survey. In this way, GLSD more consistently updated families through social media about its food distribution programs compared to PSD. At a similar rate, each school district relied on its website to provide information on logistics and pickup details for meals in the form of newsletters and daily announcements. Finally, neither district used its Twitter to communicate food distribution strategies. For a series of example posts from each school’s social media and websites, see Appendix C.

Assessment of Content in Documents, Using Modified GTE Framework for PSD and GLSD

Fig. 6: Increase Healthy Options (Quadrant I)

	GLSD	**PSD**	**Notes**
Distribute free meals	++	++	GLSD - Free for children and teens under 18. Students must live in the community. PSD - Free for children and teens 18 and under. All children must be present for pickup and in PSD's district.
Menu and food information	/	/	GLSD - Updated daily and shared across multiple platforms. Nutritional information varied by school and was communicated appropriately. No major effort noted to increase nutritious options. PSD - Updated monthly, communicated in newsletter form. In social media posts, PSD writes that families will receive "brown bag lunch" with no further details on nutrition.

In Fig. 6, we see how GLSD was moderately successful at meeting the GTE framework in "Increasing Healthy Options." GLSD went above and beyond, updating a menu daily with a variety of food options for pickup. They also ensured access by making the meals completely free for any children 18 years or under. However, GLSD did not necessarily promote the most nutritious content -- for the most part, the menu had highly standard meal options with many pre-packaged choices.

Fig. 6 also shows how PSD was somewhat successful at meeting the GTE framework in "Increasing Healthy Options." Like GLSD, PSD provided meals free of charge and for anyone under 18. They did not provide a highly detailed assessment of each meal's nutritional content, but general meal contents were updated monthly and shared in community newsletters. Nutritional content was standard, too, but extensive details on nutrition could not be found.

Fig. 7: Reduce Deterrents (Quadrant II)

	GLSD	**PSD**	**Notes**
Offer accessible locations	/	++	GLSD - Gave address and building side, high school pickup. There is one single location for a population of 1,500+ students. PSD - Gave address and building side at the singular school location for pickup. PSD also partnered with their city council to distribute food at an alternate location so as to reach more families. Lastly, PSD offered drop off. PSD had two locations and a delivery service for a population of 170+ students.
Offer flexible pickup time schedule	/	+	GLSD - Time schedule was one day a week, Fridays, from 1:00-1:30pm. "If cars are still waiting in line past 1:30, meal service will continue." PSD - Somewhat flexible pickup and delivery options. Service offered Monday, Wednesday, Friday, from 9-10am. Delivery times unclear.
Offer COVID-19 safety precautions	/	/	GLSD - 6 feet apart; stay in cars during distribution; no masks mentioned PSD - no precautions mentioned aside from picking up the meals outdoors

Frequent, consistent pickup	/	+	GLSD - Pickup on Fridays at a consistent time (1:00-1:30pm). No other dates mentioned. Meal amount was enough for one day. PSD - Very frequent. Brown bags included breakfast and lunch for two days to support students on Tuesdays and Thursdays as well.
Sign up required?	+	/	GLSD - No sign up required. Families could come to the pickup site without ID and choose meals. PSD - Sign up required. Form found on Facebook must be filled out by mid-March to receive food assistance during the entire pandemic.

Second, Fig. 7 discusses how GLSD partially reduced deterrents to food access. The only food pickup location was at GLSD's high school, and while their communications did clearly state when and where this pickup would take place, GLSD did not utilize more than the single pickup point for distribution during the Spring and Summer of 2020. The time schedule was also somewhat successful. While GLSD did offer clear times for pickup (1:00-1:30pm, every Friday), this was quite short and could be inaccessible for families who couldn't make it within the half-hour. However, GLSD did note that no cars would be turned away from the pickup line even after 1:30pm, making this timeframe somewhat flexible. GLSD also offered COVID-19 safety precautions, but did not describe procedures beyond "staying in your car" and "maintaining a 6-foot distance." No sign up was required, but one deterrent to note is that families were expected to stay in a car to pick up their meals. This presents a limitation for families without vehicles. Overall, GLSD was somewhat successful at meeting this quadrant's criteria.

PSD, on the other hand, performed well in Fig. 7. PSD families relied both on food pickup and delivery services for its distribution strategy, and allowed families the choice as to

which method best suited their needs. In addition, PSD partnered with the local City Hall to distribute food across a greater geographic distance in the district, unlike GLSD, which only had one single pickup point. In addition, PSD's food pickup time lasted one hour from 9:00-10:00am every Monday, Wednesday, and Friday, which in contrast to GLSD, offered families a larger time frame for pickup and more frequent pickup times during the week. Lastly, PSD included extra meals in its "brown bag" system to account for Tuesday and Thursday breakfasts and lunches. For a district with only around 170 total students in attendance, PSD did more comparatively to support its families and students with meal options during the Spring and Summer of 2020 than GLSD.

Fig. 8: Build on Community Capacity (Quadrant III)

	GLSD	**PSD**	**Notes**
Build community partnerships	/	+	GLSD - Very infrequent partnerships mentioned. For example, a food pantry might have left over meals for families, which GLSD posted on their Facebook. No official partnership listed. PSD - partnered with local City Hall to distribute meals to families who couldn't access them at school location. No other partnerships mentioned.
Leverage of community resources	+	+	GLSD - involved parents and community in distributing food as volunteers. PSD - it did not appear that any community resources were leveraged other than offering pickup at City Hall.

Fig. 8 discusses how GLSD somewhat built on community capacity. GLSD leveraged community volunteers to donate and distribute food. However, there were no visible partnerships with nonprofits or outside organizations that I could see from the document analysis alone, although GLSD occasionally posted about leftover food resources from local food banks and businesses when available.

Fig. 8 also shows how PSD, on the other hand, relied heavily on its partnership with City Hall to distribute food to families as an alternate pickup location. However, no other community participation or involvement in the process itself was described.

Fig. 9: Improve Social and Economic Resource Access (Quadrant IV)

	GLSD	**PSD**	**Notes**
Access to food assistance programs (nonprofits, federal and state programs)	-	-	Neither school district offered indications of these services during the summer or spring of 2020.
Access to federal stimulus fund information	-	-	No information from either school district.
Contact information for food distribution leads/facilitators	+	+	GLSD - Contacts listed on website; principals reached out directly via emails PSD - Main contact listed on initial survey sent out in the spring of 2020.

According to Fig. 9, GLSD did not make an effort to improve social and economic resources. No assistance with federal food programs like SNAP or the federal stimulus check was offered; however, individuals in charge of the food distribution did offer their contact

information, so it is assumed that families with questions could potentially reach out and receive this information in an unconventional manner. Beyond the scope of this research, in the Winter of 2020, however, GLSD began posting information about EBT support. Nevertheless, this observation should not be considered as a part of the Spring and Summer 2020 documentation, and begs the question as to why this support was offered nearly 10 months into the pandemic.

Fig. 9 displays how PSD likewise did not provide federal or state food support information. Besides its own distribution programs, PSD did not include other resources. PSD did give out contact information, so it is supposed that families could reach out and get this information if needed.

Key Takeaways: Document Analysis

1. Both GLSD and PSD used a wide range of promotional materials and online media to communicate and inform families of food pickup, delivery, and other food information. However, GLSD posted on social media at a much higher rate than PSD.
2. Both PSD and GLSD attempted to increase access to healthy options, but neither went above and beyond to ensure their pre-made meals were highly nutritious.
3. GLSD only used one pickup site location that was accessible for a half hour, once a week, for a population of 1500. PSD, on the other hand, made efforts to partner with City Hall to create two pickup site locations, and also advertised delivery options, all three of which were available three times a week for an hour, for a population of about 170.
4. Both PSD and GLSD depended on community capacity for support, but neither went above and beyond in this respect to engage the community.

5. Neither PSD nor GLSD made any effort to inform families about federal or external food support programs beyond their own.

Geospatial Analysis

For the geospatial analysis, I used publicly available and reputable files from ArcGIS. My main goal was to better understand where and how families in the school district access food. However, the *kind* of food available within each district can play a role in whether or not a community experiences food insecurity. For instance, a study by Breunig, et. al. (2012) showed how greater access to fast food resulted in higher levels of food insecurity for communities.[29] Similarly, having greater access to nutritious food in the form of supermarkets or healthy school lunch programs reduces the influence of food insecurity.[30] As a result, I mapped files containing records of more nutritious food options in the form of supermarkets (of all kinds, from Target to Whole Foods), with less nutritious options in the form of fast food restaurants, and more neutrally, free-of-charge options at the district-based food pickup locations within the boundaries of GLSD and PSD.

The files themselves I used in ArcGIS are as follows: I mapped school district boundary data from the 2010 U.S. Census; supermarket location data and populations in poverty data from a single dataset by researcher Jim Herries titled "USA Supermarket Access" at the Urban Observatory Project (2017); and fast-food point data from ArcGIS product manager Jennifer Bell who is a researcher for the organization Story Maps with her 2018 dataset titled, "Fast Food Restaurants." Lastly, I manually input the addresses of each district's schools and PSD's City Hall and added physical points to the maps myself.

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[29] Breunig, et. al., 2012
[30] Food Research and Action Center, 2017

I layered these data to create the following maps of GLSD and PSD. Each map details (1) where the school boundaries are; (2) where the food pickup locations are; (3) the location of schools that are not designated food pickup locations; (4) the locations of fast-food restaurants and supermarkets; and (5) representative markers of individuals in poverty with low access, showing where the most need for food distribution services might be. An analysis is included at the end of each grouping of maps.

A key for each map is displayed in Fig. 10.

Fig. 10: Map Key

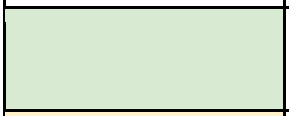
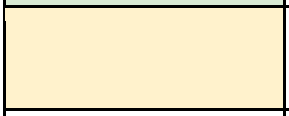
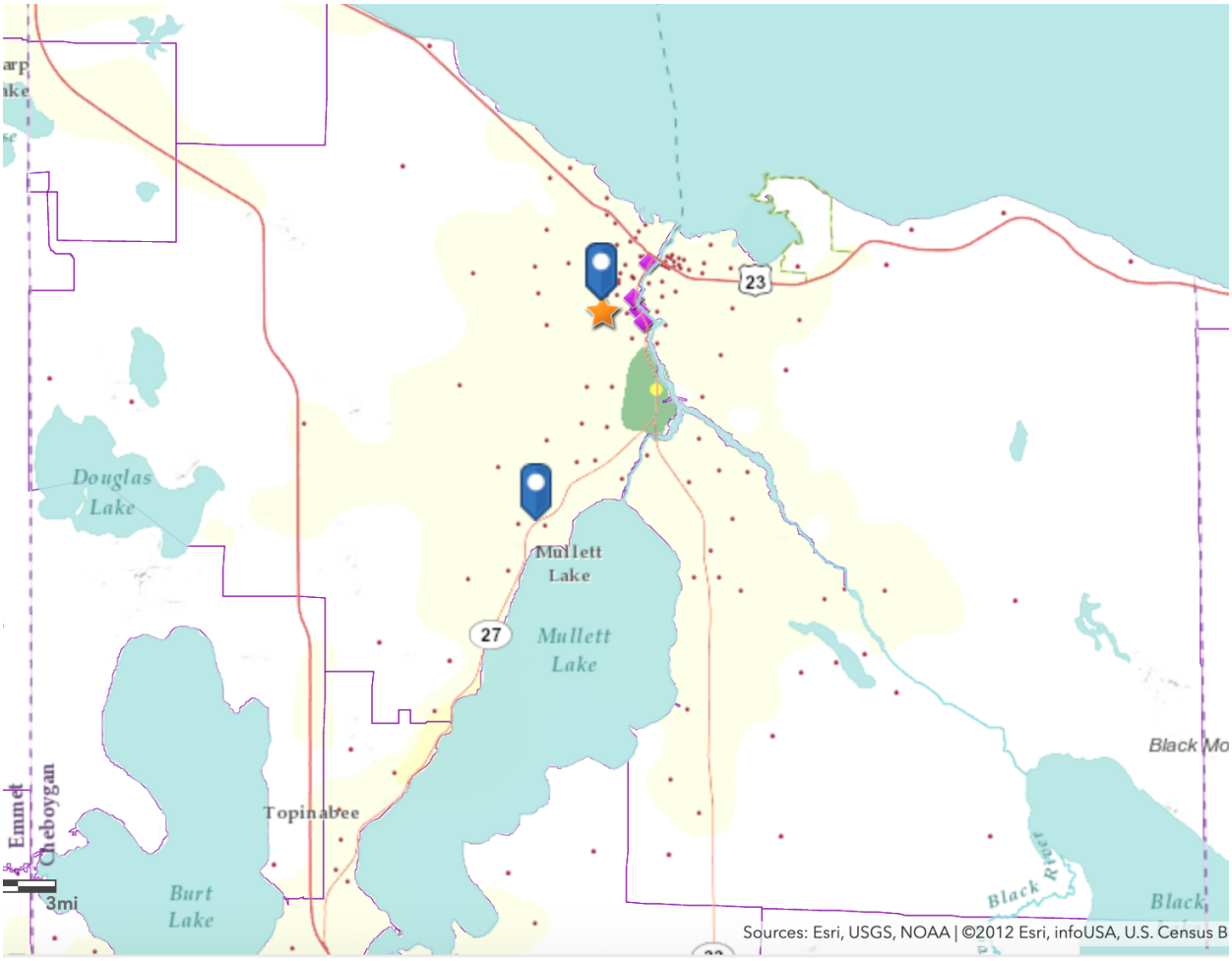
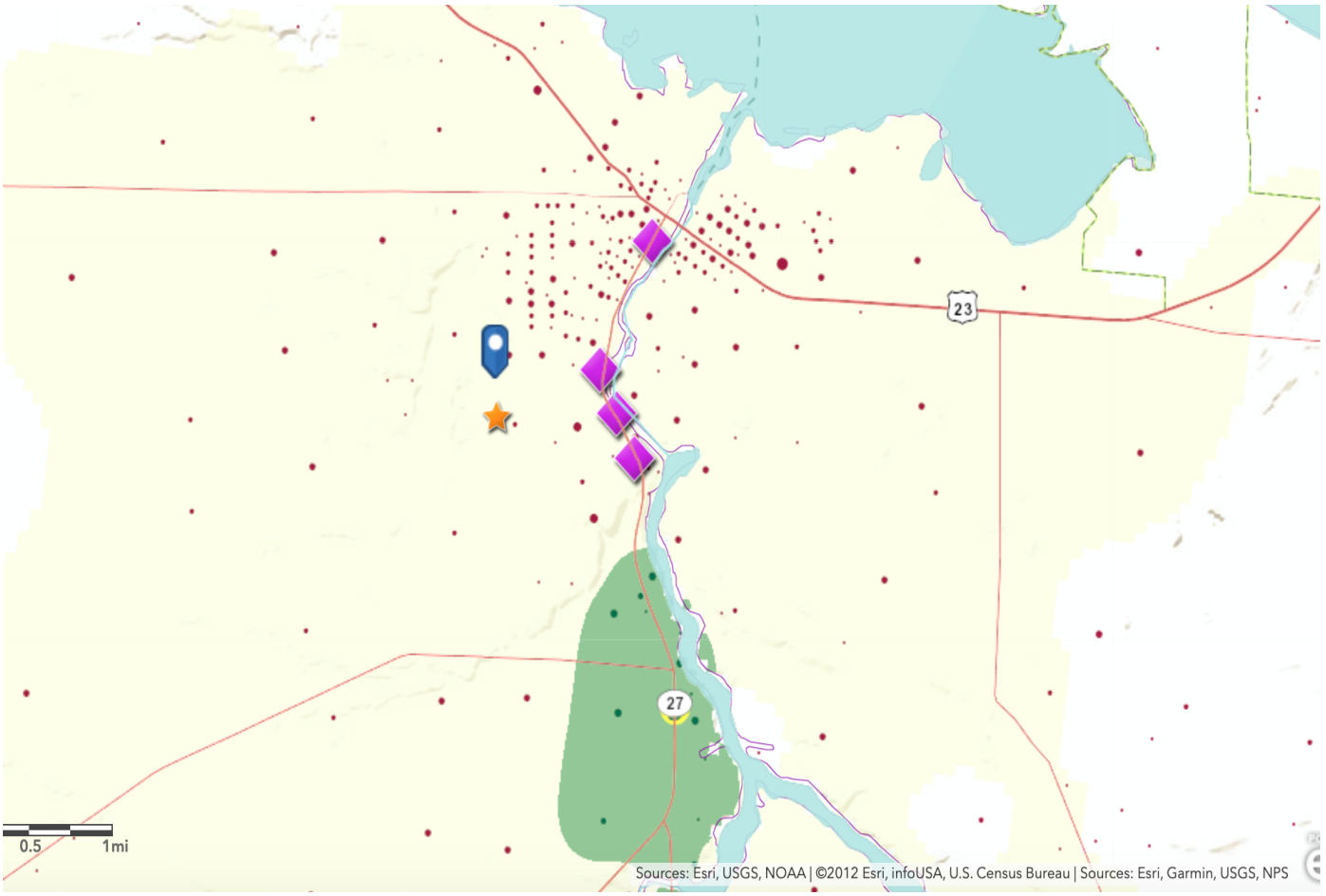
Feature	**Definition**
	Supermarket
	Within a one mile walk to supermarket
	Within a 10-minute drive to the supermarket
	Population density of those living in poverty (larger dots indicate a greater density)
	School (GLSD and PSD) - Non pickup location
	Food Pickup Location - School
	Food pickup location - Non-school
	School district boundaries
	Fast food restaurants

Fig. 11: Map of GLSD (a): displaying school district lines, population in poverty, fast food restaurants, GLSD schools, and supermarkets. The purple outline denotes district boundaries.



Feature	Definition
	Supermarket
	Within a one mile walk to supermarket
	Within a 10-minute drive to the supermarket
	Population density of those living in poverty (larger dots indicate a greater density)
	School (GLSD and PSD) - Non pickup location
	Food Pickup Location - School
	Food pickup location - Non-school
	School district boundaries
	Fast food restaurants

Fig. 12: Map of GLSD (b): food locations, zoomed in to display high school and food pickup location (star) and middle school (arrow), in addition to access to the district's main supermarket, represented by the large green area.



Feature	Definition
	Supermarket
	Within a one mile walk to supermarket
	Within a 10-minute drive to the supermarket
	Population density of those living in poverty (larger dots indicate a greater density)
	School (GLSD and PSD) - Non pickup location
	Food Pickup Location - School
	Food pickup location - Non-school
	School district boundaries
	Fast food restaurants

GLSD Geospatial Analysis

To assess GLSD geospatially, we must examine Fig. 11 and Fig. 12 which show a wide and up-close view of the district. In terms of the district's size, conducting a square mile measurement of Fig. 11 shows that GLSD covers approximately 276 square miles of land. For a district with 1,563 students, the ratio of students to square miles of land is about 5.66 students to 1 square mile of land. This low number is indicative of GLSD's large geographic spread -- conversely, Chicago Public Schools serves 359,476 students in 233.8 square miles of land, making the students to square miles ratio much denser, at about 1,537 students to 1 square mile of land.[31] This piece of information is a key difference between urban and rural districts when considering factors like food accessibility and distribution.

There are a few key things to point out in the maps of GLSD. First, we notice that in Fig. 12, the schools, fast food restaurants, and supermarkets are in the same central location. We also see that this corresponds with a higher population density of those in poverty and experiencing low food access (noted by the large number of red dots near the north-center of the district). So, it would make sense that a greater population lives in the north-center of the district nearby restaurants and schools, while less people live on the east and west extremes.

In addition, it is clear that there are limited food options compared to a nearby city in the state. Only one supermarket supports the district, and we can see four fast-food locations, both in the north-center of the district. As a result, more people living in the north-central part of the district have access to these food sites, while those people living further away have much less access to food overall. Indeed, a family living on the outskirts of the district might have to travel 13.5 miles to access the nearest supermarket.

[31] Niche, "Chicago Public School District"

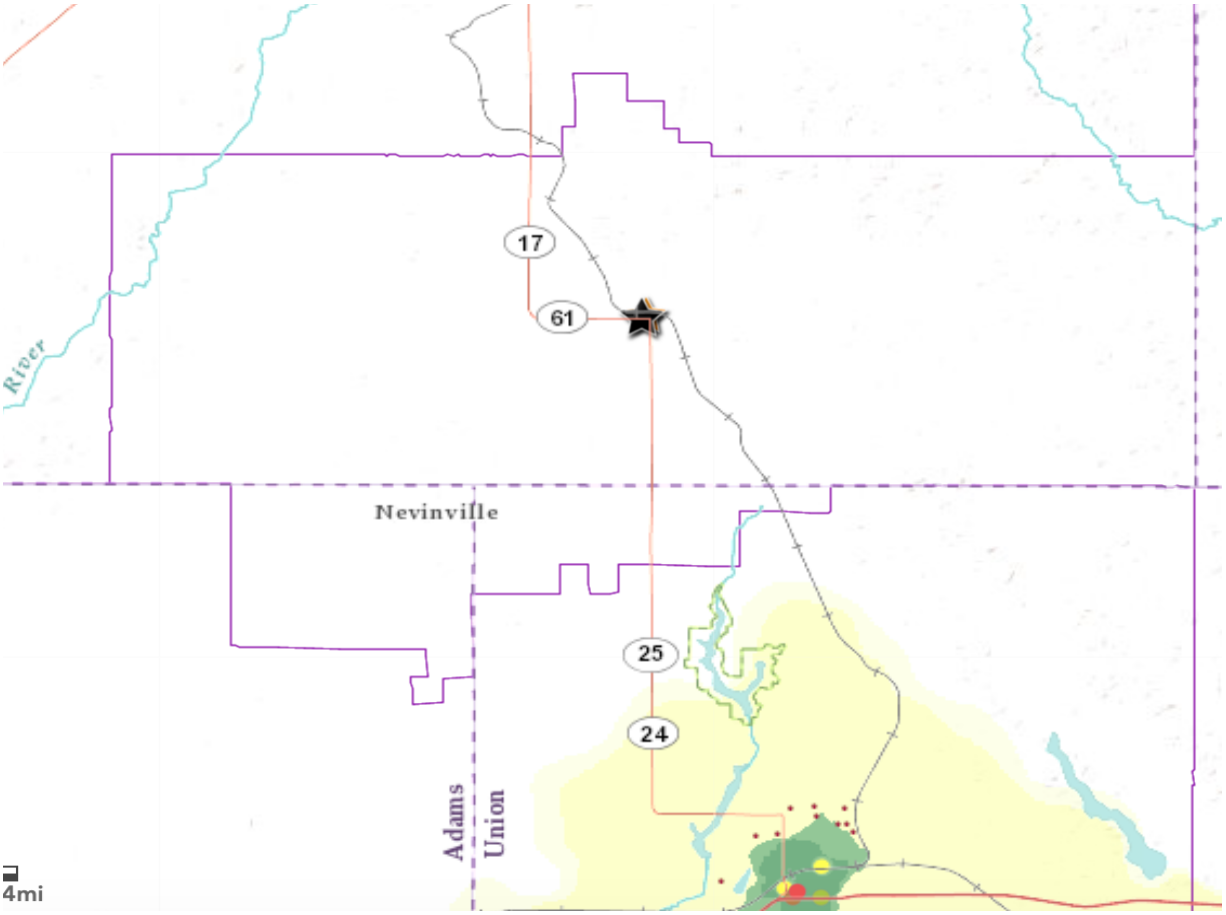
Now, we can examine supermarket access. Only a few people fall within the category of "within a one-mile distance to the supermarket," while many more have access to the supermarket in under ten minutes by car. Thus, we can assume that if people do have access to transportation, the majority of the district has access to the supermarket, while those without transportation have much less access to the supermarket. Compared to the district's most densely populated region, we see that the supermarket is on average around five miles away for those living outside of the population-dense GLSD center.

In addition, the high school was determined to be the primary pickup location for food service at GLSD and is represented by a star. We see that the high school pickup location is also nearby the greatest population density of those in poverty. Given that the pickup location and the four fast-food restaurants are so close to each other, it is reasonable to assume that most people in this area are choosing between the free food pickup at the schools and the affordable meals at fast-food restaurants. If they have a car, it is likely that they are choosing between these two food access locations as well as the supermarket.

Of major concern are those populations in poverty who do not have access to transportation and live close to both fast-food restaurants and the food pickup location. Since the food pickup is only available at a limited time from 1:00-1:30pm on Fridays, those individuals without transportation may find themselves more and more often at fast-food restaurants when they could benefit from the more nutritious school's pickup program.

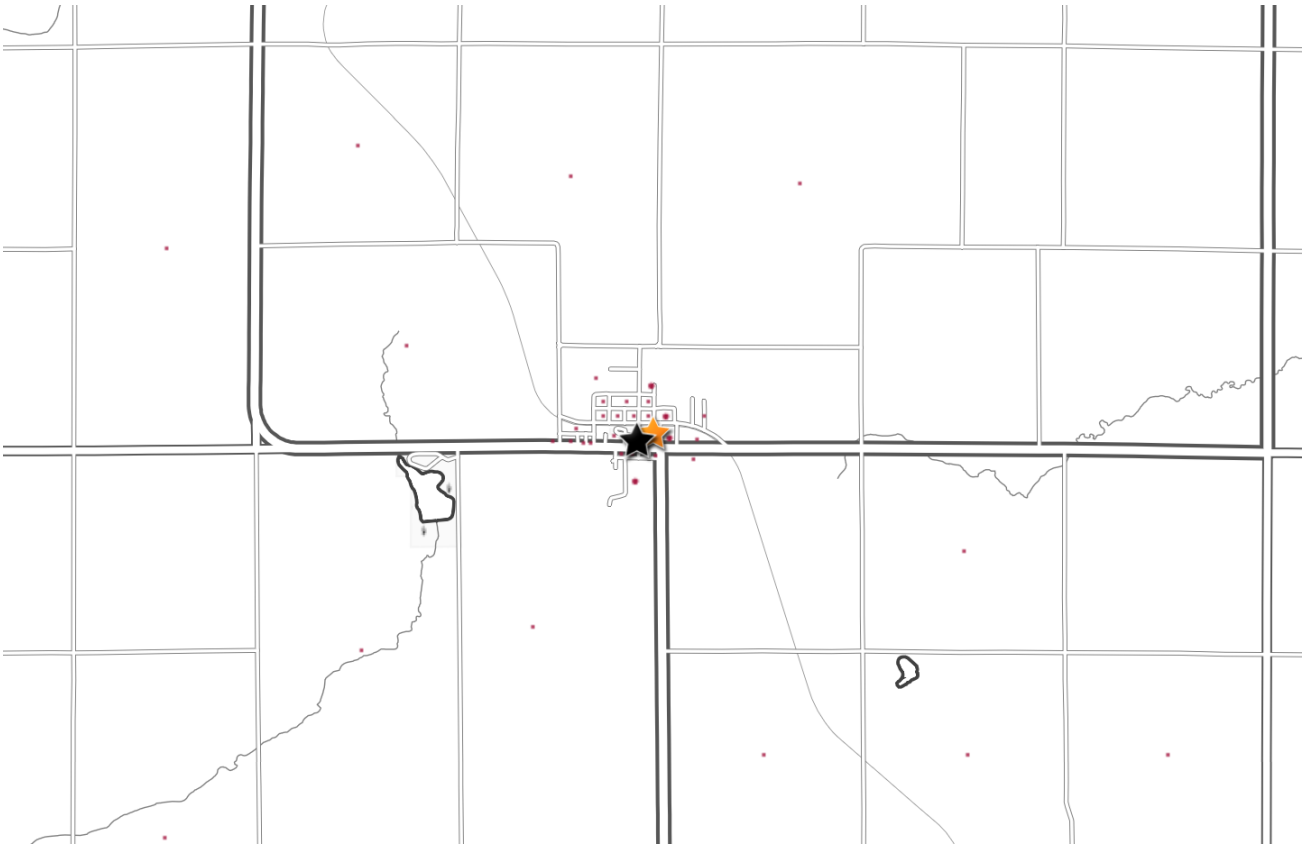
Finally, while the majority of food access and schools reside in the north-central part of the district, GLSD's intermediate school is in the south. Interestingly, GLSD chose to have only one school pickup location in the north-central location, disregarding the potential for access in the south.

Fig. 13: Map of PSD (a) displaying school district lines, population in poverty, fast-food restaurants, school, and supermarkets. Note that unlike GLSD, PSD has no major supermarkets within its boundaries, and the closest supermarket is six miles outside the district bounds.



Feature	Definition
○	Supermarket
	Within a one mile walk to supermarket
	Within a 10-minute drive to the supermarket
•	Population density of those living in poverty (larger dots indicate a greater density)
	School (GLSD and PSD) - Non pickup location
★	Food Pickup Location - School
★	Food pickup location - Non-school
	School district boundaries
◆	Fast food restaurants

Fig. 14: Enlarged view of PSD's most populated center. Notice that there are two pickup locations labeled with stars representing the city hall as well as the school pickup site. We also see a small number of red dots, indicating that of the population which lives there, most are concentrated in the center of the district and also identify as low-income.



Feature	Definition
	Supermarket
	Within a one mile walk to supermarket
	Within a 10-minute drive to the supermarket
	Population density of those living in poverty (larger dots indicate a greater density)
	School (GLSD and PSD) - Non pickup location
	Food Pickup Location - School
	Food pickup location - Non-school
	School district boundaries
	Fast food restaurants

PSD Geospatial Analysis

Fig. 13 and Fig. 14 describe the Plains School District, both in wide view and zoomed-in view respectively. Initially, we might observe the size of the district itself in Fig. 13. PSD covers approximately 184.1 square miles of land, and for a district with only 179 students, we might envision approximately one student per square mile of land (0.97:1). Compared to GLSD, PSD is five times less densely populated by students, indicating a much wider spread across the land in its district.

It becomes even more clear how much more sparsely populated PSD is compared to GLSD when examining population density of low-income individuals. Visible within Fig. 14 are only a few red dots spread out across the district compared to GLSD's much denser groups of low-income individuals, signaling low population density for a community made up of a majority of low-income individuals. Just outside the district lines, there is a supermarket approximately 10.6 miles away from the district's center and most densely populated area--in other words, driving to a supermarket could take a family almost half an hour, and walking would take two and a half hours. The distance to any food distribution location beyond school pickup is few and far between for PSD community members, making the location of their food distribution centers even more important.

Furthermore, Fig. 14 shows no record of major restaurants or fast-food chains in the district. Given the long driving distance from the nearest supermarket, PSD's food pickup sites will likely be the most used during the week. Recall that PSD held food pickup on Mondays, Wednesdays, and Fridays with enough food in each bag to last for two days at a time. PSD's aggressive distribution strategy compared to GLSD's more laid back, once-a-week plan is therefore even more understandable given the lack of alternate food sites in the district.

These food pickup locations are fittingly located at the center of the district with the densest population of low-income individuals, at and nearby PSD's only school. The other site is located at the City Hall, which happens to be only 0.2 miles from PSD's school. However, while these site locations are highly accessible to those living within walking and driving distance of the area, for families outside of this range driving to food pickup sites could be as long as 14.1 miles away. It would therefore make sense as to why PSD has an option for food distribution in addition to their in-person pickup locations.

Putting the Geospatial Analysis in Conversation with SAF Theory

As noted in the "Theory" section of this paper, a key lens to apply to the geospatial analysis is an understanding of how SAFs may play a part in food access. A SAF, recall, is a field of players which interact, collaborate, and compete to serve a common goal; in this case, a SAF in the GLSD and PSD districts is made up of the food pickup locations, the fast-food restaurants, and the supermarkets, among other players, like nonprofit organizations and food banks. As observed in GLSD, we see many more players in this SAF: GLSD includes quite a few fast-food locations as well as a supermarket. GLSD may experience competition among these players in the form of petitioning for families to visit one's business or access one's food pickup site for their weekly meals. Comparatively, PSD has no other food locations other than its food pickup sites, meaning there is less of an opportunity for collaboration and competition among players. It is likely that most PSD food insecure students are therefore depending on a single player: the PSD food distribution sites.

Examining both districts through this SAF lens allows for a deeper understanding of why GLSD and PSD may have planned differently when thinking about how often to provide food to

their students. PSD, knowing that their students would depend on their service more greatly given the lack of SAF players, may have planned its food distribution strategy with the knowledge that it might be a student's only meal. GLSD, however, may have only planned for one pick-up day and one pick-up location due to the availability of other food locations in its district. These potential thoughts should be taken into consideration when considering policy recommendations for large and small SAFs. In the following

Key Comparisons and Takeaways

	GLSD	**PSD**
Geographic spread	Ratio of ~5.6 students to 1 square mile of land; five times more densely populated than PSD	Ratio of ~1 student to 1 square mile of land; five times less densely populated than GLSD
Supermarket access	One supermarket with moderate accessibility for the densest low-income population; low accessibility for those without transportation and those who live far away	No supermarkets within the district bounds; the nearest supermarket is 10.6 miles from the city center; low accessibility for the entire population of PSD
Fast food access	A few fast-food restaurants near the most densely populated area	No fast-food restaurants in district boundaries
Population density	Most dense near the center-north part of the district; more densely populated compared to PSD	Most dense at the center of the district; less densely populated overall compared to GLSD
Number of food pickup sites	One - located near high population density area	Two - both near high population density area
SAF Size	Moderate number of players	Few players

Survey Analysis

I surveyed 25 staff members from GLSD and 12 staff members from PSD on their thoughts, feelings, and observations of their school district's food distribution plan during the Spring and Summer of 2020. A full copy of my survey can be found in Appendix A. Generally, my survey asked staff to rank their perception of various aspects of the program, including equity of access, use of promotional materials, and community perception, on a scale of 1-10 or 1-5, with 1 being the most negative and 10 or 5 being the most positive. In addition, staff could elaborate on their answers in a short answer section.

I calculated statistical summaries and graphs for each variable (variables descriptions can be found in Fig. 15) after cleaning my survey data. A raw copy of the cleaned STATA file used for my analysis can be found in Appendix A.2. For survey short-answers, I used coding to track themes.

Fig. 15: Survey variables and their definitions

dist_food	Do you have knowledge of any food distribution programs?
dist_pickup	Food distribution by pickup
dist_delivery	Food distribution by delivery
partner_banks	Partnerships with Food Banks
partner_nonprofit	Partnerships with Nonprofits/Places of Worship
dist_other	Other distribution
prom_social	Social media
prom_news	Newsletter
prom_email	Email
prom_reachout	Reach out to families
prom_tv_radio	TV, radio
prom_alert	Text alerts
prom_other	Other promotion
effect_strategy	How effective was food distribution?
effect_prom	How effective were promotional materials?
community	Community Perception
consistency	Consistency of Program
equitable	Equitability of Program

For a full explanation of survey questions, see Appendix A.

Average Program and Promotional Material Perceptions Given Summary Statistics (Discrete Variables)

My survey accounted for two types of data: discrete variables, in which I let staff rank their beliefs or perspective about a topic on a numeric scale, and categorical variables, in which I had staff indicate the types of strategies they had heard of or used personally. I will begin with overall perceptions of the program using discrete variables.

GLSD Discrete Variables

Fig. 16: Summary STATA Statistics for GLSD

```
. su effect_strategy effect_prom community consistency equitable
```

Variable	Obs	Mean	Std. Dev.	Min	Max
effect_str~y	25	8.68	1.029563	7	10
effect_prom	25	8.84	1.178983	6	10
community	24	4.625	.4945354	4	5
consistency	25	2.36	1.220656	1	5
equitable	25	8.96	1.098484	7	10

In Fig. 16, GLSD staff ranked both the effectiveness of the overall food distribution and promotional strategies quite highly, at 8.68 and 8.84 out of a maximum positive score of 10 respectively. A somewhat high standard deviation indicates variation; as a result, we might characterize this result as "somewhat effective to highly effective," given the range of responses.

In terms of community perception of the program, teachers also considered it quite high, ranking it 4.625 out of a max positive score of 5. A standard deviation of under 1 indicates low variation, so community perception is indeed quite good according to staff on average.

The programs were only somewhat consistent between Spring and Summer 2020, meaning that the overall logistics and strategy did not change often (the score out of 5 is 2.36,

with a max “high change” score of 5 and “high stability” score of 1). There was a wide range of variation on this question, so “somewhat consistent” fits well.

Finally, staff ranked highly the perceived equitability of the programs with an average score of 8.96 out of 10. Variation is again over 1, but the lowest response is 7, so we might consider this result “equitable to highly equitable.”

In summary, GLSD staff considered the food distribution program and promotion to be quite good, the community perception to be extremely good, the consistency of the programs as average, and the equitability of distribution as quite good.

PSD Discrete Variables

Fig. 17: Summary STATA Statistics for PSD

```
. su effect_strategy effect_prom community consistency equitable
```

Variable	Obs	Mean	Std. Dev.	Min	Max
effect_str~y	10	8.3	1.251666	7	10
effect_prom	9	7.888889	1.964971	4	10
community	10	4.8	.421637	4	5
consistency	10	3.9	.875595	3	5
equitable	10	9.4	1.074968	7	10

Next, we consider Fig. 17, which includes summary statistics for PSD. Note that N=10 for these responses, as two responses indicated not being aware whatsoever of any distribution or promotional activities. As a result, these two survey results will not be compared with GLSD, but one should take note that two staff members did not know anything about their school’s promotional activities.

First, PSD staff ranked strategy effectiveness “high to extremely high” given its mean of 8.3 out of 10, and a high level of variation between its max of 10 and min of 7. In contrast, PSD staff did not necessarily agree on how effective promotional activities were for its program--with a mean score of 7.89, the lowest response was a 4 out of 10, and the highest a 10. Extremely high standard deviation for this result indicates the level of disagreement between the staff.

Community perception, however, was both positively ranked and agreed upon across the board. With an average score of 4.8 out of 5, PSD staff believed that the community approved of their programs.

Next, PSD staff believed that their program strategy changed somewhat frequently, with a consistency score of 3.9 out of a maximum change score of 5. Low variation shows agreement among staff for this question.

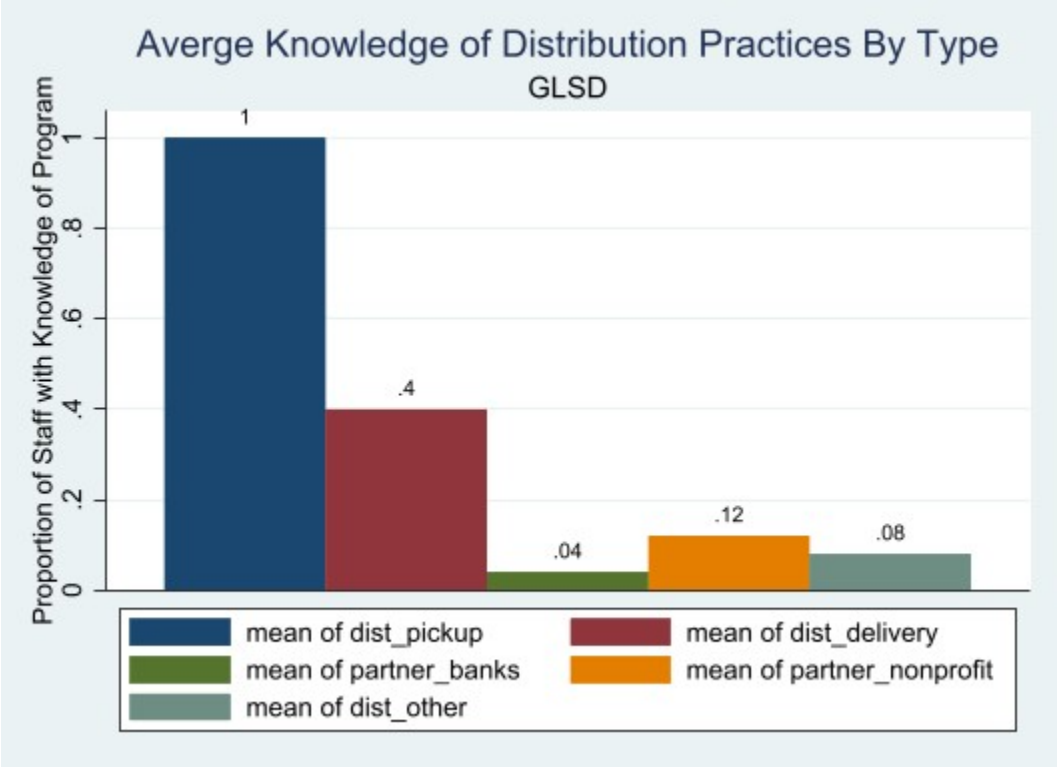
Finally, PSD also ranked equity quite highly, with a mean score of 9.4 out of 10. The variation was somewhat high on this result, yet the lowest equity score was a 7 out of 10, indicating that PSD staff believed its programs to be “equitable to highly equitable.”

In summary, PSD staff believed the food distribution strategy to be quite effective, while disagreeing on the promotion material’s effectiveness. PSD staff overwhelmingly agreed that community perception was very good, and also agreed that the program changed somewhat between the Spring and Summer of 2020. Finally, most PSD staff believed their program to be quite equitable.

Staff Knowledge of Food Distribution Program and Promotion (Categorical Variables)

Next, I tracked whether or not staff had heard about a specific type of food support program offered at his or her school as a part of their COVID-19 strategy. Staff could answer "yes" (coded 1) or "no" (coded 0) to having heard of pickup services, delivery services, partnerships with food banks, partnerships with nonprofits, or other types of distribution strategies. A graph of the proportion of teachers who had heard of each program or partnership is below.

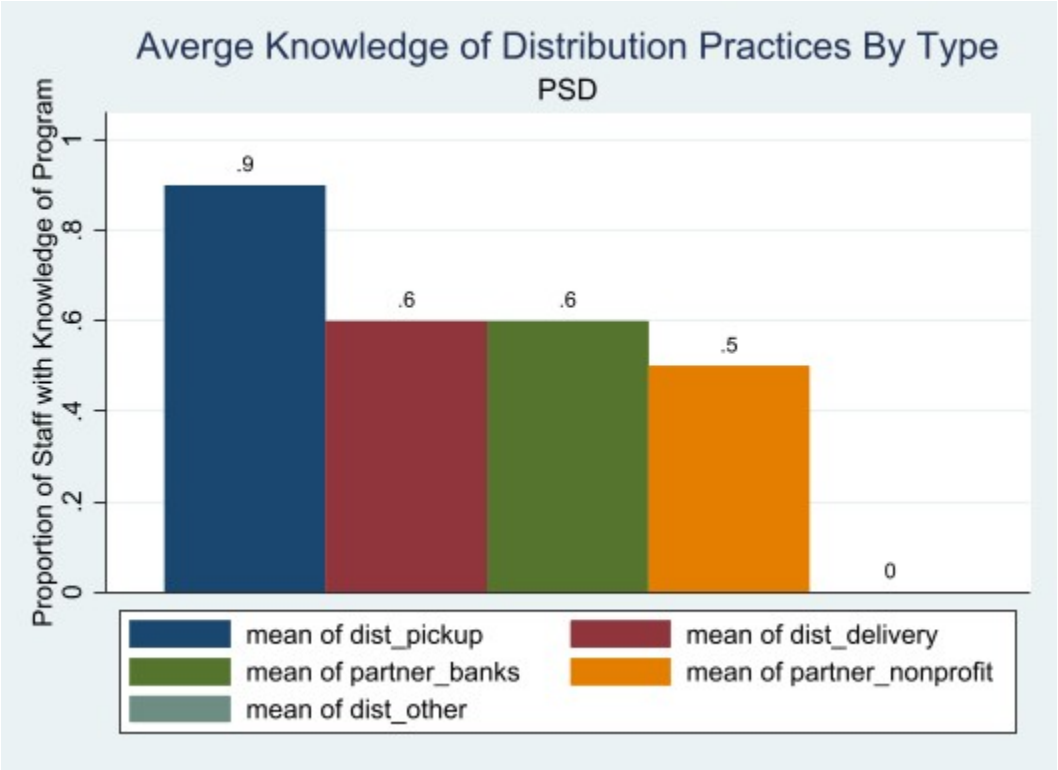
Fig. 18: GLSD Staff Average Knowledge of Distribution Strategies, by Type



In Fig. 18, 100% of GLSD staff had heard of their pickup site location in some form. The next most-heard of was delivery, and the third most-heard of was partnerships with nonprofits. Interestingly, GLSD did not advertise any partnerships with nonprofits in any form, yet 12% of teachers reported hearing of them. In addition, GLSD never advertised a delivery program, although 40% of teachers responded affirmatively to this question. This raises a question about

whether nonprofit and delivery services were communicated in other ways other than in the online documents I assessed in my "Document Analysis" section.

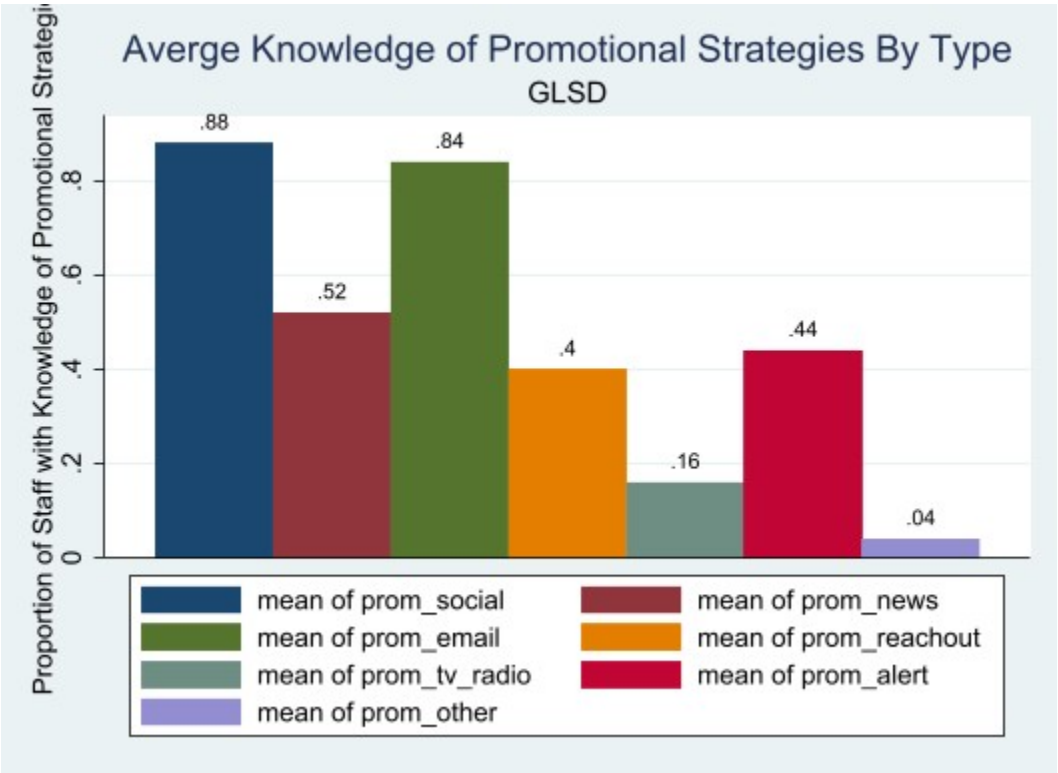
Fig. 19: PSD Staff Average Knowledge of Distribution Strategies, by Type



Comparing Fig. 18 and Fig. 19 show us that for PSD, the results were somewhat more consistent. The most heard-of distribution method was pickup (90%), and the next two were delivery and food bank partnerships (60%). Finally, only about 50% of PSD staff heard about partnerships with nonprofits. Like GLSD, these observations raise questions of consistency among promotional materials. While I saw evidence of PSD's pickup and delivery programs online, I did not read about any partnerships with nonprofits or food banks.

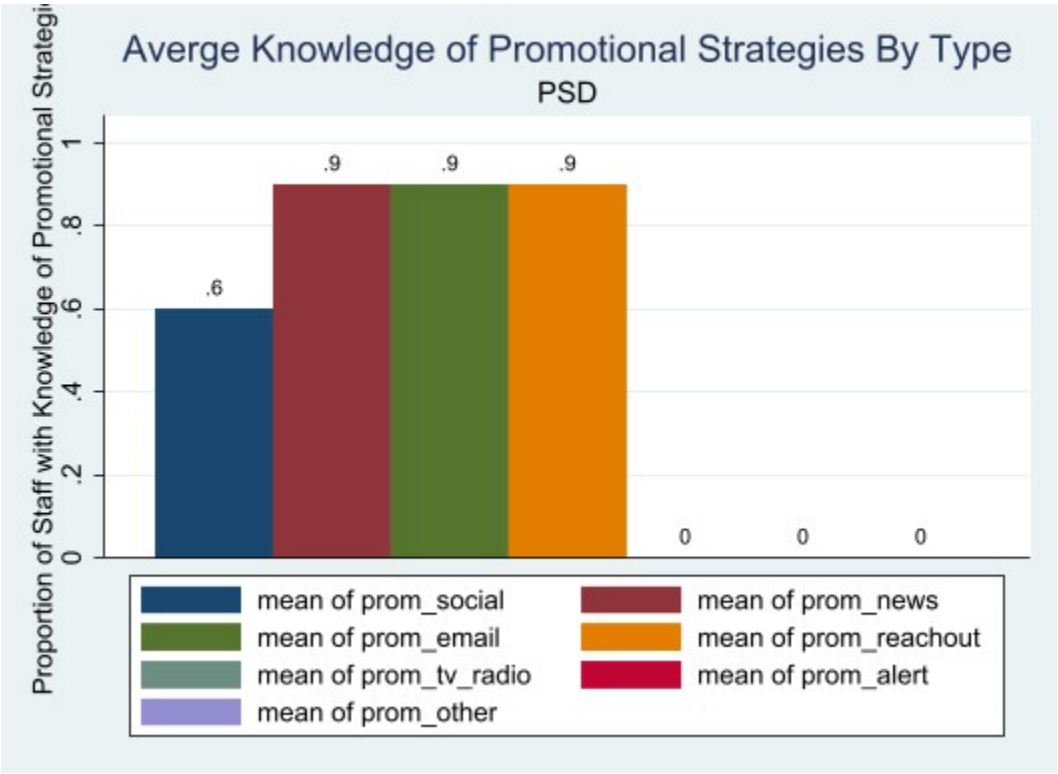
In the same fashion, I assessed whether or not staff had heard of or personally used various promotional tools to communicate different food support services. Again, “yes” was coded 1, while “no” was coded 0.

Fig. 20: GLSD Staff Average Knowledge of Promotional Strategies, by Type



According to Fig. 20, the 88% of respondents noted social media use in their promotional material strategy, and 84% noted email correspondence with families. These two strategies were the most heavily utilized overall. The next highest at 52% of affirmative responses was use of the school newsletter to promote food programs and use of a text alert system at 44%. Finally, only about 40% of respondents reached out to students and families about food programs via phone.

Fig. 21: PSD Staff Average Knowledge of Promotional Strategies, by Type



Comparing Fig. 21 and Fig. 20, we see that PSD had quite consistent responses compared to GLSD. At a three-way tie of 90% affirmative response, PSD staff reported hearing about or using email, newsletters, and personally reaching out to families as food promotional strategies. Then, 60% of respondents cited the use of social media to promote the program.

Short Answer: Themes and Trends by School District

In the final part of my survey, I asked staff to elaborate on some of their answers. I then coded some of the most common themes from the survey responses using the key below. The key is divided between what I consider a challenge for the district and a success. Challenges are in red, and successes are in green. The count is representative of the frequency that staff mentioned each challenge or success in a short answer response.

GLSD Short Answer

Fig. 22: Codes and Counts for GLSD Short-Answer Data

Code	Count
Geographic distance (hard to get food distributed across such a large area)	6
Lack of transportation for families to access food	8
Poor timing (food pickup was not at an accessible time)	7
People taking advantage of the program	3
Poor food quality	2
Community togetherness	9
Accessibility	5
Equitability	10

Fig. 22 shows that for GLSD, the most discussed challenge was a lack of transportation across a wide geographic area to access the program. Next, staff discussed how timing challenges affected whether parents could access the program's one-day-a-week, half-hour pickup window. In terms of successes, the staff ranked equity and community togetherness most highly.

PSD Short Answer

Fig. 23: Codes and Counts for PSD Short-Answer Data

Code	Count
Geographic distance (hard to get food distributed across such a large area)	2
Lack of transportation for families to access food	2

Poor timing (food pickup was not at an accessible time)	4
People taking advantage of the program	1
Financial difficulties (for the school)	2
A lack of participation/refusal to participate despite family qualifications	3
Community togetherness	6
Accessibility	7
Equitability	7

Conversely, Fig. 23 shows that for PSD, the most frequent challenge noted was poor timing for families to access the one-hour window of food pickup or delivery. Other challenges listed were a lack of transportation, a wide geographic distance, and a lack of or a refusal to participate in the program due to pride. Conversely, PSD staff noted equitability, accessibility, and community togetherness very frequently in short answers as successes.

Key Points and Takeaways from Survey Analysis

1. Both PSD and GLSD noted the difficulty of parents accessing a short timeframe for food pickup.
2. Both PSD and GLSD highlight food distribution challenges regarding a lack of transportation and a large geographic distance to cover. This meant some families often could not drive to pick up food, even if they needed it.
3. Both PSD and GLSD overwhelmingly highlighted the importance of community togetherness and positive community feeling during the food distribution.
4. Both districts relied on email and newsletters to communicate program information, but GLSD relied more heavily on social media than PSD.

5. Staff at both schools knew of pickup and some knew of delivery services, but only around half were aware of external partnerships with nonprofits or otherwise.

Interviews

At GLSD, I conducted two supplemental interviews with teachers Ms. Johnson and Ms. Webster[32] to better understand my survey data. Because of a lack of participation given a smaller school population, I did not conduct any interviews at PSD. As a result, the purpose of these two interviews at GLSD is to support and deepen GLSD's survey results only.

Like with the survey short-answer data, for the interviews I identified a few main themes that each teacher discussed in greater detail. "Constraint" indicates a challenge for the district's food program, whereas "Success" indicates a positive method or result. Sub-themes, like "Geographic," "Financial," and "Community" all indicate the topic or reason that a particular observation was successful or challenging. Finally, "General knowledge of programs and partnership" is neither positive nor negative, and rather reflects overall understanding of the program itself. This section is an outlier from the aforementioned themes and is coded separately.

The number of times each theme appeared is displayed in Fig. 24. I color-coded each sub-theme for ease of visualization in the interview. The interview transcripts can be found in Appendix B.

[32] Names changed.

Fig. 24: GLSD Interview Codes and Counts

Code	Count
Constraint - Geographic	3
Constraint - Financial	1
Constraint - Time	7
Constraint - Other	1
Success - Community	5
Success - Accessibility	5
Neutral - General Knowledge	2

A main concern which was consistently raised in both GLSD interviews was the need for an extended timeframe within which students could pick up food. Currently, GLSD has a 30-minute block on Fridays where families can access the food pickup program at 1:00pm, yet according to my two sources, this timeframe was not nearly long enough.

Next, geography was cited as a major deterrent to GLSD's food pickup program. When asked about difficulties families had accessing food, Ms. Johnson states that:

> *I know some districts that took the buses out on the bus routes, but we did not do that. We are a pretty big rural district. And so, um, I think that would have been a big, you know, expense. It was a big savings for us to not have to take the buses out every day. Yeah. So, then that, that helped us put more into some of the other things we were doing, like the food [pickup] program. So, I think that might've been a limitation if a*

family didn't have transportation.

Ms. Johnson here explains how GLSD's food distribution system was centralized at the school, primarily due to geographic and financial barriers. As a result, she notes that it could be a limitation if a family "didn't have transportation" to be able to drive to the site and pick up food. Building on this response, Ms. Webster notes that:

We also had a man who is in charge of our backpack program (food and hygiene essentials) drive to a few houses to drop off food. He was also occasionally with us to hand out hygiene essentials to people in our food pick up line.

Ms. Webster explains that, by his own accord, a man from the school handed out food to families who couldn't reach the pickup site. This indicates that some families could not access transportation due to geographic and transportation reasons. Yet, it also highlights the reliance the district had on its community, as this individual was a volunteer.

Finally, the interviews highlighted the various successes that teachers perceived in their program. Sentiments of community togetherness and praise for overall accessibility dominated the interviews. For example, Ms. Johnson states:

I think just getting food into the hands of the families, um, I think, I think it went really well. I mean, they were out there in the parking lot with their crates and people just drove up in their vehicles and it seems really well organized. Um, there are a lot of volunteers

that would come in and, uh, you know, sort this stuff out. And so, the, um, bags and boxes, uh, they just seemed really affected at it.

In this way, families, students, and teachers supported each other during a time of crisis. Success was primarily explained in terms of how community members felt rather than baseline statistics. This indicates that there was a positive sense of community overall.

Each theme discussed briefly in this section supported the results I received in my survey data and added a layer of personal perspective that I could not capture in my survey alone. Next, I will discuss the six key findings and subsequent policy recommendations that arise from my document analysis, my geospatial analysis, and my survey and interview conversations with staff.

POLICY RECOMMENDATIONS

Based on the previous findings, there are certainly ways that the two rural schools can improve and revise their strategy to best meet the needs of their food insecure students. My recommendations primarily center around four of the most surprising, most noted, and most critical themes, in terms of programmatic successes, challenges, and general strategy, among all aspects of my research. I will therefore organize my recommendations underneath each critical observation, which will be labeled numerically and discussed under the themes of (1) geography and transportation, (2) timeframe access, (3) promotion, and (4) community. While one might make more recommendations based on the wealth of data unearthed by my analysis, the following four themes proved to be most common and impactful in all aspects of my research.

Key Observation 1 – Geography and Transportation: Overwhelmingly, GLSD and PSD both noted challenges with geographic distance and a lack of transportation to food pickup sites. In addition, while teachers knew about external partnerships, no information was provided to families about these opportunities.

Recommendation One: More Partnerships with Outside Organizations

Both districts expressed how difficult it could be to reach food insecure students who could not, for transportation, distance, or other logistical reasons, access their food pickup site. Several teachers highlight a need for a broader spread of resources, yet as staff interviews revealed, financially, this was not always possible for the district. Logically, I wondered if staff had considered partnering with nonprofits and food banks in the area to broaden their reach--perhaps this could be a solution to the district's inability to reach students in the country. Yet, when I analyzed the survey results, I found that multiple teachers were aware of outside partnerships with food banks and nonprofit organizations like the Salvation Army but they very rarely, if ever, advertised these services online to parents. Instead, families were likely led to external services by word of mouth, decreasing the likelihood of many families accessing these services overall. When taking into consideration the fact that the majority of these families were out of range of supermarket access, it is crucial that families are made aware of their alternate options to alleviate this issue of geographic distance and lack of transportation.

I therefore recommend that the school district promote partnerships with these outside organizations just as they would with their own pickup services. As established in my analyses, it is clear that the districts are unable to meet the nutritional needs of their entire population given the size of their geographic reach. However, partnerships with nonprofits, food banks, places of

worship, or other food service providers would greatly expand this reach beyond what the school is immediately offering. Furthermore, both schools highlighted financial restrictions as a challenge. Partnerships with other organizations could mean that entire families can access food at a low cost or free of charge--and at no cost to the district. Most importantly, as a part of this partnership, the school district should make families very aware of these alternative services through their promotional strategies on their websites, newsletters, and social media sites, which have already proven to have been successful in promoting their individual pickup and delivery programs.

One potential barrier to this recommendation could be that no nonprofits want or are financially able to partner with the schools. If this is the case, the districts might want to seek out a federal or state grant to support their ability to directly impact their students, as discussed in the first recommendation. Federal assistance programs could enable the districts to expand their reach as they hire more staff, rent more transportation vehicles, or set up more sites across the district.

Recommendation Two: Greater Communication About Federal Programs

In addition to increasing access, it is important to make families aware of alternate options for accessing food beyond local food pickup options. While I found that schools rarely communicated information about external partnerships, in addition, the document analysis revealed that schools did not provide families with information on how to receive federal support in the form of stimulus checks or SNAP food stamp benefits. For families experiencing poverty and food insecurity that cannot easily access pickup locations, these benefits could be an invaluable resource.

It is therefore important that the school districts provide families with the information and resources to access these federal benefits. Some teachers noted that the district was already sending text and email reminders to their students' families about the pickup programs, and it would be quite simple to add a link to a federal website or information about how to access food stamps at the ends of these messages. The districts could also include a direct link to these services on any of their online resources, increasing the likelihood of parents clicking on it and increasing their access to food.

One potential barrier to this recommendation could be that families simply do not access or see the linked information. In this case, there is very little the school could do to further encourage federal program sign up. As a result, it is important to implement this recommendation in addition to Recommendation 1 so that families have multiple external options for accessing food beyond government assistance.

Key Observation 2 - Access: Both districts wished they had more accessible timing windows for their pickup option.

Recommendation Three: Increased Access by Broadening Time Window

My analysis showed that both districts' programs only allowed access at highly restricted times, namely, from 1:00-1:30pm on Fridays for GLSD, and from 9-10am on Mondays, Wednesdays, and Fridays at PSD. Multiple teachers noted how families struggled to leave work or home early enough to make this time window, and others discussed how families were still waiting in line when the time slot closed. For GLSD, major concerns were raised in regard to where the students might access food on Mondays through Thursdays especially when they qualified for weekly free and reduced lunch services--especially since GLSD has a number of

fast-food options as some of the only alternatives to its food pickup program. In addition, interviews with staff confirmed that this pickup was restricted only to students and not their families, meaning that children could receive one meal for free, once a week. At a time where an entire family was likely experiencing food insecurity, this could certainly be a barrier to accessing food. At PSD, staff worried about morning pickup times for families being a deterrent to pick up. Indeed, geographic analysis shows what a great distance each district spans--some families in PSD, for example, could find themselves 14+ miles away from their school. Without a reliable form of transportation, site access within a certain time frame could be nearly impossible.

So, what can a rural school district and community do to increase food access and subsequently equity in a reasonable way? First, allowing families access to food even one more day per week at GLSD would both increase the opportunity to pick up food as well as increase the number of days students are being fed. It also decreases the likelihood of families relying on unhealthier sources of food, such as fast-food restaurants. Next, the window for pickup should be extended to a longer and later time in the day, perhaps around 4 or 5 pm, to allow working families to pick up food. At PSD, changing the pickup time to one more agreeable with parents' work schedules could be a solution to staff's morning pickup timeframe concerns.

Potential barriers for implementing these recommendations include limited finances and limited personnel available to produce and staff more food distribution days or later timeframes. Given the small size of each district as well as the high poverty rate of their communities, increasing cash flow to a food distribution program could be difficult to do. And, given that both districts are small rural communities, there might be limited amounts of food staff willing or able to work overtime. One solution to this barrier could be receiving emergency funding from the

state or county. This grant could support the salaries of food workers and potentially hire more temporary workers so that sites could remain open for longer periods of time, alleviating this barrier to access.

Key Observation 3 - Promotion: Both PSD and GLSD used email and newsletters to advertise their programs most often, but GLSD relied more on social media. PSD staff highlighted a dissatisfaction with their lack of social media presence, which is consistent with its lack of social media presence in my document analysis.

Recommendation Four: Frequent Posting on Multiple Platforms to Increase Accessibility

What most stood out to me in my continuous variable research for PSD was a sense of dissatisfaction among staff about effectiveness of promotional materials. Indeed, when I conducted my document analysis, GLSD outperformed PSD in terms of posting frequently about food distribution logistics, access, and general information during the Spring and Summer of 2020. I could only find two posts from PSD on their Facebook page about food support, and their newsletter menus were only released once per month with limited detail, compared to GLSD, which released a new, comprehensive food menu every day. Teachers, too, alluded to the fact that PSD could have used its promotional materials more effectively. PSD highlights how, alternatively, staff reached out to many families individually. While this may have built a strong tie between teacher and parent, calling parents one by one can certainly become very time-consuming. Given that GLSD received such high marks on its promotion materials, it makes sense to push PSD to post more frequently online, rather than relying solely on teachers to communicate details of food pickup programs.

I recommend that PSD increase its social media presence and number of posts rather than only relying on its staff to communicate this information individually. Consistent, once-a-week posting with a brief description of the menu, logistical pick-up information, and otherwise could save teachers hours of conversations and allow them to direct their attention to supporting the program itself.

One challenge to this policy recommendation could be that some families in PSD cannot access social media or website posts due to a lack of internet or otherwise. In this case, this policy recommendation does not completely deter parents from contacting teachers or vice versa, but would rather save teachers time communicating with families who do have access to this information online. In that case, teachers should focus their efforts on families without access to online resources and connect with their families on an individual basis.

Key Observation 4 – Community: Throughout all aspects of my research, I found that both districts attributed much of their successes to strong community ties within their programs. Teachers cited again and again the importance of community, togetherness, and dependability in their surveys, interviews, and social media posts.

Recommendation 5: Continue to Rely on Community and Promote Small-Town Values

A consistent positive that came out of both school districts was a deep sense of togetherness and community pride. Community perception of both programs was extremely positive, and many teachers posted photos online of community members supporting each other by carrying boxes of food outdoors. In interviews, teachers discussed the importance of the community, and the value of togetherness during a challenging time apart.

A positive aspect of many rural communities is what is known as "small town values," in which the small size of a community often means people depend on each other to a greater extent. Members of small communities also are more likely to cross paths with each other and build friendships and ties with their neighbors.[33] In each rural community, "togetherness" became a common positive theme. I therefore recommend that both districts continue to rely on and deepen its ties within the community to increase support and positive feeling. In addition, districts should consider relying more on community members to support in areas like delivery, which they might not have internal resources to execute alone. For example, teachers sometimes noted the difficulty of delivery given time constraints, so could it be possible for a community member to volunteer as a delivery driver and reach more people in that capacity? The answer to this question, as well as others like it, will need to be answered by the districts and the community itself, but it is clear that community indeed plays a large role in the success of each district's program, and that it could be relied on more heavily.

One perceived challenge to this recommendation could be an eventual loss of community due to long-term isolation because of the pandemic. If this is the case, schools could utilize online means of connecting with families through Zoom and other online platforms to rebuild a sense of community. However, at the time when these interviews were conducted, the pandemic had been in effect for nearly a year—and teachers noted no decline in community togetherness. As a result, it is unlikely that this "small town value" could disappear overnight.

[33] Marohn, 2008

CONCLUSION

This paper has critically examined two rural Midwestern school districts and their strategies to support food insecure students from afar during the COVID-19 pandemic of 2020. Using a mixed method approach, I attempted to answer the research question: "How have rural school districts affected by COVID-19 strategized to distribute meals to their food insecure students, and to what extent were their strategies effective in promoting equitable food access?" I found that each rural school district succeeded at providing families and students participating in the program with a deep sense of community; providing somewhat accessible food pickup and delivery services to families; and utilizing promotional materials to advertise programming, all three of which amplified equity of access. Conversely, the districts faced challenges navigating geographic span and a lack of transportation to food pickup sites; too short of time windows for easy food access; and a lack of promotion online about external partnerships for both districts, and a lack of promotion about food services overall for PSD. These observations, among others, have informed my five main policy recommendations to increase equity in both PSD and GLSD: (1) More partnerships with outside organizations to alleviate geographic distance; (2) Greater communication about alternate federal and state assistance; (3) Increased access to pick-up sites by broadening timing windows; (4) Frequent posting on multiple platforms to increase accessibility; and (5) Continued reliance on community.

Theoretically, my use and modification of both McLoughlin, et. al.'s Getting-to-Equity framework and Fligstein's Strategic Action Field theory opens up new avenues for how these two theories might be used in similar studies. First, as McLoughlin, et. al. notes in their research, GTE has in years prior only been utilized as a personal health assessment, and never to assess equity in emergency school district. By modifying McLoughlin, et. al.'s urban interpretation of

the framework, I generated a checklist to determine equity among promotional and access strategies in rural district food programs. Given that this framework has never been used in this capacity before, this research also opens up the possibility of other rural schools using GTE to assess how equitable and accessible their own emergency food distribution programs are. Likewise, I employed Fligstein's theory on SAFs to better understand what other competing players existed in the field of emergency food distribution for each district. Again, to my knowledge this theory has never been used on the particular case of emergency food distribution during COVID-19; yet the theory's successful framing proved to be immensely useful in my research. As a result, the implications of this research also open up use of field theory in emergency food distribution scenarios like this one.

This study has attempted to address a gap in the recent COVID-19 food distribution emergency response literature, particularly that of McLoughlin, et. al, in which urban districts were assessed in their ability to distribute food to their food insecure students. My analysis shows in particular the impact that rural geography and community has on supporting food insecure students, which are trends not examined in McLoughlin, et. al., and are highly unique to rural America. Most importantly, my analysis shows that rural strategies for supporting food insecure students must differ and build on their unique strengths in order to be the most effective. The broader implication of this paper is the importance of distinguishing between rural and urban when implementing emergency policies like food distribution programs. It also points to the necessity of rural school district research, especially surrounding urgent policy questions like emergency food distribution, in which the effects and strategies differ from urban districts.

While this paper has provided a case-study-based perspective on how two rural schools can more successfully support their food-insecure students, further research should investigate

the question of how rural schools supported their students across many more districts. My paper provides a deep understanding of the nuances of PSD and GLSD's strategies, but these results cannot be generalized across each rural district in America. As a result, future research should take similar themes highlighted in this study and study these topics with many more rural districts. Doing so will allow researchers to make more generalizable policy recommendations that could apply to many schools across America.

Nevertheless, this work provides an intimate look at the successes and challenges two rural schools encountered when strategizing to support their students during a worldwide pandemic. As students return to school this Spring, and as the world returns back to some semblance of "normal," it is my hope that rural schools feel more prepared to support food insecure students if and when they ever must return to remote learning in the future. Most importantly, while the impacts of COVID-19 are great and will affect all of us for years to come, as staff from both GLSD and PSD proudly expressed, it is the people of one's community who we must hold on to, cherish, and support, no matter the obstacles ahead.

APPENDIX

Appendix A: Survey Questions

Food Distribution During COVID-19 Survey

Thank you for taking this survey. Your responses will aid our research in understanding the different strategies that schools use to distribute food to students qualifying for free and reduced lunch during unprecedented events like COVID-19. Please not that your response is anonymous unless you opt to share your name and contact details at the end of the survey. Any and all questions or comments may be directed to the researcher, Stephanie Wallen, via email at swallen@uchicago.edu.

* Required

1. By continuing to complete this survey, you are consenting to participate in the research. You may find the survey consent form, as well as research details, details on confidentiality, and data security, here. [I will link the electronic consent form here.]

   Mark only one oval.

   - ◯ I consent
   - ◯ I do not consent

Food Insecurity During the COVID-19 Pandemic

Thank you for taking this survey. Your responses will aid our research in understanding the different strategies that schools use to distribute food to students qualifying for free and reduced lunch during unprecedented events like COVID-19. Please not that your response is anonymous unless you opt to share your name and contact details at the end of the survey. Any and all questions or comments may be directed to the researcher, Stephanie Wallen, via email at swallen@uchicago.edu.

2. To your knowledge, has your school or school district provided any resources to support students who may not have consistent access to food during any point of the COVID-19 pandemic? (Examples may include: food pickup or drop-off services, partnership with local food banks, information regarding where parents could pick up food, etc.) *

   Mark only one oval.

   - ◯ Yes
   - ◯ No *Skip to question 17*
   - ◯ Other: _____

Yes, my school or district directly or indirectly provided information or food for students who needed it.

This section will ask questions about what kinds of services your school or district provided. Please note that all questions are optional -- if you do not feel comfortable answering one question, you may skip it. The survey will take an estimated 5-10 minutes to complete.

7. How effective do you believe these promotional techniques were at reaching students and families who needed them?

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not at all effective	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Extremely effective

8. Please explain your above answer.

9. What was the community perception of these efforts to provide students with food who needed it?

Mark only one oval.

	1	2	3	4	5	
Negative	◯	◯	◯	◯	◯	Positive

10. Please explain.

11. Rate the consistency of food distribution during the pandemic from its beginning in the Spring of 2020 until the present day.

Mark only one oval.

	1	2	3	4	5	
There has been little change in consistency (ability for families to access) food which my school directly or indirectly provided.	◯	◯	◯	◯	◯	There has been a large change in consistency (abili

12. Please explain.

13. To what extent do you believe that access to food was equitable? (Could families from various backgrounds access the food or promotional materials?)

Mark only one oval.

	1	2	3	4	5	6	7	8	9	10	
Not equitable	◯	◯	◯	◯	◯	◯	◯	◯	◯	◯	Very equitable

14. Please explain.

15. In your opinion, what has your school succeeded at in terms of providing food to students who need it during the COVID-19 pandemic?

16. In your opinion, what has been a major challenge for your school or district in terms of providing food to students who need it during the COVID-19 pandemic?

Skip to question 23

No, my school or district did not directly or indirectly provided information or food for students who needed it.

This section will ask questions about student access to food during COVID-19. Please note that all questions are optional -- if you do not feel comfortable answering one question, you may skip it. The survey will take an estimated 5-10 minutes to complete.

17. Did your school or district ever attempt to provide or distribute food to students and families at any point during the COVID-19 pandemic?

Mark only one oval.

- ◯ Yes
- ◯ No

18. Please explain.

19. For students who may not have consistent access to food during COVID-19, are you aware of other sources they may access which would fill this need?

Mark only one oval.

- ◯ Yes
- ◯ No

20. If yes, please explain.

_____

_____

_____

_____

_____

21. What may be the reasoning behind your school or district not attempting to provide food to students during the pandemic?

Check all that apply.

- ☐ Financial or budgetary reasons
- ☐ Logistical limitations
- ☐ Inability to coordinate distribution
- ☐ Other organizations or food suppliers filled this need
- ☐ Governmental assistance (such as SNAP food benefits) could fill this need

Other: ☐ _____

22. If an unexpected event happened in the future which forced students and staff to stay home, what would you like to see change in terms of supporting students who may not have access to food, if anything?

_____

_____

_____

_____

_____

Skip to question 23

Interview option

We greatly appreciate your feedback on this survey. Your insight is an incredible help for further research, and we would love to follow up with you for a brief 15-20 min interview at your convenience. If you are interested in interviewing, please provide your name and contact details below. Thank you very much for your time.

23. Would you like to participate in a brief 15-20 min interview with the researcher at your convenience?

Mark only one oval.

- ◯ Yes
- ◯ No

24. Name (Optional - please fill this out if you would like to interview.)

_____

25. Email address (Please fill this out if you would like to interview).

_____

A.1 Survey Raw Cleaned Data - GLSD

N	dist_food	dist_pickup	dist_delivery	partner_banks	partner_nonprofit	dist_other	prom_social	prom_news	prom_email	prom_reachout	prom_tv_radio	prom_alert	prom_other	effect_strategy	effect_prom	community	consistency	equitable
1	1	1	1	0	0	0	1	1	1	0	0	0	0	8	9	4	2	10
2	1	1	0	0	0	0	1	0	1	0	0	1	0	9	9	5	1	9
3	1	1	0	0	0	0	1	1	1	0	0	1	0	8	9	5	1	10
4	1	1	1	0	1	0	1	0	1	1	1	0	0	10	10	5	3	10
5	1	1	0	0	0	0	0	1	1	0	0	1	0	10	10	5	1	10
6	1	1	1	0	0	0	1	0	0	1	0	0	0	8	10	5	4	7
7	1	1	0	0	0	0	0	0	1	0	0	1	0	8	7	5	2	7
8	1	1	0	0	0	0	1	0	1	1	0	0	0	7	7	4	3	8
9	1	1	0	0	0	0	1	1	1	0	0	0	0	9	9		1	10
10	1	1	0	0	0	0	1	1	0	0	0	1	0	7	9	5	1	9
11	1	1	0	0	0	0	1	0	1	0	0	0	0	8	6	5	3	7
12	1	1	1	0	1	0	1	0	0	0	0	1	0	10	10	4	2	10
13	1	1	1	1	1	0	1	1	1	1	0	0	1	10	10	5	1	10
14	1	1	0	0	0	1	1	1	1	1	0	1	0	8	7	5	3	8
15	1	1	0	0	0	0	1	1	1	1	0	0	0	9	9	5	4	9
16	1	1	1	0	0	1	1	0	1	0	0	1	0	10	10	5	5	10
17	1	1	0	0	0	0	0	0	1	1	1	0	0	7	8	5	2	7
18	1	1	0	0	0	0	1	0	1	0	0	0	0	8	8	4	2	8
19	1	1	1	0	0	0	1	1	1	1	1	0	0	9	8	4	2	9
20	1	1	0	0	0	0	1	1	0	0	0	1	0	8	10	5	4	9
21	1	1	1	0	0	0	1	1	1	0	0	1	0	10	10	4	1	10
22	1	1	0	0	0	0	1	1	1	1	0	0	0	10	10	4	3	10
23	1	1	1	0	0	0	1	0	1	1	1	0	0	9	9	4	3	9

24	1	1	0	0	0	0	1	0	1	0	0	1	0	8	8	5	1	9
25	1	1	1	0	0	0	1	1	1	0	0	0	0	9	9	4	4	9

A.2 Survey Raw Cleaned Data - PSD

N	dist_food	dist_pickup	dist_delivery	partner_banks	partner_nonprofit	dist_other	prom_social	prom_news	prom_email	prom_reachout	prom_tv_radio	prom_alert	prom_other	effect_strategy	effect_prom	community	consistency	equitable
2	1	1	1	0	0	0	1	1	1	1	0	0	0	10	10	5	5	10
3	1	1	0	1	1	0	1	1	1	1	0	0	0	7	7	5	4	8
4	1	1	0	0	1	0	1	1	1	1	0	0	0	8	7	4	3	10
5	1	1	0	1	0	0	0	1	0	0	0	0	0	7	8	5	4	10
6	1	1	1	1	1	0	1	1	1	1	0	0	0	7	7	4	4	7
8	1	1	1	0	0	0	0	1	1	1	0	0	0	8	8	5	5	9
9	1	0	1	1	0	0	0	0	1	1	0	0	0	8	4	5	3	10
10	1	1	0	1	1	0	1	1	1	1	0	0	0	8		5	3	10
11	1	1	1	1	1	0	0	1	1	1	0	0	0	10	10	5	5	10
12	1	1	1	0	0	0	1	1	1	1	0	0	0	10	10	5	3	10

A. 3 List of Survey Variable Labels

dist_food	Do you have knowledge of any food distribution programs?
dist_pickup	Food distribution by pickup
dist_delivery	Food distribution by delivery
partner_banks	Partnerships with Food Banks
partner_nonprofit	Partnerships with Nonprofits/Places of Worship
dist_other	Other distribution
prom_social	Social media
prom_news	Newsletter
prom_email	Email
prom_reachout	Reach out to families
prom_tv_radio	TV, radio
prom_alert	Text alerts
prom_other	Other promotion
effect_strategy	How effective was food distribution?
effect_prom	How effective were promotional materials?
community	Community Perception
consistency	Consistency of Program
equitable	Equitability of Program

A.4 Survey Uncleaned Data - PSD

Timestamp	By continuing to complete this survey, you are consenting to participate in the research. You may find the survey consent form, as well as research details, details on confidentiality, and data security, here: https://drive.google.com/file/d/13aqxHbhGiXt7Onbq-_hxsS3OFdN-ylAk/view?usp=sharing	To your knowledge, has your school district provided any resources to support food-insecure students while conducting virtual learning during the COVID-19 pandemic? (Examples may include: food pickup or drop-off services, partnership with local food banks, information regarding where parents could pick up food, etc.)	In what way(s) did your school or district directly support food insecure students while conducting virtual learning during the COVID-19 pandemic?	How effective do you believe these strategies were at reaching students and families who needed them?	Please explain your above answer in 1-2 sentences.	How did your school or district promote these strategies in the above question?	How effective were these promotions at reaching students and their families, in your opinion?	Please explain your above answer in 1-2 sentences.	What was the community perception of these efforts to provide students with food who needed it?	Please explain in 1-2 sentences.	Rate the consistency of food distribution during the pandemic from its beginning in the Spring of 2020 until the present day.
3/22/2021 13:38:22	I consent	No									
3/22/2021 13:40:53	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example)	10	We let families know what was available they signed up for what worked best for them	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Reaching out to families directly	10	From what I remember, seems every family we contacted we got a response back	5	People in the community were very thankful we were doing this	5
3/22/2021 13:43:58	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Partnerships with local food banks, Partnerships with local nonprofits or places of worship	7	Very rural area with a lot of single parents and families with two parents are both working and difficult to get to school for pick up.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Reaching out to families directly	7	Many families have no access to wifi	5	Good community support	4
3/22/2021 15:40:25	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Partnerships with local nonprofits or places of worship	8	Some parents choose not to participate in the services provided.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Reaching out to families directly	7		4		3
3/22/2021 20:13:05	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Partnerships with local food banks	7	I feel that it is hard to know who really needs the food and if everyone that needs it gets it.	Using a school or district newsletter	8	I felt that the newsletter was available for everyone but not sure if everyone reads it	5	I feel that the community felt positive about it	4
3/22/2021 21:03:06	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example), Partnerships with local food banks, Partnerships with local nonprofits or places of worship	7	The outreach was there, the problem is getting parents onboard with accepting food assistance. Many people refused or rejected the help.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Reaching out to families directly	7		4	We had quite a few take the free meals on a weekly basis, but still had some who refused even though they qualified	4
3/23/2021 8:11:44	I consent	No									
3/23/2021 8:48:39	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example)	8	We had families that live in the town the school is in come and pick up their meals. We also sent meals to a neighboring town and the kids could walk to pick them up. That way if parents worked and couldn't come to town many kids still had access to the meals.	Using a school or district newsletter, Communicating via email, Reaching out to families directly	8	I believe that it was very effective because we had many families participate.	5	The community thought it was a great idea.	5
3/26/2021 13:35:46	I consent	Yes	Food distribution by delivery (someone from the school may drop off food for families, for example), Partnerships with local food banks	8	I feel that the student's don't exactly understand why they are getting food. Although they don't know what it is for I think they are grateful for receiving the food.	Communicating via email, Reaching out to families directly	4	Our school doesn't have great communication with parents, such as we can't get parents to respond to our emails or phone calls. We try to reach out in many different ways, but the feedback we get from parents isn't the best.	5	I feel that the school did what they needed to do for the student's who need the food.	3
3/26/2021 13:38:36	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Partnerships with local food banks, Partnerships with local nonprofits or places of worship	8	It is my understanding that a survey went out to see how to best meet the needs of the families. The community and the school have worked hand and hand to help at this time.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Reaching out to families directly		to my knowledge it was successful. It helps that the communities that make up our school system is small.	5	I don't know exactly, but I know the turn out has been good and I personally feel it has been a great opportunity for families and the communities	3

Timestamp	Please explain in 1-2 sentences.	To what extent do you believe that access to food was equitable? (Could families from various backgrounds access the food or promotional materials?)	Please explain in 1-2 sentences.	In your opinion, what has your school succeeded at in terms of providing food to students who need it during the COVID-19 pandemic?	In your opinion, what has been a major challenge for your school or district in terms of providing food to students who need it during the COVID-19 pandemic?	Did your school or district ever attempt to provide or distribute food to students and families at any point during the COVID-19 pandemic?	Please explain in 1-2 sentences.	For students who may not have consistent access to food during COVID-19, are you aware of other sources they may access which would fill this need?	If yes, please explain in 1-2 sentences.	What may be the reasoning behind your school or district not attempting to provide food to students during the pandemic?	If an unexpected event happened in the future which forced students and staff to stay home, what would you like to see change in terms of supporting students who may not have access to food, if anything?
3/22/2021 13:38:22						Yes	Right after the pandemic started and clear through the summer we delivered meals to certain drop of points.	No		There isn't a need in our district	Probably offer more drop off points.
3/22/2021 13:40:53	We came back to school full time face to face so the food distribution program isn't being used anymore	10	Again, when families were contacted they responded to what their needs were	yes, I believe we have	I don't really think we had any problems						
3/22/2021 13:43:58	Has been consistent	8	fairly equitable in low economic area	have succeeded in relieving some hardship for many families	difficulty in parents obtaining gas for vehicle or taking time off for pick up						
3/22/2021 15:40:25		10		Having set times for pick up.							
3/22/2021 20:13:05	Food is not always provided for students to take home	10	It was available for anyone and everyone	Free lunches for students	Families being able to pick it up						
3/22/2021 21:03:06	Food is still being provided to students but they are no longer taking much home. The majority of it is offered at school during school hours (breakfast and lunch)	7	We have quite a few families who live out of town and/or don't have reliable transportation and/or communication.	We reached students in multiple communities through delivery and various pick up locations.	Some of the students who didn't receive food, didn't have parents or adults to bring them to pickup locations or a way to communicate that they would need food delivered.						
3/23/2021 8:11:44						No		Yes	food pantry	na	
3/23/2021 8:48:39	The reason there has been a large change is because we are back in school so we no longer offer meals because the students are here and can eat lunch.	9	We had two drop off places so it was nice for many people. Obviously there were some that live in the country that couldn't get the meals.	I thought that it was great to have food for families. It could be any of our families too not just low income.	I would say that students that live in the country may not have parents at home that can go get the food for them so if they didn't live it town it was not as accessible to them.						
3/26/2021 13:35:46	I don't think we started this program soon enough and feel we should have reached out and donated food sooner.	10	It didn't matter what the background of the family was, everyone had the same access to the food if they needed it.	We have kept records of those who have received the food and done our best to get the food to different families instead of the same ones each week.	We have a lot of students who need the food, and I feel we aren't able to get enough donations to get to each family that need it each week, we have to pick which families each week instead of being able to provide to every single one each week.						
3/26/2021 13:38:36	I really don't know how to answer this question and it won't let me leave it blank. Our School system has been in session since the beginning in the fall so the kids are getting their breakfast and lunch at school. I know the community still has food give aways but not sure how often.	10	Our community isn't very diverse as well as the school system, but as I see it I feel everyone had the same opportunities.	having meals available since the pandemic started and the kids were not able to go to school and once it has started back the meals are still free.	not sure. I'm sure there has been a lot of paper work.						

A.5 Survey Uncleaned Data - GLSD

Timestamp	By continuing to complete this survey, you are consenting to participate in the research. You may find the survey consent form, as well as research details, details on confidentiality, and data security, here: https://drive.google.com/file/d/13aqxl4bhGXt7Onbq-_hasS3OFdN-ylAk/view?usp=sharing	To your knowledge, has your school district provided any resources to support food-insecure students while conducting virtual learning during the COVID-19 pandemic? (Examples may include: food pickup or drop-off services, partnership with local food banks, information regarding where parents could pick up food, etc.)	In what way(s) did your school or district directly support food insecure students while conducting virtual learning during the COVID-19 pandemic?	How effective do you believe these strategies were at reaching students and families who needed them?	Please explain your above answer in 1-2 sentences.	How did your school or district promote these strategies in the above question?	How effective were these promotions at reaching students and their families, in your opinion?	Please explain your above answer in 1-2 sentences.	What was the community perception of these efforts to provide students with food who needed it?	Please explain in 1-2 sentences.	Rate the consistency of food distribution during the pandemic from its beginning in the Spring of 2020 until the present day.	Please explain in 1-2 sentences.	To what extent do you believe that access to food was equitable? (Could families from various backgrounds access the food or promotional materials?)	Please explain in 1-2 sentences.	In your opinion, what has your school succeeded at in terms of providing food to students who need it during the COVID-19 pandemic?	In your opinion, what has been a major challenge for your school or district in terms of providing food to students who need it during the COVID-19 pandemic?	Did your school or district ever attempt to provide or distribute food to students and families at any point during the COVID-19 pandemic?	Please explain in 1-2 sentences.	For students who may not have consistent access to food during COVID-19, are you aware of other sources they may access which would fill this need?	If yes, please explain in 1-2 sentences.	What may be the reasoning behind your school or district not attempting to provide food to students during the pandemic?	If an unexpected event happened in the future which forced students and staff to stay home, what would you like to see change in terms of supporting students who may not have access to food, if anything?	Would you like to participate in a brief 15-20 min interview to build on your survey responses at your convenience? Please note that you will have the option to remain anonymous for this interview if you choose.
1/28/2021 10:10:08	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example), At the beginning of the shut down our school lunch coordinator made sure that each child, K-7, received a $300 Bridge card that replaced the money that would have been spent on school lunches.	10	Our district coordinated with families, staff volunteers, and outside sources to make sure that the families were well supported in numerous ways.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Communicating via email, text message alerts	10	By using multiple platforms many/all families were made aware of the food pickups date and times.	5	From what I saw on social media and heard from other families, we did a great job managing and reaching out to our families.	5	Food pickup is still occurring in our district.	10	All families were made aware of the availability.		Access to food for those without transportation.							No
2/8/2021 8:03:39	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example)	7		Communicating via email, Reaching out to families directly, Communicating via radio or TV announcements	8		5		2		7										No
2/8/2021 9:19:19	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example)	8	There were a very large number of families from the community and surrounding communities that showed up weekly for the food distribution. The participation did dwindle as summer approached and more of the community able to acquire jobs.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Communicating via email	8	The school has an effective messaging system that uses emails, text messages, phone calls and there were staff that also made sure the time and dates of food distribution were on other forms of social media.	4	Overall I think the community was very thankful for the opportunity to receive food through these avenues. A number of our students receive 2 of there meals per day from sources related to the school.	2	Food is still distributed by the school for those that are in school as well as those that are receiving schooling virtually.	8	The food distribution was used by members of numerous socioeconomic groups including a number of educators.	The school has provided an opportunity for people to receive enough food to prevent total food insecurity although there are still a number of students and families that are on the brink of food insecurity.	One of the biggest challenges is creating a graduated system of food distribution in which the needs of all levels of food insecurity can be met. Our distribution is very one dimensional.							No
2/8/2021 9:33:32	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example)	9		Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Reaching out to families directly, Communicating via radio or TV announcements	8		4		2		9										No
2/8/2021 10:06:09	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example)	8		Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Texting alerts	10		5		4		9		Weekly food pick ups for the student's weekly meals, for both remote and in person learning during shutdown	transportation for some							No
2/9/2021 13:10:32	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example)	10	The effectiveness of the program was evident in the amount of people who lined up for each food distribution. Sometimes the distribution lasted for an hour. This was the start, but as the system became more efficient, the wait time was less.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Text message alerts were sent out to parents and families.	10	Many families showed up to receive distributions.	4	The perception was mostly positive; however, some people were concerned with the fact that there were people from out of the area taking advantage of the program. For example, summer residents or individuals who belonged to other local communities. However, if they needed it and the food was available, I don't see why people needed to be negative about a program that was aimed to be helpful.	1	The program was well-organized and the days stayed relatively the same. Our school district as still continued food pickups even after school has resumed in person.	10	I think that they did not take names of people receiving food. I am aware that some individuals were not necessarily from low-economic families, but had multiple children. They were still able to receive food.	Consistency and providing for many families in the area. We also have individuals who donate money for students who have an unpaid meal balance at the school. Our community is very giving.	None							No
2/9/2021 8:31:57	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example)	10	Most families were able to get food during the pick-ups. There were different locations for pick ups and the few families that couldn't make it had food taken to them.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email, Reaching out to families directly	10	Each school has a Facebook page where announcements were made. Parents asked questions right there and if it couldn't be answered, the question got to someone who could answer it. Robo calls directly to parents and students; This is a small community	4	Many families were grateful for the help, some parents are perpetual victims and wanted us to cook it for them too. Overall it is an amazing effort.	3	It began in March 2020 with us sending home a week's supply of food for each kid. From there the method of distribution improved as there was a need. Distribution continued through the summer. In the fall, many kids came back to school and we feed them breakfast and lunch.	10	We had families from other districts getting food boxes. Anyone could get it, no questions asked.	Our school knocked it out of the park! None of our kids should have been hungry during the pandemic. This is one aspect of this disaster that went really well.	I don't know. I helped during a distribution and was impressed by the amount and quality of the food distributed. Who paid for it?							Yes
2/10/2021 4:09:01	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example)	9		Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Communicating via email, Reaching out to families directly, Communicating via radio or TV announcements	9		4		3		9		anybody could access it	responsible guardians							No
2/12/2021 7:39:28	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example)	8	Parents are used to this system and a lot pick the meals up.	Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Communicating via email, Text alerts	8		5		1	We have had the program in place consistently.	9			Students and families without reliable transportation. Poor quality of food.							No
2/16/2021 13:22:00	I consent	Yes	Food distribution by pickup (a family may drive up to the school and pick up lunches, for example), Food distribution by delivery (someone from the school may drop off food for families, for example)	9		Using social media (such as posting the location of food banks, the dates and times for food pickup, etc.), Using a school or district newsletter, Communicating via email	9		4		4		9		The school provided a variety of food to families.								No

Appendix B: Interview Transcripts

CODING KEY

Constraints: Geographic, financial, other, time
Knowledge of programs
Successes: access, community

Johnson Interview Transcript

Me: (00:04)
And I think we can get started. Thank you so much. Um, so first, could you please start by telling me just a little bit more about your role in the school, kind of what you do, how long you've been there for?

Johnson: (00:15)
I teach life science, so anatomy, biology, and, um, I've taught here since 2008, so 12 years or so, and, uh, taught different things in that time. Special ed history just ended up in science here recently. I was there for four or five years. Um, so just a classroom teacher, but, um, been here for a while. Yeah.

Me: (00:41)
Okay. Wow. Yeah, that's a long time. That's great. Wonderful. And could you please just, um, I guess, describe to me maybe a little bit more about how your school handled COVID of course it was a huge shock for everyone, but then specifically, um, what their plan was for supporting food insecure students?

Johnson: (01:00)
Um, when we closed down there, you know, very unexpected point for sure, but with, I don't remember exactly how long, but within, you know, a week or two, at the most we had started the food program and they did a pickup one day a week here at the high school building. And they could come and get like a gallon of milk per child and like a bag of food per child. Um, and it didn't matter what district you're from or if you belong to the school or not. If you had a child under 18, basically they let you take the stuff every week.

Me: (01:40)
Okay, great. I see. Yeah, I was reading online about the food pickup and that sounded really awesome. And I was curious, like, is that food that would be like enough to feed like an entire family of four or would it just be for that one student?

Johnson: (01:54)

Just for that student? Yeah. It was like two meals a day for that student. Gotcha. So, like a cereal and granola bar maybe for breakfast and then, you know, like, um, whatever, you know, like one of those Lunchable things or a PB and J one of those Smucker's PB and J things and some carrots or something for lunch.

Me: (02:20)
Sure. And you said that that was on Fridays?

Johnson: (02:24)
I don't remember. I want to say it was on Tuesdays or Wednesdays when we did it in the spring.

Me: (02:33)
Okay. Do you know, like maybe what the reason was for that change?

Johnson: (02:37)
I think just with the, um, food service, you know, when we were closed down and nobody was here, they just kind of picked the middle of the week so that they would have a couple of days to get stuff prepped. But now that we're in person and we still have kids virtual, like we're doing the hybrid thing. Um, they, I think they just do it at the end of the week to make it easier for them. I see what they have left over from the week, you know, that's, pre-packaged stuff. That's not going to go bad, and they can use that in those bags like us.

Me: (03:08)
Okay. That makes sense. Um, let's see. So, I don't know what your role was if you were involved at all in the food pickup service, or if you, maybe you just heard about it or were connecting families to it.

Johnson: (03:21)
Uh, we all were connecting families to it. Whenever we called students to check in, when we were closed in the spring, we were always telling them about it and when it was available. Um, but I wasn't directly involved in it.

Me: (03:32)
Okay, perfect. Um, and then do you know like who maybe the main coordinator was, or who kind of was in charge of that?

Johnson: (03:41)
I would want to say our food service director, but also possibly, um, Principal [redacted]. She would be the person for our building. Probably. That would be the best person to talk to about it. Besides the food director whose name I can't remember right now, cause it's a third party.

Me: (03:59)
Well, that sounds really great. Um, I guess, I don't know if you would notice maybe, maybe [Principal] or something like that would know. Um, but I don't know if you are aware of like any

protocol or system that would kind of be supporting students when they're outside of school, if that was like a protocol that was already in place before the pandemic, or was it something that just like--

Johnson: (04:19)
No, I think it was just put in place in response to the pandemic.

Me: (04:23)
Gotcha. Yeah, that makes total sense.

Johnson: (04:26)
We did have a different program. The backpack program, a lot of schools have, um, that one of our school board members kind of runs, um, um, just kind of a volunteer basis, but that wasn't from the school, it's kind of something outside of the school. So, they would get bags of food to kids, um, once a week as well, but not like two meals a day or anything like that. Just, you know, perfect a bag of stuff to help them get through the weekend or whatever.

Me: (04:53)
Was that happening at the same time as the food pickup sites?

Johnson: (04:57)
Uh, I don't think it continued when school was out of session. That was just what we'd had in place before. Um, and then it has continued now that we're back in person, but, um, I don't think it did when we were not in session. And I found the guy's name. His name is [redacted]. He's the director of the food program.

Me: (05:20)
Okay. I might reach out then. That's great. Thank you. Um, okay, so I guess just moving on to just different promotions about the, um, food pickup site, um, how would you, I guess, could you elaborate? I know this was like some information on the survey, but could you elaborate a little bit more on how your school promoted the food pickup site?

Johnson: (05:41)
Yeah, we put it out on our website. We also send out text reminders. We have this alert system that parents, and kids can sign up there with their texts, with their phone or email or both. And there's alerts that go out on that. So, we send out, um, a reminder every week, remember food picked up a smart from one to three or whatever the time is. Um, and then we also have a newsletter that goes out monthly and so that it was in there as well. And then, um, we also have like, there's that one of those electronic signs in town where the school can put information on. Um, and so it's been on there too, like rotating, you know, with all the other schools around there.

Me: (06:28)

I haven't seen one of those in a while. [laughs] I always see them when I'm driving back home, very cool. Okay.

Johnson: (06:33)
It's like, you know, the varsity game is at this time always not as much of those messages, then other things.

Me: (06:40)
Right. Okay, cool. Um, awesome. And I don't know which of those, if you would have any like, feeling about which of those strategies were maybe the most effective and like actually getting families to the food pickup sites?

Johnson: (06:55)
I think like when we actually were calling in the spring to make contact with our kids, that was probably pretty effective, but I think the alerts that they get, because they get a text on their phone or an email, I think those are pretty effective as well.

Me: (07:10)
Yeah. It makes sense. Totally. Um, Oh, I skipped over one question. So, kind of going back to the whole logistical thing, I don't know if you would be able to estimate maybe the number of meals served per week or the number of students served per week.

Johnson: (07:24)
You know, I really don't know. Um, yeah, I, I really don't know. I know it's, it's changed a lot from, you know, in the spring. I think there were initially a lot of families that went through, you know, when we were closed, but now that we're in person and most of the kids are here getting free breakfast and, you know, getting their lunch. Um, I'm assuming that the numbers have dropped dramatically, but I don't really know for sure.

Me: (07:52)
Yeah. That makes sense. As we move in person--

Johnson: (07:55)
[principal] would probably be able to tell you that or the food director maybe.

Me: (07:59)
Awesome. Awesome. Yeah. Okay. That makes sense. Um, let's see. So just a couple more questions. Um, first I'm curious about what you think went really well with the food pickup service program. Like what was the most successful thing about it?

Johnson: (08:13)
Um, I think just getting food into the hands of the families, um, I think, I think it went really well. I mean, they were out there in the parking lot with their crates and people just drove up in their vehicles and it seems really well organized. Um, there are a lot of volunteers that would come in

and, uh, you know, sort this stuff out. And so the, um, bags and boxes, uh, they just seemed really affected at it.

Me: (08:38)
Oh, great. That's good to hear. Um, okay. And then kind of just shifting gears a little bit, um, I was kind of reading through your survey responses and saw that you mentioned that transportation could be a challenge. So was that sort of a requirement like families had to pick up through their cars and had to come there to get the food?

Johnson: (08:56)
I know some districts like took the buses out on the bus routes, but we did not do that. We are a pretty big rural district. And so, um, I think that would have been a big, you know, expense. It was a big savings for us to not have to take the buses out every day. Yeah. So then that, that helped us put more into some of the other things we were doing, like the fleet program. So I think that might've been a limitation than if a family didn't have transportation. Um, they couldn't have gotten here on that day to get the food, you know, um, but usually if they really want it, they find somebody that can give a ride or it gets to get here somehow it didn't have to be mom or dad either. It could be grandma, grandpa that came and said, you know, I have four kids in the district, but I need to give them food. And that was something that was just like, you know, no identification, just like, we'll give you the food no matter what. I don't think they've tried to verify anything.

Me: (09:54)
Okay, awesome. And then I guess just for those families that still weren't able to access the food pickup sites, or even maybe just other days during the week, like Monday, Tuesday when the food pickup maybe wasn't available. Um, are you aware of just other locations or pickup places for families that they might have been able to access food?

Johnson: (10:12)
Not from the school. Um, you know, we have like a soup kitchen in town and stuff, but not, I don't, there's nothing that the school would have provided other days that I know of.

Me: (10:23)
Cool. So yeah, just rely on probably on like food pantries or something like that is what you're saying. Yeah. Cool. Makes sense. Okay, cool. So I think, yeah, maybe just one more question really quickly. So just from your perspective, really broad question, but do you believe that students who needed the program were able to access it overall?

Johnson: (10:44)
Yes, I would say overall. Yeah.

Me: (10:46)

Awesome. Okay, cool. So we are coming up on time, but I just want to leave the next two minutes for anything else you might like to share about the program, anything that you think might be useful for me?

Johnson: (10:57)
I think you covered it pretty well. Um, I think that it's good that we continued it in the fall here for our virtual students. Um, you know, we still offer it for those kids to come in and get it. Something else that we did this year, um, everything happening, we went to half days, once a week on Wednesdays. And so we knew that that was one day a week that kids wouldn't be getting lunches. So we started offering, um, a sack lunch at the end of the day, on those half days so that they can grab it so that they still have a lunch every day of the week.

Me: (11:31)
Awesome. And that was in the fall, you said?

Johnson: (11:34)
Yeah, this fall, we started it right in September. Um, with it, towards the end of September, we realized that we didn't have enough time to do all the prepping that we needed to do. Cause we're doing this hybrid model where we're teaching both in-person all day and then we have virtual kids too. Um, so the district, like we negotiated that we needed a half day week so that we had more time for that planning. And we knew that then that'd be 20% of the time kids weren't getting lunches. So they started the sack lunch thing where they'd come around and offer the kids a sack lunch to anybody that wants it and they don't have to give their name or their student number or anything. They just grab it that way. They have a lunch on the half days.

Me: (12:17)
That's awesome. Yeah. Perfect. Yeah. Okay, great. Thank you so much for sharing that. And, um, like I said, I really, really appreciate you taking the time to speak a little bit more to me about this.

Webster Interview

Me: Um ok I think we're good. Can you start by telling me a little bit more about your role in the school, what you do, how long have you been there for?

Webster: I am a third grade teacher and I have worked in the district for 26 years now.

Me: Wow congrats that's a long time! Wonderful, could you please describe to me more about what your school did to support students during the pandemic, so more like when everyone was virtual?

Webster: Okay, uh, I mean I guess the reason why I said I would do that interview is because I was a part of the process in helping. Um, so, um I was there every week when at first we were bagging up the food and everything and getting everything out, helping distributing the food

when the parents came through the line. And then they kind of shifted to kitchen people um bagging up the food, but then I was still there weekly, distributing food to the families.

Me: Ok, amazing. So you were kind of on the front lines of it all, making sure people got their pickup food?

Webster: Yes.

Me: Great, and from what I understand the pickup happened on Fridays, is that right?

Webster: Uh, I can't remember.

Me: I think it might have been on Fridays. Do you remember if it was like one day a week, or multiple days?

Webster: I thought it was on Wednesdays.

Me: Oh Wednesdays, ok cool. Uh, yeah, I was talking to someone else and they said it might have changed a couple times.

Webster: Uh, yeah, I think it did change a few times. I think it has changed, but I can't remember.

Me: Ok cool, sounds good.

Loudspeaker announcement interrupts conversation. The interview needed to be cut short due to an emergency. We followed up with the additional questions over email

Me: I guess the only other question based off this topic is, do you know how many students you were serving food on a day to day basis? So, I know the time block is something like 30 minutes, um, so do you remember how many students were served during that time?

Webster: Um, anywhere between 100 and 200, I would estimate, I can't remember. If you want more exact numbers, I can find out for you. I will ask the food director.

Emailed responses

Our most effective way for promoting food pick up was through our school alert system as well as on facebook. The alert system went out to school families and facebook let the community know.

In the beginning I was helping out (along with other teachers and school employees from secretaries to the superintendent) with packaging the food and milk and helping pass it out as cars pulled up. Eventually, only food service employees took over the packaging up. I think we

all had suggestions as far as logistics were concerned in being more efficient. I'm sure the final call was from the superintendent or the head food service man.

In the beginning we had multiple sites for parents to pick food up. As time moved on those sites were reduced. By the time warmer weather came we had to utilize only one site because we had to keep frozen food in the freezer and the milk in the fridge.

If families could not pick up food other families were allowed to. We also had a man who is in charge of our backpack program (food and hygiene essentials) drive to a few houses to drop off food. He was also occasionally with us to hand out hygiene essentials to people in our food pick up line. I know other organizations (such as Salvation Army) had food pick as well but I am not sure how often that was.

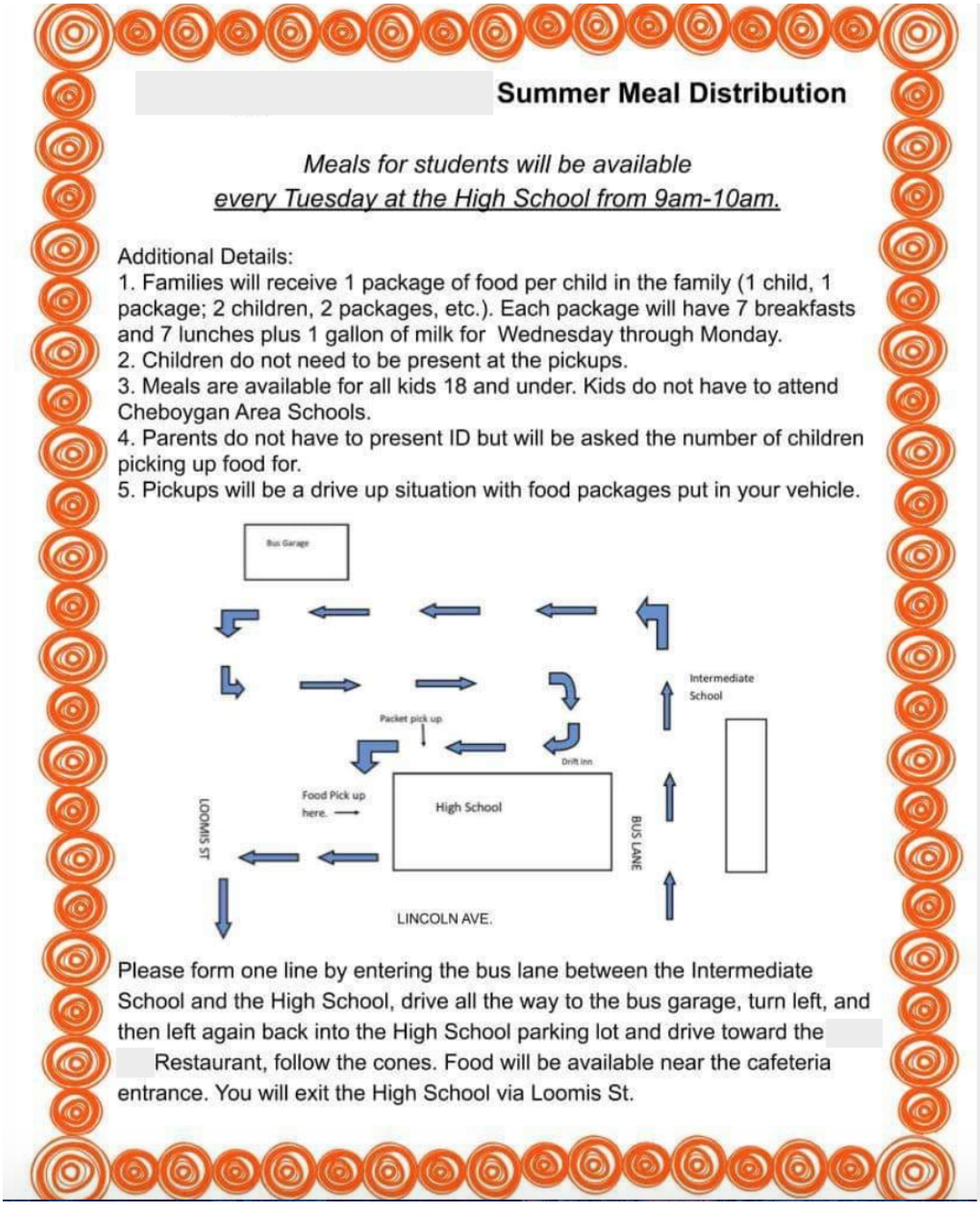
In the beginning we were providing for around 600 families. During the summer it varied around 250-350. Now, technically only those who are going to school virtually can pick up for 5 meals. Because we are remote again this week, it will be open to everyone again.

For both interviews:

Code	Count
Constraint - Geographic	3
Constraint - Financial	1
Constraint - Time	7
Constraint - Other	1
Success - Community	5
Success - Accessibility	5
Neutral - General Knowledge of Programs/Partnerships	2

Appendix C: Document Analysis

C.1: GLSD Promotional Content Examples - Facebook



The above is an example of highly detailed logistical information for accessing meals. This image was posted very frequently on GLSD's main Facebook page.

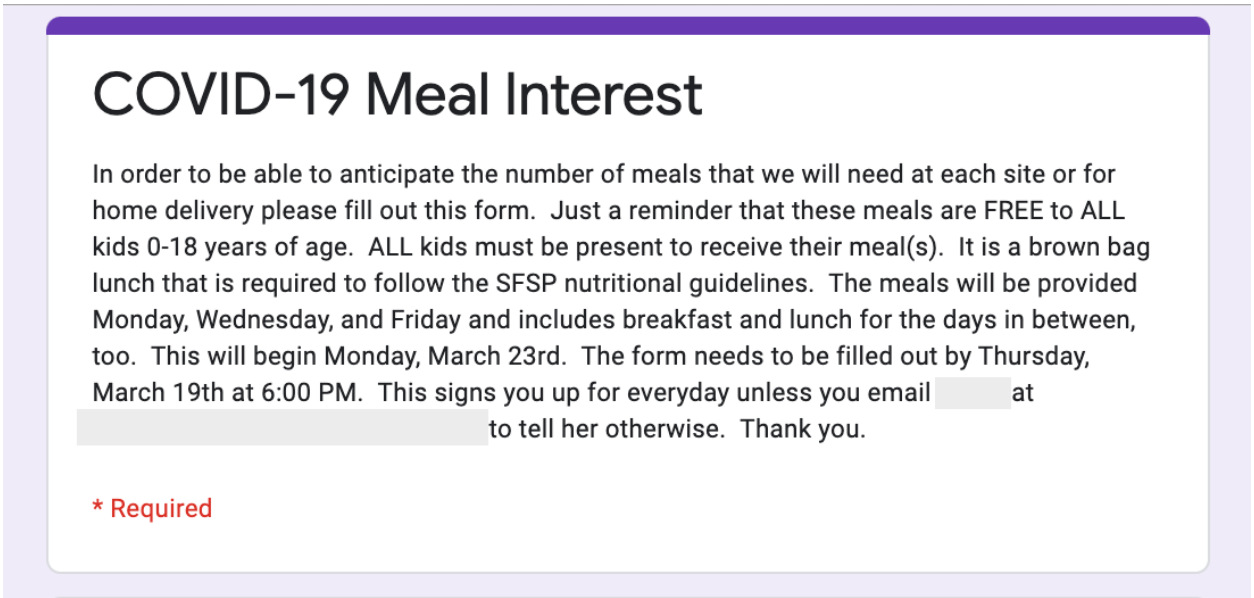
This image is an example of GLSD's "real time" updates about its food distribution process.

The above image shows a group of teachers and volunteers at GLSD who helped distribute food. Content like this engaged community members on Facebook and promoted the site location.

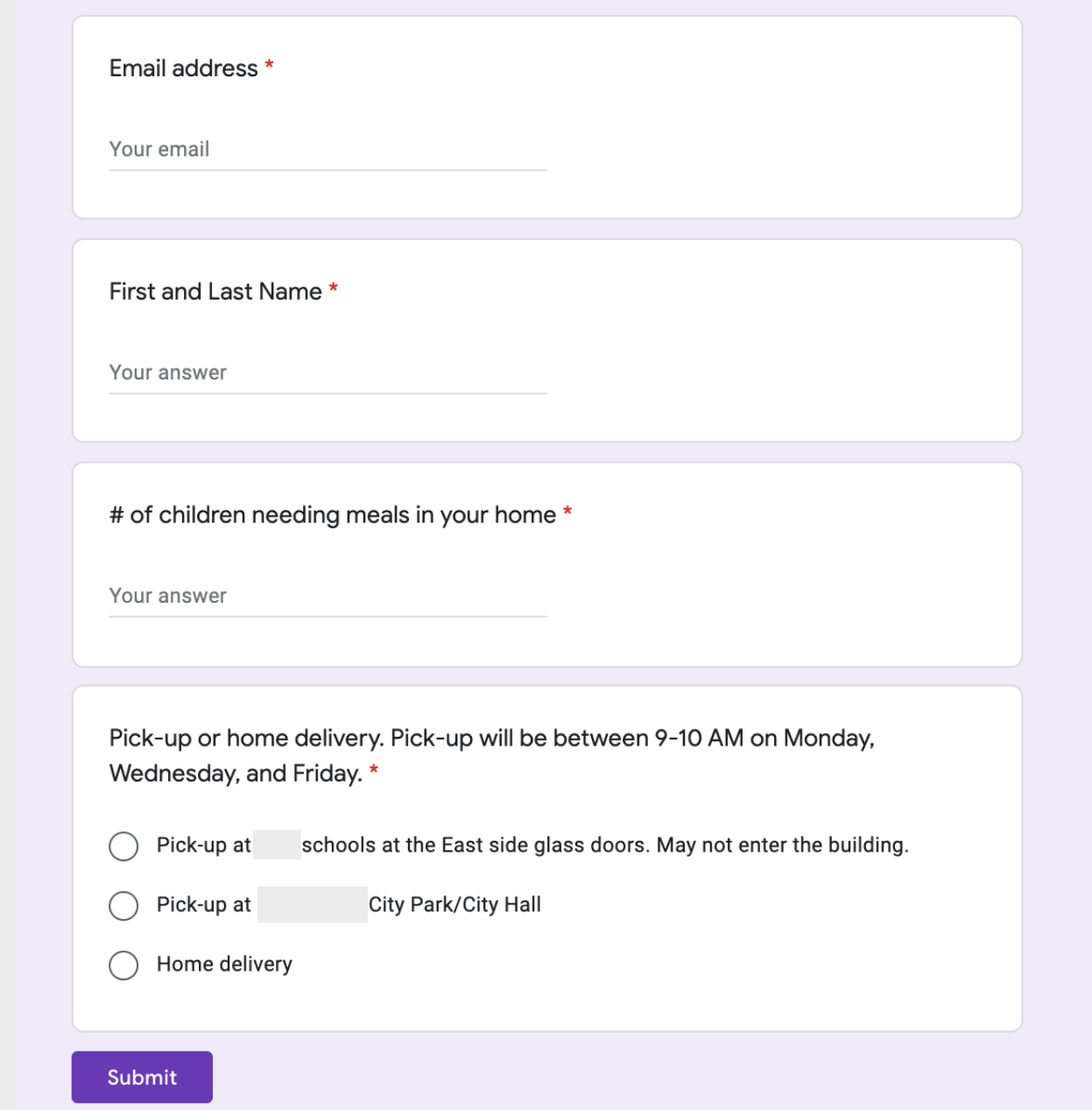
C.2 GLSD Promotional Content Examples - Website

This image shows, in detail, how GLSD communicated their strategy to families on their website.

C.3: PSD Promotional Content Examples - Facebook

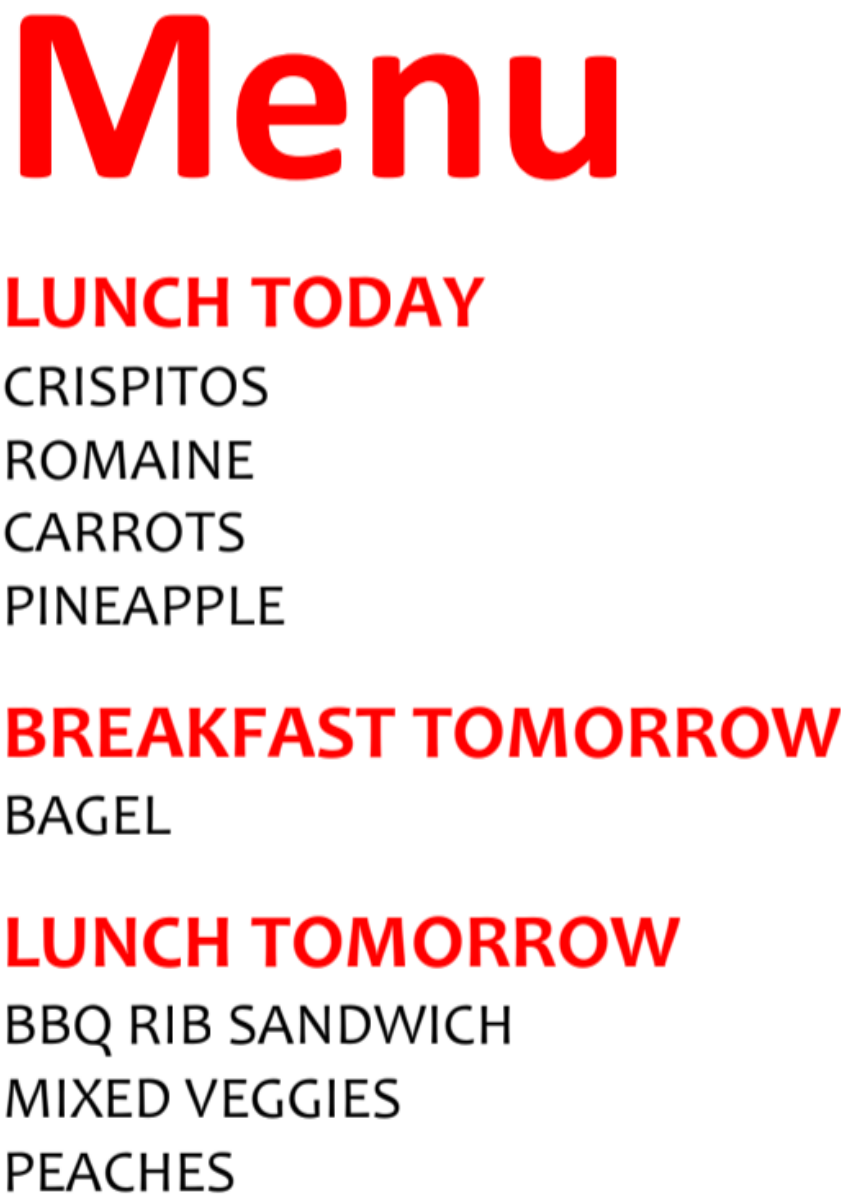


Above image is a screenshot of the information section of the food pickup form for PSD.



The survey for PSD meal distribution, continued. This was promoted on their Facebook.

C.4 An example of the GLSD menus, updated daily



C.5 An example of PSD's menu, displayed in their newsletter

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***Please note that this reference is a former paper I wrote for Prof. Sorcha Brophy's course, Organizational Theory in Public Policy. I am required to cite that I used elements from this paper in my Theory section, specifically "SAF Theory."*

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