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## Implementation of Farmers Markets in Bell County, Kentucky

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The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's capstone including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Rachael Schmetzer, Student

Dr. Mark Swanson, Committee Chair

Dr. Sarah Wackerbarth, Director of Graduate Studies

## **PROJECT NARRATIVE**

### **Target Population and Need**

#### *Obesity Burden*

Obesity is a significant and growing public health problem in the United States. The prevalence of obesity in the United States between 2017 – 2018 was 42.4%, an increase from 30.5% in 1999-2000 (Adult Obesity Facts, 2021). People suffering from obesity are at risk for other conditions such as heart disease, stroke, type 2 diabetes, and certain types of cancer, which are some of the leading causes of preventable, premature death in the United States (Adult Obesity Facts, 2021). Not only is this disease affecting people's health, but it is also costing the country significant amounts of money in medical costs and lost productivity. In 2013, the estimated annual medical cost of obesity in the United States was \$342.2 billion, a drastic increase from the estimated \$147 billion spent in 2008 (Adult Obesity Facts, 2021; Explore Obesity in the United States | 2021 Annual Report, 2021). Furthermore, it is estimated that obesity costs an additional \$8.65 billion per year in decreased productivity among American workers (Explore Obesity in the United States | 2021 Annual Report, 2021).

The burden of obesity in the US is not equally distributed; rural areas suffer higher rates of obesity while simultaneously having fewer resources to address the problem (Rural Obesity and Weight Control Overview, n.d.). In 2018, the prevalence of obesity in rural parts of the United States was 42.4%, which is higher than the prevalence in metropolitan areas, which falls at 35.1%. According to the State of Obesity 2020: Better Policies for a Healthier America, this difference has been attributed to healthcare facilities in rural areas being less likely to have dietitians and weight management experts available, plus many rural areas lack exercise facilities

and the infrastructure needed to encourage physical activity (Rural Obesity and Weight Control Overview, n.d.). Rural areas are also limited in access to healthy and affordable food, have higher calorie consumption among community members, and a lack of nutrition education and services.

The proposed intervention will be implemented in Bell County, KY located in the southeast part of the state bordering on Virginia and Tennessee, in the heart of the central Appalachian region. Table 1 displays how this rural county suffers

| <b>Table 1</b>                      | United States     | Kentucky        | Bell County     |
|-------------------------------------|-------------------|-----------------|-----------------|
| Obesity                             | 42.4%             | 36.6%           | 47%             |
| Overweight                          | 73.6%             | 68%             | 79%             |
| Diabetes                            | 11.3%             | 13%             | 17%             |
| Deaths from Heart Disease           | 211.5 per 100,000 | 195 per 100,000 | 293 per 100,000 |
| Adults in less than good health     | --                | 23%             | 43%             |
| Physically unhealthy days per month | --                | 5               | 11              |

disproportionately from obesity and obesity-

related diseases. With obesity increasing the risk of other illnesses such as heart disease and type 2 diabetes, Kentucky's statistics for these conditions are important to acknowledge. Kentucky is a state with many rural areas, with these areas having high prevalence of obesity. Overall, Bell County suffers from obesity and its consequences at higher rates than the state and the country as seen in Table 1. Statewide, 23% of Kentucky adults are in less than good health, having just five

(Data By Location: Bell County, n.d.), (Explore Obesity in the United States | 2021 Annual Report, 2021), (*Obesity and Overweight*, 2021), (Rural Obesity and Weight Control Overview, n.d.), (Statistics About Diabetes, 2022).

physically unhealthy days per month. Per the Behavioral Risk Factor Surveillance System questionnaire, in Bell County, 43% of adults report being in less than good health and have eleven physically unhealthy days per month. Adults taking the Behavioral Risk Factor Surveillance System questionnaire were asked to rate their health status as excellent, very good, good, fair or poor (*Data By Location: Bell County*, n.d.). Those reporting their health to be fair or poor are considered to be in less than good health. To measure the number of unhealthy days per month, participants were asked the average number of days in the past 30 days their physical health was not good.

#### *Obesity Risk Factors*

Bell County, like other rural communities, faces challenges which contribute to higher rates of obesity. Rural communities are affected by obesity at higher rates due to several factors including poverty, limited access to food that is healthy and affordable, lack of nutrition education and services, few programs offering obesity prevention and weight management, scarcity of recreation areas, and being reliant on automobiles (*Rural Obesity and Weight Control Overview*, n.d.). Limited access to healthy and affordable food leads to community members being food insecure, which increases their risk of poor health outcomes such as obesity, diabetes, and consuming fewer than five servings of fruits and vegetables daily (*Rural Hunger and Access to Healthy Food Overview*, n.d.). To combat food insecurity, the Supplemental Nutrition Assistance Program (SNAP) was developed to provide nutritional benefits to people who needed supplementation to their food budget. While SNAP has been associated with improvements in food security, there is also concern that the program may be associated with increased obesity (*SNAP and Food Security*, n.d.). One study by the Harvard School of Public Health found

obesity rates to be 30% higher among SNAP participants compared to non-participants (SNAP and Obesity: The Facts and Fictions of SNAP Nutrition, n.d.). SNAP benefits are distributed in a single lump sum at the beginning of the month, resulting in recipients overeating after receiving the benefits, then restricting intake later in the month as benefits are depleted (DeBono et al., 2012). This can cause metabolic changes and promote body fat accumulation. SNAP is also criticized for not having a defined food-list or set menu, so the benefits can be used to purchase nutrient-poor foods that can promote obesity over time (Leung et al., 2013). Overall, studies have found women who are long term users of SNAP are more at risk for developing obesity, however more research needs to be conducted to fully understand this relationship. While SNAP helps minimize food insecurity, there is room to improve the food security status of the Bell County population and incorporating SNAP benefits into the proposed farmers markets can serve as a way for participants to use these benefits for fresh fruits and vegetables rather than for nutrient-poor foods. Furthermore, consuming a diet rich in healthy foods such as fruits and vegetables can be an important part of weight-management. Not only do fruits and vegetables provide important nutrients, but they are also linked to a decreased risk of many chronic diseases that are associated with obesity such as heart disease, stroke, high blood pressure, diabetes, and some cancer (Centers for Disease Control and Prevention, 2011).

Coupled with food insecurity, an area's food environment index score quantifies an estimate of limited access to healthy food and food insecurity (Food Environment Index, n.d.-a). This index score is based on the percentage of the population that is low-income and has limited access to a grocery store, and the percentage of the population that has experienced food insecurity in the past year (Food Environment Index, n.d.-b). The Food Environment Index defines food insecurity as not having access to a reliable food source. The index is scored from 0

(worst) to 10 (best) and serves as a calculable system that can be used to rank different states and counties in the United States based on the area's access to healthy food and food insecurity. A low score on the Food Environment Index is a measure of a community's level of food insecurity, which can also be associated with obesity. Bell County has a low Food Environment Index score of 4.9, with 25% of the population facing food insecurity, and 12% of the population having limited access to healthy foods (Food Environment Index, n.d.-a).

### *Social Determinants of Health and Health Disparities*

Social determinants of health are environmental conditions where people live, work, learn, and play which affect their health and quality-of-life (Social Determinants of Health, n.d.). The five domains of social determinants of health include economic stability, education access and quality, health care access and quality, neighborhood and built environment, and social and community context. The domain targeted by the implementation of farmers markets in Bell County to increase access to fresh foods is neighborhood and built environment.

Kentucky holds the highest rate of food insecurity in the nation among older adults ages 50-59 years old. The national rate of food insecurity for this age range is 10.6%, while Kentucky's rate is 17.3% (*Hunger Data*, 2021). This age range of adults with the highest rate of food insecurity in Kentucky, 50-59 years old, is also the most populated age range in Bell County, with 15% of their population fitting this category (*Census Profile: Bell County, KY*, n.d.). Therefore, many adults in Bell County will face food insecurity as a large portion of the population falls in this high-risk age for experiencing food insecurity. Along with being food insecure, 30.3% of Bell County residents live in poverty, with \$26, 272 being the median household income and 35.4% of households in Bell County receiving SNAP benefits, more than

double the Kentucky rate of 15.2% (Census Profile: Bell County, KY, n.d.), (Food Stamp Offices - Bell County, KY (SNAP Benefits & Food Programs), n.d.).

Bell County is a good example of how food insecurity can lead to obesity and associated health problems. Bell County sees high rates of chronic health problems associated with food insecurity, such as obesity. Food insecure households are more likely to have diets that do not meet the dietary recommendations for daily servings of fruits and vegetables, further increasing the risk of obesity (Savoie-Roskos et al., 2016). Bell County's food insecurity is a primary component of the low food environment score, which is a risk factor contributing to this community's prevalence of obesity.

#### *Community Resources Related to Obesity Prevention*

A significant challenge in Bell County contributing to the obesity problem is the limited access to healthy foods in the county. Currently, there are just six grocery stores serving roughly 24,000 county residents and one small farmers market in Middlesboro (Go to the Atlas, n.d.; Research Your Community, n.d.). This current farmers' market is not as widespread as the proposed program and is not organized through the health department (Bell County Extension Office, personal communication, February 23, 2022).

#### *Supplementation of Existing Health Department and Community Resources*

The county health department offers medical nutrition therapy, where community members can meet one-on-one with a registered dietitian (*Services*, n.d.). The dietitian can provide counseling on a wide range of topics including weight management, eating disorders, diabetes, hypertension, and triglycerides. All these topics could be helpful in obesity prevention;

however, it is a billable service, and the health department does not accept Medicare and Medicaid. This puts a burden on those community members who are unable to afford private insurance or the services without insurance. Although there is one farmers market present, is not widely used and does not serve the community to the full potential a market could. Research shows that shopping at farmers markets has been associated with improved food security and greater consumption of fruits and vegetables, especially among low-income individuals, such as those community members of Bell County (Savoie-Roskos et al., 2016).

Presently, 35.4% of Bell County households receive SNAP benefits with SNAP offices in Middlesboro and Pineville, KY (*Food Stamp Offices in Bell County, Kentucky*, n.d.). These offices assist customers with determining food stamp eligibility, applying for benefits, calculating SNAP benefits, EBT cards, and finding stores that accept SNAP, EBT cards, and food stamps (*Food Stamp Offices in Bell County, Kentucky*, n.d.). Extending the use of existing SNAP benefits to local farmers markets could significantly increase access to healthy fresh fruits and vegetables for this at-risk population.

### *Program Reach*

Implementing farmers markets through the Bell County Health Department is a desirable first step in attempting to increase access to healthy foods in the county. With the link between obesity and access to food, this food insecure population needs access to affordable fruits and vegetables. The target population of this program is the entire population in Bell County since all residents and families can benefit from the farmers markets. Nearby Letcher County, Kentucky has a similar population to that of Bell County, so the reach of this program is expected to be comparable to the very active Letcher County farmers market, which serves approximately 100

community members each week (V. Horn, personal communication, February 23, 2022). With three active farmers market locations in Bell County, it is expected every location will serve approximately 100 people each week, totally approximately 300 people total each week. Since SNAP will be accepted, an expected 100 community members total will use SNAP each week at the Bell County farmers markets, or about 1/3 of the total population that is served. Furthermore, the use of Women, Infants, and Children (WIC) and the Senior Farmers Market Nutrition Program (SFMNP) benefits at the proposed farmers markets will help further build the customer base at the markets since more of the population can utilize benefits. Implementation of these benefits has also been seen as successful in the comparable market in Letcher County, Kentucky (V. Horn, personal communication, February 23, 2022).

## **Program Approach**

### *Background and Evidence for Farmers Markets*

The Bell County Health Department is proposing implementation of farmers markets to address the lack of access to affordable and healthy food for community members. According to County Health Rankings and Roadmaps, there is some evidence for farmers markets increasing access to healthy foods in places with limited healthy food access, especially limited access to fresh fruits and vegetables (*Farmers Markets*, n.d.). Implementing methods to increase access of fruit and vegetables supports the Healthy People 2030 goals of increasing fruit and vegetable consumption by people over 2 years old and increasing vegetable consumption by people over 2 years old (*Nutrition*, n.d.). A lack of access to fruits and vegetables is a risk factor for not consuming an adequate number of servings, and inadequate fruit and vegetable consumption is a risk factor for obesity. Therefore, increasing access to fruits and vegetables is essential to a

person's health status, so they can consume adequate servings of fruits and vegetables (Evans et al., 2012).

A study by Evans, et al. discovered that after the implementation of a farm stand in a low-income community in East Austin, Texas, consumption of fruits and vegetables was increased, particularly in consumption of fruit juice, tomatoes, green salad, and other vegetables (Evans et al., 2012). This study also found increases in the percent of participants who reported purchasing fruits and vegetables at the local farmers market and in those who perceived fruit and vegetable intake to be important (Evans et al., 2012).

The ability to use SNAP benefits at the farmers markets will help increase market use by area residents. In markets around the country, SNAP redemption doubled between 2008 and 2009. With SNAP benefits being an already present resource relied on by Bell County households for food, the newly formed farmers markets should accept SNAP benefits to increase market usage among residents in the community (Evans et al., 2012). At farmers markets between fiscal year 2008 and 2009, the total value of SNAP redemptions doubled from over \$2 million to \$4 million, despite only 900 of the nationwide 5,200 farmers markets participating in accepting SNAP benefits (Wasserman et al., 2010a). This shows SNAP participants use their benefits at farmers markets, and there is room to implement this type of program in more markets.

Along with accepting SNAP benefits, incorporating farmers market incentive programs is a strategy that has been used to improve food security status in communities and increase fruit and vegetable intake among low-income individuals (Savoie-Roskos et al., 2016). GrowNYC is an environmental organization in New York City that has several programs committed to helping community members have a clean and healthy environment. Their Greenmarket farmers markets

accept SNAP/EBT along with a Health Bucks incentive program (*Nutrition Benefit Programs Accepted at GrowNYC Food Retail Sites*, n.d.). SNAP participants can receive a bonus \$2 in health bucks for every \$2 in SNAP spent, up to \$10. The Health Bucks can be used to buy additional fruits and vegetables at the farmers markets, helping participants purchase more produce. In 2019, GrowNYC saw \$994,493 in SNAP/EBT sales plus distributed \$390,952 in Health Bucks (*GrowNYC*, n.d.). Similarly, an example of farmers markets using incentive programs is the Kentucky Double Dollars program. This program allows farmers markets to provide incentives for SNAP users to double up their SNAP benefits, up to \$12 per customer per day when spent on fruits and vegetables (*2015 Farmers Markets Support Program Final Report*, 2016). This program has already helped contribute to a 32% sales growth among 9 markets in Kentucky. After surveying market customers, 64% said the Double Dollars incentives were extremely or very important for shopping at the farmers market, 68% said they eat a lot more fruits and vegetables and 71% felt more educated about nutrition and healthy eating (*2015 Farmers Markets Support Program Final Report*, 2016). Incorporating incentives into farmers markets can help increase the purchasing power of low-income households and, because the incentives must be used on fresh produce, the diet quality of these individuals has the potential to improve.

#### *Implementation Overview –Planning, Piloting, and Readiness Period*

The Bell County Health Department is proposing to implement farmers markets at three locations: the Middlesboro SNAP office, the Pikeville SNAP office, and the Bell Co. Volunteer Fire Department. The SNAP offices are in two of the larger towns in Bell County, while the Bell Co. Voluntary Fire Department is off the main highway, serving as a location for community

members who do not live as close to the towns. Placing two of the markets at the SNAP offices will allow for ease of setting up the EBT technology, with SNAP staffers close by for help if

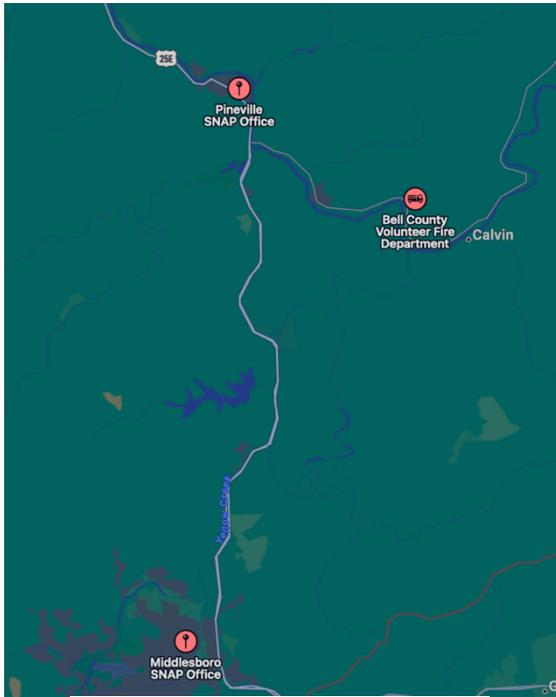


Figure 1: Map of farmers market locations

Since there are three market locations, farmers will sign up to participate in the market of their choosing. Allowing farmers to choose where they would like to sell their produce will increase the likelihood they will participate since they can choose a location that is more convenient to them, rather than being assigned to an area they do not wish to go.

To ensure the best quality of fresh produce is supplied to the markets, the farmers markets will be open seasonally. To initially launch the first season of the farmers markets, they will take place the first and second Saturday of each month from May through October, from 10am-3pm. Since SNAP is distributed at the beginning of the month, having the market available during times of maximum resource availability will increase market usage. After the initial season, the market schedules will be adjusted for the proceeding seasons based on customer and farmer interest. Additionally, with different market locations, times of operation can be adjusted

needed. Also, with a great number of community members participating in SNAP, having an event at the offices will ensure they know where the offices are located if they ever need assistance. Local farmers will be recruited to participate in the farmers market with help from the Bell County Extension Office. This will be advertised through local newspapers, news stations, flyers displayed in public buildings, local groups focused on farming or gardening, and connections the extension office has.

based on the areas' customers. Operation time of the markets can also occur at varying times to accommodate different schedules and allow community members to pick the time that works best for their availability. This will be determined based on the community's needs and feedback during the initial market season.

To publicize the event, a few different methods will be employed. First, people signed up to receive emails from the Bell County Health Department will receive an email with information about the event two weeks before the first farmers market, along with a reminder email every Thursday before the market takes place. People already on the email list from the health department have been involved before in some capacity, so they may be interested in participating in another health department event such as farmers markets. The markets will also be promoted through a Facebook page created for the event. This page will provide updates on when the markets are happening, show pictures of the produce being sold, and allow participants to connect and interact. Posts created in the Facebook page can be shared by other people, increasing the reach of this publicizing method. Finally, individuals can be encouraged to participate through local news advertisements on the local television and radio stations, and flyers placed in newspapers, and public buildings such as churches, libraries, schools, and the county extension office. To celebrate the grand opening of the markets, local newspapers and news stations will be invited to cover the event.

### *Market Retention*

To encourage retention among farmers markets users, a "product of the week" will be advertised each week. This will be a featured product from one of the farmers. This is expected to improve retention from both the farmers and the participants since farmers will feel

appreciated being featured, while participants will want to try the special, featured item. This will allow farmers to promote a product they are particularly proud of or want to give extra notice to promote it to the public. The product of the week will be advertised on the market Facebook page and will be displayed at the markets.

### *SNAP Benefits and Kentucky Double Dollar Implementation*

Use of SNAP benefits will be implemented at each market location in Bell County. SNAP Benefits are accessed through an Electronic Benefit Transfer (EBT) card, which is processed using electronic funds transfer technology (Wasserman et al., 2010a). Using EBT technology allows farmers markets to not only accept EBT, but also debit and credit cards, further increasing revenue. To accept SNAP benefits using EBT cards, the farmers market will obtain a SNAP license and implement a scrip project which allows multiple vendors at the market to accept the SNAP benefits (Wasserman et al., 2010a). FNS is the USDA agency that approves retailers to participate in SNAP and should be contacted prior to implementation.

To submit the FNS application, several steps must be completed. First, the FNS SNAP application will be filled out with the necessary documents (Wasserman et al., 2010b). The type of scrip system to be used will also have to be decided, which for this program will be tokens. The signed application will be submitted for approval, and, upon approval, the state EBT contractor will be contacted, and point-of-sale equipment needs will be determined.

Once the market obtains the necessary license, tokens can be used to execute transactions through one point-of-sale (POS) terminal. Customers swipe their EBT cards at the central POS terminal and enter their PIN number, then the market staff member will enter the number of

tokens requested. Once this is approved, the customer receives the tokens and uses them at vendors' stands to purchase fruits and vegetables.

Along with accepting SNAP benefits, implementing bonus incentives at the markets can help expand the SNAP customer base (Wasserman et al., 2010a). Offering a SNAP incentive involves giving SNAP customers extra farmers market tokens when they use their EBT cards at the market. The Bell County farmers markets propose using the Kentucky Double Dollars program, implemented through the Community Farm Alliance organization. To use this incentive, farmers market workers will swipe a participant's EBT card and give him or her the EBT tokens to spend, along with the Kentucky Double Dollars matching tokens ("Kentucky Double Dollars," n.d.). This gives the participant up to \$12 in fruit and vegetable tokens, which encourages use of SNAP benefits to buy fresh produce, while supporting the farmers markets.

A benefit that will be considered in addition to the SNAP tokens and Kentucky Double Dollars program is the implementation of Women, Infants, and Children (WIC) and Senior Farmers Market Nutrition Program (FMNP) benefits. The FMNP will provide eligible farmers market shoppers with vouchers for fresh fruits and vegetables (*KY Farmers Market Toolkit: Stage 3*, n.d.). Incorporating these benefits to the proposed farmers market will help to further build the customer base.

### *Sustainability*

After the three years of Federal funding for this project ends, the farmers markets will continue through the support of the Bell County Health Department and the designated Market Manager hired through the Health Department. The Market Manager will continue to oversee day-to-day operations of the markets' needs. This Market Manager will be a Health Department

employee, in a full-time employee role. This employee will be previously trained to be a Market Manager in accordance with the guidelines and information provided by the Community Farm Alliance (*KY Farmers Market Toolkit: Stage 3*, n.d.). A main priority of the Market Manager will be working with the County Extension Office to ensure farmers are available to participate, as this will be a challenge to sustainability if farmers do not participate. Also, the Market Manager will maintain communication with the SNAP offices and Double Dollars Program to ensure future token and incentive usage runs smoothly.

To increase sustainability, a standard operating procedure checklist will be created and utilized during market development and implementation. A standard operating procedure checklist provides clear instructions that should be followed for successful implementation of the market and serves as a guideline for future workers and vendors to participate in the markets. Modifying this checklist will lead to improved markets each year based on feedback received. This can contribute to sustainability since improvements will be made, leading to customer and vendor approval. Guidelines to follow will help new employees learn about what tasks need to be completed as well.

### *Community Advisory Group*

The Community Advisory Group will be established to oversee program development, implementation, and monitoring throughout the process. This group will work together, specializing in their individual roles and responsibilities to ensure successful implementation of the project. Specific roles of each member are detailed in Table 2.

**Table 2: Community Advisory Group**

| <b>Organization/Role</b>  | <b>Responsibilities</b>  |
|---|--|
| Market Manager  | Employed by the Health Department and oversees all day-to-day operations of the markets such as farmer recruitment, market promotion, growing customer base, SNAP benefit assistance, and securing community partners. The Market Manager will also be the point-of-contact for each market location representative. |
| Health Department Representative                                | Will supervise project and collaborate with partnerships for planning and implementation of the market. Will adopt changes based on feed-back from other community advisors.   |
| Extension Office Representative                                 | Assist in advertising events and lead recruitment of farmers.  |
| SNAP Office Representative                                      | Will provide information and assistance in setting up EBT usage and troubleshoot any complications related to SNAP or FMNP benefits.   |
| Community Farm Alliance Representative                          | Oversee and fund Double Dollar Incentive program. Provide information on Market Manager training.  |
| Farmer's Market Representative – Pineville SNAP Office Location | Oversee market located at the Pineville SNAP Office. This will be a community member who can offer feedback on how program is going. Will directly report to Market Manager. Responsible for distributing Double Dollar tokens during the markets.   |
| Farmer's Market Representative – Bell Co.                       | Oversee market located at Bell Co. Volunteer Fire Department; This will be a community member who can offer feedback on how program is going. Will directly report to Market Manager.  |

|  |  |
|--|--|
| Volunteer Fire Department<br>Location                                      | Responsible for distributing Double Dollar tokens during the markets.  |
| Farmer's Market<br>Representative –<br>Middlesboro SNAP Office<br>Location | Oversee market located at Middlesboro SNAP Office. This will be a community member who can offer feedback on how program is going. Will directly report to Market Manager. Responsible for distributing Double Dollar tokens during the markets. |

### *Program Inclusivity*

The farmers market program will be inclusive and non-stigmatizing toward all individuals. There will be no policies that lead toward exclusion or discrimination of any members of the community it is serving. There will not be discrimination against community members who are SNAP participants because customers will be allowed to use SNAP benefits through the token system at the markets. This allows for inclusion of people of all socioeconomic and food security status without the stigma of using a SNAP EBT card. Workers at the farmers markets will receive training on how to distribute tokens efficiently so SNAP users do not feel they are causing trouble by requesting and using them. The community advisory group includes members from different areas of work and varying socioeconomic status to ensure the group is diverse and representative of the population being served

### *Project Challenges*

Like every project, there are challenges associated with this program. The biggest challenge is obtaining a consistent supply of produce and participating farmers. To combat this, the program will collaboratively work with the Bell County Cooperative Extension Service and

the Community Farm Alliance. These programs will assist the Bell County Health Department with recruiting farmers and sustaining a supply of produce. The Bell County Cooperative Extension Service office will combat the challenge of farmer recruitment by utilizing their networking resources. The Extension Office is connected in the community and will be able to recruit farmers to participate. The Community Farm Alliance is also a resource the Market Manager can use to learn information about implementing farmers markets. They provide many tips and guidelines in the Market Toolkit that the Market Manager will be trained to use and can reference for future challenges that will arise (*KY Farmers Market Toolkit: Stage 3*, n.d.).

## **Performance Measures & Evaluation**

### *Formative Evaluation*

As the program develops, documentation of steps taken throughout the process and notes on feasibility and acceptability will be conducted by the Market Manager and Location Representatives. The Community Advisory Group will meet monthly to provide updates on the various implementation tasks that are being accomplished and feedback on the feasibility of the program based on the guidelines provided by the standard operating procedure checklist. The meetings will move to bi-weekly meetings in the two months leading up to the start of the market season. To assess acceptability, a pilot farmers market will take place at the Pikeville SNAP office market location. This pilot market will be implemented and evaluated for any challenges or modifications that need to be addressed before the program implementation. During the pilot market, the Market Manager and Market Location Representatives will work together to specifically assess the market before the event, during the event, and cleaning up after the event. This will cover any aspects that need to be modified before full implementation at all markets.

After this pilot, the Community Advisory Group will meet to review and make the necessary changes before the full launch of the program.

During the monthly Community Advisory Group meetings, the group will discuss various details on the logistics of market implementation. The Health Department, along with the Extension Office will lead the advertisement of the markets to the community to promote the event, with the Market Manager being responsible for advertisements on the Facebook page. Once the actual events have begun, input from each Farmers Market Representative will determine the physical location of the market stands within the SNAP offices and Volunteer Fire Department. Signage will be placed at the entrance of the markets and in surrounding blocks to guide people to the location. Each Location Representative will work at a table near the register to distribute the Kentucky Double Dollar tokens for eligible SNAP users. There will be small signage at this location to promote the use of the incentive without drawing major attention to it to protect people who are not wishing to draw attention to their EBT cards. Each market will have the same core features, but each Location Representative will assess how specific aspects, such as location and signage, will work best at their location.

### *Program Fidelity*

For program fidelity, standard operating procedure checklists will be utilized throughout the development and implementation of the programs. Monthly meetings among the Community Advisory Group will be used during the development of the program to ensure all three locations are being developed according to the checklist. During the implementation, bi-weekly meetings among the Community Advisory Group will take place to discuss feedback from the Market Manager and Location Representative about how the process is going. Leading up to the start of

the market season, items to check for fidelity include the Market Manager creating the Facebook group and creating posts regularly, the Health Department and Extension Office promoting the event as directed, markets applying for SNAP eligibility and the POS machines, approval of the Double Dollars program, and community partners completing their assigned tasks as promised. Also, to ensure fidelity, the Market Manager will spend time leading up to the first farmers market season learning about the role of a Market Manager through the Community Farm Alliance resources. During the weekly farmers market events, each Location Representative will check for fidelity through a standard operating procedure checklist. This will include details on proper set up of the farmers stands, the register machine, signage, workers' responsibilities, and clean up after the weekly event. After the first farmers market season, the standard operating procedure checklist will be adjusted based on changing needs and deliberation of operations that were most effective. Modifications to the standard operating procedure checklists will be considered based on feedback from workers, market participants, and the farmers and vendors.

### *Process Evaluation*

Process evaluation will take place through feedback from market participants, vendors, and farmers and will be discussed during Community Advisory Group meetings. During the markets, those involved with running the market such as the Market Manager and Location Representative will gather verbalized feedback from customers, vendors, and farmers by asking about their experiences at the market. The Bell County Extension staff member working with the Community Advisory Group will provide the main source of feedback from the farmers. Additional feedback can be obtained through a survey box located at the register. This will ask customers about their favorite part of the market and for any areas of improvements. Additional

sets of the process evaluation will include confirming a Market Manager is hired, vendors are secured, the markets are prepared and set-up properly, records of how many customers and vendors came to the markets compared to the expected number, and the community partners, such as the Community Farm Alliance and the Cooperative Extension Office, did the tasks assigned to them as promised.

One process goal is having an average of 5 vendors at each farmers market location each week the first season the markets are open. This data will be tracked by the Market Location Representative weekly. Setting implementation goals, such as a goal number of vendors, will give the market standards to uphold. The average number of vendors participating weekly will be calculated at the end of the first market season. The second- and third years' vendor goals will include an increase in vendors from the preceding year. This goal will expand the size of the market, give more opportunity for farmers to be involved, and provide customers with additional produce to buy. An additional process goal is having 100 customers at each market location each week.

### *Outcome Evaluation*

The outcome goals of the proposed program include short-term, medium-term, and long-term outcomes. The short-term goals include farmers market use resulting in purchase of more fruits and vegetables. The medium-term goal is increased consumption of fruits and vegetables, along with positive changes in attitude toward fruits and vegetables, reduced perceived feelings of food insecurity among farmers market users, and increased self-efficacy about attending and purchasing produce at farmers markets. The long-term goal is to reduce obesity rates in Bell County. These outcome goals will be evaluated through surveys. County residents who qualify to

use SNAP benefits will be targeted for surveys, since they can be identified as food insecure. Evaluating their food security status will help determine if the farmers markets are successful in increasing access to food for those who do not already have adequate access.

To measure these goals, different surveys will be used. At the farmers market, a tablet survey will be used to collect baseline data including: the participants' names, addresses, anthropometric data, presence of chronic disease states, if they used the market tokens or not, current purchasing trends of fruits of vegetables, current attitude toward fruits and vegetables, perceived food security status, and self-efficacy status regarding attending and purchasing produce at the farmers markets. The customers who complete this tablet survey will qualify for the first mail survey to collect short-term outcome information. This survey will be sent out three months after the start of the farmers market because this will give participants enough time to habitually start using the markets, and enough time for more people to hear about the market and attend. As an incentive, participants will receive a \$10 farmers market credit for mailing back a completed survey. The survey collecting short-term goal data will be very simple, gathering the following information: name, address, updated anthropometric data such as height and weight, and asking current trends of purchasing fruits and vegetables.

To measure the medium-term goal of increased consumption of fruits and vegetables, positive changes in attitude toward fruits and vegetables, reduced perceived feelings of food insecurity among farmers market users, and increased self-efficacy about attending and purchasing produce at farmers markets, the process will be like the first survey. Those who mailed back a completed survey from the short-term goal will be eligible for the second survey and will again be incentivized with another \$10 farmers market credit. This survey will be sent out six months after the first survey, nine months after the initial market session, and will inquire

about changes to the SNAP participants' diet after using the farmers markets. It will ask about fruit and vegetable intake and ask how often the individuals redeemed their SNAP tokens at the market and utilized the Kentucky Double Dollar tokens. It will also ask current attitudes toward fruits and vegetables, perceived food security status, and self-efficacy status regarding attending and purchasing produce at the farmers market. This medium-term goal survey will be sent out nine months after the first market in May, and since the first market season will last from May-October, this delayed medium-term goal survey will assess what the participants lives are like even after the market season has ended.

Lastly, to measure the long-term goal of reducing obesity rates in Bell County, a final survey will be sent out to the participants from the first survey one year after the first surveys are sent out. This survey will collect data on dietary habits and self-reported anthropometric data such as height, weight, and recent weight change, and any changes in present chronic diseases. Current BMI measurements will be calculated from the participants' height and weight and compared to their first survey's calculated BMI. Like the other surveys, participants will receive a \$10 farmers market credit for mailing back the survey. These short, medium, and long-term goals can be assessed after each market season, providing data that can be compared through the three years of funding. This can also help determine if changes and adaptations made throughout the program produced different outcomes.

### *Program Goals*

The main goal of this program is to enable low-income residents in Bell County, Kentucky to have better diets, through increased access to affordable fruits and vegetables. This program will achieve this by launching three farmers market in Bell County, that will take place

at the Pineville SNAP office, the Middlesboro SNAP office, and the Bell County Volunteer Fire Department. These markets are intended to increase access and consumption of fruits and vegetables among community members through the incorporation of SNAP benefits and Double Dollar incentives. Long term, this program would expand to include nutrition education, cooking/food preparation help, and shopping tips which would provide additional benefits to this population. Ultimately, increasing this population's access and consumption of fruits and vegetables is intended to decrease the obesity rates and prevent future obesity rises in Bell County.

### **Capacity and Experience of the Applicant Organization**

#### *Partnerships*

The Bell County Health Department has the necessary experience working with partners that is desired to implement this evidence-based program. One partnership that will take place is with the Community Farm Alliance. This state-wide non-profit organization helps improve the quality of life in rural and urban communities by assisting the development and maintenance of farmers markets. This organization has a Farmers Market Support Program which provides markets in Kentucky with the tools, resources, and network development needed to provide a profitable market, access to fresh food and a sustainable program (Farmers Market Support Program, n.d.). This organization is also responsible for the Kentucky Double Dollars program which is intended to remove obstacles of using SNAP benefits at the farmers markets ("Kentucky Double Dollars," n.d.). This program gives customers using EBT tokens up to \$12 in Kentucky Double Dollars to be used on fruit and vegetables, increasing the amount of money they originally would spend on fruits and vegetables. Finally, the Community Farm Alliance will

be used as a resource for training the Market Manager. This organization provides information online regarding development of farmers markets and specific guidelines for Market Managers. This online site will be utilized by the hired Market Manager for training and for reference throughout the duration of the planning and implementation of the markets.

A second partnership that will take place is with the Bell County Extension Office. The Extension Office hosts various events in the community, with the goal of making a difference in the lives of Kentuckians through research-based education (“Bell County Cooperative Extension,” n.d.). The implementation and goals of the farmers market aligns with the mission of the Extension Office, and since the Extension Office already frequently hosts community events, people in Bell County are aware of this resource and Extension workers are well connected in the community. This gives them the ability to successfully recruit farmers and promote the markets. With research-based education being an essential component of the Extension Office, they will support the proposed researched-based farmers market program. Furthermore, the Extension Office promotes events through their website, and can do this as well for the markets. Although there will be a Facebook page created by the Health Department, additional advertisement and promotion from the Extension Office will be beneficial and help reach a more wide-spread clientele for the events.

Successful implementation of the farmers markets will require effective cooperation between the Bell County Health Department and the partners; therefore, it is crucial that the Health Department has experience implementing resources that involve outside programs. One example of this necessary collaboration already in place with the Bell County Health Department is their work with the Kentucky HANDS Program. This Health Access Nurturing Development Services (HANDS) program is a voluntary home visitation program for moms, dads, and

families to receive support during the early parenthood time. This program is run in every county in Kentucky, through referrals made by the health department. Advertising this program through the Bell County Health Department shows the ability to work with partners, which will be necessary for the implementation and sustainability of the farmers markets.

Along with successful partnerships, the Health Department already practices and promotes evidence-based services to the community members of Bell County and the farmers market program would complement this mission. The Bell County Health Departments states it is “committed to promote health, protect health, and prevent disease, injury and disability” (*Services*, n.d.). This supports the goals of the farmers market to increase access and consumption of fruits and vegetables and ultimately decrease obesity rates. The markets are intended to address the issue of food insecurity and lack of access to fresh fruits and vegetables. Increasing this access promotes the health of the community members, protects their health, and can prevent diseases, all aligning with the mission of this organization. Currently, the Health Department has services available that cover different aspects of health, and the farmers market program would expand upon their nutrition services.

### *Staffing Adequacy*

Finally, the Bell County Health Department is adequately staffed to support the implementation of this program. There is a public health director, a public health services coordinator, a finance specialist, administrative specialist, several local health nurses, a nurse supervisor, senior support services workers, an environmentalist, and a technical consultant on staff. For example, the public health director and public health services coordinator will oversee the employees working on the farmers markets and will be responsible for hiring the Market

Manager. Although the Market Manager and other market employees will be responsible for the success of the markets, the Bell County Health Department staff can help find proficient employees for the markets and support the program as needed.

### **Partnerships and Collaboration**

The successful implementation of this program will require community partnerships and stakeholders. Table 3 details the necessary groups from state and local levels and their responsibilities in implementing the farmers markets. These groups include Bell County Cooperative Extension Services, the Community Farm Alliance, the Pineville and Middlesboro SNAP offices, and the Bell County Volunteer Fire Department. Including representation from local and state levels ensures diversity of partners. Letters of support from each entity are attached.

**Table 3: Community Partners**

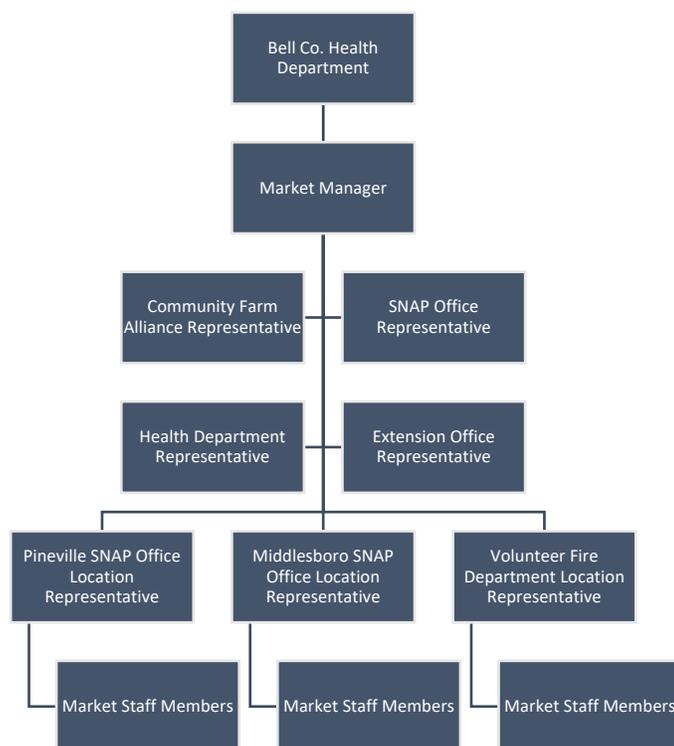
| Entity                                    | Level        | Description  | Role  |
|---|--------------|--|---|
| Bell County Cooperative Extension Service | County/local | Provides research-based education and services to help Kentuckians in various areas of health. This is a program throughout the state, with each county in Kentucky having their own Extension Office. | Promote the farmers market program and recruit farmers.             |
| Community Farm Alliance                   | State        | This is a statewide nonprofit that helps organize and support farmers markets. This organization   | Lead Double Dollar program implementation and provide resources for |

|  |       |  |   |
|--|-------|--|---|
|  |       | works to improve the quality of life of Kentuckians in rural and urban communities and create policies and programs that will address the needs of communities.  | market manager training and overall resource for farmers market implementation.   |
| SNAP Offices (Pineville and Middlesboro) | Local | Administers SNAP benefits to income-eligible households. The SNAP offices work with customers to determine SNAP eligibility and calculating the benefits. The offices also help SNAP users find stores that accept the benefits. | Assist with implementation of SNAP benefits and token use. Will be a resource for any SNAP assistance required during the markets. The Pineville and Middlesboro locations will serve as the physical setting for two of the farmers markets. |
| Bell County Volunteer Fire Department    | Local | This organization is in Bell County and helps community members in need of their services.   | This community resources will be the location of the third farmers market in this program.  |

## Project Management

This project will have several key staff members, each with specific responsibilities that will contribute to the overall success of the program. The roles of each position have been previously discussed. To ensure the program is improving, suggestions from community members, market attendees, vendors, and farmers will be collected by each Market Location Representative since feedback is crucial for improvements. As discussed earlier, this information will be reviewed by the Community Advisory Group and modifications will be made to the markets accordingly. As displayed in Table 4, the Market Manager oversees all involved in the program.

**Table 4: Key Staff Members**



*Timeline*

The timeline for planning and implementation is included in the proposed Gantt chart. Year one will mainly include the project start up, establishment of the Community Advisory Group and partnerships, recruitment of farmers, and other preparation measures such as creating the surveys, setting up the point-of-sale system, and establishing the Kentucky Double Dollars incentive. The second year will entail the actual launch of the farmers market events, the start of the baseline surveys during the markets, and mailing out the short-term surveys. Data management of the surveys will also begin during this second year. The third and last year of funding will include a second farmers market season, while the medium and long-term surveys are sent out as follow up to the first market season participants. During this time, data management and analysis will be conducted.

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## Appendix 1: LOGIC MODEL

Program: Bell County Farmers Market Logic Model

| Inputs  | Activities  | Outputs  | Outcomes -- Impact                                    |   |   |
|---|---|--|---|---|---|
|   |   |  | Short   | Medium  | Long  |
| <p>-Location of farmers markets (Pineville SNAP Office, Middlesboro SNAP Office, Bell Co Volunteer Fire Department)</p> <p>-Community partnerships (Cooperative Extension, Community Farm Alliance, SNAP Offices)</p> <p>-Market equipment: POS systems, tablets for surveys, tables/tents, signage, mailing supplies for mail surveys</p> <p>-People: farmers and vendors, Market Manager, Health Department Representative, Market Location Representatives, SNAP Office Representative, CFA representative</p> | <p>-Reserve market locations and times</p> <p>-Contact community partners and establish relationship</p> <p>-Establish token system, set up POS, create tablet and mail surveys, create advertisements and Facebook group</p> <p>-Recruit farmers, establish Community Advisory Group and meeting times, train Market Manager</p> | <p>-Consistent market times and locations (number of markets during the season, how many people attend, how many farmers participated)</p> <p>-Established partnerships for sustainability (adequate number of partnerships)</p> <p>-High participant satisfaction with market set-up and implementation<br/>--Successful number of participants ~ 300 total each week</p> <p>-Successful recruitment and retention of farmers and workers<br/>---Have an average of 5 vendors at each farmers market location each week and increase each market season</p> | <p>1. Increased purchase of fruits and vegetables</p> | <p>1. Increase consumption of fruits and vegetables</p> <p>2. Positive change in attitude toward fruits and vegetables</p> <p>3. Reduce perceived feelings of food insecurity</p> <p>4. Increase self-efficacy about attending and purchasing produce at farmers market</p> | <p>1. Reduce obesity rates in Bell County, KY, --Measured through BMI</p> |

**Assumptions**

Farmers market vendors will provide fresh fruits and vegetables, customers are willing to buy the produce with their SNAP benefits

**External Factors**

Community members' attitudes toward fruits and vegetables, social norms regarding SNAP usage, access to farmers markets, recruitment of farmers/vendors

## Appendix 2: GNATT CHART

| Timeline                               | Year 1 | Year 2 | Year 3 |
|--|--------|--------|--------|
| <b>Phase 1: Preparation</b>            |        |        |        |
| Project start up                       | ■      | ■      | ■      |
| Community Advisory Board Establishment | ■      | ■      | ■      |
| Partners Established                   | ■      | ■      | ■      |
| Recruitment of farmers                 | ■      | ■      | ■      |
| POS System Start-Up                    | ■      | ■      | ■      |
| Kentucky Double Dollars Establishment  | ■      | ■      | ■      |
| Survey preparation                     | ■      | ■      | ■      |
|  | ■      | ■      | ■      |
| <b>Phase 2: Implementation</b>         |        |        |        |
| Farmers market events                  | ■      | ■      | ■      |
| Baseline tablet survey                 | ■      | ■      | ■      |
| Mail short-term survey                 | ■      | ■      | ■      |
| Mail medium-term survey                | ■      | ■      | ■      |
| Mail long-term survey                  | ■      | ■      | ■      |
| <b>Phase 3: Evaluation</b>             |        |        |        |
| Data Management                        | ■      | ■      | ■      |
| Data Analysis                          | ■      | ■      | ■      |



## Appendix 4: BUDGET NARRATIVE

### Personal Salaries and Wages

|  | Year 1 | Year 2 | Year 3 |
|--|--------|--------|--------|
| Health Department Representative                           | 75%    | 60%    | 60%    |
| Extension Office Representative                            | 40%    | 35%    | 35%    |
| SNAP Office Representative                                 | 10%    | 9%     | 8%     |
| Community Farm Alliance Representative                     | 25%    | 15%    | 15%    |
| Pineville SNAP Office Location Representative              | 35%    | 40%    | 40%    |
| Middlesboro SNAP Office Location Representative            | 35%    | 40%    | 40%    |
| Bell Co. Volunteer Fire Department Location Representative | 35%    | 40%    | 40%    |
| Market Manager   | 75%    | 100%   | 100%   |
| Farmers Market Staff                                       | 5%     | 5%     | 5%     |

#### **Health Department Representative (75% Y1 / 60% Y2 / 60% Y3)**

The Health Department Representative will oversee this farmers market program and supervise all other rolls. This representative will collaborate with partnerships for planning and implementation of the market and will adopt changes based on the feed-back collected from other community advisors. More time will be committed from this representative the first year during the start up, then will drop some as the program is established the following years.

#### **Extension Office Representative (40% Y1 / 35% Y2 / 35% Y3)**

The Extension Office Representative will assist in advertising the program's events and will lead the recruitment of farmers.

#### **SNAP Office Representative (10% Y1 / 9% Y2 / 8% Y3)**

The SNAP Office Representative will provide information and assistance in setting up EBT usage at the farmers markets. This representative will also troubleshoot any complications related to SNAP and FMNP benefits as they arise during the market implementation.

#### **Community Farm Alliance Representative (25% Y1 / 15% Y2 / 15% Y3)**

The Community Farm Alliance Representative will oversee the Double Dollar Incentive program that will be funded through the Community Farm Alliance. This representative will provide information regarding market manager training as well, which will primarily occurring during year one.

**Pineville SNAP Office Location Representative (35% Y1 / 40% Y2 / 40% Y3)**

The Pineville SNAP Office Location Representative will oversee the market located at the Pineville SNAP Office. This representative will collect and offer feedback about how the program is going and will be responsible for distributing the Double Dollar tokens during the market events.

**Middlesboro SNAP Office Location Representative (35% Y1 / 40% Y2 / 40% Y3)**

The Middlesboro SNAP Office Location Representative will oversee the market located at the Middlesboro SNAP Office. This representative will collect and offer feedback about how the program is going and will be responsible for distributing the Double Dollar tokens during the market events.

**Bell Co. Volunteer Fire Department Location Representative (35% Y1 / 40% Y2 / 40% Y3)**

The Bell Co. Volunteer Fire Department Location Representative will oversee the market located at the Bell Co. Volunteer Fire Department. This representative will collect and offer feedback about how the program is going and will be responsible for distributing the Double Dollar tokens during the market events.

**Market Manager (75% Y1 / 100% Y2 / 100% Y3)**

The Market Manager will oversee all day-to-day operations of the markets including farmer recruitment, market promotion, expanding the customer bases, SNAP benefit assistance, securing community partners, miscellaneous assigned duties. The market manager will be the point-of-contact for each market location representative.

**Farmers Market Staff – Each (3) Location (5% Y1 / 5% Y2 / 5% Y3)**

The farmers market staff at each location will be a community member who is responsible for working the POS system during the event.

**Fringe Benefits****Total - Y1: \$54,775 / Y2: \$57,579 / Y3: \$59,165**

Retirement and health insurance have been negotiated at a rate of 35% for this proposal.

**Equipment****Total - Y1: \$11,000 / Y2: \$3,500 / Y3: \$3,500**

Equipment costs include the point-of-sale system, tables, chairs, tents, tablets for surveys.

**Supplies****Total – Y1: \$3,000 / Y2: \$2,000 / Y3: \$2,000**

Supply costs include printed advertisements, mailing supplies, office supplies, snacks for community advisory board meetings, water for market events.

**Travel:****Total: \$264.00**

In-state travel includes staff members traveling from the Health Department in Pineville to farmers market locations during the develop stages to plan out the markets. Round Trip Distance form Health Department to the locations: Pineville SNAP Office Location: 0.4 miles, Middlesboro SNAP Office Location: 22 miles, Volunteer Fire Department Location: 9 miles Total Distance: 31.4 miles with an estimated five trips = 157 miles traveled with the federal reimbursement rate of \$0.56 = \$87.92 = \$88 total each year = \$264

**Research Incentives:**

**Total: \$2,600**

\$10 incentives will be given to each participant of the short, medium, and long-term surveys.

Short-term survey:  $\$10 \times 80 = \$800 \times 2 \text{ years} = \$1600$

Medium-term survey:  $\$10 \times 60 = \$600$

Long-term survey:  $\$10 \times 40 = \$400$

**F&A/Indirect Costs:**

**Total- Y1: \$119,442 / Y2: \$121,094 / Y3: \$124,866**

The negotiated F&A rate is 53% each year. The indirect cost request is calculated on the direct cost base of Y1: \$225,363 / Y2: \$228,479 / Y3: \$235,597