Arlington Food Insecurity Study

Summary of Results 2012–2013

ARLINGTON FOOD ASSISTANCE CENTER

This Study was made possible
with the generous support of the

Geary – O'Hara Family Foundation

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In September 2012 the Board of Directors of the Arlington Food Assistance Center (AFAC) completed and approved a Three Year Strategic Plan for AFAC. As part of the Strategic Plan, the Board authorized the conduct of a food insecurity study of Arlington County. The purpose was to determine the true extent of food insecurity in the County so that AFAC could determine ways in which it could better serve all those in need in our community.

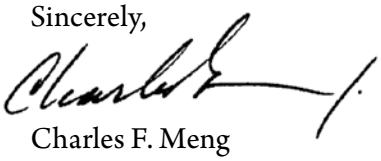
The Board of Directors of AFAC wants to recognize and to thank the **Geary-O'Hara Family Foundation** for the generous support that has made this study possible. It is only through the partnership and support of our colleagues at the Geary-O'Hara Family Foundation and many others that the work of AFAC in helping our Arlington neighbors in need is possible.

In addition, this study would not have been possible without the help, dedication and hard work of a number of other individuals. In particular, we would like to thank Beth Offenbacher, Ph.D. at the Center for Public Administration & Policy, and Susan Willis-Walton, Ph.D. at the Center for Survey Research, both of whom directed the study under the auspice of Virginia Polytechnic Institute & State University (Virginia Tech) at Blacksburg. We would also like to thank Mary Katharine D'Addario, Arlington County Department of Human Services, Economic Independence Division, and Elizabeth Rodgers from the Department of Community Planning, Housing & Development, Planning Division, who provided important information and assistance during the study. Finally, a great thanks must be given to Mona Bormet, Outreach & Research Manager here at AFAC, who patiently, over many long months and with great care, sheparded this study through to completion.

AFAC will use the results of this study to formulate a new Strategic Plan to guide AFAC's actions in the coming years to address the needs of the many families that come to us for help. More importantly, the study and the new Strategic Plan will allow AFAC to expand its services in a planned way to reach even more families in need right here in Arlington County. It is our hope that with this study, AFAC will be able to work more effectively and in greater collaboration with Arlington County's Department of Human Services, communities of faith, other nonprofits, other social service agencies, and Arlington County Public Schools to address the 31,500 individuals living in Arlington County who experience food insecurity.

For more information, please contact communications@afac.org or 703-845-8486.

Sincerely,



Charles F. Meng
Executive Director

Executive Summary

In 2012, the nonprofit Arlington Food Assistance Center (AFAC) partnered with Virginia Tech's Center for Survey Research (CSR) and its Center for Public Administration and Policy (CPAP) to conduct two food insecurity studies and develop two food security indices.

Food insecurity refers to the U.S. Department of Agriculture's (USDA) measure, including limited or uncertain access to food, reduced food intake, and disrupted eating patterns. Hunger is a condition that may result from food insecurity.[1]

These studies were designed to help AFAC gain a more accurate picture of how many people are food insecure in Arlington County, identify the factors that affect food insecure individuals (characteristics, conditions, behaviors, and experiences that limit the ability to access food), and guide AFAC and other social service providers in determining how to continue improving the effectiveness of their programs and services.

Despite Arlington's reputation as a wealthy community, there are many food insecure people in the county. Some individuals or families have temporary food needs due to job changes while others have ongoing issues. A 2011 Feeding America Food Insecurity Study estimated that 19,980 people in Arlington County (about 9 percent of Arlington County's population) are food insecure to some degree[2]. At any given time, AFAC has approximately 2,300 active household referrals from county social service agencies, communities of faith, other nonprofits, and Arlington County Public Schools, which represents nearly 3,500 individuals who suffer from food insecurity on a regular basis. Taken together, AFAC's figures and those of Feeding America highlight a gap of almost 16,480 people who have not been referred to AFAC.

HIGHLIGHTS FROM THE STUDY

part I

1. **Among Arlington residents, there are greater levels of food insecurity than previous data suggested. According to this study, slightly more than 4 in 10 Arlington residents in the $60,000 and under income group are experiencing food insecurity.**
   a. With roughly 75,000 Arlington residents in this income category, this suggests as many as 42 percent or 31,500 of these individuals could experience food insecurity (page 18).
   b. This is significantly more than the 2011 Feeding America Food Insecurity study that estimated that 19,980 people in Arlington County (about 9 percent of Arlington County's population of approximately 213,000 people) are food insecure to some degree.[2]
   c. Few survey participants (less than 10 percent) participate in any government food benefits program, with the major reason cited that they have not needed the help (82 percent) (pages 28–29).

2. **Both youth and older Arlingtonians in households with low incomes ($60,000 and under) are disparately affected by food insecurity as compared to other age groups. About one-third (29 percent) of households with children (page 22) and nearly as many older respondents (30 percent age 65 and older) are experiencing some level of food insecurity (page 24).**

3. **Household employment/underemployment is largest factor affecting food insecurity.**
   a. Among low-income residents with food insecurity, unemployment and underemployment (low pay and not enough work hours) were the most common reasons for why they are not able to access the amount or type of food they want (page 30).
   b. Among respondents overall, physical and mental health issues are the most common reasons for lack of access and other reasons included high bills for expenses, such as heating and cooling and food costs (page 30).

4. **County residents frequently cut the amount of food eaten or skipped meals to cope with food insecurity. Among the 96 respondents to the primary survey who indicated that they or other adults in their household had cut the size of their meals or skipped meals because they did not have enough money for food:**
   a. 43 percent experienced this 'almost every month,'
   b. 39 percent among those respondents indicating that this occurred for them 'some months but not every month' over the past year
   c. 19 percent of respondents indicated that they experienced this '1 or 2 months' over the past year
   d. For individuals experiencing any food insecurity over the past year, this experience occurred frequently (page 20).

part II

1. **More than 9 in 10 (94 percent) of the respondents to the referral survey have experienced food insecurity in the past year (page 36).**
2. **Friends and families are an essential part of the community food safety net.**
   a. Low-income Arlingtonians who have been referred to AFAC in the past also report relying on family and friends to address food insecurity as a supplement to shopping in retail grocery stores (page 39).
   b. Among these households, the most common reason they stop using AFAC services is a (positive) change in personal circumstances, such as employment status (page 35).
3. **Almost 9 out of 10 households referred to AFAC are interested in learning more about how they can access its services (page 40). Among those respondents, a third have already visited an AFAC distribution site at some time (page 34).**

Table of Contents

1 Introduction

In 2012, the nonprofit Arlington Food Assistance Center (AFAC) partnered with Virginia Tech's Center for Survey Research (CSR) and its Center for Public Administration and Policy (CPAP) to conduct two food insecurity studies and develop two food security indices.

Despite Arlington's reputation as a wealthy community, there are many food insecure people in the County. Some individuals or families have temporary food needs due to job changes while others have ongoing issues. A 2011 Feeding America Food Insecurity study estimated that 19,980 people in Arlington County (about 9 percent of Arlington County's population of approximately 213,000 people) are food insecure to some degree. At any given time, AFAC has approximately 2,300 active household referrals from County social service agencies, communities of faith, other nonprofits, and Arlington County Public Schools, which represents nearly 3,500 individuals who suffer from food insecurity on a regular basis. Taken together, AFAC's figures and those of Feeding America highlight a gap of almost 16,480 people who have not been referred to AFAC.

These studies were designed to help AFAC gain a more accurate picture of how many people are food insecure in Arlington County, identify the factors that affect food insecure individuals (characteristics, conditions, behaviors, and experiences that limit the ability to access food), and guide AFAC and other social service providers in determining how to continue improving the effectiveness of their programs and services.

1. **The first study (Part I) is a comprehensive survey of low-income residents in Arlington, Virginia, to identify their food security status (Arlington Food Insecurity Primary Survey). A total of 828 Arlington residents completed this survey.**
2. **The second study (Part II) is a survey of individuals who had been referred to AFAC but who chose to not use or who discontinued use of AFAC services. There were 207 respondents to the Arlington Food Insecurity Referral Survey.**

As part of this effort, two telephone surveys were designed and administered by CSR in order to collect data for the study. This report summarizes the data collection procedures and results of the survey. Throughout this report, the representative general population survey of low income Arlington residents is referred to as the "primary" survey and the survey of the group of referred clients on the lists received by AFAC is referred to as the "referral" survey. The overall tabulated results and responses for the open-ended survey items for both surveys appear in *Appendices C-F*.

3. **The Arlington Food Security Indices section (Part III) consists of the Conditions/Experiences/Behaviors Indicative of Food Security and the Arlington Food Security Composite Index.**

The first index, the Conditions/Experiences/Behaviors Indicative of Food Security, is based on methodology specified in the report, *Measuring Food Security in the United States: Guide to Measuring Household Food Security* (2000, 2012), which was published by the U.S. Department of Agriculture. The indicators included in this index describe the range of conditions, experiences, and behaviors that indicate food security and hunger in Arlington County (see Part III, section 1).

The second index, the Arlington Food Security Composite Index, uses 25 indicators to provide a snapshot of the degree of food security in Arlington County at any one point in time (see Part III, section 2). These indicators are divided into broad categories that include Food Accessibility, Food Availability and Affordability, and Socioeconomic Data. They were identified through a review of the food security literature and by discussion and collaboration with the staff and organizational partners[3] of AFAC. Changes in individual indicators that comprise these categories can signify broader changes at the community level that may affect food security and that may drive greater demand for AFAC services. This index has been designed to be updated periodically by AFAC staff in order to provide a longer-term view of food security. More detailed information about this index can be found in *Appendix K.*

2 Methodology

SAMPLING AND SURVEY INSTRUMENT DESIGN

For the primary survey (Part I) of Arlington residents, a targeted random-digit dialing (RDD) method was employed by the CSR for the administration of the survey. **The sample pool of telephone contact records specifically targeted lower income households (predicted likelihood of individuals with incomes of $60,000 or lower residing in home).**

Both listed and unlisted telephone numbers were included in the sample for this project. Cellular numbers were also included in the random sample for the study. CSR worked with Survey Sampling International of Fairfield, Conn., to define the parameters of the sample and to ensure the contact records for the study would be representative of citizens residing in Arlington. While the CSR received locality information for each telephone record included in the study, because some exchanges include areas outside Arlington and because respondents sometimes report residing outside of a survey target area, a screener question was also included in the survey to eliminate non-Arlington County residents.

Based on a total of 828 completed interviews for the primary survey, the survey has a sampling error of ±3 percent. Therefore, in 95 out of 100 surveys completed with this number of interviews using the same sampling methodology and parameters, the results obtained would fall in a range of ±3 percent of the results that would be achieved if interviews were completed with every potential respondent (in households with working land or cellular telephones) residing in Arlington in the target income range. Smaller sampling errors are present for items on which there is polarized response (e.g., 90 percent identical response on an item).

The telephone contact records for the referral survey (Part II) were obtained from AFAC. These records were for the group of individuals who were referred to AFAC but who were not current users of services.

In order to assist CSR in the development of the survey instruments to be used for the study, AFAC provided study objectives and other survey instruments related to food insecurity so that initial draft surveys could be developed. CSR created the surveys in a format that would be suitable for telephone survey administration using primarily scaled, fixed choice survey items. Demographic survey items were included so the survey results could be analyzed by selected respondent characteristics. Open-ended survey items were included in the survey to capture additional information that might not be garnered with closed-ended questions. A copy of the primary survey instrument used for the study appears in *Appendix A*. A copy of the referral survey instrument used for the study appears in *Appendix B*.

DATA COLLECTION PROCEDURES

All telephone calls for the survey were made by CSR staff members utilizing a Computer-Assisted Telephone Interviewing (CATI) system at the Blacksburg, Virginia location of the Virginia Tech Center for Survey Research. All calls for the two surveys were made during the period between October 2012 and February 2013. CSR wrote calling programs to be used with CATI for administering the 2013 Arlington Food Insecurity Survey and the 2013 Arlington Food Insecurity Referral Survey. The programs provide scripted survey items, preclude out of range responses and facilitate real-time data entry of all responses gathered on the telephone.

The interviewers collecting data for the survey projects were monitored by a CSR Call Center Supervisor in order to ensure accuracy and proper interviewing protocol. Clarifying notes for specific survey items appeared on the CATI screens for interviewers to ensure that identical prompts were used for respondents requesting additional information about survey items or response categories.

CSR programmed all call scheduling so that each sample member remaining as a non-respondent was attempted to be reached at least six times at different times of day on different days of the week. Many sample members were never reached after numerous attempts and a final disposition of "no answer" was assigned. Therefore, the residency rate among these households is unknown. It may be assumed that a number of these households are indeed, ineligible sample members due to non-residence. **Tables 1 and 2** (page 10) provide an overview of the final call dispositions for all sample members for both surveys.

CSR utilizes a standard conversion calling protocol in which all calls that are coded as "soft refusals" are re-attempted utilizing more senior interviewing staff. A call is coded as a "soft refusal" when the potential respondent refuses but does not indicate a reason for exclusion from the calling pool (i.e., refusal due to illness, request to be removed from calling pool, etc.). Likewise, all telephone numbers deemed to be temporarily disconnected are attempted periodically throughout the duration of the study.

Table 1. Primary Survey Final Call Dispositions

Total Initial Sample	14,235
Ineligible Sample: • Residence outside Arlington (843) • Language/hearing barrier (after translation attempt) (667) • Non-working telephone number (fax tones, out of service/disconnected numbers, automated disconnect services) (2,899) • No adult residing in home (31) • Non-residential telephone number (110)	4,550
Eligible Sample	9,685
Total Number of Completed Interviews	828
Non-respondents: • Final disposition of no answer, busy, answering machine or callback after six attempts (7,209) • Refusals (1,648)	8,857

Table 2. Referral Survey Final Call Dispositions

Total Initial Sample	1,553
Ineligible Sample: • Incarcerated or deceased (6) • Language/hearing barrier (after translation attempt) (263) • Non-working telephone number (fax tones, out of service/disconnected numbers, automated disconnect services) (379) • Wrong number (243) • Non-residential telephone number (14)	
Eligible Sample	648
Total Number of Completed Interviews	207
Non-respondents: • Final disposition of no answer, busy, answering machine or callback after six attempts (317) • Refusals (124)	441

3 Summary of Findings

The 2012-2013 AFAC-Virginia Tech food insecurity studies were designed to help AFAC gain a more accurate picture of how many people are food insecure in Arlington County, identify the factors that affect food insecure individuals (characteristics, conditions, behaviors, and experiences that limit the ability to access food), and guide AFAC and other social service providers in determining how to continue improving the effectiveness of their programs and services. It consists of two surveys focused on food insecurity issues and the development of two indices of food security.

STUDY OF LOW-INCOME RESIDENTS (PART I)

The first study is a comprehensive survey of low-income residents in Arlington, Virginia, to identify their food security status (Primary Survey, Part I). There were 828 respondents to this survey. Highlights of these findings include:

1. **The number of food insecure respondents (N=345) is significant, representing 42 percent of the general population survey group for Arlington.** Thus, slightly more than four in ten Arlington residents in the $60,000 and under income group are experiencing food insecurity. According to 2012 U.S. Census estimates, roughly 75,000 Arlington residents would fall in this income category, suggesting that as many as 31,500 of those individuals in the County could experience food insecurity. Among these individuals, more than a third worried that food would run out before they could get money to buy more (34.5 percent), purchased food ran out and the individual did not have money to buy more (27.7 percent), and the food that was bought didn't last and the individual didn't have funds to get more (24.2 percent). *See Part I, Section 1 and 2.*
2. **County residents frequently cut the amount of food eaten or skipped meals to cope with food insecurity.** Among the 96 respondents to the primary survey who indicated that they or other adults in their household had cut the size of their meals or skipped meals because they did not have enough money for food, 43 percent (N=41) experienced this 'almost every month'. Thirty-nine percent of those respondents (N=37) indicated that this occurred for them 'some months but not every month' over the past year, and 19 percent of respondents (N=18) indicated that they experienced this '1 or 2 months' over the past year. For individuals experiencing any food insecurity over the past year, this experience occurred frequently. *See Part I, Section 2.*
3. **People with food insecurity are interested in learning more about how they can benefit from AFAC programs.** Almost three-fourths (74 percent) of primary survey respondents who have experienced food insecurity in the past year are interested in AFAC services. However, more than half (52 percent) of these respondents who have at least one indicator of food insecurity had not heard of AFAC. *See Part I, Section 6.*

4. **Food insecurity affects 29 percent of households with children among primary survey respondents.** Among the respondents to the primary survey, 157 reported at least one child currently residing in their home. In 46 of these households, food insecurity had been experienced by at least one child. Among these adult respondents, 44 also met the study criteria for food insecurity themselves. As the Conditions/Experiences/Behaviors Indicative of Food Security Index indicates in Part III, all households with children that participated in the study have Low Food Security (157 respondents) and more than 99 percent of households without children that participated in the study are experiencing Marginal Food Security. *See Part I, Section 3 and also Part III, Section 1.*
5. **Older respondents have experienced a higher level of food insecurity in the past year as compared to most other age groups.** Among the 29 percent of primary survey respondents who are age 65 or older, 30 percent have experienced food insecurity in the past year as indicated by their responses to the food insecurity items included on the survey. 37 percent of respondents in the 45-64 years of age group experienced food insecurity in the past year prior to the survey. This percentage of respondents experiencing food insecurity is significantly higher than the levels of food insecurity found among respondents less than 25 years of age in the survey (6 percent food insecure), in the 25-34 years of age group (13 percent food insecure), and among respondents age 35-44 (14 percent food insecure). The age 65 or older age group of respondents expressed less interest in AFAC services compared with respondents in the 45-64 years of age group (26 percent vs. 38 percent). *See Part I, Section 4.*
6. **There is a large degree of awareness of AFAC although very low income respondents are most interested in learning more.** More than half (52 percent of the 828 survey respondents) of the primary survey group reported that they had heard of the Arlington Food Assistance Center. In addition, almost 3 in 4 (74 percent out of the 345) primary survey respondents who have experienced food insecurity in the past year indicated on the survey that they would be 'somewhat interested' or 'very interested' in using the services of the Arlington Food Assistance Center. Survey respondents reporting a household income of less than $15,000 expressed a stronger interest in AFAC services than most of the other income groups. However, respondents at all income levels expressed significant interest, with the range for this category being 58.8 percent ($50,000-$75,000 in household income) to 76.3 percent (less than $15,000 in household income). *See Part I, Sections 6 and 7.*
7. **There is minimal participation in government food benefits programs.** Reported levels of participation in government programs was relatively low among respondents to the primary survey, with less than 10 percent of the 828 respondents indicating current participation in any government food assistance program. Respondents overwhelmingly indicated that they have not needed the help as the major reason for not using these programs (82 percent). *See Part I, Sections 8 and 9.*

8. **Physical and mental health issues were the most prevalent reasons cited by respondents to the primary survey as contributing to why they may have not been able to afford the amount or type of food they wanted.** Unexpectedly high bills such as heating and cooling were also cited frequently by respondents as contributing to food insecurity. In addition to the reasons listed on the survey as possible contributing factors, some respondents cited increasing food costs as an issue. Although unemployment and underemployment (low pay and not enough work hours) were more prevalent reasons cited by respondents identified as being food insecure (according to responses on the survey items included in the food insecurity variable created by CSR), these were not the most commonly cited factors among the overall group of survey respondents. *See Part I, Section 10.*

STUDY OF INDIVIDUALS REFERRED TO AFAC (PART II)

The Referral Survey (Part II) was conducted by CSR using contact records provided by AFAC for individuals who were referred but never used or no longer used AFAC services. There were 207 respondents to this survey. Highlights of these findings include:

1. **Social service referrals form the majority of client referrals.** The majority of survey respondents (55 percent) who recall being referred to AFAC were referred by a social service agency. The referral survey also included an open-ended question regarding why the respondent was referred to the Arlington Food Assistance Center. The primary responses to this survey item were related to unemployment, a lack of income, or the loss of a job. *See Part II, Section 1.*
2. **About one-third have visited an AFAC distribution site.** Some survey respondents (13 percent) indicated that they had visited a site other than those listed. When asked which other site they had visited, the most common other sites mentioned were "Shirlington" or churches not already included as a survey response option. *See Part II, Section 2.*
3. **Changes in personal circumstances, such as a change in employment status, was the most prevalent reason cited by respondents for choosing not to use or choosing to stop using AFAC services.** The second most prevalent response was 'other' reasons beyond those included in the survey. Asked to specify what these issues were, respondents indicated they were too old or sick to go anywhere; or other people needed the assistance more; that the respondent believed they did not qualify for assistance; or expressed dissatisfaction with the amount or quality of food available through AFAC. *See Part II, Section 3.*
4. **More than 9 in 10 (94 percent) of the respondents to the referral survey have experienced food insecurity in the past year as indicated by the food insecurity variable constructed by CSR.** This is a significant finding in that these survey respondents are not using AFAC services, yet are still experiencing food security.

Half of the respondents to the referral survey responded that they or other adults in their household had cut the size of their meals or skipped meals in the past year because there was not enough money for food. *See Part II, Section 4.*

5. **Families and friends are sources of food support.** The most prevalent source of food for both the primary survey group and the referral survey group was grocery stores. However, the referral survey respondents were more likely to turn to friends and family for food than were respondents in the primary survey group. *See Part II, Section 5.*
6. **There is higher interest in AFAC services among Referral Survey respondents.** While the level of interest in receiving food assistance from the Arlington Food Assistance Center varied among referral survey respondents with different demographic characteristics, there was an even higher overall level of interest among respondents in the referral group (88 percent interested) than in the primary survey group (65 percent interested). This finding suggests that perhaps many of the individuals in the referral survey respondent group may again use AFAC services in the future or visit AFAC food distribution sites. *See Part II, Section 6.*
7. **Factors contributing to food insecurity are similar to those for the Primary Survey.** Among referral survey respondents, unemployment was the primary factor contributing to their not being able to afford the type or amount of food they wanted over the past year. Conversely, the most prevalent contributing factors to food insecurity among the primary survey group were physical and mental health issues. Similar to the responses among the primary survey respondents, the referral survey respondents also frequently cited unexpectedly high bills such as heating and cooling as contributing to their food insecurity. *See Part II, Section 7.*

EXTERNAL FACTORS

This study sought to also identify a larger understanding of the many factors that can contribute to food insecurity. The Arlington Food Security Composite Index developed for this study (see Part III, Section 2) consists of 25 indicators divided into the broad categories of Food Accessibility, Food Availability and Affordability, and Socioeconomic data.

Changes in individual indicators that comprise these categories can signify broader changes at the community level that may affect food security and that may drive greater demand for AFAC services. Arlington is comparably high in ranking; at 56.97, its index is fifth among the 79 Virginia counties and cities included. Of the three categories included (Food Accessibility, Food Availability and Affordability, and Socioeconomic), Socioeconomic data was the most influential factor (76.69), followed by Food Availability and Affordability (69.84) and then Food Accessibility (24.40). As data in these subject areas changes, Arlington's ranking also may fluctuate.

PART I

Primary Survey

1 Respondent Demographic Profile

As is reported elsewhere in this summary, some differences in the survey results may be seen when examined by selected respondent demographic characteristics. **Table 3** depicts the demographic characteristics of the respondents to the primary survey along with the characteristics for Arlington County and AFAC current clients.

Table 3. Demographic Characteristics of Primary Survey Respondents

Characteristic	Primary Survey	Arlington County	AFAC Clients
Female	64%	50%	58%
Male	36%	50%	42%
White	56%	77%	16%
African American/Black	21%	9%	27%
Asian	5%	10%	6%
Hispanic	8%	15%	50%
Less than $25,000	21%	3%	86%
Between $25,000–$50,000	14%	11%	12%
Between $50,000–$75,000	11%	8%	2%
$75,000 and over	35%	74%	.5%
<25 years of age (Arlington % includes under 18)	4%	26%	*Not Available*
25–34 years of age	14%	27%	*Not Available*
35–44 years of age	15%	16%	*Not Available*
45–64 years of age	37%	23%	*Not Available*
Age 65 or older	29%	9%	*Not Available*

2 Respondent Food Insecurity

Appendix G provides detailed tabulations for all survey items for the 345 respondents who were identified as experiencing food insecurity. For the purposes of analysis, food insecurity is defined as a respondent answering any survey item affirmatively indicating they are experiencing food insecurity. Specifically, CSR identified respondents in the primary survey as experiencing food insecurity if they answered "often/sometimes true" or "yes" to any of the survey questions Q2a-Q2k, Q4, and Q6-Q9. There were 345 respondents who indicated food insecurity on at least one of these survey items.

This number of food insecure respondents (N=345) is significant at 42 percent of the general population survey group for Arlington. ***Slightly more than four in ten Arlington residents in the $60,000 and under income group are experiencing food insecurity.*** *According to 2012 U.S. Census estimates, roughly 75,000 Arlington residents would fall in the survey group income category, suggesting that as many as 31,500 of those individuals in the County could experience food insecurity.*

Even though the survey sample targeted households predicted to be at an income level of $60,000 or lower, income was asked on the survey and indeed, a number of the survey respondents reported household incomes higher than $60,000. As demonstrated in the survey results, it may be assumed that a number of Arlington residents in the higher than $60,000 income ranges may also be experiencing at least some aspects of food insecurity.

An additional survey item addressed the kinds of food eaten by survey respondents. The majority of respondents to the primary survey (68 percent in response to Q3) reported that they have had "enough of the kinds of food they wanted to eat," while 29 percent of respondents indicated that this was not the case for them in the last 12 months.

Table 4 depicts the ranked percentages of responses for the individual items that were used to identify food insecurity in the primary survey.

Table 4. Ranked Percentages of Survey Item Responses Indicating Food Insecurity (N=828)

Survey Item	% Responding Often/ Sometimes True
You worried that food at home would run out before you got money to buy more.	34.5%
The food that you bought ran out and you didn't have money to get more.	27.7%
The food that you bought just didn't last, and you didn't have money to get more.	24.2%
Your meals only included a few kinds of cheap foods because you were running out of money to buy food.	22.6%
You were not able to eat a healthy meal because you didn't have enough money.	20.1%
You had to eat smaller meals because you didn't have enough money for food.	19.4%
You had to eat less frequently because you didn't have enough money to buy food.	17.9%
You wanted information about how to prepare nutritious meals in the most cost efficient way but were unsure about how to get it.	17.4%
You had difficulty getting transportation to get the food you needed for yourself or your household.	15.8%
In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food ****Yes/No format (Percentage 'yes' reported).	13.2%
You were hungry but didn't eat because you didn't have enough food.	13.0%
You had to skip a meal because you didn't have enough money for food.	12.5%
In the last 12 months, or since last October, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food ****Yes/No format (Percentage 'yes' reported).	11.6%
In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food ****Yes/No format (Percentage 'yes' reported).	8.7%
In the last 12 months, did you lose weight because there wasn't enough money for food ****Yes/No format (Percentage 'yes' reported).	7.6%
In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food****Yes/No format (Percentage 'yes' reported).	3.6%

For one of the survey items included in the food insecurity identification variable created by CSR, there was a follow up question (Q5) asking how often this experience related to food insecurity occurred. Specifically, respondents were asked about adults in the household cutting the size of their meals or skipping meals in the last twelve months because there was not enough money for food, with a follow up question asking how often this occurred for respondents who had answered affirmatively. Among the 96 respondents to the primary survey who indicated that they or other adults in their household had cut the size of their meals or skipped meals because there wasn't enough money for food, 43 percent (N=41) experienced this 'almost every month, with 39 percent among those respondents (N=37) indicating that this occurred for them 'some months but not every month' over the past year, and 19 percent of respondents (N=18) indicated that they experienced this '1 or 2 months' over the past year. For individuals experiencing any food insecurity over the past year, this experience occurred frequently.

Figure 1 depicts the findings from the primary survey regarding the food eaten in respondent households in the last 12 months.

Figure 1. **Primary Survey Respondent Description of Food Eaten in Household in the Last 12 Months at Time of Survey**

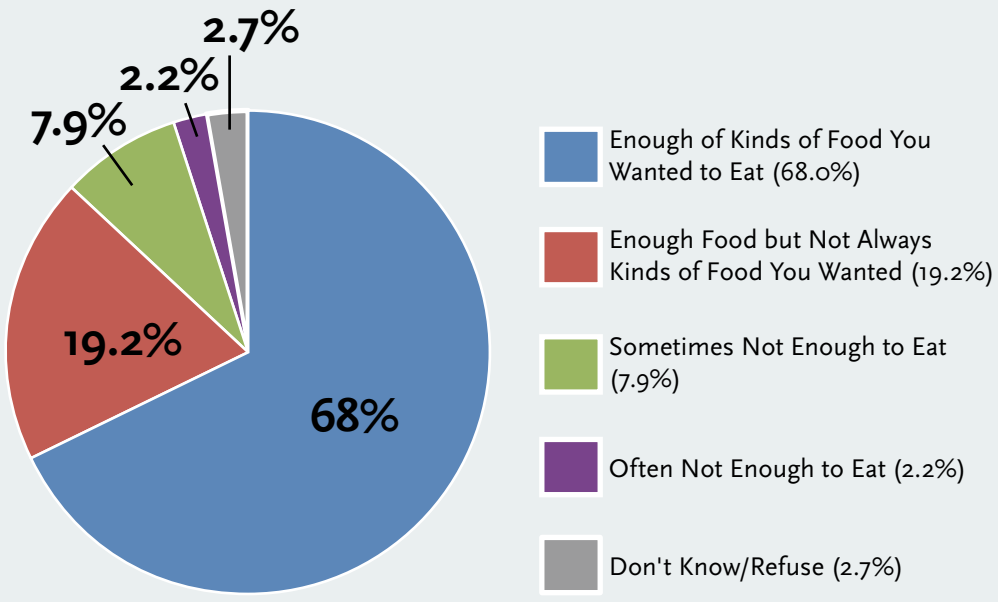


Table 5 depicts selected characteristics for the primary survey respondents who experienced food insecurity in the past year.

Table 5. Demographic Characteristics of Primary Survey Respondents with At Least One Positive Food Insecurity Indicator (N=345)

Characteristic	% Respondents
Are currently renting	81%
Would be 'somewhat' or 'very' interested in AFAC services	74%
Female	61%
Report a household income of less than $50,000 per year in survey	59%
Had not heard of AFAC prior to the survey	52%
African American/Black, Hispanic, or Asian	52%
Are the only adult residing currently in the home	46%
Male	39%
Cite unemployment or underemployment as related to their food insecurity	29%
Age 65 or older	29%
At least one child present in home	25%
City a medical or mental health issue as related to their food insecurity	21%
Have turned to a food pantry/soup kitchen in the past year for food	18%
Cite high bills such as heating and cooling as related to their food insecurity	17%
Receive assistance from SNAP	8%
Receive assistance from WIC or TEFAP	1%

Almost three-fourths (74 percent) of primary survey respondents who have experienced food insecurity in the past year are interested in AFAC services. *Appendix I* in this report summary provides the tabulated survey responses for all respondents who indicated interest in AFAC services for all survey items. Interestingly, more than half (52 percent) of the respondents who have at least one indicator of food insecurity had not heard of AFAC. This represents an opportunity for AFAC outreach to the 42 percent of the general population of Arlington residents experiencing food insecurity.

3 Food Insecurity Among Children

Among the respondents to the primary survey, 157 reported at least one child currently residing in their home. In 46 of these households (29 percent), food insecurity had been experienced by at least one child. CSR created a child food insecurity variable by including any respondent who answered 'yes,' 'often true,' or 'sometimes true' in response to the survey items indicating child food insecurity on the survey (Q12, Q14, Q15, Q17a, Q17b, Q17c) *(Appendix A)*. Among the 46 respondents to the primary survey who indicated child food insecurity in their household, 44 also met the study criteria for adult food insecurity.

Table 6 depicts selected characteristics for the primary survey respondents with at least one food insecure child in the home in the past year.

Table 6. Demographic Characteristics of Primary Survey Respondents with At Least One Positive Food Insecurity Indicator for a Child in Their Home (N=46)

Characteristic	% Respondents
Are currently renting	83%
Reported income of less than $50,000 in survey	78%
Female	72%
Cite unemployment or underemployment as related to their food insecurity	70%
African American/Black or Hispanic	46%
Are the only adult in the household	22%
Cite medical or mental health issue as related to their food insecurity	20%

Table 7 depicts the ranked percentages of responses for the individual items that identify child food insecurity among respondent households in the primary survey.

Table 7. Ranked Percentages of Survey Item Responses Indicating Child Food Insecurity in Home (N=157)

Survey Item	Percentage Responding Often/Sometimes True in Last 12 Months
You relied on only a few kinds of low-cost foods to feed your children because you were running out of money to buy food.	23.6
You couldn't afford to feed your children a healthy meal.	17.8
In the last 12 months, did you ever cut the size of your meal or did your children skip meals because there wasn't enough money for food****Yes/No format (Percentage 'yes' reported).	9.6
Your children were not eating enough because you just couldn't afford enough food.	8.9
In the last 12 months, were your children ever hungry but you just couldn't afford more food****Yes/No format (Percentage 'yes' reported).	8.9
In the last 12 months, did your children ever not eat for a whole day because there wasn't enough money for food****Yes/No format (Percentage 'yes' reported).	2.5

4 Food Insecurity by Respondent Age

Among the 29 percent of primary survey respondents who are age 65 or older, 30 percent have experienced food insecurity in the past year as indicated by their responses to the appropriate questions on the survey. This percentage of respondents experiencing food insecurity is significantly higher than the levels of food insecurity found among respondents less than 25 years of age in the survey (6 percent food insecure), in the 25-34 years of age group (13 percent food insecure), and among respondents age 35-44 (14 percent food insecure). However, 37 percent of respondents in the 45-64 years of age group experienced food insecurity in the year prior to the survey.

Interestingly, even though 30 percent of the 65 years or older age group reported experiencing food insecurity, they expressed less interest in AFAC services compared with respondents in the 45-64 years of age group (26 percent vs. 38 percent). The percentages of respondents in the remaining age groups responding that they are 'very interested' or 'somewhat interested' in receiving food assistance from AFAC if they needed help with obtaining food are <25 years of age (4 percent), 25-34 years of age (17 percent), and 35-44 years of age (15 percent).

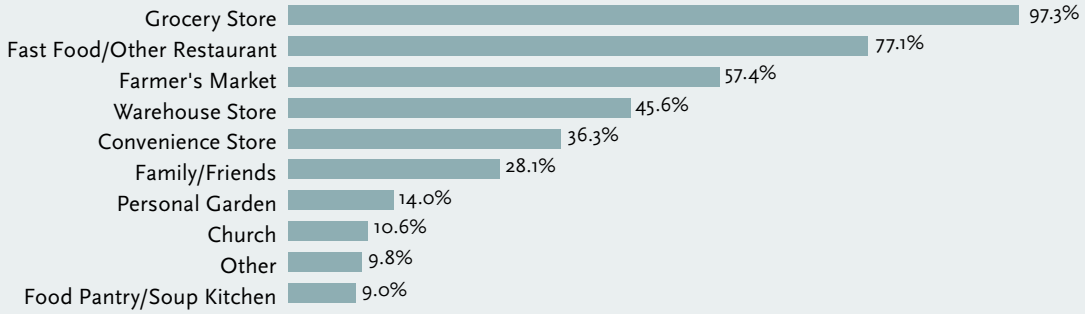
As can be seen in **Table 8**, unemployment is a more significant factor in food insecurity among respondents younger than 30 years of age and health, medical, or mental health issues are more prevalent as contributing factors to food insecurity among seniors. If respondents said there were "other" contributing factors to their not being able to obtain the type or amount of food they wanted, they were asked to specify what the "other" factor was. Responses to this question included factors such as escalating food prices and retirement/being on a fixed income.

Table 8. Reasons for Food Insecurity by Age of Respondent (N=828)

Survey Item	<25 Years of Age	25–34 Years of Age	35–44 Years of Age	45–64 Years of Age	Age 65 or Older
Unemployment	9.4%	8.3%	2.5%	8.8%	7.1%
Not enough work hours	3.1%	1.8%	4.2%	1.8%	1.8%
Low pay for employment	12.5%	4.6%	2.5%	4.2%	1.3%
Health, medical, or mental health issue	6.2%	1.8%	4.2%	13.3%	12.8%
Unexpectedly high bills such as heating and cooling	6.2%	2.8%	10.2%	9.5%	6.2%
Other reasons for not being able to afford amount/type of food wanted	6.2%	5.5%	3.4%	6.7%	7.1%

5 Sources of Food

Figure 2. Sources From Which Respondents in Primary Survey Obtained Food 'Often' or 'Sometimes' in Past 12 Months (N=828)



Grocery stores and fast food and other restaurants were the primary sources of food for the vast majority of respondents to the primary survey. However, some other sources were also prevalent. For example, almost six in ten (57 percent) of respondents reported obtaining food from a farmer's market in the past 12 months. An open-ended survey item asked respondents to indicate any additional food sources during the prior year; responses included military commissary, food delivery for seniors/retirement home, and a pharmacy such as CVS.

As depicted in **Table 9**, some differences in use of food sources was indicated for respondents who had experienced food insecurity in the past year and for those who had not. Individuals experiencing the most food insecurity were more likely to use a source such as a food pantry or soup kitchen; they were also less likely to obtain food from a farmer's market or a personal garden.

Table 9. Food Sources Used 'Often' or 'Sometimes' by Food Insecurity Status of Respondents in Past Year

Survey Item	Experienced Food Insecurity in Past Year (N=345)	Did Not Experience Food Insecurity in Past Year (N=483)
Grocery store	96.2%	98.2%
Convenience store	37.6%	35.2%
Warehouse store	44.4%	46.6%
Farmer's market	44.1%	66.9%
Personal garden	9.9%	17.0%
Church	21.2%	2.9%
Family or friends	40.0%	19.7%
Fast food or other restaurant	68.7%	83.0%
Food pantry or soup kitchen	18.5%	2.1%

6 Knowledge of AFAC

A description of AFAC provided to all survey respondents identified it as "an organization that provides supplemental food assistance to Arlington County residents." Respondents were asked if they had heard of AFAC and more than half (52 percent of the 828 survey respondents) of the primary survey group reported in the affirmative. This is a striking finding in that there is a high level of awareness of AFAC in the Arlington community, particularly since not all primary survey group respondents can be considered as low income.

Table 10 depicts the levels of awareness of AFAC among respondents who were identified as experiencing food insecurity over the past year and among those who had not experienced food insecurity.

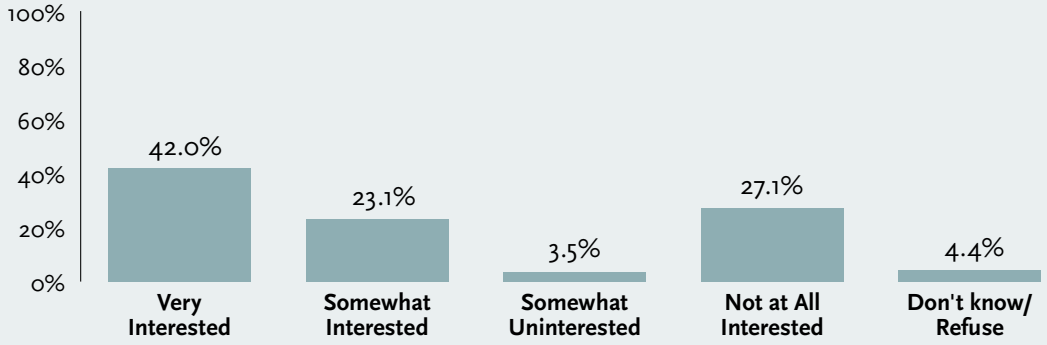
Table 10. **Awareness of AFAC by Food Insecurity Status of Respondents in Past Year**

Heard of AFAC	Experienced Food Insecurity in Past Year (N=345)	Did Not Experience Food Insecurity in Past Year (N=483)
Yes	47.0%	56.1%
No	51.9%	43.1%
Don't know/refused to answer	1.2%	0.8%

7 Interest in AFAC Services

While the level of interest in receiving services from the Arlington Food Assistance Center varied among respondents with different demographic characteristics, there was an overall high level of interest among respondents in receiving food assistance from AFAC if they should need the help. **Figure 3** depicts the overall percentages among all primary survey respondents regarding interest in receiving such assistance from AFAC.

Figure 3. Level of Interest Among Primary Survey Respondents in Receiving Food Assistance From AFAC if They Needed Help With Obtaining Food (N=828)



Almost 3 in 4 (74 percent out of the 345) respondents who have experienced food insecurity in the past year indicated that they would be 'somewhat interested' or 'very interested' in receiving food assistance from the Arlington Food Assistance Center. Among respondents who had not experienced food insecurity in the past year, 59 percent would be interested in receiving food assistance from AFAC.

The level of interest in receiving food assistance from AFAC also varied among respondents with different household incomes. Specifically, among survey respondents reporting a household income of less than $15,000 the interest in AFAC services was higher than among respondents from most of the other income groups. The percentage of respondents at each income level indicating they are 'very interested' or 'somewhat interested' in receiving AFAC services if they need food in the future are as follows:

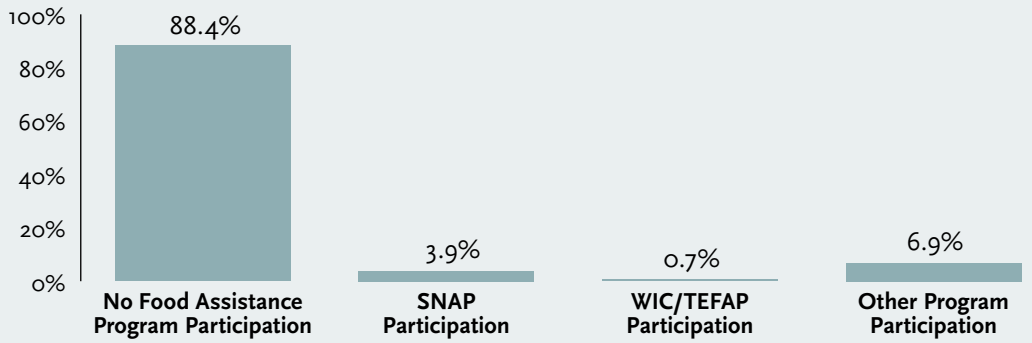
Less than $15,000	$15,000–$25,000	$25,000–$35,000	$35,000–$50,000	$50,000–$75,000	$75,000–$100,000	Over $100,000
76.3%	68.4%	82.1%	68.8%	57.0%	61.8%	63.3%

The degree of interest in AFAC services among higher income respondents may seem surprising given their lower levels of food insecurity, but this survey item was worded to elicit a response regarding possible future needs of the respondents.

8 Food Assistance Program Participation

Levels of participation in food assistance programs was relatively low among respondents to the primary survey, with less than 10 percent of the 828 respondents reporting current participation in any government food assistance program (**Figure 4).** Respondents who reported participation in a program other than the Supplemental Nutrition Assistance Program (SNAP) or Women, Infants and Children (WIC)/The Emergency Food Assistance Program (TEFAP) were asked to specify the program. Responses to this question included "food stamps" (indicating a lack of familiarity with the official program name "SNAP") and "AFAC."

Figure 4. Levels of Food Assistance Program Participation Among Primary Survey Respondents (N=828)

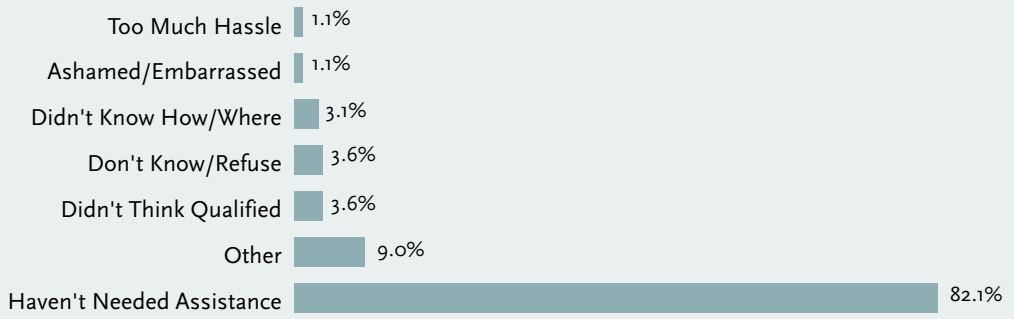


Among the 345 respondents experiencing food insecurity in the past year, 76 percent were not receiving assistance from any program to help them pay for or obtain food, 8 percent were receiving SNAP benefits, 1 percent was receiving WIC/TEFAP benefits, and 15 percent reported receiving other types of assistance than those programs specified in the survey.

9 Reasons for Not Seeking Food Assistance

Respondents who reported receiving no food assistance were asked about the primary reasons they have not sought such assistance. These reasons are depicted in **Figure 5**. Among the 'other' reasons reported are thinking that they did not qualify or feeling that they did not really need the assistance.

Figure 5. Primary Reasons For Not Seeking Assistance From a Food Assistance Program (N=731)

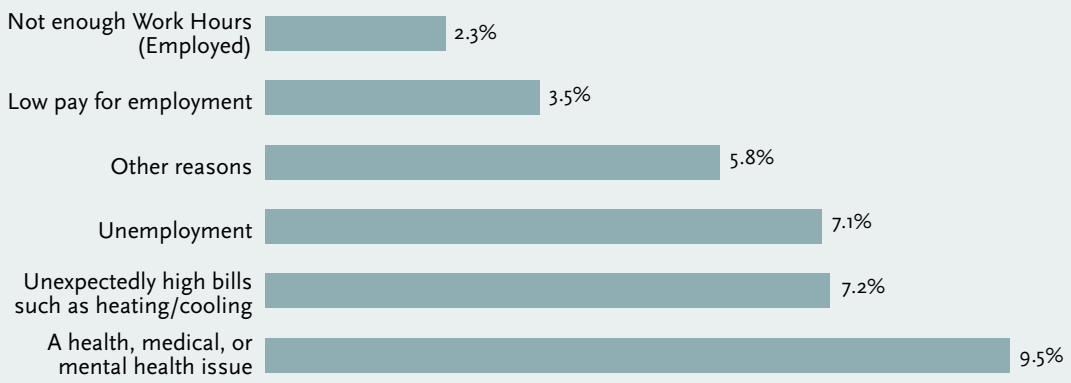


10 Factors Contributing to Food Insecurity

Physical and mental health issues were the most prevalent reasons cited by respondents as contributing to why they may have not been able to afford the amount or type of food they wanted. Unexpectedly high bills such as heating and cooling were also cited frequently by respondents. In addition to the reasons listed on the survey as possible contributing factors, some respondents cited increasing food costs as a reason for not being able to afford the amount or type of food they wanted. Unemployment and underemployment (low pay and not enough work hours) were cited more frequently by respondents identified as being food insecure. However, these factors were not the most commonly cited among the overall group of respondents.

Figure 6 depicts the findings for all respondents regarding issues contributing to food insecurity over the past twelve months. Among the 'other' reasons cited by respondents were living on a fixed income and the rising cost of living.

Figure 6. Reasons Contributing to Food Insecurity Among All Primary Survey Respondents (N=828)



PART II

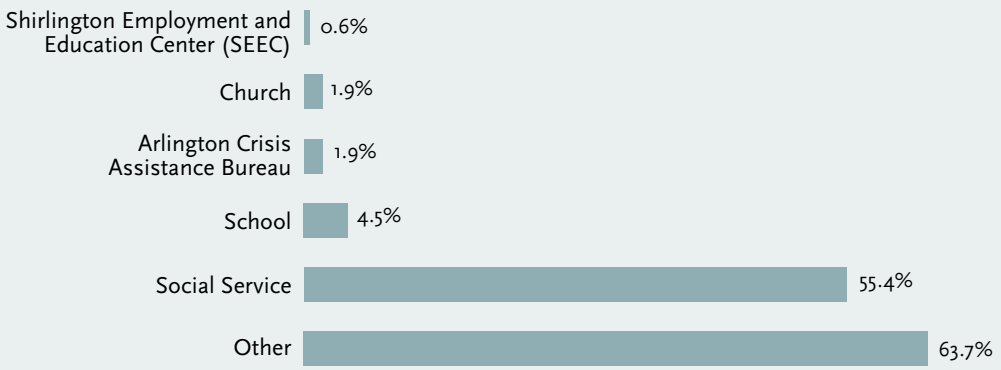
Referral Survey

1 Respondent Profile

The Referral Survey was conducted using contact records provided by AFAC for individuals who were referred but never used or no longer used AFAC services. There were 207 respondents to this survey. More than three-fourths (76 percent of the 207) of respondents remembered being referred to AFAC. However, a small number of survey respondents who indicated that they did not recall being referred to AFAC responded later in the survey that they did remember visiting an AFAC site. The majority of survey respondents (55 percent) who did recall being referred to AFAC were referred by a social service agency. Respondents were allowed to select more than one option in the survey to indicate how they were referred.

Figure 7 provides the percentages of respondents indicating each referral source. Among the referral sources not included in the survey but mentioned by respondents (included in the 'other' group in the figure below), 'human services' and 'Arlington County' were prevalent responses, clearly indicating additional social service agency referrals. Some respondents also mentioned that they were referred to AFAC by a friend. These responses are also included in the 'other' category in the figure below.

Figure 7. Sources of Referral for Respondents to the Referral Survey (N=207)

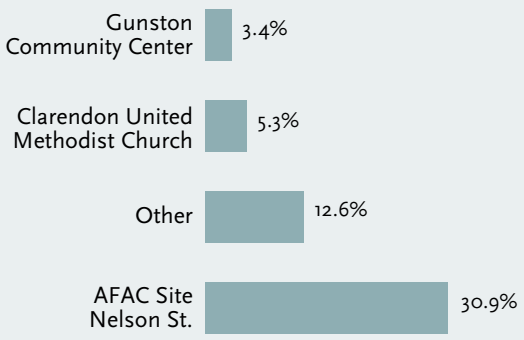


The referral survey also included an open-ended question regarding why the respondent was referred to the Arlington Food Assistance Center. The primary responses to this survey item were related to unemployment, a lack of income, or the loss of a job. Given that the referral survey included only individuals who no longer or never used AFAC services, many of the respondents likely experienced changes in circumstances since originally being referred.

2 Respondent Visits to AFAC Distribution Sites

Among respondents to the referral survey, only 31 percent have visited an AFAC food distribution site. **Figure 8** provides the percentages of respondents that visited each of the distribution sites included in the survey. Some survey respondents (13 percent) indicated that they had visited a site other than those listed. When asked which other site they had visited, the most common responses were "Shirlington" or churches not already included as a survey option.

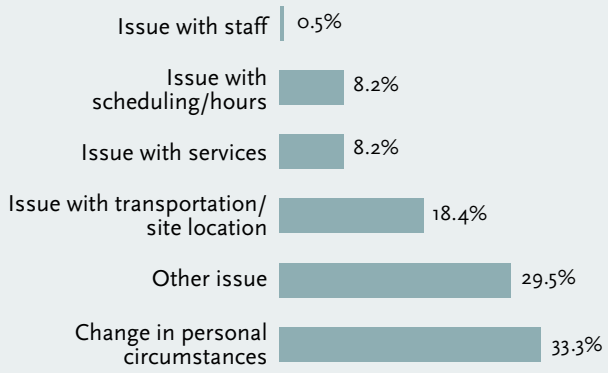
Figure 8. Percentage of Respondents to Referral Survey Visiting AFAC Food Distribution Sites (N=207)



3 Reasons for Not Using AFAC Services

Respondents to the referral survey were asked about the primary reasons for not using or choosing to stop using AFAC services. The most prevalent reason cited by respondents was a change in personal circumstances, such as employment status. The second most prevalent response was 'other' reasons beyond those included in the survey. Asked to specify what these issues were, respondents indicated they were too old or sick to go anywhere; or other people needed the assistance more; that the respondent believed they did not qualify for assistance; or expressed dissatisfaction with the amount or quality of food available through AFAC. **Figure 9** depicts the percentages of respondent reasons for not using or discontinuing use of AFAC services.

Figure 9. Reasons for Not Using/Discontinuing Use of AFAC Services (N=207)



4 Food Insecurity Among Referral Group

CSR created a combined variable for identifying food insecurity among respondents in the referral survey group in order to analyze the data for this group separately as was done for the primary survey group. Referral survey respondents were identified as experiencing food insecurity if they answered 'often true' or 'sometimes true' to any of the survey items Q6a–Q6k, or 'yes' to Q8, Q10 or Q11 *(Appendix B)*.

More than 9 in 10 (94 percent) of the respondents to the referral survey have experienced food insecurity in the past year. This is a significant finding in that these survey respondents are not using AFAC services, yet are still experiencing food security. Among the characteristics of the 194 respondents to the referral survey who have experienced at least one aspect of food insecurity:

- **10%** *are age 65 or older*
- **19%** *receive assistance from SNAP and* **7%** *from WIC or TEFAP*
- **23%** *do not recall being referred to AFAC*
- **23%** *indicated a language barrier such that translation was required*
- **29%** *cite a medical or mental health issue as related to their food insecurity*
- **33%** *cite high bills such as heating and cooling as related to their food insecurity*
- **38%** *have turned to a food pantry/ soup kitchen in the past year for food*
- **43%** *cite unemployment or underemployment as related to their food insecurity*
- **43%** *have at least one child present in the home*
- **43%** *have not visited an AFAC food distribution site*
- **45%** *are the only adult residing currently in their home*
- **62%** *have turned to family and friends in the past year for food*
- **63%** *are female and 37% are male*
- **67%** *are African American/Black, Hispanic, or Asian*
- **84%** *are renters*
- **85%** *report a household income of less than $50,000 per year*
- **88%** *would be 'somewhat' or 'very' interested in AFAC services*

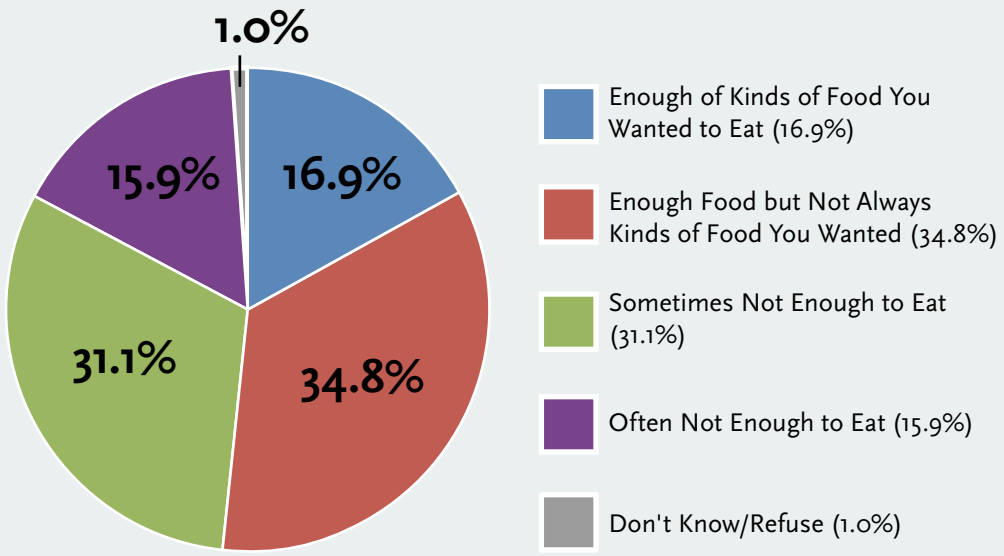
Table 11 provides the percentage of responses to the survey items indicating food insecurity among referral survey respondents.

Table 11. Ranked Percentages of Responses Indicating Food Insecurity Among Referral Survey Respondents (N=207)

Survey Item: Indicator of Food Insecurity in Past 12 Months	Percentage Responding Often True or Sometimes True
Your meals only included a few kinds of cheap foods because you were running out of money to buy food.	79.7%
You worried that food at home would run out before you got money to buy more.	77.8%
The food that you bought ran out and you didn't have money to get more.	76.9%
The food that you bought just didn't last, and you didn't have money to get more.	76.8%
You had to eat smaller meals because you didn't have enough money for food.	73.9%
You had to eat less frequently because you didn't have enough money to buy food.	69.6%
You were not able to eat a healthy meal because you didn't have enough money.	68.1%
In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food ****Yes/No format (Percentage 'yes' reported).	58.5%
You had to skip a meal because you didn't have enough money for food.	56.0%
You had difficulty getting transportation to get the food you needed for yourself or your household.	53.2%
You were hungry but didn't eat because you didn't have enough food.	51.7%
In the last 12 months, or since last January, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food ****Yes/No format (Percentage 'yes' reported).	49.8%
You wanted information about how to prepare nutritious meals in the most cost efficient way but were unsure about how to get it.	44.0%
In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food ****Yes/No format (Percentage 'yes' reported).	43.0%

Figure 10 depicts the findings regarding the general description of the food eaten in respondent households in the last 12 months.

Figure 10. **Referral Survey Respondent Description of Food Eaten in Household in the Last 12 Months at Time of Survey (N=207)**



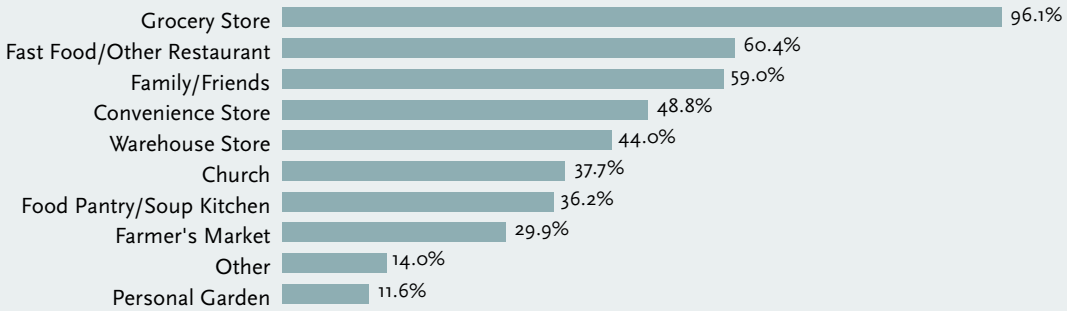
Half of the respondents to the referral survey indicated that they or other adults in their household had cut the size of their meals or skipped meals in the past year because there was not enough money for food. Among the respondents who had cut or skipped meals, almost half (48 percent) said that they did this 'almost every month,' 34 percent said that they did this 'some months but not every month,' and 18 percent said that they did this 'one or two months' over the past year. As indicated in **Figure 10** and in the other survey responses, food insecurity is a significant issue among respondents to the referral survey.

An open-ended survey item was included on the referral survey that assessed what respondents would typically do if they did not have enough money to purchase the food they needed. Detailed responses to this survey item appear in *Appendix F* of this summary. The most prevalent responses to this survey item were doing without or cutting back on the food that they would eat; buying less expensive food; seeking assistance from a program, friend, or church; and making the food that they had last.

5 Sources of Food

The most prevalent source of food for both the primary survey group and the referral survey group was grocery stores. However, the referral survey respondents were more likely to turn to friends and family for food than were respondents in the primary survey group. **Figure 11** depicts the percentages of food sources used by respondents during the prior year.

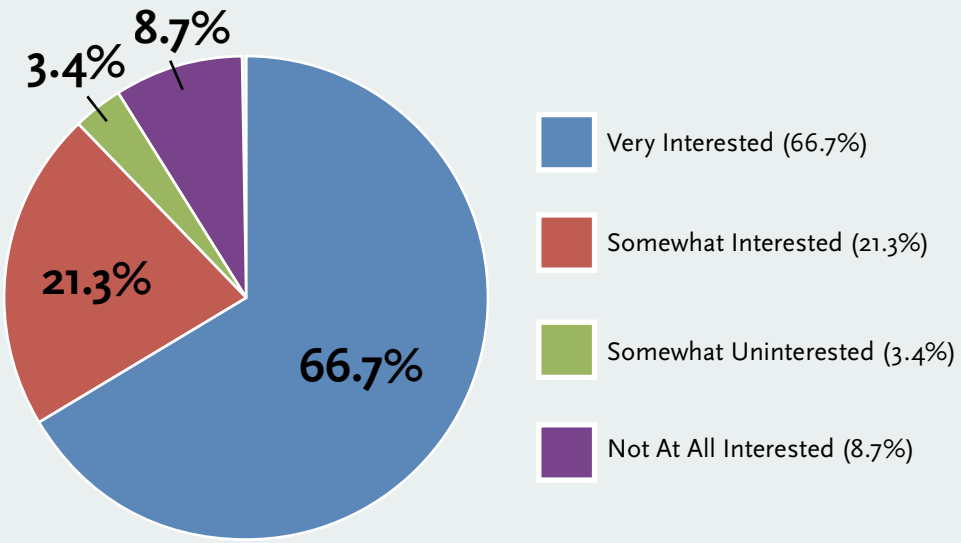
Figure 11. Sources From Which Respondents in Referral Survey Obtained Food in Past 12 Months (N=207)



6 Interest in AFAC Services

While the level of interest in receiving food assistance from AFAC varied among referral survey respondents with different demographic characteristics, there was an even higher overall level of interest among respondents in the referral group (88 percent interested) than in the primary survey group (65 percent interested). This finding suggests that many of the individuals in the referral survey respondent group may want to use AFAC services in the future. **Figure 12** depicts the overall percentages among all respondents to the referral survey regarding interest in receiving food assistance from AFAC.

Figure 12. **Interest in AFAC Services Among Referral Survey Respondents (N=207)**

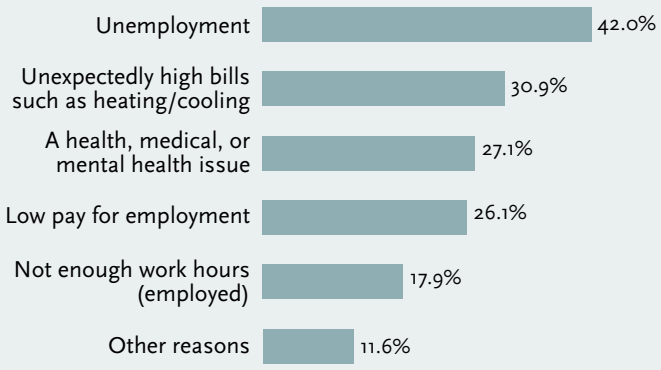


7 Factors Contributing to Food Insecurity

Among referral survey respondents, unemployment was the primary factor contributing to their not being able to afford the type or amount of food they wanted over the past year. Conversely, the most prevalent contributing factors to food insecurity among the primary survey group were physical and mental health issues. Mirroring the primary survey responses, however, the referral survey respondents also frequently cited unexpectedly high bills such as heating and cooling as contributing to their food insecurity.

Figure 13 depicts the findings for all respondents regarding reasons contributing to food insecurity over the past twelve months.

Figure 13. Reasons Contributing to Food Insecurity Among All Referral Survey Respondents (N=207)



PART III

Food Security Indices

Two indices were developed as a result of this research to provide a measure of both household food insecurity and community food insecurity. The findings of the Arlington Food Insecurity Survey were used to develop an index to measure the severity of household food security in Arlington County (Conditions/Experiences/Behaviors Indicative of Food Security). In combination with survey data from this project, community level characteristics were used to also develop a broader community food security index (Arlington County Composite Food Security Index). A detailed explanation of these indices follows.

1 Conditions/Experiences/Behaviors Indicative of Food Security

The indicators included in this index describe the range of conditions, experiences and behaviors that indicate food security and hunger in Arlington County for use by AFAC. It is based on survey data collected by CSR as part of its efforts to determine the overall numbers of food insecure or hungry individuals in Arlington County and the food security status/level of residents. For the purpose of this analysis, responses to questions from the primary survey that asked about issues of food insecurity or hunger in their households were included and all others were omitted.

The analysis is based on the methodology specified in the report, *Measuring Food Security in the United States: Guide to Measuring Household Food Security* (2000, 2012), which was published by the U.S. Department of Agriculture (USDA).[4] The initial step for preparing the data involved imputing missing values for households with incomplete responses. First, questions in the survey were identified that asked about food insecurity or hunger in households. Questions that did not correspond to these criteria were discarded. The USDA report recommended sequencing the applicable questions by severity, with the lowest level value being responses like "Worried food would run out" and the most severe level being "Children did not eat for a whole day." See **Table 13** for a comparison of the ranking of the applicable questions included in the AFAC survey based on this suggested sequencing. No variables were found to be missing in the data for the applicable questions. Next, the data was converted for interpretation using the following coding mechanism.

Table 13. Item Calibration for Questions, In Increasing Level of Severity

Suggested Item Calibration Values (USDA, 2000)	Question Sequence Using AFAC Survey Instrument
1. Worried food would run out	1. The food that you bought ran out and you didn't have money to get more. (Q2c)
2. Food bought just didn't last	2. The food that you bought just didn't last, and you didn't have money to get more. (Q2a)
3. Relied on a few kinds of low-cost food for children	3. You worried that food at home would run out before you got money to buy more. (Q2b)
4. Couldn't afford to eat balanced meals	4. You relied on only a few kinds of low-cost foods to feed your children because you were running out of money to buy food. (Q17a)
5. Couldn't feed the children a balanced meal	5. You couldn't afford to feed your children a healthy meal. (Q17b)
6. Adult cut size of meals or skipped meals	6. In the last 12 months, or since last October, did you or other adults in your household ever cut the size of your meals or skip meals because there wasn't enough money for food? (Q4)
7. Adult ate less than felt they should	7. You had to skip a meal because you didn't have enough money for food. (Q2h)
8. Adult cut size of meals or skipped meals in 3 or more months	8. How often did this happen? (Q5)
9. Children were not eating enough	9. In the last 12 months, did you ever eat less than you felt you should because there wasn't enough money for food? (Q6)
10. Adult hungry but didn't eat	10. In the last 12 months, were you ever hungry but didn't eat because there wasn't enough money for food? (Q7)
11. Respondent lost weight	11. In the last 12 months, did you lose weight because there wasn't enough money for food? (Q8)
12. Cut size of children's meals	12. In the last 12 months, did you or other adults in your household ever not eat for a whole day because there wasn't enough money for food? (Q9)
13. Adult did not eat for whole day	13. How often did this happen? (Q10)
14. Children were hungry	14. In the last 12 months, since October of last year, did your children ever not eat for a whole day because there wasn't enough money for food? (Q15)
15. Adult did not eat for whole day in 3 or more months	
16. Children skipped meals	
17. Children skipped meals in 3 or more months	
18. Children did not eat for whole day	

There were three kinds of possible responses to the questions used in the USDA scale:

- **Often/1, Sometimes/2, Never/3, Don't Know/4, Refused/5:** "Often/1" and "Sometimes/2" were converted to scores of 1; "Never/3" was converted to 0, and "Don't Know/4" and "Refused/5" were converted to [.].
- **Almost Every Month/1, Some Months But Not Every Month/2, Only 1 or 2 Months/3, Don't Know/4, Refused/5:** "Almost Every Month/1" and "Some Months But Not Every Month/2" were converted to 1, "Only 1 or 2 Months/3" was converted to 0, and "Don't Know/4" and "Refused/5" were converted to [.].
- **Yes/1, No/2, Don't Know/3, Refused/4:** "Yes/1" remained a 1, "No/2" was converted to 0, and "Don't Know/4" and "Refused/5" were converted to [.].

Null responses were converted to [.] and did not count toward the findings. Affirmative responses (fields with '1') were tabulated and sorted based on type of household (households with children and households without children). The data was analyzed based on the sequential set of food security/hunger indicators provided in the USDA report[5], showing increasing levels of hunger based on higher affirmative responses to survey questions.[6] (**Table 12**)

Table 12. Arlington County 2012 Conditions/Experiences/Behaviors Indicative of Food Security
N=828 (671=households without children, 157=households with children)

High Food Security	Marginal Food Security	Low Food Security	Very Low Food Security
Households Without Children: 4 (0-2 affirmative responses)	Households Without Children: 667 (3-5 affirmative responses)	Households Without Children: 0 (6-8 affirmative responses)	Households Without Children: 0 (9-10 affirmative responses)
Households With Children: 0 (0-2 affirmative responses)	Households With Children: 0 (3-7 affirmative responses)	Households With Children: 157 (8-12 affirmative responses)	Households With Children: 0 (13-18 affirmative responses)

Based on Guide to Measuring Household Food Security – 2000, 2012

The analysis shows, based on the USDA methodology, that:

- All households with children that participated in the study have Low Food Security (157 respondents). Of these, 71 percent or 112 respondents gave 8 affirmative responses; 23 (about 15 percent) gave 9 affirmative responses; 10 respondents (6 percent) gave 10 affirmative responses; and 12 (almost 8 percent) gave 11 affirmative responses.
- More than 99 percent of households without children that participated in the study are experiencing Marginal Food Security. Only 4 respondents or less than 1 percent of households without children have High Food Security.

2 Arlington Food Security Composite Index

The Arlington Food Security Composite Index consists of 25 indicators divided into the broad categories of: 1) Food Accessibility, 2) Food Availability and Affordability, and 3) Socioeconomic data. These three categories were identified through a review of the food security literature and by discussion and collaboration with the staff and organizational partners[7] of AFAC. Taken together, these categories provide a snapshot of food security in Arlington County, Virginia, at any one point in time.

Arlington is ranked 5th among 79 cities and counties in Virginia based on a range of factors from these three categories. The data compiled ranks counties and cities on a scale from food secure to food insecure. A higher food security index indicates greater food security in a given locality.

These three categories, or sub-indices, are comprised on specific data points; the three sub-indices are then combined to determine the Composite Index. Identifying individual factors is important in creating awareness among agencies and nonprofits about the specific factors with the greatest potential effect on living costs, which in turn can affect food security levels among residents. For example, low-income people who live more than a mile from a food store represent a significant proportion of the Food Accessibility category and may signal the need for additional programs that support transportation to and from food markets among low income persons.

Arlington is ranked 22nd in Food Accessibility, or in the top 28% of cities and counties included in the index. This ranking is positive and demonstrates that food in Arlington is generally accessible through various sources (grocery stores, farmers markets, etc.), but there remains room to improve. This category also includes data on gas prices and on low income people who live more than a mile from a food store.

Even more favorably, Arlington is ranked 10th, or in the top 13%, when considering Food Availability and Affordability. This sub-index includes data such as the number of SNAP participants, free/reduced student lunch participants, as well as the average cost of a meal.

Finally, Arlington is ranked 3rd in terms of Socioeconomic data resulting from a combination of factors such as median income, unemployment, poverty, etc. Various demographic factors that may influence socioeconomic success are included. A high ranking in this category is positive as it reflects socioeconomic factors in Arlington that may contribute to food insecurity as compared to other communities in the sample.

Changes in individual indicators that comprise these categories can signify broader changes at the community level that may affect food security and that may drive greater demand for AFAC services. This index has been designed to be updated periodically by AFAC staff in order to provide a longer-term view of food security. As data in these subject areas changes, Arlington's ranking also may fluctuate. The detailed elements of the Composite Index are provided in *Appendix K*.

A review of the food scholarship literature, including analysis of assessments conducted in other local communities, provided the research team with an initial diverse list of potential food security indicators. This list was revised to reflect those included in this analysis after discussion with our organizational partners, evaluation of the available data, and statistical analysis of the internal consistency of the data. The 25 indicators are listed in **Table 14**.

Table 14. 25 Food Security Indicators Selected for Composite Index

Indicator	Measurement	Year Data Collected	Indicator Category
Grocery stores	Number of stores	2009	Food Accessibility
Supercenters & club stores	Number of stores	2009	Food Accessibility
Convenience stores	Number of stores	2009	Food Accessibility
Specialized food stores	Number of stores	2009	Food Accessibility
SNAP-authorized stores	Number of stores	2010	Food Accessibility
WIC-authorized stores	Number of stores	2011	Food Accessibility
Farms with direct sales	Number of households	2007	Food Accessibility
Farmers' markets	Number of markets	2011	Food Accessibility
Low income & > 1 mile to store	Number of households	2006	Food Accessibility
Gas prices	Dollars	2012	Food Accessibility
SNAP redemptions/SNAP-authorized stores	Redemptions per stores	2010	Food Availability and Affordability
SNAP benefits per capita	Dollars per capita	2010	Food Availability and Affordability
Number of SNAP program participants	Number of participants	2011	Food Availability and Affordability
Students free-lunch eligible	Percentage	2009	Food Availability and Affordability
Students reduced-price-lunch eligible	Percentage	2009	Food Availability and Affordability
WIC redemptions per capita	Redemptions per capita	2011	Food Availability and Affordability
Average cost of a meal	Dollars	2010	Food Availability and Affordability
Unemployment rate	Percentage	2009-11	Socioeconomic
Poverty rate	Percentage	2010	Socioeconomic
Child poverty rate	Percentage	2010	Socioeconomic
Sex ratio	Number of males per 100 females	2009-11	Socioeconomic
Age dependency ratio	Number of people under age 18 and 65 and over per 100 working-age people (18-64)	2009-11	Socioeconomic
% Black	Percentage	2010	Socioeconomic
% Hispanic	Percentage	2010	Socioeconomic
Median household income	Dollars	2010	Socioeconomic

Factor analysis[8] and assessment of the internal consistency of the 25 indicators using Chronbach's alpha[9] determined that these indicators largely group according to the three major categories. The factor analysis was used to remove indicators that did not.

The 25 indicators included in the final list were selected based on the following criteria: each indicator was considered important in the food security literature and also by AFAC's organizational partners, each had available data and all indicators fit into one of the three broad categories of interest for this study. Publicly-available quantitative data was used for this analysis, including data from governmental, nonprofit, and for-profit sources. The data sources include:

- U.S. Department of Agriculture, Economic Research Service, Food Environment Atlas[10]
- U.S. Census Bureau, American Community Survey[11]
- Feeding America, Mind the Meal Gap Project[12]
- Automotive.com[13]

The index is reflective of the values of the food accessibility, food availability and affordability and socioeconomic categories as compared across 79 counties and cities in Virginia in a given range of time. The Virginia localities that met the American Community Survey's three-year estimate population threshold of 20,000 were included in this analysis (see *Appendix L*).

Data Storage

SPSS datasets from which the primary survey and referral survey data in this summary report were derived accompany this report in electronic format. All variable and value labels are provided on the SPSS datasets. All electronic files of the survey instruments, report, and tabulations related to the data are the property of AFAC. However, CSR will retain copies of all survey materials for a period of at least one year. No information from this survey will be shared by CSR or CPAP with anyone other than project team members from AFAC without the express permission of that organization.

Endnotes

1. Colemen-Jensen, A. & Nord, M. (2012). Definitions of Food Security.U*SDA Economic Research Service*. Retrieved from http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx#.UffXnKzt6Xs.
2. Gundersen, C., Waxman, E., Engelhard, E., Satoh, A., & Chawla, N. "Map the Meal Gap 2013: Food Insecurity Estimates at the County Level." Feeding America, 2013. Retrieved from: http://feedingamerica.org/hunger-in-america/hunger-studies/map-the-meal-gap/~/media/Files/a-map-2011/VA_AllCountiesMMG_2011.ashx?.pdf.
3. Arlington County Department of Human Services, Economic Independence Division, Public Assistance Bureau and the Arlington Department of Community Planning, Housing & Development, Planning Division
4. This index also is referred to in USDA documentation as the "Sequential Set of Increasingly Severe Indicators" because it is designed to provide a scale of low- to high-level food insecurity based on community characteristics.
5. *Op Cit*, pp. 31 and 34.
6. Note that the categories used today by the USDA reflect a range of food security; this is a change in 2012 from the terminology originally used in 2000 by the USDA, which reflected a scale of food insecurity [Food secure, Food insecure without hunger, Food insecure with hunger (moderate), Food insecure with hunger (severe)].
7. Arlington County Department of Human Services, Economic Independence Division, Public Assistance Bureau and the Arlington Department of Community Planning, Housing & Development, Planning Division
8. Factor analysis is a multivariate data analysis technique that considers the relationship between different variables, without distinguishing as to whether they are independent or dependent. The goal is to determine which variables have a relationship to one another, if any. (Hair, J., Black, W., Babin, B., Anderson, R., and Tatham, R. (2006). Multivariate Data Analysis. 6th Edition. Upper Saddle River: Pearson/Prentice Hall.)
9. Chronbach's alpha is a measure of reliability, ranging from 0 to 1. Values that fall between .60 and .70 are the lower limit of reliability found acceptable. (Hair, J., Black, W., Babin, B., Anderson, R., and Tatham, R. (2006). Multivariate Data Analysis. 6th Edition. Upper Saddle River: Pearson/Prentice Hall.)
10. Economic Research Service (ERS), U.S. Department of Agriculture (USDA). Food Environment Atlas. http://www.ers.usda.gov/data-products/food-environment-atlas.aspx.
11. U.S. Census Bureau; American Community Survey, 2009-2011 American Community Survey 3-Year Estimates, Tables S0101 and S2301; generated by Fatima Sharif; using American FactFinder; <http://factfinder2.census.gov>; (November 2012).
12. Gundersen, C., Del Vecchio, T., Engelhard, E., & Waxman, E. (2010). *Map the Meal Gap 2010: Food insecurity estimates at the county level.* Chicago: Feeding America.
13. (2012, Nov). Virginia Gas Prices. Retrieved from http://www.automotive.com/gas-prices/31/virginia/.

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