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THE MEAL DEFICIT METRIC PROJECT

Measuring Missing Meals at a Granular Level Across Ashtabula County, Ohio

A Research Project For
Gray Television *InvestigateTV*

EXECUTIVE SUMMARY

June 2021

OVERVIEW

Examining Hunger in Ashtabula County

The most northeastern county in Ohio is Ashtabula, a name that translates in the "Delaware languages" once spoken by indigenous peoples to "always enough fish to go around, to be given away."

Ashtabula County is known for its 19 covered bridges, 27 miles of shoreline, recreational boating, fishing, and birding, the cultivation of grapes, and award-winning wineries. And the name Ashtabula suggests that there is also enough food for everyone. Yet in this report, we document a severe problem in this land of plenty: hunger.

Hunger has been an issue in parts of Ohio and elsewhere for decades. What will it take to finally solve generational hunger as well as newer, mostly undocumented hunger among the many households that struggle to put food on the table?

The name "Ashtabula" was formed from a set of contractions that can be broken into three parts that give hope to this pressing question:

Apchi means *always*
Tepi means *enough* and
Hële is a verb suggesting *motion*

Imagine pairing the spirit of the name "Ashtabula" with reliable, pinpointed data and the willpower to fix a broken system. With these three forces working together, the provision of regular, nutritious meals could generate the momentum to attract new resources and more strategic and efficient use of existing ones. The name Ashtabula might then encode yet another definition:

Solving hunger is *possible*

EXECUTIVE SUMMARY

MAP APPENDIX

The Appendix includes high-resolution maps

See viewing instructions at the end of this report

MORE INFORMATION AVAILABLE ONLINE AT:

MariGallagher.com

ACKNOWLEDGEMENTS

This special analysis was conducted at the request of *InvestigateTV*, which has been reporting on health disparities throughout the Mississippi Delta & Appalachia.

Their commitment to high-quality, in-depth journalism and coverage of pressing issues contributed greatly to our work.

MORE INFORMATION AVAILABLE ONLINE AT:

***InvestigateTV*.com**

The Meal Deficit Metric

The Meal Deficit Metric is a unique model developed by Mari Gallagher Research & Consulting Group (MG). It was first commissioned by Feeding Florida at the behest of its extremely capable Executive Director, Robin Safley, who continues to be passionate in her resolve to solve hunger in her home state. Learn more at FeedingFlorida.org.

The Meal Deficit Metric calculates the unmet food gap at a very low geography after "netting out" (1) all government food subsidies such as the Supplemental Nutrition Assistance Program (SNAP) and free-or-reduced-price school meals, (2) charitable food provided through pantries and other organizations, and (3) all other ways that households might acquire food, including support from friends and relatives. The Meal Deficit Metric predicts meals that are missed because households cannot afford them. This is distinct from dieting and fasting for reasons not related to food affordability.

A New Approach

Hunger is not just an Ohio problem

Why is this work unique? First, our model uses only local data and generates statistically significant results for very small geographic units. Up until now, food banks and the anti-hunger lobby have only had access to limited data with results at the state or county level. In some cases, that data has been "projected down" to smaller areas, but not reliably. Looking down from such a high altitude, how is it possible to accurately identify the locations and totals of missed meals across a county? Because our model (1) considers all households, not just poor households or those households that self-identify as "food insecure" and (2) calculates missing meals at these very small geographic units, true hunger is revealed in a new way that makes meaningful and trackable food relief possible.

The results we present today of missing meals is not just an Ohio problem. Anti-hunger leaders and public officials *everywhere* are well aware of those "obvious sections" of their counties with high concentrations of very poor households. But having a sense of (1) where many poor people live and (2) their general population count, is not synonymous with (3) quantifying the number of net missing meals or (4) pinpointing the locations where meals are missed. Nor does it account for (5) those "not so obvious" households and locations where meals might regularly or periodically be missed because households cannot afford them.

We avoid the labels *food insecure* and *food insecurity*

Instead we use *net missing meals* and *net meal deficit*

New Terminology

Food insecurity* is a term that *creates confusion

Science and even our own lifeforce as human beings on earth is not static; it keeps moving and evolving. And all movements require a periodic refreshing of methods and action. They beg for a deeper understanding, for a closer look. And they require terminology and communication that is more accurate, enlightened, relatable, and direct. It is time for a refreshed defining of both problems and solutions concerning hunger. Persistent hunger in the land of plenty is a solvable dilemma. In many respects, "fighting" hunger has become big business, and the idea of winning and moving past the war might not be welcomed by everybody. Scientifically measuring the *willpower* of society to greatly reduce if not eliminate hunger is not a metric we can develop at our firm. Our aim here is to introduce suggestions for new ways of thinking about hunger, new ways of measuring and understanding hunger, new openings for thoughtful discussions about hunger (in policy circles and around our own kitchen tables), and new and better ways to take meaningful action that is trackable, honest, and transparent. The first step is to get our measures and our language straight.

"Fighting" hunger has become BIG BUSINESS, and the idea of winning and retiring the war might not be welcomed news for everybody

Many food relief advocates across America use the term "food insecure" to (1) describe all SNAP-qualifying households (which is an income bracket adjusted for household size) as (2) the population that experiences hunger. In our view, this is problematic for many reasons.

In our work, we avoid the labels "food insecure" and "food insecurity" and instead use "net missing meals" and "net meal deficit" as more accurate and specific descriptions.

Where did the term "food insecurity" originate?

In 1939, as America was recovering from the Great Depression, the federal government created its first version of today's food relief program. In the 1960s, these efforts were refined and tested with pilot programs. This ultimately resulted in the Food Stamp Act of 1964 (SNAP's predecessor).

For the first time, there was wide public awareness of hunger and poverty. In response, federal program officials developed a formula that used household income (adjusted by the number of members in the household) as a way to quantify and target the national "food

insecure" population. Income was the early proxy for "food insecurity" and for hunger. But "food insecurity" programs were designed to *reduce* "food insecurity" and as such *reduce* hunger. Therefore, the terms should not be used interchangeably unless (1) all efforts that contribute to reducing hunger are netted out and (2) all households of all income levels are considered.

In the 1990s, the United States Department of Agriculture (USDA), in partnership with others, began a yearly hunger survey. This results in yearly "food insecurity" reports based on survey data. When USDA researchers use the term "food insecurity" in their survey analysis, they are indeed "netting out" all other ways that households might acquire food and they consider all households. This survey is of tremendous value. It is a dependable, reliable, year-to-year assessment of hunger across America. As such, it is a major resource in all anti-hunger toolboxes. However, in many other cases in the larger anti-hunger field, the term "food insecurity" is used incorrectly and is misunderstood.

For Ashtabula County we use Ohio results from the hunger survey (as opposed to national results used in other hunger studies) as one of many components in our Meal Deficit Metric Model. And we used local Ashtabula County block group data. Block groups are simply small clusters of individual blocks.

Block groups are small clusters of individual blocks

Announcing that a community has a certain number of "food insecure families" does not reveal…

HOW MANY MEALS ARE MISSING?

Imagine assigning all households residing anywhere in the United States to one of these three categories: (1) those that qualify for and receive government food subsidies such as SNAP; (2) those that qualify for but *do not* receive government food subsidies, for whatever reason; and (3) those that do not qualify for government food subsidies and therefore do not receive them. Each of these three household categories across a large geography will have some combination of (1) households that regularly miss meals, (2) households that periodically or occasionally miss meals, and (3) households that have all their meal needs completely met. The number of households that qualify for food subsidies is often incorrectly conflated with the number of households that go hungry. This is confusing, and also incorrect.

A second problem is that announcing that a community has a certain number of these "food insecure families" does not reveal how many meals they are missing. It weights all households equally as having the same meal deficit and adds the households up as one total. Additionally, the number of "food insecure families" is usually far off the mark.

Why is equal weighting problematic? Households do not all have the exact same meal shortage. Households miss meals for different reasons and at different times. Some miss them regularly each week or at the end of the month, when resources run short. Others miss them periodically at different times of the year due to unforeseen hardships (such as an illness, job loss, or divorce). Some households miss some or more meals than usual depending on the season (when household employment is seasonal, for example). And

households can miss meals because of an unforeseen circumstance that creates financial hardship. And all of those households will have varying durations of hunger. In the case of an unexpected hardship, for example, the duration of missing meals could be long, short, or moderate.

The Meal Deficit Metric takes the stereotypes and the guesswork out of directing food relief to households in need

The Meal Deficit Metric takes the stereotypes and the guesswork out of directing food relief to households in need. As discussed in the preceding paragraph, many communities across America, wages have not kept up with the rising cost of housing, daycare, health insurance, and other necessities. Some households might earn a good wage but still have very tight budgets and maxed-out credit. When the unexpected happens, it is not just the "obvious poor" who have to choose between paying bills or buying enough food. This is why it is important to consider all households in all income brackets and then "net out" all resources used to put food on the table, including but not limited to government food programs, using *localized* data. And this is also why we have developed a few new terms to communicate what exactly should and is being measured.

It is important to consider all households in all income brackets and to "net out" all resources, including but not limited to government food programs, using localized data, and to have new and clear terms to communicate what exactly is being measured and why

Key Findings

Overview

In this section, we provide the findings of net missing meals across Ashtabula County. While one "snapshot" map is in the body of the Findings section, the full set of high-resolution maps are located in the Appendix. To zoom-in and enlarge features of high-resolution maps, view maps on a desktop computer with current PDF-type software and increase the "percentage shown" number. Depending on the quality of your viewing software and the speed of your internet connection, high-resolution maps might take a few minutes to load. Should the screen freeze, exit-out and re-open the map.

The Meal Deficit Metric calculates missing meals for households, not for group quarters, which include nursing homes and prisons where regular meals are already provided

Ashtabula County Introduced

Ashtabula County, Ohio, sits on Lake Erie and borders the state of Pennsylvania. It is comprised of approximately 38,000 households and an overall population of 98,000. As we detail in the Methodology section, by design, our model calculates missing meals for *households*, not for *group quarters*. Group quarters include institutions such as nursing homes and prisons, where regular meals are already provided.

The population only for those Ashtabula residents living in households is 94,376, only slightly lower than the overall total population of about 98,000. Of overall household population, 21,666 are under 18 years of age, 55,468 are between 18 and 64, and 17,242 are 65 or older. Of the population over 25 years of age, 39% have a high school diploma and 20% have attended at least some college. Ashtabula is predominantly White (93% of the population).

Table #1: Ashtabula County Demographics

Total Population	97,830	
Total Households	37,832	
Housing Units	46,174	
Population Over 25 Years of Age by Educational Attainment		
Category	**Total**	**Percent**
Population 25+	68,608	100%
No schooling	634	0.9%
Nursery School	0	0.0%
Kindergarden	7	0.0%
1st to 4th Grade	170	0.2%
5th to 8th Grade	2,454	3.6%
Some High School	6,327	9.2%
High School Diploma	26,852	39.1%
GED	3,724	5.4%
Some College	13,444	19.6%
Associate degree	5,201	7.6%
Bachelor's degree	6,564	9.6%
Master's degree	2,518	3.7%
Professional school degree	454	0.7%
Doctoral degree	259	0.4%

Table #2: Ashtabula County By Race		
Category	**Total**	**Percent**
Total population	97,830	100%
White alone	90,804	92.8%
Black or African American alone	3,515	3.6%
American Indian and Alaska Native alone	146	0.1%
Asian alone	533	0.5%
Native Hawaiian and Other Pacific Islander alone	12	0.0%
Some other race alone	433	0.4%
Two or more races	2,387	2.4%

Population in Ashtabula County is predominantly White

It is useful to examine patterns of race by individual blocks where people actually live. Ashtabula has 94 block groups, which are clusters of individual blocks. As Ashtabula County's population is almost all White, the entire county has mostly blocks with White-only population, with some exceptions in small geographic pockets. For example, the total number of individual blocks across Ashtabula is 3,880. Out of that total, 1,160 blocks (30%) are without any population, and those blocks with only White population constitute 56% of all blocks.

Table #3: Ashtabula County By All Blocks by Race		
Category	**Total**	**Percent**
Blocks with no population	1,160	29.90%
Blocks with only White population	2,155	55.54%
Blocks with only Black population	5	0.13%
Blocks with population that is neither White nor Black	12	0.31%
Remaining blocks with mixed population including only 1 Black person	186	4.79%
Remaining blocks with mixed population including only 2 Black people	111	2.86%
Remaining blocks with mixed population including only 3 to 10 Black people	190	4.90%
Remaining blocks with mixed population including only 11 to 20 Black people	42	1.08%
Remaining blocks with mixed population including only 21 to 69 Black people	19	0.49%
TOTAL BLOCKS	3,880	100.00%

If the White population is mostly dispersed throughout the county, where is the Black population of approximately 3,500 people? Out of those blocks across the county that *do* have population, 21 blocks each have 40% or more of Black population concentration (in terms of the percentage of population for that block, not the total number of individuals in that category countywide). The Black population across these 21 blocks, added together, constitutes 29% of the total Black population across the county. Maps in the Appendix include

population distribution by race by block group (aggregated from individual blocks), and in the table below we detail those 21 blocks where Black concentration is 40% or greater. As we see in the table, 6 of those blocks are located in block group MG ID #37.

Table #4: Ashtabula County
By Only Blocks with Black Population of 40% or More

Geographic unit		Population White and *Black Only				Age of all population in block		
Block #	MG Block Group ID	Total	White alone	Black alone	% Black of block population	Under 18	65 and over	Between 18 and 65
1	45	4	0	4	100%	2	0	2
2	68	5	0	5	100%	2	2	1
3	69	2	0	2	100%	0	0	2
4	70	1	0	1	100%	0	1	0
5	80	1	0	1	100%	0	0	1
6	37	32	4	23	72%	15	2	15
7	37	55	22	33	60%	17	11	27
8	80	5	2	3	60%	0	2	3
9	3	1,500	648	829	55%	0	8	1,492
10	11	6	3	3	50%	0	2	4
11	37	12	4	6	50%	6	1	5
12	64	12	6	6	50%	3	2	7
13	86	2	1	1	50%	0	0	2
14	28	27	10	13	48%	9	0	18
15	37	28	5	13	46%	15	2	11
16	23	11	6	5	45%	4	1	6
17	35	7	4	3	43%	0	2	5
18	38	7	4	3	43%	0	3	4
19	37	72	39	30	42%	18	10	44
20	37	64	29	26	41%	18	10	36
21	29	5	1	2	40%	2	0	3
Totals		**1,858**	**788**	**1,012**	**NA**	**111**	**59**	**1,688**

NOTE: We detailed only White and Black population as other population by race is low in these blocks. For example, across all 21 blocks, there are a total of 2 American Indian and Alaska Native alone, 2 Asian alone, 0 Native Hawaiian and Other Pacific Islander alone, 25 some other race alone, and 27 identified as some other (unspecified) race. Block #9 (MG BG ID #3) is an outlier in terms of total population; most blocks are substantially lower in population. Additionally, block data is updated every ten years by the Census, whereas block group data is based on a yearly rolling five-year average.

Based on these data, it is reasonable to conclude that one-third of the Black population concentrates in specific blocks and the remainder is more dispersed throughout the county. As the Black population is low to begin with, that dispersion is across a small fraction of all blocks.

How do people earn a living in Ashtabula County? We present two tables which use distinct industry categories for the civilian employed population over 16 years of age. Type of work varies greatly in Ashtabula County. Two sectors that stand out are manufacturing and health care and social assistance. Nearly 70% of all workers 16 years of age or older are employed in Ashtabula County, and of all civilian workers, 48% are female and 52% are male. 85% of all civilian workers who do not work from home drive alone to work, and for about 48% of all workers, the drive time is less than 20 minutes.

Table #5: Employment by Industry Category 1

TOTAL CIVILIAN EMPLOYED OVER 16 YEARS OF AGE	Total	Percent
	40,462	100%
Agriculture, forestry, fishing, and hunting	764	1.9%
Mining, quarrying, and oil and gas extraction	150	0.4%
Construction	2,506	6.2%
Manufacturing	9,769	24.1%
Wholesale trade	736	1.8%
Retail trade	4,166	10.3%
Transportation and warehousing	1,648	4.1%
Utilities	526	1.3%
Information	532	1.3%
Finance and insurance	1,095	2.7%
Real estate and rental and leasing	356	0.9%
Professional, scientific, and technical services	885	2.2%
Management of companies and enterprises	32	0.1%
Administrative and support and waste management services	1,231	3.0%
Educational services	2,624	6.5%
Health care and social assistance	6,906	17.1%
Arts, entertainment, and recreation	523	1.3%
Accommodation and food services	2,832	7.0%
Other services, except public administration	1,734	4.3%
Public administration	1,447	3.6%

Data source: 2015 to 2019 American Community Survey Estimate.
Note: More current estimates are available. We use this estimate as it matches the data years of a key input into our Meal Deficit Metric Model and can also be culled for the Model's output scores by individual block groups.

Employment varies across Ashtabula County, but 2 sectors stand out: manufacturing & health care and social assistance

Table #5: Employment by Industry Category 2		
TOTAL CIVILIAN EMPLOYED OVER 16 YEARS OF AGE	**Total**	**Percent**
	40,462	100%
Management	3,480	8.6%
Business and financial operations	936	2.3%
Computer and mathematical	402	1.0%
Architecture and engineering	458	1.1%
Life, physical, and social science	152	0.4%
Community and social services	689	1.7%
Legal	95	0.2%
Education, training, and library	1,825	4.5%
Arts, design, entertainment, sports, and media	260	0.6%
Healthcare practitioner, technologists, and technicians	2,617	6.5%
Healthcare support	2,000	4.9%
Protective service	669	1.7%
Food preparation and serving related	2,419	6.0%
Building and grounds cleaning and maintenance	1,992	4.9%
Personal care and service	565	1.4%
Sales and related	3,412	8.4%
Office and administrative support	4,069	10.1%
Farming, fishing, and forestry	385	1.0%
Construction and extraction	1,838	4.5%
Installation, maintenance, and repair	1,633	4.0%
Production	6,036	14.9%
Transportation and material moving	4,530	11.2%
Data source: 2015 to 2019 American Community Survey Estimate. **Note:** More current estimates are available. We use this estimate as it matches the data years of a key input into our Meal Deficit Metric Model and can also be culled for the Model's output scores by individual block groups.		

Average household income = $60,365

Median household income = $47,326

One third of Ashtabula County households earn between $50,000 and $100,000 per year. When we adjust for family size, we also see that 18% of all households are below the poverty level and that same percentage of households participate in the SNAP program, although the two sets of households are likely not mutually exclusive.

In our work we find that many households that qualify for SNAP do not apply, and household members do not need to be below the poverty level to quality. Of all households, 38% receive at least some Social Security income, and 33% have at least one household member with a disability.

Table #6: Ashtabula County Households by Income		
Category	**Total**	**Percent**
Total households	37,832	100%
Less than $10,000	3,389	9.0%
$10,000 to $14,999	2,298	6.1%
$15,000 to $19,999	2,317	6.1%
$20,000 to $24,999	2,432	6.4%
$25,000 to $29,999	2,242	5.9%
$30,000 to $34,999	2,184	5.8%
$35,000 to $39,999	1,637	4.3%
$40,000 to $44,999	1,856	4.9%
$45,000 to $49,999	1,777	4.7%
$50,000 to $59,999	3,572	9.4%
$60,000 to $74,999	3,943	10.4%
$75,000 to $99,999	4,486	11.9%
$100,000 to $124,999	2,467	6.5%
$125,000 to $149,999	1,407	3.7%
$150,000 to $199,999	1,153	3.0%
$200,000 or more	672	1.8%

Income and other demographic patterns alone do not determine accurately which households miss meals because they cannot afford them

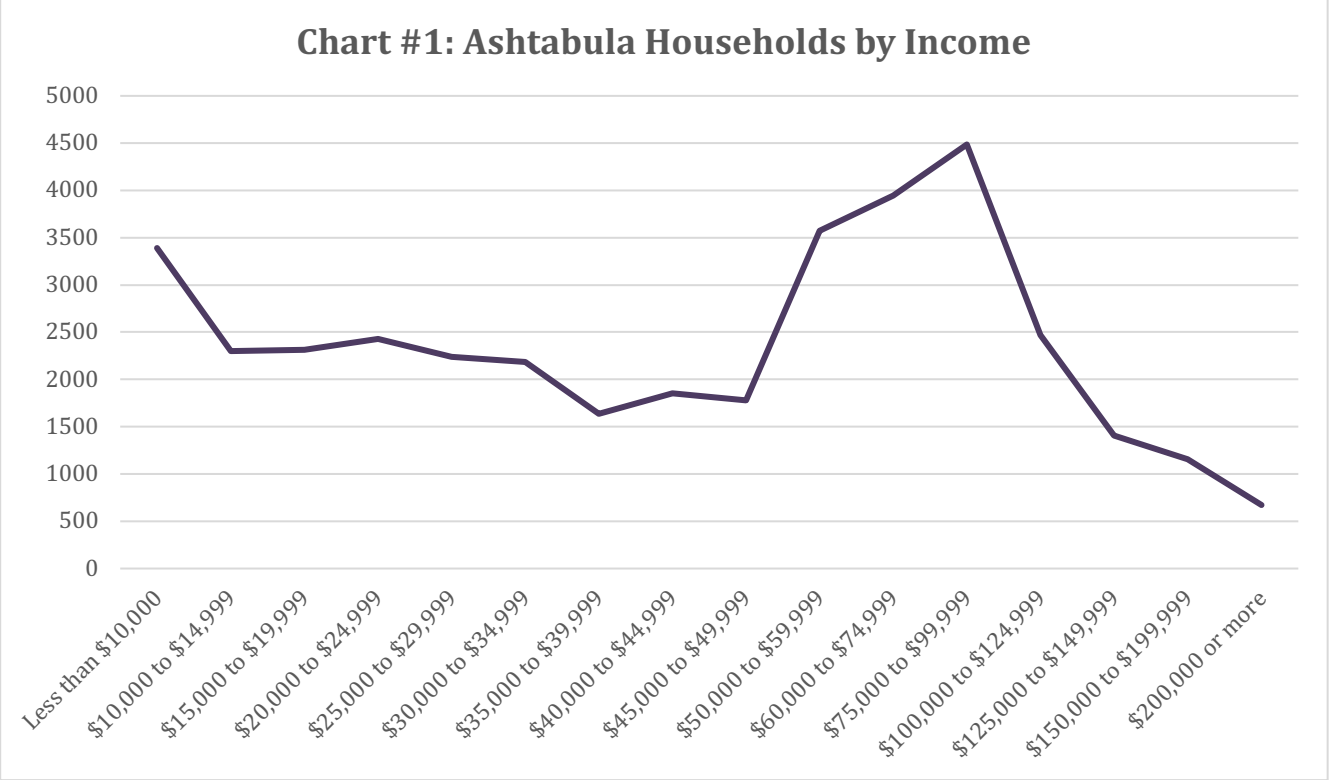
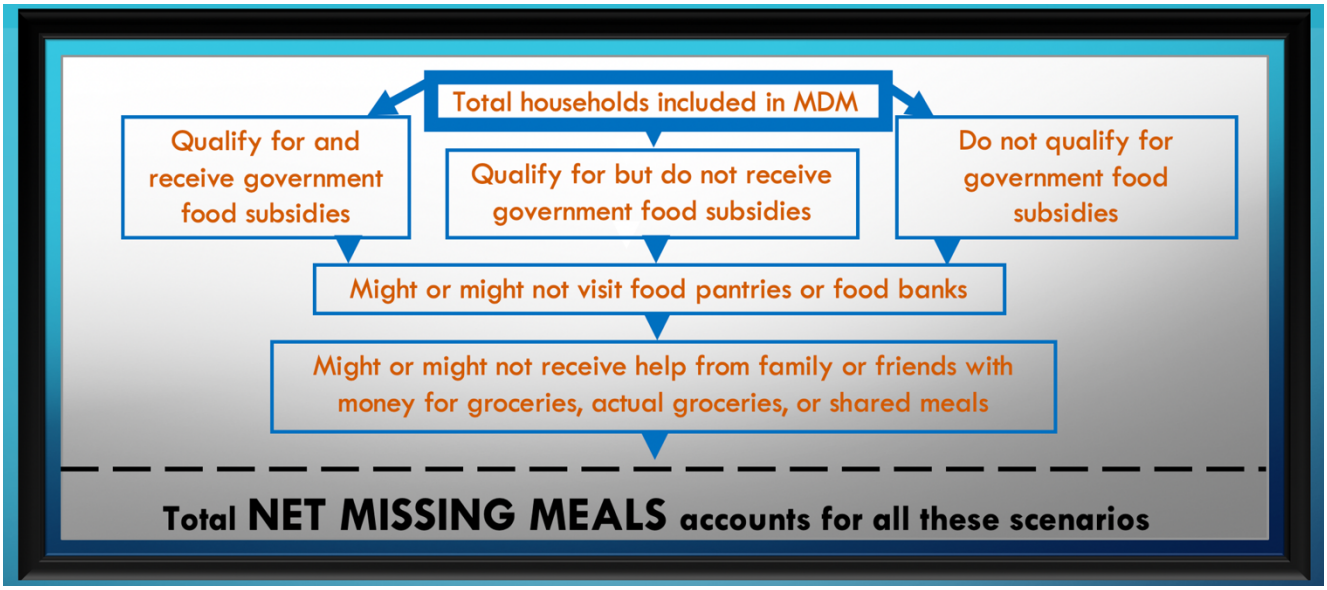


Table #7: Ashtabula County Households by Income by Age of Household Head Bracket							
2020 Disposable Income by Age of Householder	**Under 25**	**25-34**	**35-44**	**45-54**	**55-64**	**65-74**	**75+**
Total	1,136	5,210	5,523	6,862	8,487	6,979	5,266
<$15,000	368	1,005	890	1,094	1,739	1,215	1,320
$15,000-$24,999	158	661	454	653	864	1,087	1,495
$25,000-$34,999	128	418	499	684	918	825	739
$35,000-$49,999	219	1,058	865	1,054	1,360	1,357	677
$50,000-$74,999	165	1,179	1,204	1,542	1,804	1,316	534
$75,000-$99,999	61	398	990	745	888	475	250
$100,000-$149,999	32	447	547	923	815	548	231
$150,000-$199,999	1	30	47	104	57	99	7
$200,000+	4	14	27	63	42	57	13
Median Disposable Income	$27,682	$40,966	$50,702	$48,969	$41,704	$37,959	$23,151
Average Disposable Income	$35,455	$48,494	$56,892	$58,387	$50,833	$48,685	$34,472
NOTE: The total number of households across all income brackets is slightly larger than the countywide household total presented in previous tables because estimating income by age bracket required the use of a different estimate method using data from the Current Population Survey and the U.S. Census Bureau.							

Household income varies by age of household head, with younger and older household heads earning less than other households. Participation in SNAP (the USDA Supplemental Nutrition Assistance Program, formerly Food Stamps) is 18%. As discussed previously, income and qualification for the SNAP program are not accurate proxies for hunger. It is important to know income and other demographic patterns across Ashtabula County, but they alone do not determine accurately which households miss meals because they cannot afford them.



Ashtabula County Missing Meals

First, we present the high-level finding for the county as a whole. As discussed previously and later in the methodology section, our model nets out all ways households acquire food.

Accounting for all food subsidies, food bank support, and help from friends and family, Ashtabula County residents miss a total of 4,667,220 (rounded) meals per year because they cannot afford them

If all residents of Ashtabula shared the meal loss equally at one time without interruption, it would mean that no one in the County would eat a single meal for over 2 straight weeks

Block groups are the Ideal unit of measurement

Scores are at the block group level, which are small clusters of individual blocks. Why is this unit of measurement ideal? Because without high-quality, pinpointed hunger scores, solving hunger is not possible. The table on the next page is designed to make this point. Let's examine all counties in Ohio in terms of their units of measurement. Many governments and foundations rely on larger units such as ZIP Codes, which are too large and can cross county boundaries.

Table #8: Missing Meals Across Ashtabula County & Geographic Comparisons Across Ohio Illustrating Why Block Groups are Ideal Units of Measurement

County Name & Units of Measurement (Block Groups)		Current County Population	Total Number of *HHs (Households)	Average Weekly HH Missing Meals	Total Weekly Missing Meals	Total Yearly Missing Meals
Ashtabula	94	96,549	37,832	2.41	89,754	4,667,220

NOTES: **Units of Measurement** is the total number of small geographic areas for which the model generates reliable scores across Ashtabula County (94 areas). These areas are technically called "block groups" because they consist of a small cluster of individual blocks. The number of **yearly missing meals in *pounds of food*** in Ashtabula County is **6,534,107.** Missing meals are calculated for households, not group quarters which include nursing homes, prisons, and other group settings where meals are already provided. The number of households listed is the sum of the most reliable current data for each block group for which scores are generated. Therefore, it might be slightly different from current estimates made across the county as a whole. The average weekly missing meals is the simple average across all block groups, not the weighted average.

NOTES: There are 9,238 total block groups across all of Ohio. Imagine dividing the entire state into these hyper local areas and reliably predicting the number of meals missed after netting out EVERYTHING else. This is what this work can accomplish and what has already been done for the 94 block groups across Ashtabula.

All Ohio counties in alphabetical order	Block Groups	Tracts	Total ZIP Codes	ZIP Codes Fully Inside County	ZIP Codes Partially Inside County
Adams	22	6	10	3	7
Allen	92	33	18	8	10
Ashland	44	11	18	3	15
Ashtabula (study area)	**94**	**26**	**19**	**11**	**8**
Athens	48	15	18	9	9
Auglaize	41	11	18	5	13
Belmont	68	20	28	19	9
Brown	32	9	19	5	14
Butler	267	80	17	8	9
Carroll	25	7	20	5	15
Champaign	34	10	16	5	11
Clark	136	44	21	10	11
Clermont	118	40	23	9	14
Clinton	32	9	12	4	8
Columbiana	94	24	24	11	13
Coshocton	33	10	17	5	12
Crawford	48	13	15	6	9
Cuyahoga	1162	447	53	49	4

Table #8: Geographic Comparisons Across Ohio Illustrating Why Block Groups are Ideal Units of Measurement *continued*					
County Name	**Block Groups**	**Tracts**	**Total ZIP Codes**	**ZIP Codes Fully Inside County**	**ZIP Codes Partially Inside County**
Darke	52	12	23	14	9
Defiance	36	9	14	4	10
Delaware	88	35	20	6	14
Erie	70	19	14	5	9
Fairfield	94	28	18	5	13
Fayette	26	7	11	3	8
Franklin	887	284	48	36	12
Fulton	31	9	11	4	7
Gallia	25	7	11	5	6
Geauga	65	21	19	7	12
Greene	112	35	24	9	15
Guernsey	35	10	19	8	11
Hamilton	697	222	57	49	8
Hancock	62	13	23	11	12
Hardin	28	7	15	5	10
Harrison	17	5	16	3	13
Henry	27	7	17	5	12
Highland	35	9	15	3	12
Hocking	23	7	15	5	10
Holmes	23	8	18	5	13
Huron	48	13	14	3	11
Jackson	30	7	10	3	7
Jefferson	67	23	23	14	9
Knox	46	12	15	5	10
Lake	155	59	11	6	5
Lawrence	57	16	12	6	6
Licking	112	32	26	11	15
Logan	39	11	18	6	12
Lorain	202	74	24	15	9
Lucas	398	128	30	25	5
Madison	28	12	12	2	10
Mahoning	216	70	36	20	16
Marion	57	18	12	2	10
Medina	110	37	23	6	17
Meigs	23	6	14	9	5
Mercer	33	9	13	6	7
Miami	86	21	17	6	11
Monroe	16	4	16	8	8
Montgomery	420	153	40	24	16
Morgan	15	4	10	2	8
Morrow	23	6	16	4	12
Muskingum	75	19	19	10	9
Noble	12	3	15	4	11

Table #8: Geographic Comparisons Across Ohio Illustrating Why Block Groups are Ideal Units of Measurement *continued*

County Name	Block Groups	Tracts	Total ZIP Codes	ZIP Codes Fully Inside County	ZIP Codes Partially Inside County
Ottawa	43	13	17	10	7
Paulding	17	5	14	6	8
Perry	28	6	17	6	11
Pickaway	36	13	17	4	13
Pike	22	6	12	4	8
Portage	101	35	25	9	16
Preble	34	12	16	7	9
Putnam	27	7	14	4	10
Richland	95	30	19	5	14
Ross	62	17	15	5	10
Sandusky	59	15	17	6	11
Scioto	73	20	18	8	10
Seneca	57	14	19	7	12
Shelby	39	10	17	7	10
Stark	276	86	40	20	20
Summit	452	135	39	24	15
Trumbull	193	55	27	17	10
Tuscarawas	77	21	26	9	17
Union	30	10	19	3	16
Van Wert	28	9	14	6	8
Vinton	12	3	14	3	11
Warren	108	33	23	8	15
Washington	47	16	21	10	11
Wayne	83	32	22	6	16
Williams	36	9	12	6	6
Wood	90	28	31	20	11
Wyandot	22	6	12	4	8
Totals	**9,238**	**2,952**	**NA***	****788**	****949**

***NOTE:** the column is not summed as ZIP Codes cross county boundaries, and many would be counted more than once.

Consider our study area: Ashtabula County. ZIP Codes are not ideal units of analysis as – in the case of Ashtabula – 8 are only *partially* in the county, meaning other areas of the ZIP Code are in an *adjacent* county.

Entirely in Ashtabula	Partially in Ashtabula
44082	44428
44003	44076
44093	44057
44004	44064
44032	44086
44010	44062
44084	44099
44048	44041
44030	
44047	
44085	

****NOTE:** Total singular ZIP Codes across Ohio should not be summed by adding these two columns as many partially in the county would be incorrectly counted more than once.

The singular count of all ZIP Codes either fully or partially in each county across Ohio = 1,197

Additional Table #8 notes:

There are 88 counties across Ohio. Some studies predict missing meals across the U.S. at the county level but either they do not consider all households, or they do not net out everything. Local data is not used. And many organizations use ZIP Codes for data averaging on a wide range of other social factors. ZIP Codes are too large and can distort the true patterns of social conditions. Even if they provided accurate information, *where* in the ZIP Code do specific conditions of interest exist? This is not revealed and becomes a guessing game. Furthermore, ZIP Codes cross county boundaries. If a county department of public health, for example, were addressing health disparities with ZIP Code data where the ZIP crosses the county boundary, it is possible that the issue resides in the neighboring county. Consider that there are 1,197 ZIP Codes across Ohio but only 788 reside fully within one county. Block group data, if reliable, solves these problems.

Top Two Block Groups with the Most Missing Meals

The block group with the most missing meals across Ashtabula County is block group #35 (identified also in Table #4). This block group is missing a total of about 141,000 meals per year. The block group contains 815 households and has a total population of about 2,000 people.

To see details of where block groups are located, consult the Map Appendix

To zoom in, enlarge the "percentage shown" using current PDF software from a desktop computer with a stable internet connection

The block group with the second highest missing meals is block group #47. That block group has about half of the population as block group #35 and roughly 500 households and 1,060 people. Block group #47 is missing about 91,000 meals per year.

In the Map Appendix, we provide a high-resolution block group ID map that shows the location of each block group in Ashtabula County (there are 94 total block groups). To see details of where block groups are located, enlarge the "percentage shown" using current PDF software from a desktop computer.

On the next page, we provide a low-resolution zoomed in snapshot map that show block group #35 and block group #47.

Following the snapshot map, we present the demographic details and missing meals for those two block groups. In each table, we also provide the corresponding Census block group ID. We recode those longer IDs into easier-to-use numbers.

Snapshot Map #1 Showing Locations of Two Block Groups: #35 and #47

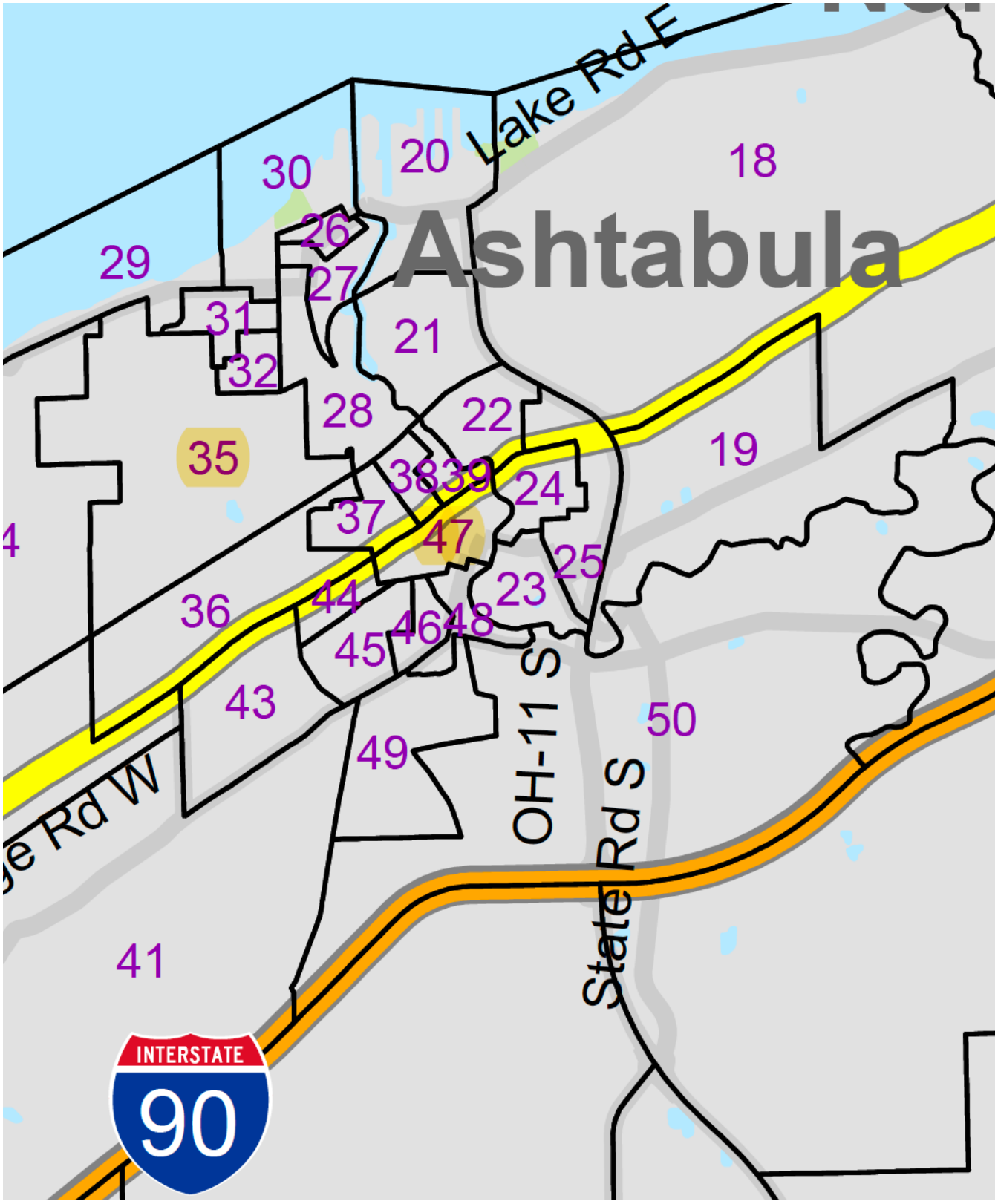


Table #9: Top Block Group with the Most Missing Meals —MG BLOCK GROUP #35— & Additional Variables	
Census Block Group ID (MG BG #35)	G39000700006033
Total Population	1,953
Number of Households (HHs)	815
Population under 18	513
Population over 64	189
Percent of HHs without a Car	11.17%
Percent of HHs in Poverty	28.10%
HHs on SNAP	359
Black/African American Population	74
White Population	1,790
Average Weekly HH Missing Meals	3.33
Total Weekly Missing Meals	2,711
Total Yearly Missing Meals	140,970
Total Yearly Missing Meals in Pounds of Food	197,359

Table #10: Top Block Group with the Most Missing Meals —BLOCK GROUP #47— & Additional Variables	
Census Block Group ID (MG BG #47)	G39000700007041
Total Population	1,059
Number of Households (HHs)	496
Population under 18	205
Population over 64	269
Percent of HHs without a Car	36.29%
Percent of HHs in Poverty	55.85%
HHs on SNAP	221
Black/African American Population	43
White Population	993
Average Weekly HH Missing Meals	3.52
Total Weekly Missing Meals	1,744
Total Yearly Missing Meals	90,692
Total Yearly Missing Meals in Pounds of Food	126,969

Conclusion

Accounting for all food subsidies, food bank support, and help from friends and family, Ashtabula County residents miss a total of 4,667,220 (rounded) meals per year because they cannot afford them. This is a serious quality of life and quality of health problem. If the state of Ohio set the goal of everyone obtaining 3 meals per day, and if all residents of Ashtabula shared the meal loss equally at one time without interruption, it would mean that no one in the County would eat a single meal for 2 straight weeks. Hunger is solvable, and we are hopeful that local, statewide, and national leaders will use the data and tools in this report to take meaningful and focused action.

METHODOLOGY

A Unique Model

Mari Gallagher Research & Consulting Group (MG) developed a unique statistical model that utilizes a USDA hunger survey administered in Ohio and across the United States. In the USDA hunger survey, respondents are asked a number of questions concerning food purchases, food subsidies, and missing meals. Our model uses only (1) Ohio-specific household level data from the USDA hunger survey, (2) *additional* household level data collected from other Census-administered surveys and appended to hunger survey household records, and (3) local demographic data from the American Community Survey at the block group level using only Ashtabula County block group data. We call the model the Meal Deficit Metric and its output is a Meal Deficit Score. Scores are in both missing meals and – for charitable feeding purposes – missing meals are also converted to pounds of food.

The Meal Deficit Metric calculates the unmet food gap at a very low geography after "netting out" (1) government food subsidies such as SNAP and free-or-reduced-price school meals, (2) charitable food provided through pantries and other organizations, and (3) all other ways that households might acquire food, including support from friends and relatives. The Meal Deficit Metric predicts meals that are missed because households cannot afford them. This is distinct from dieting and fasting for reasons not related to food affordability.

Reliability

The findings from our model are statistically significant, meaning that they are reliable and are unlikely to have resulted from chance patterns in the data.

Unit of Measurement: The Block Group

Our unit of measurement is the Census-defined block group.

In our work, we found that the "block group" as a geographic unit or even as a general concept is fairly unknown. This is not surprising and is most likely because funders and organizations in the nonprofit arena across the U.S. typically rely on tabulations by county, by ZIP Code, or by Census tract. Block group data are rarely used. We provide a brief

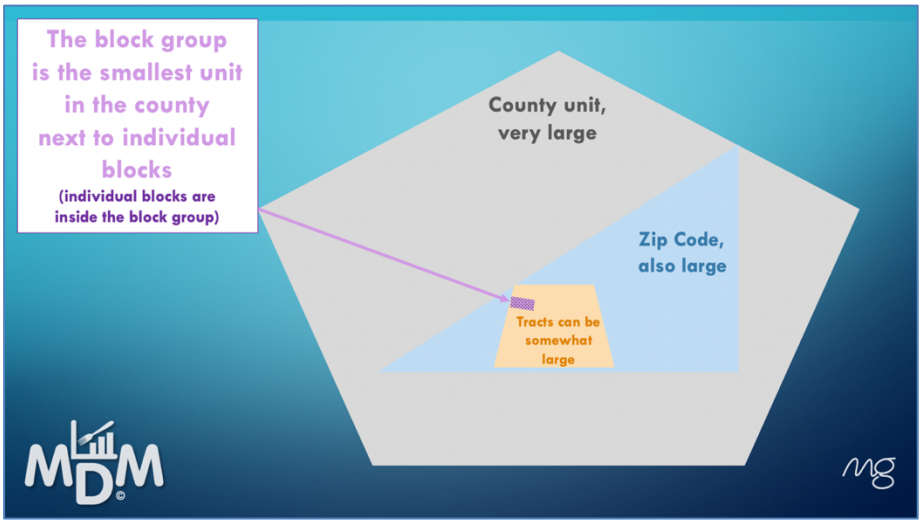
explanation that we hope is useful as an introduction to block groups and why they are an ideal geographic unit for measuring and understanding "hunger totals" and other community conditions.

Over the course of history, county boundaries have changed from time to time, although today they rarely do. Determining county boundaries is strictly a state matter. The U.S. Census Bureau has created a hierarchy of geographic units below the county unit and re-examines (and, in some cases, re-configures) their boundaries every 10 years. Below the county, the next largest unit is the ZIP Code. There are two types of ZIP Code areas. To keep it simple, one can be considered a "postal" ZIP Code, originally created by the U.S. Postal System. The other can be considered a "Census" ZIP Code, adopted and amended by the Census Bureau. The "postal" ZIP Code and the "Census" ZIP Code are geographically similar but usually not identical. We have seen instances where tabulated "Census" ZIP Code data is detailed in a table but then, as a location reference, the ZIP Code boundary is mapped using the "postal" boundary. There also can be confusion when ZIP Codes cross county boundaries. For example, if you are a county official, and you are relying on ZIP Code data either averaged or totaled across the ZIP Code, it would be helpful to know which ZIP Codes cross county boundaries.

Below the ZIP Code are Census-defined tracts. Tracts are made up of a cluster of block groups. They can be large and elongated and stretch out in one direction for many miles.

Below tracts are Census-defined block groups. Blocks groups are a much smaller unit made up of a cluster of individual blocks. The block group has very robust data that is collected each year and rolled into moving five-year estimates as part of the American Community Survey. Results are very detailed and reliable. This is also true of tracts, but because block groups are much smaller, in our view, block group data are more insightful and actionable.

Blocks are the smallest Census unit, although any point on a block also can be pinpointed and mapped, and many rural blocks also can stretch out for comparatively long distances compared to urban blocks. Blocks have very limited data: every 10 years, the Census updates its counts of total block population by race and by adults and children. Here is an illustration from one of our community PowerPoint presentations underscoring the small size of block groups compared to other units of measurement:



Ashtabula County has 94 block groups. This compares to 26 tracts and 19 ZIP Codes. That our model results in reliable scores at the block group level is ideal: to fight hunger effectively, it is critical to pinpoint exact locations where meals are missing.

Data Details

Our projections are based on Ashtabula County block group characteristics (the latest American Community Survey – ACS) and the relationship between household characteristics and the number of additional meals each household requires to meet its basic food needs (estimated from the latest "Food Security" Supplement to the Current Population Survey – CPS). The CPS is a nationally representative monthly survey administered by the U.S. Census Bureau. We utilized deidentified individual Ohio-only household data from households that participated over a five-year grouping (without duplicates), distinct from other hunger studies that utilize national data regardless of the state being studied, and these data were extracted from the IPUMS-CPS website. Each December, the survey contains a set of questions, devised in cooperation with the U.S. Department of Agriculture (USDA), to assess unmet food needs in households. The survey asks useful questions, including: (1) "what is the usual weekly amount the household spends on food?" and (2) "how much additional money is needed in order for the household to meet weekly basic household needs for food?" The two questions were combined to determine how many additional meals the household needed to "meet weekly basic household needs for food." This was done by adding (1) and (2) together (to get the weekly food spending that would meet basic needs), using the household composition to determine the cost of each of the household's 21 meals per person per week (assuming that each adult meal was 1.5 times the cost of each child meal), and dividing (2) by the estimated per meal cost to determine how many meals (rather than how many dollars) were represented by the family's unmet food needs.

ABOUT MG & *INVESTIGATETV*

Research Team

Mari Gallagher Research & Consulting Group is a national firm specializing in localized data, strategic information, and measurable solutions. The firm has maintained a national reputation for diverse, high impact projects across the United States since its founding in 2005. Clients and partners include grassroots community and civic organizations, government entities, foundations, small and large for-profit and non-profit ventures, healthcare systems, and major international corporations. We have collaborated with the Institute of Medicine (known as the National Academy of Medicine since 2015), the Urban Institute, Harvard, MIT, the National YMCA, and many other organizations.

Our firm has extensive expertise quantitative and qualitative research projects; food access and public health; food systems studies and market and grocer assessments; anti-hunger assessments and strategies; retail and housing market assessments; transit and other focused real estate developments; CDFI and other financial services, community and small business development; investment strategies; the economy; immigration; program evaluation; and other content areas.

We do not have a communications "handler" on staff, and we have never retained a public relations firm to advance or manage our firm's public persona. However, our work, based on its own merit, has been widely covered in publications such as The Economist, The Wall Street Journal, the New York Times, USA Today, and on national news networks such as CNN. You can also access a TEDx talk we gave by googling "Mari Gallagher TEDx."

Examples of MG work products:

- Grocery market analysis
- Other types of market analysis and support of business district development
- Product and new venture assessment
- Statistical modeling
- Impact studies
- Food system assessments
- Food deserts and health outcomes assessments
- Anti-hunger assessments
- Health and wellness measures
- Hospital and healthcare assessments
- Economic development impact measures
- Demographic analyses and trends
- Community profiles
- Neighborhood report cards
- Program development and evaluation
- Indexes
- Below-the-radar data development
- Indicator identification, development, tracking, and analysis
- GIS, spatial analysis, and mapping

Additional MG qualitative products:

- Program evaluation and program design
- Mystery shopping
- Public and expert testimony
- Surveys
- Key informant interviews
- Face-to-face interviews
- Intercepts
- Traditional focus groups
- Immediate-turn-around focus groups
- Needs assessments
- Communications and forums
- Illustrative and on-point reports, report cards, and summaries
- Dynamic PowerPoint presentations, including video and music inserts
- Public forums
- Town hall meetings and charrettes
- Strategic planning
- Community juries
- Facilitated discussions

- Internal meeting facilitation
- Strategic planning
- Keynote speaking engagements
- Executive briefings

Philosophy & Incorporation:

Our philosophy is that quality data and information, expertise, and integrity result in a successful project. We don't believe in research assembly lines or shunting off key assignments to junior staff or vendors. We are a full-service firm that custom-designs and executes each project to meet the unique needs and strategic questions of our clients. Strategy, precision, results – these are always our focus. We are a neutral third-party firm, and wholly owned female business enterprise, that does not engage in political campaigns or lobbying. With our passion, strategic insights, perseverance, commitment, and practical know-how, we help our clients change their worlds for the better.

Visit MariGallagher.com for more information!

About *InvestigateTV*

InvestigateTV is Gray Television's national investigative team, which reports on issues of concern, corruption, greed, mismanagement and fraud for digital, streaming and broadcast audiences across the United States.

Gray Television is a television broadcast company headquartered in Atlanta, Georgia. Gray currently owns and/or operates television stations and leading digital properties in 94 television markets that collectively reach approximately 24% of U.S. television households.

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MAP APPENDIX

Notes:

- All maps are HIGH RESOLUTION in a separate PDF file on our website.
- All maps are designed to be viewed on a computer using a program that can read PDF files; they are not designed to be printed onto a standard page size or through a typical printer.
- We suggest that the map file size not be reduced; that would compromise quality.
- Because the maps are at a very high resolution, the viewer can increase the "percentage shown" number (usually located at the top of the PDF) to enlarge

features. This enables to viewer to zoom in. The viewer can create a custom zoom-in map by doing this and then taking a screen shot.

- VIEWING DIFFICULITIES: Maps are large in file size, and each viewer's display quality depends on the PDF software used for viewing. Older PDF software might take longer to load. Should a page appear incomplete or show a line running through it, simply use your mouse to click on that page and it should reformat. Or exit out of the map and re-open it again. Again, these maps are designed to be viewed on a computer. Viewing by phone or another small device will likely result in difficulties.