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THE MEAL DEFICIT METRIC PROJECT

Measuring Missing Meals at a Granular Level Across Florida

Commissioned By

FEEDING® FLORIDA
Florida's Food Bank Network

UPDATE & SUMMARY OF FINDINGS

February 17, 2021

BACKGROUND

The Meal Deficit Metric

Imagine dividing the state of Florida into more than 11,400 small pieces and statistically predicting "hunger totals" for each one. This is exactly what The Meal Deficit Metric Project accomplishes across Florida. The Meal Deficit Metric is a unique model developed by Mari Gallagher Research & Consulting Group (MG) and commissioned by Feeding Florida, the premier statewide association of food banks serving every county in the state. We thank Feeding Florida for commissioning this work, its individual food bank members for their ongoing and outstanding efforts to feed those who are hungry, and all Florida officials and organizations that work hard each day to serve their constituents.

THIS UPDATE PROVIDES:

- **NEW hunger totals based on a granular analysis of over 11,400 hyper-local areas across Florida**
- **Comparisons across three time periods by state, county, and ZIP Code**
- **Special breakout of hunger totals resulting from pandemic conditions**

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 (MDM) predicts meals that are missed because households cannot afford them. This is distinct from dieting and fasting for reasons not related to food affordability.

Our model uses only Florida-specific data and generates statistically significant results at very small geographic units. Up until now, most food banks across America have only had access to reliable "net hunger totals," with results at the state or county level. Some have statistics generated for Census tracts, but these are typically extrapolated down from county totals, not from individual tract-level data. Looking down from such a high plateau, how is it possible to accurately identify the locations and totals of missed meals across a county? Most know that Florida is a diverse state and that there is great variation among counties, but there is also great variation *within* counties. Our analysis provides the granular assessment needed to accurately track and solve hunger.

Unit of Analysis: Introducing the Block Group

Our reliable 11,400-plus Florida scores are for areas that the U.S. Census Bureau calls block groups. A block group is a small cluster of individual blocks. They are tiny compared to more well-known Census tracts. We use unique data at the block group level as a major component of our model. And 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 (the block group), true hunger

is revealed in a new way that makes meaningful and trackable food relief planning possible. These granular factors must be accounted for to generate a reliable meal deficit total and corresponding action plan. Local and statewide leaders cannot solve a problem such as huger without knowing how many and specifically where (meaning small geographic units) meals are missing.

Granular factors across Florida must be accounted for to generate a reliable meal deficit total & corresponding action plan

Pilot Launch (2017)

Our model was first developed as a pilot project for Palm Beach County block groups in late 2017. Known for its beautiful beaches, expensive retirement homes, sophisticated hotels, and lush golf courses, Palm Beach County also has a residential population that struggles to make ends meet. This is certainly the case in every county across Florida, and probably every county across America. However, Florida in many ways is the land of abundance. With the state's rich, fertile soil, long growing season, farms and fisheries, and 300-plus commodity crops, its hunger is often underestimated and hidden from view, perhaps more than any in other state in the country.

Pilot Completion (2018)

The Palm Beach County pilot was completed in 2018. We found that other studies undercounted hunger in this county by over 60%. This was not only corrected by the MDM countywide, but was also done *specifically and reliably* for the 884 small geographic units (block groups) *within* Palm Beach County, allowing food relief to be pinpointed.

Analysis showed hunger undercounted by other studies for Palm Beach County by over 60%

To be consistent with the Palm Beach County pilot, the statewide analysis used the same 2017 data baseline

Statewide Launch (2019)

After careful review of the MDM results for Palm Beach County, Feeding Florida concluded that this new approach was needed statewide. The effort to calculate meal deficit scores for all block groups across all 67 Florida counties began in early 2019. However, to be consistent with the work in Palm Beach County, we used the same data as was available when we began the pilot study in 2017. By early summer of 2019, Meal Deficit Metric deliverables for each of the 67 counties were completed. This included a "re-run" of Palm Beach County. These statewide results were also statistically significant and, as such, reliable, and the Palm Beach County results were consistent with our initial model application. During the second half of 2019, we participated in community briefings with Feeding Florida's leadership to further introduce the approach and results, and to solicit feedback.

MG supported Feeding Florida in community briefings throughout the summer of 2019 to share results & solicit feedback

First Statewide MDM Release (Early March 2020)

An Executive Summary with detailed findings across the state was released in March of 2020, just days before many states issued lockdown orders due to pandemic conditions.

The Executive Summary can be found at MariGallagher.com and FeedingFlorida.org.

Second Release: COVID-19 Employment Disruption (May 2020)

Just a few months after the first statewide release, we updated findings to include the impact of the pandemic on hunger

Pandemic conditions resulted in unprecedented lines at food banks and pantries across the country. Some stretched for miles, and Florida was no exception. Even before Florida instituted official pandemic-related restrictions, consumers began modifying their own behavior, and many households – especially those in the tourist industry – saw a reduction or elimination of earnings. To capture the impact of the pandemic on hunger, Feeding Florida commissioned our group to perform another update that incorporated employment disruption. Our employment disruption model generates estimates for the same small geographic units (block groups) across Florida for which we generate Meal Deficit Metric scores. Our employment disruption model estimates how many *additional workers* in a block group (*i.e.,* over and above the baseline pre-COVID-19 level of unemployment) have become unemployed by either (1) the direct shutdown of businesses, or (2) the social distancing regulations that make some work impossible to perform in a traditional workplace or remotely at home, where social distancing can be observed.

The Executive Summary can be found at MariGallagher.com and FeedingFlorida.org.

Third Release: The MDM Update & Summary of Findings (February 2021)

THIS REPORT

The employment disruption analysis, which we incorporated into the second statewide release, uses the very latest employment data for Florida. However, the Meal Deficit Metric (MDM) model relies on another data source as one of many model inputs: the American Community Survey (ACS).

ACS data – collected, tabulated, and released by the U.S. Census Bureau – provides the demographic details our MDM model requires for block groups based on a rolling average across a five-year period. Each year, the Census moves the five-year grouping forward one year as that new year's data becomes available. The demographic ACS data our MDM model requires always lags more in time than the employment data needed for the employment disruption model. And because ACS data scores for block groups are based on the average of five scores over five distinct years, ACS data only refreshes each year by 20%. In December of 2020, the Census added another year of data (2019) to this rolling average. Now, enough data years have been refreshed since our initial 2017 Palm Beach County pilot to warrant an update of the entire MDM model. Feeding Florida commissioned this update

and Summary of Findings also in December of 2020 so that the MDM model could utilize the most current data available as soon as possible. These findings incorporate our original employment disruption analysis and its impact on hunger as those data inputs still reflect local and statewide Florida pandemic-related conditions. Should those economic conditions change, the employment disruption model can be recalibrated to reflect those changes.

Summary of the Three MDM Time Comparisons Found in this Report

1) March 2020 release
    - The original MDM model output that sets the baseline across Florida
    - Calculated for over 11,400 hyper-local areas across the state
    - Uses 2017 ACS data to be consistent with 2017 Palm Beach County pilot
    - 2017 ACS data at the time the pilot began were based on averages across a five-year grouping, **from 2011 through 2015**
2) May 2020 release
    - An employment disruption model that responds to COVID-19 pandemic conditions
    - Distinct from the MDM model, it calculates the impact of the pandemic on hunger
    - These additional missing meals were added to our MDM baseline figures for each of the 11,400-plus hyper-local areas across Florida
    - The rest of the MDM model is unchanged (same as March 2020 release)
3) February 2021 release (this latest update)
    - Uses ACS data updated by the Census in December of 2020
    - The years for the 2020 ACS data are averages across the five-year grouping, **from 2015 through 2019**
    - Includes the employment disruption model's impact of the pandemic on hunger

Tables show change across two time periods:

- From the baseline year (March 2020 release) using the average across ACS years **2011 through 2015**
- To this report (February 2021 release) using the ACS average across ACS years **2015 through 2019** which **includes the current impact of the pandemic on hunger**

Methodology

The methodology of the Meal Deficit Metric model can be found in the first and second statewide executive summaries. The employment disruption model can be found in the second statewide executive summary.

Please visit MariGallagher.com or FeedingFlorida.org for more information

SUMMARY OF FINDINGS

Data Contents

MDM findings include tables by:

- The state of Florida – in this document in the next section
- Each Florida county – in this document in the next section
- Each Florida ZIP Code provided in a separate Excel file to be posted online at MariGallagher.com and FeedingFlorida.com – watch our websites!

As part of this project, we also provide a general county table that quantifies geographic units of analysis by:

- The number of Census-defined blocks, block groups, and tracts in the county
- The number of ZIP Codes that are fully or only partially within each county
- This special table is provided in a separate Excel file and will be posted online at MariGallagher.com and FeedingFlorida.com – watch our websites!

SCROLL DOWN FOR DATA TABLES

Data Tables

TABLE #1: STATE OF FLORIDA		
Meal Deficit Metric Time Comparisons	**Total Weekly Missing Meals**	**Total Yearly Missing Meals**
First Release March 2020 Uses ACS data available at the time of the initial Palm Beach County pilot for years 2011 through 2015	**16,936,154**	**880,680,008**
Second Release **Pandemic Impact Only** May 2020 Uses current employment data	**2,723,532**	**141,623,664**
Third Release February 2021 Uses the most current ACS data available today for years 2015 through 2019 & includes the current pandemic impact	**19,808,725**	**1,030,053,714**
Increase / Decrease in total missing meals between March 2020 & February 2021 releases	**2,872,571**	**149,373,706**
Increase / Decrease in percentage of total missing meals between March 2020 & February 2021 releases	**17% increase in missing meals**	

TABLE #2: STATE OF FLORIDA BY COUNTY
-TOTAL WEEKLY MISSING MEALS-
SEE NOTES AT END OF TABLES

County Name & Units of Measurement (Block Groups)		First Release (Baseline)	Second Release Pandemic Impact Only	Third (Latest) Release Including Pandemic Impact	Change in Total Missing Meals	% Change in Total Missing Meals (rounded)
Alachua	155	206,232	24,904	211,518	5,286	3%
Baker	12	21,657	2,886	23,321	1,664	8%
Bay	108	147,588	31,444	180,630	33,042	22%
Bradford	18	22,427	3,141	25,823	3,396	15%
Brevard	317	438,472	59,972	471,585	33,113	8%
Broward	939	1,679,707	242,457	1,903,052	223,345	13%
Calhoun	10	13,057	1,787	12,368	-689	-5%
Charlotte	107	123,282	27,429	150,481	27,199	22%
Citrus	87	118,966	20,918	136,221	17,255	15%
Clay	81	154,139	27,311	187,019	32,880	21%
Collier	192	227,551	51,258	282,346	54,795	24%
Columbia	40	59,999	8,384	68,832	8,833	15%
DeSoto	26	31,986	4,621	38,469	6,483	20%
Dixie	12	14,125	2,120	20,283	6,158	44%
Duval	489	843,807	119,540	972,016	128,209	15%
Escambia	190	253,111	48,376	305,816	52,705	21%
Flagler	51	75,277	14,427	92,312	17,035	23%
Franklin	11	9,797	1,633	11,071	1,274	13%
Gadsden	32	58,697	5,862	61,433	2,736	5%
Gilchrist	13	14,004	2,335	17,441	3,437	25%
Glades	10	8,791	1,304	12,354	3,563	41%
Gulf	14	12,658	1,812	14,257	1,599	13%
Hamilton	10	15,222	1,659	16,462	1,240	8%
Hardee	20	24,019	2,860	26,609	2,590	11%
Hendry	25	39,686	4,503	46,515	6,829	17%
Hernando	106	154,888	25,771	187,995	33,107	21%
Highlands	79	87,722	14,456	103,822	16,100	18%
Hillsborough	879	1,198,829	194,524	1,406,272	207,443	17%
Holmes	15	16,655	2,546	20,239	3,584	22%
Indian River	92	107,907	20,106	111,383	3,476	3%
Jackson	39	42,697	5,311	49,659	6,962	16%
Jefferson	10	13,296	1,881	15,675	2,379	18%
Lafayette	6	6,320	820	6,785	465	7%
Lake	148	253,857	49,355	325,213	71,356	28%
Lee	513	494,753	116,158	605,381	110,628	22%
Leon	177	265,542	37,995	289,826	24,284	9%
Levy	28	38,508	5,929	43,942	5,434	14%
Liberty	6	6,229	918	7,354	1,125	18%

TABLE #2 CONTINUED: STATE OF FLORIDA BY COUNTY
-TOTAL WEEKLY MISSING MEALS-
SEE NOTES AT END OF TABLES

County Name & Units of Measurement (Block Groups)		First Release (Baseline)	Second Release Pandemic Impact Only	Third (Latest) Release Including Pandemic Impact	Change in Total Missing Meals	% Change in Total Missing Meals (rounded)
Madison	16	19,847	2,254	20,910	1,063	5%
Manatee	207	260,424	50,844	302,916	42,492	16%
Marion	175	295,653	38,384	342,988	47,335	16%
Martin	93	98,978	22,449	117,654	18,676	19%
Miami-Dade	1,593	2,702,021	292,990	3,067,176	365,155	14%
Monroe	76	46,591	11,243	61,253	14,662	31%
Nassau	39	56,664	10,065	68,618	11,954	21%
Okaloosa	115	144,838	26,554	170,842	26,004	18%
Okeechobee	28	35,919	4,739	40,320	4,401	12%
Orange	375	1,136,636	164,193	1,351,895	215,259	19%
Osceola	76	291,245	25,101	339,474	48,229	17%
Palm Beach	884	1,073,522	193,840	1,252,753	179,231	17%
Pasco	307	391,458	90,006	508,918	117,460	30%
Pinellas	719	725,602	166,577	853,161	127,559	18%
Polk	331	557,781	81,991	657,793	100,012	18%
Putnam	61	72,808	9,948	83,678	10,870	15%
Santa Rosa	77	122,737	26,154	148,538	25,801	21%
Sarasota	251	268,352	66,954	315,737	47,385	18%
Seminole	235	303,582	34,827	373,118	69,536	23%
St. Johns	81	129,861	15,510	149,034	19,173	15%
St. Lucie	140	255,777	55,263	315,858	60,081	23%
Sumter	41	58,052	18,336	78,416	20,364	35%
Suwannee	26	42,156	5,432	43,491	1,335	3%
Taylor	19	19,602	2,484	22,353	2,751	14%
Union	9	11,121	1,161	11,676	555	5%
Volusia	288	423,694	101,719	536,625	112,931	27%
Wakulla	14	24,328	3,990	27,880	3,552	15%
Walton	44	44,638	8,672	58,574	13,936	31%
Washington	15	20,807	3,140	25,298	4,491	22%
TOTAL OR AVERAGE	11,402	16,936,154	2,723,532	19,808,725	2,872,571	17%

TABLE #3: STATE OF FLORIDA BY COUNTY -TOTAL WEEKLY MISSING MEALS- FROM HIGHEST TO LOWEST PERCENTAGE CHANGE

SEE NOTES AT END OF TABLES

County Name & Rank from Highest to Lowest		First Release (Baseline)	Second Release Pandemic Impact Only	Third (Latest) Release Including Pandemic Impact	Change in Total Missing Meals	% Change in Total Missing Meals
Dixie	1	14,125	2,120	20,283	6,158	43.59%
Glades	2	8,791	1,304	12,354	3,563	40.53%
Sumter	3	58,052	18,336	78,416	20,364	35.08%
Monroe	4	46,591	11,243	61,253	14,662	31.47%
Walton	5	44,638	8,672	58,574	13,936	31.22%
Pasco	6	391,458	90,006	508,918	117,460	30.01%
Lake	7	253,857	49,355	325,213	71,356	28.11%
Volusia	8	423,694	101,719	536,625	112,931	26.65%
Gilchrist	9	14,004	2,335	17,441	3,437	24.54%
Collier	10	227,551	51,258	282,346	54,795	24.08%
St. Lucie	11	255,777	55,263	315,858	60,081	23.49%
Seminole	12	303,582	34,827	373,118	69,536	22.91%
Flagler	13	75,277	14,427	92,312	17,035	22.63%
Bay	14	147,588	31,444	180,630	33,042	22.39%
Lee	15	494,753	116,158	605,381	110,628	22.36%
Charlotte	16	123,282	27,429	150,481	27,199	22.06%
Washington	17	20,807	3,140	25,298	4,491	21.58%
Holmes	18	16,655	2,546	20,239	3,584	21.52%
Hernando	19	154,888	25,771	187,995	33,107	21.37%
Clay	20	154,139	27,311	187,019	32,880	21.33%
Nassau	21	56,664	10,065	68,618	11,954	21.10%
Santa Rosa	22	122,737	26,154	148,538	25,801	21.02%
Escambia	23	253,111	48,376	305,816	52,705	20.82%
DeSoto	24	31,986	4,621	38,469	6,483	20.27%
Orange	25	1,136,636	164,193	1,351,895	215,259	18.94%
Martin	26	98,978	22,449	117,654	18,676	18.87%
Highlands	27	87,722	14,456	103,822	16,100	18.35%
Liberty	28	6,229	918	7,354	1,125	18.07%
Okaloosa	29	144,838	26,554	170,842	26,004	17.95%
Polk	30	557,781	81,991	657,793	100,012	17.93%
Jefferson	31	13,296	1,881	15,675	2,379	17.90%
Sarasota	32	268,352	66,954	315,737	47,385	17.66%
Pinellas	33	725,602	166,577	853,161	127,559	17.58%
Hillsborough	34	1,198,829	194,524	1,406,272	207,443	17.30%

TABLE #3 CONTINUED: STATE OF FLORIDA BY COUNTY
-TOTAL WEEKLY MISSING MEALS-
FROM HIGHEST TO LOWEST PERCENTAGE CHANGE
SEE NOTES AT END OF TABLES

County Name & Rank from Highest to Lowest		First Release (Baseline)	Second Release Pandemic Impact Only	Third (Latest) Release Including Pandemic Impact	Change in Total Missing Meals	% Change in Total Missing Meals
Hendry	35	39,686	4,503	46,515	6,829	17.21%
Palm Beach	36	1,073,522	193,840	1,252,753	179,231	16.70%
Osceola	37	291,245	25,101	339,474	48,229	16.56%
Manatee	38	260,424	50,844	302,916	42,492	16.32%
Jackson	39	42,697	5,311	49,659	6,962	16.30%
Marion	40	295,653	38,384	342,988	47,335	16.01%
Duval	41	843,807	119,540	972,016	128,209	15.19%
Bradford	42	22,427	3,141	25,823	3,396	15.14%
Putnam	43	72,808	9,948	83,678	10,870	14.93%
St. Johns	44	129,861	15,510	149,034	19,173	14.76%
Columbia	45	59,999	8,384	68,832	8,833	14.72%
Wakulla	46	24,328	3,990	27,880	3,552	14.60%
Citrus	47	118,966	20,918	136,221	17,255	14.50%
Levy	48	38,508	5,929	43,942	5,434	14.11%
Taylor	49	19,602	2,484	22,353	2,751	14.03%
Miami-Dade	50	2,702,021	292,990	3,067,176	365,155	13.51%
Broward	51	1,679,707	242,457	1,903,052	223,345	13.30%
Franklin	52	9,797	1,633	11,071	1,274	13.01%
Gulf	53	12,658	1,812	14,257	1,599	12.64%
Okeechobee	54	35,919	4,739	40,320	4,401	12.25%
Hardee	55	24,019	2,860	26,609	2,590	10.78%
Leon	56	265,542	37,995	289,826	24,284	9.15%
Hamilton	57	15,222	1,659	16,462	1,240	8.15%
Baker	58	21,657	2,886	23,321	1,664	7.69%
Brevard	59	438,472	59,972	471,585	33,113	7.55%
Lafayette	60	6,320	820	6,785	465	7.36%
Madison	61	19,847	2,254	20,910	1,063	5.35%
Union	62	11,121	1,161	11,676	555	4.99%
Gadsden	63	58,697	5,862	61,433	2,736	4.66%
Indian River	64	107,907	20,106	111,383	3,476	3.22%
Suwannee	65	42,156	5,432	43,491	1,335	3.17%
Alachua	66	206,232	24,904	211,518	5,286	2.56%
Calhoun	67	13,057	1,787	12,368	-689	-5.28%
TOTAL OR AVERAGE		16,936,154	2,723,532	19,808,725	2,872,571	17%

NOTES

(1) Units of Measurement is the total number of small geographic areas for which the model generates reliable scores across the county. These geographic units are technically called “block groups” because they consist of a small cluster of individual blocks. In this table we provide aggregation by county.

(2) There are 11,442 total block groups in Florida. The table sums to only 11,402 because there are 40 Florida block groups that are only water; those were immediately excluded from our baseline number of block groups. See the methodology section for more information.

(3) For more information on the variables in the table, please see preceding Background section.