

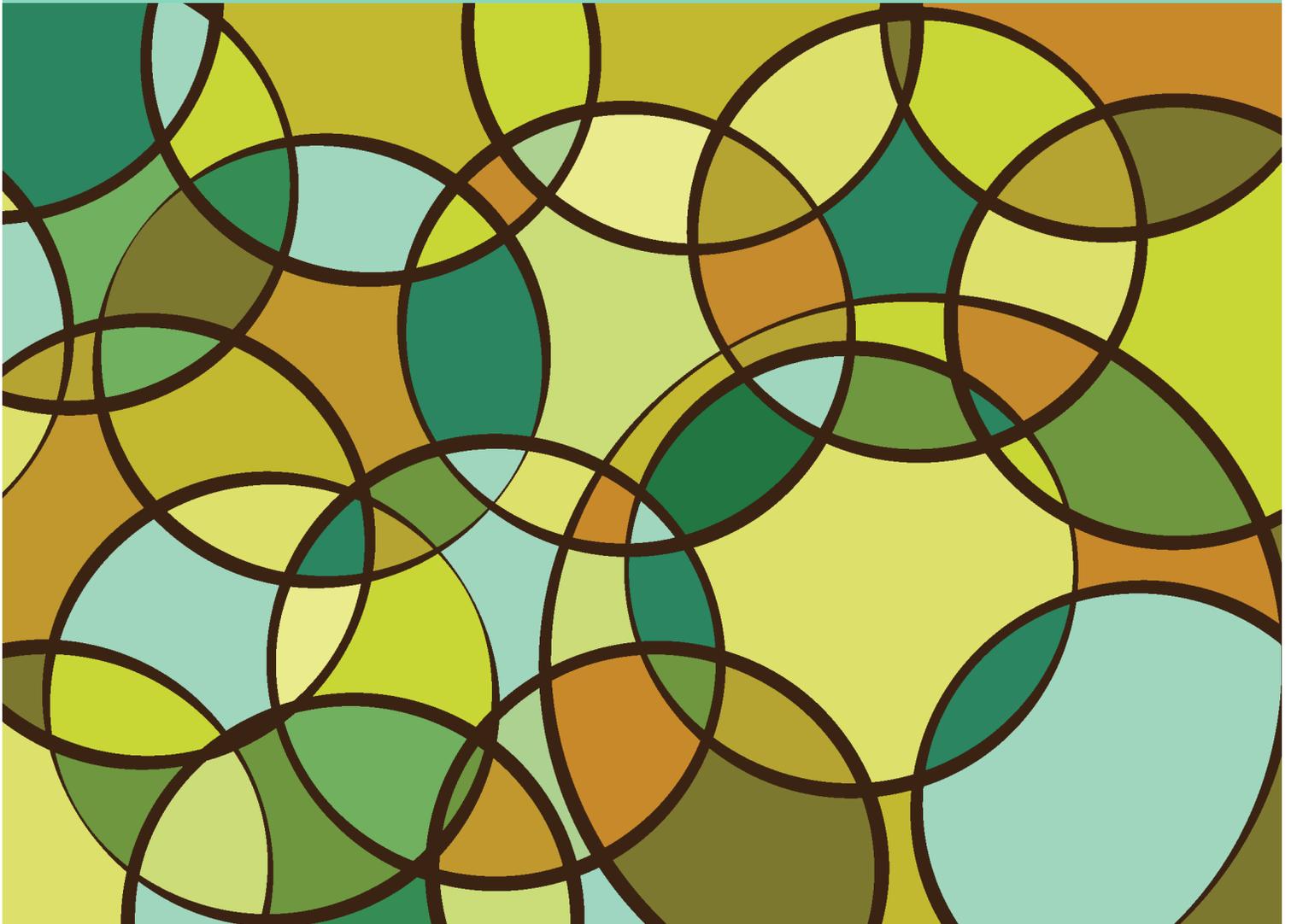
# 2012 Nutrition Environment Measures Survey Findings from Douglas County, Nebraska



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# Nutrition Environment Measures Survey Findings – Outcome of Nutrition Environment Measures Survey in Douglas County’s Grocery and Convenience Stores, Summer 2012

## Background

Public health research suggests that the retail food environment of a neighborhood – the presence of grocery stores, small markets, street vendors, local restaurants, and farmers markets – plays a key role in determining its residents’ access to healthy foods. Availability of healthy food options is associated with increased consumption of those products<sup>1</sup>. Therefore access to healthy foods has a compelling influence on individual health. It is reported that residents with limited access often have less healthy diets and an increased risk of diet-related diseases, specifically obesity and diabetes<sup>2</sup>. The same neighborhoods often contain increased access to alcohol and tobacco, which only adds to the health risk<sup>3</sup>. Research reflects that improving healthy food access can also create an environment that supports living wage jobs, raises property values, and attracts other businesses<sup>4</sup>. By measuring food access over time, public health practitioners can monitor change and potentially measure the impact of a food access intervention, subsequently seeing the impact of environmental change on health equity.

Food access assessments are associated with community vitality<sup>5</sup>. Since convenience and affordability are two primary drivers in food selection, the challenge for many communities is to create an environment that offers easy access to both healthy foods and assures that residents have the resource to purchase those foods. Primary assessment components include observing the availability, quality, and price of food products in retail food outlets (grocery stores or convenience stores). When mapped, these results provide a spatial review of where access may be difficult. The Douglas County Health Department (DCHD) conducted a retail food assessment in 2009 and repeated the assessment in 2012. This report reviews the most recent findings and compares the 2012 findings to those attained in 2009. The assessments are part of the work of the Center for Disease Control and Prevention’s Communities Putting Prevention to Work and Community Transformation Grants.

## 2012 Nutrition Environment Measures Survey Assessment – Methods

In the spring of 2012, DCHD repeated a Nutrition Environment Measures Survey (NEMS) assessment in Douglas County using the same instrument and methods as in 2009. Appendix 1 provides a detailed description of the 2009 NEMS methods. A review of the 1A list that was provided by the Environmental Health Division at the Douglas County Health Department resulted in 17 single item stores and/or specialty food item stores being removed from the assessment list. Additionally, twenty-one stores were also removed from the final data set: fifteen stores were no longer in business or otherwise unable to be completed (e.g. refused by manager, rater unable to locate business, store no longer sold groceries, etc.); five store surveys were not returned during the data collection period; and one store survey was returned blank. The number of stores actually observed was 332.

The NEMS instrument is a point-in-time evaluation of the type, quality, quantity, and price of foods arranged into a simple scoring system. The “healthy access” (i.e. the number of healthy food choices in each of five food groups) scoring criteria identified the degree to which a retail outlet provided full access to healthy foods. Healthy access scores range from zero (no choices available from the five food groups) to five (choices available from all five food groups) and were assigned to each store assessed. The Bureau of Sociological Research at the University of Nebraska analyzed the findings of the assessment. By mapping each outlet in relation to its score, geographic areas of redundant and limited healthy food access could be pinpointed.

Trained community volunteers evaluated the retail food outlets. Training sessions for using the tool and conducting observations were held for 39 community volunteers, of whom 56% (22) were involved in the previous NEMS assessment. To assure consistent information, the project examined duplicated ratings in 9.6% (32) of stores to measure inter-rater reliability.

### **2012 NEMS Results**

Retail food outlets scores are mapped using Health Impact Assessment guidelines to depict a buffer zone which simulates access to healthy foods. When the scoring system and buffer zones are combined, the result defines access as those areas where an individual can consistently purchase a full range of healthy foods within one mile from their home. Indicators from the San Francisco Department of Public Health’s Healthy Development Measurement Tool (HDMT) and the measurement guide from the Centers for Disease Control and Prevention (CDC) *Recommended Community Strategies and Measurements to Prevent Obesity in the United States* produced the rationale for using the one-mile radius as the local Health Impact Assessment guideline in Douglas County. The one-mile radius was an adequate distance measurement based current data indicating that Douglas County population distribution was equivalent to 10,000 residents per square mile. Ultimately, this process demonstrates geographic areas of the community where healthy food access is duplicative and areas where healthy food option coverage is limited.

The results section will examine in greater detail two key focus areas that have been identified as significant in Douglas County. These two areas include (1) countywide assessment findings and (2) inter-regional outcomes.

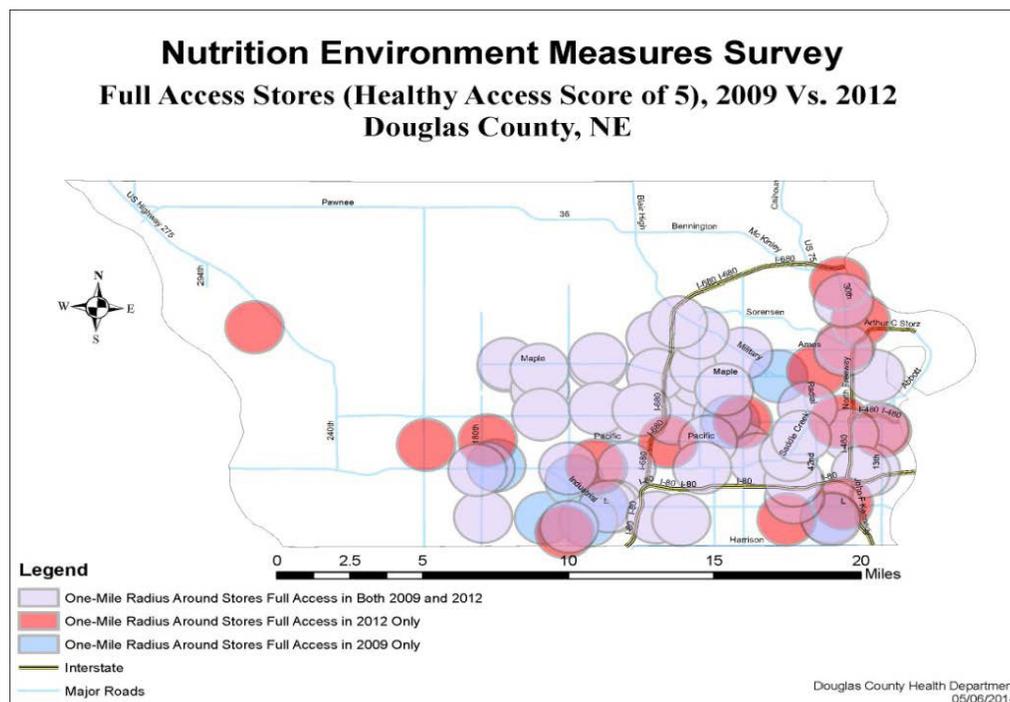
### **2012 Countywide Findings**

Of the 332 convenience and grocery stores that were observed, 66 stores (19.9%) scored a five in healthy access (i.e. these 66 stores met the criteria for healthy access in all five food groups [fruit, vegetables, milk, meat or meat alternatives, and whole grains]). Five stores (1.5%) were identified as a “four”, or having adequate access in four of the five food groups; 25 stores (7.5%) were identified as a “three”; sixty-three stores (19.0%) as a “two”; 108 stores (32.5%) as a “one”; and 65 stores (19.6%) had no access to any of the five food groups. This data indicates

that roughly only a quarter (28.9% or 96 stores) of all retail food outlets assessed had adequate access to foods from three or more of the five food groups. Of the stores with a healthy access score of three or greater, over 75% were identified as a grocery store (70 stores). The validity of these results was reviewed within the scope of reliability. Based on the inter-rater comparisons, the mean reliability for the core variables in the data is 0.598. Kappa values approaching 1.0 with no missing items indicate strong agreement.

Healthy access is considered as areas where an individual can consistently purchase a full range of healthy foods within a mile from their home. To examine changes over time it is important to assess if the number and distribution of stores that received a healthy access score of five fluctuated in the three-year period between assessments. In 2009, 314 grocery and convenience stores in Douglas County were observed, while 332 were observed in 2012. The total number of stores observed increased by 18 stores (5.7%) and the percentage of stores with a healthy access score of five increased by 13.8%. Healthy access score results were mapped and they identified areas where there is redundancy in access as well as where a single outlet provides the access or coverage. *Map 1* depicts the change in access to healthy foods over the three-year period between assessments. GIS mapping calculated an increase of approximately 25 square miles of additional healthy food access from 2009 (110 square miles) to 2012 (135 square miles). It should be noted that in a neighborhood where a single store provides healthy food access, a store closing or changes in business plans resulting in a decreased healthy access score can lead to a complete lack of access for residents living within a mile of that store.

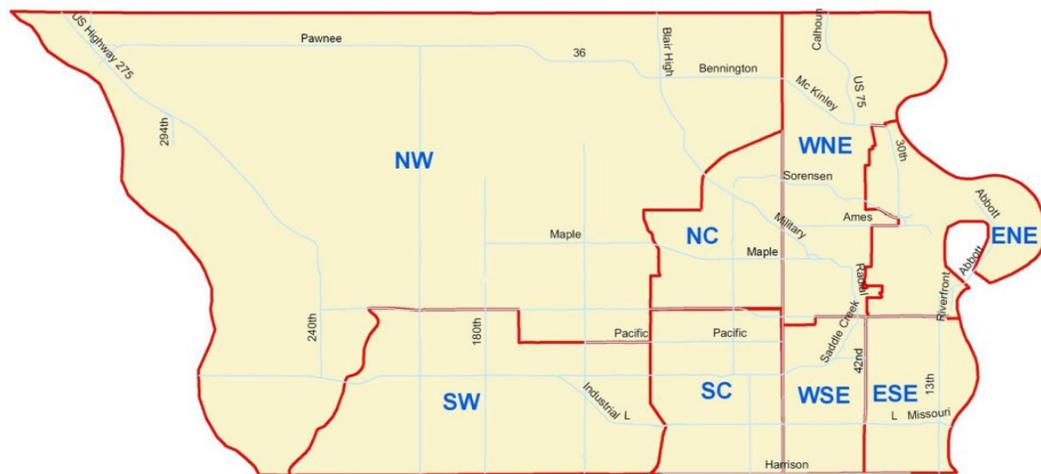
Map 1.



## Inter-Regional Findings

Region-specific comparison data show that the percentage of retail food outlets with an overall healthy access score of three or greater increased from 2009 to 2012 within five of the eight regions of the county. Specifically, the East-Northeast (24.3% vs. 26.8%), West-Southeast (36.8% vs. 42.1%), North Central (28.8% vs. 31.5%), Northwest (30% vs. 33.3%), and Southwest (31.4% vs. 36%) regions saw increases in the number of retail food outlets with access to healthier foods. The Douglas County Nebraska Region Map (*Map 2*) identifies the boundaries of the eight regions discussed in this report. *Table 1* identifies the number and percentage of stores that were assessed as having a healthy access score of three or greater from the 2009 and 2012 NEMS assessment. Only two regions showed a modest decline in access.

**Map 2. Douglas County Nebraska Region Map.**



**Table 1. Inter Regional Access – Number and Percentage of Retail Food Outlets with a Healthy Access Score of 3 or Higher.**

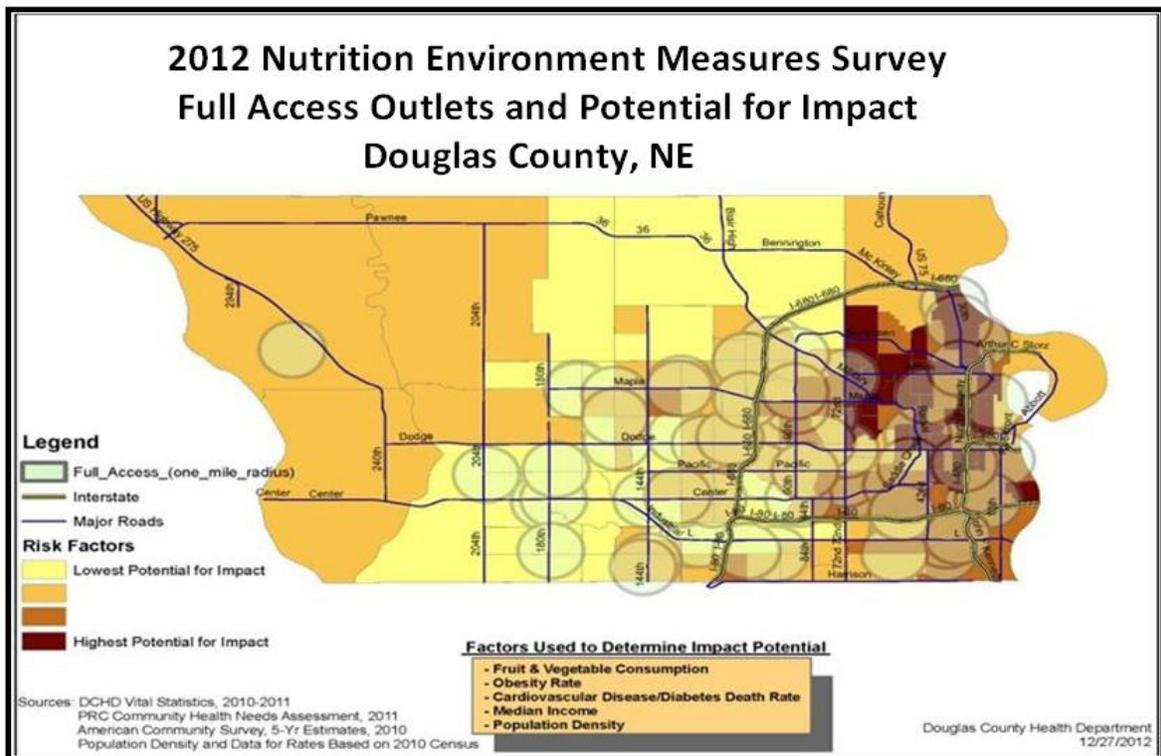
Region	2009	2012	Change
East-Northeast (ENE)	9 (24.3%)	11 (26.8%)	+2 (2.5%)
West-Northeast (WNE)	3 (18.7%)	3 (15%)	0 (-3.7%)
East-Southeast (ESE)	21 (30%)	20 (28.5%)	-1 (2.5%)
West-Southeast (WSE)	7 (36.8%)	8 (42.1%)	+1 (5.3%)
North Central (NC)	15 (28.8%)	18 (31.5%)	+3 (2.7%)
South Central (SC)	4 (15.3%)	3 (10%)	-1 (-5.3%)
Northwest (NW)	12 (30%)	15 (33.3%)	+3 (3.3%)
Southwest (SW)	17 (31.4%)	18 (36%)	+1 (4.6%)

## Interpretation of Findings

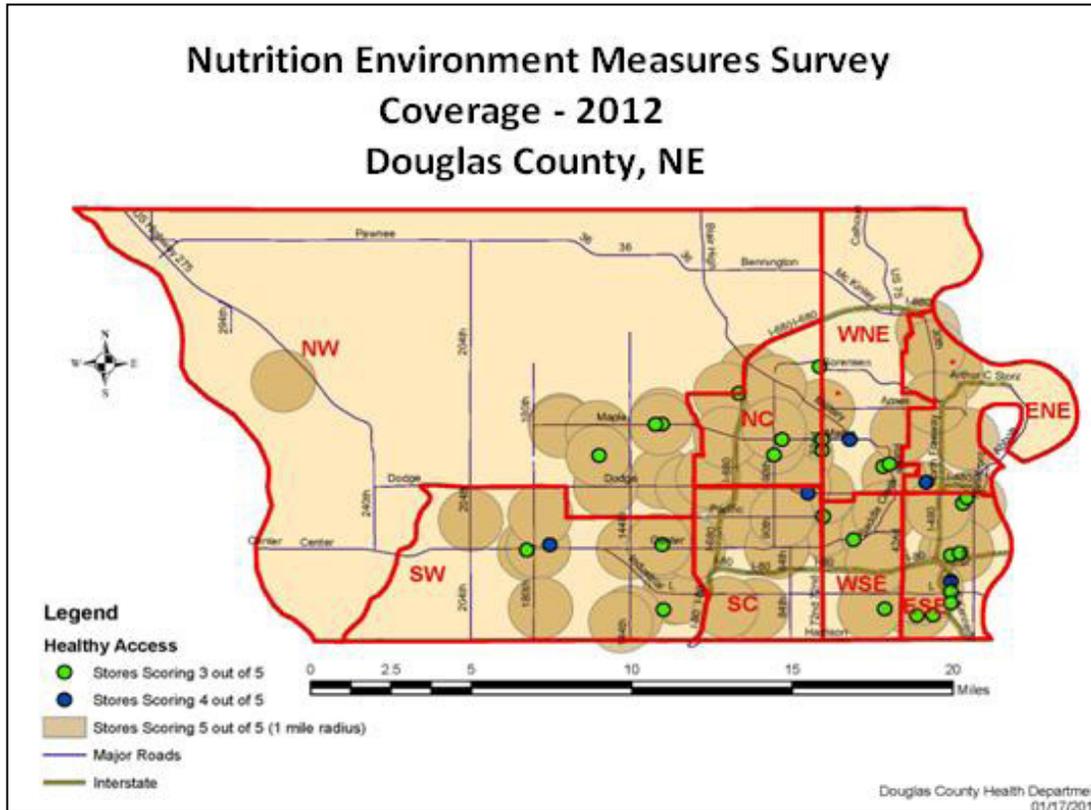
According to the United States Department of Agriculture (USDA), food deserts are defined as urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food. The 2009 NEMS assessment identified that Douglas County did have distinct areas where access to healthy foods is limited and therefore deemed food deserts. The 2012 assessment has shown some fluctuation in the size of the previously identified food deserts.

In order to design solutions with maximum impact, the department reviewed other potential contributing factors such as income, population density, death rates from cardiovascular disease and diabetes, obesity rates, and fruit and vegetable intake. Areas where these potential contributing factors were the most detrimental (e.g. highest obesity rate, lowest fruit and vegetable intake, etc.) were considered as having the greatest need for interventions because they were already experiencing negative health outcomes. A map that layered the contributing factors and the one-mile Health Impact Assessment buffer provided a more concise picture of areas with the greatest potential for impact (*Map 3*). Secondary analysis showed that within the identified areas there were food retail outlets with a healthy access score of a three or four (see Map 4), representing existing capacity on which to build.

Map 3.



Map 4.



Community projects that aim to impact food access have been implemented in Douglas County. In an attempt to increase access in the areas of need that were identified through the 2009 NEMS assessment, Douglas County Health Department implemented the Healthy Neighborhood Store (HNS) project in the spring of 2010. This project assists stores, through resources and support, within the identified limited access area which have the capacity to improve their nutrition profile by increasing the healthier food options (fruits, vegetables, lean meats, whole grains, and low fat milk) they carry. Currently there are eight established HNS locations and two expansion locations that are working to implement the project. Initial project findings indicate increases in total sales of healthy foods in 75% of HNS locations; more specifically, 88% (7 out of 8) of stores noted sales improvements in whole-grain products and low-fat milk options. Additionally, a variety of non-profit organizations are also working to increase the availability of healthy foods within Douglas County through school breakfast programs, farm to institution programs, food hubs, Community Supported Agriculture (CSA's), and nutrition education opportunities.

### Recommendations

Findings from the 2012 Nutrition Environment Measures Survey identified three recommendations to assure that all Douglas County residents have access to healthy foods:

1. Maintain and/or improve locations of healthy food retail outlets particularly in areas with no access or limited access.

In areas where no healthy food retail outlets are available, intense strategies should be used to recruit new stores into the area or a delivery system for healthy foods must be employed.

In areas where there is only one store with healthy foods, the healthy food capacity of that store should be maintained or if needed increased and/or recruitment of additional stores with healthy food should occur.

2. Maintain and/or increase the quality and selection of healthy foods in existing retail stores with moderate healthy access scores (3's and 4's).

Utilize evidence-based strategies such as corner store projects, farm to store, buying consortiums, food hubs, and modification to distributor practices to impact quality and selection. Community focus groups and surveys assure neighborhood preferences are identified and that new partnerships are developed to implemented selected strategies.

3. Monitor healthy food access and fluctuations using NEMS assessments to measure the impact of strategic efforts to improve food access.

Following these recommendations would assure countywide access to healthy foods and address potential health disparities.

### **Conclusion**

In summary, from 2009 to 2012 there was a slight increase in the total number of retail food outlets with a healthy access score of five (i.e. outlets that provide adequate quality and quantity of healthy foods from the five food groups examined [fruits, vegetables, milk, whole grains, and lean meats]). Douglas County saw a decrease in the number of square miles of the county where access to healthy food is limited. From 2009 to 2012 there was an increase of roughly 25 square miles of access to healthy foods. It should be noted that the 2012 NEMS assessment reinforced the importance of redundancy within geographic areas. This is evident on *Map 1* which illustrates how the loss of a single store created a gap in access due to the lack of surrounding stores with a healthy access score of five to maintain coverage in the area.

A secondary report outlining 2012 NEMS findings regarding supplemental nutrition programs (Supplemental Nutrition Assistance Program and Women, Infants and Children) will be released in October 2013. This report was made possible by funding from the Department of Health and Human Services.

# Nutrition Environment Measures Survey Findings - Supplemental Nutrition Assistance Program (SNAP) and Special Supplemental Nutrition Program for Women, Infants and Children (WIC) Healthy Food Access in Douglas County, Nebraska

## Background

Food assistance programs affect the daily lives of millions of Americans. The majority of food assistance in the United States is provided by the Supplemental Nutrition Assistance Program (SNAP), the Special Supplemental Nutrition Program for Women, Infants and Children (WIC), and child nutrition programs<sup>1</sup>. These programs can make a significant impact on the nutritional health of an individual who may be at risk for poor nutritional intake due to their socioeconomic status by providing funds for food products<sup>7</sup>. The Food and Nutrition Service (FNS) of the United States Department of Agriculture (USDA) works to end hunger and obesity through the administration of 15 federal nutrition assistance programs including SNAP, WIC, and school meals<sup>6</sup>.

The Supplemental Nutrition Assistance Program (SNAP) offers nutrition assistance to millions of eligible, low-income individuals and families as well as provides economic benefits to communities. SNAP is the largest program in the domestic hunger safety net and provides resources to purchase foods for participants to eat such as grains, produce, meats, and dairy products<sup>8</sup>. SNAP eligibility requires that participants meet certain requirements pertaining to resources, income, deductions, and employment. SNAP recipients are able to choose a variety of food options using their benefits as there are no requirements for the type and quantity of food items purchased. The only restrictions are that benefits cannot be used to purchase alcohol, tobacco, non-food items (paper products, vitamins, etc.), food that will be eaten in the store, and hot foods. In July 2013, 47,637,407 individuals participated in the SNAP program across the United States, with slightly over 182,000 Nebraskans enrolled in the program.

The mission of the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) program is to safeguard the health of nutritionally at-risk low-income women, infants, and children up to age five. The program provides nutritious supplemental foods, information on healthy eating, and referrals to health care<sup>9</sup>. Federal grants to states support the program's mission by providing supplemental foods, health care referrals, and nutrition education for low-income pregnant, breastfeeding, and non-breastfeeding postpartum women and to infants and children. Eligibility for this program is based on gross income, which must fall at or below 185 percent of the U.S. Poverty Income Guidelines, as well as having an identified nutritional risk factor<sup>10</sup>. Only certain food items in stated quantities, determined by the category (woman, child, or infant) of the participant, can be purchased with WIC vouchers. Approved WIC foods include fruits and vegetables, whole grain cereals, breads and tortillas, canned fish, peanut butter, juice, milk, cheese, eggs, infant formula, and infant baby food (fruits/

vegetables and meats). Nationally, over 8.6 million women and children were participating in the WIC program in July 2013 with nearly 15,000 (14,968) participants in Douglas County, which represents nearly three percent of the total population of the county.

A growing number of articles within public health literature indicate that an individual's health and behaviors are affected by their social and physical surroundings<sup>11</sup>. Additionally, research suggests that the retail food environment of a neighborhood – the presence of grocery stores, small markets, street vendors, local restaurants, and farmers markets – plays a key role in determining its residents' access to healthy foods. Availability of healthy food options is associated with increased consumption of those products<sup>12</sup>. Therefore, access to healthy foods has a compelling influence on individual health. Any measure of access should consider the quality, quantity, and variety of choices available, as well as whether consumers have the means to purchase healthy items. Examining retail food outlets that accept federal assistance programs such as SNAP and WIC aligns convenience of location with actual ability to purchase and creates a robust description of access.

The Douglas County Health Department (DCHD) conducted a retail food assessment in the summer of 2012. This report will discuss the outcomes of the 2012 Nutrition Environment Measures Survey (NEMS) completed in Douglas County, Nebraska in SNAP and WIC approved vendors. This assessment is part of the work of the Centers for Disease Control and Prevention's Community Transformation Grant.

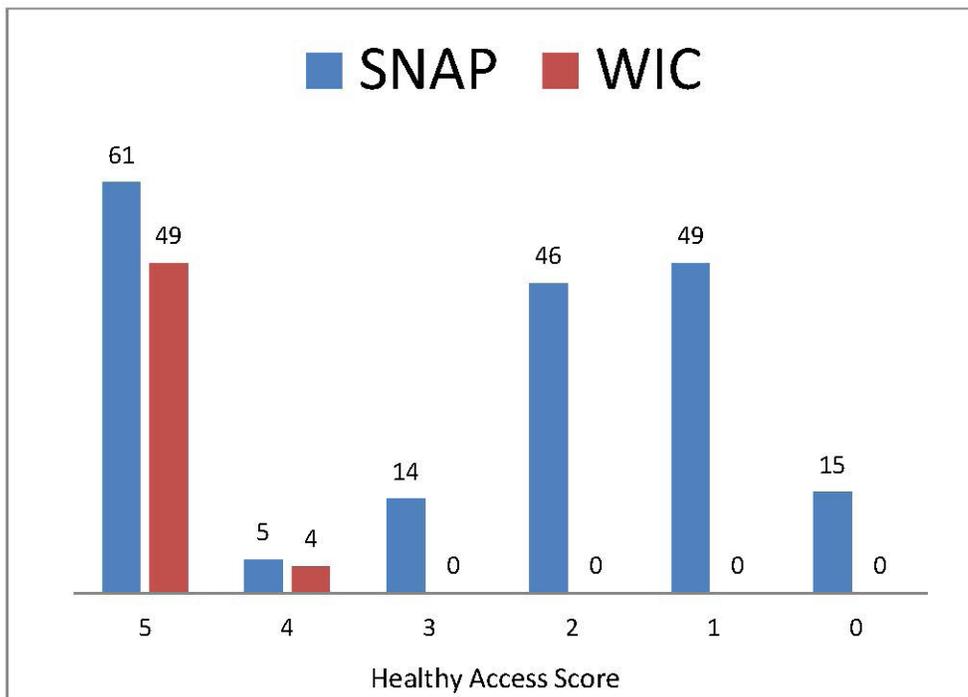
### **2012 Nutrition Environment Measures Survey Findings**

Three hundred and thirty-two retail food outlets were assessed using a modified Nutrition Environment Measures Survey assessment tool. The NEMS instrument is a point-in-time evaluation of the type, quality, quantity, and price of foods arranged into a simple scoring system. The "healthy access" (i.e. the number of healthy food choices in each of five food groups – fruits, vegetables, whole grains, low-fat milk, and lean meat) scoring criteria identified the degree to which a retail outlet provided full access to healthy foods. Healthy access scores range from zero (no choices available from the five food groups) to five (choices available from all five food groups) and were assigned to each store assessed. *Table 1* provides a breakdown of the number of SNAP and WIC approved vendors that received a healthy access score from "zero" to "five".

Of the 332 stores assessed, 190 stores (57.2%) were currently a SNAP approved vendor. Comparisons were conducted for SNAP approved retailers versus vendors which are not SNAP approved for all of the retail food outlets included in the sample. Differences in the number of SNAP approved vendors and their healthy access scores within the eight regions of the county were also examined. *Table 1* shows that about one-third (32.1%) of SNAP approved retailers received a healthy access score of "five" and that in the uppermost categories of stores (i.e. stores with a rating of "four" and "five"), the majority of stores were SNAP approved (32.1% SNAP vs. 3.5% non-SNAP). However, over 57 percent of SNAP approved stores received a healthy access score of "two" or less, which

would suggest that some residents who frequent low-rating stores may have difficulty using their SNAP benefits to purchase a variety of healthy foods from the five food groups. When investigating the adequacy of SNAP benefits, an Institute of Medicine committee found that three environmental influences may play a role in food purchasing power for SNAP recipients: limited availability of healthy foods; increased availability of processed items; and restricted access to retail food outlets that offer a range of healthy food options.

**Chart 1. Number of SNAP and WIC Vendors by Healthy Access Score.**



**Table 1. Overall Healthy Access in 5 Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk).**

Healthyaccess	Count % within SNAP	Non-SNAP retailer	Approved SNAP retailer	Total
No healthy categories		50 35.2%	15 7.9%	65 19.6%
One healthy category		59 41.5%	49 25.8%	108 32.5%
Two healthy categories		17 12.0%	46 24.2%	63 19.0%
Three healthy categories		11 7.7%	14 7.4%	25 7.5%
Four healthy categories		0 0.0%	5 2.6%	5 1.5%
All five healthy categories		5 3.5%	61 32.1%	66 19.9%
<b>Total</b>		<b>142</b> <b>100.0%</b>	<b>190</b> <b>100.00%</b>	<b>332</b> <b>100%</b>

The impact of SNAP availability is more noticeable when regions of the county are compared. *Table 2* shows healthy access scores for SNAP approved vendors in the geographic regions of the county. Out of the eight regions, only two had greater than 50 percent of SNAP approved stores which received a healthy access score of “three” or greater. This provides further support that individuals within the remaining six regions may experience increased challenges when using SNAP benefits to purchase healthy foods. The Northwest (50%) and Southwest (48.1%) regions of the county had the highest percentage of SNAP approved stores with a healthy access score of “five”. The West Northeast (7.1%) and East Southeast (23.1%) regions of the county had the lowest percentage of SNAP stores with access to all five healthy categories. Previous data collected by the Health Department identified these areas has having increased incidents of factors that are detrimental to health such as higher obesity rates, lower fruit and vegetable consumption, etc. These factors and lack of an adequate number of vendors providing healthy food options represent increased hardships to residents.

**Table 2.**  
**Overall Healthy Access in 5 Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk) by Region of Douglas County for SNAP Stores Only.**

Healthyaccess	Count % within SNAP	Region 1 (ENE)	Region 2 (WNE)	Region 3 (ESE)	Region 4 (WSE)	Region 5 (NC)	Region 6 (SC)	Region 7 (NW)	Region 8 (SW)	Total
No healthy categories		4 14.8%	3 21.4%	6 15.4%	0 0.0%	0 0.0%	1 8.3%	0 0.0%	1 3.7%	15 7.9%
One healthy category		6 22.2%	5 35.7%	12 30.8	3 30.0%	10 27.0%	4 33.3%	5 20.8%	4 14.8%	49 25.8%
Two healthy categories		6 22.2%	3 21.4%	5 12.8%	3 30.0%	12 32.4%	4 33.3%	5 20.8%	8 29.6%	46 24.2%
Three healthy categories		1 3.7%	2 14.3%	5 12.8%	0 0.0%	4 10.8%	0 0.0%	2 8.0%	0 0.0%	14 7.4%
Four healthy categories		1 3.7%	0 0.0%	2 5.1%	0 0.0%	1 2.7%	0 0.0%	0 0.0%	1 3.7%	5 2.6%
All five healthy categories		9 33.3%	1 7.1%	9 23.7%	4 40.0%	10 27.0%	3 25.0%	12 50.0%	13 48.1%	61 32.1%
<b>Total</b>		<b>27</b> <b>100%</b>	<b>14</b> <b>100%</b>	<b>39</b> <b>100%</b>	<b>10</b> <b>100.0%</b>	<b>37</b> <b>100.0%</b>	<b>12</b> <b>100.0%</b>	<b>24</b> <b>100.0%</b>	<b>27</b> <b>100.0%</b>	<b>190</b> <b>100.0%</b>

WIC provides vouchers for supplemental foods, health care referrals, and nutrition education to low-income women, infants, and children who are found to be at nutritional risk. Of the 332 retail food outlets assessed, 53 (15.9%) of the vendors were approved to accept WIC vouchers for healthy foods. *Tables 3 and 4* below compare WIC approved retailers to their non-WIC approved counterparts across the county as a whole, as well as by region. Due to stringent vendor requirements, over ninety-two percent of WIC approved retail food outlets provide access to all five food groups, with the remaining stores providing access to four of the five groups. Additionally, all regions had a large majority (85.7% or higher) of their WIC stores score a “five” in healthy access.

**Table 3. Overall Healthy Access in 5 Categories (Fruits, Vegetables, Grains, Meat/Alt, Milk) by WIC Designation.**

Healthyaccess	Count % within WIC	Non-WIC retailer	Approved WIC retailer	Total
No healthy categories		65 23.3%	0 0.0%	65 19.6%
One healthy category		108 38.7%	0 0.0%	108 32.5%
Two healthy categories		63 22.6%	0 0.0%	63 19.0%
Three healthy categories		25 9.0%	0 0.0%	25 7.5%
Four healthy categories		1 .4%	4 7.5%	5 1.5%
All five healthy categories		17 6.1%	49 92.5%	66 19.9%
<b>Total</b>		<b>279</b> <b>100.0%</b>	<b>53</b> <b>100%</b>	<b>332</b> <b>100.0%</b>

**Table 4. Overall Healthy Access in 5 Categories (Fruits, Vegetables, Grains, Meat/Alt., Milk) by Region of Douglas County for WIC Store Only.**

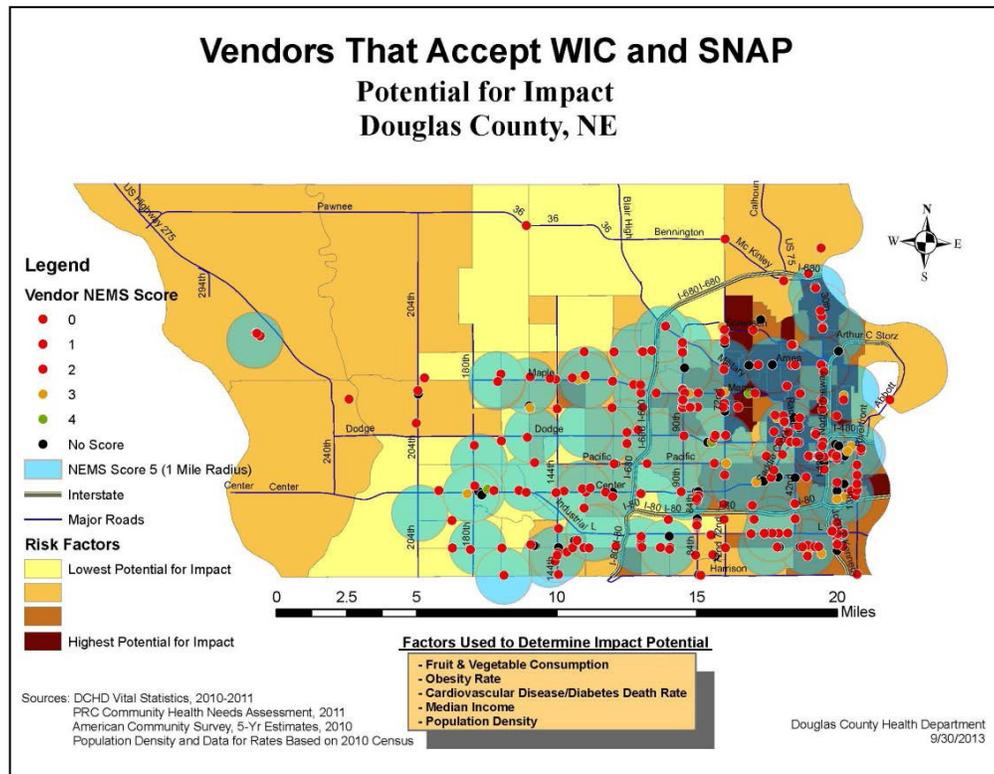
Healthyaccess	Count % within WIC	Region 1 (ENE)	Region 2 (WNE)	Region 3 (ESE)	Region 4 (WSE)	Region 5 (NC)	Region 6 (SC)	Region 7 (NW)	Region 8 (SW)	Total
Four healthy categories		1 14.3%	0 0.0%	1 14.3%	0 0.0%	1 14.3%	0 0.0%	0 0.0%	1 7.1%	4 7.5
All five healthy categories		6 85.7%	1 100.0%	6 85.7%	3 100.0%	6 85.7%	3 100.0%	11 100.0%	13 92.9%	49 92.5%
<b>Total</b>		<b>7</b> <b>100.0%</b>	<b>1</b> <b>100.0%</b>	<b>7</b> <b>100.0%</b>	<b>10</b> <b>100.0%</b>	<b>7</b> <b>100.0%</b>	<b>3</b> <b>100.0</b>	<b>11</b> <b>100.0%</b>	<b>14</b> <b>100.0%</b>	<b>53</b> <b>100.0%</b>

In an effort to understand more about the areas of the county where there is representation of SNAP and/or WIC stores that have a healthy access score of less than “five”, the Health Department reviewed potential contributing factors such as income, population density, death rates from cardiovascular disease and diabetes, obesity rates, and fruit and vegetable intake. Areas where these potential contributing factors were the most detrimental (e.g. highest obesity rate, lowest fruit and vegetable intake, etc.) were considered as having the greatest potential for impact from interventions because they were already experiencing negative health outcomes. The resulting map (*Map 1*), which measures communitywide access to healthy foods, consists of the layered contributing factors and a one-mile Health Impact Assessment (HIA) buffer to provide a more concise picture of areas with the greatest potential for impact. Ultimately, this process demonstrates geographic areas of the community where healthy food access is duplicative and areas where healthy food option coverage is limited.

*Map 1* identifies three distinct areas where healthy food option coverage, represented by the HIA one-mile radius, is limited and therefore it may be more difficult for residents and nutrition assistance program participants

to obtain healthy foods. Residents that reside in these areas have to travel greater than one mile to access healthy foods from a WIC and/or SNAP approved vendor that carries all five of the healthy food options examined (fruits, vegetables, whole grains, low-fat milk, and lean meat).

Map 1.



Geographic areas of need, where the distance to an approved vendor is greater than one mile, do exist, particularly in the West Northeast and East Southeast regions. Great differences exist in the allocation of SNAP and WIC approved vendors (i.e. over 92 percent of WIC approved vendors have adequate access to healthy food options while among SNAP vendors less than half of vendors offer adequate access to healthy food options).

### Recommendation

1. Educate and encourage non-approved WIC and/or SNAP vendors with a healthy access score of “four” or “five” to achieve approved vendor status.
2. Develop and implement strategies to enhance healthy foods offerings in SNAP approved stores with healthy access score of “two” or “three” in the high risk regions; West Northeast and East Southeast.
3. Monitor current SNAP and/or WIC vendors rated with a healthy access score of a “five” to assure continued healthy status.

To move these recommendations forward and assure that the retail food environment in Douglas County reinforces nutrition assistance programs by providing healthy food options next steps include:

1. Investigate SNAP sales data to identify the percentage of sales reimbursed by healthy access score rating (“five”, “four”, “three”, etc.).

2. Investigate the geographic distribution of nutrition assistance program participants to identify areas where participants have limited access to healthy foods.
3. Convene community stakeholders (e.g. pantries, community supported agriculture [CSA], and single food access outlets) and based on input identify and determine strategies to enhance healthy foods offered in SNAP approved stores with a healthy access score of “two” or “three”.
4. As needed, consider a public policy action plan that encourages retail food outlets that are WIC and SNAP approved to provide healthy food options consistent with at least a NEMS healthy access score of “three” or “four”.

### **Conclusion**

Nutrition assistance programs provide resources to individuals at times of greatest need. Both the SNAP and WIC programs have a critical role in improving the health of the nation, especially among the most vulnerable. Research has found the diets of neighborhood residents to be healthier when the supermarket or retail food outlet in their neighborhood offered more healthful products<sup>13</sup>. It is critical that nutrition assistance program participants have adequate access to a variety of healthy foods in order to maximize the health benefits they receive from these programs.

## Appendix 1.

### 2009 Nutrition Environment Measures Survey Assessment – Methods

Nutrition Environment Measures Survey (NEMS), an evidence-based system developed by Karen Glanz and James Sallis at Emory University to assess food availability, was designed to quantify what a consumer encounters in their retail food outlets. The Bureau of Sociological Research (BOSR) at the University of Nebraska-Lincoln assisted in designing the tool and evaluation strategy, as well as performed the data analysis.

The original survey tool developed by Emory University was modified to better reflect the unique components of healthy access within both urban and rural areas of Nebraska. The modified instrument, known as the “Nebraska NEMS tool” provided a point-in-time observation of the availability of healthy food options in the following areas: fruits, vegetables, meat and meat alternatives, whole grains, milk, and snacks. The instrument was designed to only examine grocery and convenience stores. Other venues for the procurement of healthy foods (e.g. farmers’ markets, specialty stores, restaurants, etc.) were not assessed.

The NEMS utilized trained observers to assess retail food outlets. Community volunteers were trained to use the Nebraska NEMS tool to record their observations of a store’s availability, quality, quantity and price of the items listed on the NEMS tool. The community volunteers were then equipped with survey packets for each store that included the Nebraska NEMS tool, an informational letter for the store manager, and a business reply envelope.

DCHD obtained the “Table 1A” list with all the names and locations of licensed retail grocery and convenience stores located in Douglas Counties. The list was culled to remove specialty and secondary food outlets, or single food venues (e.g. candy or home stores, farmers markets) that did not meet the criteria of variety and types of food sold.

Two methods of scoring stores were used in both the 2009 and 2012 NEMS assessment. One method calculates a total score for each store based on availability, price, and quality. The second method took into consideration access (i.e. the number of “healthy” food choices belonging to each of the five food groups). Only the second method, “healthy access” which denotes healthy food availability, will be discussed for the purpose of this report. Access is not defined as the availability of a single item in a food group category, but rather observers note the number of food choices offered in a food group.

For each food group, “healthy access” was defined by slightly different criteria; each set was based on the number of servings an individual would need to meet current dietary recommendations. The presence of one fresh fruit and vegetable option and one other form (canned or frozen in 100% juice/no sugar/no sauce) was considered to be “healthy access” and thus received a healthy fruit/vegetable score. In order to have “healthy access” to meat and meat alternatives, a store needed two or more options of healthy proteins (e.g. lean ground beef, tuna in water, and/or beans). Healthy access criteria for whole grains consisted of three or more options

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available (e.g. bread and/or tortillas and whole-grain cereal or pasta/rice). Healthy access to milk included having skim and/or 1% available. Clear criteria were also set regarding product specifications such as: no added sugar, salt, sauces, dressing or gravy. As this process was a modification from the researched NEMS process, the assessment tool was reviewed by the Emory NEMS staff and reported to be feasible for the assessment.

## Appendix 2 - References

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