Nebraska Social Determinants of Health COIIN Team

FOOD SECURITY Mapping

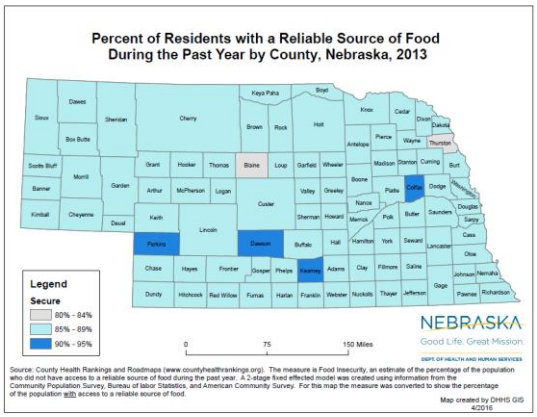
Introduction: Social determinants of health (SDOH) are conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life risks and outcomes. In addition to the more material attributes of "place," the patterns of social engagement and sense of security and well-being are also affected by where people live. Resources that enhance quality of life can have a significant influence on population health outcomes (Healthy People 2020). The Nebraska Collaborative Improvement and Innovation Network (CoIIN) Social Determinants of Health (SDOH) Team has been working in the SDOH Learning Network of the nationwide Infant Mortality CoIIN since 2015. The aim of the SDOH Learning Network is to build state and local capacity to influence SDOH.

The mapping of risk and protective factors is identified as a strategy for guiding policy, program, and community decisions. In Nebraska, mapping of risk and protective factors at the county level is a way to engage individuals and groups in conversations about population health not limited to individual behavior. In this way, conversations about equity can be guided by the variations in conditions and circumstances in which we live.

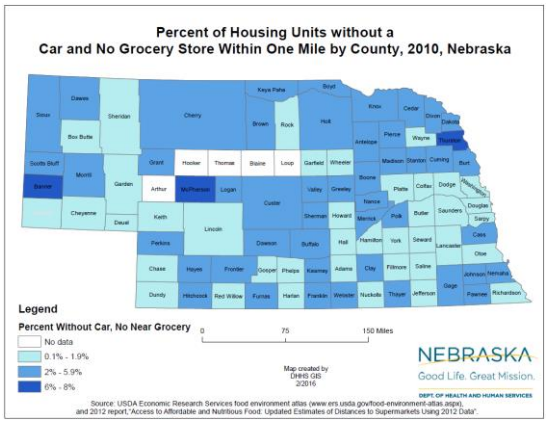
The NE CoIIN SDOH team seeks to use maps to tell a story about the extent of food security in Nebraska. The team selected environmental, economic, and policy measures related to food access from available county-level data sets to illustrate the variability experienced by Nebraska families. Four maps are included: F1 reliable source of food; F2 grocery store within one mile; F3 free and reduced lunch enrollment; F4 % of income left after housing and transportation.

Maps: *(Full-sized maps are available in the Appendix section)*

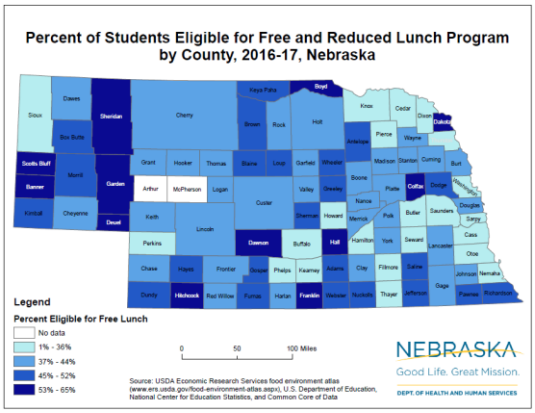
F1:



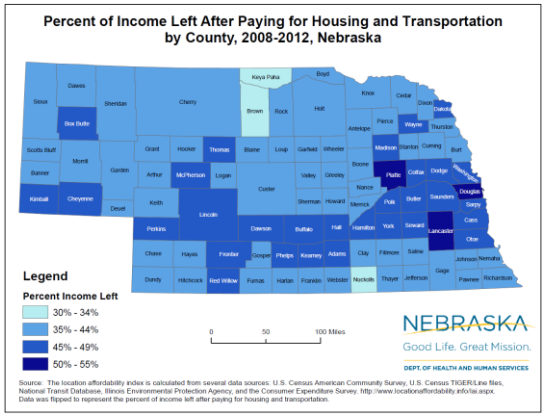
F2:



F3:



F4:



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The Significance We See:

F1: The maps led to many questions about the meaning of "Reliable Source of Food." From the website www.feedingamerica.org, the following description:

> *"Food Insecurity refers to the U.S. Department of Agriculture's measurement of a lack of access, at times, to enough food for an active healthy life for all members of a given household and limits or uncertain availability of nutritionally adequate foods. It can be defined simply as an economic or social condition of limited or uncertain access to adquate food."*

F2: Food security is a function not only of income, but it's where the food is in relation to where you live. The team found data sets that differentiate between urban and rural proximity to grocery stores (1 mile for urban, 10 miles for rural). These measures figure into the definition of "food desert." The team found data from USDA that equalized distance (1 mile) for all counties, combined with availability of a car in households by county.

F3: Free and Reduced Lunch Eligibility captures the intersection of children, economic adversity, and food security. We see the lifecourse relationship between child hunger and not doing well in school. Child hunger impacts concentration, anxiety, distraction, isolation, stigma, illness, stress, etc. Also noted is that FRL at school is not the only way communities assist with food security: summer feeding programs, FoodNet, community gardens, faith community donations, and backpack programs also are delivered in some but not all communities. We lack data and perspective as to the extent to which these other supplemental food programs are available, their demand, and where communities and children lack these supports.

F4: This map provides strong context for food as a portion of a family budget, a budget that also provides for basic necessities such as housing and transportation to one's job. As a result of this map, the team began to ask questions about equity in food prices and questioned whether rural distances might influence consumer costs for food and transportation due to fuel prices.

Suggested Questions For Discussion:

- What thoughts do you have about the food economy (food prices, transportation costs, labor costs, economic development, other significant costs faced by families and the proportion left for food) as a result of map F4?
- How far do you travel for food?
- What community supports exist in your community to increase food security for children and families?
- What additional information would you like to have when thinking about food security and the systems-level factors influencing food security state wide? In your county?
- Food Security is an important social determinant of health and equity. Obesity is a health condition reaching epidemic proportions. How do you look at the relationship between the two?

Limitations of the Maps:

- Small populations resulted in no data for some counties.
- Is our county-level lens the right fit for understanding food security? Are we missing family-level or systems-level aspects of the issue?

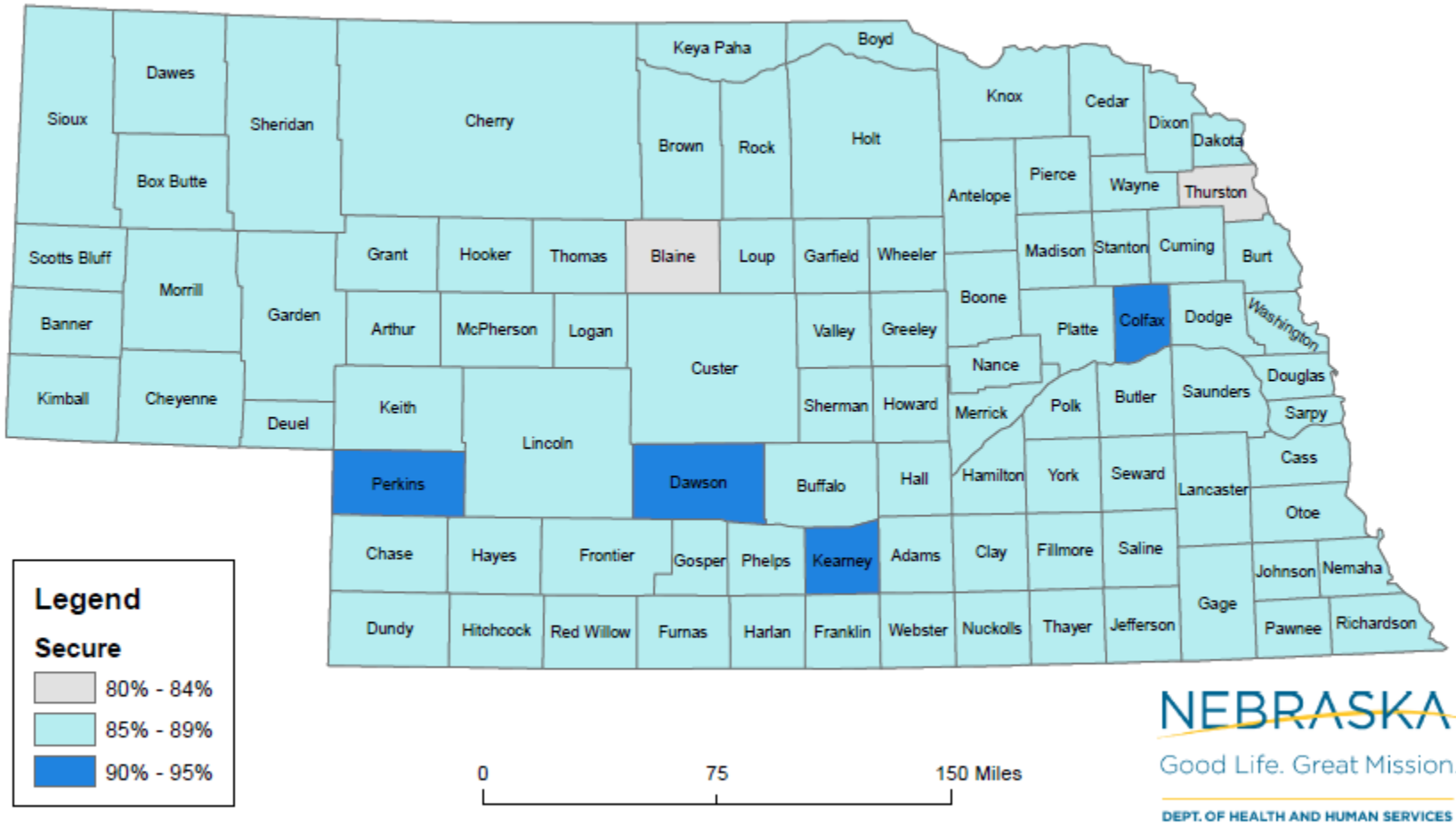
Unexpected Insights from the Maps:

- If no more than 30% of income goes to housing, plus 10% to transportation, approx. 60% of income would remain. The map suggests the population in NE spends FAR MORE on housing and transportation than our "reasonable estimate."
- In this topic area, rural distances not racial differences have been the predominant theme of disparities. Also receiving discussion is the state of the rural economy in Nebraska, perceived as slow and lacking investment, with low population density that is a challenge to many business models, such as child care.

Recommendations – Using this Information:

- Use this work as a stepping off point to explore and better understand who is most vulnerable to food insecurity in your community. Explore the relationship between early food security, mental well-being, and school success for children.
- Seek out more information about the policy and resource decisions that underlie food availability and food pricing in your area. How do food prices compare across different sizes of community? What barriers exist to making food affordable for low-income families?
- Raise awareness about the relationship between food insecurity and obesity.
- Raise awareness of food donations that occur in your community, and how they are used.

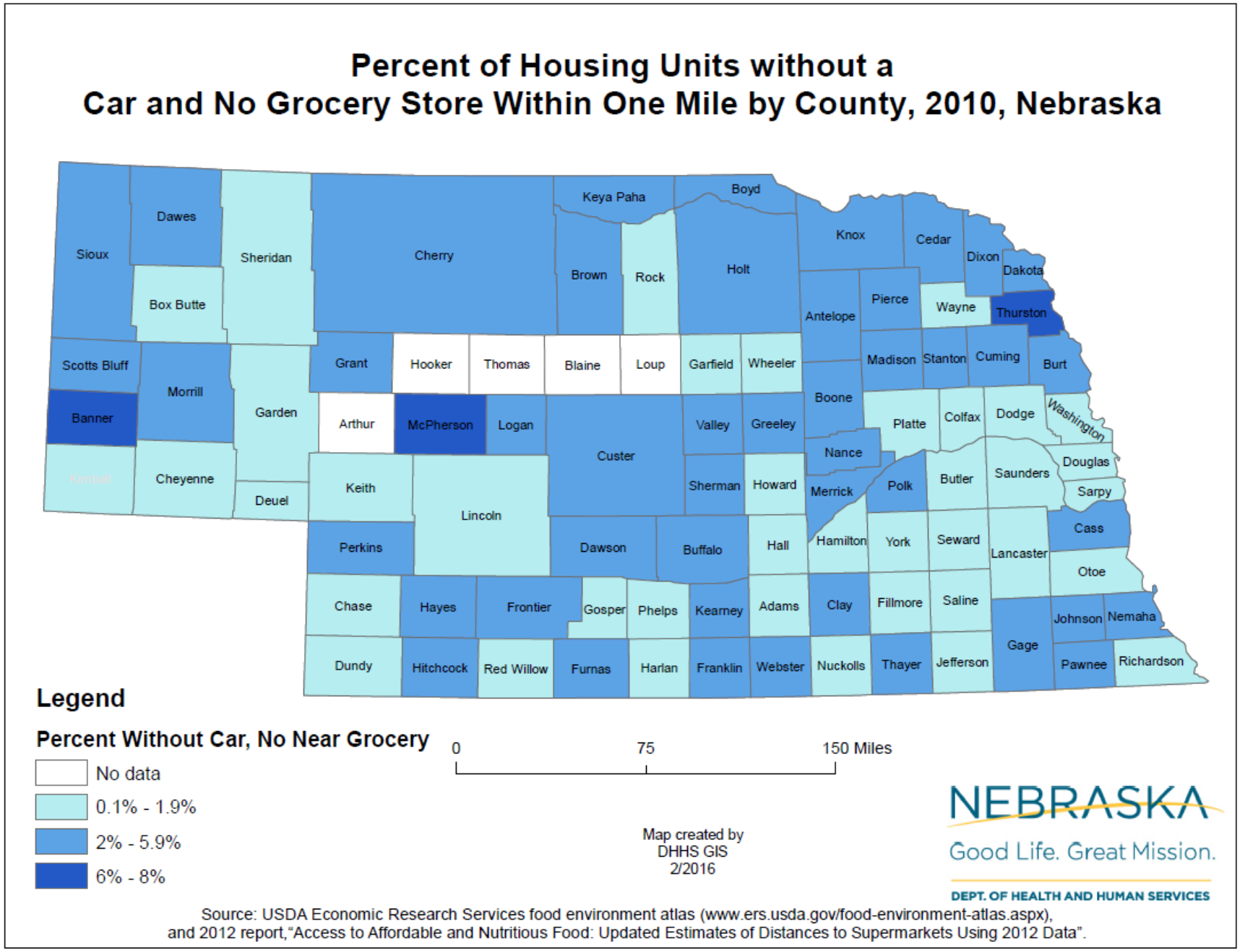
APPENDIX 1: F1 Reliable Source of Food



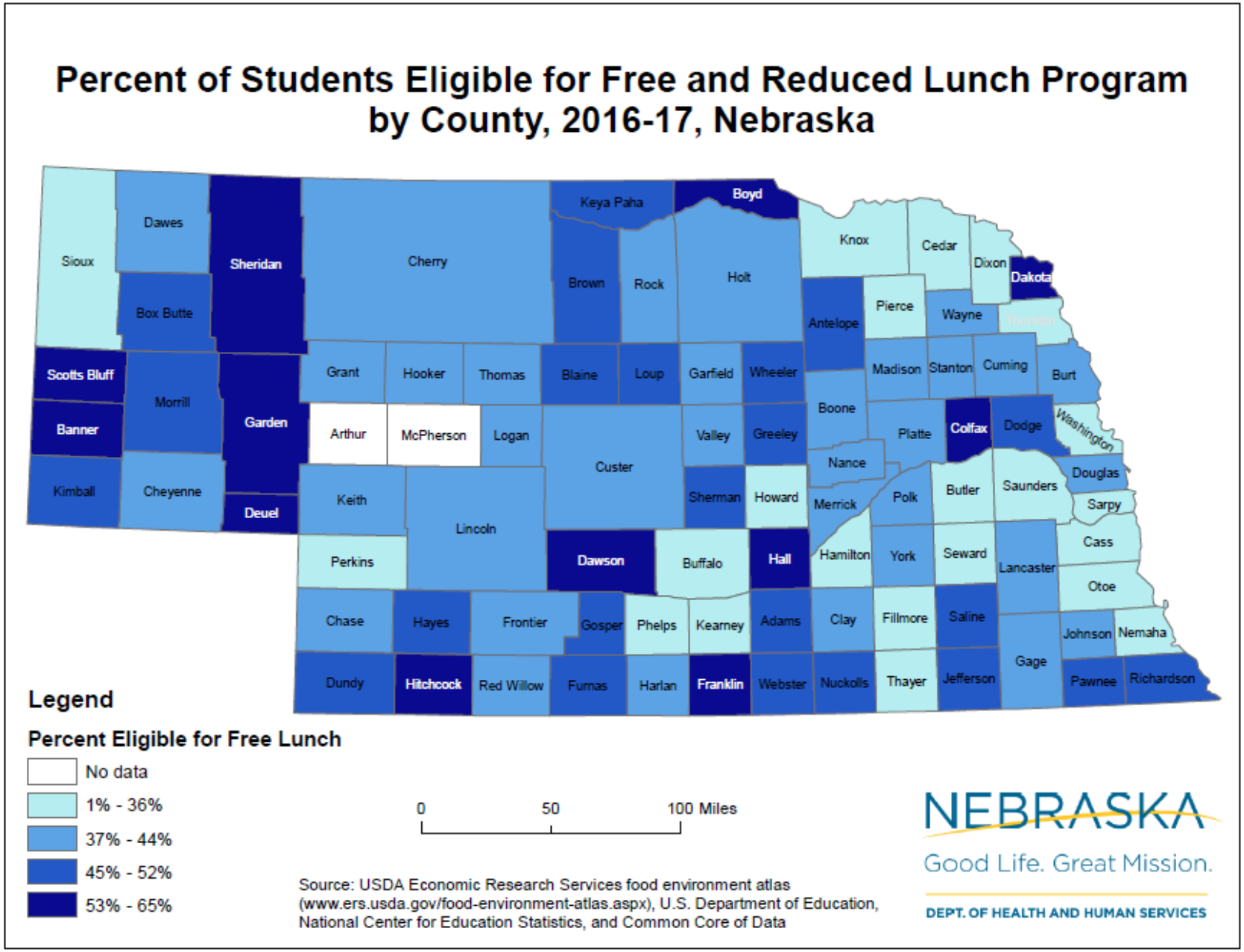
Source: County Health Rankings and Roadmaps (www.countyhealthrankings.org). The measure is Food Insecurity, an estimate of the percentage of the population who did not have access to a reliable source of food during the past year. A 2-stage fixed effected model was created using information from the Community Population Survey, Bureau of labor Statistics, and American Community Survey. For this map the measure was converted to show the percentage of the population with access to a reliable source of food.

Map created by DHHS GIS
4/2016

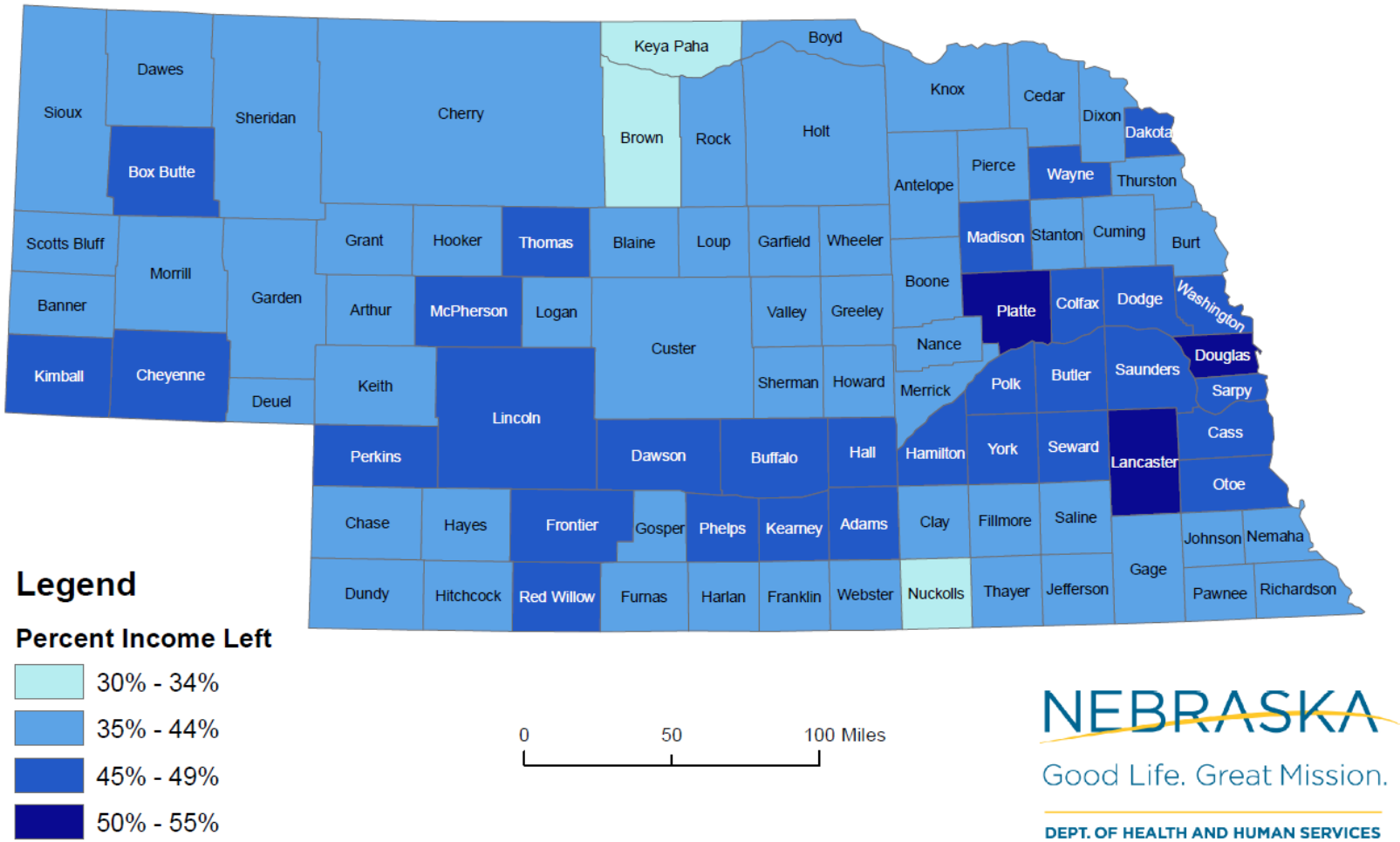
APPENDIX 2: F2 Housing Units without a Car and No Grocery Store within One Mile



APPENDIX 3: F3 Students Eligible for Free and Reduced Lunch Program



APPENDIX 4: F4 Income left after Paying for Housing and Transportation



Source: The location affordability index is calculated from several data sources: U.S. Census American Community Survey, U.S. Census TIGER/Line files, National Transit Database, Illinois Environmental Protection Agency, and the Consumer Expenditure Survey. http://www.locationaffordability.info/lai.aspx. Data was flipped to represent the percent of income left after paying for housing and transportation.