(Start with overview of Mapping Methodology)

At this point I’d like to walk through a set of maps that look at where supermarkets are located and overlay demographic and health data to highlight lower-income areas that experience both a lack of supermarkets and high-rates of diet-related disease.

As with any mapping projects, these maps are just one way of looking at the data; they do not reflect every nuance of healthy food access in communities, but highlight compelling trends about food access and health in NC.

I’d like to thank the many groups across the state that took the time to provide feedback on these maps and help us to ground truth them locally. This is a critical component of ensuring these reflect a more accurate picture of the food access landscape across NC.

• **Supermarket Locations and Sales:**
  - Nielsen TDLinx is the industry standard for store locations throughout the country. We use their latest data set.
  - We chose supermarkets > than $2mill in annual sales because that tends to capture stores that have full service produce sections. This is a pretty low threshold and captures a range of grocers from full service large chain stores down through smaller independent grocers and even limited assortment like Aldi
and Sav-a-lot.

- **Income:** American Community Survey latest data: 2010-2014
- **Health Data:** from the North Carolina Department of Health & Human Services. We use their latest data which is 2014. And we use mortality data because it’s tied to place of residence so we understand which communities these people had lived in.

- I’m going to walk you through a series of 6 maps of the state of NC, to give an example of our process of arriving at Map #6 which indicates what we call the “Areas of Greatest Need”. I’ll then show you Map #6 for 5 cities throughout the state and then.
- As I walk through maps 1 through 6 for the state, please hold questions until I get to Map #6 at which point I’ll pause for questions.
Here is **Map 1: Weekly Sales Volume for Supermarkets**

This first map shows the geographic distribution of supermarkets across the city.

Supermarkets were then classified into two categories based on their weekly sales volume. The smaller red circles represent smaller stores with lower weekly sales volume; the larger red circles represent larger stores with higher weekly sales volume.

The gray shading that you see here gives a sense of store concentration throughout the city. Darker shaded areas contain high sales volumes per square mile; lighter shaded areas less so.
Map 2: Supermarket Sales and Total Population

Neighborhoods with greater than average supermarket sales relative to total population are shown in yellow and brown tones. In these neighborhoods, people are either spending more than average in supermarkets, as might be the case in higher-income communities, or more people are buying groceries in these communities than the number of people who live there, indicating that people are traveling from outside the area to shop there.

In this map we see large swaths of tan which indicates areas where there are lower than average sales relative to total population.
Map 3: Supermarket Sales and Income

Building on the prior map, this one overlays income onto sales.

The yellow areas are higher income areas with low supermarket sales. People in the yellow areas have fewer supermarkets to shop at in their community. However, as these communities are higher-income and often have high auto ownership rates, residents are more able to drive to supermarkets to shop.

The green parts on the map show higher-income areas with higher supermarket sales. These areas have the best access to food resources.

There are a few low-income areas where there are higher supermarket sales, indicated in blue. As you can see, this case is not as prevalent on the map.

The red parts here show those areas across the city that have both poor access to a supermarket and are low income.
Map 4: Low Supermarket Sales and Low Income

This map shows just the areas in red from the previous map. **These are areas are those that are low income and also have low supermarket access, or low sales.**

Supermarket sales are lower in these areas because there are few to no supermarkets there. And since income is also lower in these areas, people living there are less able to afford to travel to the areas where supermarkets are concentrated.

The next two maps take a look at health data – specifically death from diet related disease and how that matches up with these low-income and low-supermarket sales areas.
Map 4: Low Supermarket Sales and Low Income (with Urban Areas Highlighted)

This map shows just the areas in red from the previous map. These are areas are those that are low income and also have low supermarket access, or low sales.

Supermarket sales are lower in these areas because there are few to no supermarkets there. And since income is also lower in these areas, people living there are less able to afford to travel to the areas where supermarkets are concentrated.

Estimates show that there are more than 4.3 million North Carolina residents, including more than X children, living in these lower-income areas with low supermarket access. (Fill in # of children based on your preferred definition of children- see Estimated Population Counts spreadsheet for the data).

The next two maps take a look at health data – specifically death from diet related disease and how that matches up with these low-income and low-supermarket sales areas.
IN Map 5, we plots the rates of diet-related deaths in the state and how they relate to income levels.

As you can see, in red, many of the low-income areas with high rates of diet-related deaths are the same regions that we saw in red on the previous maps.

(The yellow areas display higher rates of diet-related deaths occurring in higher-income areas. The blue and green areas have lower rates of diet-related deaths.)
This final map highlights just those lower income regions of NC that experience both a lack of supermarkets AND high-rates of death from diet-related diseases.

Estimates show that more than an estimated 2 million (2,256,179) people, including more than X children, live in these red areas across state – which represent about 23% of the state’s total population (9,750,405).

(Fill in # of children based on your preferred definition of children - see Estimated Population Counts spreadsheet for the data).

There are large swaths of the state where residents are suffering with diet-related disease and can’t easily access a venue to purchase healthy foods.

In addition to the cites, we see large areas in need in many rural areas.

**Total NC State Pop:** 9,750,405  
Pop Low Sales Low Income (Map 4): 4,391,814  
Pop Low Sales Low Income High Death (Map 6): 2,256,179
Map 4, Lexington: 2,328 living in red area of 19,029 total = 12.23%
Map 6, Lexington: 2,328 of 19,029 = 12.23% (same for map 4 and Map 6- no change)
Map 4, Goldsboro: 14,767 living in red areas of 35,908 total = 41%
Map 6, Goldsboro: 13,231 living in red area of 35,908 total = 36.85%
Map 4, Winston-Salem: 120,377 of 234,469 =51.234%
Map 6, Winston-Salem: 52,270 of 234,469 = 22.29%
These neighborhoods include large areas of:
Map 4, Fayetteville: 120,498 of 202,421 = 59.53%
Map 6, Fayetteville: 57,175 of 202,421= 28.25%
Map 4, Raleigh: 132,518 of 423,287 = 31.31%
Map 6, Raleigh: 28,154 of 423,287 = 6.65%