

**Diabetes Risk Factors
Community Profile
Kent County**

December 2013

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The National Association of Chronic Disease Directors (NACDD) contracted with the Directors of Health Promotion and Education (DHPE) to provide the following data and recommendations to identify:

- target audiences for the Diabetes Prevention Programs (DPP)
- how to reach the target audience
- health care facilities in the area that can refer to DPPs.
- locations of select business that may be useful in promoting DPPs

This report uses PRIZM segment descriptions to determine where people at risk for diabetes may be located. Each segment has unique demographic descriptions based on income, life stage, age range, presence of children in the household, home ownership, employment, education, and race and ethnicity; there are 66 PRIZM segments. Based on the segment profiles the following questions can be examined:

- Where is the target population located?
- How would you reach them?
- What else is in the area?

Target Population

Approximately 150,000¹ prediabetic adults 21 years old and older live in Kent County. Nearly a third (46,450) of these adults live in Grand Rapids. Approximately 50% of adults 65 and older are estimated to have prediabetes.¹ People with prediabetes have an increased risk of developing type 2 diabetes, heart disease, and stroke. Studies have shown that people with prediabetes who lose weight and increase their physical activity can prevent or delay type 2 diabetes and in some cases return their blood glucose levels to normal.

If the modifiable risk factors for type 2 diabetes (being overweight or obese and physical inactive) continue to increase, so will the prevalence of type 2 diabetes. The adult obesity prevalence in Michigan increased from 18.2 to 31.7 percent between 1995 and 2010.²

Individuals at greatest risk of developing diabetes in Michigan are:

- African Americans
- Individuals with no college education
- Households that earn less than \$25,000 per year

Table 1 provides a summary of some of the demographic factors associated with a higher risk of developing diabetes. **Appendix 2** contains a detailed report of demographics and household characteristics for the areas of interest.

¹Estimate is based on multiplying the population for those 21 years old and older by 35%.The estimated number of persons with prediabetes was calculated by applying the national estimate of prediabetes from NHANES III to the 2013 population estimate for adults aged 21 years and older in the geography of interest. This is the same methodology as was used in the Centers for Disease Control and Prevention. National diabetes fact sheet: national estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2011. Available at: http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf.

²Michigan Behavioral Risk Factor Surveillance System, 1995-2010. Available at <http://apps.nccd.cdc.gov/BRFSS>.

Table 1 Demographics

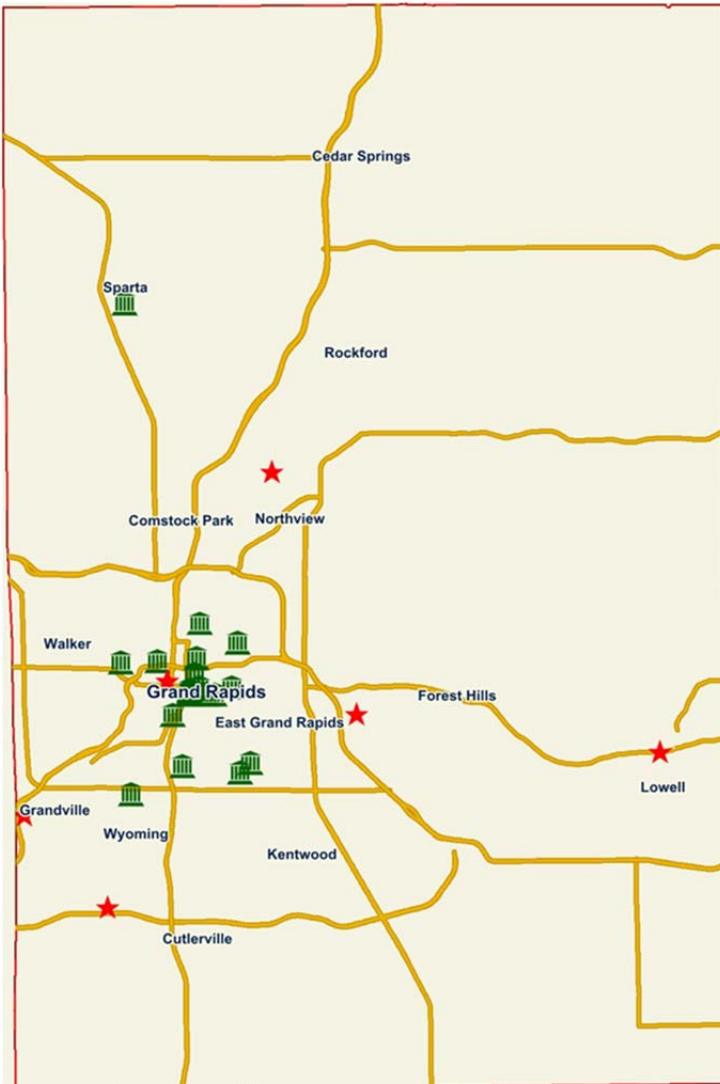
	Grand Rapids	Kent County	Michigan
Total Population	191,117	615,163	9,862,679
Age			
< 21 years old	30.56%	30.35%	27.69%
21-44	36.75%	32.41%	29.70%
45-64	21.28%	25.47%	27.87%
65-84	9.08%	9.97%	12.69%
85+	2.33%	1.80%	2.05%
Race			
White	64.13%	79.20%	78.56%
Black or African American	20.69%	9.87%	14.21%
American Indian and Alaska Native	0.72%	0.49%	0.64%
Asian	1.97%	2.43%	2.56%
Native Hawaiian and Other Pacific Islander	0.06%	0.04%	0.03%
Some Other Race	8.01%	4.76%	1.57%
Two or More Races	4.42%	3.21%	2.43%
Ethnicity			
Hispanic	16.12%	10.33%	4.69%
Not Hispanic	83.88%	89.67%	95.31%
Household Income			
Average	\$44,519	\$57,172	\$58,514
Median	\$34,053	\$43,831	\$43,691
Population 25 and older with less than a four-year college degree	71.44%	70.04%	74.90%

Approximately 1 in 3 individuals in Kent County are between 45 and 64 years old. This age group is an ideal target group as the prevalence of diabetes goes up dramatically in the population 65 and older.³ Compared to the state, Kent County has a higher median household income and lower percent of adults with less than a four-year college degree. This suggests that the population that lives in Kent County may be at less risk of developing diabetes compared to the state as a whole. However, Grand Rapids has a lower median household income compared to the state and individuals living in Grand Rapids may have a greater risk of developing diabetes compared to the state and compared to Kent County as a whole.

³ Michigan Behavioral Risk Factor Surveillance System, 1995-2010. Available at <http://apps.nccd.cdc.gov/BRFSS>.

Map 1 shows Kent County. There are several Federally Qualified Health Centers (FQHC) located in Kent County and YMCA's.

Map 1 Kent County



-  FQHC
-  YMCA
-  Highway

Location of People with Diabetes Risk Factors

The target population is individuals with risk factors for diabetes. The target population was determined using the demographic description and lifestyle preferences of each PRIZM segment found in Kent County. Segments with demographic characteristics associated with a higher prevalence of diabetes were combined to form a profile. The demographic and socioeconomic characteristics included are:

- Education Attainment: less than a four-year college degree
- Household Income: \$50,000 or less per year
- Age: segment age ranges that overlapped or contained the age group of 45 to 84 year olds

Based on these three characteristics the following PRIZM segments were found to be at high risk of developing diabetes: 38,39,40,41,42,43,44,45,46,48,49,52,53,54,55,56,57,58,59,60,61,64,65,66. There are 66 PRIZM segments. In general, as the segment number increases, the socioeconomic status decreases. As mentioned previously, each segment has a unique demographic and socioeconomic description based on several indicators including income, life stage, age range, presence of kids in the household, home ownership, employment, education, and race and ethnicity. For a detailed description of each segment, visit

<http://www.claritas.com/MyBestSegments/Default.jsp?ID=30&id1=1027&id2=&webid=1>

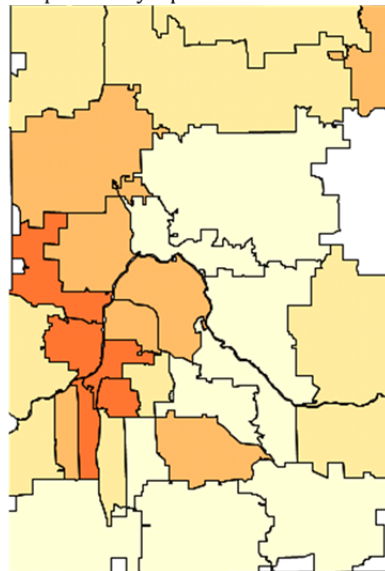
To verify that these segments also had high-risk lifestyle behaviors that could lead to diabetes additional analyses examined their likelihood of being physically active, consuming fruits and vegetables, and watching over 20 hours of television per week. It was found that these segments were among the least likely to be physically active and to consume fruits and vegetables, and among the most likely to watch more than 20 hours of television per week.

Map 2.1 shows the concentration of the target segments within each zip code in Kent County and **Map 2.2** shows the concentration within each census tract; the darker the orange, the higher the concentration of the target segments. **Appendix 3** provides a list of all the zip codes and census tracts in Kent County and the number of households that are at high risk of developing diabetes.

The zip codes within Kent County where 50% or more households have one or more adults that fit this profile are 49509, 49507, 49503, 49504, 49544, 49512, 49326, 49505, and 49321.

Taking a closer look at the census tracts in these areas may help narrow the focus highest risk areas further.

Map 2.1 Concentration of Target Population by Zip Code

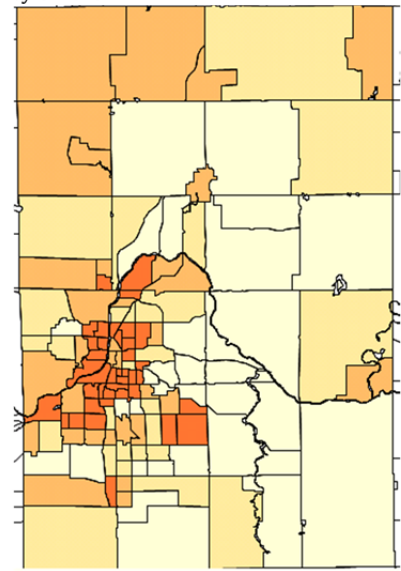


HH/ 100 HH*	Index †
67.76	159
49.51	120
35.81	87
18.88	46

*Number of adults per 100 households.

† Likelihood that the target population is located in a particular zip code compared to all zip code in the area of interest

Map 2.2 Concentration of Target Population by Census Tract



HH/ 100 HH*	Index †
86.69	209
49.50	119
24.97	60
6.40	15

*Number of adults per 100 households.

† Likelihood that the target population is located in a particular census tracts compared to all zip code in the area of interest

Marketing⁴

Below are ways to reach your target audience. There are descriptions of how often and the types of print, radio, and television stations they read, listen to, and watch. For radio and television, the times and days of the week the audience is most likely to listen to or watch are listed as well.

See **Appendix 4** for detailed tables and information for the source information the descriptions below are based on. The majority of findings are based on the number of adults per 100 households. For these findings, it is possible to have more than 100 adults per 100 households as multiple adults can live in a household. A few of the findings are based on household consumption, for these findings the number of households cannot exceed 100.

Print Media Profile:

Among the segments at high risk for diabetes that live in Kent County:

- Over 60 adults per 100 households in the target PRIZM segments read the women's magazines, Sunday newspaper, and general editorials.
- Approximately the 76 adults per 100 households report frequently reading the newspaper; however, 96 adults per 100 households report reading the newspaper infrequently.
- Approximately 68 adults per 100 households report reading the Sunday newspaper and 54 adults per 100 households report reading the daily newspaper.

If using print media as a method for reaching the target population, the Sunday newspaper has the most reach.

Radio Media Profile:

Among the segments at high risk for diabetes that live in Kent County:

- Approximately 89 adults per 100 households listen to the radio less than 20 hours a week; however, 82 adults per 100 households listen to the radio more than 20 hours a week.
- The highest number of adults per 100 households listens to the radio Monday through Friday from 6 am to 10am, and Saturday and Sunday from 10am to 3pm.
- The most frequently listened to radio stations are urban contemporary radio stations

If using radio media as a method for reaching the target population, the best time of day is 6 a.m. to 10 a.m. Monday through Friday on urban contemporary radio stations.

⁴ Marketing Profile is based on the PRIZM segments that are least likely to report exercising: segments 26, 31, 38-40, 42-49, 52-66. There are 66 PRIZM segments the higher the number the lower the social-economic status. The segments are defined based on a combination of household characteristics (e.g., presence of kids), demographic characteristics, and economic characteristics. Nielsen's segmentation system has been tested and verified in various settings and geographic locations. The selected marketing avenues were selected based on both a high Market Potential Index as well as the number of people that could be reached.

Television Media Profile:

Note this profile captures usage of specific channels if you want to know the shows watched or frequency of viewing different shows, let DHPE know and additional analysis can be run.

Among the Segments at High Risk for Diabetes that live in Kent County:

- Over 103 adults per 100 households watch 20 hours or more of television per week.
- Over 80 adults per 100 households average at least a half hour of television between 8 p.m. and 11 p.m., 7:30 p.m. and 8 p.m., and 7 p.m.-7:30 p.m. Monday through Friday. Weekend viewing during these times is also around 80 adults per 100 households.
- Approximately 75% of households subscribe to cable or satellite television.

If using television media as a method for reaching the target population, the best time of day is 7 p.m. - 11 p.m. Monday through Friday.

Internet Media Profile:

Among the Segments at High Risk for Diabetes that live in Kent County:

- Over 110 adults per 100 households use the internet 0 to 17 times per month.
- Approximately 66% own their own computer.
- Approximately 62 adults per 100 households use the internet frequently – 28 or more times per month.
- Just over half of households (57%) have access to the internet at home.
- Approximately 31 adults per 100 households use the internet via a cell phone or smart phone.

If using the internet as a method for reaching the target population keep in mind that just over half of the target segment has access to the internet at home. Internet use for most users in the target segments is low.

Attitude Towards Media:

Over 60 users per 100 households in the target population feel magazines, newspapers, radio, and television ads give useful information. The target segments are more likely to agree that television is the most trusted media.

Grocery Shopping Habits

Over 78 users per 100 households in the target segments grocery shop at a Walmart Supercenter or similar store (e.g. Meijer or Target Super Store).

Approximately 44 users per 100 households in the target segments do their grocery shopping within two miles of their home.

Retailer and Shopping Habits:

Walmart appears to be the store that the target segments shop at most often. Meijer was not included in the survey but since it has similar attributes as Walmart, it would have likely ranked high among the stores most frequented.

Restaurants:

McDonalds and Burger King are the two fast food restaurants where the highest number of users per household frequent. However, the target segments are less likely to frequent these restaurants compared to all segments.

Maps

The following maps may be useful in program planning efforts to identify potential target areas. **Maps 3.1 through 8.3** highlight geographic areas with demographic and socioeconomic status data that are associated with a higher risk of developing diabetes. **Maps 9.1 through 12.2** highlights geographic areas where health behaviors are exhibited that are associated with higher risk of developing diabetes. **Appendix 5** contains the demographic and socioeconomic status data provided in **Maps 3.1 through 8.3**. **Appendix 6.1-6.2** contains the health behavior data provided in **Maps 9.1 through 12.2**.

Demographic and Socioeconomic Status Associated with Higher Risk of Diabetes

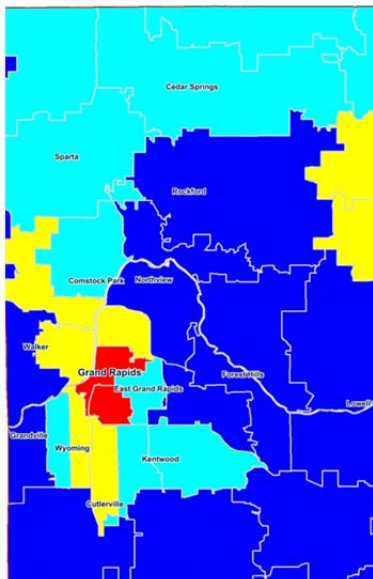
Map 3.1 shows the percent of families living below poverty by zip code. The zip codes in red have the highest percent of families living below poverty -- between 20.1% and 25.6%.

At least 15% of the families in the following zip codes are below poverty: 49507, 49503, 48838, 49504, 49505, 48809, 49548, 49509 and 49544.

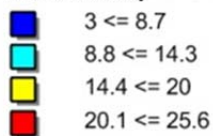
Map 3.2 shows the percent of families living below poverty by census tract.

Map 3.3 shows the number of families living below poverty.

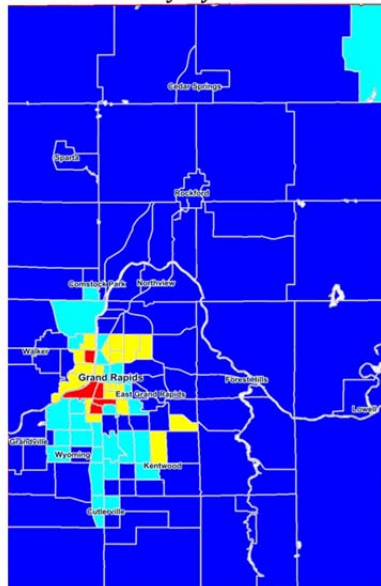
Map 3.1 Percent of Families Living Below Poverty by Zip Code



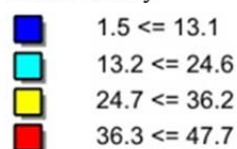
Percent of Families Living Below Poverty



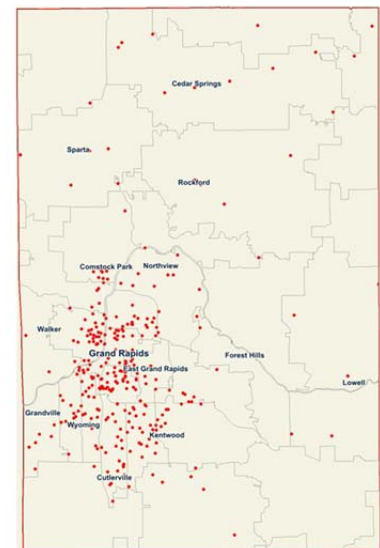
Map 3.2 Percent of Families Living Below Poverty by Census Tract



Percent of Families Living Below Poverty



Map 3.3 Number of Families Living Below Poverty



1 dot = 50 Families Living Below Poverty

Zip Code Border

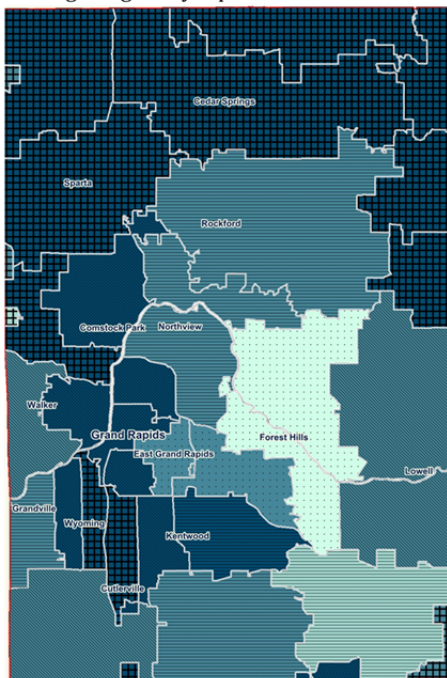
Map 4.1 shows the average annual household income and percent of adults 25 and older who have less than a four-year college degree by zip code. The areas with the darkest bluish-green color have the lowest average household income, and the areas with the darkest lines have the highest percent of adults without a four-year college degree.

The following zip codes had average household income less than \$45,000 per year: 49503, 49548, 48838, 49507, and 49509.

At least 85% of adults 25 years old and older have less than a four-year college degree in the following zip codes: 49330, 49318, 48809, 49548, 49343, 49509, and 49403.

Map 4.2 shows the average annual household income and percent of adults 25 and older who have less than a four-year college degree by census tract.

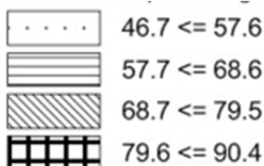
Map 4.1 Average Household Income and Percent of Adults with Less than a Four-Year College Degree by Zip Code



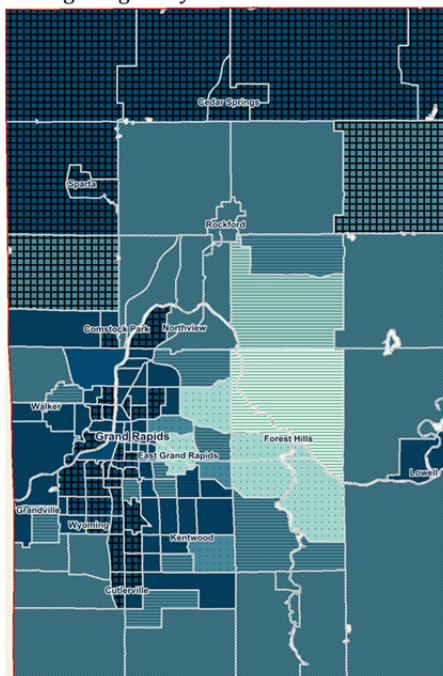
Average annual household income



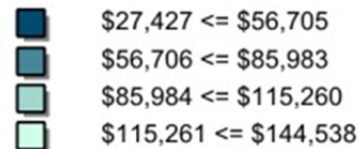
Percent of Adults 25 and older with less than a four-year degree



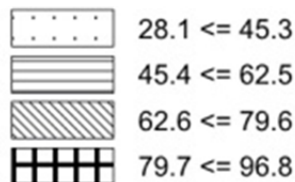
Map 4.2 Average Household Income and Percent of Adults with Less than a Four-Year College Degree by Census Tract



Average annual household income



Percent of Adults 25 and older with less than a four-year degree



Map 5.1 shows the percent of the population that is Hispanic by zip code. As the blue color darkens, the percent of the population that is Hispanic increases.

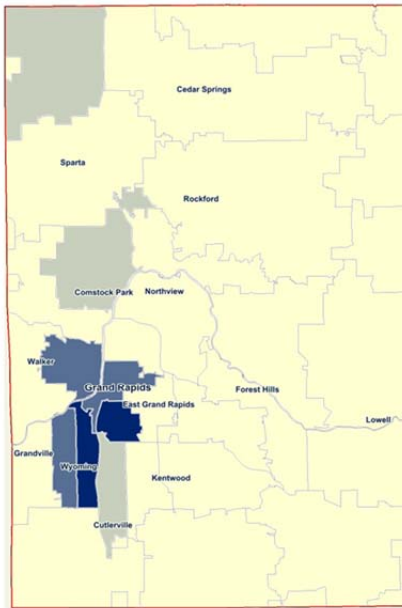
At least 10% of the population is Hispanic in the following zip codes: 49509, 49507, 49503, 49504, 49519, 49548, and 49321.

Nationally, Hispanics have a higher risk of developing diabetes.

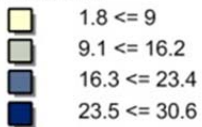
Map 5.2 shows the percent of the population that is Hispanic by census tract.

Map 5.3 shows the number of Hispanics.

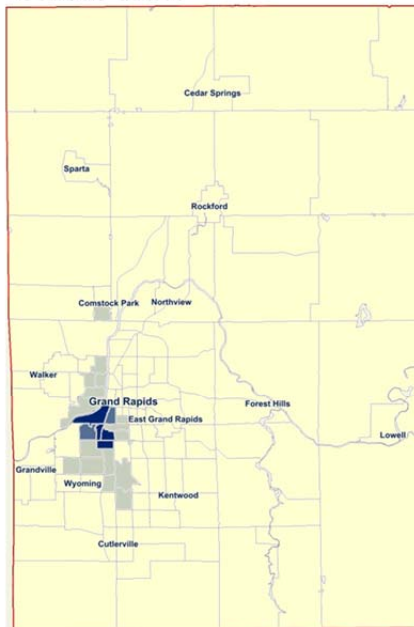
Map 5.1 Percent of the Population that is Hispanic by Zip Code



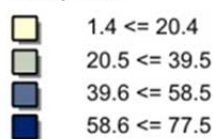
Percent of the Population that is Hispanic



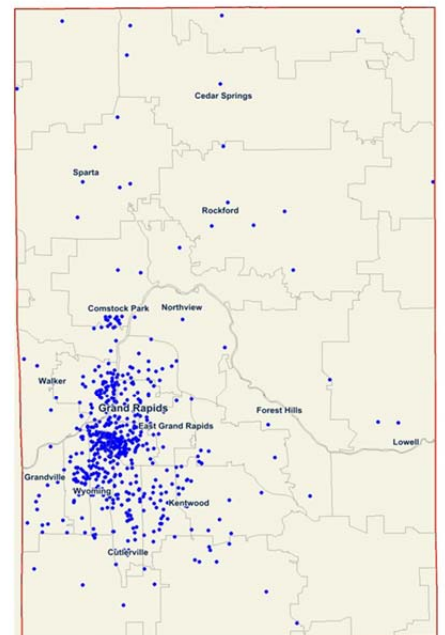
Map 5.2 Percent of the Population that is Hispanic by Census Tract



Percent of the Population that is Hispanic



Map 5.3 Number of Hispanics



1 dot = 100 Hispanics
 Zip Code Border

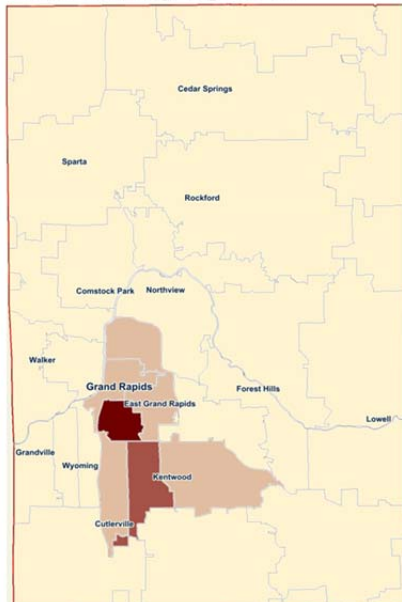
Map 6.1 shows the percent of the population that is African American by zip code. As the red color darkens, the percent of the population that is, African American increases.

At least 15% of the population is African American in the following zip codes: 49507, 49508, 49503, 49512 and 49506.

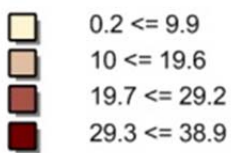
Map 6.2 shows the percent of the population that is African American by census tract.

Map 6.3 shows the number of African Americans.

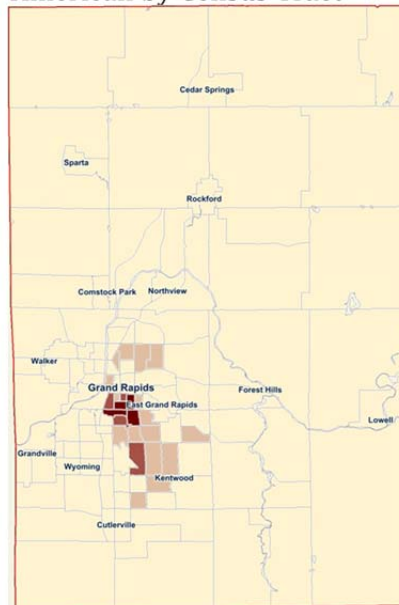
Map 6.1 Percent of the Population that is African American by Zip Code



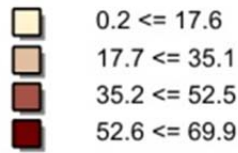
Percent of the Population that is African America



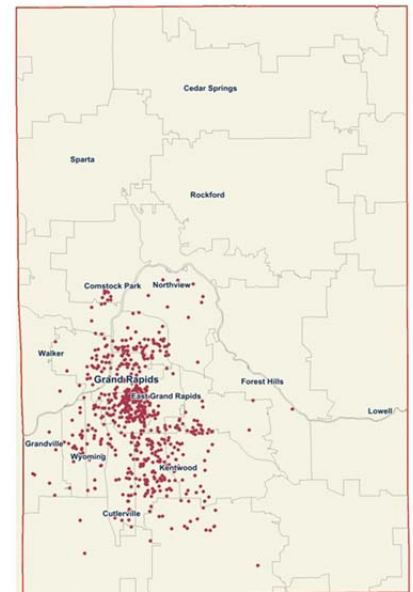
Map 6.2 Percent of the Population that is African American by Census Tract



Percent of the Population that is African America



Map 6.3 Number of African Americans



1 dot = 100 African Americans
 Zip Code Border

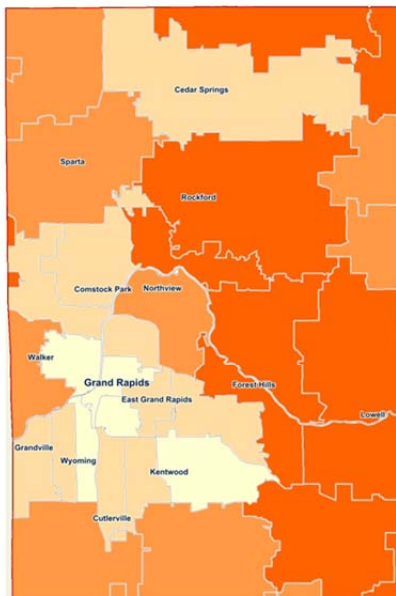
Map 7.1 shows the percent of the population 45 through 64 years old by zip code. As the orange color darkens, the percent of the population that is between 45 and 64 years old increases.

At least 30% of the population is 45 to 64 years in the following zip codes 49301, 49302, 49306, 49326, 49403, 49325, 49435, 49341 and 49331.

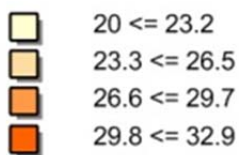
Map 7.2 shows the percent of the population 45 through 64 years old by census tract.

Map 7.3 shows the number of adults 45 through 64 years old.

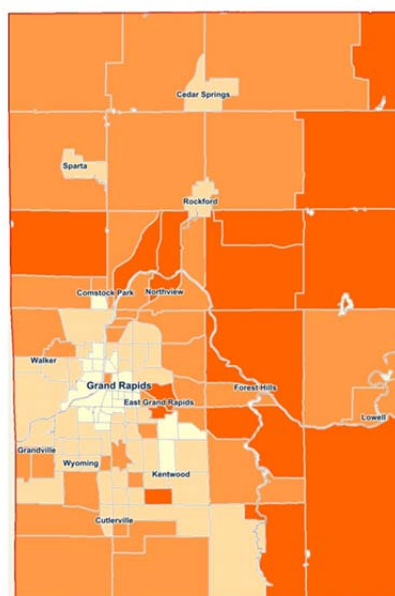
Map 7.1 Percent of the Population Age 45 to 64 Years Old by Zip Code



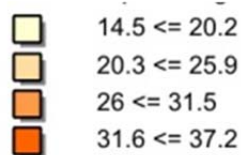
Percent of the Population Age 45 to 64 Years Old



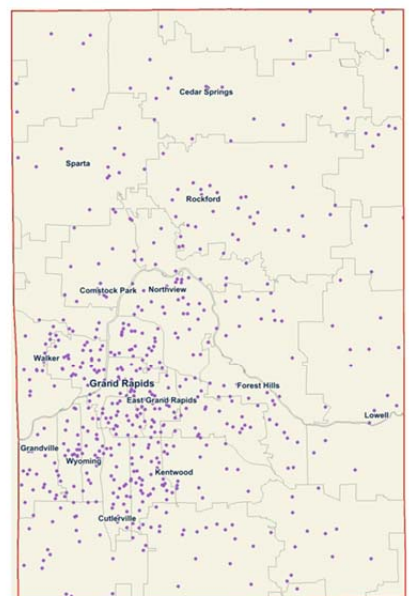
Map 7.2 Percent of the Population Age 45 to 64 Years Old by Census Tract



Percent of the Population Age 45 to 64 Years Old



Map 7.3 Number of Adults Age 45 to 64 Years Old



● 1 dot = 250 Adults 45 to 64 Years Old

Zip Code Border

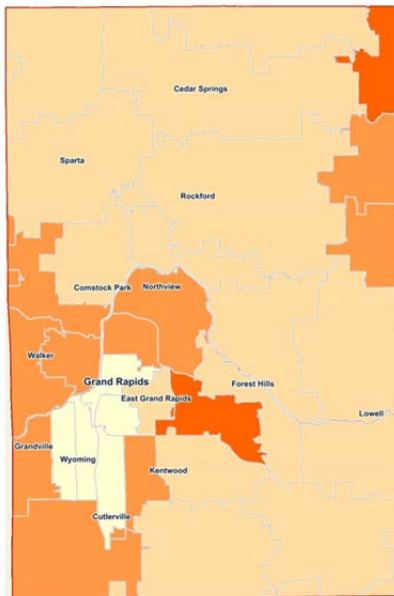
Map 8.1 shows the percent of the population 65 years old and older by zip code. As the orange color darkens, the percent of the population that is 65 years old and older increases.

At least 15% of the population is 65 years old and older in the following: 49546, 49428, 49326 and 49315.

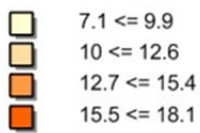
Map 8.2 shows the percent of the population 65 years old and older by census tract.

Map 8.3 shows the number of adults 65 years old and older.

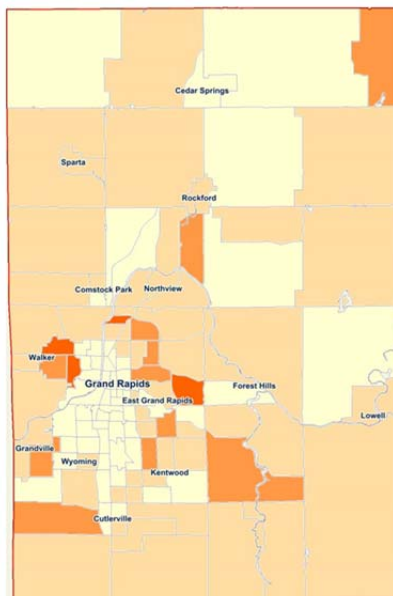
Map 8.1 Percent of the Population 65 Years Old and Older by Zip Code



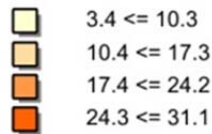
Percent of the Population Age 65 Years Old and Older



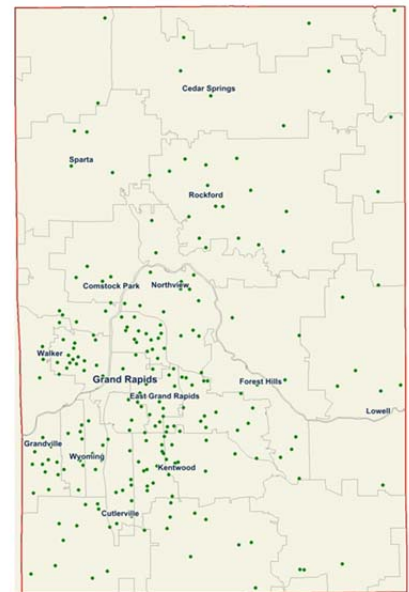
Map 8.2 Percent of the Population 65 Years Old and Older by Census Tract



Percent of the Population Age 65 Years Old and Older



Map 8.3 Number of Adults 65 Years Old and Older



1 dot = 250 Adults 65 Years Old

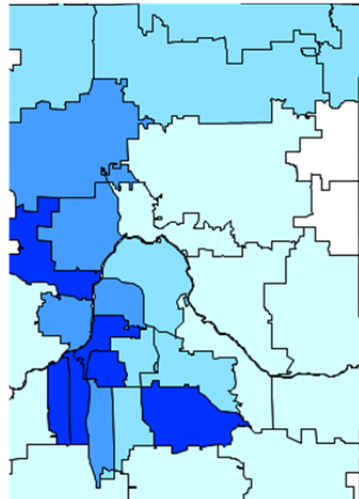
Zip Code Border

Behaviors Associated with Higher Risk of Diabetes

Maps 9.1 and 9.2 show the likelihood adults have health insurance by zip code and census tract compared to the average adult within Kent County. The darker the blue, the **less likely** they are to report having health insurance.

Market Potential Index (MPI) is calculated based on the number of users per 100 households in each zip code or census tract divided by number of users per 100 households in the geographic area of interest times 100. It indicates the likelihood that households in a zip code or census tract are to display the behavior of interest compared to the average for the geography of interest. An MPI of less than 100 indicates they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest. An MPI of 100 indicates that they are as likely to display the behavior of interest as the average household in the geography of interest is.

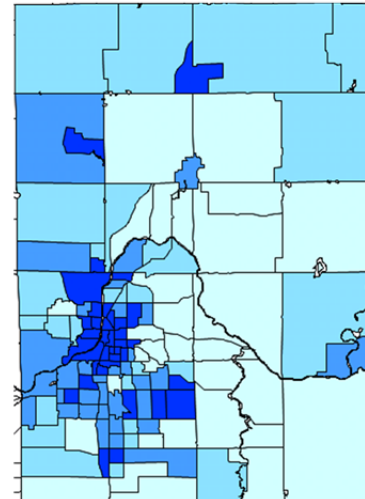
Map 9.1 Likelihood Adults Report Having Health Insurance by Zip Code Compared to the Average User in Kent County



Users/100 HH*	MPI†
108.68	86
118.13	94
130.46	104
144.11	114

*Number of adults per 100 households.
 † MPI = Market Potential Index. Likelihood that households in a zip code display the behavior of interest compared to the average for the geography of interest. An MPI of less than 100 indicated they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest.

Map 9.2 Likelihood Adults Report Having Health Insurance by Census Tract Compared to the Average User in Kent County



Users/100 HH*	MPI†
93.01	74
116.29	92
137.24	108
155.60	124

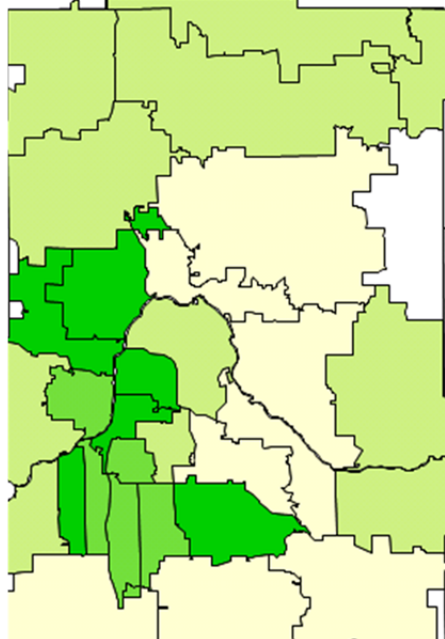
*Number of adults per 100 households.
 † MPI = Market Potential Index. Likelihood that households in a census tract display the behavior of interest compared to the average for the geography of interest. An MPI of less than 100 indicated they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest.

The behavior of interest in **Maps 9.1** and **9.2** is having health insurance, and the geography of interest is Kent County. The zip codes with the darkest blue color are 14% **less likely** to have insurance as compared to the average user for Kent County, and the zip codes with the lightest blue shading are 14% **more likely** to have insurance as compared to the average user for Kent County. The census tract with the darkest blue color are 26% **less likely** to have insurance as compared to the average user for Kent County, and the census tract with the lightest blue shading are 24% **more likely** to have insurance as compared to the average user for Kent County.

Maps 10.1 and 10.2 show the likelihood households consume more or less fresh fruits and vegetables per month by zip code and census tract as compared to the average household in Kent County. The darker the green, the **less likely** the households are to consume as much fresh fruits and vegetables as the average household in Kent County.

Market Demand Index (MDI) is calculated based on the average consumption per household in each zip code compared to the average consumption in the geography of interest. It indicates the likelihood that households in a zip code or census tract have a higher or lower demand (or rate of consumption) for a particular product compared to the average for the geography of interest. An MDI of less than 100 indicates households are less likely to consume the product of interest. An MDI greater than 100 indicates households are more likely to consume the product of interest. A MDI of 100 indicates that they are as likely to consume the product of interest as the average household in the geography of interest.

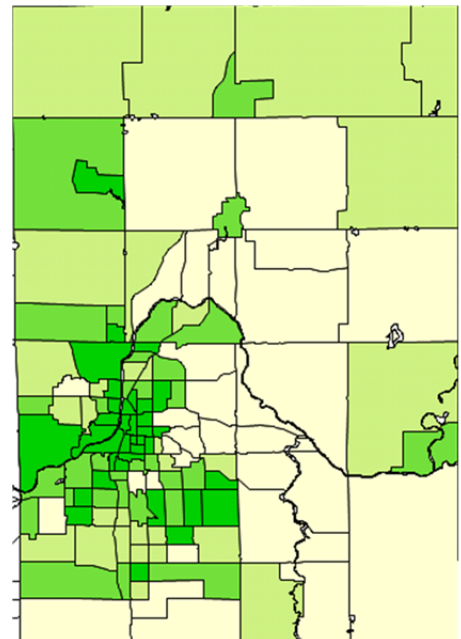
Map 10.1 Likelihood Households Consume More or Less Fresh Fruit and Vegetables in a One Month Period by Zip Code Compared to the Average User in Kent County



	Pounds/Month*	MDI †
	28.37	91
	29.92	96
	30.28	103
	31.67	111

* Average number of pounds of fresh fruits and vegetables per month per household
 † MDI= Market Demand Index. MDI is calculated based on the average consumption per household in a zip code compared to the average consumption in the geography of interest. An MDI of less than 100 indicates adults are less likely to consume the product of interest. An MDI greater than 100 indicates households are more likely to consume the product of interest.

Map 10.2 Likelihood Households Consume More or Less Fresh Fruit and Vegetables in a One Month Period by Census Tract Compared to the Average User in Kent County



	Pounds/Month*	MDI †
	27.51	86
	29.34	97
	30.51	104
	32.54	115

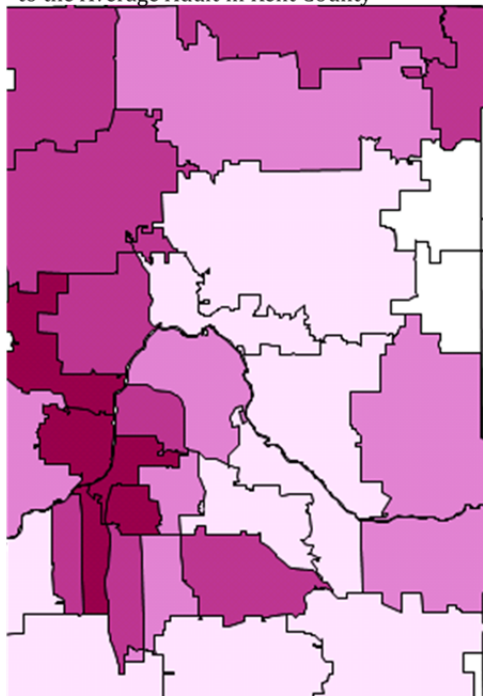
* Average number of pounds of fresh fruits and vegetables per month per household
 † MDI= Market Demand Index. MDI is calculated based on the average consumption per household in a census tract compared to the average consumption in the geography of interest. An MDI of less than 100 indicates adults are less likely to consume the product of interest. An MDI greater than 100 indicates households are more likely to consume the product of interest.





The product of interest in **Maps 10.1 and 10.2** is pounds of fresh fruits and vegetables consumed per month per household, and the geography of interest is Kent County. The zip codes of darkest green are 9% **less likely** to consume fresh fruits and vegetables as compared to the average household in Kent County. The zip codes with the lightest yellow-green shading are 11% **more likely** to consume fresh fruits and vegetables as compared to the average household in Kent County. The census tracts of darkest green are 14% **less likely** to consume fresh fruits and vegetables as compared to the average household in Kent County, The census tracts with the lightest yellow-green shading are 15% **more likely** to consume fresh fruits and vegetables as compared to the average household in Kent County.

Maps 11.1 and 11.2 show the likelihood adults in exercise 2 or more times per week at home by zip code and census tract compared to the average user in Kent County. The darker the purple, the *less likely* they are to report exercising two or more times per week.

Market Potential Index (MPI) is calculated based on the number of users per 100 households in each zip code or census tract divided by number of users per 100 households in the geographic area of interest times 100. It indicates the likelihood that households in a zip code or census tract are to display the behavior of interest, compared to the average for the geography of interest. An MPI of less than 100 indicates they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest. An MPI of 100 indicates that they are as likely to display the behavior of interest as the average household in the geography of interest.

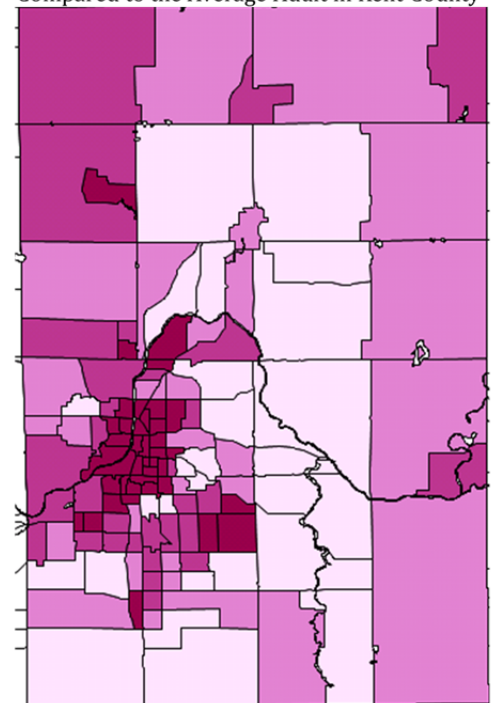
Map 11.1 Likelihood Adults Exercise 2 or More Times per Week at Home by Zip Code Compared to the Average Adult in Kent County







	Users/ 100 HH*	MPI†
	44.90	82
	49.72	91
	55.83	103
	66.37	122

*Number of adults per 100 households.
 † MPI = Market Potential Index. Likelihood that households in a zip code display the behavior of interest compared to the average for the geography of interest. An MPI of less than 100 indicates they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest.

Map 11.2 Likelihood Adults Exercise 2 or More Times per Week at Home by Census Tract Compared to the Average Adult in Kent County



	Users/ 100 HH*	MPI†
	37.34	69
	47.91	88
	58.86	108
	74.01	136

*Number of adults per 100 households.
 † MPI = Market Potential Index. Likelihood that households in a census tract display the behavior of interest compared to the average for the geography of interest. An MPI of less than 100 indicates they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest.

The behavior of interest in **Maps 11.1 and 11.2** is exercising two more times per week at home and the geography of interest is Kent County. The darkest purple zip codes are 18% *less likely* to exercise two or more times per week at home as compared to the average adult in Kent County, and the zip codes with the lightest purple shading are 22% *more likely* to exercise two or more times per week at home as compared to the average adult in Kent County. The darkest purple census tracts are 31% *less likely* to exercise two or more times per week at home as compared to the average census tract in Kent County. The areas with the lightest purple shading are 36% *more likely* to exercise two or more times per week at home as compared to the average adult in Kent County.

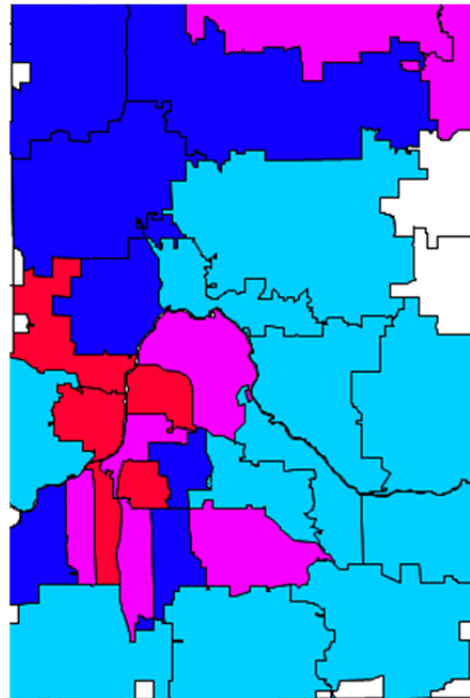
Maps 12.1 and 12.2 show the likelihood adults watch 45 or more hours of television per week by zip code and census tract compared to Kent County. The red areas are **more likely** to report watching 45 or more hours of television per week.

Market Potential Index (MPI) is calculated based on the number of users per 100 households in each zip code or census tract divided by number of users per 100 households in the geographic area of interest times 100. It indicates the likelihood that households in a zip code or census tract are to display the behavior of interest compared to the

average for the geography of interest. An MPI of less than 100 indicates they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest. An MPI of 100 indicates that they are as likely to display the behavior of interest as the average household in the geography of interest.

The behavior of interest in **Maps 12.1 and 12.2** is watching 45 or more hours of television per week and the geography of interest is Kent County. The red zip codes are 13% **more likely** to watch 45 or more hours of television per week as compared to the average user household in Kent County. The zip codes in light blue are 16% **less likely** to watch 45 or more hours of television per week as compared to the average household in Kent County. The red census tracts are 23% **more likely** to watch 45 or more hours of television per week as compared to the average user household in Kent County. The census tracts in light blue are 26% **less likely** to watch 45 or more hours of television per week as compared to the average household in Kent County.

Map 12.1 Likelihood Adults Watch More Than 45 Hours of TV per Week by Zip Code Compared to the Average User in Kent County

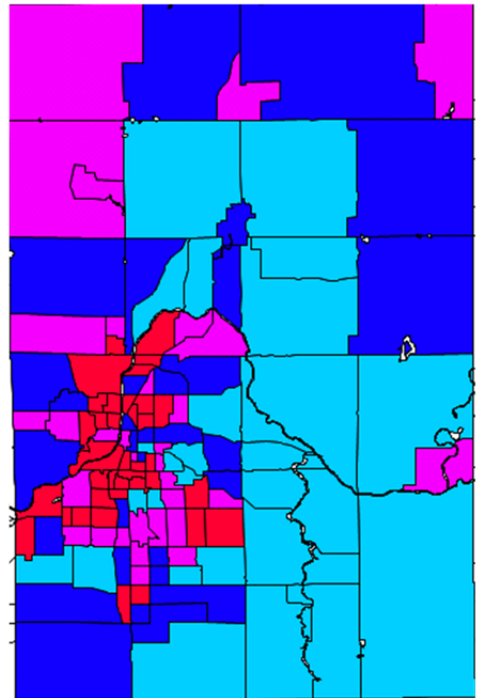


	Users/ 100 HH*	MPI †
Red	43.98	113
Pink	41.20	106
Dark Blue	38.63	100
Light Blue	32.55	84

*Number of adults per 100 households.

† MPI = Market Potential Index. Likelihood that households in a zip code display the behavior of interest compared to the average for the geography of interest. An MPI of less than 100 indicated they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest.

Map 12.2 Likelihood Adults Watch More Than 45 Hours of TV per Week by Census Tract Compared to the Average User in Kent County



	Users/ 100 HH*	MPI †
Red	47.58	123
Pink	42.04	108
Dark Blue	36.17	93
Light Blue	28.85	74

*Number of adults per 100 households.

† MPI = Market Potential Index. Likelihood that households in a census tract display the behavior of interest compared to the average for the geography of interest. An MPI of less than 100 indicated they are less likely to display the behavior of interest. An MPI greater than 100 indicates they are more likely to display the behavior of interest.

Understanding the Built Environment

Table 2 below provides a list of the number of certain types of businesses located in Kent County. The North American Industry Classification System (NAICS) codes were used to identify businesses. The following NAICS codes were used:

- 621111 Medical Offices (except Mental Health Specialist)
- 445120 Convenience food stores
- 447110 Gasoline stations with convenience stores
- 445110 Grocery stores
- 813110 Churches
- 722511 - 722515 Restaurants
- 722515 Coffee shops
- 812112 - 812113 Beauty Salons
- 611110 Elementary and Secondary Schools
- 713940 Fitness Centers

Appendix 7 provides a list of each of these types of businesses that are in Kent County.

Table 2. Number of Select Types of Businesses within the Kent County

	Number of Businesses
Medical Offices (except Mental Health Specialist)*	428
Federally Qualified Health Centers †	23
Farmer's Markets	21
Grocery Stores	154
Churches	760
Elementary and Secondary Schools	498
YMCA	8
Fitness Centers	101
Senior Centers	21

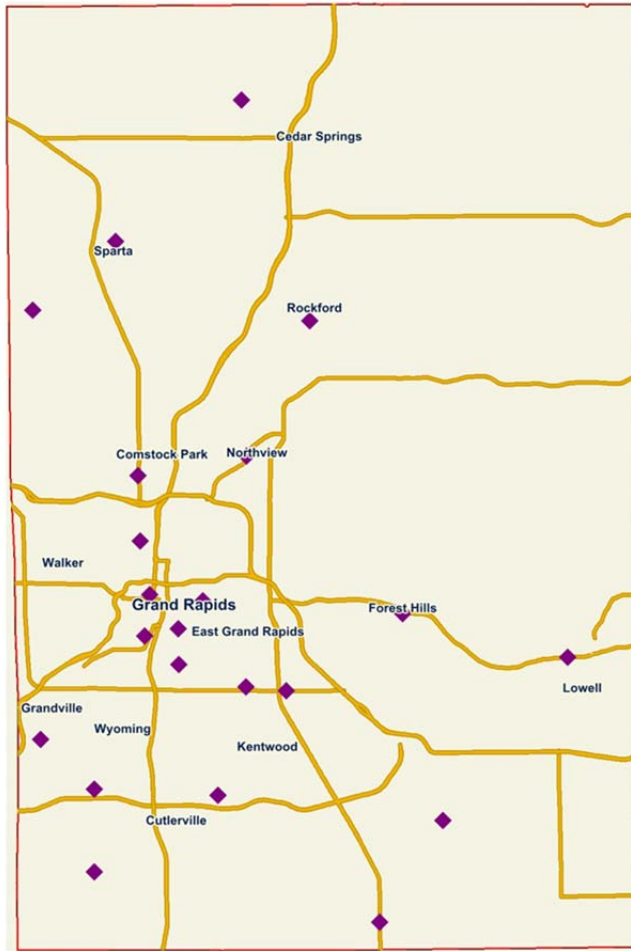
* This includes dermatologists, cardiologist, and other specialty offices in addition to primary care offices. Due to changes in coding, it is not easy to separate the type of medical office based on the NAICS codes. Also medical offices are listed multiple times because each provider can register themselves as a business. Attempts were made to de-duplicate the number based on the street address. However, all listings are provided in Appendix 7.

† Health Resource and Service Administration Data Warehouse
http://datawarehouse.hrsa.gov/Download_HCC_LookALikes.aspx. Accessed March 8, 2013

Farmer's Markets

Map 13 shows the locations of farmer's markets throughout Kent County.

Map 13 Farmer's Markets



◆ Farmer's Markets

— Highway

Large Employers

Table 3 below provides a list of business that have 500 or more employees within Kent County. Businesses with multiple locations may have registered the number of employees for each location OR the number for all locations. (e.g., McDonald's might say it has 10,000 employees because all locations combined have 10,000). **Appendix 8** provides a list of all businesses, large employers, and business with multiple locations. The business lists may contain the same business multiple times for several reasons: 1) they have multiple locations, 2) different spellings of the same business were registered with the same address, 3) the business is registered under more than one NASIC code, and 4) it was registered with the same name more than once or with a different employee size.

Table 3. Large Employers within Kent County

Company Name	Address	City/State	Zip Code
MILITARY AFFAIRS	3000 MONROE AVE NE	Grand Rapids, MI	49505
GRANDS RAPIDS VETERANS HOME	3000 MONROE AVE NE	Grand Rapids, MI	49505
AUTODIE LLC	44 COLDBROOK ST NW	Grand Rapids, MI	49503
AMERICAN SEATING INC	401 AMERICAN SEATING CTR NW	Grand Rapids, MI	49504
AMWAY GRAND PLAZA HOTEL	187 MONROE AVE NW	Grand Rapids, MI	49503
HELEN DE VOS CHILDREN'S HOSP	100 MICHIGAN ST NE	Grand Rapids, MI	49503
GRAND RAPIDS COMMUNITY COLLEGE	143 BOSTWICK AVE NE	Grand Rapids, MI	49503
ST MARY'S HEALTH CARE	200 JEFFERSON AVE SE	Grand Rapids, MI	49503
MARY FREE BED HOSPITAL	235 WEALTHY ST SE # 100	Grand Rapids, MI	49503
MARY FREE BED REHAB HOSPITAL	235 WEALTHY ST SE	Grand Rapids, MI	49503
KNAPE & VOGT MFG CO	2700 OAK INDUSTRIAL DR NE	Grand Rapids, MI	49505
DEMATIC CORP	507 PLYMOUTH AVE NE	Grand Rapids, MI	49505
CALVIN COLLEGE	3201 BURTON ST SE	Grand Rapids, MI	49546
SEARS	3099 28TH ST SE	Grand Rapids, MI	49512
MARSHALL FIELD'S	3195 28TH ST SE	Grand Rapids, MI	49512
MEIJER	1540 28TH ST SE	Grand Rapids, MI	49508
STEELCASE INC	901 44TH ST SE	Grand Rapids, MI	49508
HUSH PUPPIES RETAIL INC	9341 COURTLAND DR NE	Rockford, MI	49351
WOLVERINE PROCUREMENT INC	9341 COURTLAND DR NE	Rockford, MI	49351
WOLVERINE WORLD WIDE INC	9341 COURTLAND DR NE	Rockford, MI	49351
HY-TEST INC	9341 COURTLAND DR NE	Rockford, MI	49351
BEHR INDUSTRIES	1020 7 MILE RD NW	Comstock Park, MI	49321
MEIJER INC	2929 WALKER AVE NW	Grand Rapids, MI	49544
CHALLENGE MANUFACTURING CO	3079 3 MILE RD NW	Grand Rapids, MI	49534
BISSELL INC	2345 WALKER AVE NW	Grand Rapids, MI	49544
HEARTLAND DISTRIBUTORS	4001 3 MILE RD NW	Grand Rapids, MI	49534
PRIORITY HEALTH	1231 E BELTLINE AVE NE	Grand Rapids, MI	49525
HEARTLAND HOME CARE & HOSPICE	3230 EAGLE PARK DR NE # 200	Grand Rapids, MI	49525

PYXIS INNOVATIONS INC	7575 FULTON ST E	Ada, MI	49301
AMWAY PRODUCTS DISTRIBUTOR	7575 FULTON ST E	Ada, MI	49355
ALTICOR INC	7575 FULTON ST E	Ada, MI	49355
AMWAY GLOBAL	5101 SPAULDING PLZ SE	Ada, MI	49355
ACCESS BUSINESS GROUP LLC	7575 FULTON ST E	Ada, MI	49355
GE AVIATION	3290 PATTERSON AVE SE	Grand Rapids, MI	49512
CASCADE ENGINEERING INC	3400 INNOVATION CT SE	Grand Rapids, MI	49512
HART & COOLEY INC	5030 CORPORATE EXCHANGE BL SE	Grand Rapids, MI	49512
SPECTRUM HEALTH	1900 WEALTHY ST SE # 250	Grand Rapids, MI	49506
BLOGETT HOSPITAL	1840 WEALTHY ST SE	Grand Rapids, MI	49506
BORISCH MANUFACTURING CORP	4511 EAST PARIS AVE SE	Grand Rapids, MI	49512
DELPHI CORP	2100 BURLINGAME AVE SW	Wyoming, MI	49509
COUNTRY FRESH LLC	355 MART ST SW	Grand Rapids, MI	49548
HOPE NETWORK WEST MICHIGAN	795 36TH ST SE	Grand Rapids, MI	49548
GRAND VALLEY ARMORY	1200 44TH ST SW	Wyoming, MI	49509
GORDON FOOD SVC	1300 GEZON PKWY SW	Wyoming, MI	49509
SPARTAN STORES INC	850 76TH ST SW	Byron Center, MI	49315
PINE REST CHRISTIAN MENTAL	300 68TH ST SE	Grand Rapids, MI	49548
STEELCASE DEVELOPMENT CTR	6100 E PARIS AVE SE	Caledonia, MI	49316
FOREMOST PROPERTY/CASUALTY INS	5600 BEECHTREE LN SE	Caledonia, MI	49316
FOREMOST INSURANCE CO	5600 BEECHTREE LN SE	Caledonia, MI	49316

Appendix 1: Project and Technical Notes:

Behavioral Risk Factor Surveillance System (BRFSS) is a primary source of diabetes data at the county and state level for local health departments and other agencies. Through a grant award, from NACDD the Directors of Health Promotion and Education (DHPE) are able to offer data and analysis at smaller units of geography through a database maintained by the Nielsen Company.

Technical Background

Nielsen is a global marketing and advertising research company that offers software to businesses and government agencies through two software programs: ConsumerPoint and PrimeLocation. Nielsen is one of the world's leading suppliers of marketing information, media information and TV ratings, online intelligence, and mobile measurement.

Nielsen PRIZM Segments

Community populations are categorized into 66 segments based on socioeconomic rank, life stage, and urbanization. The 66 segments each have unique demographic descriptions based on income, age class, age range, presence of kids in the household, home ownership, employment, education, and race and ethnicity. Each segment also has specific lifestyle preferences that are typical for the segment such as media preferences, shopping preferences, and typical behaviors. More information may be accessed at the following site:

<http://www.claritas.com/MyBestSegments/Default.jsp?ID=30&SubID=&pageName=Segment%2BLook-up>

Appendix 2: Enhanced Demographics

Due to the length of this appendix it is in a separate accompanying document. This appendix contains detailed demographics and socioeconomic characteristics beyond those provided in **Table 1**.

Appendix 3: Target Concentration Reports

There are approximately 232,648 households in Kent County. Of these approximately 96,727 households (or 42%), have one or more members who are at high risk of developing prediabetes.

Due to the length of this appendix, it is in a separate accompanying document. The information in this appendix was used create Maps 2.1 and 2.2.

Appendix 4: Media Profiles

Media profiles were conducted for the target area of interest using PRIZM household segments that have characteristics associated with a higher risk of developing prediabetes and diabetes as the target population. For this report, the geography of interest is Kent County.

Due to the length of this appendix, it is in a separate accompanying document. The information in this appendix was used create the marketing descriptions provided in the Marketing section of this report.

Appendix 5: Select Demographics by Zip Code

Due to the length of this appendix, it is in a separate accompanying document. This information in this appendix was used in the creation of Maps 3.1 through 8.3.

Appendix 6.1: Behaviors Associated with Higher Risk of Diabetes by Zip Code

Due to the length of this appendix, it is in a separate accompanying document. The information in this appendix was used create Maps 9.1 through 12.2.

Appendix 6.2: Behaviors Associated with Higher Risk of Diabetes by Census Tract

Due to the length of this appendix, it is in a separate accompanying document. The information in this appendix was used create Maps 9 through 12

Appendix 7: List of Select Businesses

Due to the length of this appendix it is in a separate accompanying document. The information in this appendix was used to estimate the number of business in **Table 2**.

Appendix 8: Large and Multi Site Businesses

Due to the length of this appendix, it is in a separate accompanying document. The information in this appendix was used to develop the large employer list in **Table 3**.