Diabetes Risk Factors Community Profile Oakland County

September 2013

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Oakland County

The National Association of Chronic Disease Directors (NACDD) has 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 314,500[1] prediabetic adults 21 years old and older live in Oakland County. 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 has 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

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[1]Estimate 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.

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

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.

	Oakland County	Michigan	United States
Total Population	1,218,936	9,862,679	314,861,807
Age			
< 21 years old	26.29%	27.69%	28.08%
21-44	29.45%	29.70%	31.59%
45-64	29.88%	27.87%	26.40%
65-84	12.33%	12.69%	12.06%
85+	2.06%	2.05%	1.87%
Race			
White	75.95%	78.56%	71.49%
Black or African American	14.49%	14.21%	12.71%
American Indian and Alaska Native	0.28%	0.64%	0.96%
Asian	5.97%	2.56%	5.04%
Native Hawaiian and Other Pacific Islander	0.02%	0.03%	0.18%
Some Other Race	1.02%	1.57%	6.56%
Two or More Races	2.27%	2.43%	3.06%
Ethnicity			
Hispanic	3.74%	4.69%	17.33%
Not Hispanic	96.26%	95.31%	82.67%
Household Income			
Average	$80,011	$58,514	$69,637
Median	$58,376	$43,691	$49,297
Population 25 and older with less than a four-year college degree	58.40%	74.90%	71.90%

Nearly 30% individuals in Oakland 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, individuals living in Oakland County have a higher median average household income and lower percent of adults with less than a four-year college degree. Individuals living in households earning less than $50,000 and who have less than a four-year degree have a higher risk of developing diabetes.

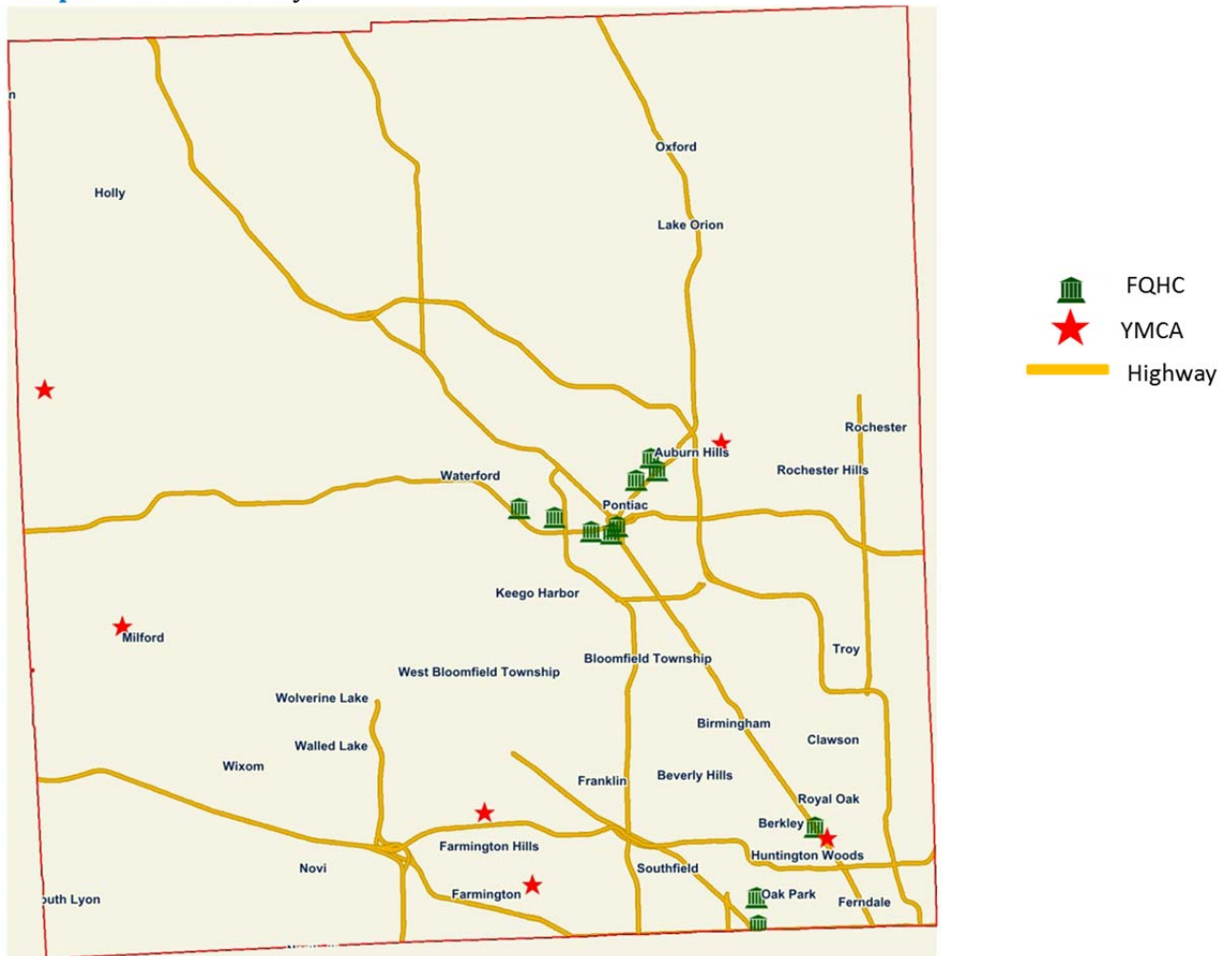[3] Michigan Behavioral Risk Factor Surveillance System, 1995-2010. Available at http://apps.nccd.cdc.gov/BRFSS.

Map 1 shows Oakland County.

There are several Federally Qualified Health Centers (FQHC) and YMCAs located in Oakland County.

Map 1 Oakland County

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 Oakland 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 Oakland 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 Oakland County and the number of households that are at high risk of developing diabetes.

Map 2.1 Concentration of Target Population by Zip Code
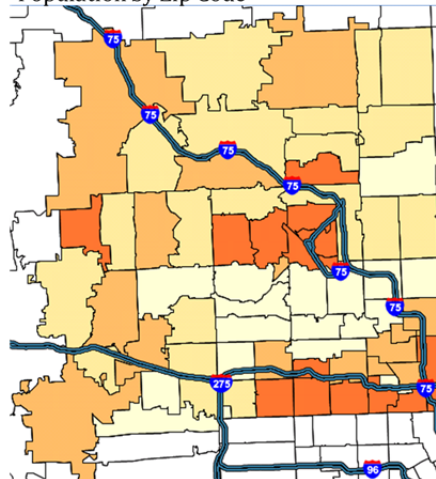
HH/ 100 HH*	Index †
45.01	232
20.81	107
10.77	55
1.41	7

*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
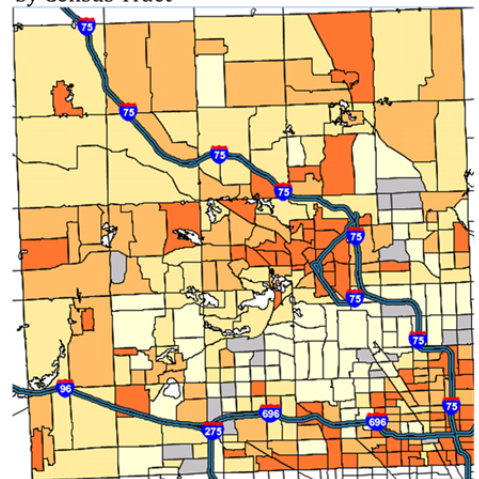
HH/ 100 HH*	Index †
55.11	281
18.87	96
4.17	21
0.22	1
Zero/Null HHS	

*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

The zip codes within Oakland County where 50% or more households have one or more adults that fit this profile are 48030, 48071, 48220, and 48342. Taking a closer look at the census tracts in these areas may help narrow the focus highest risk areas further.

Marketing[4]

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 Oakland County:
- Over 60 adults per 100 households in the target PRIZM segments read the Sunday newspaper, women's magazines, and general editorials.
- Approximately the 79 adults per 100 households report frequently reading the newspaper; however, 88 adults per 100 households report reading the newspaper infrequently.
- Approximately 72 adults per 100 households report reading the Sunday newspaper and 57 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 Oakland County:
- Approximately 91 adults per 100 households listen to the radio less than 20 hours a week for men and less than 15 for women; however, 77 adults per 100 households listen to the radio more than 20 hours a week for men and more than 15 hours for women.
- 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.

Adults in the target segments are 14% more likely to report listening to urban contemporary radio stations compared to all segments that live in Oakland County. 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.

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[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 both on 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 Oakland County:
- Over 103 adults per 100 households watch 23.5 hours or more of television per week for men and 24.5 hours or more per week for women.
- 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 time periods is also around 80 adults per 100 households.
- Approximately 77% 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 Oakland County:
- Over 112 adults per 100 households use the internet 0 to 17 times per month.
- Approximately 62% own their own computer.
- Approximately 56 adults per 100 households use the internet frequently – 28 or more times per month.
- Just over half of households (54%) have access to the internet at home.
- Approximately 25 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 55 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 77 users per 100 households in the target segments grocery shop at a Walmart Supercenter or similar store (e.g. Meijer or Target Supper 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, Target, and Kmart appear to be the stores that the target segments shop at most often. Meijer was not included in the survey but since it has similar attributes as Walmart and Target, it would have likely ranked high among the stores most frequented. The target segment is 7% more likely to shop at Kmart compared to all segments in Oakland County.

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** highlight 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. Appendixes 6.1-6.2 contain** 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 30.8% and 40.4%.

The zip codes in Oakland County the highest percent of families below poverty.

At least 20% of the families in the following zip codes are below poverty: 48203, 48342, 48340, 48219, 48341, and 48235.

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. Each dot represents 100 families.

Map 3.1 Percent of Families Living Below Poverty by Zip Code
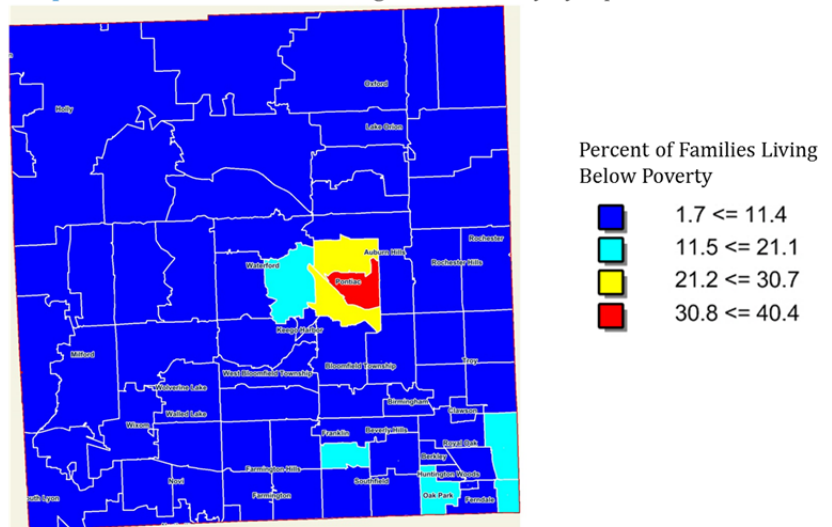
Percent of Families Living Below Poverty

- 1.7 <= 11.4
- 11.5 <= 21.1
- 21.2 <= 30.7
- 30.8 <= 40.4

Map 3.2 Percent of Families Living Below Poverty by Census Tract

Percent of Families Living Below Poverty

- -- <= 10.5
- 10.6 <= 21
- 21.1 <= 31.4
- 31.5 <= 41.9

Map 3.3 Number of Families Living Below Poverty
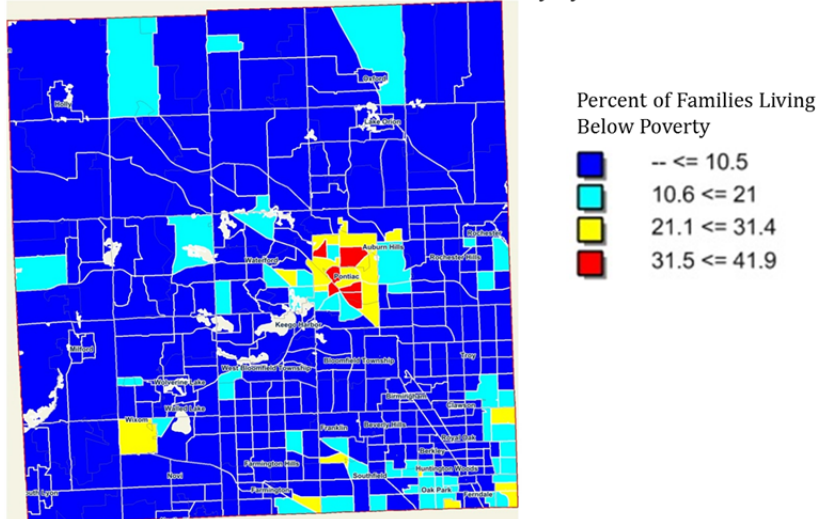
- 1 dot = 100 Families Living Below Poverty
- Zip Code Boarder
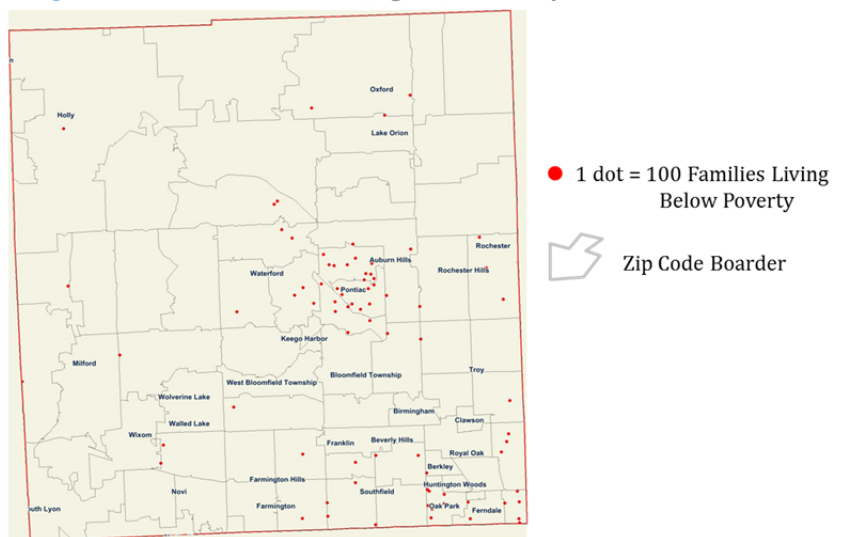
Map 4.1 shows the average annual household income and percent of adults 25 and older who have less than a four-year college degree by zip code. The areas with the darkest bluish-green color have the lowest average household income, and the areas with the darkest lines have the highest percent of adults without a four-year college degree.

The following zip codes had average household income less than $50,000 per year: 48203, 48342, 48030, 48340, 48235, 48219, 48341, 48221 and 48071.

At least 80% of adults 25 years old and older have less than a four-year college degree in the following zip codes: 48342, 48030, 48340, 48203, 48219, 48235 and 48240.

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

■	$31,940 <= $64,799
■	$64,800 <= $97,657
□	$97,658 <= $130,516
□	$130,517 <= $163,374

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

· · · ·	28.2 <= 44.1
☰	44.2 <= 60
▨	60.1 <= 75.9
▦	76 <= 91.8

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

■	$0 <= $50,352
■	$50,353 <= $100,704
□	$100,705 <= $151,055
□	$151,056 <= $201,407

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

· · · ·	-- <= 24.4
☰	24.5 <= 48.9
▨	49 <= 73.3
▦	73.4 <= 97.7
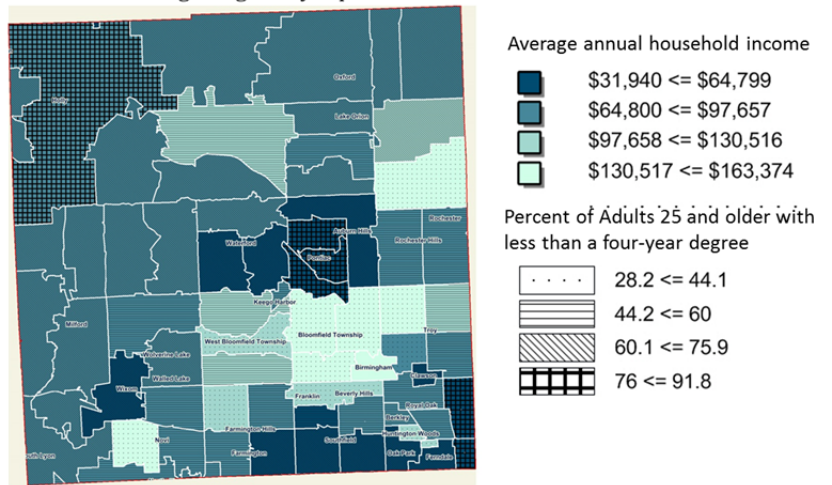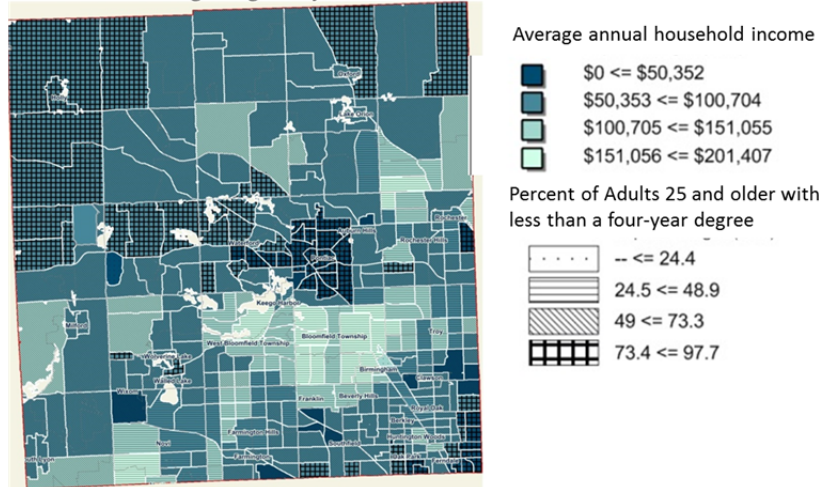
Map 5.1 shows the percent of the population that is Hispanic by zip code. As the blue color darkens, the percent of the population that is Hispanic increases.

At least 5% of the population is Hispanic in the following zip codes: 48340, 48342, 48328, 48341, 48326, 48320, 48359 and 48346.

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

- 0.9 <= 7.1
- 7.2 <= 13.2
- 13.3 <= 19.4
- 19.5 <= 25.5

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

Percent of the Population that is Hispanic

- -- <= 7.9
- 8 <= 15.8
- 15.9 <= 23.6
- 23.7 <= 31.5

Map 5.3 Number of Hispanics

- 1 dot = 50 Hispanics
- Zip Code Boarder
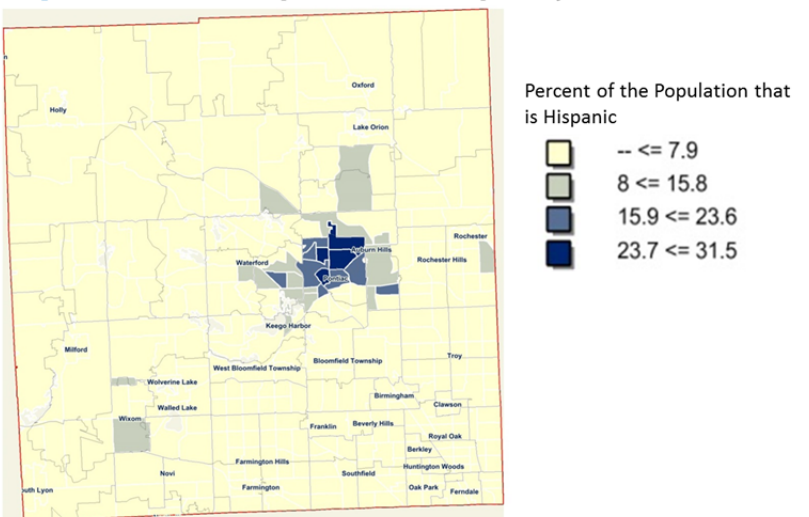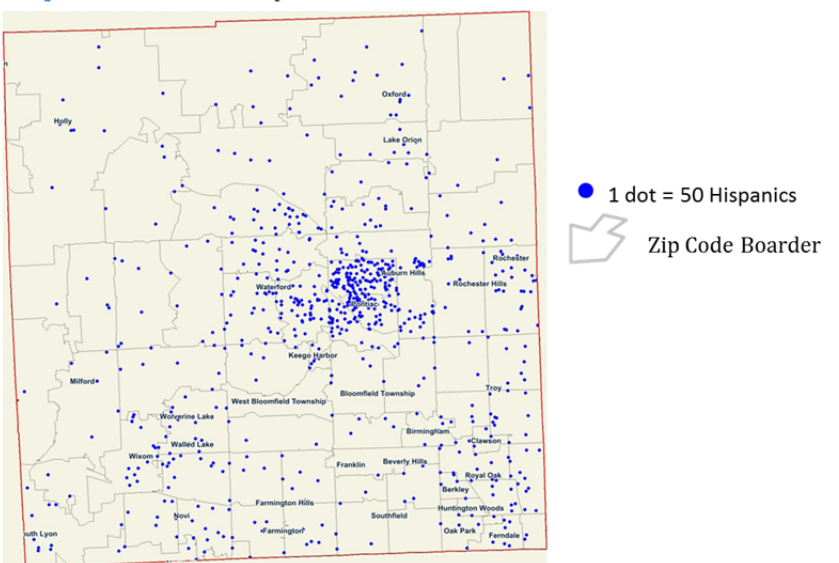
Map 6.1 shows the percent of the population that is African American by zip code. As the red color darkens, the percent of the population that is African American increases.
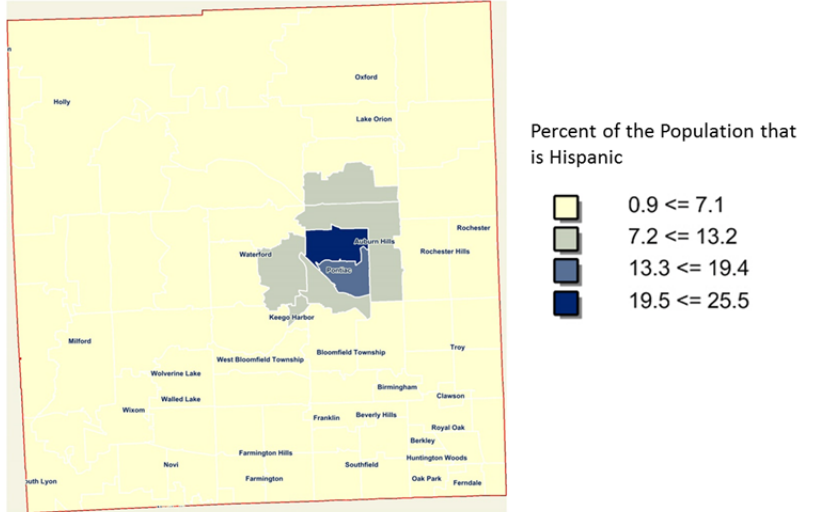
At least 70 % of the population is African American in the following zip codes: 48235, 48221, 48203, 48219, 48034, 48075 and 48033.

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

☐	0.3 <= 19.8
☐	19.9 <= 39.3
◼	39.4 <= 58.7
◼	58.8 <= 78.2

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

Percent of the Population that is African America

☐	-- <= 23.8
☐	23.9 <= 47.6
◼	47.7 <= 71.4
◼	71.5 <= 95.2

● 1 dot = 50 African Americans

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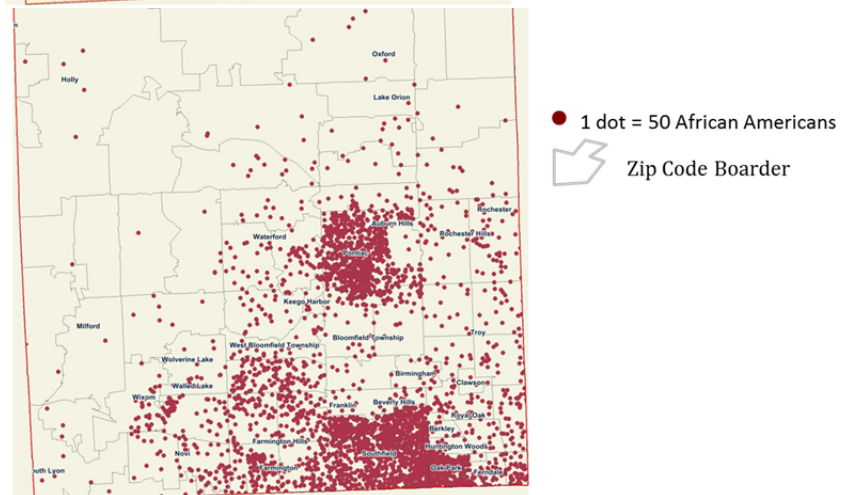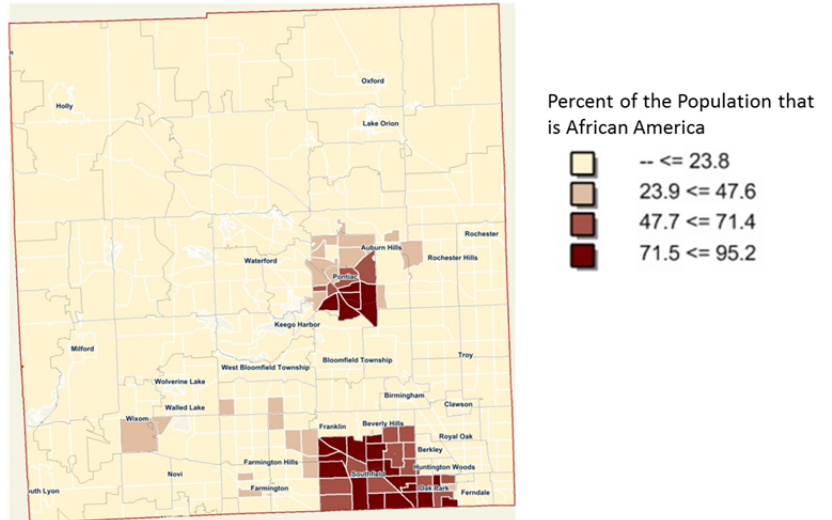
Map 7.1 shows the percent of the population 45 through 64 years old by zip code. As the orange color darkens, the percent of the population that is between 45 and 64 years old increases.

At least 34% of the population is 45 to 64 years in the following zip codes 48370, 48098, 48462, 48363, 48367, 48374, 48301, 48306, 48380, 48324, 48356 and 48348.

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

- 22.2 <= 26.1
- 26.2 <= 30
- 30.1 <= 33.9
- 34 <= 37.8

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

- -- <= 10.5
- 10.6 <= 21
- 21.1 <= 31.4
- 31.5 <= 41.9
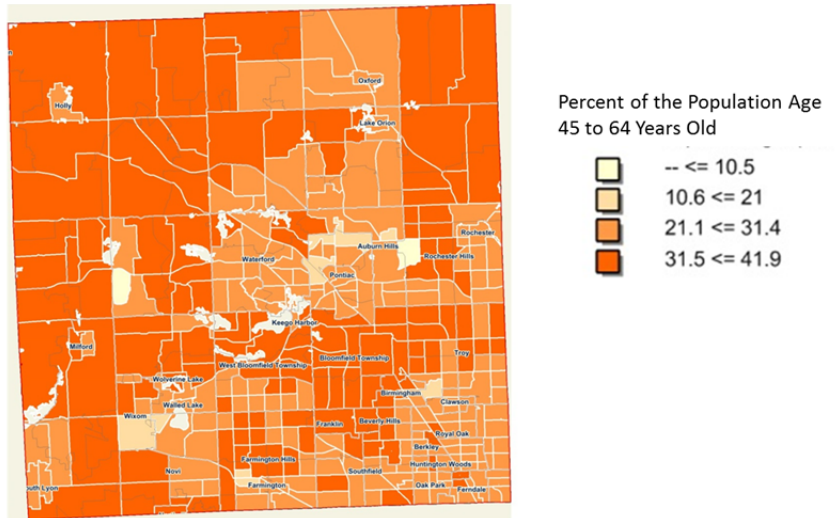
Map 7.3 Number of Adults Age 45 to 64 Years Old

- 1 dot = 100 Adults 45 to 64 Years Old
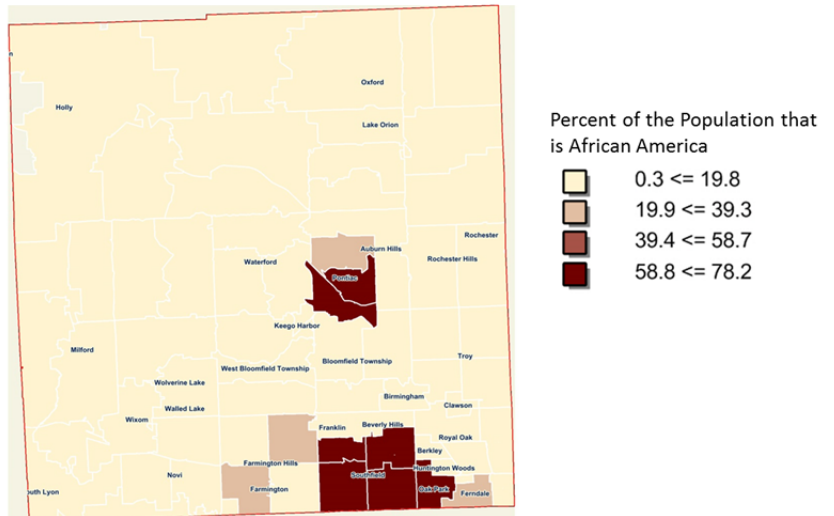- Zip Code Boarder
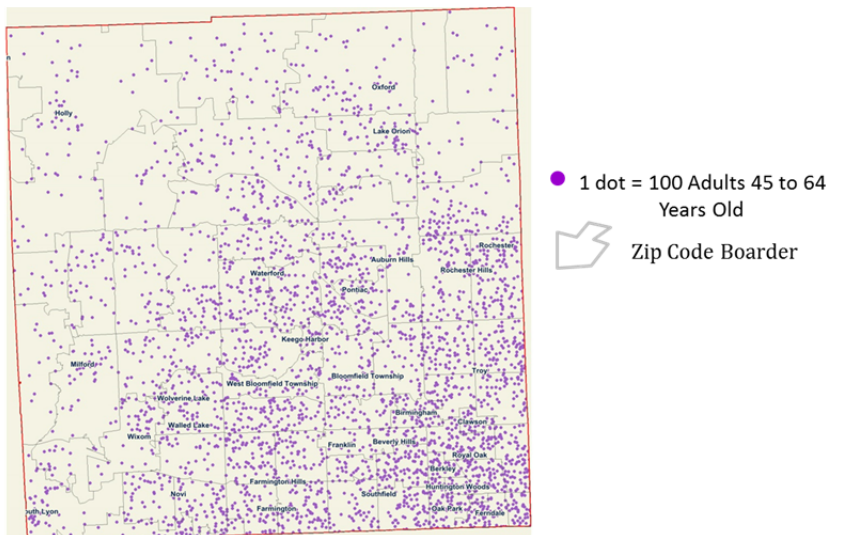
Map 8.1 shows the percent of the population 65 years old and older by zip code. As the orange color darkens, the percent of the population that is 65 years old and older increases.

At least 15% of the population is 65 years old and older in the following: 48304, 48302, 48301, 48334, 48322, 48033, 48025, 48323, 48034, 48221, 48075, 48235, 48309, 48331, 48167, 48377, 48098, 48370 and 48076.
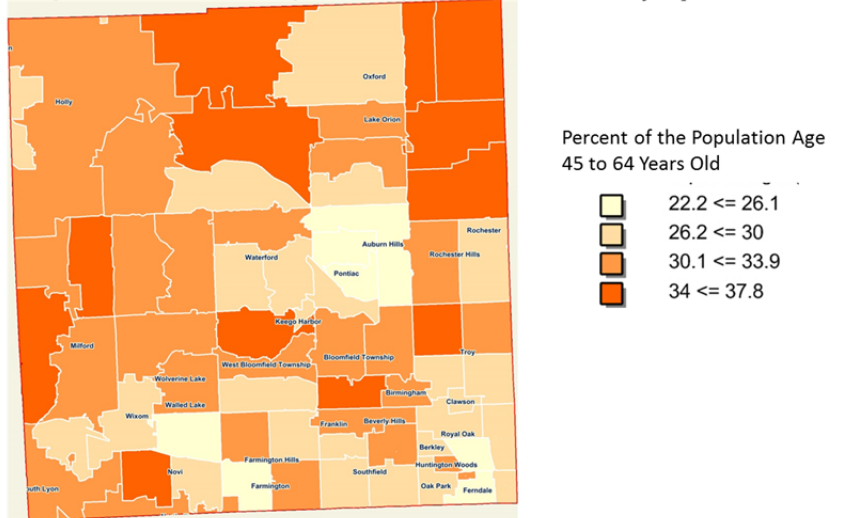
Map 8.2 shows the percent of the population 65 years old and older by census tract.

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
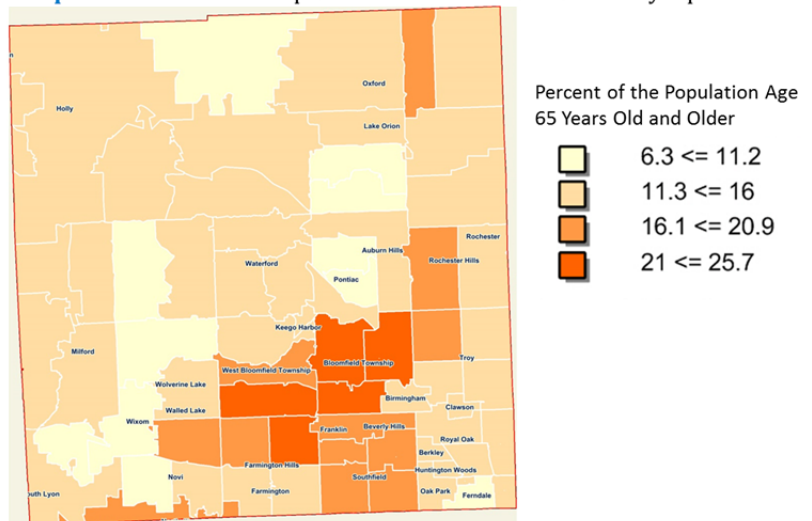
Percent of the Population Age 65 Years Old and Older

- 6.3 <= 11.2
- 11.3 <= 16
- 16.1 <= 20.9
- 21 <= 25.7

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

- -- <= 11.1
- 11.2 <= 22.2
- 22.3 <= 33.2
- 33.3 <= 44.3

Map 8.3 Number of Adults 65 Years Old and Older
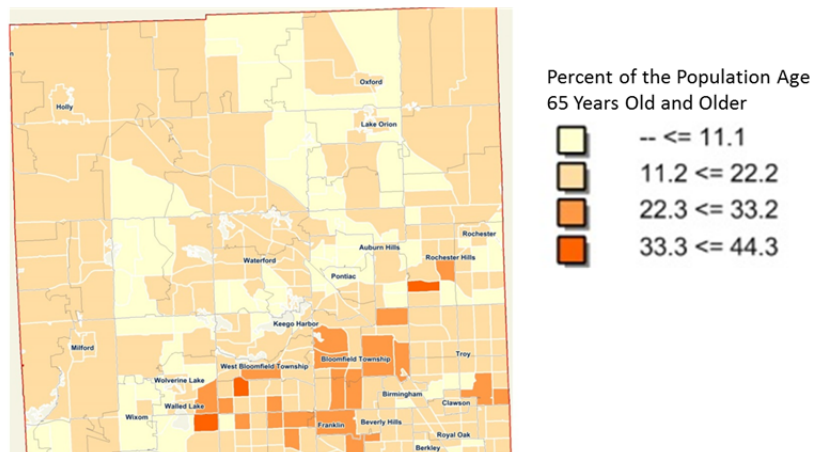
- 1 dot = 100 Adults 45 to 64 Years Old
- Zip Code Boarder
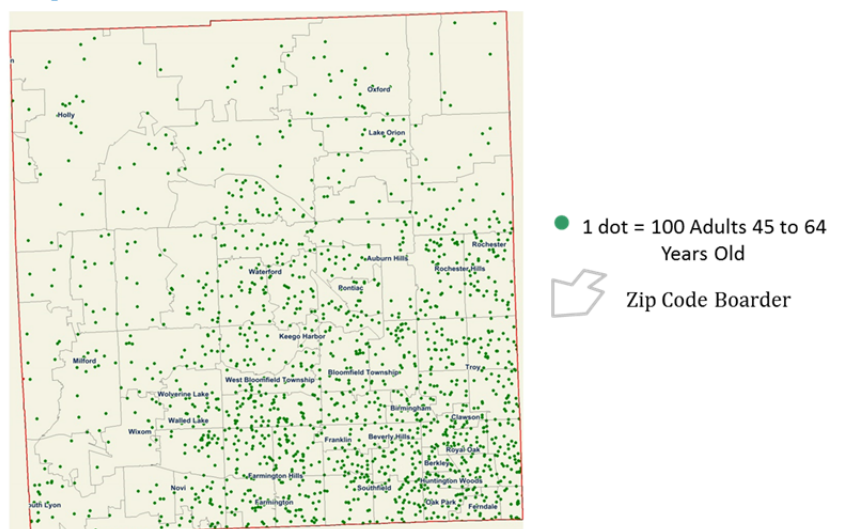
Behaviors Associated with Higher Risk of Diabetes

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 Oakland 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

Map 9.1 Likelihood Adults Report Having Health Insurance by Zip Code Compared to the Average User in Oakland County
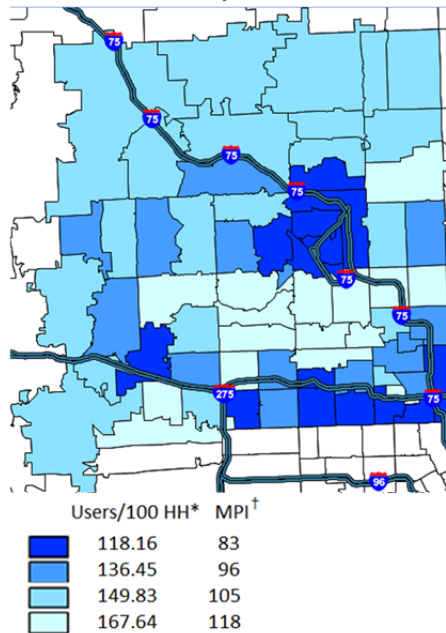
Users/100 HH*	MPI†
118.16	83
136.45	96
149.83	105
167.64	118

*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 Oakland County
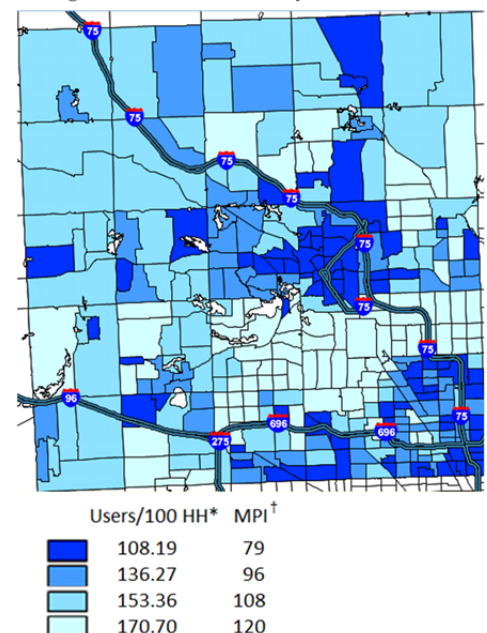
Users/100 HH*	MPI†
108.19	79
136.27	96
153.36	108
170.70	120

*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.

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 compared to the average household in the geography of interest.

The behavior of interest in **Maps 9.1** and **9.2** is having health insurance and the geography of interest is Oakland County. The zip codes with the darkest blue color are 17% *less likely* to have insurance as compared to the average user in Oakland County and the zip codes with the lightest blue shading are 18% *more likely* to have insurance as compared to the average user in Oakland County. The census tract with the darkest blue color are 21% *less likely* to have insurance as compared to the average user in Oakland County, and the census tract with the lightest blue shading are 20% *more likely* to have insurance as compared to the average user in Oakland 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 Oakland County. The darker the green, the *less likely* the households are to consume as much fresh fruits and vegetables as the average household in Oakland 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

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 Oakland County
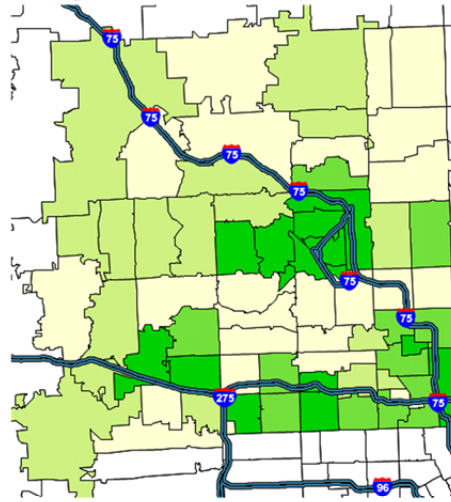
Pounds/Month*	MDI†
28.37	93
30.37	101
31.42	109
33.45	118

- 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 Oakland County

Pounds/Month*	MDI†
27.41	88
30.34	103
31.99	111
33.99	120

- 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.

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.

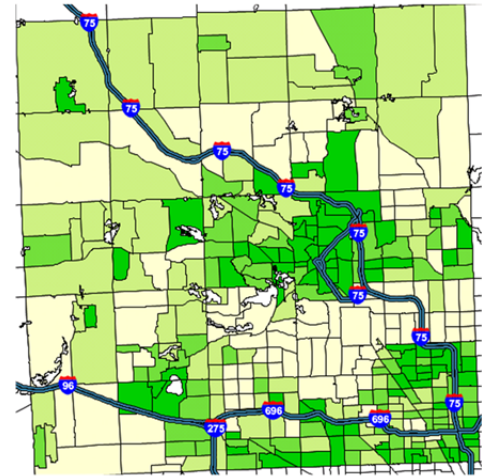The product of interest in **Maps 10.1 and 10.2** is pounds of fresh fruits and vegetables consumed per month per household and the geography of interest is Oakland County. The zip codes of darkest green are 7% *less likely* to consume fresh fruits and vegetables as compared to the average household in Oakland County, and the zip codes with the lightest yellow-green shading are 18% *more likely* to consume fresh fruits and vegetables as compared to the average household in Oakland County. The census tracts of darkest green are 12% *less likely* to consume fresh fruits and vegetables as compared to the average household in Oakland County, and the census tracts with the lightest yellow-green shading are 20% *more likely* to consume fresh fruits and vegetables as compared to the average household in Oakland County.

Maps 11.1 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 Oakland 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 compared to the average household in the geography of interest.

Users/ 100 HH*	MPI†
49.32	78
59.64	94
67.79	107
76.98	121

*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 11.2 Likelihood Adults Exercise 2 or More Times per Week at Home by Census Tract Compared to the Average Adult in Oakland County
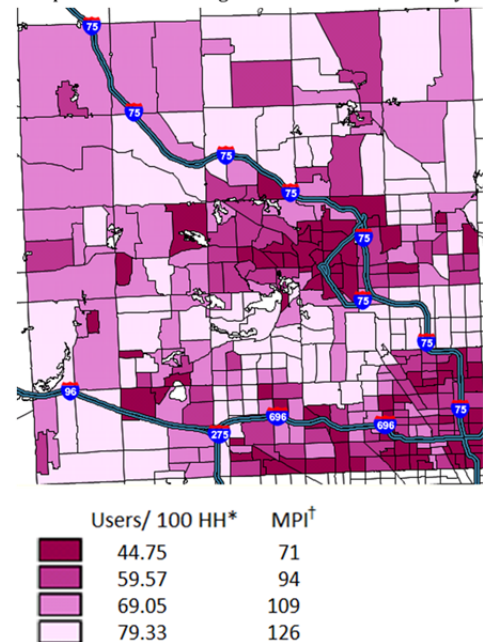
Users/ 100 HH*	MPI†
44.75	71
59.57	94
69.05	109
79.33	126

*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 11.1** and **11.2** is exercising two more times per week at home and the geography of interest is Oakland County. The darkest purple zip codes are 22% *less likely* to exercise two or more times per week at home as compared to the average adult in Oakland County and the zip codes with the lightest purple shading are 21% *more likely* to exercise two or more times per week at home as compared to the average adult in Oakland County. The darkest purple census tract are 29% *less likely* to exercise two or more times per week at home as compared to the average census tract in Oakland County and the areas with the lightest purple shading are 26% *more likely* to exercise two or more times per week at home as compared to the average adult in Oakland 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 Oakland 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.

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

Users/ 100 HH*	MPI†
43.86	121
37.92	104
34.15	94
29.19	80

*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.
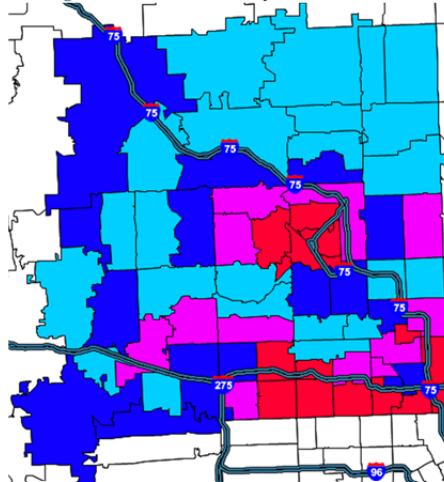
Map 12.2 Likelihood Adults Watch More Than 45 Hours of TV per Week by Census Tract Compared to the Average User in Oakland County
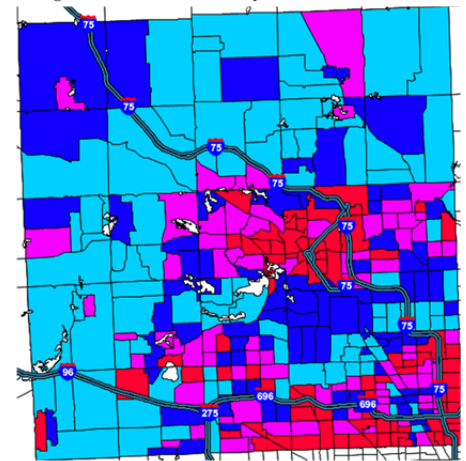
Users/ 100 HH*	MPI†
46.06	126
38.11	105
33.60	92
27.92	77

*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 12.1** and **12.2** is watching 45 or more hours of television per week and the geography of interest is Oakland County. The red zip codes are 21% *more likely* to watch 45 or more hours of television per week as compared to the average user household in Oakland County, and the zip codes in light blue are 20% *less likely* to watch 45 or more hours of television per week as compared to the average household in Oakland County. The red census tracts are 26% *more likely* to watch 45 or more hours of television per week as compared to the average user household in Oakland County, and the census tracts in light blue are 23% *less likely* to watch 45 or more hours of television per week as compared to the average household in Oakland County.

Understanding the Built Environment

Table 2 below provides a list of the number of certain types of businesses located in Oakland 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)
- 445110   Grocery stores
- 813110   Churches
- 611110   Elementary and Secondary Schools
- 713940   Fitness Centers
- 624120   Senior Centers

Farmer's Markets were identified through USDA National Farmers Market Directory. The directory can be found at http://search.ams.usda.gov/farmersmarkets. YMCA's were identified through a search of the Fitness Center list as well as a Google search.

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

Table 2. **Number of Select Types of Businesses within the Oakland County**

	Number of Businesses
Medical Offices (except Mental Health Specialist)*	2,267
Federally Qualified Health Centers ‡	11
Farmer's Markets	19
Grocery Stores	229
Churches	941
Elementary and Secondary Schools	745
YMCA	10
Fitness Centers	254
Senior Centers	61

* 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.

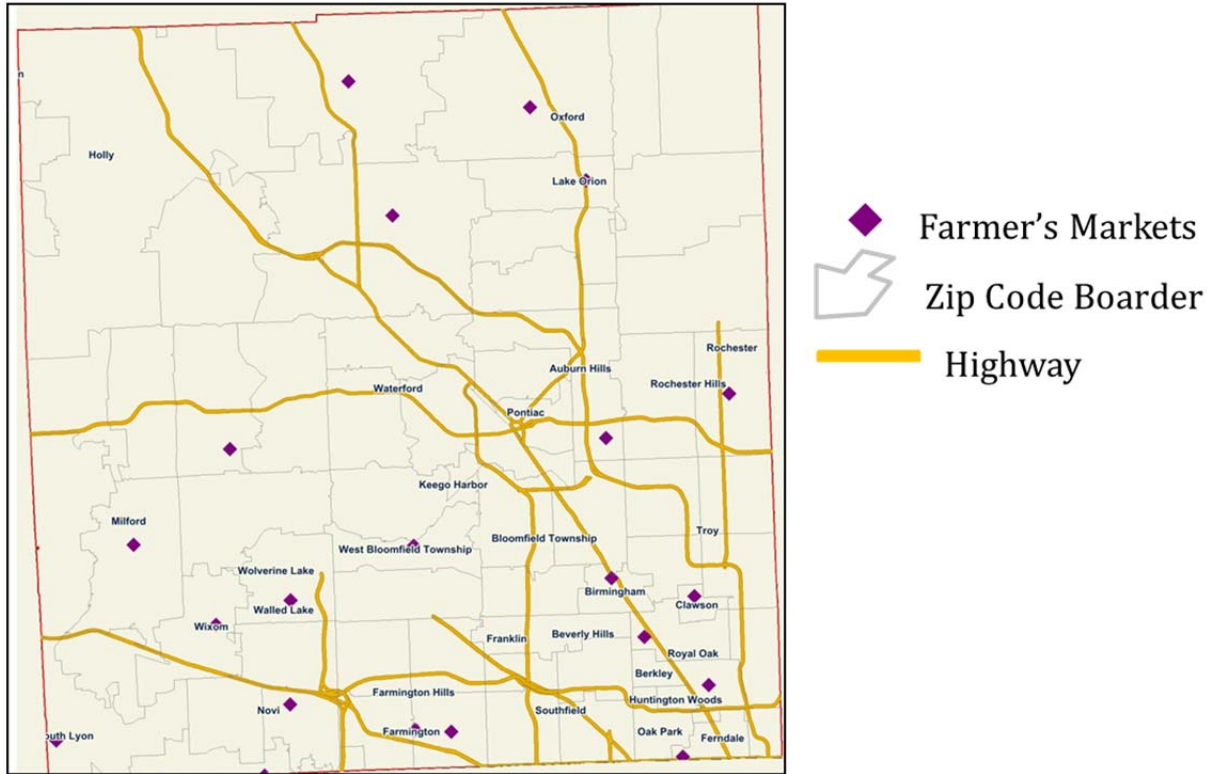‡ Health Resource and Service Administration Data Warehouse
http://datawarehouse.hrsa.gov/Download_HCC_LookALikes.aspx. Accessed March 8, 2013

Farmer's Markets

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

Map 13 Farmer's Markets

Large Employers

Table 3 below provides a list of business that have 500 or more employees within Oakland 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 register with the same name more than once or with a different employee size.

Table 3. Large Employers within Oakland County

Company Name	Address	City/State	Zip Code
GENERAL MOTORS ORION ASSEMBLY	4555 GIDDINGS RD	Lake Orion, MI	48359
GENERAL MOTORS PROVING GROUNDS	3300 GENERAL MOTORS RD	Milford, MI	48380
MEIJER PHARMACY	49900 GRAND RIVER AVE	Wixom, MI	48393
MAYFLOWER VEHICLE SYSTEMS INC	28800 BECK RD	Wixom, MI	48393
MAC VALVES INC	30569 BECK RD	Wixom, MI	48393
WILLIAMS INTERNATIONAL	2280 E WEST MAPLE RD	Walled Lake, MI	48390
HO MEDICS INC	3000 N PONTIAC TRL	Walled Lake, MI	48390
HURON VALLEY-SINAI HOSPITAL	1 WILLIAM CARLS DR	Commerce Township, MI	48382
TWIN LAKES PARTY SHOPPE	2701 BENSTEIN RD	Walled Lake, MI	48390
MACY'S	27550 NOVI RD	Novi, MI	48377
INTIER AUTOMOTIVE	39600 LEWIS DR	Novi, MI	48377
MAGNA SEATING SYSTEMS	39600 LEWIS DR	Novi, MI	48377
CVS CAREMARK DISTRIBUTION CTR	43000 E GLEN MAR ST	Novi, MI	48375
TATA TECHNOLOGIES INC	41050 W 11 MILE RD	Novi, MI	48375
RYDER	39550 W 13 MILE RD # 101	Novi, MI	48377
INSTRUCTIONAL TECHNOLOGY CTR	25345 TAFT RD	Novi, MI	48374
AUBURN HILLS WATER BILLING	1827 N SQUIRREL RD	Auburn Hills, MI	48326
CONTINENTAL AUTOMOTIVE SYSTEMS	2400 EXECUTIVE HILLS DR	Auburn Hills, MI	48326
COMERICA BANK	3501 HAMLIN RD	Auburn Hills, MI	48326
OAKLAND UNIVERSITY	2000 N SQUIRREL RD	Auburn Hills, MI	48326
GKN DRIVELINE NORTH AMERICA	3300 UNIVERSITY DR	Auburn Hills, MI	48326
ABB ROBOTICS INC	1250 BROWN RD	Auburn Hills, MI	48326
QUEST DIAGNOSTICS	4444 GIDDINGS RD	Auburn Hills, MI	48326
CONTINENTAL CORP	1 CONTINENTAL DR	Auburn Hills, MI	48326
PALACE SPORTS & ENTERTAINMENT	6 CHAMPIONSHIP DR	Auburn Hills, MI	48326
UNIQUE FABRICATING INC	800 STANDARD PKWY	Auburn Hills, MI	48326
AUTOLIV NORTH AMERICA	1320 PACIFIC DR	Auburn Hills, MI	48326
OAKLAND COUNTY HEALTH DEPT	1200 N TELEGRAPH RD # 34	Pontiac, MI	48341
OAKLAND COUNTY HUMAN SVC DEPT	1200 N TELEGRAPH RD	Pontiac, MI	48341

Company Name	Address	City/State	Zip Code
OAKLAND COUNTY SHERIFF DEPT	1200 N TELEGRAPH RD # 38E	Pontiac, MI	48341
OAKLAND COUNTY INFO TECH DEPT	1200 N TELEGRAPH RD # 49W	Pontiac, MI	48341
SERVICE PARTS OPERATIONS GEN	1251 JOSLYN AVE	Pontiac, MI	48340
GM POWERTRAIN	895 JOSLYN AVE	Pontiac, MI	48340
MCLAREN OAKLAND HOSPITAL	50 N PERRY ST	Pontiac, MI	48342
PONTIAC CITY PERSONNEL	47450 WOODWARD AVE	Pontiac, MI	48342
DOCTORS' HOSPITAL OF MICHIGAN	461 W HURON ST	Pontiac, MI	48341
US POST OFFICE	735 W HURON ST	Pontiac, MI	48341
ST JOSEPH MERCY OAKLAND	44405 WOODWARD AVE	Pontiac, MI	48341
MEIJER	4200 HIGHLAND RD	Waterford, MI	48328
OAKLAND COUNTY WATER RESOURCES	1 PUBLIC WORKS DR	Waterford, MI	48328
OAKLAND COUNTY ROAD COMMISSION	2420 PONTIAC LAKE RD	Waterford, MI	48328
OAKLAND COUNTY JAIL	1201 N TELEGRAPH RD	Pontiac, MI	48341
PENSKE CORP	2555 S TELEGRAPH RD	Bloomfield Hills, MI	48302
HONIGMAN MILLER SCHWARTZ COHN	39400 WOODWARD AVE # 101	Bloomfield Hills, MI	48304
CRANBROOK KINGSWOOD GIRLS MDDL	39221 WOODWARD AVE	Bloomfield Hills, MI	48304
CREDIT ACCEPTANCE CORP	25505 W 12 MILE RD # 2300	Southfield, MI	48034
CAC REINSURANCE LTD	25505 W 12 MILE RD # 3000	Southfield, MI	48034
INTERNATIONAL AUTOMOTIVE	28333 TELEGRAPH RD	Southfield, MI	48034
DENSO INTERNATIONAL AMERICA	24777 DENSO DR	Southfield, MI	48033
MATHER SEAL CO	26555 NORTHWESTERN HWY	Southfield, MI	48033
FEDERAL-MOGUL CORP	26555 NORTHWESTERN HWY	Southfield, MI	48033
VERIZON WIRELESS	26935 NORTHWESTERN HWY # 100	Southfield, MI	48033
FEDERAL-MOGUL WORLD TRADE INC	26555 NORTHWESTERN HWY	Southfield, MI	48033
SOUTHFIELD POLICE DEPT	26000 EVERGREEN RD	Southfield, MI	48076
ALIX PARTNERS LLP	2000 TOWN CTR # 2400	Southfield, MI	48075
ACCENTURE LIMITED	3000 TOWN CTR # 2400	Southfield, MI	48075
R L POLK & CO	26533 EVERGREEN RD # 900	Southfield, MI	48076
COMAU INC	21000 TELEGRAPH RD	Southfield, MI	48033
IBM	18000 W 9 MILE RD # 2	Southfield, MI	48075
LEAR CORP	21557 TELEGRAPH RD	Southfield, MI	48033
TD AUTO FINANCE LLC	27777 INKSTER RD	Farmington, MI	48334
GALE	27500 DRAKE RD	Farmington, MI	48331
MINACS	34115 W 12 MILE RD	Farmington, MI	48331
QUICKEN LOANS	27555 FARMINGTON RD # 300	Farmington, MI	48334
BOTSFORD HOSPITAL	28050 GRAND RIVER AVE	Farmington, MI	48336
MAHLE INDUSTRIES INC	23030 HAGGERTY RD	Farmington, MI	48335
ACO HARDWARE INC	23333 COMMERCE DR	Farmington, MI	48335
TRW AUTOMOTIVE	24175 RESEARCH DR	Farmington, MI	48335
BOSCH GROUP	38000 HILLS TECH DR	Farmington, MI	48331
NISSAN TECHNICAL CTR N AMERICA	39001 SUNRISE DR	Farmington, MI	48331

Company Name	Address	City/State	Zip Code
HARMAN BECKER AUTOMOTIVE SYSTS	39001 W 12 MILE RD	Farmington, MI	48331
MAGNUM ENGINEERING	27300 HAGGERTY RD # F-15	Farmington, MI	48331
OAK PARK CITY HALL	13600 OAK PARK BLVD	Oak Park, MI	48237
TURF TENDERS COMPLETE GROUNDS	13100 CLOVERDALE ST	Oak Park, MI	48237
BEAUMONT HOME CARE	1410 E 14 MILE RD	Madison Heights, MI	48071
DMC SURGERY HOSPITAL	30671 STEPHENSON HWY	Madison Heights, MI	48071
SCARFONE & GEEN	241 E 11 MILE RD	Madison Heights, MI	48071
ST JOHN OAKLAND HOSPITAL	27351 DEQUINDRE RD	Madison Heights, MI	48071
MEIJER	5150 COOLIDGE HWY	Royal Oak, MI	48073
BEAUMONT HOSPITAL	3601 W 13 MILE RD	Royal Oak, MI	48073
JHP PHARMACEUTICALS MFG	870 PARKDALE RD	Rochester, MI	48307
LETICA CORP	52585 DEQUINDRE RD	Rochester, MI	48307
OAKLAND UNIVERSITY	2200 N SQUIRREL RD	Rochester, MI	48309
MEIJER	3175 S ROCHESTER RD	Rochester, MI	48307
TECHNICAL TRAINING INC	3903 W HAMLIN RD	Rochester, MI	48309
TRICO PRODUCTS CORP	3255 W HAMLIN RD	Rochester, MI	48309
EAGLE OTTAWA LLC	2930 W AUBURN RD	Rochester, MI	48309
WEBASTO ROOF SYSTEMS INC	2700 PRODUCT DR	Rochester, MI	48309
WILLIAM BEAUMONT HOSPITAL	44201 DEQUINDRE RD	Troy, MI	48085
DELPHI PRODUCT & SVC SOLUTIONS	5820 DELPHI DR	Troy, MI	48098
DELPHI CORP	5725 DELPHI DR	Troy, MI	48098
DELPHI THERMAL SYSTEMS	5820 DELPHI DR	Troy, MI	48098
FLAGSTAR BANCORP INC	5151 CORPORATE DR	Troy, MI	48098
FLAGSTAR INVESTMENT GROUP INC	5151 CORPORATE DR	Troy, MI	48098
MORTGAGE GUARANTY INS CORP	901 TOWER DR # 300	Troy, MI	48098
SEARS HOLDINGS RESOURCE CTR	2240 CUNNINGHAM DR	Troy, MI	48084
NORDSTROM	2850 W BIG BEAVER RD	Troy, MI	48084
DU PONT AUTOMOTIVE	950 STEPHENSON HWY	Troy, MI	48083
VALEO INC	150 STEPHENSON HWY	Troy, MI	48083
BEHR AMERICA INC	2700 DALEY DR	Troy, MI	48083
DIALOGUE MARKETING	300 E BIG BEAVER RD # 400	Troy, MI	48083
KELLY SERVICES INC	999 W BIG BEAVER RD	Troy, MI	48084
HUNTINGTON NATIONAL BANK	801 W BIG BEAVER RD # 600	Troy, MI	48084
KELLY LAW REGISTRY	999 W BIG BEAVER RD	Troy, MI	48084
THYSSEN KRUPP USA INC	3155 W BIG BEAVER RD # 125	Troy, MI	48084
MERITOR INC	2135 W MAPLE RD	Troy, MI	48084

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 492,102 households in Oakland County. Of these, approximately 96,614 households (or 20%) 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 Oakland 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 12.1.

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 9.2 through 12.2.

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.