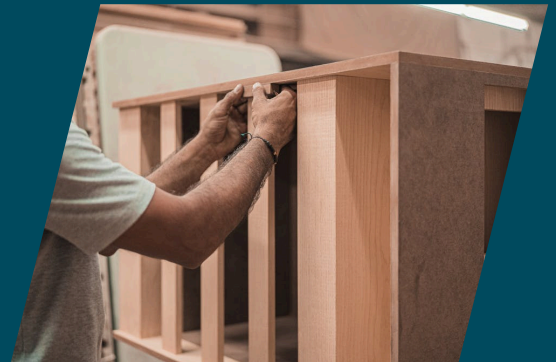


Appendix for Economic Outlook for Lakeshore Advantage: Getting to 2030

Prepared for
Lakeshore Advantage
201 W. Washington Ave.
Loft 410
Zeeland, MI 49464

Prepared by
W.E. Upjohn Institute for
Employment Research
300 South Westnedge
Avenue
Kalamazoo, MI 49007
269-343-5541

August 27, 2020



W.E. UPJOHN
INSTITUTE
FOR EMPLOYMENT RESEARCH

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Introduction to the Appendix

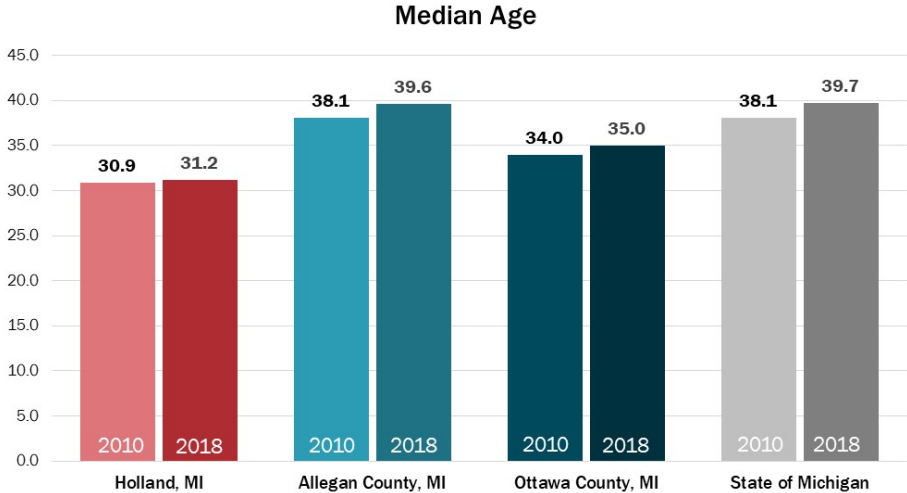
This appendix provides additional geospatial information on the Lakeshore Advantage Region. The data contained in the Appendix were separated from the full report to allow for a more streamlined and focused document. The intention of the appendix is to support the report by providing further details of mobility and migration for the region using national-level maps of migration patterns. Additionally, the maps provide a visual guide to the subcounty geographic data referenced in the report. The appendix is a companion to the report.

It is recommended that all readers start with the report and refer to the appendix as questions arise.

Demographics of the Lakeshore Advantage Region

The Population

The median age across the Lakeshore Advantage Region increased by about one year between 2010 and 2018 (see Figure 1). In Allegan County, the median age went from 38.1 in 2010 to 39.6 in 2018. In Ottawa County, the median age increased from 34.0 in 2010 to 35.0 in 2018. In the city of Holland, the median age increased from 30.9 in 2010 to 31.2 in 2018. Overall, this is in line with increased aging in the state of Michigan, which saw its median age increase from 38.1 in 2010 to 39.7 in 2018.



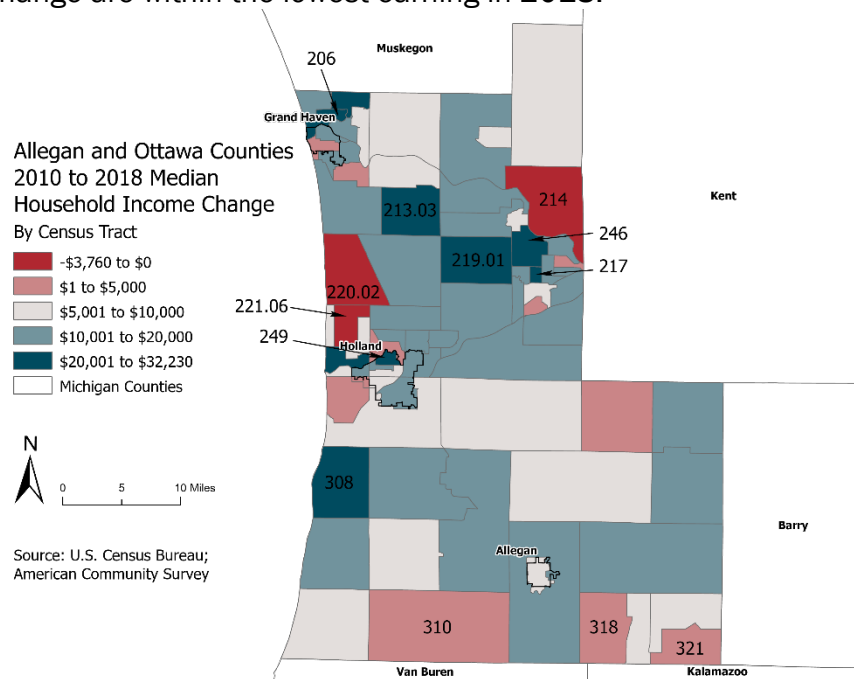
Source: U.S. Census Bureau, 2010-2018 American Community Survey 5-Year Estimates

Figure 1: Median Age

Income

From 2010 to 2018, all but three census tracts within Allegan and Ottawa counties experienced a positive change in median household income. Tracts 220.02, 221.06 (both north of Holland), and 214 (west of Walker) had a negative change (see Map 3). Those tracts having a negative change did not exceed a negative change greater than \$4,000 and are among the highest earning census tracts (between \$70,000 and \$92,000) in 2018. Many rural Ottawa County census tracts experienced the greatest positive change, such as 213.03 (Robinson Township), 219.01 (Blendon Township), 246 (Georgetown Township), and 217 (North of Hudsonville). However, tracts within Grand Haven and Ferrysburg (206), Holland (249), and Saugatuck and Douglas (308) also saw large positive change. Again, many of the aforementioned tracts are within the highest earning group. Southern Allegan County census tracts, like 310 (Lee and Cheshire Townships), 318 (Otsego Township), and 321 (Gun Plain Township), saw the least amount of positive change (\$1 to \$5,000), and are within the lowest earning tracts in 2018 (between \$20,085 to \$55,000). In short, most tracts within Allegan and Ottawa counties had positive median household income change—

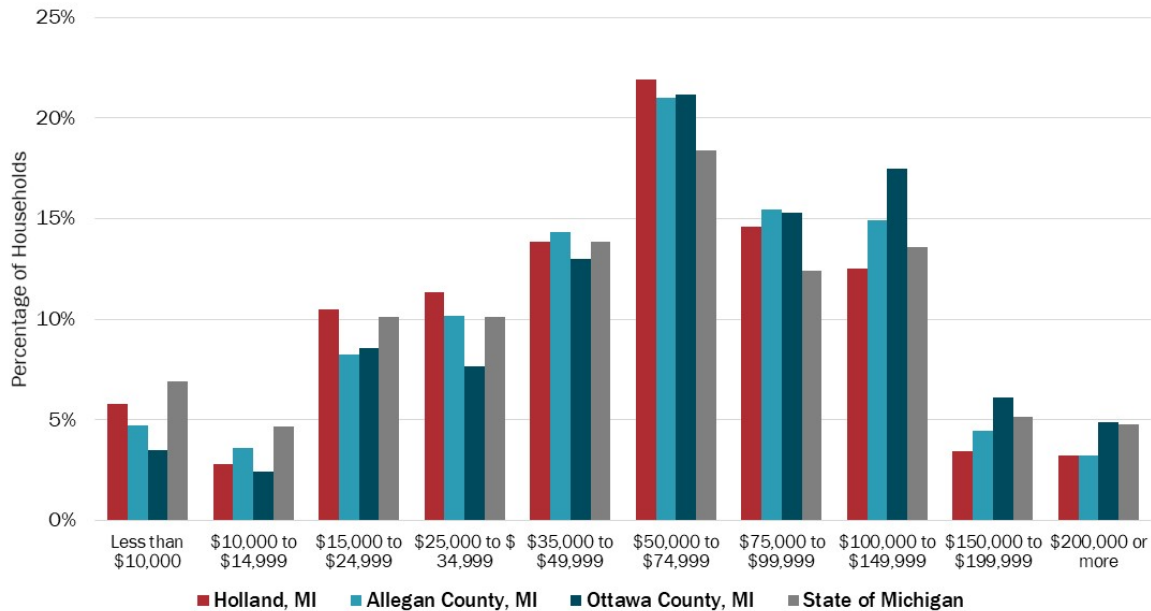
those having negative change are still within the highest earning in 2018 and those having little positive change are within the lowest earning in 2018.



Map 1: Allegan and Ottawa Counties 2010 to 2018 Median Household Income Change

Part of median household income growth is related to the distribution of incomes within the counties. In Allegan County, 22.6% of households earn over \$100,000 per year, while in Ottawa County 28.4% of households earn over \$100,000 per year (see Figure 2). These compare with 23.5% of households in the state of Michigan earning \$100,000. In the city of Holland, 19.2% of households earn over \$100,000 per year, an increase of 7.2% of households earning over \$100,000 since 2010.

Household Income and Benefits (2018)



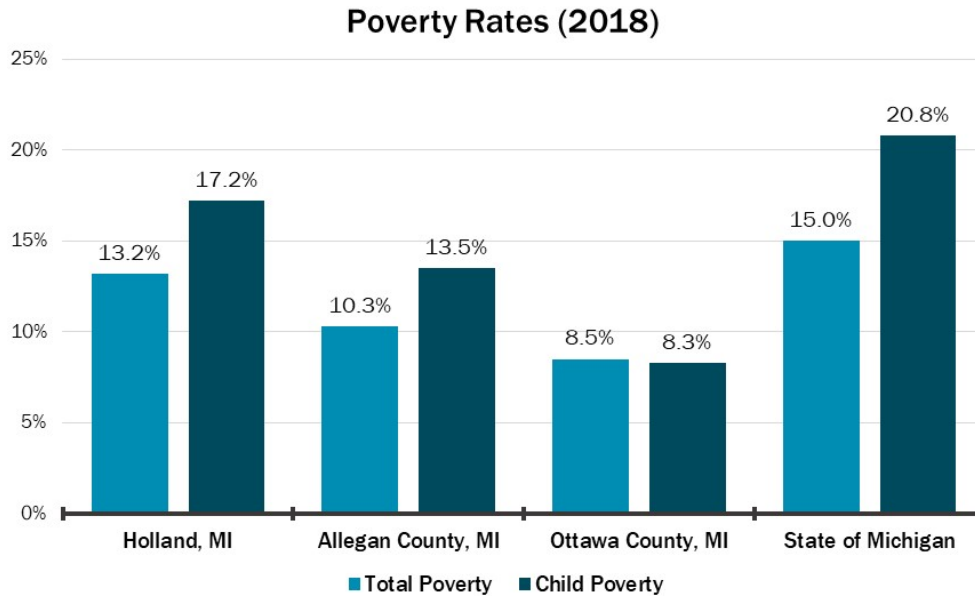
Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

Figure 2: Household Income and Benefits (2018)

Poverty

Trends in poverty rates can serve as a leading indicator for an area’s economic future. Higher levels of poverty are strongly correlated with lower levels of education and fewer opportunities within the knowledge economy. Additionally, higher levels of poverty in a community induce numerous harmful impacts on standards of living.

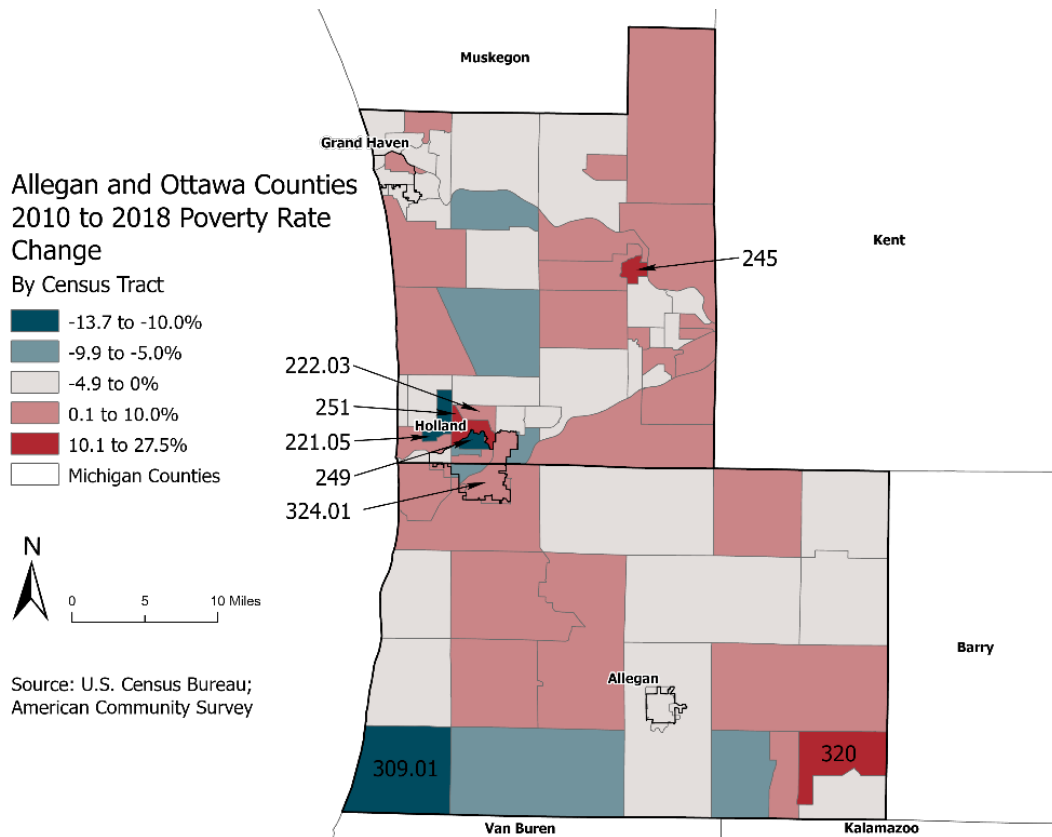
As household incomes have risen, poverty rates have also declined (see Figure 3). In Ottawa County, the poverty rate is relatively low compared to the state of Michigan, at 8.5% (a 0.2% decline from 2010). In Allegan County, the poverty rate decreased by 1.6%, from 11.9% in 2010 to 10.3% in 2018. The poverty rate in the city of Holland remains higher than that of the counties; however, the poverty rate has also decreased by 2.2%, from 15.4% in 2010 to 13.2% in 2018. During this same period, the poverty rate in the state of Michigan increased 0.2%, from 14.8% to 15.0%.



Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

Figure 3: Poverty Rates (2018)

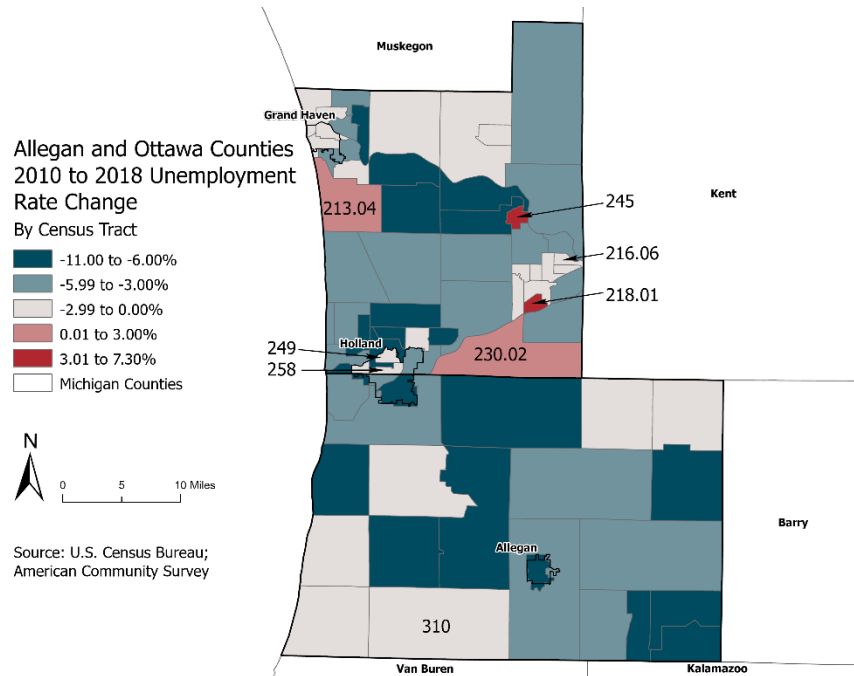
The majority of Allegan County and Ottawa County census tracts show a decline in poverty rates from 2010 to 2018 (see Map 2). Census tracts that remained at a poverty rate greater than 15% in 2018 include (listed in descending order) 245 (Grand Valley), 320 (the west half of Plainwell), and 251, 324.01, and 222.03 (Holland). The state of Michigan’s poverty rate in 2018 was approximately 15%. Tracts 245, 320, and 251 all had an increase in poverty rates of more than 10% from 2010 to 2018. Inversely, tracts 221.05 and 249 (Holland) and 309.01 (Casco Township) all experienced a decrease in the poverty rate greater than 10%. Both Allegan and Ottawa counties primarily decreased in poverty rates between 2010 and 2018, but there are multiple tracts in each county that saw an increase in poverty rates.



Map 2: Allegan and Ottawa Counties 2010 to 2018 Poverty Rate Change

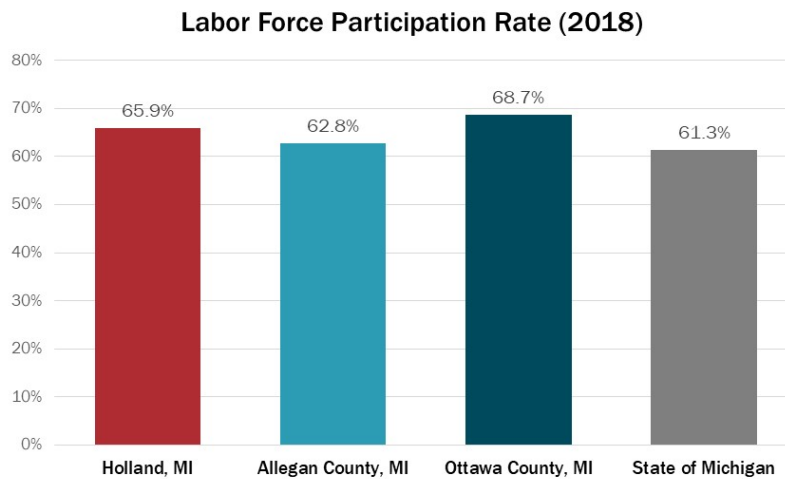
Employment

All but four census tracts in Allegan and Ottawa counties saw a decrease in their unemployment rates from 2010 to 2018 (see Map 3). The four tracts with an increase in unemployment rates included 245 (Grand Valley, 7.3%), 218.01 (Hudsonville, 3.2%), 213.04 (Grand Haven Township – South, 2.1%), 230.02 (Zeeland Charter Township and Jamestown Township, 1.5%); all these tracts are in Ottawa County. From the ACS 2018 5-year estimates, Michigan’s unemployment rate is 6.5%; nationally it is 5.9%. Only 7 of the 77 census tracts in Allegan and Ottawa counties had an unemployment rate equal to or greater than 5.9%; three were equal to or greater than 6.5%. These tracts included 245 (Grand Valley–Ottawa County, 12.8%), 249 (City of Holland–Hope College, 10%), 310 (Lee and Cheshire Townships–Allegan County, 6.5%), 258 (City of Holland–Ottawa County, 6.4%), 216.06 (Georgetown Township–Ottawa County, 6.4%), 230.02 (Zeeland Charter Township and Jamestown Township, 5.9%), and 218.01 (Hudsonville, 5.9%).



Map 3: Allegan and Ottawa Counties 2010 to 2018 Unemployment Rate Change

The labor force participation rate in the city of Holland, Allegan County, and Ottawa County is slightly higher than the rate for the state of Michigan. As shown in Figure 4, the rate as reported by the ACS for the city of Holland is 65.9%, compared to 62.8% for Allegan County, 68.7% for Ottawa County, and 61.3% for the state. The labor force participation rate measures an economy’s active labor force. It is the sum of all noninstitutionalized individuals age 16 and older who are either working or looking for work, divided by the entire population age 16 and older. It represents the relative number of people active in the labor market. Labor force participation rates typically fall as individuals reach age 55 or older in age. The higher median age for Allegan County may be contributing to the lower labor force participation rate in that area.

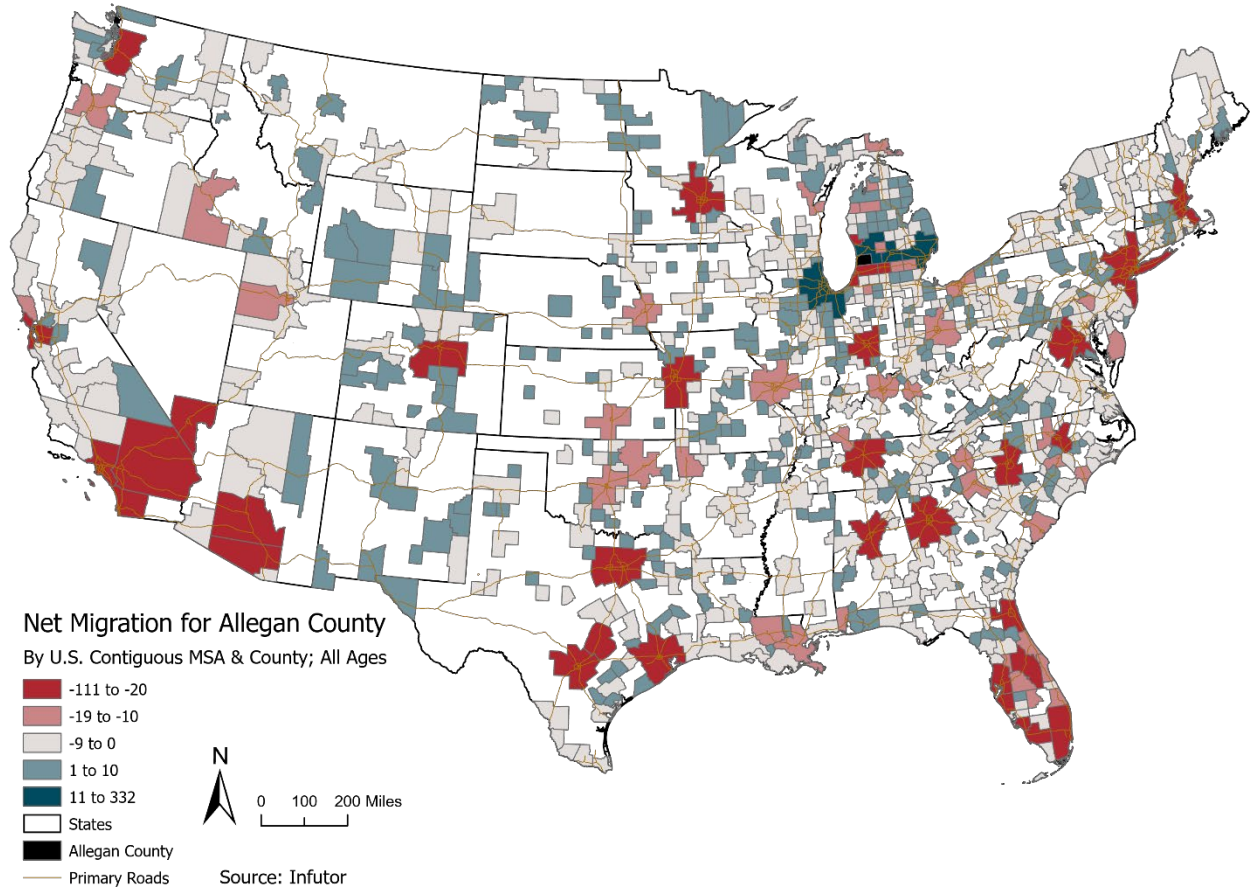


Source: U.S. Census Bureau, 2014-2018 American Community Survey 5-Year Estimates

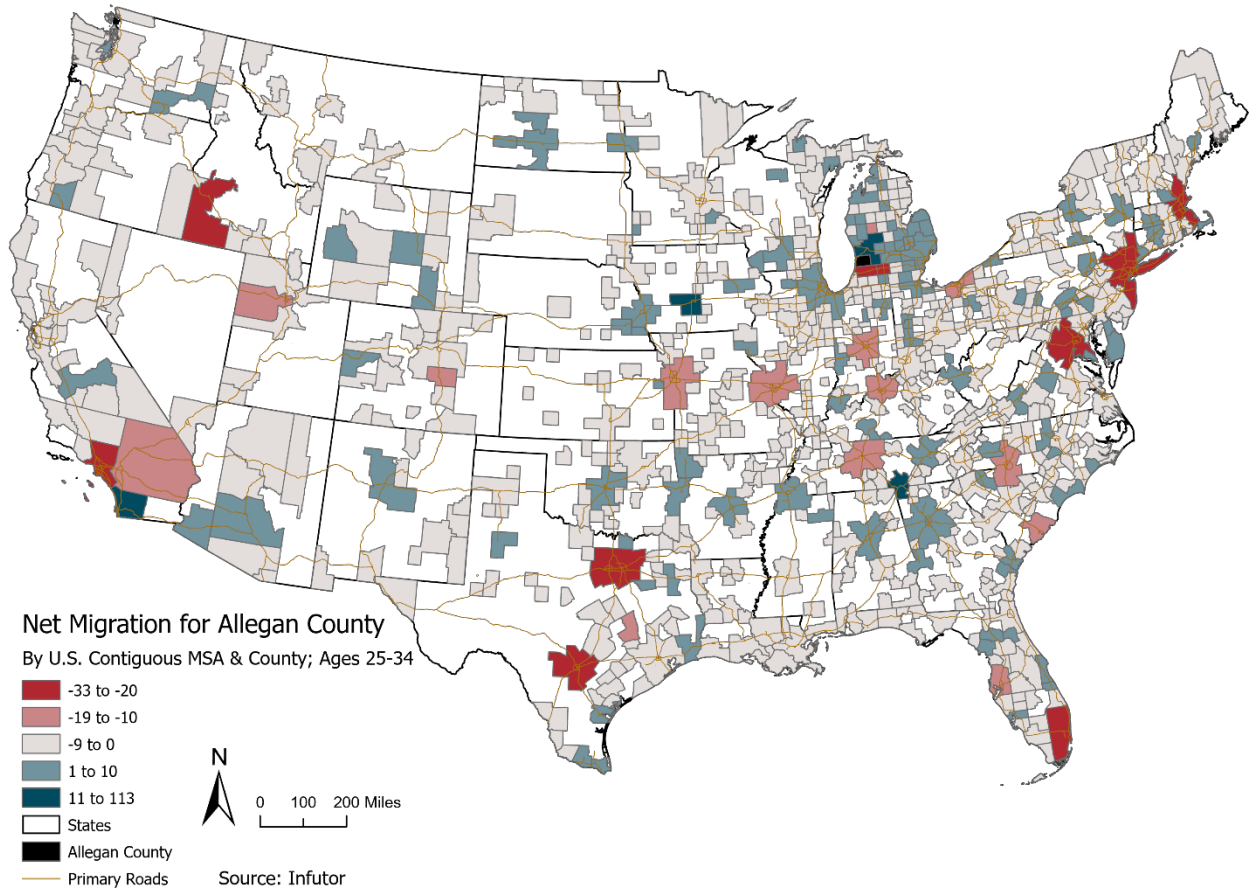
Figure 4: Labor Force Participation Rate (2018)

Mobility and Migration

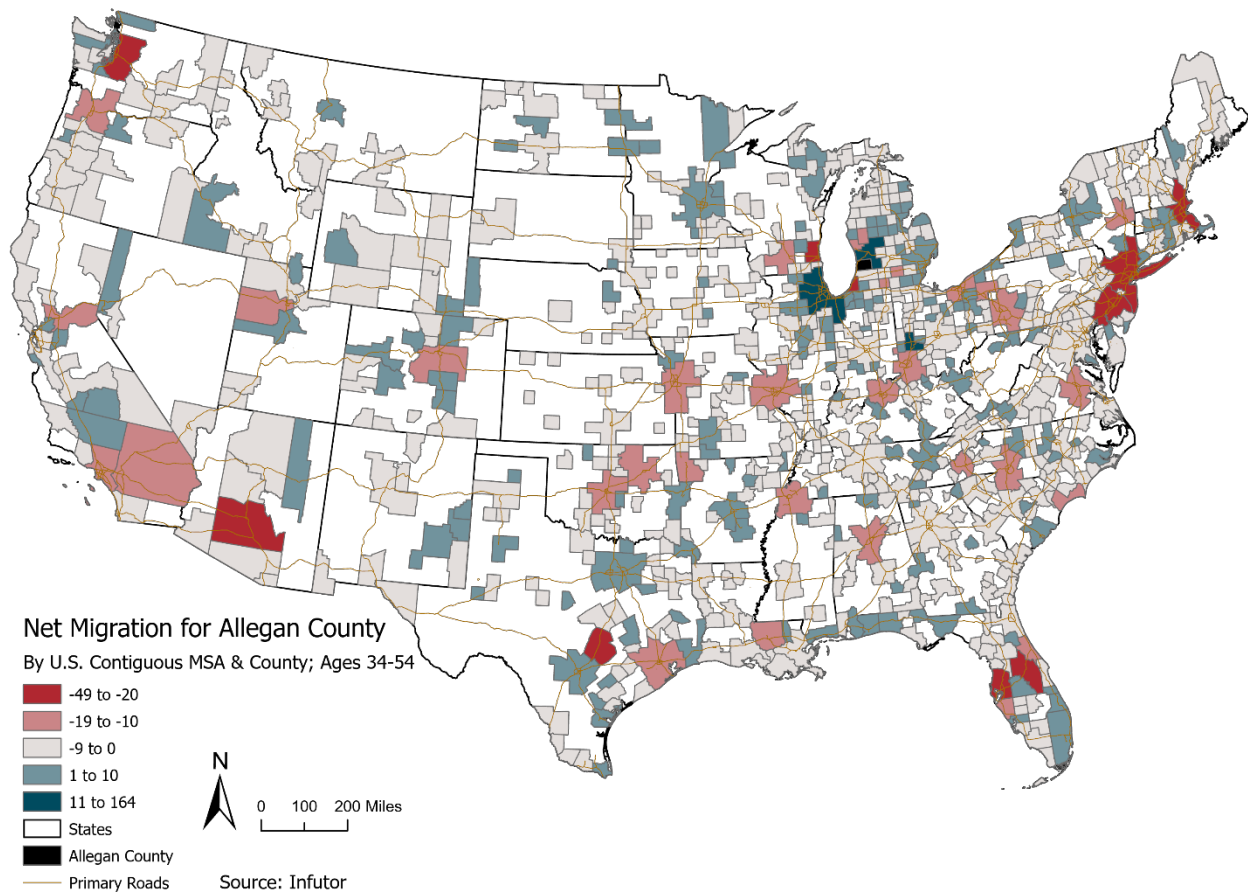
Allegan County Migration



Map 4: Net Migration for Allegan County by U.S. Contiguous MSA and County; All Ages; National

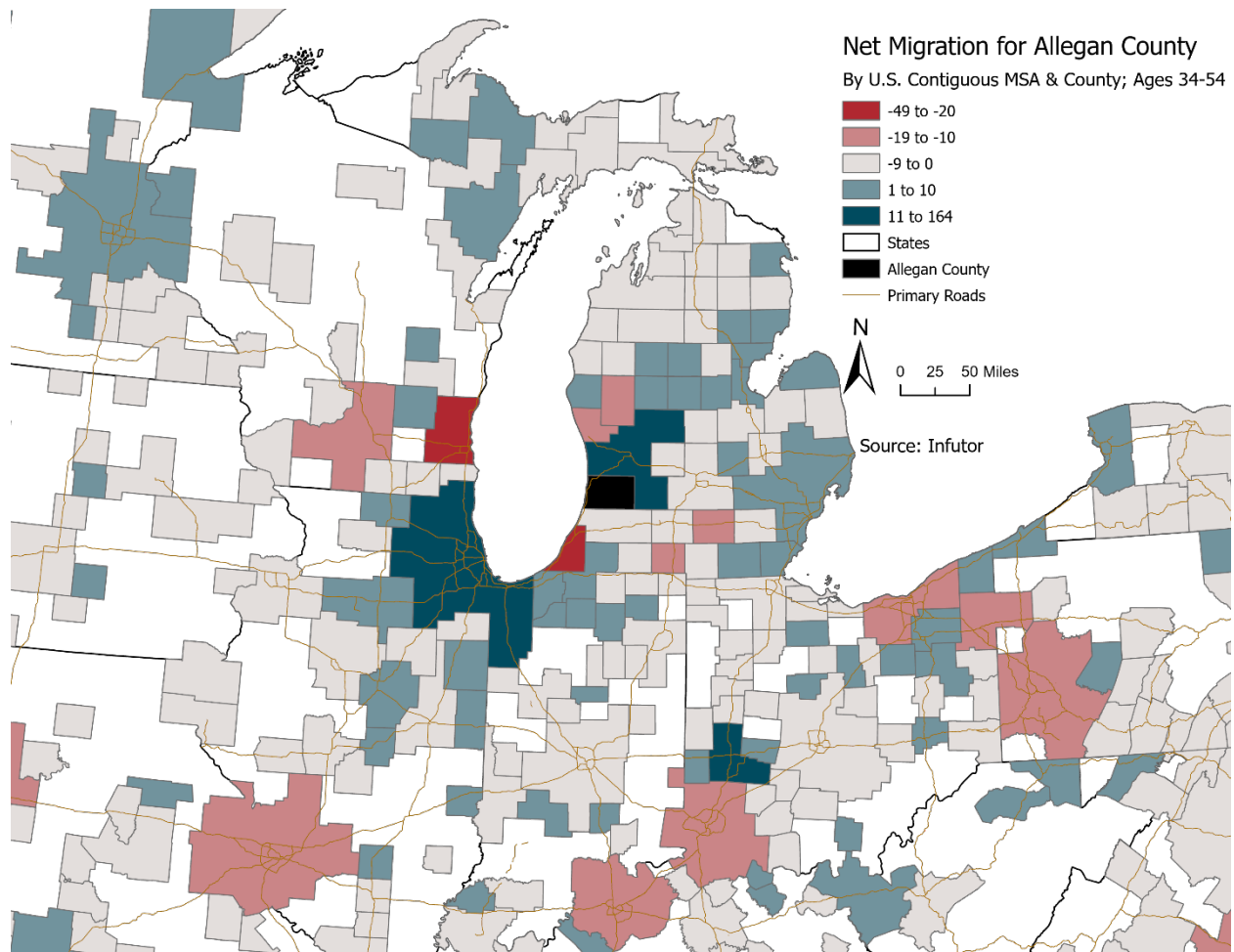


Map 5: Net Migration for Allegheny County by U.S. Contiguous MSA and County; Ages 25 to 34; National

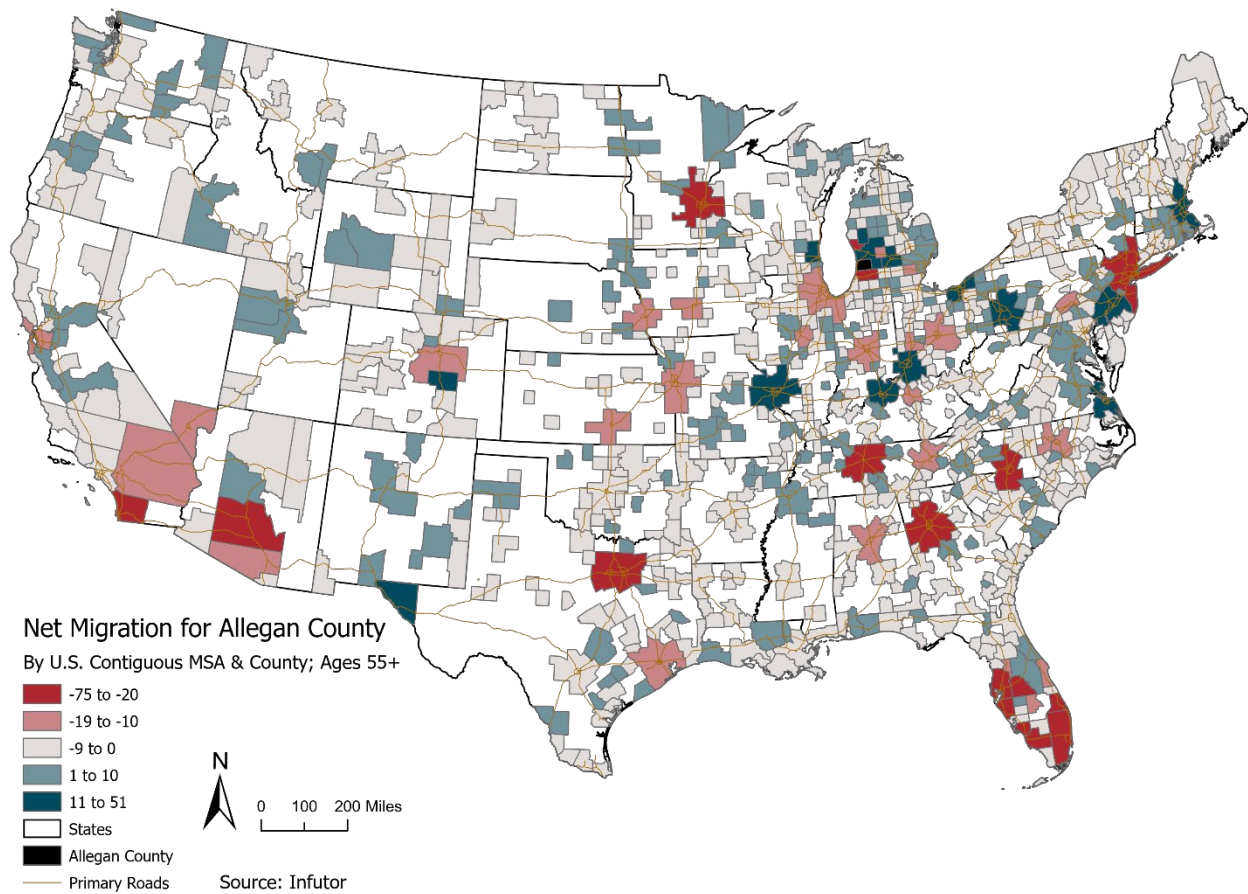


Map 6: Net Migration for Allegan County by U.S. Contiguous MSA and County; Ages 35 to 54; National

Prime-age workers, age 35 to 54 (2013 to 2017 data), demonstrate an in-migration pattern that is more concentrated within Michigan than emerging workers or post-prime-age workers (see Map 7). For example, the largest amount of in-migration for this age cohort is from the Grand Rapids-Wyoming and Chicago-Naperville-Elgin areas. Although spread throughout the contiguous United States, out-migration for this age group is mostly concentrated within Northeast MSAs like New York-Newark-Jersey City, Boston-Cambridge-Newton, and Philadelphia-Camden-Wilmington. Florida MSAs like Orlando-Kissimmee-Sanford and Tampa-St. Petersburg-Clearwater also hold many out-migration shares (see Map 6).

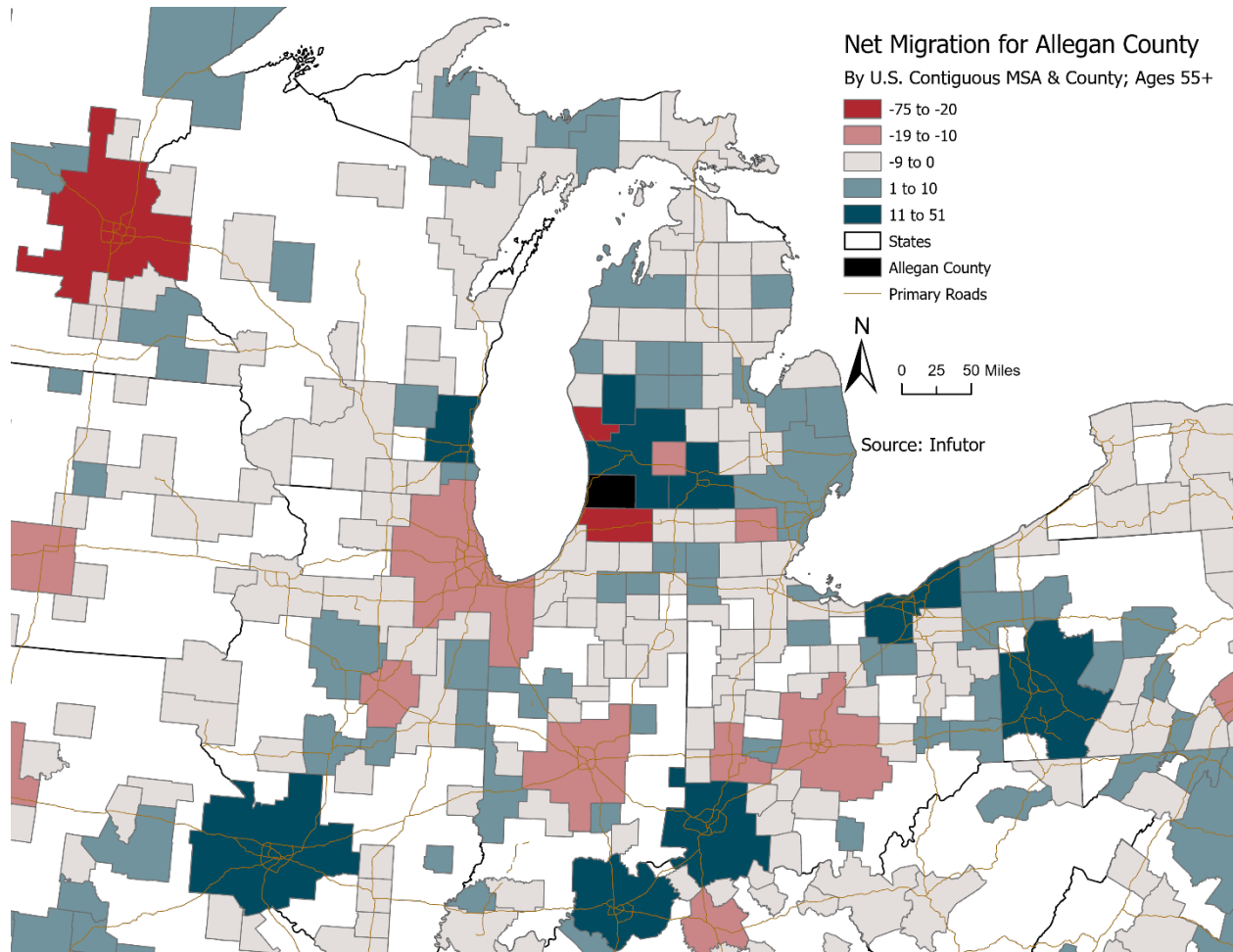


Map 7: Net Migration for Allegheny County by U.S. Contiguous MSA and County; Ages 34 to 54



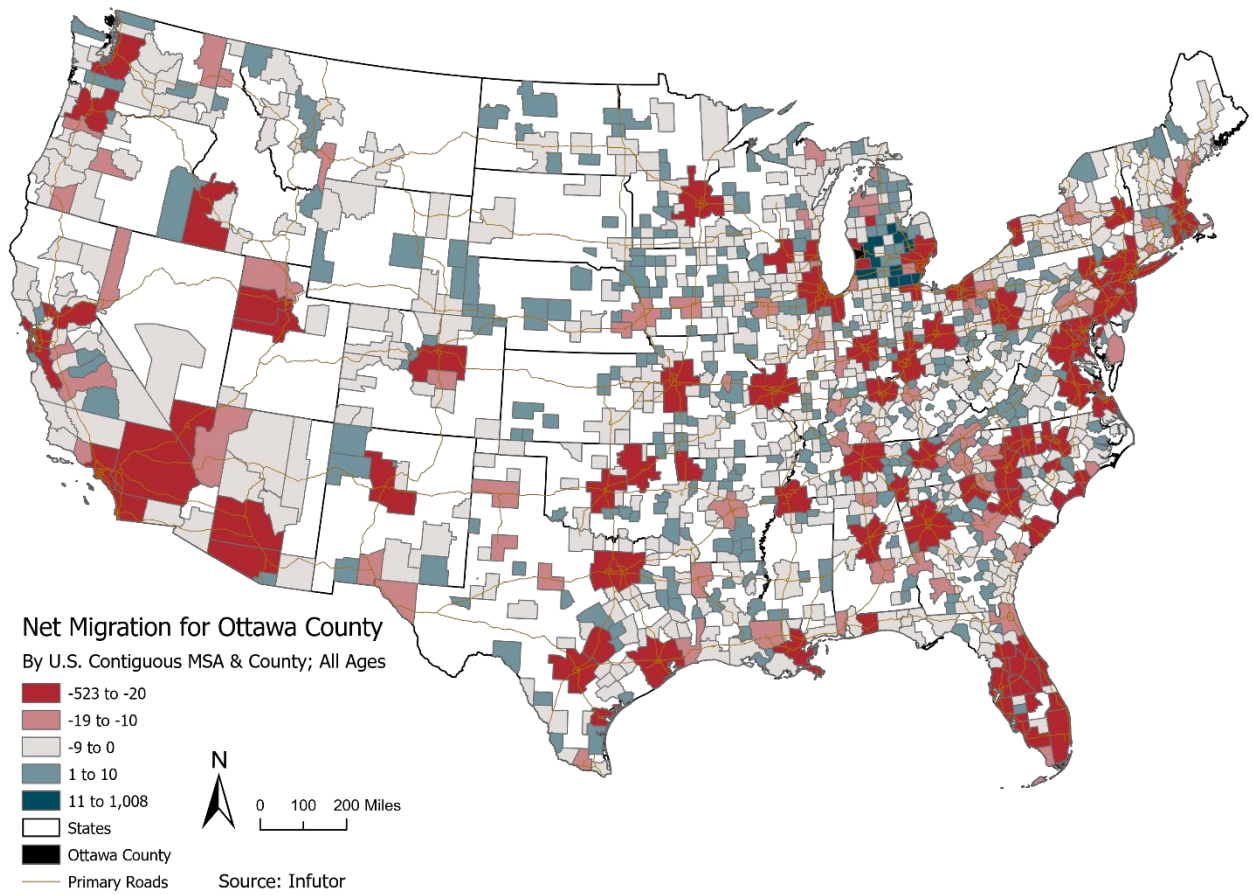
Map 8: Net Migration for Allegan County by U.S. Contiguous MSA and County; Ages 55+; National

The oldest age cohort, post-prime-age workers age 55 and over (2013 to 2017 data), displays the largest range of in-migration to Allegan County (see Map 9). While Michigan MSAs still make up a large portion of in-migrants from MSAs like Grand Rapids-Wyoming and Lansing-East Lansing, there are large shares of in-migration from Boston-Cambridge-Newton, Philadelphia-Camden-Wilmington, Cleveland-Elyria, and St. Louis (see Map 4 in the appendix). This suggests that Allegan County serves as a destination for many older individuals in larger Midwest and Eastern MSAs, possibly as a retirement destination because of the lakeshore and other amenities. Out-migration from the county for this age group is generally located in southern states: Phoenix-Mesa-Scottsdale, Tampa-St. Petersburg-Clearwater, Cape Coral-Fort Myers, and Dallas-Fort Worth-Arlington (see Map 8). Intrastate out-migration still accounts for a large share of total out-migration, with the Kalamazoo-Portage, MSA being the largest destination for former Allegan County residents.

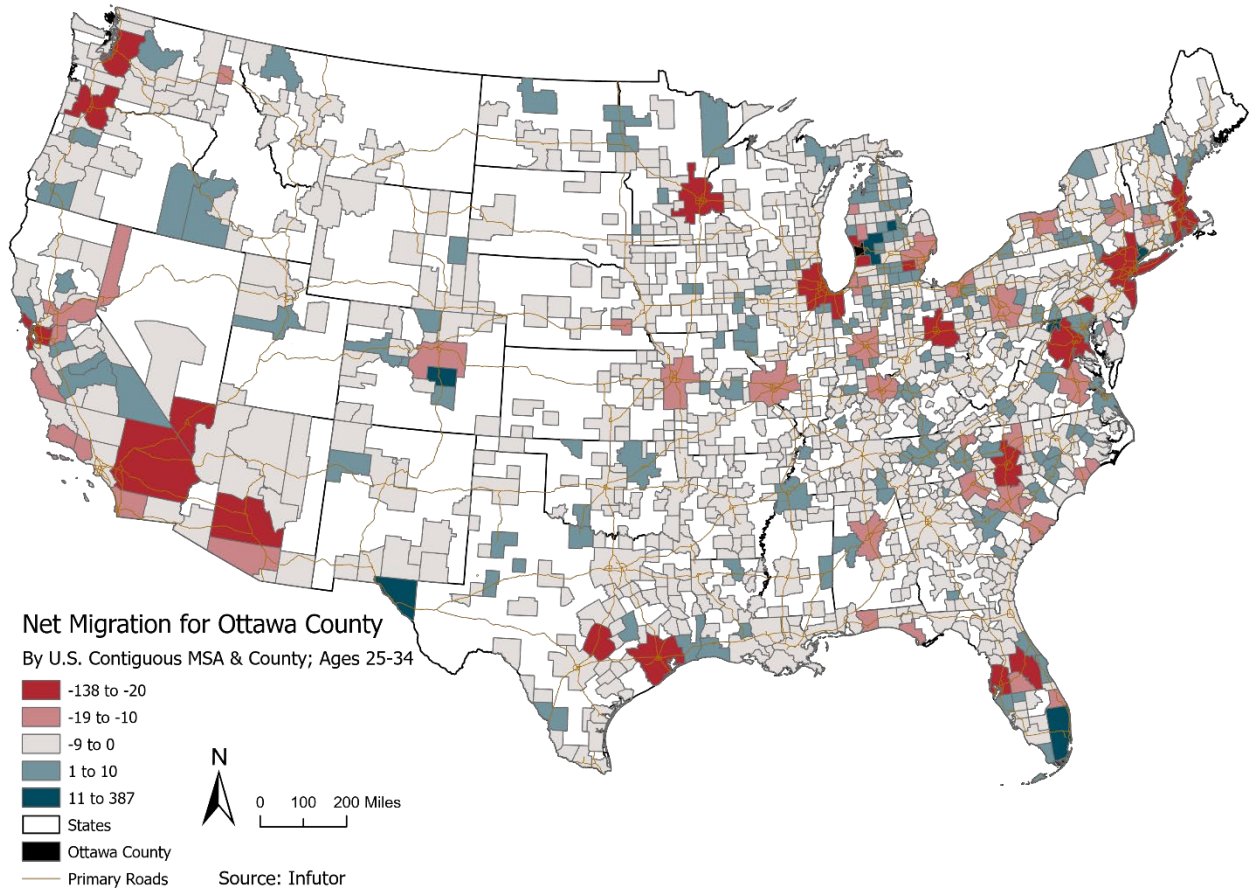


Map 9: Net Migration for Allegheny County by U.S. Contiguous MSA and County; Ages 55+

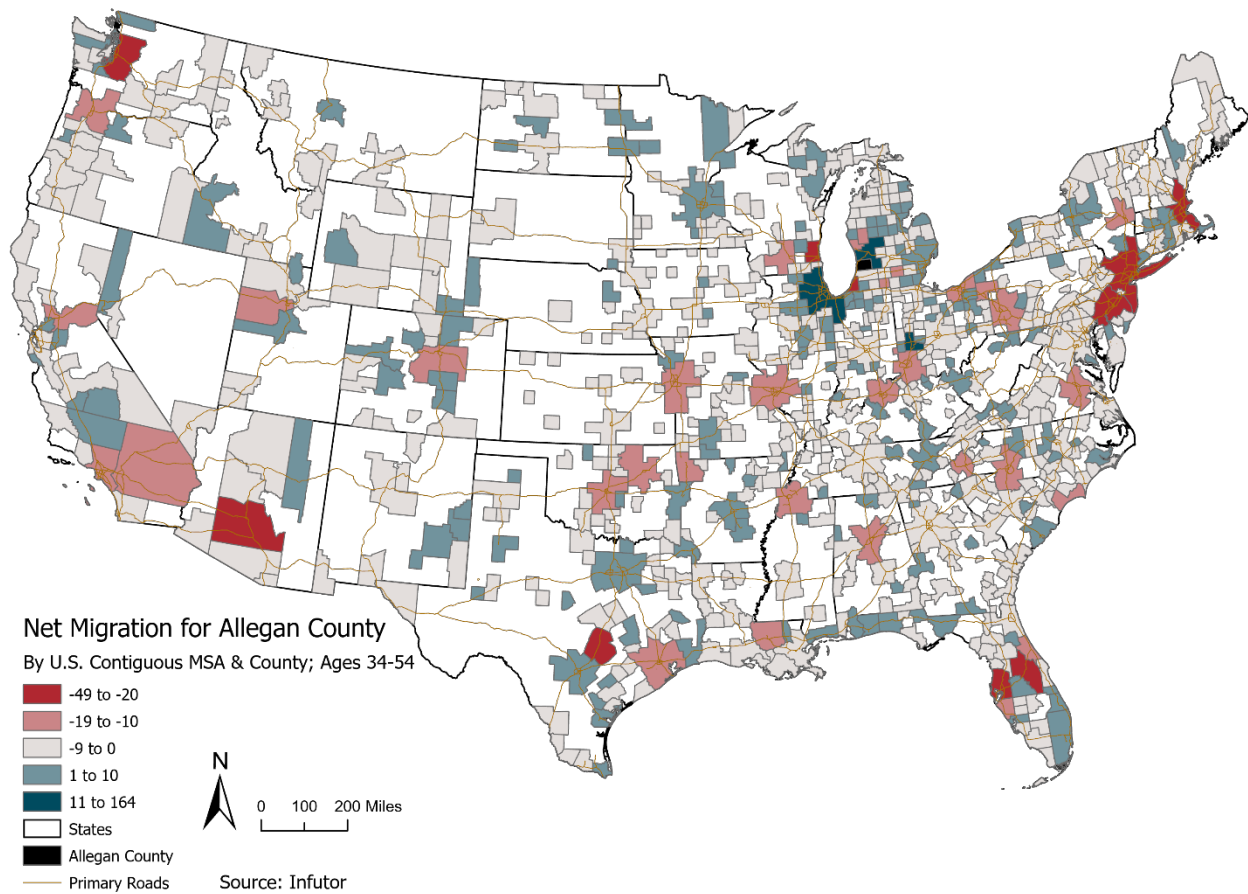
Ottawa County Migration



Map 10: Net Migration for Ottawa County by U.S. Contiguous MSA and County; All Ages; National

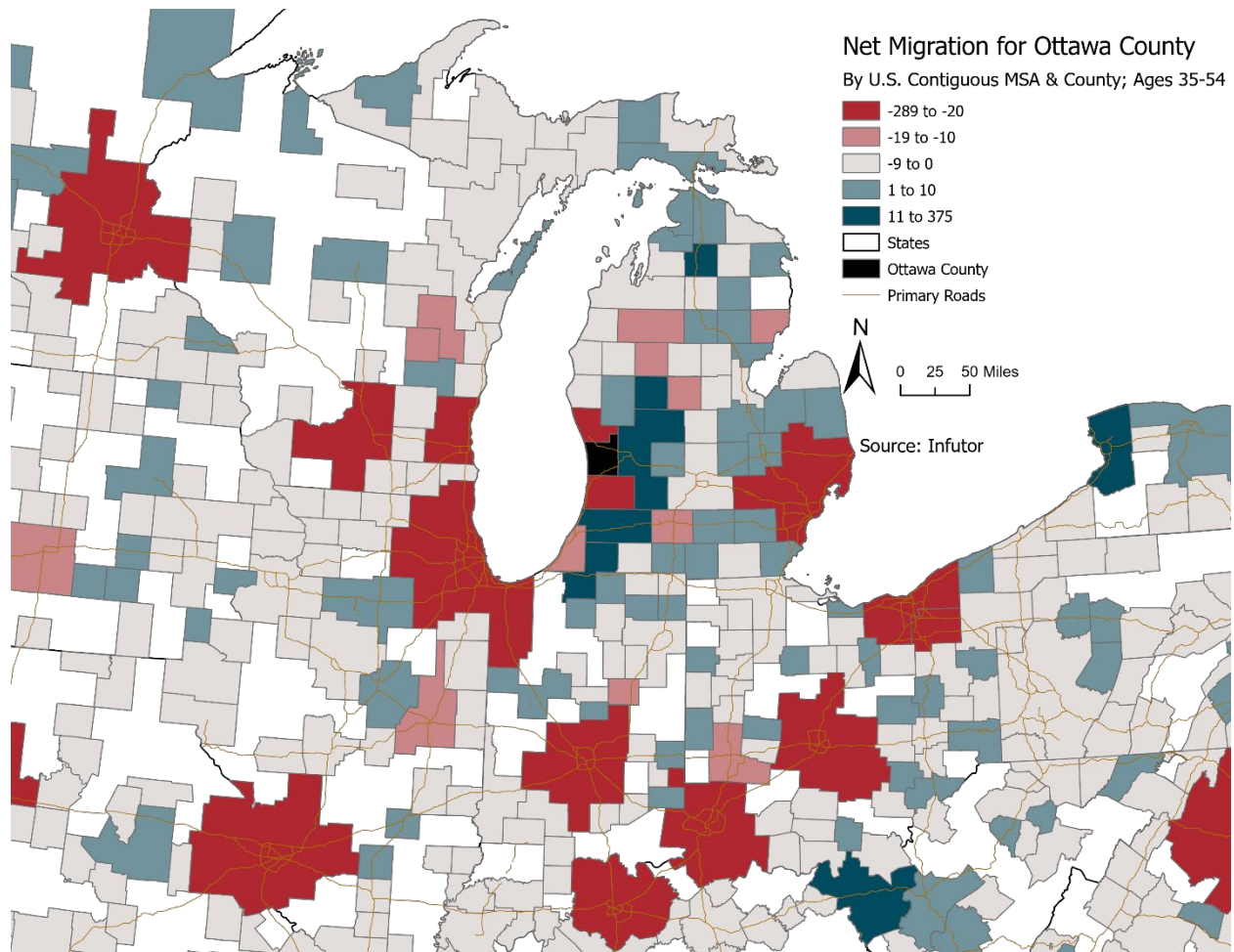


Map 11: Net Migration for Ottawa County by U.S. Contiguous MSA and County; Ages 25 to 34; National

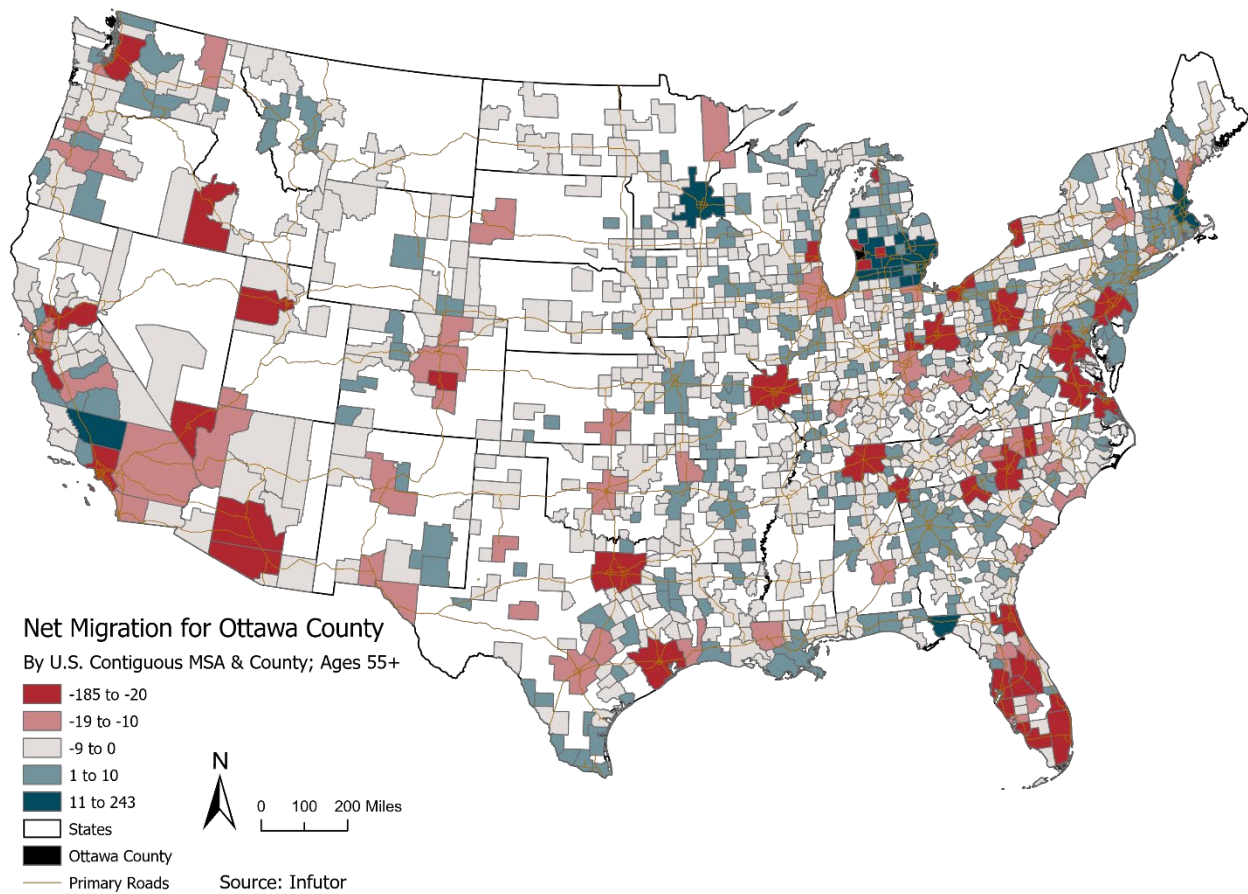


Map 12: Net Migration for Ottawa County by U.S. Contiguous MSA and County; Ages 35 to 54; National

Prime-age workers, age 35 to 54 (2013 to 2017 data), display a large amount of in-migration from west Michigan MSAs including Grand Rapids-Wyoming, Kalamazoo-Portage, Big Rapids, and South Bend-Mishawaka (see Map 13). Other notable in-migration locations include Buffalo-Cheektowaga-Niagara Falls, Wichita, Chattanooga, and Boulder (see Map 7 in the appendix). Like the other age cohorts, most out-migration for the age group 35 to 54 is to the Holland and Muskegon MSAs. While the New York-Newark-Jersey City MSA accounts for a large share of out-migration from Ottawa County, southern MSAs like Atlanta-Sandy Springs-Roswell, Dallas-Fort Worth-Arlington, Phoenix-Mesa-Scottsdale, and Houston-The Woodlands-Sugar Land show large out-migration shares from Ottawa County (see Map 12).

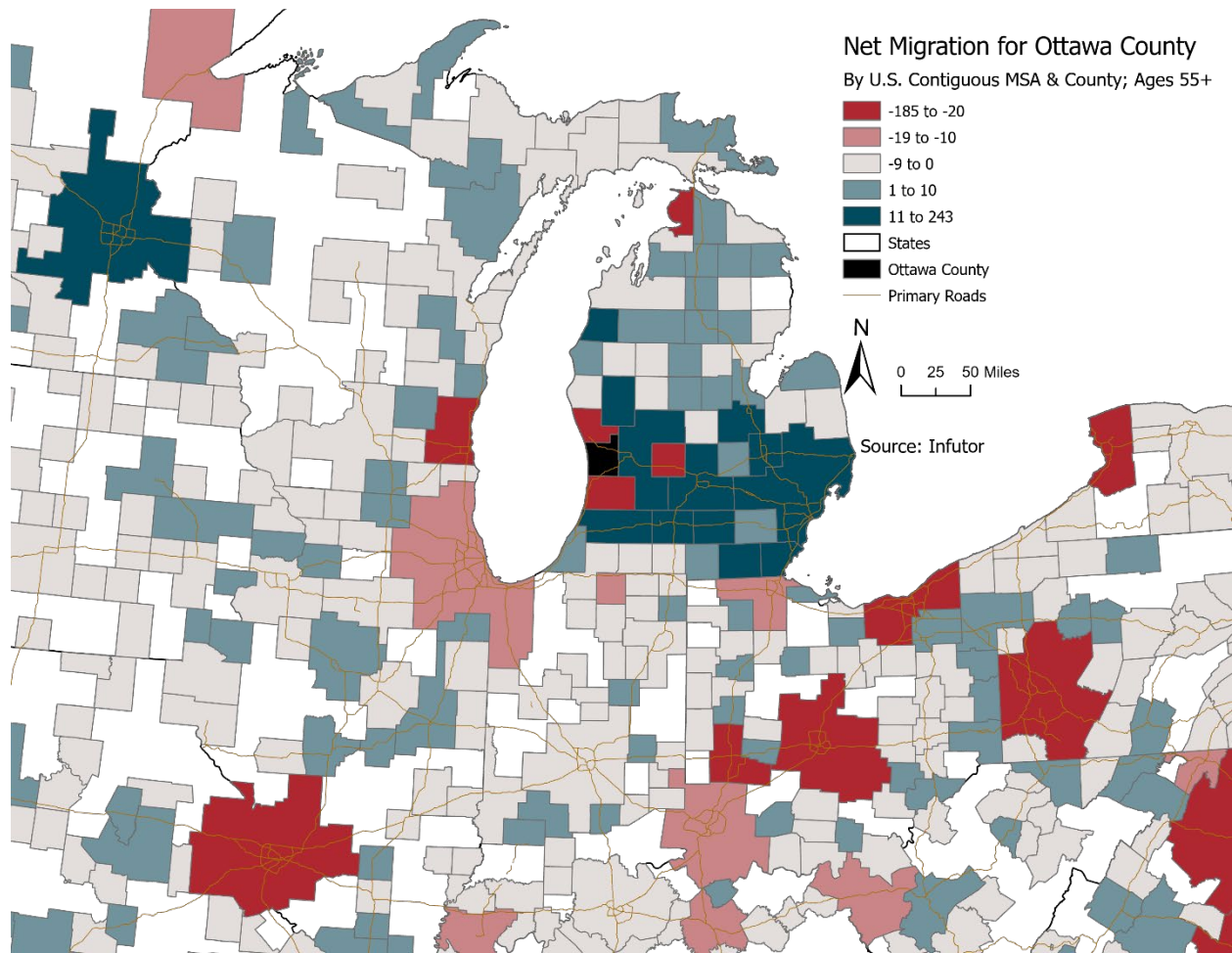


Map 13: Net Migration for Ottawa County by U.S. Contiguous MSA and County; Ages 35 to 54



Map 14: Net Migration for Ottawa County by U.S. Contiguous MSA and County; Ages 55+; National

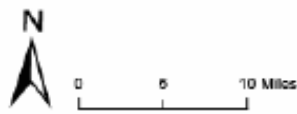
In-migration of post-prime-age workers (2013 to 2017 data), age 55 and older, to Ottawa County occur mostly from Michigan—specifically from the Grand Rapids-Wyoming, Flint, Kalamazoo-Portage, Detroit-Warren-Dearborn, Monroe, Jackson, Saginaw, Battle Creek, Lansing-East Lansing, and Adrian MSAs (see Map 15). Large portions of in-migration for this age group are also from out-of-state MSAs like Minneapolis-St. Paul-Bloomington, Tallahassee, Bakersfield, and Boston-Cambridge-Newton MSAs (see Map 8 in the appendix). Smaller amounts of in-migration can be observed from more populated east coast and southern MSAs. The largest amount of out-migrations for the oldest age cohort occur to mild climate zones like Miami-Fort Lauderdale-West Palm Beach, Los Angeles-Long Beach-Anaheim, Tampa-St. Petersburg-Clearwater, and Phoenix-Mesa-Scottsdale (see Map 14). The largest share of out-migration still belongs to the Muskegon MSA.



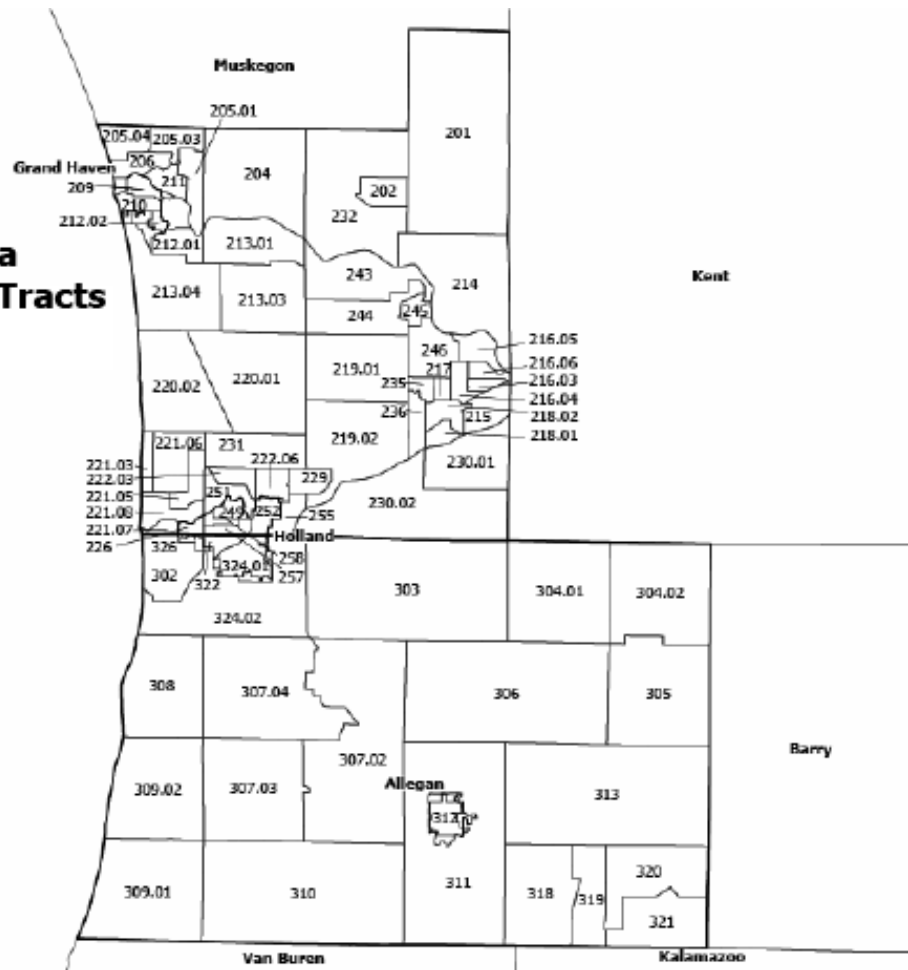
Map 15: Net Migration for Ottawa County by U.S. Contiguous MSA and County; Ages 55+

Allegan and Ottawa Counties—Census Tracts

Allegan and Ottawa Counties - Census Tracts



Source: U.S. Census Bureau;
American Community Survey



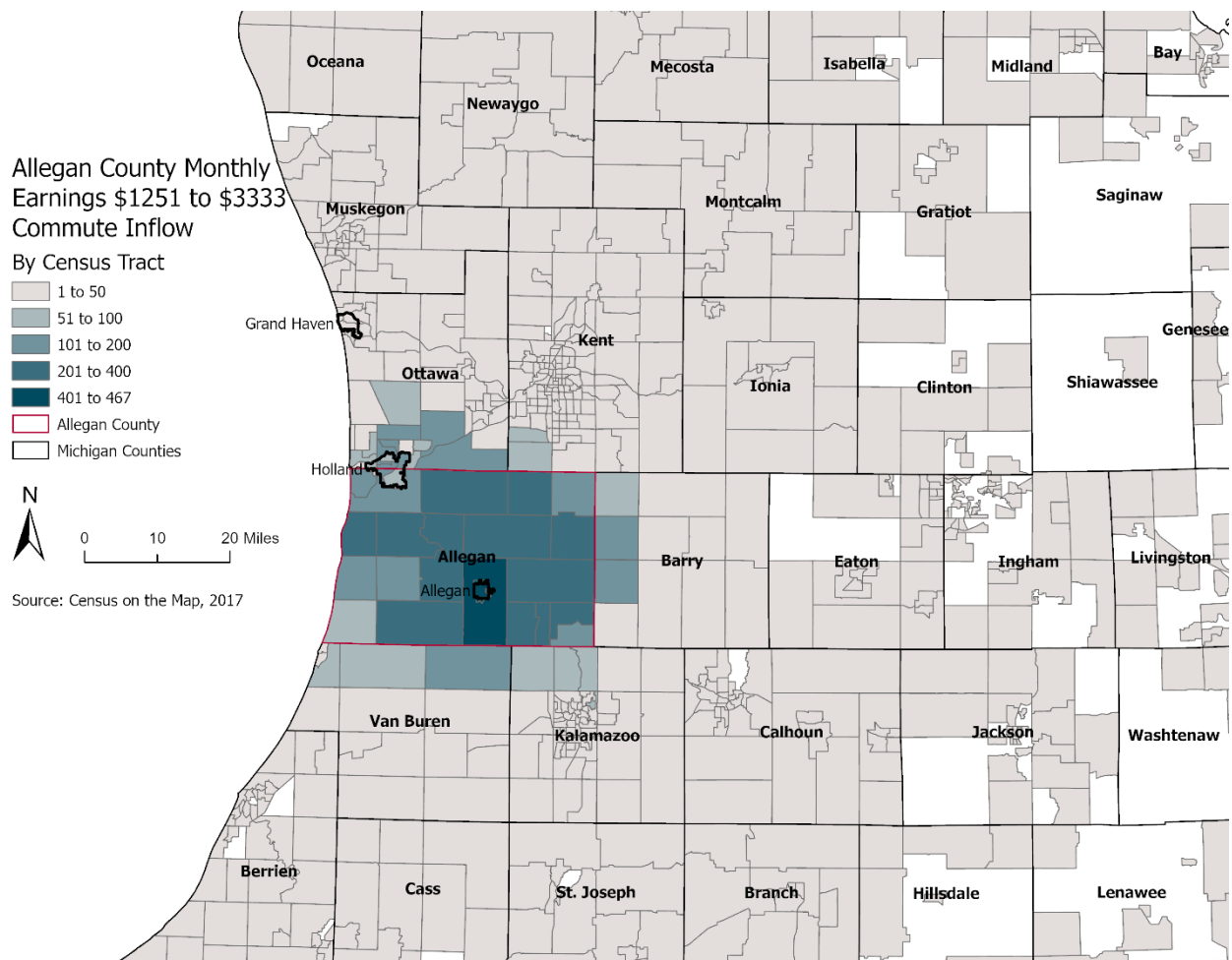
Map 16: Allegan and Ottawa Counties—Census Tracts

Commuting Patterns

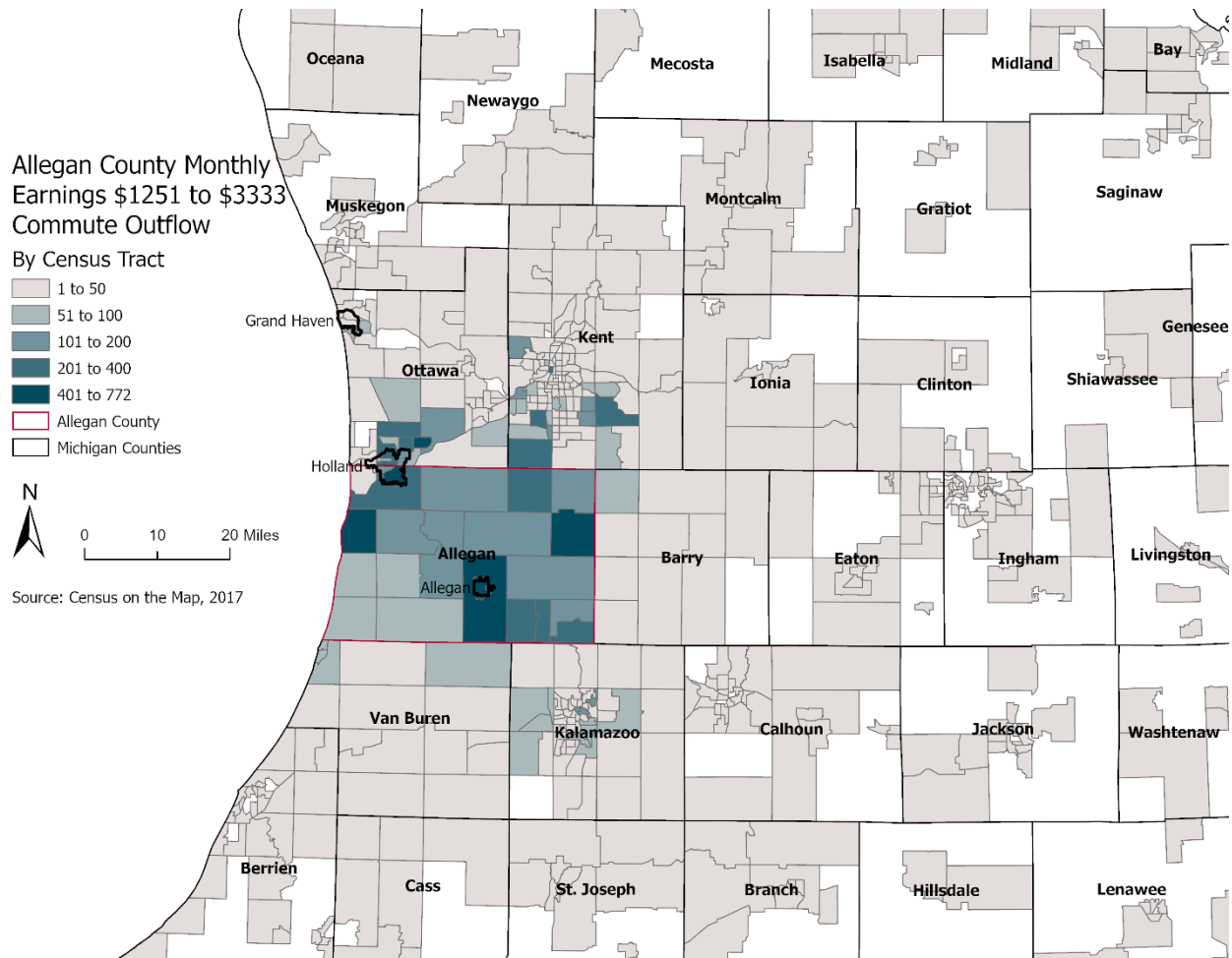
Allegan County Inflow and Outflow Commuting Patterns

Inflow and Outflow: Allegan County—Middle Income Workers

The inflow and outflow of workers earning between \$1,251 and \$3,333 monthly to Allegan County (2017 data) follow a similar pattern to those earning \$1,250 or less. The inflow of workers earning between \$1,251 and \$3,333 is generally limited to census tracts within Allegan County, with a few exceptions to tracts neighboring the county (see Map 17). While the outflow of workers in this earning group is more concentrated in Allegan County than the lowest earning group, there are still many workers that are commuting to Kent, Ottawa, Van Buren, and Kalamazoo counties (see Map 18).



Map 17: Allegan County Monthly Earnings \$1,251 to \$3,333 Commute Inflow



Map 18: Allegan County Monthly Earnings \$1,251 to \$3,333 Commute Outflow

Inflow and Outflow: Allegan County—High Income Workers

The inflow and outflow for workers earning more than \$3,333 monthly (2017 data) have commuting patterns similar to the lower- and middle-income earning groups (see Maps 19 and 20). Inflow of workers in the highest earning group extends slightly farther geographically than the other two earning groups (reaching tracts near Grand Haven and the city of Kalamazoo), but is still mostly focused within Allegan County. The largest share of inflow workers in this income bracket are in census tracts near and surrounding the city of Allegan.

Allegan County Monthly
Earnings > \$3333
Commute Inflow

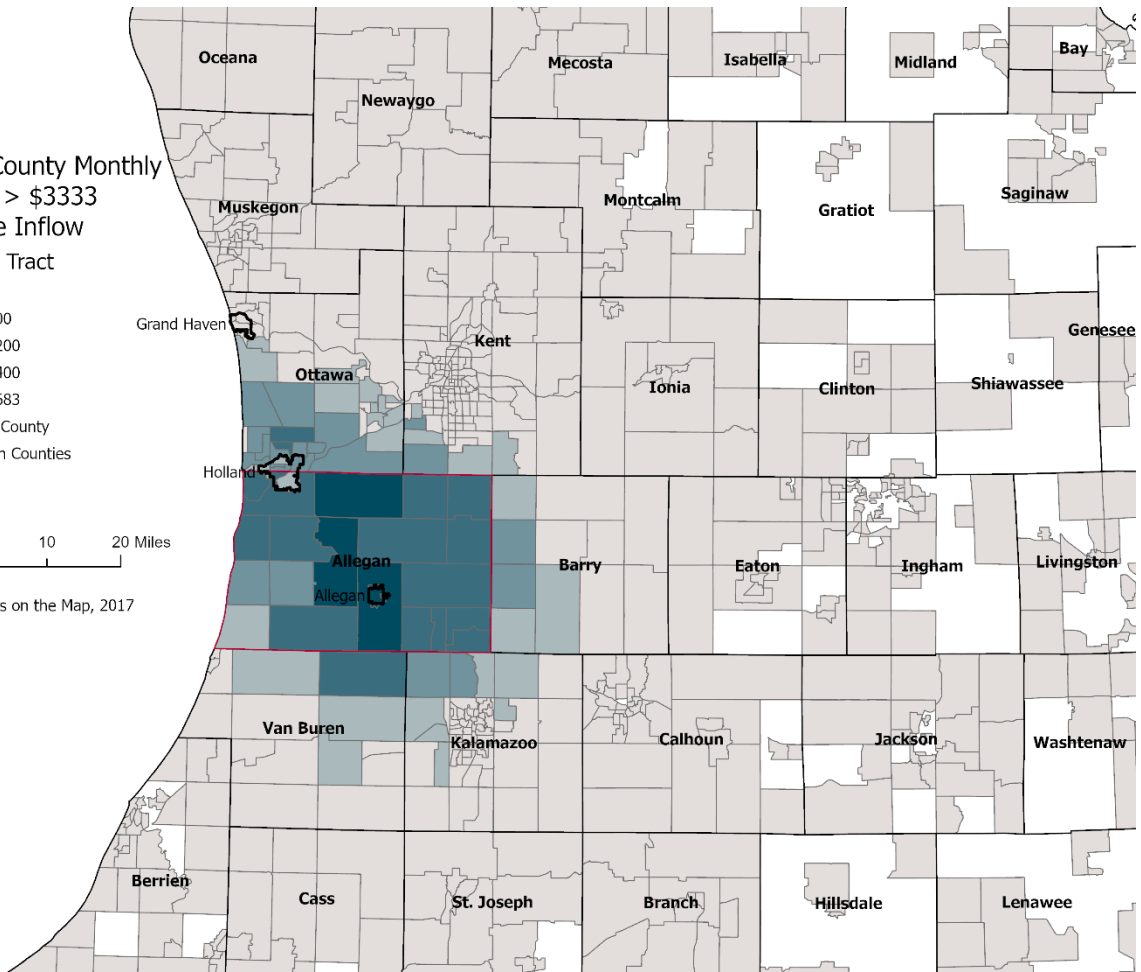
By Census Tract

- 1 to 50
- 51 to 100
- 101 to 200
- 201 to 400
- 401 to 683
- Allegan County
- Michigan Counties

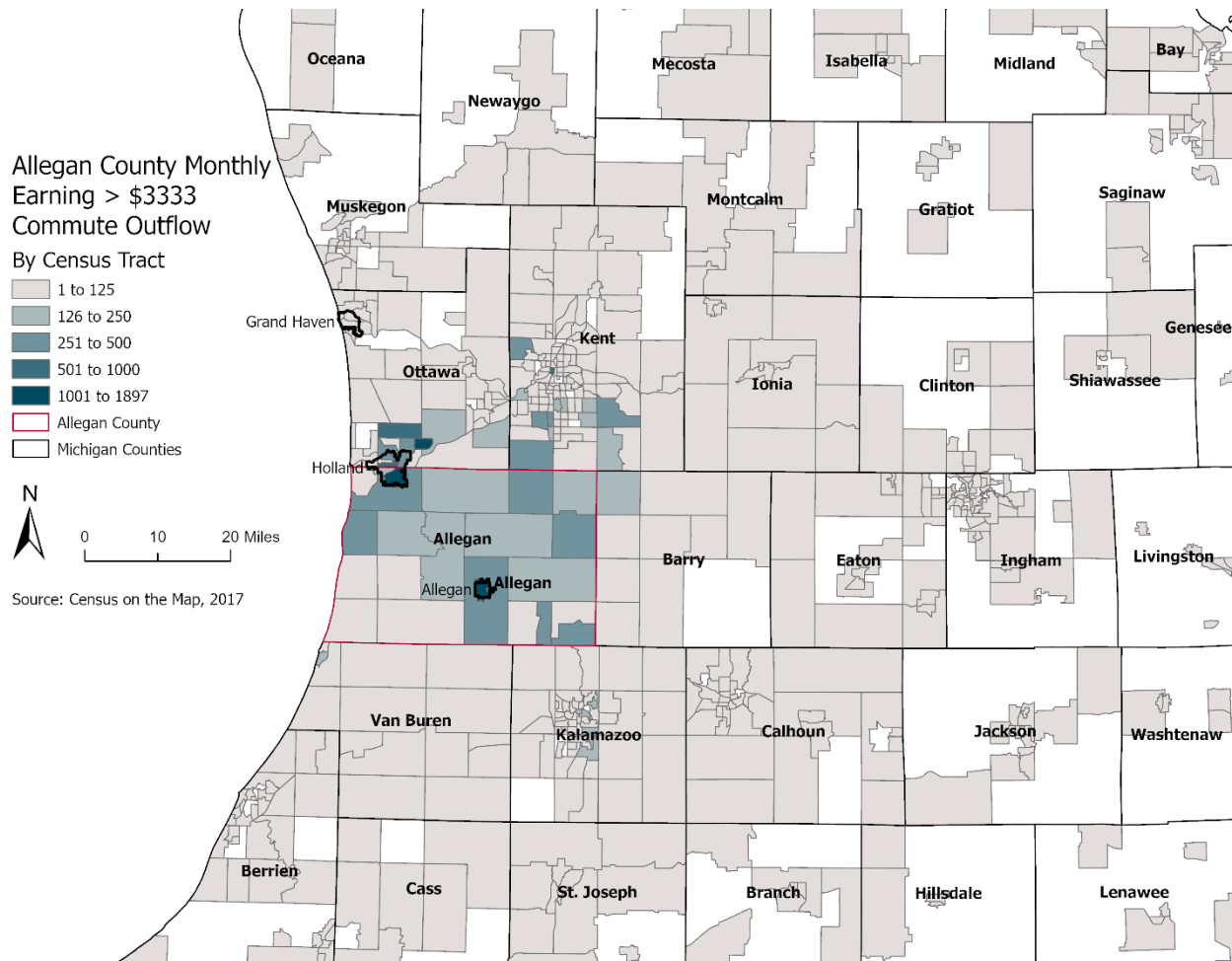


0 10 20 Miles

Source: Census on the Map, 2017



Map 19: Allegan County Monthly Earnings Greater than \$3,333 Commute Inflow



Map 20: Allegan County Monthly Earnings Greater than \$3,333 Commute Outflow

Ottawa County Inflow and Outflow Commuting Patterns

Inflow and Outflow: Ottawa County—Middle-Income Workers

Workers earning between \$1,251 and \$3,333 monthly (2017 data) commute farther than those earning \$1,250 or less to and from Ottawa County. High shares of workers in the \$1,251 to \$3,333 income bracket flow into Ottawa County monthly, ranging geographically from Oceana County to Allegan County (see Map 28). There is minimal commuting to the Grand Rapids area. The outflow of workers earning \$1,252 to \$3,333 commute within Ottawa County and to the Grand Rapids area, with notably high shares of workers commuting to Muskegon County, specifically Fruitport Township and the City of Muskegon (see Map 21). Outflow of the \$1,251 to \$3,333 income group is similar in geographic range and destination as the \$1,250 or less group. Again, inflow to the county has a larger distance range than outflow for the middle-income bracket.

Ottawa County Monthly Earnings \$1251 to \$3333 Commute Inflow

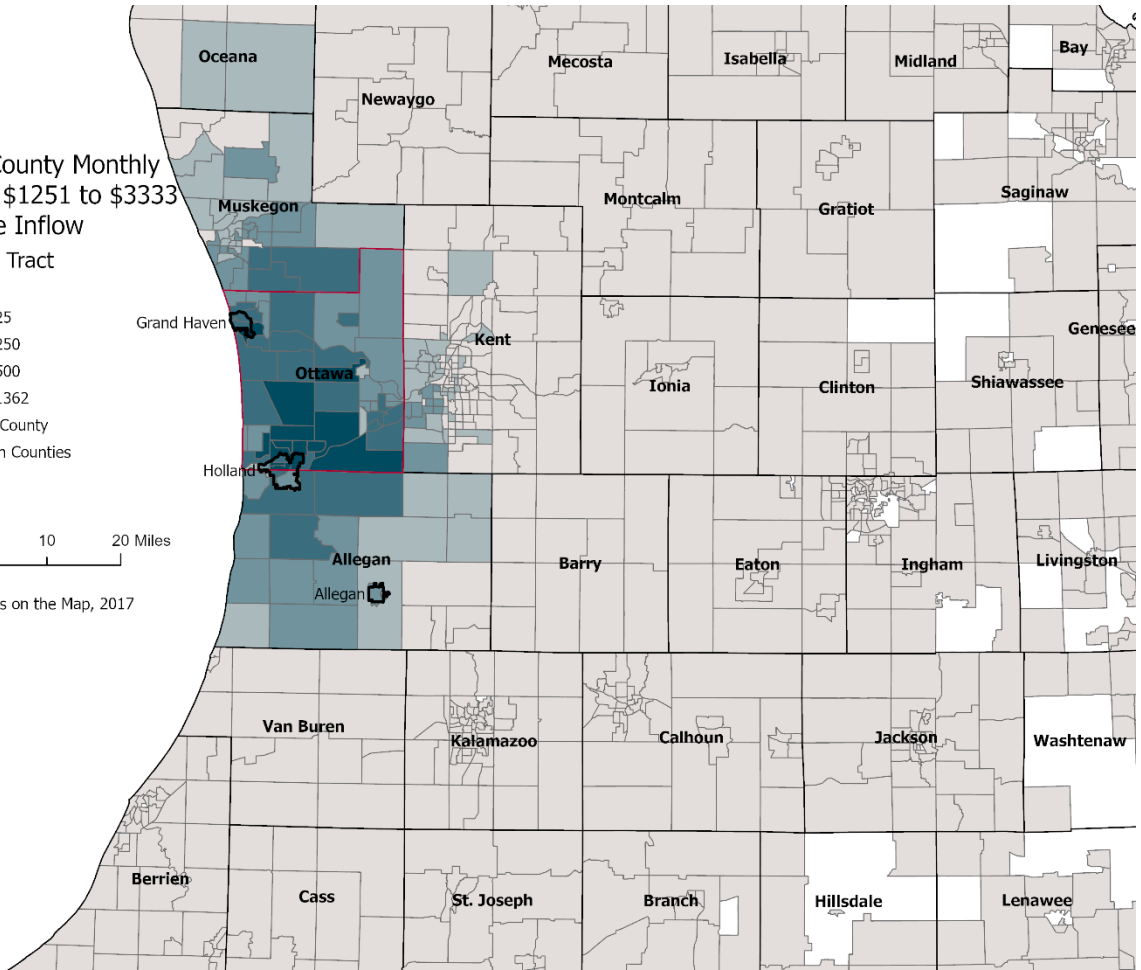
By Census Tract

- 1 to 50
- 51 to 125
- 126 to 250
- 251 to 500
- 501 to 1362
- Ottawa County
- Michigan Counties

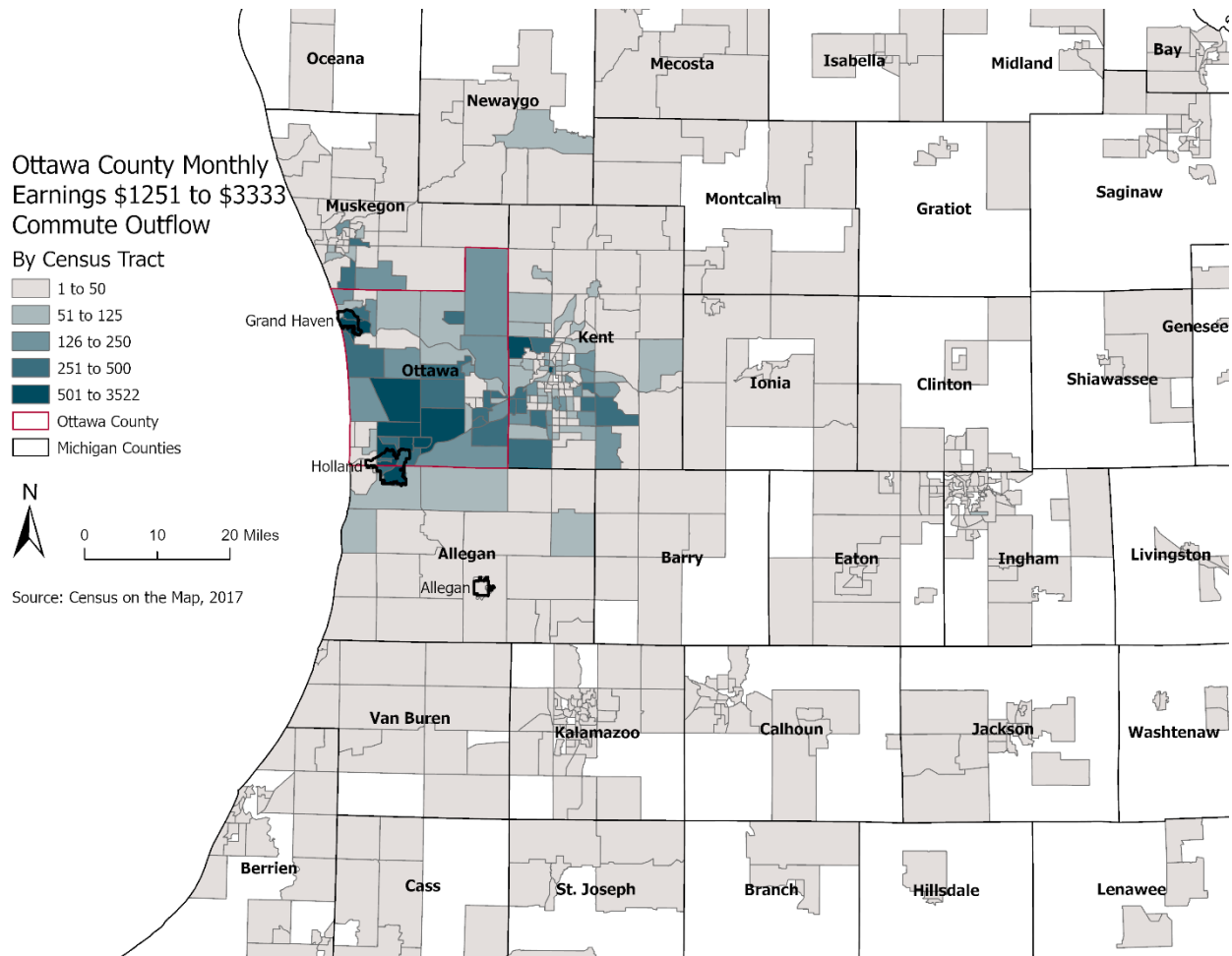


0 10 20 Miles

Source: Census on the Map, 2017



Map 21: Ottawa County Monthly Earnings \$1,251 to \$3,333 Commute Inflow



Map 22: Ottawa County Monthly Earnings \$1,251 to \$3,333 Commute Inflow

Inflow and Outflow: Ottawa County—High-Income Workers

Inflow and outflow commuting for Ottawa County in the highest earning group, \$3,333 or greater in monthly earnings (2017 data), shares a similar pattern to the lower earning groups. Inflow to Ottawa County is primarily from the north and south (Muskegon and Allegan counties) but is largest within the county—specifically census tracts north of Allegan County (see Map 23). Outflow from Ottawa County is largest in the Grand Rapids area, second to census tracts within Ottawa County that are north of Holland and in Grand Haven (see Map 24).

Ottawa County Monthly
Earnings > \$3333
Commute Inflow

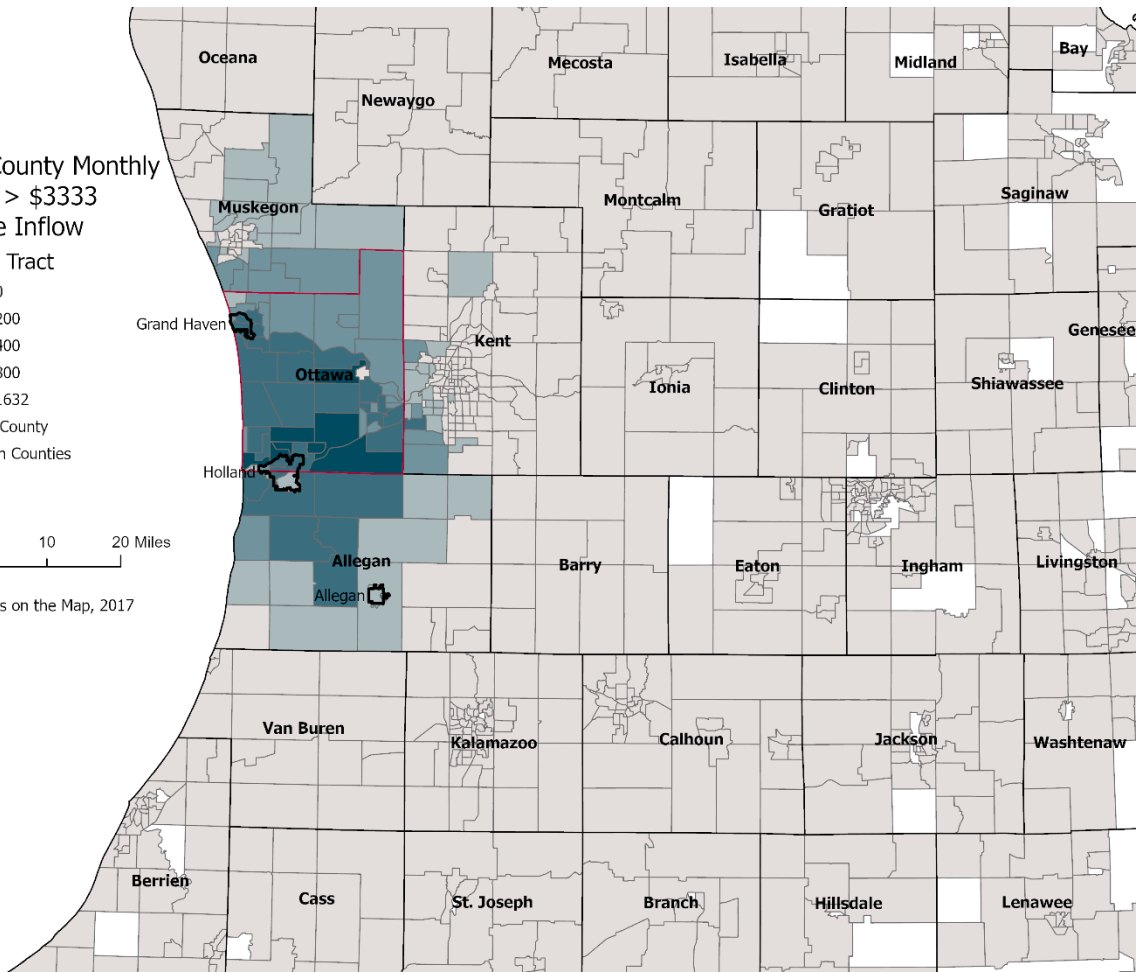
By Census Tract

- 1 to 100
- 101 to 200
- 201 to 400
- 401 to 800
- 801 to 1632
- Ottawa County
- Michigan Counties

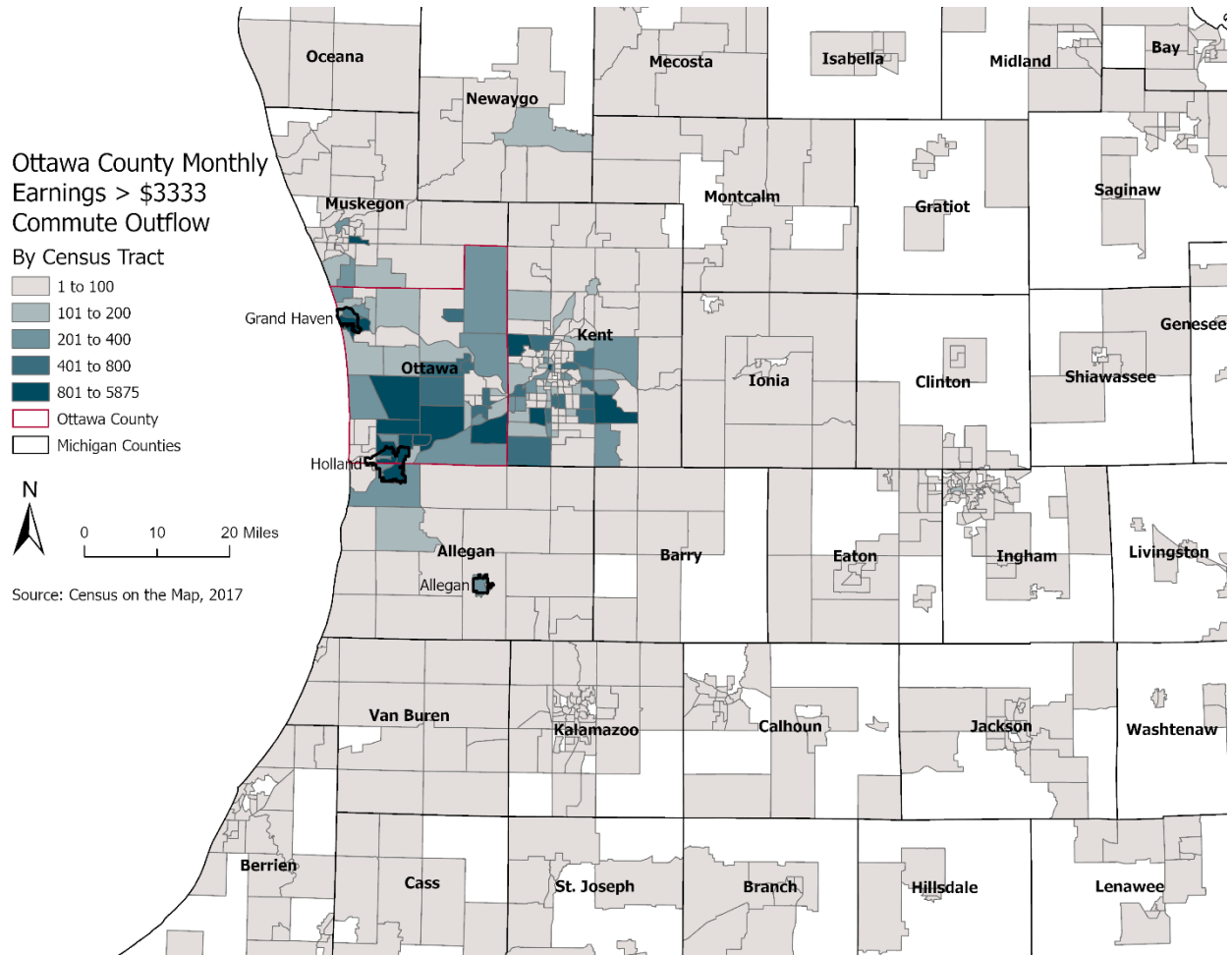


0 10 20 Miles

Source: Census on the Map, 2017



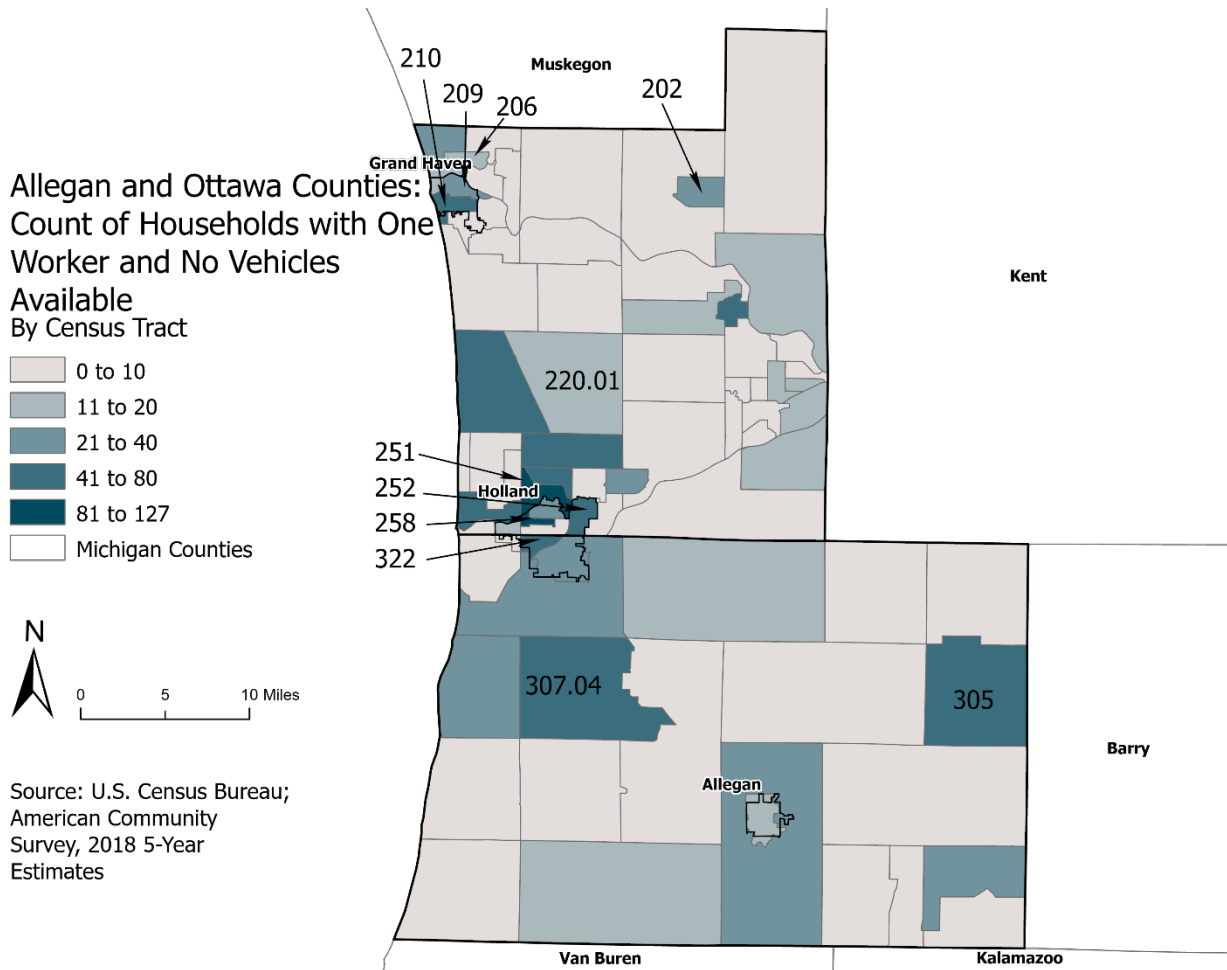
Map 23: Ottawa County Monthly Earnings Greater than \$3,333 Commute Inflow



Map 24: Ottawa County Monthly Earnings Greater than \$3,333 Commute Inflow

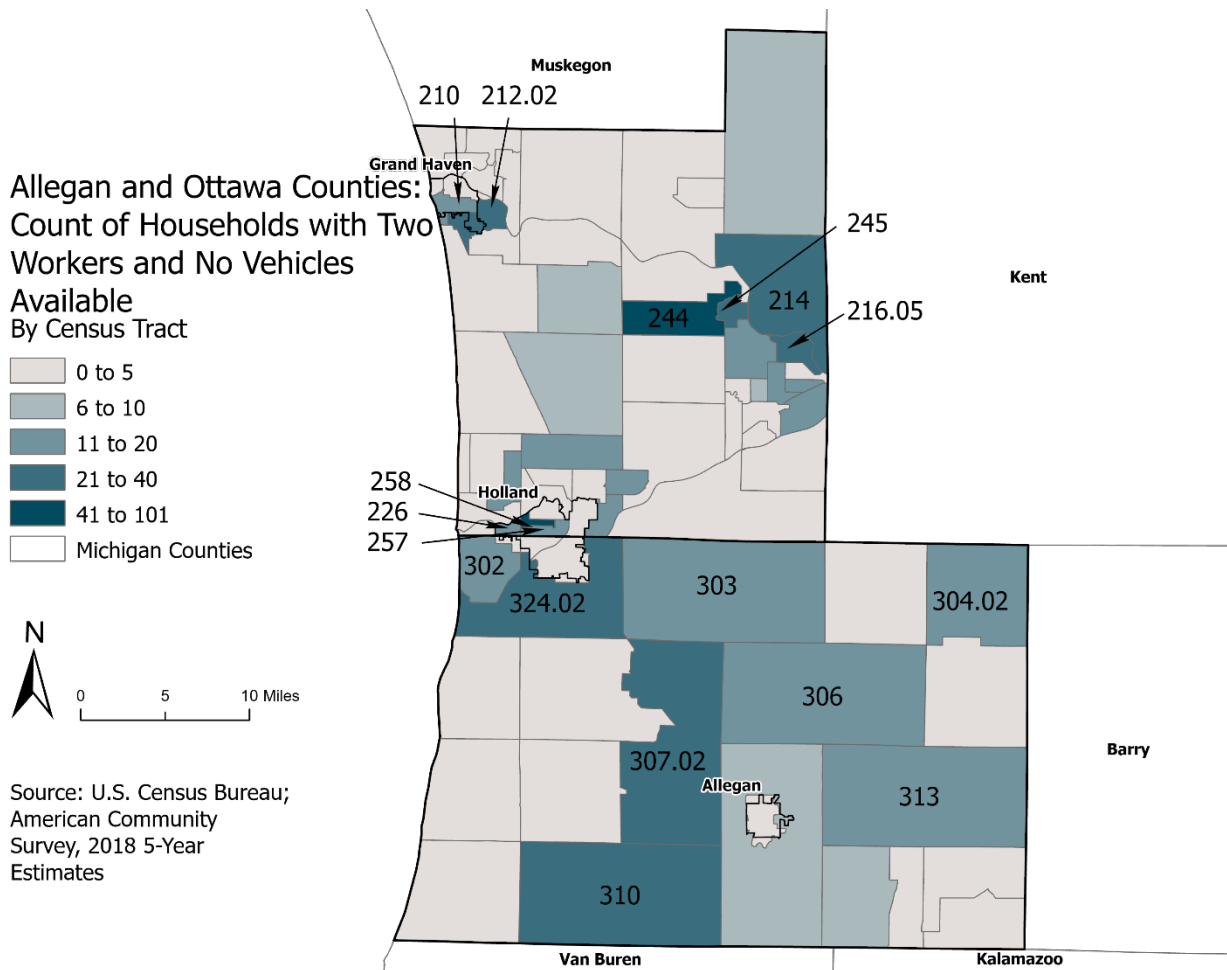
Transportation

Households in the Lakeshore Advantage Region (Ottawa and Allegan Counties) with one worker and no vehicles available are distributed throughout the region, but there is a notable concentration of these households (between 80 and 127) in the city of Holland and the city of Grand Haven (see Map 25) in tracts 258, 251, 322, 252, 210, 209, and 206. Tract 251 (north of the city of Holland) has the highest count of households with one worker and no vehicles available in the region. However, more rural areas in the region with a less dense population than the cities of Holland or Grand Haven (tracts 305, 307.04, 220.01, 202) also have a high number of households with one worker and no vehicles available. In short, the cities of Holland and Grand Haven are dense pockets of one worker households with no vehicles; more rural areas also have high counts of one worker and no vehicles households while having less dense populations.



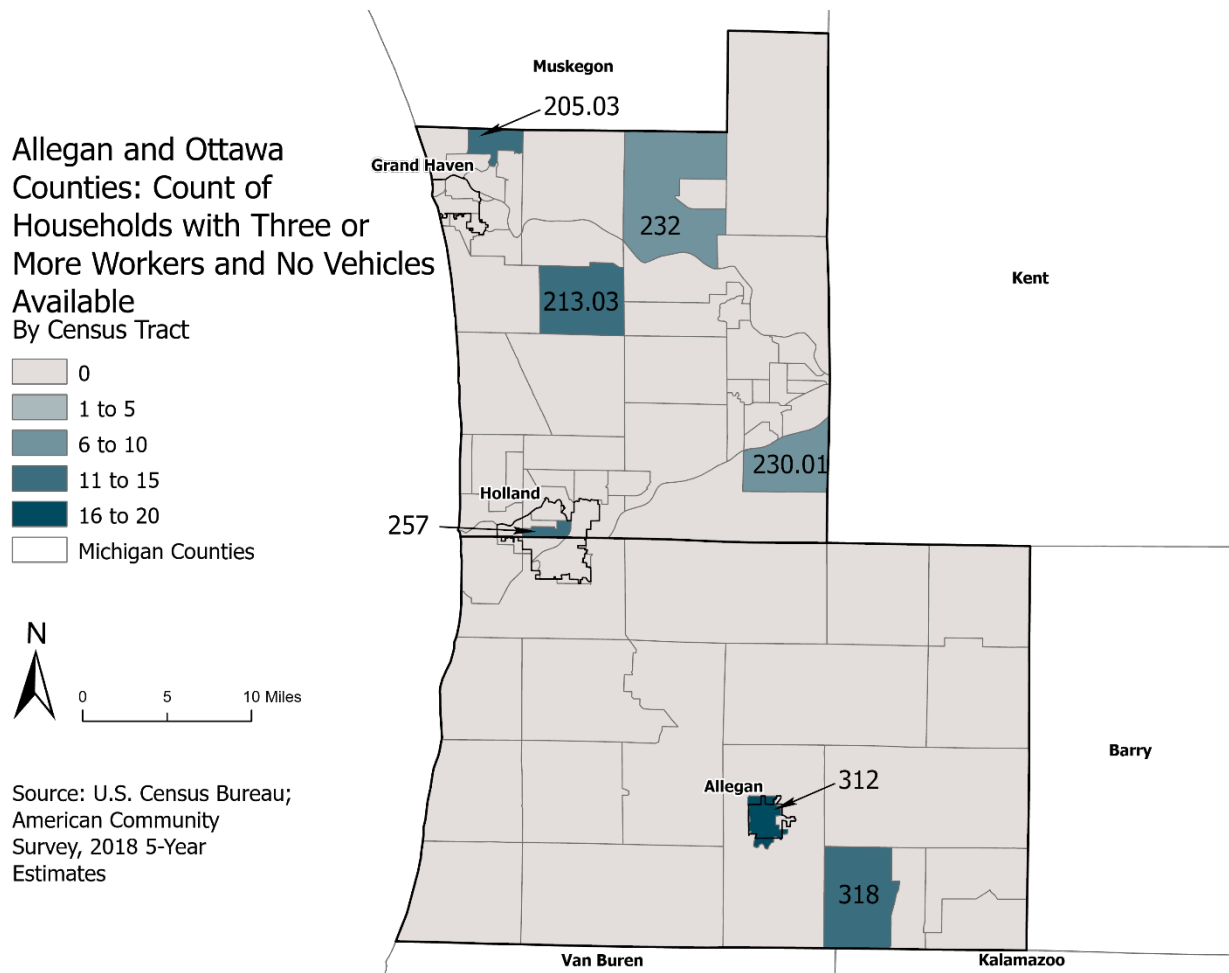
Map 25: Households with One Worker and No Vehicles Available

In the Lakeshore Advantage Region, households with two workers and no vehicles available in Ottawa County are located within urban areas like Holland, Grand Haven, and Allendale, but have a rural distribution in Allegan County (see Map 26). Census Tracts 324.02, 307.02, and 310 have the highest number of households with two workers and no vehicles available (21 to 40 households) in Allegan County. Additionally, tracts 303, 306, 313, 302, and 304.02 in Allegan County also have a notable number of households with two workers and no vehicles available (11 to 20 households). Within Ottawa County, census tracts with high counts of households with two workers and no vehicles available are located within cities like Holland (tracts 258, 226, and 257), Grand Haven (tracts 210 and 212.02), and Allendale (tracts 244 and 245). Tracts 214 and 216.05 (west of Grand Rapids) also have a high number of households with two workers and no vehicles available (between 21 and 40 households).



Map 26: Households with Two Workers and No Vehicles Available

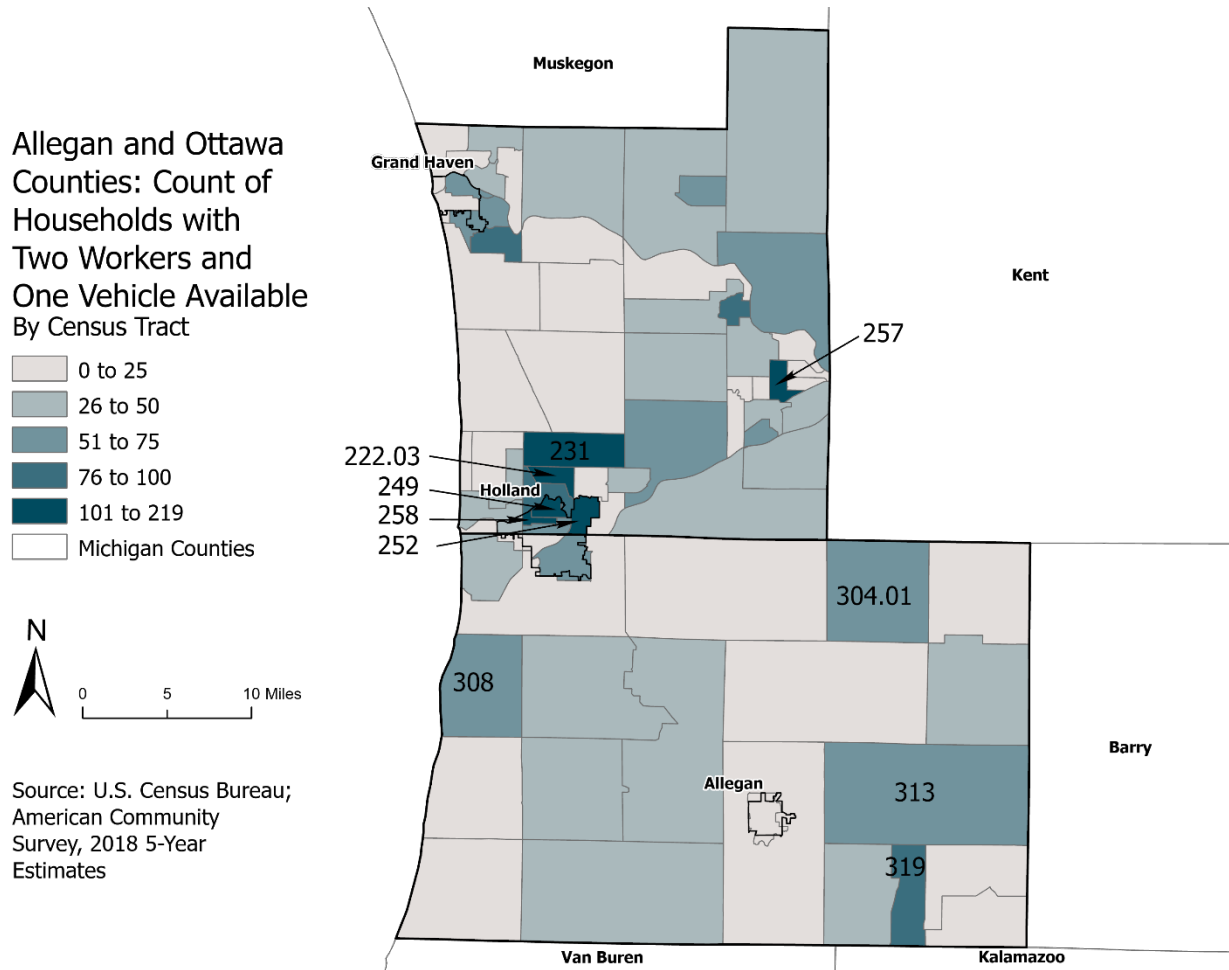
Overall, households with three or more workers and no vehicles available are sparse within the Lakeshore Advantage Region, with most census tracts having counts of zero (see Map 27). Tracts 312, 318, 257, 230.01, 213.03, 231, and 205.03 all have between 6 and 20 households with 3 or more workers and no vehicles available, with tract 312 having the highest count at 20. With the expectation of tracts 257 and 312, most other tracts with high counts of these households are more rural, or at least not located within a city core like most households with one or two workers and no vehicles available.



Map 27: Households with Three or More Workers and No Vehicles Available

Households with two workers and one vehicle available are more abundant within the Lakeshore Advantage Region than households with one, two, or three workers with no vehicles available (see Map 4). Census tracts 258, 249, 252, 222.03, and 231 within and surrounding the city of Holland have the highest number of households with two workers and one vehicle available. Tract 216.04 in Ottawa County also has a high count of

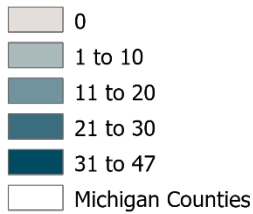
households. Tracts 319, 308, 304.01, and 313 in Allegan County also have a notable number of households with two workers and one vehicle available (between 51 and 100 households); these tracts are also less populated than most tracts listed above in Ottawa County.



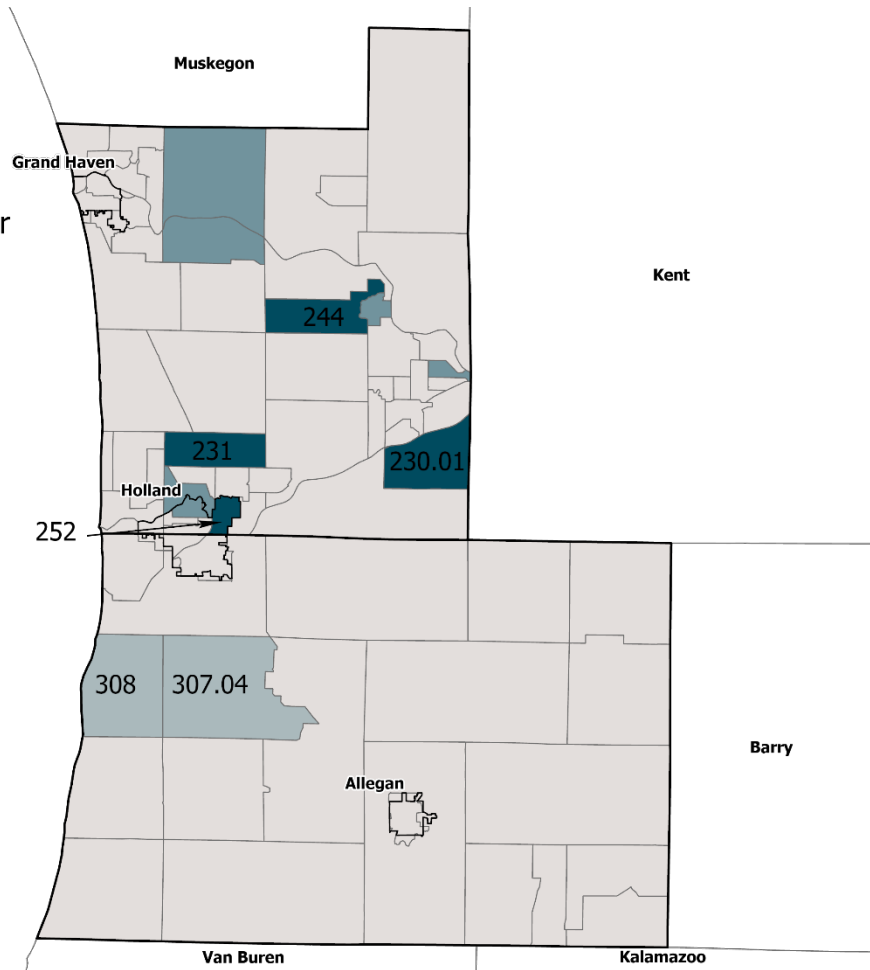
Map 28: Households with Two Workers and One Vehicle Available

Like households with three or more workers and no vehicles available, households with three or more workers and one vehicle available are sparse throughout the Lakeshore Advantage Region and are mostly located in Ottawa County (see Map 29). Additionally, most tracts in Allegan and Ottawa Counties have zero households with three or more workers and one vehicle available. Tracts 252, 231, 244, and 230.01 in Ottawa County have the highest count of households with 3 or more workers and 1 vehicle available (between 31 and 47 households), with tract 252 having the highest count at 47 households. The only tracts in Allegan County that have any households with 3 or more workers with 1 vehicle available are 308 and 307.04; both have less than 10.

Allegan and Ottawa Counties: Count of Households with Three or More Workers and One Vehicle Available By Census Tract



Source: U.S. Census Bureau; American Community Survey, 2018 5-Year Estimates



Map 29: Households with Three or More Workers and One Vehicle Available

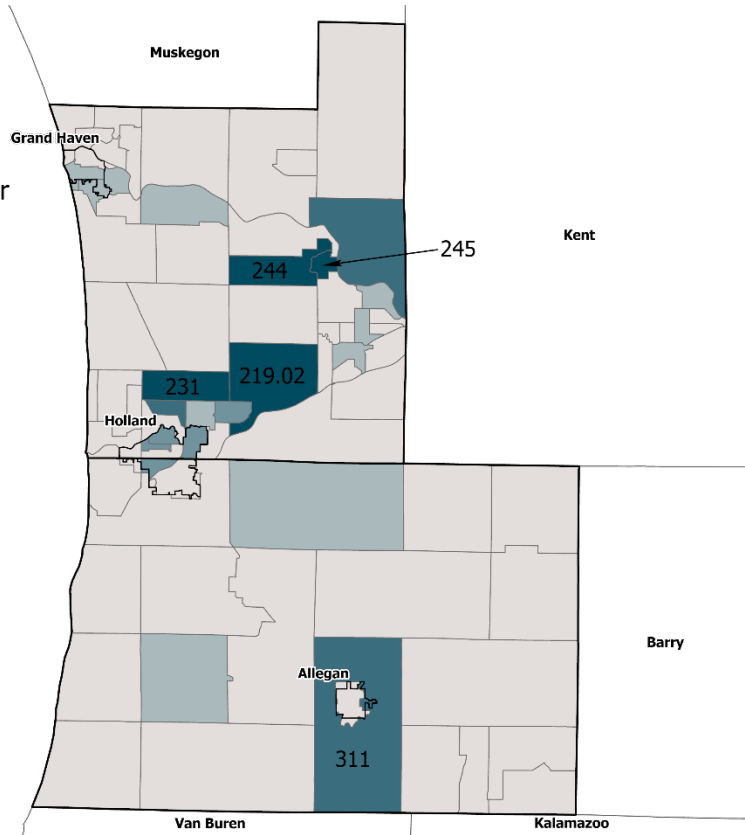
Unlike households with three or more workers and no vehicles available or households with three or more workers and one vehicle available, households with three or more workers and two vehicles available are more prevalent in both Allegan and Ottawa Counties (see Map 30). Households with three or more workers and two vehicles available are concentrated in Ottawa County, located north of Holland (tracts 22.03 and 231) and west of Zeeland (tract 219.02), Allendale (tracts 244), and Grand Valley (tracts 245). In Allegan County, tract 311 has the highest count of households with three or more workers and two vehicles available.

Allegan and Ottawa Counties: Count of Households with Three or More Workers and Two Vehicles Available By Census Tract

- 0 to 25
- 26 to 50
- 51 to 75
- 76 to 100
- 101 to 159
- Michigan Counties



Source: U.S. Census Bureau; American Community Survey, 2018 5-Year Estimates



Map 30: Households with Three or More Workers and Two Vehicles Available

Lakeshore Advantage Tuition Subsidy

One proposal the team at Lakeshore Advantage has asked the Upjohn Institute to evaluate is the cost of subsidizing tuition for out-of-county students to attend the larger campuses of GRCC located in Grand Rapids or MCC located in Muskegon, where more courses are offered. Currently, students of Allegan and Ottawa counties pay \$130 more per contact hour to attend basic classes at GRCC and \$101 more per contact hour to attend courses at MCC. The question the Upjohn team has been asked to estimate is the cost of subsidizing the difference between resident and non-resident tuition.

This section summarizes the work estimating a place-based (or Promise) scholarship program that would subsidize the cost for graduates to attend neighboring community colleges. The Promise Scholarship model has proven to be an effective method in Michigan and throughout the United States, where investing in human capital yields high economic returns.

Several program parameters are assumed in the estimation of the model:

1. Student eligibility
 - Graduation from the Allegan Area Educational Service Agency or Ottawa Area ISD.
 - Direct enrollment in a post-secondary institution no later than 1\one year following graduation and attending full time. Full time is defined as a minimum of 15 credit hours.
2. Eligible post-secondary institutions
 - The eligible institutions at which students may use their scholarships include Grand Rapids Community College (GRCC) and Muskegon Community College (MCC).
3. Scholarship structure
 - Students who enroll in higher education within one year after high school graduation are eligible for two years of scholarship funding.
 - The scholarship would be awarded on the basis of enrollment in either GRCC or MCC and cover the tuition difference between out-of-county and in-county tuition.

Each element of estimating the tuition subsidy is described below, and the estimated costs are shown in Table 2.

Step 1. Estimating the number of students eligible for the scholarship

The first step in estimating the cost of a place-based scholarship program is to understand how many students could potentially be eligible for the program. This requires examining enrollment trends in the Allegan Area Educational Service Area and the Ottawa Area ISD and the expected number of eligible college-going graduates. Using demographic forecasts on an estimate provided by the school districts in each ISD, the estimate is adjusted as necessary

to match assumptions about enrollment impacts of a last-dollar scholarship program and the associated time frame.

Based on these enrollment forecasts and population growth trends, it is assumed that the population of eligible seniors that could take advantage of the scholarship would increase slightly over time.

Step 2. Projecting which colleges students will attend

Under the model, student numbers increase steeply in years one through two as successive classes of graduating seniors enter post-secondary education. Once the program is fully enrolled with two classes of graduates, student numbers remain relatively flat. While three years would be allowed for use of the two-year scholarship, the costs are higher at the beginning of the subsidy, and it is assumed that everyone will progress through their program in two years.

To calculate the likely year-to-year retention of scholarship recipients, the average retention rate for full-time students at community colleges is used. For this model, the retention rate is estimated to be 27.9%. This includes all students who earn a certificate or degree within three years of enrolling. The rate would increase if we added students who take longer to earn a degree or certification, which would add to the cost significantly.

Step 3. Projecting scholarship amount

The final step is to estimate the cost of covering the difference between in-county and out-of-county students. As the basis of the estimate, the difference paid to attend GRCC or MCC full time for students from Allegan and Ottawa counties and the difference for residents of Kent and Muskegon counties to attend those schools is used. Based on the data found using IPEDS,¹ in the first year, graduates pay a difference of \$3,861 per year at GRCC and \$4,091 per year at MCC. This estimate is multiplied by the number of students who are assumed to attend community college, yielding a per-student estimated cost for each institution.

Cost Estimate

The program in its first year is estimated to cost \$2,303,889 and then rise to an estimated annual cost of \$3,236,913 by year 10. The 10-year estimated cost of the subsidy is shown in Table 2. The costs are not adjusted for inflation but do take into account projected increases in community college tuition. Note that costs rise substantially in the first two years of the program, then flatten out. The reason is that Promise programs take two years

¹ IPEDS is the Integrated Postsecondary Education Data System, which is a system of interrelated surveys conducted annually by the U.S. Department of Education's National Center for Education Statistics.

to become fully subscribed, since in year one only a single group of graduates is receiving scholarships. This increases annually until two graduating classes are enrolled.

Table 1: 10-Year Subsidy Cost Estimate

10-Year Subsidy Cost Estimate

Class	Students	Average Cost Per Student	Annual Cost
2021	574	\$4,012	\$2,303,889
2022	715	\$4,062	\$2,902,840
2023	711	\$4,114	\$2,923,199
2024	738	\$4,167	\$3,073,762
2025	725	\$4,223	\$3,059,372
2026	711	\$4,279	\$3,042,267
2027	710	\$4,338	\$3,078,431
2028	718	\$4,399	\$3,159,235
2029	726	\$4,461	\$3,239,326
2030	715	\$4,526	\$3,236,913

Source: Upjohn Institute

Risks to Forecast

Promise scholarship programs must benefit from a secure and sustainable funding stream that will remain in place over a long period. This helps students, families, educators, and other stakeholders make decisions within a predictable framework. Obtaining a reliable cost estimate is one step toward ensuring that such a secure funding stream is created. However, all estimates contain risks, and some of the assumptions in this report may not prove to be correct. In seeking to be transparent about the decisions made throughout the report, areas where data or assumptions are problematic are highlighted. The most important risks are summarized here:

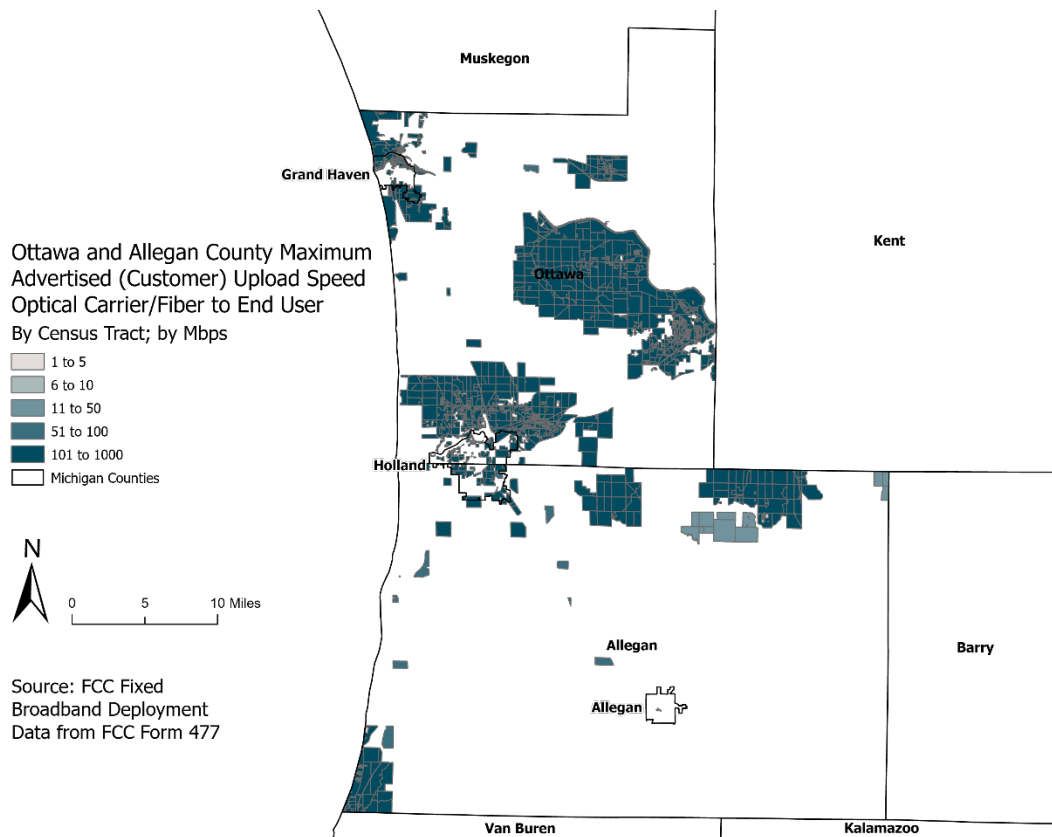
- It is assumed that all students will attend full time. By assuming immediate full-time enrollment, the estimate is higher in the beginning of the program since students have extra time in which to complete their degrees (three years for the two-year programs).
- The scholarship could lead to an improvement in retention rates at two-year institutions; if so, costs would increase.
- There is some uncertainty around tuition rates over the 10-year forecast period. This increase is based on three-year average historical trends and the current political climate, but the rate of tuition increase (and/or the political climate) could certainly change over the next decade.
- This model assumes there is no switching from other two-year schools to GRCC or MCC. This is the likeliest risk to the forecast, as this would undoubtedly happen, but there is no way of knowing to what degree. If this were to occur, the cost of the program would rise.

The overall cost of the scholarship “promise style” program should be compared to the overall cost of implementing a millage. Creating a scholarship program brings with it several advantages. It is less expensive overall, costing a fraction of what a millage would. Additionally, it allows students in each county to choose which community college best suits their needs, either geographically or in area of study. If the Lakeshore Advantage counties commit to one community college system, the entire county is then locked into a reduced rate for only that institution. This removes the flexibility for students to choose which school is best for them, while still paying a reduced rate to attend that school.

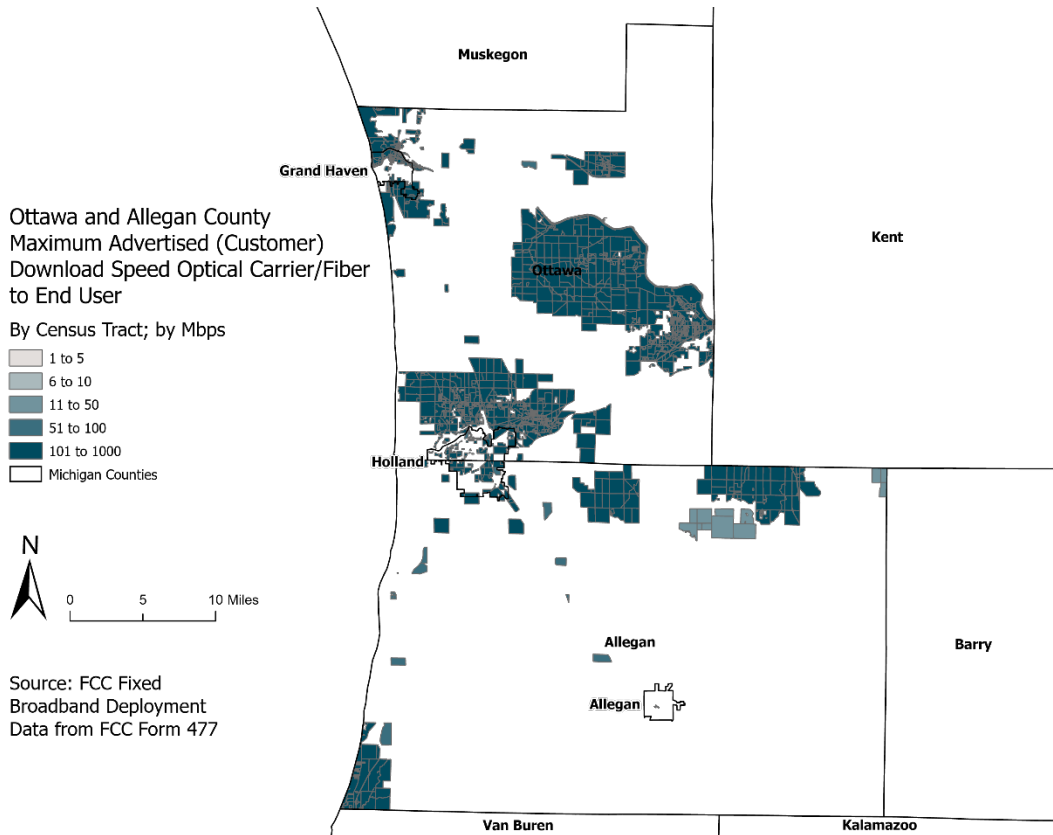
Broadband in the Lakeshore Advantage Region

Maximum Advertised Upload and Download Service Offered by Provider for Customer Service (Fiber)

Maps 31 and 32 reflect optical carrier/fiber to the end user (optical carrier/fiber is defined as technology transfer code 50 on FCC Form 477) as maximum advertised upload and download service speeds offered by the provider for customer service. Between Ottawa and Allegan counties, Ottawa County has more and faster fiber coverage. Most fiber coverage is 1,000 Mbps, but some areas in Allegan County only advertise speeds between 11 to 50 Mbps. Areas in Ottawa County that have large coverage include Spring Lake Township, Grand Haven Charter Township, Allendale (and surrounding zones like Blendon Township and Georgetown Chart Township), and areas north of Holland (Holland Charter Township and Park Township). Allegan County’s high (101 to 1,000 Mbps) coverage is limited to Casco Township, Door Township, and the city of Holland. The city of Allegan has nearly no fiber coverage.



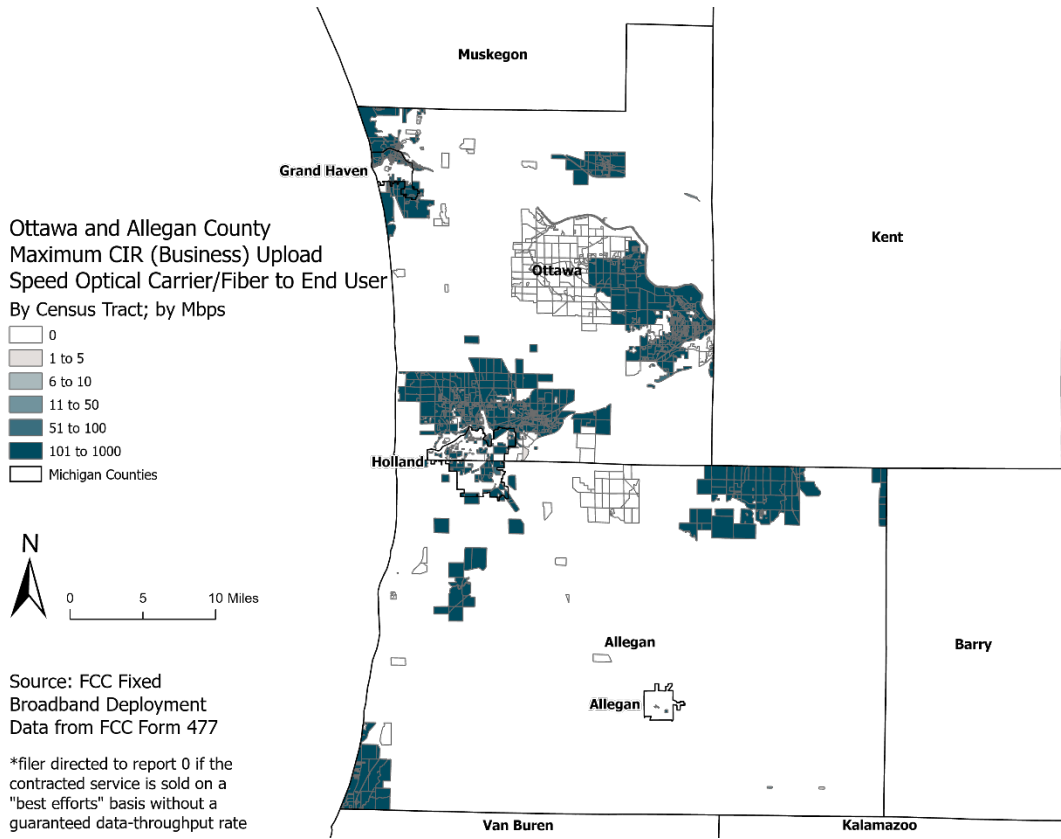
Map 31: Ottawa and Allegan County Maximum Advertised Upload Speed Optical Carrier/Fiber to End User



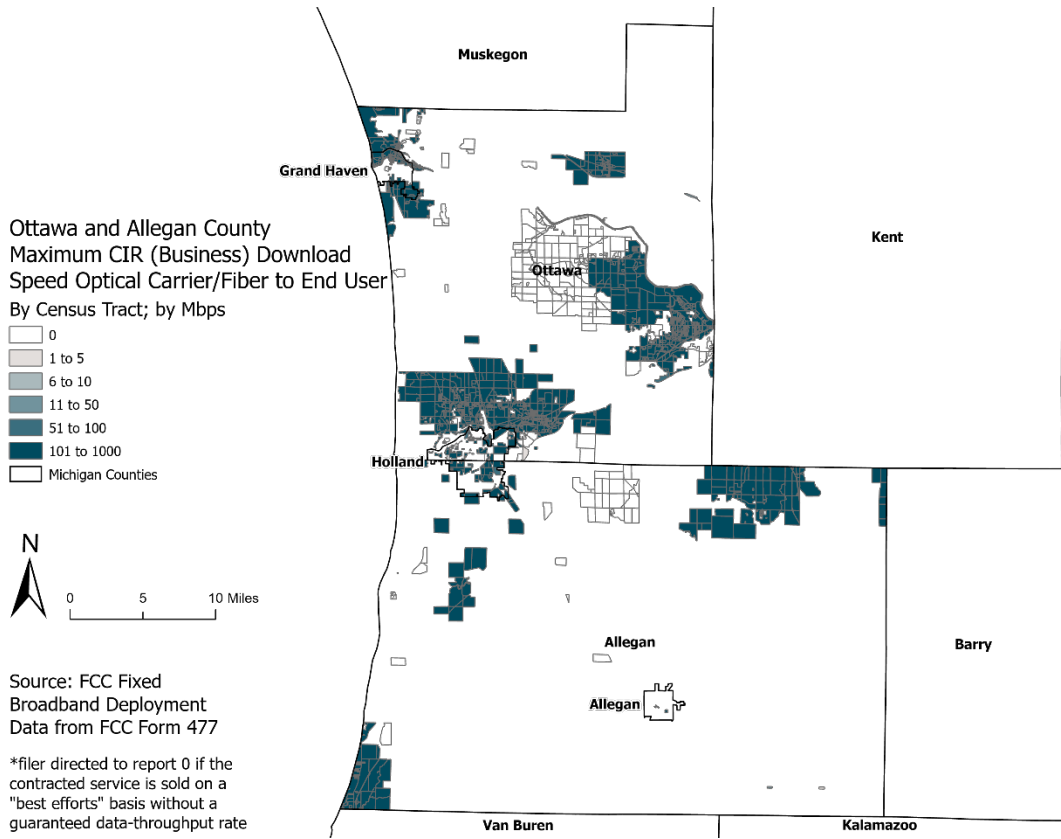
Map 32: Ottawa and Allegan County Maximum Advertised Upload Speed Optical Carrier/Fiber to End User

Maximum Contractual Upload and Download Service by Provider for Business Service (Fiber)

Maps 33 and 34 reflect optical carrier/fiber to the end user (optical carrier/fiber is defined as technology transfer code 50 on FCC Form 477) as maximum advertised upload and download service speeds offered by the provider for business service. Ottawa and Allegan counties have different coverage for business service fiber; Ottawa County has much more comprehensive coverage. Ottawa County has the fastest fiber coverage in Spring Lake Township and Grand Haven Charter Township, Allendale (and surrounding zones like Blendon Township and Georgetown Chart Township), and areas north of Holland (Holland Charter Township and Park Township). However, areas in Ottawa County are reported as zero, where the contracted service is sold on “best efforts” without a guaranteed data-throughput rate. The areas of Allegan County with the fastest fiber coverage include Casco Township, Door Township, Manlius Township, and areas of the city of Holland. The city of Allegan has almost no fiber coverage.



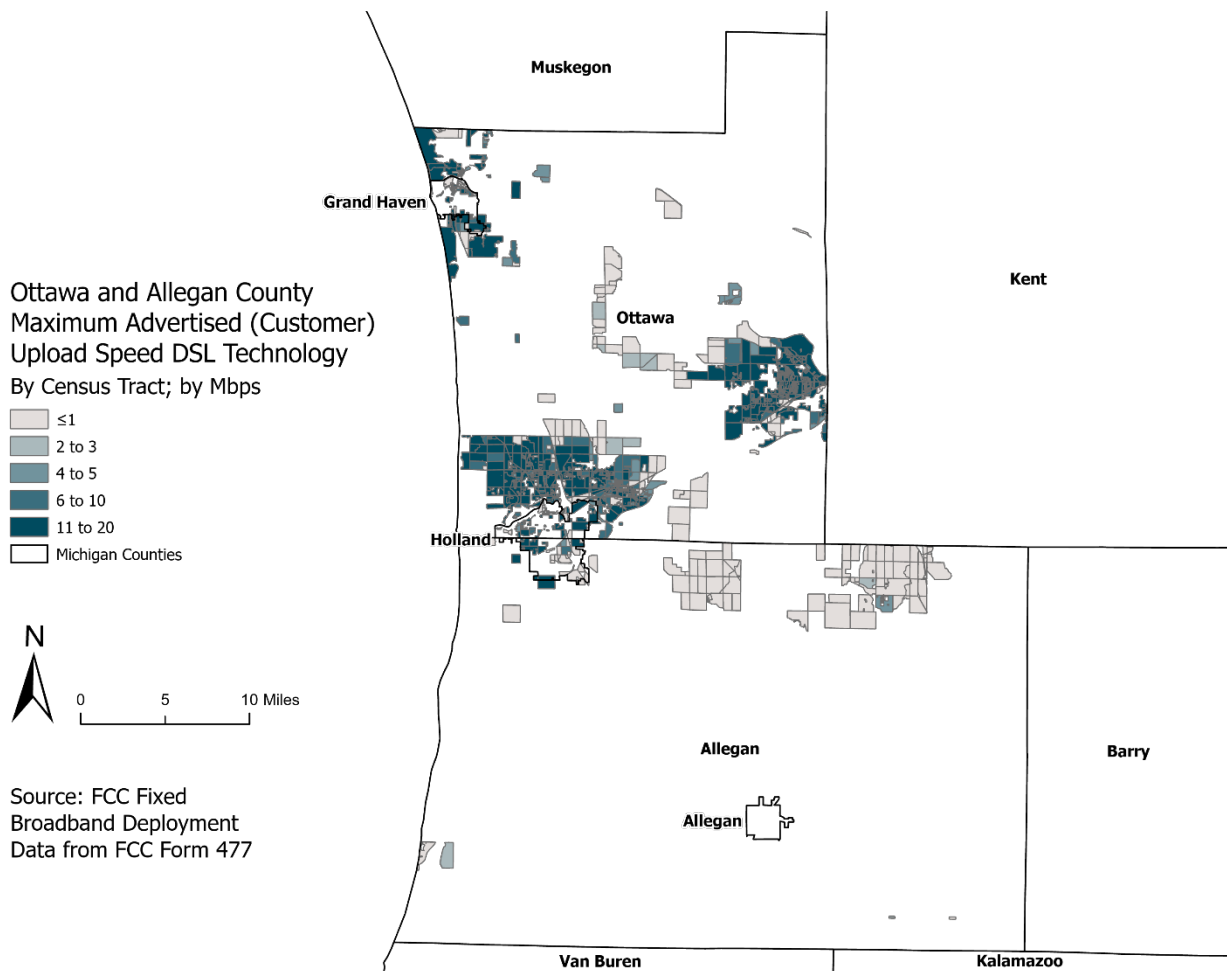
Map 33: Ottawa and Allegan County Maximum CIR Upload Speed Optical Carrier/Fiber to End User



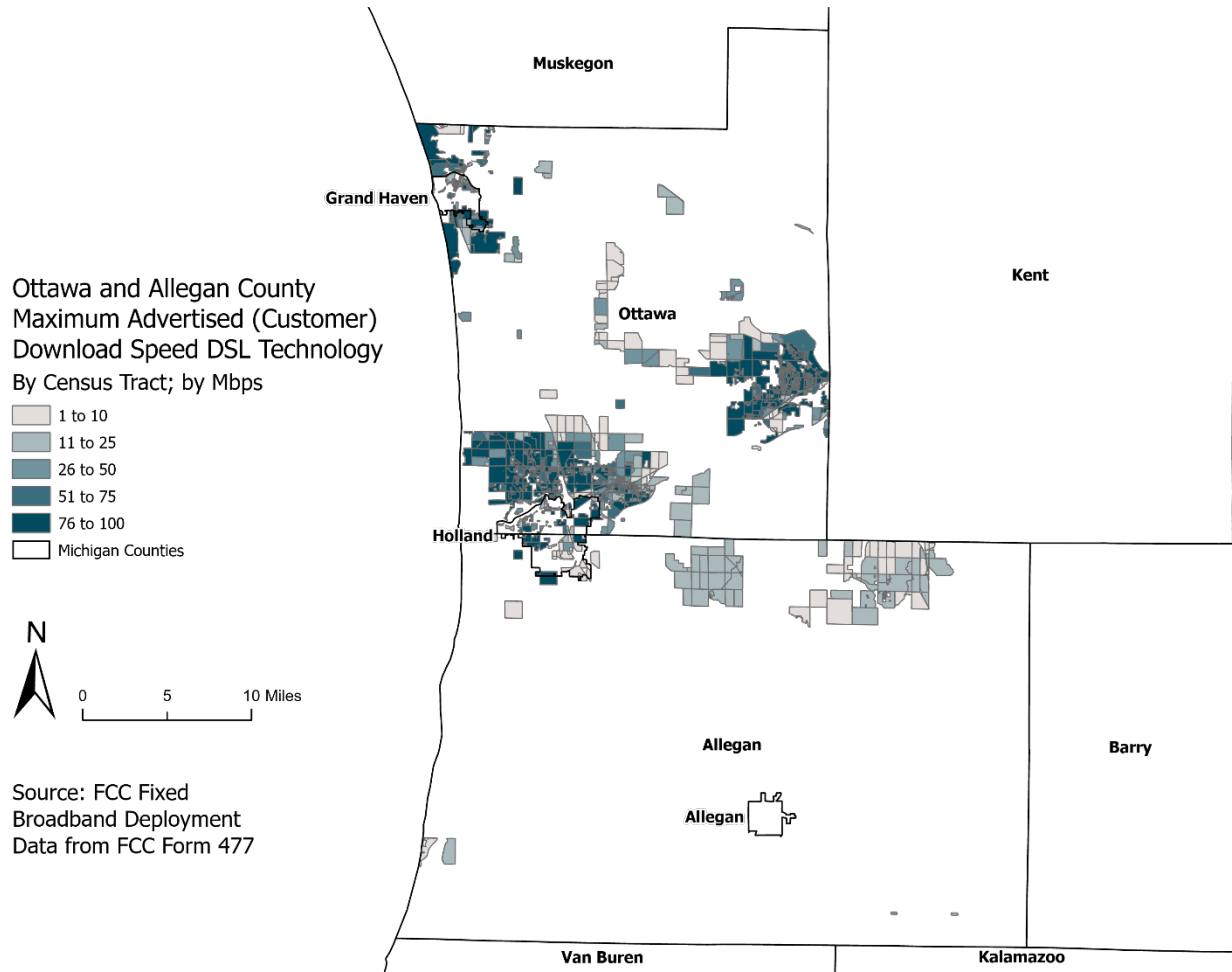
Map 34: Ottawa and Allegan County Maximum CIR Download Speed Optical Carrier/Fiber to End User

Maximum Advertised Upload and Download Service Offered by Provider for Customer Service (DSL)

Maps 35 and 36 display DSL technology (DSL is defined as technology transfer codes 0, 11, 12, and 20 on FCC Form 477) as maximum advertised upload and download service offered by the provider for customer service. Like all other broadband transfer technologies, Allegan County has substantially less DSL coverage compared to Ottawa County. Ottawa County has the highest DSL upload and download speeds in Holland Charter Township, Park Township, Grand Haven Charter Township, and Spring Lake Township. The highest upload and download speeds in Allegan County are in the city of Holland, Overisel Township, and Dorr Township. In general, both counties have faster download speeds (reaching up to 100 Mbps download speed, as opposed to 20 Mbps upload speed). Overall, DSL coverage is sparse in Ottawa County, with most coverage located north of Holland, the townships surrounding the city of Grand Haven, and the Grandville area. Furthermore, DSL coverage in Allegan County is limited to the city of Holland, Overisel Township, and Dorr Township.



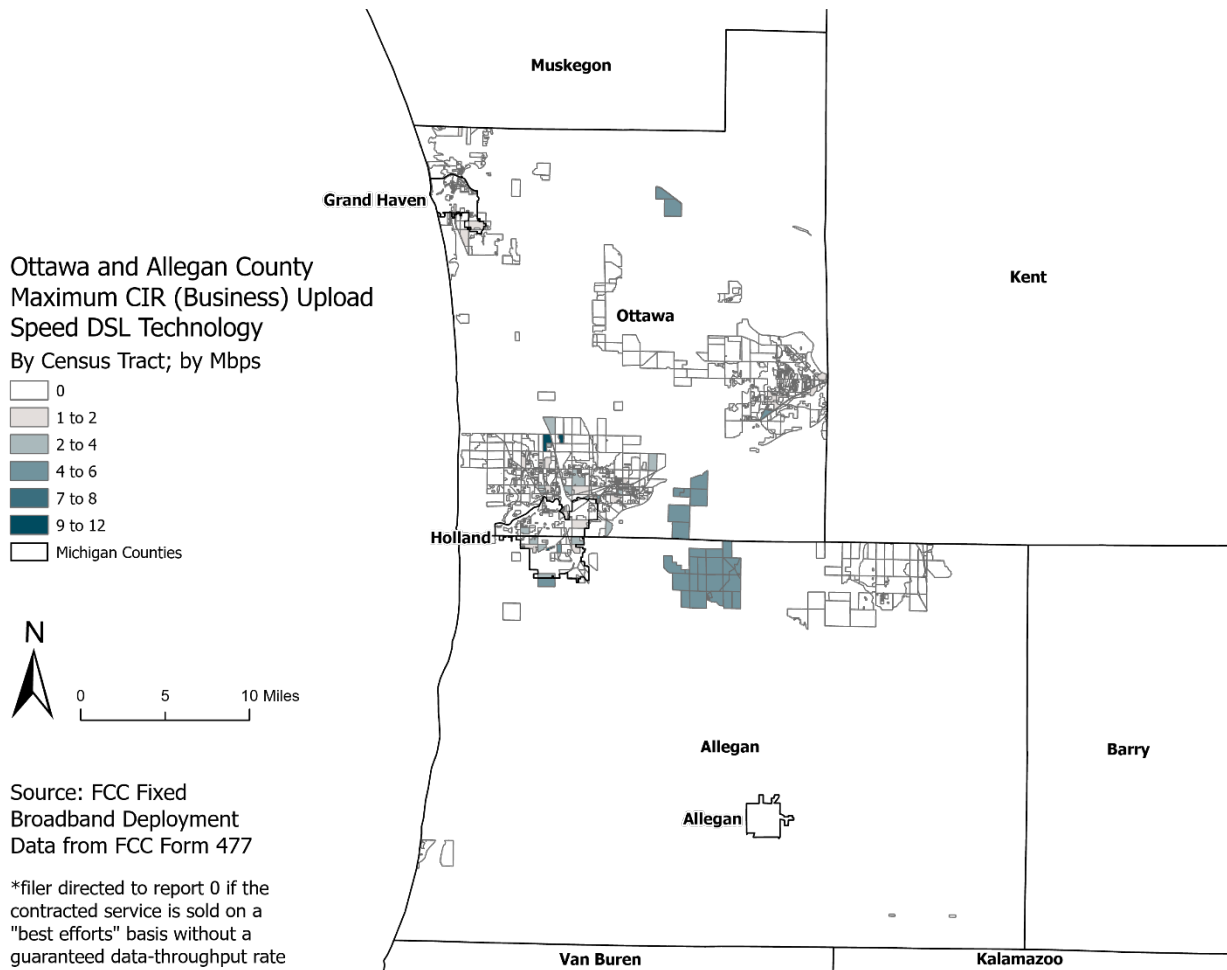
Map 35: Ottawa and Allegan County Maximum CIR Upload Speed DSL Technology



Map 36: Ottawa and Allegan County Maximum CIR Download Speed DSL Technology

Maximum Contractual Upload and Download Service by Provider for Business Service (DSL)

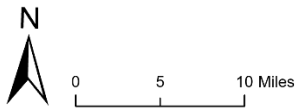
Maps 37 and 38 depict DSL technology (DSL is defined as technology transfer codes 0, 11, 12, and 20 on FCC Form 477) as maximum advertised upload and download service speeds offered by the provider for business service. Most business DSL service in both Allegan and Ottawa counties is sold on a “best efforts” basis without a guaranteed data-throughput rate. Guaranteed data-throughput rates for DSL in Allegan and Ottawa counties is sparse. The highest concentration of guaranteed data-throughput rates for DSL are in Overisel Township in Allegan County and Zeeland Charter Township in Ottawa County (4 to 6 Mbps for upload speed and 13 to 25 Mbps for download speeds). Some areas in Holland Charter Township and Grand Haven Charter Township do have a guaranteed data-throughput rate.



Map 37: Ottawa and Allegan County Maximum Advertised Upload Speed DSL Technology

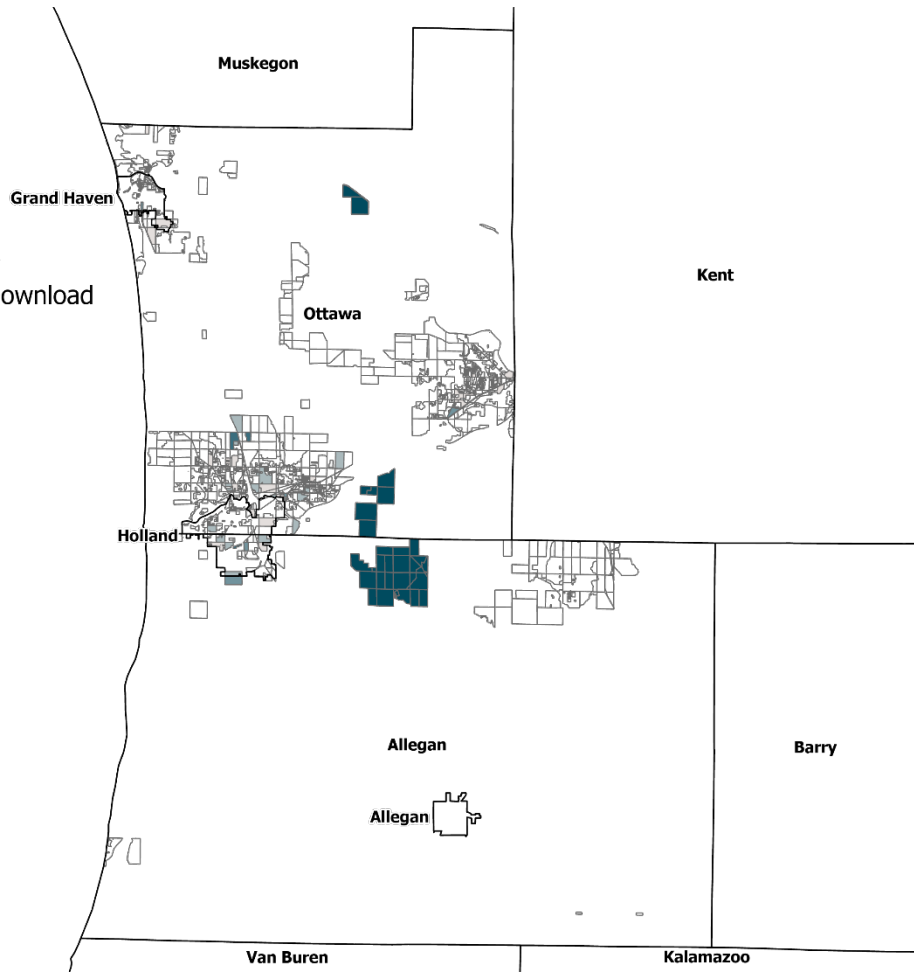
Ottawa and Allegan County
 Maximum CIR (Business) Download
 Speed DSL Technology
 By Census Tract; by Mbps

- 0
- 1 to 2
- 3 to 4
- 5 to 8
- 9 to 12
- 13 to 25
- Michigan Counties



Source: FCC Fixed
 Broadband Deployment
 Data from FCC Form 477

*filer directed to report 0 if the
 contracted service is sold on a
 "best efforts" basis without a
 guaranteed data-throughput rate



Map 38:Ottawa and Allegan County Maximum Advertised Upload Speed DSL Technology