Collier 2045 Long-Range Transportation Plan

2015 and 2045 Socio-economic Data

PREPARED FOR: Collier MPO

PREPARED BY: Jacobs

DATE: 2/3/2020

Introduction

The Collier MPO is in the process of updating the previous (year 2040) Long-Range Transportation Plan (LRTP) to a new planning horizon year of 2045. To support the update effort by all MPOs in District One, the Florida Department of Transportation (FDOT) is updating its 2040 regional planning model to the year 2045. This model is referred to as the D1-RPM.

Long-range transportation planning by MPOs relies heavily on the D1-RPM, which is a travel model that uses algorithms to simulate travel behavior throughout District One. The results of the modeling helps MPOs analyze the need for new road capacity and for better transit service.

Travel models follow a sequence of steps that simulate responses people make about how to travel, given various possible configurations of highway and transit service. These configurations are effectively scenarios of different travel networks that could exist in Collier County in the year 2045. These 'travel-network scenarios' are tested to see how they perform given a hypothetical distribution of people and their destinations across Collier County in 2045.

Before any travel-network scenarios can be tested, the forecasted distribution of population, employment, shopping, schools, etc. for the year 2045 must be entered into the model. This dataset is referred to as socio-economic (SE) data, which must be provided for each Traffic Analysis Zone (TAZ). Future land use patterns are a key variable that affects transportation networks and the public investments required to build and maintain them. **Figure 1** shows the 730 Collier County TAZs being used in the new D1-RPM. Florida DOT modified the TAZ boundaries slightly from the prior travel model, and all zone numbers have been changed.

In addition to analyzing the effectiveness of travel-network scenarios, the model can be run using different scenarios of how population, employment, and shopping might be distributed across Collier County in 2045. These are called 'land-use scenarios.'

Before any tests are run for the year 2045, the travel model must be calibrated to ensure that it reasonably represents actual travel decisions being made in Collier County. This process is called "validation," which is conducted by running the travel model for the year 2015, using actual traffic counts and transit service for 2015 and using SE data for each TAZ that represents actual conditions in 2015.

FDOT runs the D1-RPM for all MPOs in District One, but it relies on individual MPOs to provide SE data for 2045 and to review SE data for 2015. These datasets have been in preparation since spring of 2019. This memorandum describes key assumptions and data sources for SE data and presents a summary and maps of the resulting data. **Figure 2** identifies the types of SE data that are required for each TAZ for 2015 and for 2045.

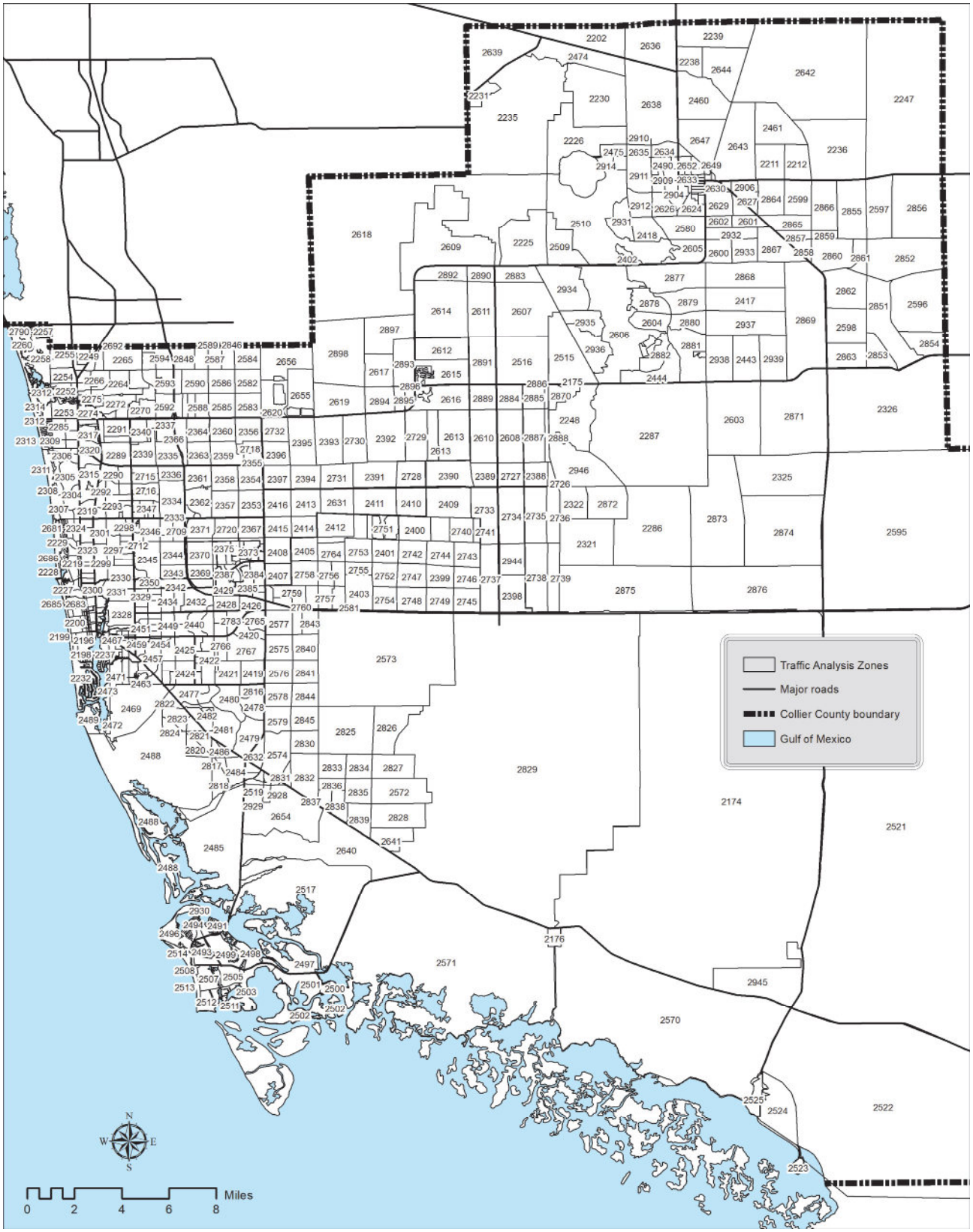

***Figure 1**, Traffic Analysis Zones in the latest D1-RPM*

Field name	Description of data in each field
ZONE	Unique number for each Collier County traffic analysis zone in FDOT's D1-RPM
SFDU	Number of single-family dwelling units
SF_PctVac	Percentage of single-family dwelling units that are vacant because they are for sale, for rent, being rehabilitated, etc.
SF_PctVnp	Percentage of single-family dwelling units that are vacant (as above) plus those that are used only by seasonal residents (whose permanent residence is somewhere else)
SFpop	Permanent population in (occupied) single-family dwelling units
SF_PopDU	Average number of permanent residents per (occupied) single-family household
SF_0auto	Percentage of single-family dwelling units with 0 automobiles
SF_1auto	Percentage of single-family dwelling units with 1 automobile
SF_2auto	Percentage of single-family dwelling units with 2 or more automobiles
MFDU	Number of multi-family dwelling units
MF_PctVac	Percentage of multi-family dwelling units that are vacant because they are for sale, for rent, being rehabilitated, etc.
MF_PctVnp	Percentage of multi-family dwelling units that are vacant (as above) plus those that are used only by seasonal residents (whose permanent residence is somewhere else)
MFpop	Permanent population in (occupied) multi-family dwelling units
MF_PopDU	Average number of permanent residents per (occupied) multi-family household
MF_0auto	Percentage of multi-family dwelling units with 0 motor vehicles
MF_1auto	Percentage of multi-family dwelling units with 1 motor vehicles
MF_2auto	Percentage of multi-family dwelling units with 2 or more motor vehicles
RESDhhld	Residential households -- sum of single-family and multi-family dwelling units
RESDpop	Residential population – sum of permanent population in single-family and multi-family dwelling units
HHincome	Median household income
HHincindex	Median household income index: ratio of the median household income of the TAZ to all of District One
HHLDsize	Average number of permanent residents per household (occupied dwelling units)
WORKERS	Number of workers, by place of residence
WRKRphhld	Average number of workers per household
IND_Emp	Number of industrial employees, by place of employment
COMM_Emp	Number of commercial (retail) employees, by place of employment
SERV_Emp	Number of service employees, by place of employment
TOT_Emp	Total number of employees, by place of employment
HMDU	Number of hotel and motel rooms
HMocc	Percentage of hotel and motel rooms occupied during the peak season
HMpop	Number of occupants in hotel and motel rooms during the peak season
SCHOOL	Number of students enrolled in schools (K-12 plus post-secondary if fewer than 2,000 students)
UNIVERSITY	Number of students enrolled in post-secondary schools with more than 2,000 students (in 2015 data only; combined with SCHOOL in 2045 data)

***Figure 2**, Description of SE data in the latest D1-RPM*

Summary of 2015 SE Data

Socio-economic data for 2015 will be used to calibrate and validate the D1-RPM. The calibration process is essential to ensure that the model fairly represents the travel choices currently being made across District One; those choices differ to some degree among the twelve counties in the district.

In April 2019, Florida DOT, through its consultant Traf-o-Data, began preparing a complete draft of socio-economic data for the year 2015. This data also included a number of preliminary changes to the TAZ structure; some Collier TAZs were split and others were aggregated, and new sequential TAZ numbers were assigned.

At the request of the Collier MPO, a significant data source was year 2017 TAZ-level data from the Collier Interactive Growth Model (CIGM), prepared for Collier County in 2017 by Metro Forecasting Models. In the zonal data files, the TAZ numbers from CIGM are shown as 'TAZ10'; the revised TAZ numbers that will be used in the D1-RPM are shown as 'TAZ15.'

The county-wide residential population (permanent residents in single and multi-family dwellings) for 2017 from CIGM was 367,516, higher than the 2015 county-wide population estimate from the American Community Survey of 357,305. The CIGM population and housing data for 2017 was reduced by Florida DOT to 2015 levels in part by examining property appraiser parcel data and recent aerial photographs to identify TAZs with significant growth between 2015 and 2017.

The CIGM also produces estimates of the number of employees for each TAZ, beginning with its base year of 2017. These estimates are calculated based on the square-footages of buildings (commercial, industrial, governmental, and institutional). Florida DOT declined to use this data for 2015 employment levels, preferring to use data from InfoUSA, a commercial provider, which does not rely on ratios between building size and number of employees. The CIGM employee forecasts for future years, however, will be used to prepare SE data on employment for 2045, since neither InfoUSA nor any source other than CIGM is able to provide employment forecasts for small areas such as TAZs.

Florida DOT also prepared 2015 data on other factors that are important in the D1-RPM, using various sources including the U.S. Census plus data provided by directly by county and state agencies. Three examples are illustrated here:

- **Figure 3**: the ratio of permanent residents per acre in each TAZ for the year 2015.
- **Figure 4**: the number of single-family dwellings in each TAZ with two or more vehicles.
- **Figure 5**: average household income in each TAZ.

Note that much of this data originated from the U.S. Census, which often does not provide separate data for each TAZ, thus requiring that multiple adjoining TAZs are assigned the data from a single larger area such as a census block group or census tract.

Beginning this year, the number of students in colleges and universities will no longer be broken out separately in the D1-RPM, except for institutions with more than 2,000 local students. Since no local institutions exceed that threshold, college and university students will be included in a single data field for schools; however, the 2015 SE files use the older method, with all college and university students shown in a separate column.

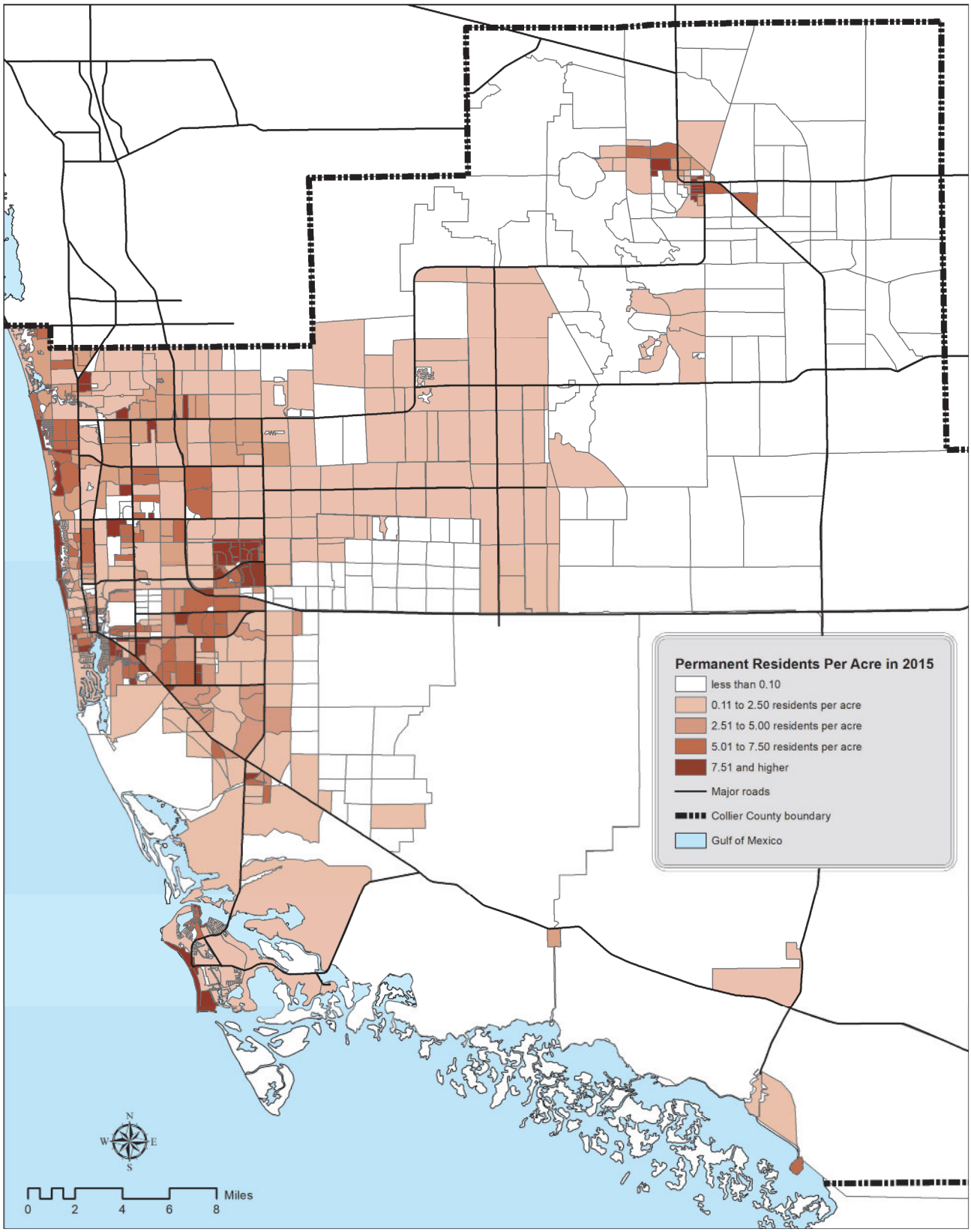

***Figure 3**, Ratio of permanent residents per acre in each TAZ in 2015*

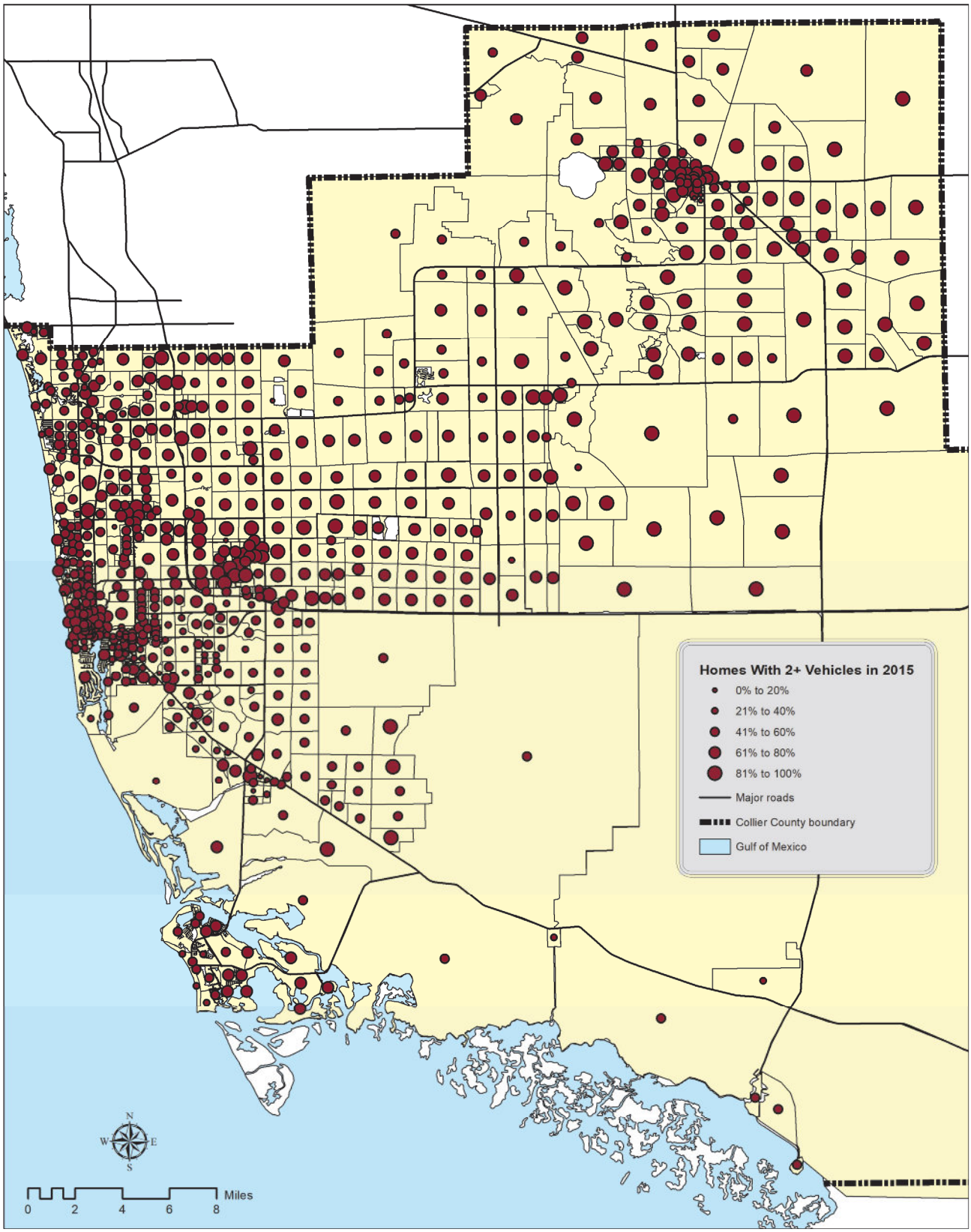

***Figure 4**, Number of single-family dwellings in each TAZ with two or more vehicles in 2015*

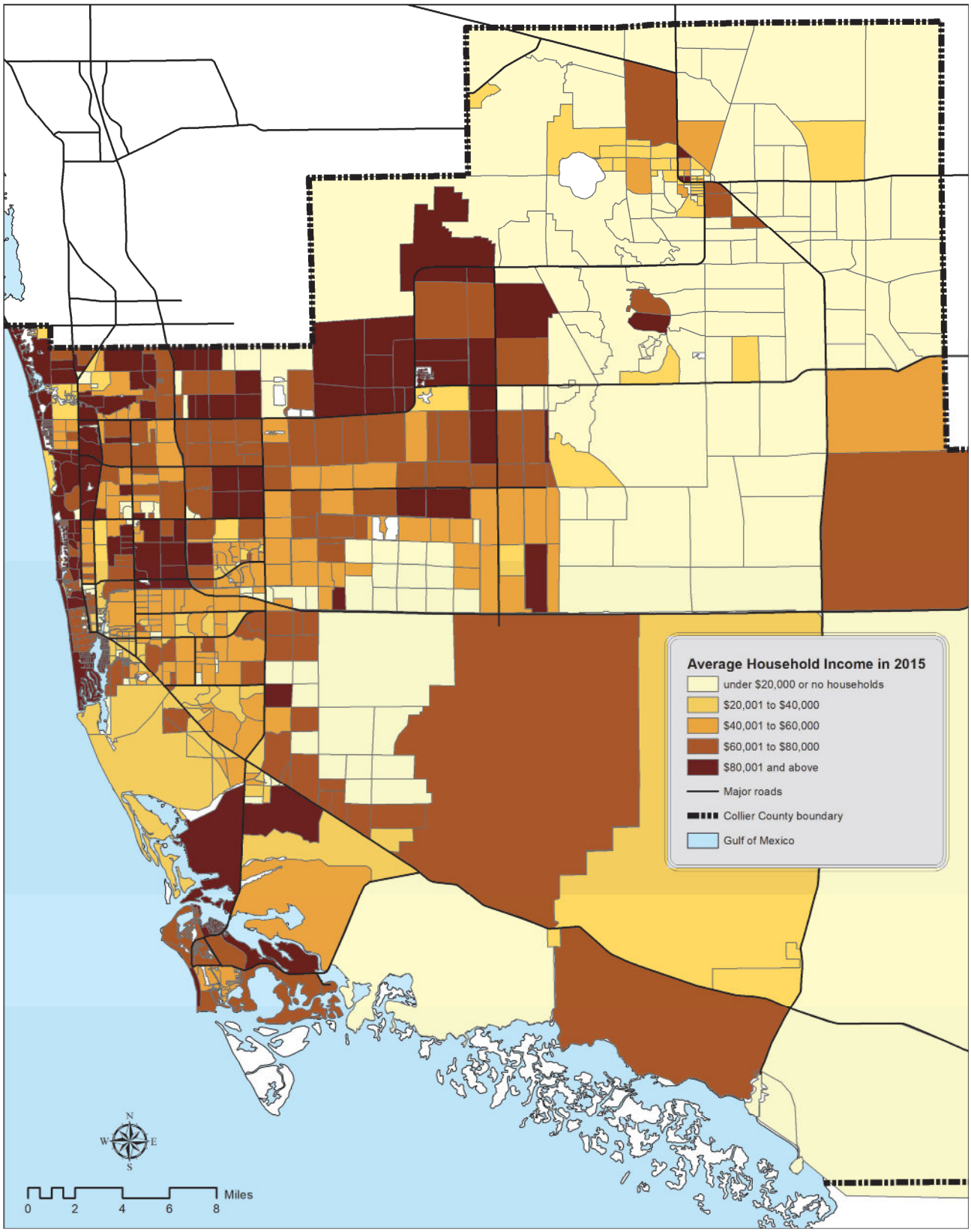

***Figure 5**, Average household income in each TAZ in 2015*

Conceptual Alternatives for 2045 Data

The expected county-wide population for the year 2045 is 516,100, according to the medium projection from the University of Florida's Bureau of Economic and Business Research (BEBR).[1] Counties frequently use the medium BEBR figure as a population forecast for their comprehensive plans; according to state statutes, sufficient land must be available to accommodate at least that number of people (*F.S.* 163.3177(1)(f)(3)). Because MPO plans are often incorporated into comprehensive plans, the same figure is frequently used by MPOs.

Collier County is in the unique position of having prepared its own and much more detailed population forecasts. The county authorized the initial development of the Collier Interactive Growth Model (CIGM) in 2007 to better understand the spatial distribution of population over time to assist in planning for infrastructure. The initial CIGM covered only the land area east of County Road 951, but has now been expanded to include the entire county.[2] Unlike the BEBR projections, which provide a single figure for the entire county, the CIGM provides data for every TAZ. The 2017 CIGM forecast for the year 2045 was for a total residential population of 559,410 for the entire county (about 8% higher than BEBR medium).

There are several advantages to either population total for 2045 when updating the Long-Range Transportation Plan:

Advantages of using 2045 CIGM forecast:
Uses sophisticated locally generated data instead of generic county-level data from BEBR
CIGM data was prepared at the TAZ level; BEBR data would have to be disaggregated to TAZs
Keeps MPO planning in sync with other Collier County planning efforts

Advantages of using 2045 BEBR medium projection:
Follows past practices by the Collier MPO when preparing long-range transportation plans
Complies with Policy 4.9 in Collier County's Growth Management Plan
Meets minimum requirement in state law
Most other MPOs use BEBR projections (very few have locally generated forecasts)

After extensive discussions including the Jacobs team, Collier MPO staff, Collier County transportation planning staff, Traf-o-Data (modeling consultant to Florida DOT and to Jacobs), and Metro Forecasting Models (consultant to Collier MPO and Collier County on the Collier Interactive Growth Model), Jacobs recommended that two separate scenarios be developed and evaluated during the process leading to the 2045 update of the Collier MPO Long-Range Transportation Plan:

- **Scenario A** uses the 2045 forecasts for population, housing, employment, public schools, and hotel/motel rooms as produced by the Collier Interactive Growth Model (CIGM) on behalf of Collier County. (The CIGM also provides forecasts in 5-year increments beginning with the year 2020, allowing an interim-year travel model to be developed in the future.)

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[1] *Projections of Florida Population by County, 2020–2045, with Estimates for 2018,* BEBR Bulletin 183, April 2019

[2] *Reading MFM Reports: Housing & Population, Commercial, and Industrial – for the Collier County MPO*, Metro Forecasting Models, LLC, undated

- **Scenario B** modifies the CIGM forecasts so that the county-wide population total will match the most recent BEBR medium projection for 2045 (516,100). The reductions will come primarily by lowering the optimism about how much development will take place in Rural Lands Stewardship Areas and Rural Fringe Mixed-Use Districts by 2045.
- Other socio-economic data required by Florida DOT's District One regional travel model for both scenarios is being provided by Jacobs.

FDOT allows MPOs to submit socio-economic (SE) data that is equal to or higher than the medium projection for each county from BEBR. The choice of which population projection to use for the Long-Range Transportation Plan has implications for the MPO's member entities. Language now in the Florida Statutes (§§163.3180(5)(h)(2) and (4)) governs proportionate share payments that may be required by local governments. A key phrase ("...including traffic modeling...") can be interpreted to mean that whatever 'transportation deficiencies' will be created in order to accommodate the development forecast that is in the SE data for 2045 could be interpreted as a public responsibility. This is because proportionate share payments, by current state law, cannot be charged to remedy 'transportation deficiencies.'

Collier County's Growth Management Plan, its comprehensive plan, requires that the county's capital improvement plan be based on BEBR's medium projection (Policy 4.9, Future Land Use Element). MPOs commonly submit SE data based on the BEBR medium projection when updating their Long-Range Transportation Plans (LRTP). For these reasons, Jacobs recommends that the Collier MPO base the 2045 LRTP on the BEBR medium projection, and also evaluate the transportation needs should a higher rate of growth prevail by creating a second scenario for testing purposes. These scenarios would be used as follows:

- **Scenario A (CIGM 2045):** In 2017, the CIGM forecasted a residential population of 559,410 for the year 2045. Scenario A is based primarily on that forecast, which is well below the BEBR high projection of 612,100 for 2045. A significant reason that the CIGM forecasts are higher than the BEBR medium projection is the added development potential in the eastern part of the county, primarily in Rural Lands Stewardship Areas and Rural Fringe Mixed-Use Districts as designated in the county's Growth Management Plan. The rate of growth in these areas is much more difficult to forecast than the remaining rate of growth in the western part of the county where past growth rates are well known.

  Scenario A will be used internally by the MPO's consulting team to test the full CIGM forecasts in the travel model and identify any potentially additional transportation needs.

- **Scenario B (BEBR Medium 2045):** The most recent BEBR medium population projection for 2045 is 516,100. Scenario B is nearly identical to Scenario A except that the assumed rate of development in Rural Lands Stewardship Areas, Rural Fringe Mixed-Use Districts, and far eastern Golden Gate Estates zones through 2045 is lowered slightly from the rate forecasted by the CIGM so that the county-wide population would match the BEBR medium projection**.**

  Scenario B is being submitted by the Collier MPO to FDOT for use in the District One regional planning model for the 2045 LRTP.

By using these two scenarios – CIGM 2045 and BEBR Medium 2045 – the MPO can effectively model a medium and a somewhat higher rate of population growth for Collier County while keeping the underlying land uses and ultimate densities and intensities consistent with adopted county policies. If the higher rate of growth anticipated by Scenario A requires additional or wider roads, those needs could be identified as being dependent on additional private financing, which could come from developer contribution agreements or other funding sources.

These two scenarios can be visualized by these maps showing additional dwelling units by 2045:

- **Figure 6**: the number of additional dwelling units in **Scenario A (CIGM 2045)** in each TAZ between 2017 and 2045.
- **Figure 7**: the number of additional dwelling units in **Scenario B (BEBR Medium 2045)** in each TAZ between 2017 and 2045.
- **Figure 8**: enlargement showing the number of additional dwelling units in and around Naples (same in both scenarios).
- **Figure 9**: enlargement showing the number of additional dwelling units in and around Marco Island (same in both scenarios).
- **Figure 10**: enlargement showing the number of additional dwelling units in and around Immokalee (same in both scenarios).

These two scenarios can be further visualized by these maps showing additional commercial square footage by 2045:

- **Figure 11**: the number of additional commercial square footage in **Scenario A (CIGM 2045)** in each TAZ between 2017 and 2045.
- **Figure 12**: the number of additional commercial square footage in **Scenario B (BEBR Medium 2045)** in each TAZ between 2017 and 2045.

Other Potential Scenarios

Other Land Use Scenarios for 2045: Given the inherent limitations of regional travel demand models and the predominant low-density pattern of most existing development within Collier County, Jacobs does not recommend modeling other alternative land-use scenarios such as high-density, mixed-use infill and redevelopment. Modeling of realistic scenarios for land that has mostly been developed would not alter the regional travel model results enough to justify the expense incurred.

Interim Land Use Scenarios: Florida DOT does not intend to create interim regional travel models anywhere in District One. Collier County could create its own interim travel model for any period from 2025 to 2040, for instance a single mid-point interim scenario based on the original CIGM forecast for 2030. This option, which could assist in prioritizing transportation improvements that are needed by 2045, will be explored during the LRTP planning process.

Network Scenarios: Instead of additional land-use scenarios for 2045, Jacobs recommends exploring a range of transportation-related scenarios which will be developed through the LRTP process and then evaluated using the 2045 regional travel model.

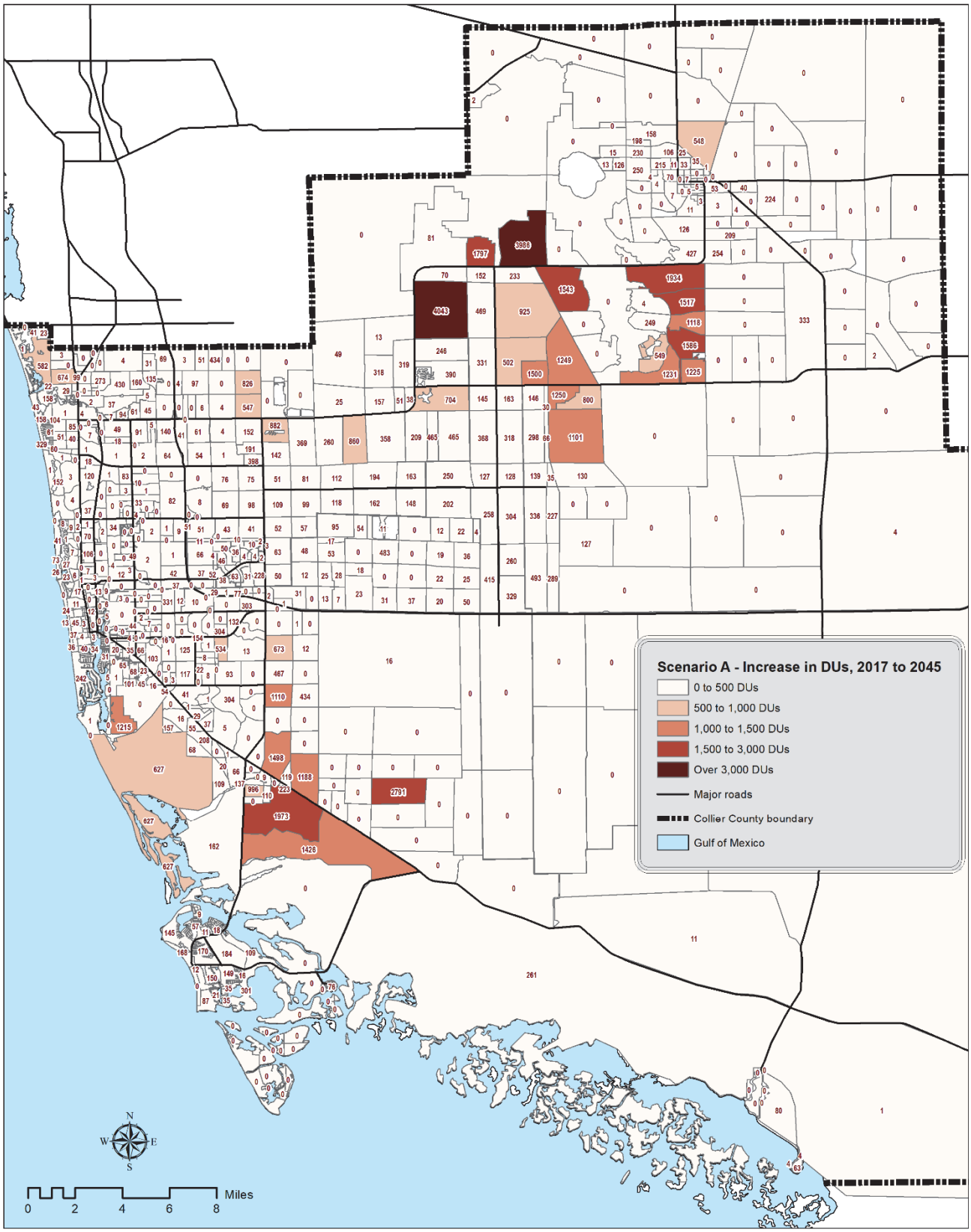

***Figure 6**, Forecasted increase in dwelling units for Scenario A between 2017 and 2045*

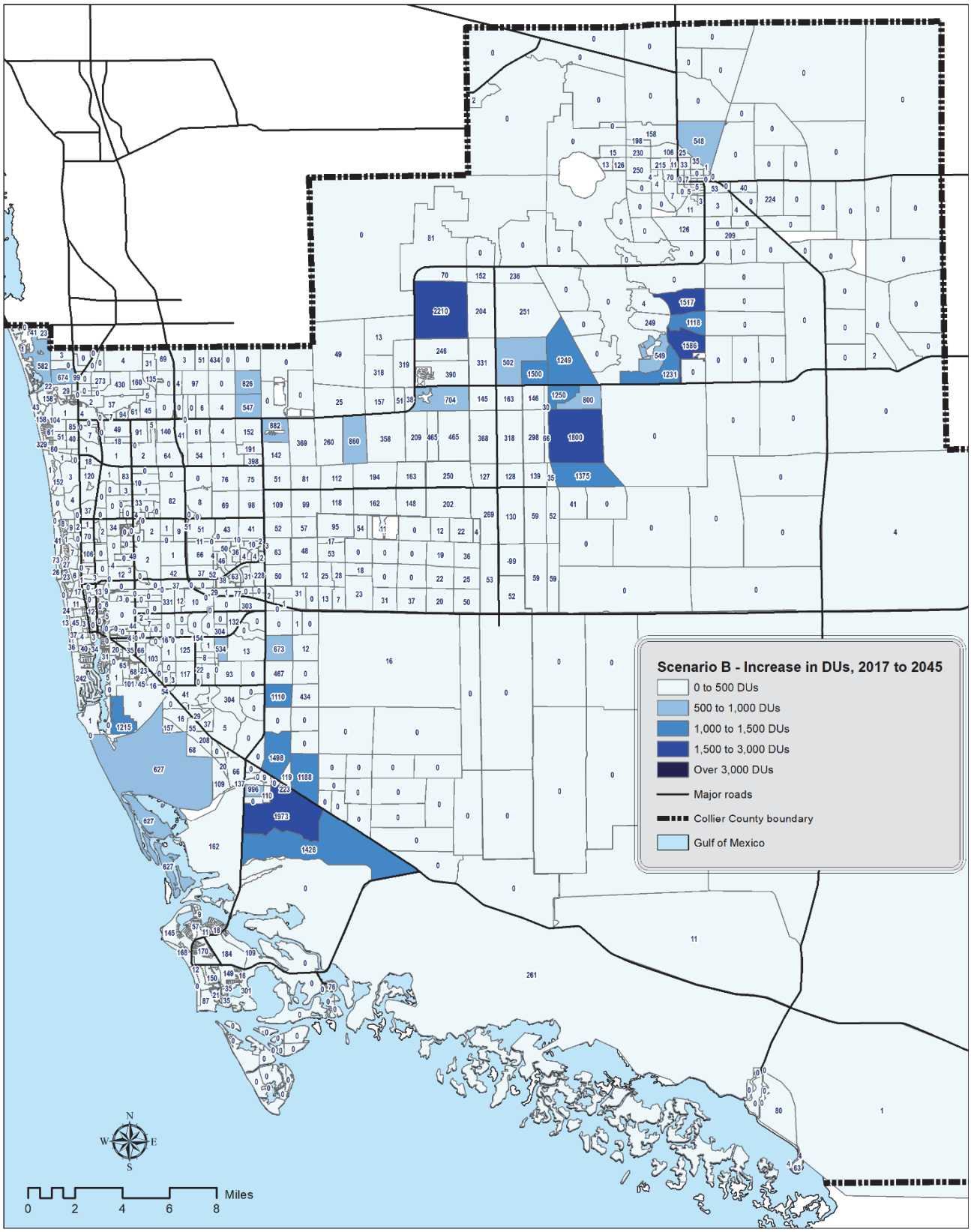

***Figure 7**, Forecasted increase in dwelling units for Scenario B between 2017 and 2045*

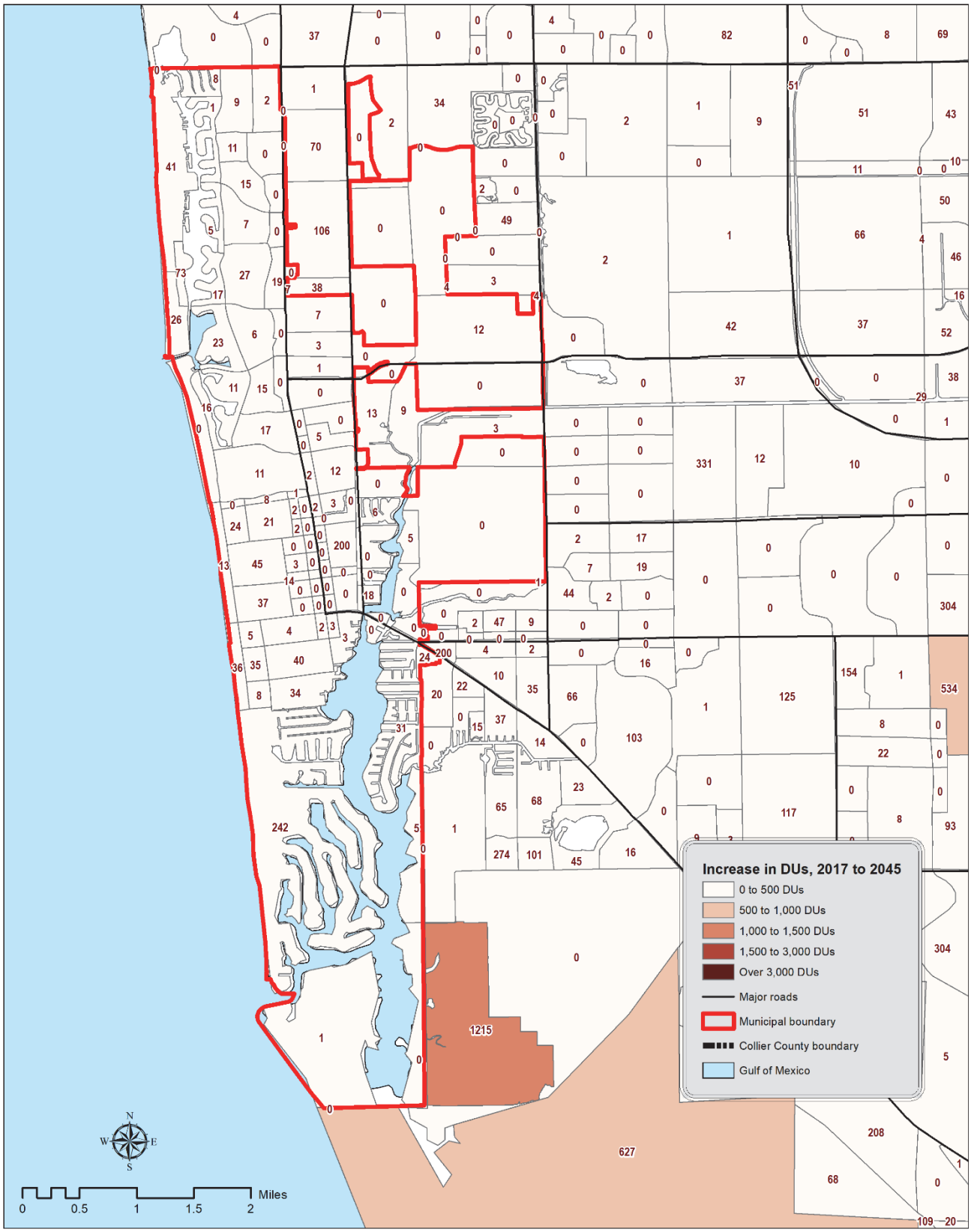

***Figure 8**, Forecasted increase in dwelling units for Naples between 2017 and 2045 (both scenarios)*

***Figure 9**, Forecasted increase in dwelling units for Marco Island between 2017 and 2045 (both scenarios)*

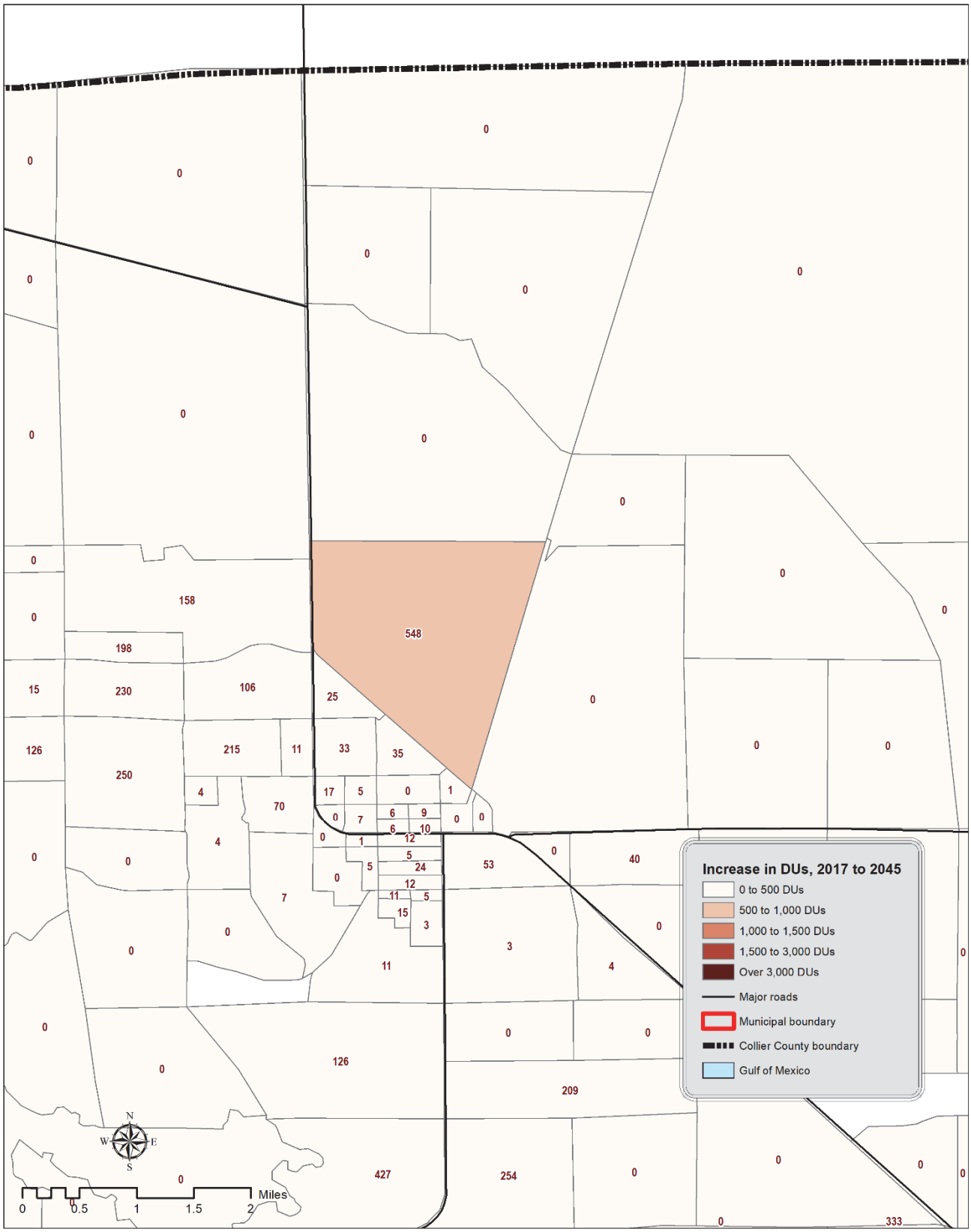

***Figure 10**, Forecasted increase in dwelling units for Immokalee between 2017 and 2045 (both scenarios)*

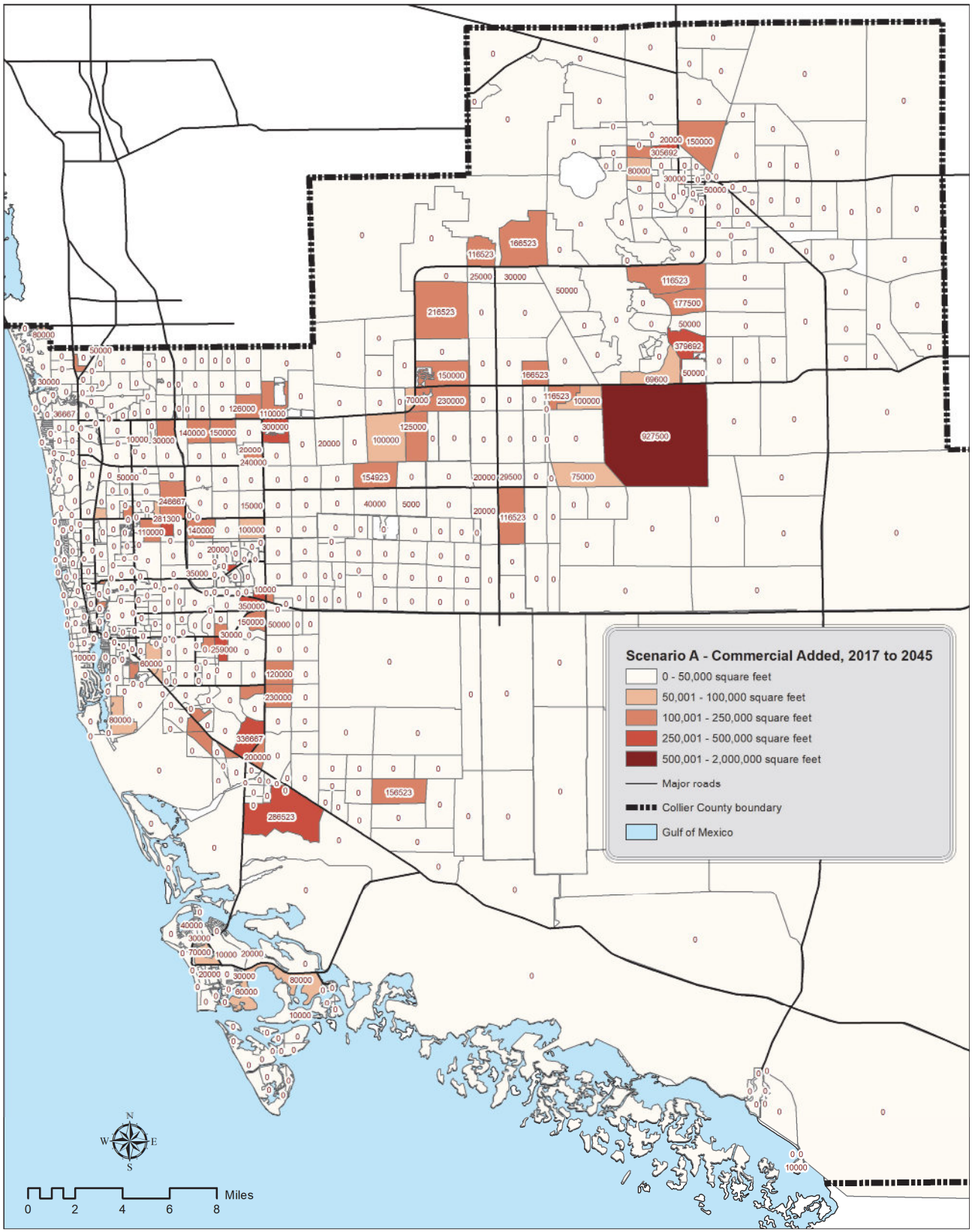

***Figure 11**, Forecasted increase in commercial square footage for Scenario A between 2017 and 2045*

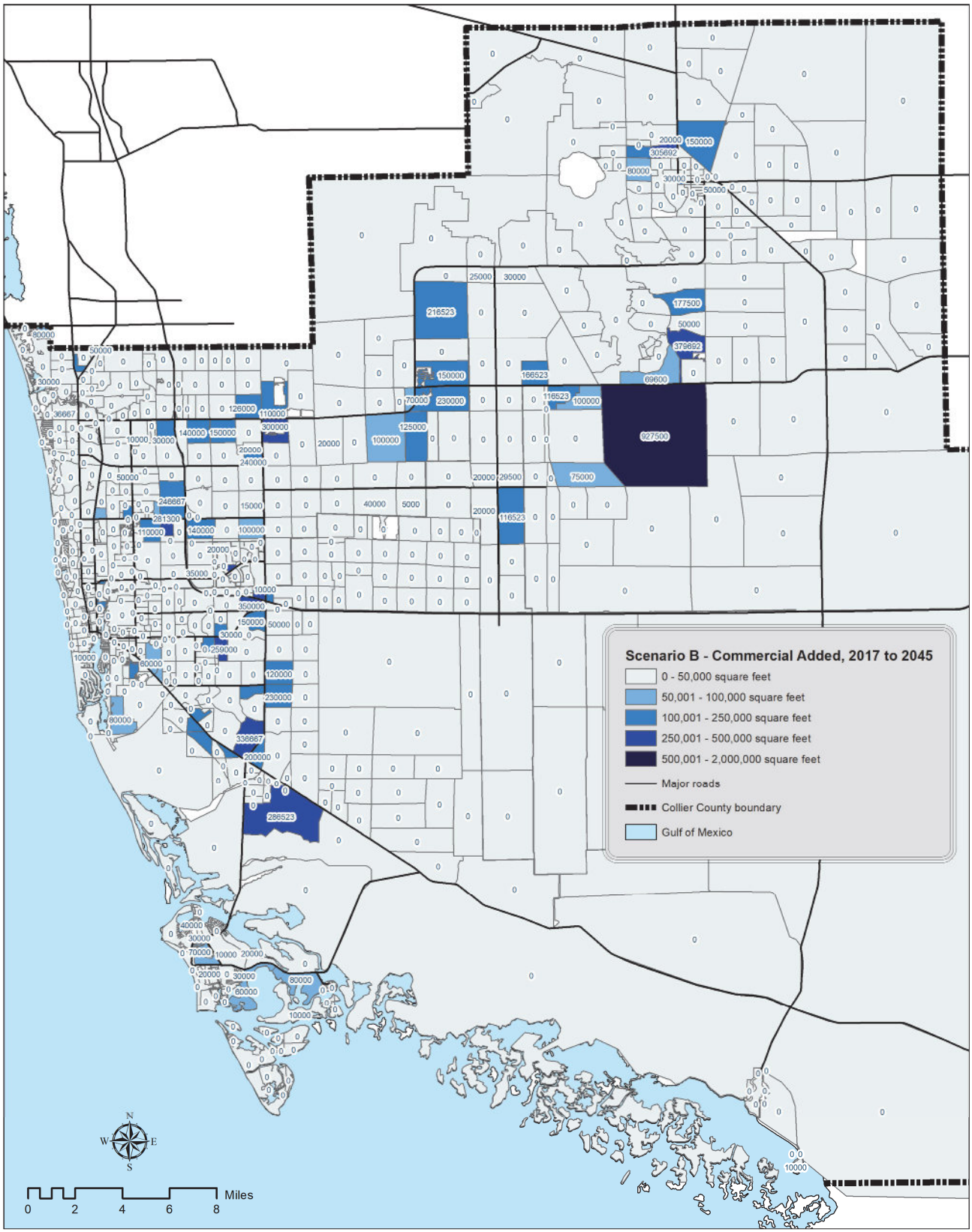

***Figure 12**, Forecasted increase in commercial square footage for Scenario B between 2017 and 2045*

Sources of Core 2045 SE Data

Population estimates and forecasts in travel models count the number of permanent residents in a manner similar to the U.S. Census Bureau. Seasonal residents are not included in the population totals; the dwellings they occupy seasonally are tabulated, but are identified as "vacant" along with dwellings that are vacant for other reasons such as being up for sale or for rent.

Travel demand models, however, use a figure that is slightly lower: the number of permanent residents in single-family and in multi-family dwellings (disregarding permanent residents living in group quarters such as nursing homes, dormitories, jails, etc.). This lower figure is the "residential population" that must be entered into the D1-RPM for each TAZ.

Collier's Interactive Growth Model (CIGM) uses the same "residential population" as the D1-RPM. The 2017 CIGM forecast of residential population county-wide in the year 2045 was 559,410. The CIGM figures for each TAZ are being used for Scenario A without adjustments other than those described later in this report.

Scenario B reduces the population forecast slightly to be in sync with the BEBR medium projection for 2045 (516,100 people). However, the BEBR projection includes people living in group quarters. The American Community Survey estimates that in recent years about 1.2% of Collier County's population was living in group quarters. Assuming this ratio will be the same in 2045, the BEBR medium projection for 2045 would need to be reduced by 1.2%, to around 510,000; this reduced figure was used as a target for the total residential population in Scenario B.

For most Collier County TAZs, the forecasted residential population is virtually the same in Scenario B as in Scenario A. The major differences are in and near TAZs within the Rural Lands Stewardship Areas and Rural Fringe North and South. (These differences can be visualized by comparing **Figures 6** and **7**, or by comparing **Figures 11** and **12**.)

To estimate the growth in each TAZ, the CIGM first determines the likely amount of residential, commercial, and industrial development in each TAZ at full build-out. The rate of growth between now and build-out is forecasted using non-linear regression methods including logistic growth curves that reflect the rate of development to date in Collier County. Specific forecasts are then provided in five-year increments beginning in 2020 and ending near build-out of each TAZ.[3]

For Scenario B, the shape of the logistic growth curves were adjusted for certain TAZs to simulate a slightly slower growth rate through 2045 – sufficient to lower the county-wide residential population to about 510,000. Note that these growth-curve adjustments have no effect on the anticipated density and intensity at build-out of any TAZs.

[3] *Collier County, Florida – 2015 Forecast Report: Population, Housing, and Commercial Demand,* Metro Forecasting Models, LLC

DATA ON HOUSING AND POPULATION: For residential development, the CIGM begins with the number of single-family and multi-family dwellings in each TAZ. To convert the number of dwellings into a population forecast, the CIGM uses a series of adjustments similar to those used by the Census Bureau:

- **Average Household Size:** An average household size is assigned to each TAZ. This factor is derived from census data: the number of permanent residents divided by the number of dwellings they occupy. This factor varies considerably across Collier County.
- **Vacancy Rate:** A vacancy rate is also assigned to each TAZ. This rate is expressed as the total percentage of dwellings that are vacant, including:
  - Dwellings considered to be vacant because they are used only by seasonal residents who have a permanent residence somewhere else; plus
  - Dwellings that are vacant for all other reasons, including units that are for sale or for rent, or have recently been sold or abandoned.

  The remaining dwellings in each TAZ are deemed "occupied." The residential population is the number of occupied dwellings times the average household size, calculated separately for single-family and for multi-family dwellings.

  Vacancy rates vary dramatically across Collier County, primarily due to the locational preferences of seasonal retirees and other owners of vacation homes.
- **Zone Clusters:** Since source data on household size, vacancy rates, and many other factors is not available down to the TAZ level, the same factor is sometimes applied to each TAZ in what the CIGM terms a 'zone cluster.' Numerous zone clusters were defined by the CIGM to organize zonal data by cities, census-designated places, and locally specified planning districts, allowing the best available census data to be combined with locally important planning distinctions that are not reflected in census data. **Figure 13** provides a map showing the larger zone clusters. Many zone clusters are further subdivided, for instance in Rural Land Stewardship and Rural Fringe areas where development densities and intensities will vary considerably within the larger zone clusters that are shown on Figure 13.

Figure 14 presents the ratio of permanent residents per total acre in each TAZ in 2045 for Scenario A.

Additional maps are provided here as examples of other population and housing data in each TAZ for 2045; these maps apply to both Scenario A and Scenario B:

- **Figure 15** presents the average household size (for occupied dwellings). The travel model requires this data separately for single-family and multi-family dwellings; that data is combined in Figure 15.
- **Figure 16** presents the vacancy rate (percentage of dwellings that are not occupied by permanent residents). The travel model requires this data separately for single-family and multi-family dwellings; that data is combined in Figure 16.

DATA ON HOTELS AND MOTELS: The CIGM provides data on the expected number of hotel and motel rooms in each TAZ, again derived from other CIGM growth forecasts for the same period. When two or more establishments are in the same TAZ, the number of rooms is combined.

- **Figure 17** identifies TAZs where hotel or motel rooms are forecasted in 2045 for Scenario A, with the darker shading representing a larger number of rooms.
- **Figure 18** provides the same information for Scenario B.

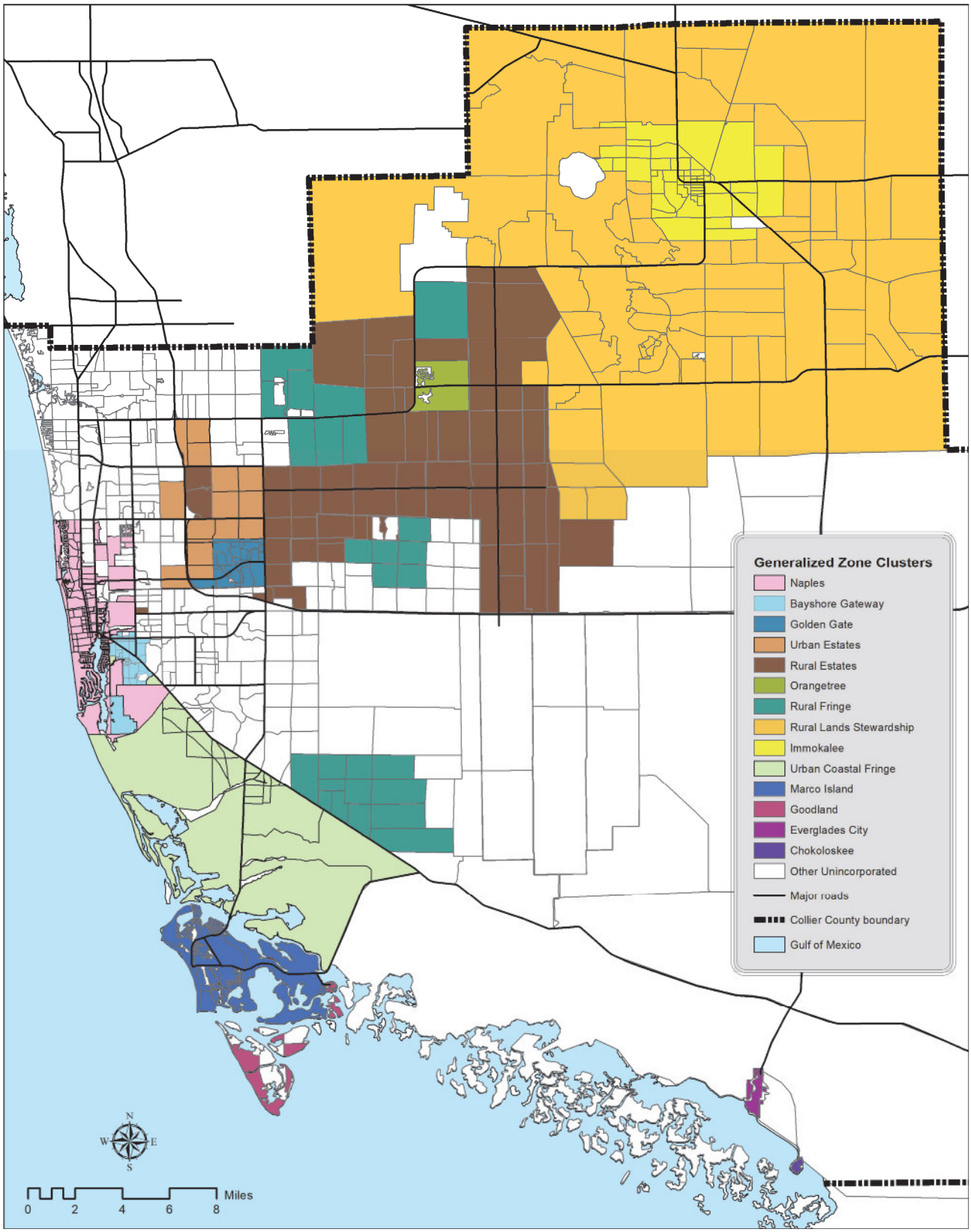

***Figure 13**, Larger CIGM zone clusters*

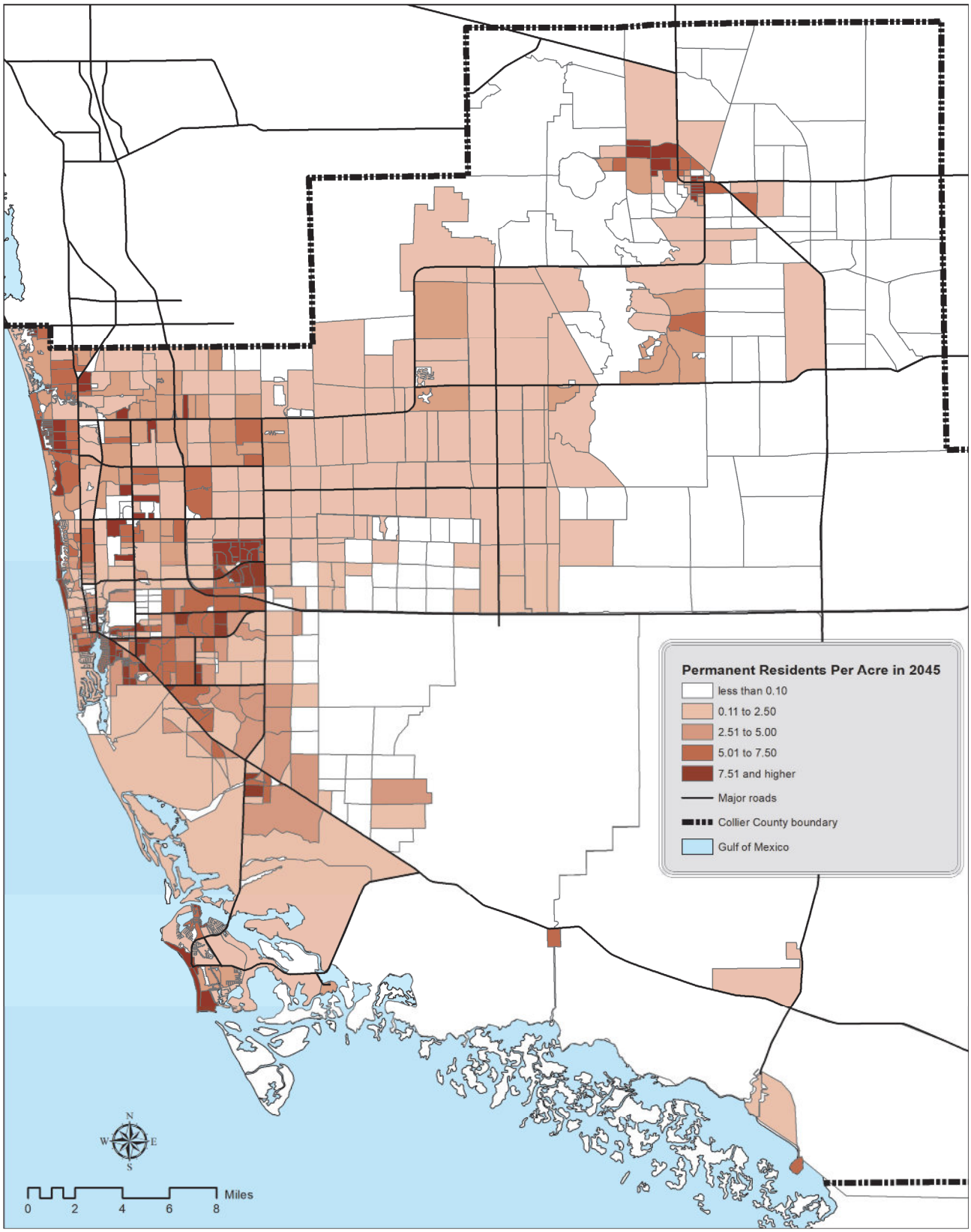

***Figure 14**, Ratio of permanent residents per acre in each TAZ in 2045 (Scenario A)*

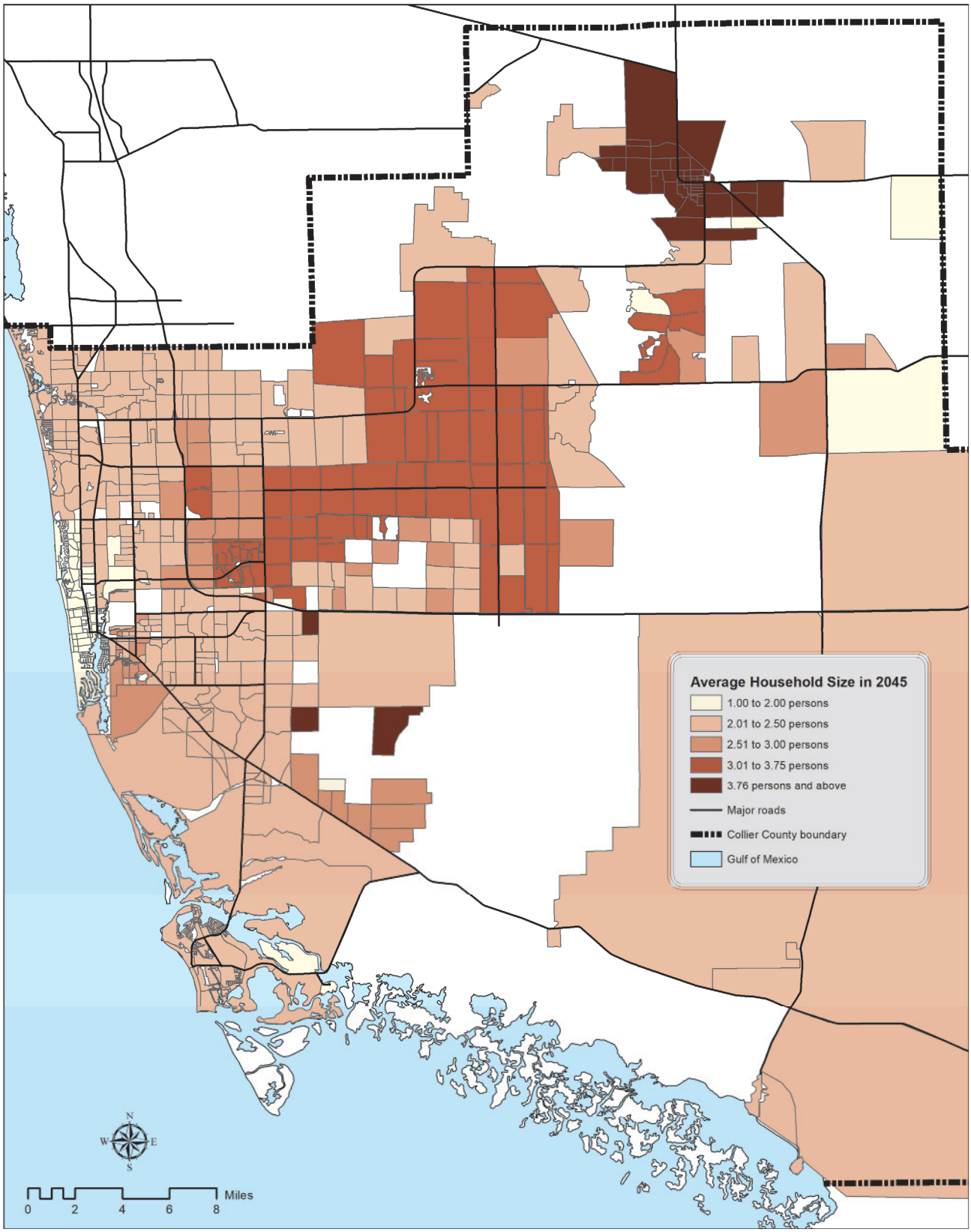

Figure 15, *Average household size in 2045*

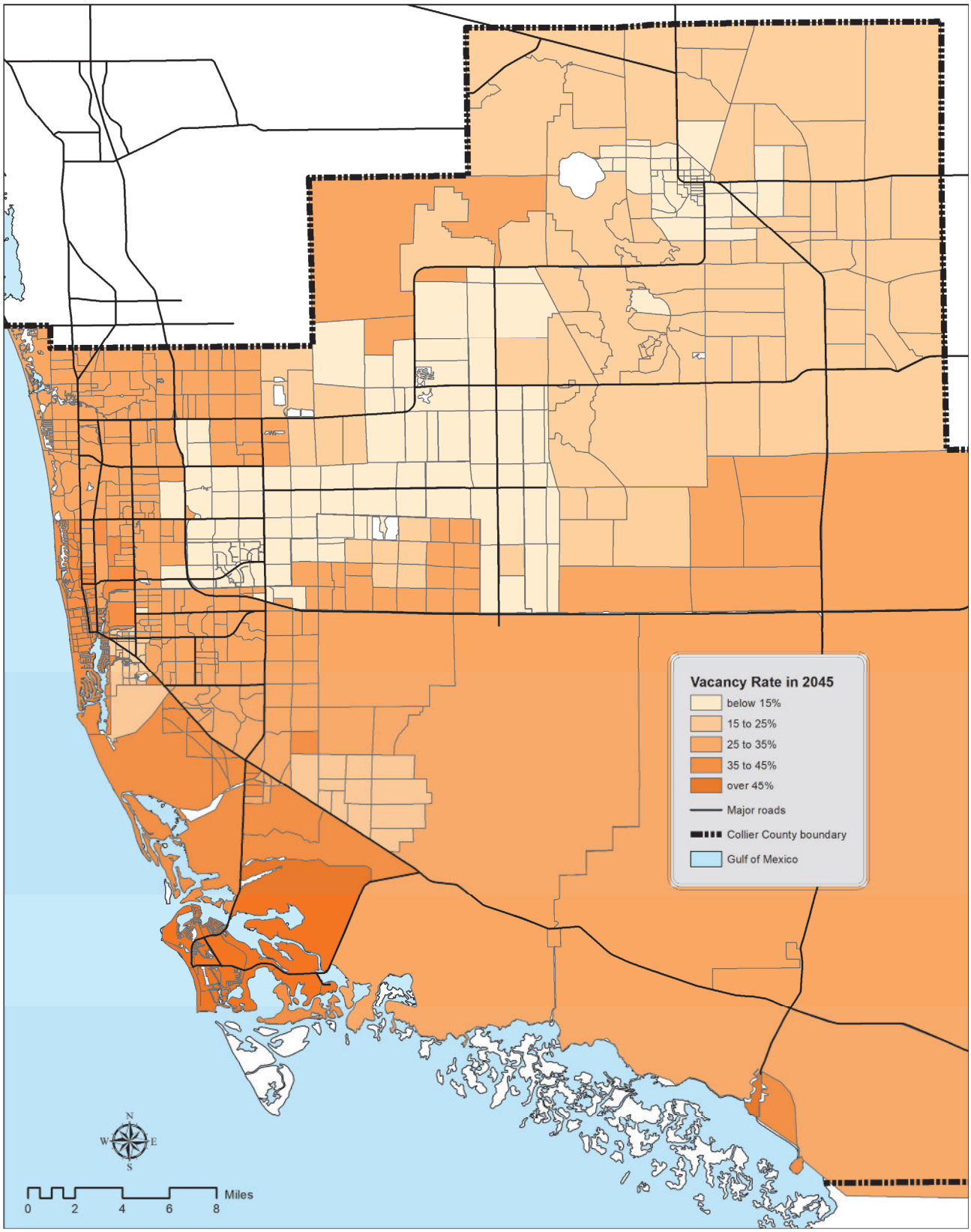

***Figure 16**, Vacancy rate in 2045*

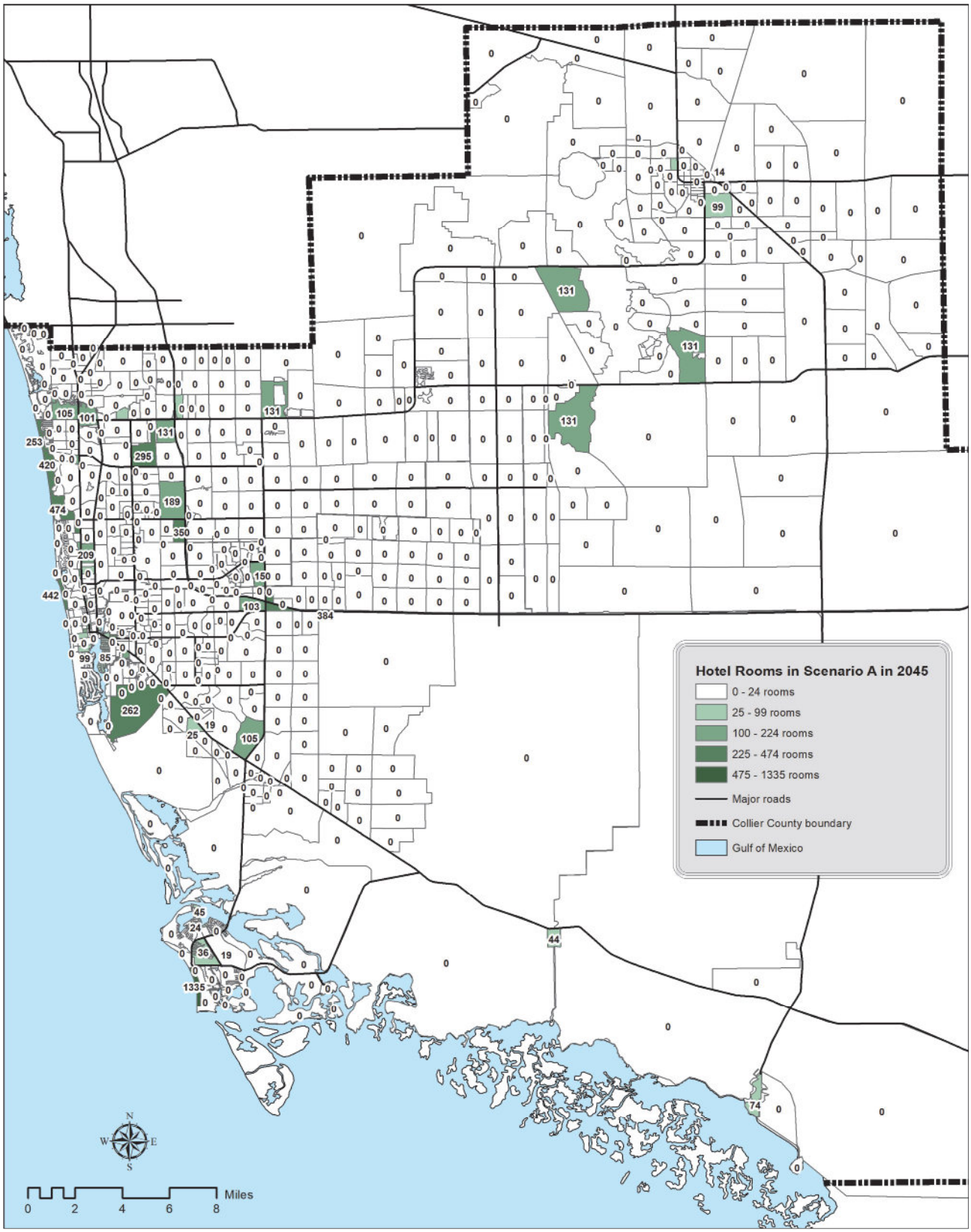

***Figure 17**, Number of hotel/motel rooms in 2045 for Scenario A*

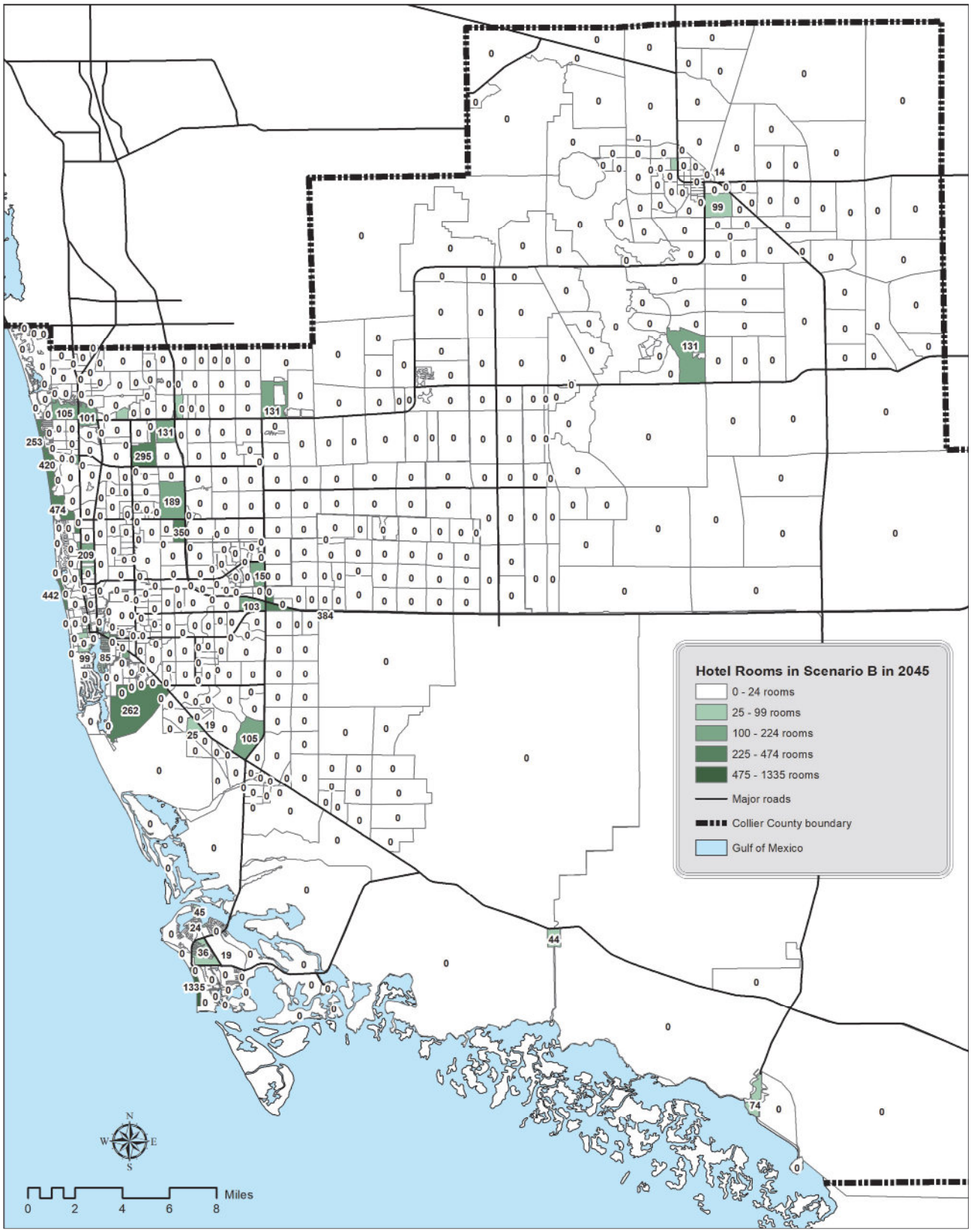

***Figure 18**, Number of hotel/motel rooms in 2045 in Scenario B*

DATA ON LOCATION AND ENROLLMENT IN SCHOOLS: The CIGM begins with current data on the number of students attending a K-12 public school in each TAZ. The CIGM then provides forecasts of future growth in K-12 public school students; these forecasts are derived from the CIGM forecasts of population growth for Scenario A and for Scenario B. Additional public schools that could serve the expanded student population are then designated within CIGM. The lower population anticipated by Scenario B would reduce the number of public schools in 2045 by four elementary schools, by one middle school, and by one high school.

CIGM data on public schools was supplemented by determining the current number of students in charter schools, based on data from the Collier County School District. The current number of students in private schools was determined primarily using data submitted voluntarily to the Florida Department of Education, supplemented by data on some additional private schools that was available in the 2015 SE dataset.

Beginning this year, the number of students in post-secondary schools (including trade schools, colleges, and universities) will no longer be broken out separately in the D1-RPM, except for institutions with more than 2,000 local students. Since no local institutions exceed that threshold, post-secondary students will be included in a single data field that also include public schools, charter schools, and private schools. These students currently attend Florida SouthWestern State College, Hodges University, Ave Maria University, Ave Maria School of Law, Immokalee Technical College, and Lorenzo Walker Technical College; enrollment data was obtained from the National Center for Education Statistics.

- **Figure 19** presents the total number of students anticipated to attend all schools in each TAZ for Scenario A.
- **Figure 20** presents the same information for Scenario B.

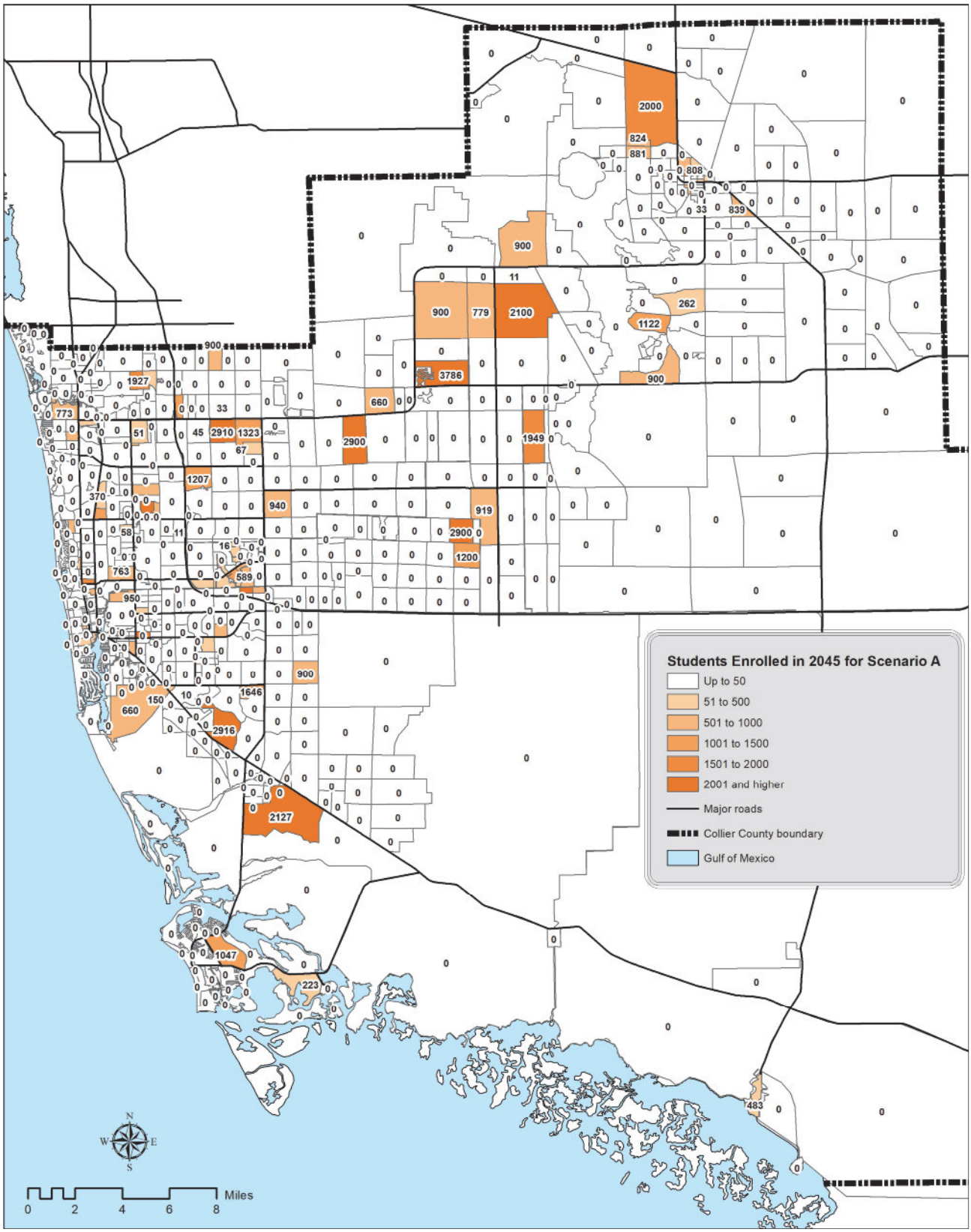

***Figure 19**, Students enrolled in 2045 for Scenario A*

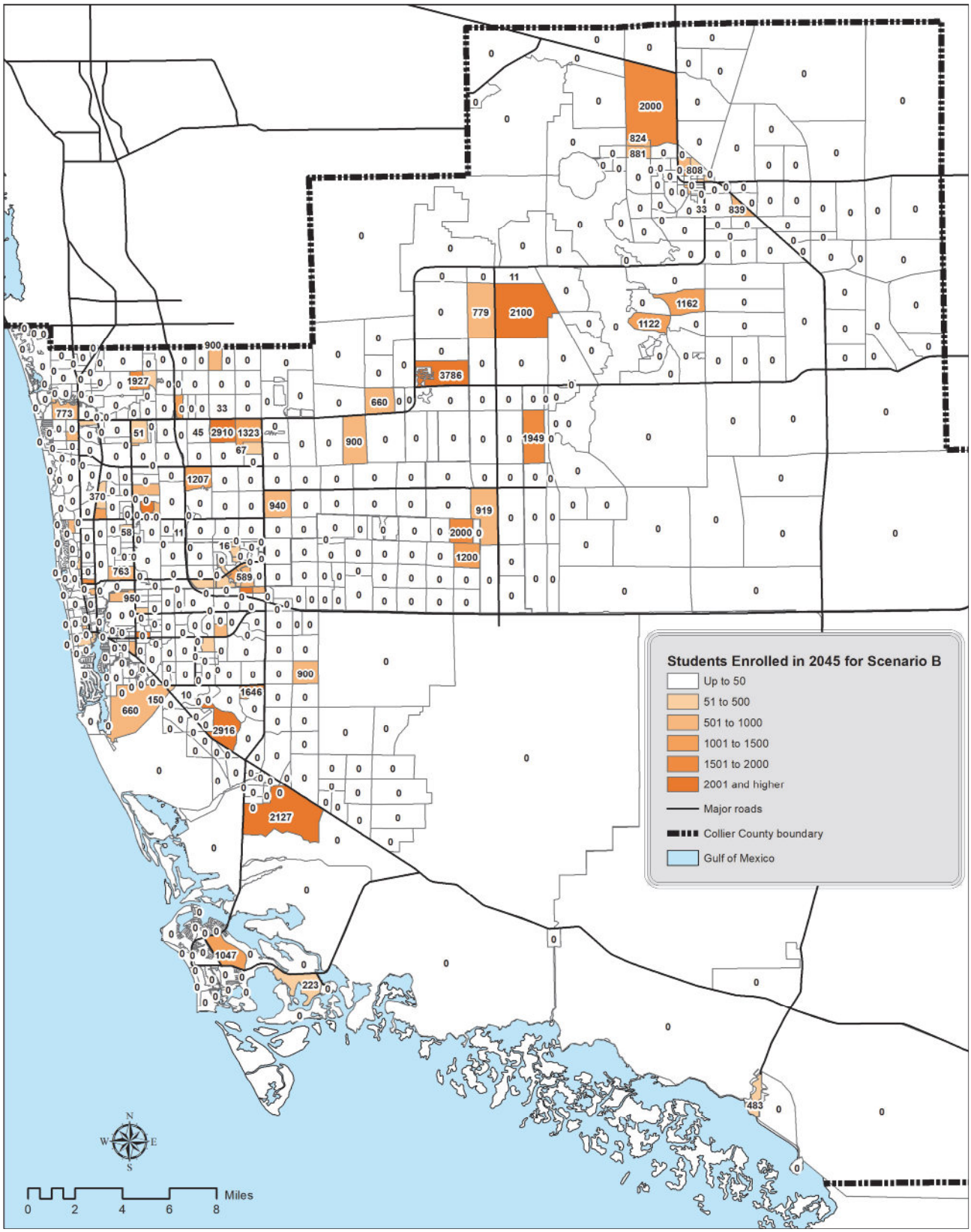

***Figure 20**, Students enrolled in 2045 for Scenario B*

DATA ON EMPLOYEES BY PLACE OF WORK: The CIGM provides data on the approximate number of employees currently working in each TAZ, broken into five categories: industrial, retail, office, government, and institutional employees. CIGM also provides forecasts for 2045 for industrial, retail, office, and public school employees, all of which are derived from the CIGM's forecast of the additional demand for each of these land uses given the forecasted growth in population over the same period.

The number of employees to be used in the D1-RPM travel model in Scenario A for 2045 was derived as follows:

- For industrial employees, CIGM 2045 forecasts of industrial employees were used without modification.
- For commercial employees, CIGM 2045 forecasts of retail employees were used without modification.
- For service employees, the following data sources were combined:
  - CIGM 2045 forecasts of office employees; plus
  - CIGM 2017 data on institutional and government employees, plus 1.5% annual increase in government employees; plus
  - CIGM forecasts of increases in public school employees between 2017 and 2045 (public school employees in 2017 were included in the 2017 total of government employees).

The number of employees for Scenario B was computed in the same manner, without the percentage increase in government employees. The total number of employees is lower in Scenario B mainly due to the lower population in Scenario B.

- **Figure 21** presents the total number of employees in each TAZ for Scenario A; the relative intensity (in employees per acre) is shown through shading.
- **Figure 22** presents the same information for Scenario B.

Note that on Figures 21 and 22, one TAZ is circled. This TAZ (#2870) had been shown with a strong concentration of employees in a major retail and office center that would serve residents on land likely to be developed by 2045 (formerly known as Rural Lands West) and nearby residents in eastern Golden Gate Estates. The demand for this center was forecasted in 2017 by CIGM based on the assumption that the development pattern would be a new town immediately east of Golden Gate Estates.

Given the current uncertainty whether a town will in fact be built at that location, the concentration of employees (and commercial square footage) in TAZ 2870 was deemed no longer appropriate. Consequently, that concentration was reduced to match the currently proposed commercial development levels for the four villages that could replace the previously proposed town. The remaining commercial demand has been relocated nearby (further east on the south side of Oil Well Road). This relocation concept was presented to the Technical and Citizens Advisory Committees in November and the MPO Board in December and was endorsed by each group.

DATA ON WORKERS BY PLACE OF RESIDENCE: The latest D1-RPM travel model requires a new type of data: the number of workers in each TAZ, by place of residence.

This data was provided by Florida DOT for the year 2015. For 2045, the 2015 data was increased for all TAZs with more than nominal increases in households through 2045. The number of additional households forecasted by the CIGM for each TAZ was converted to the number of additional workers by applying the average 2015 ratio of workers per household in each larger zone cluster.

The number of workers for Scenario B was computed in the same manner. The total number of workers is lower in Scenario B due to the lower population in Scenario B.

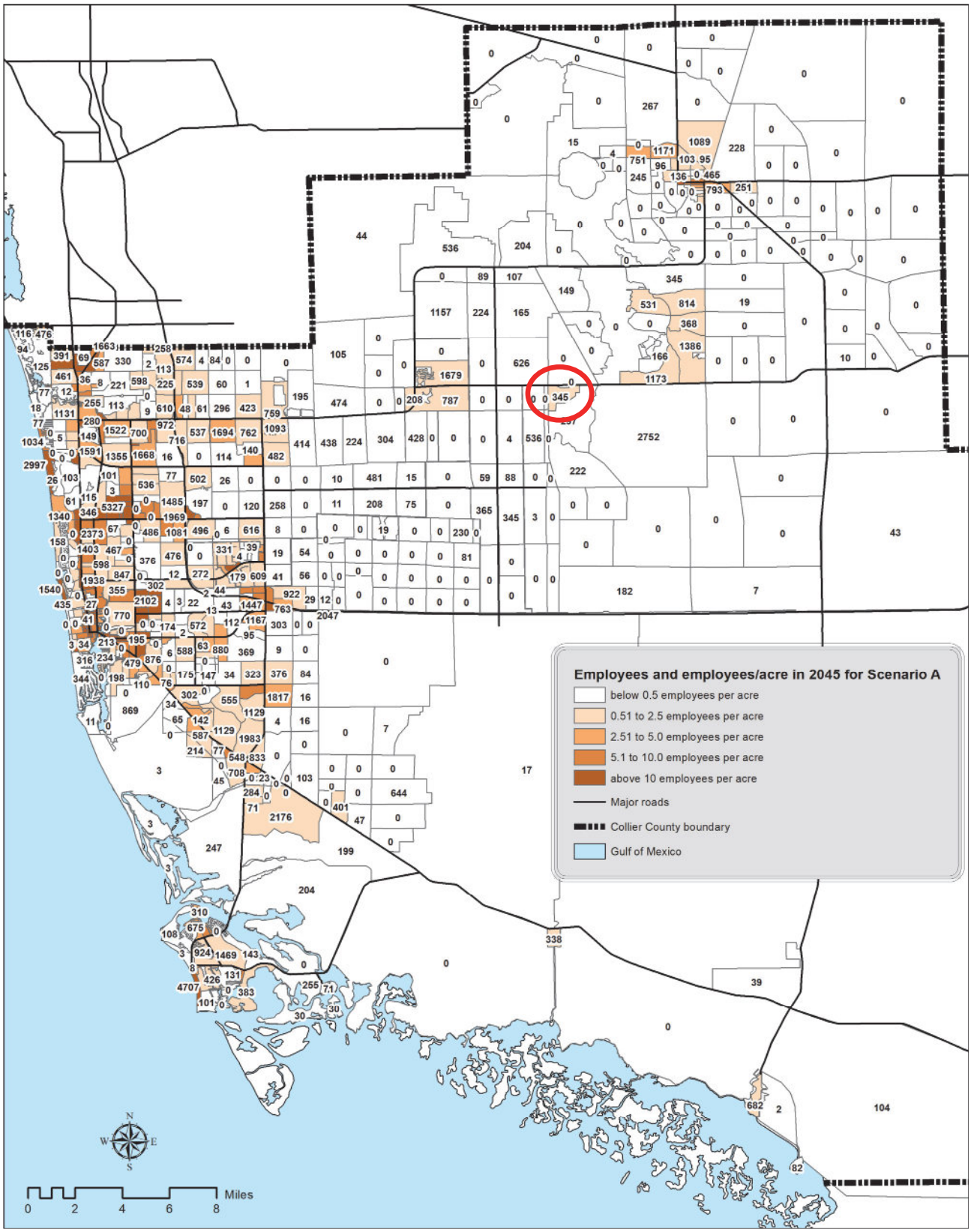

***Figure 21**, Employees, in each TAZ and per acre, in 2045 in Scenario A*

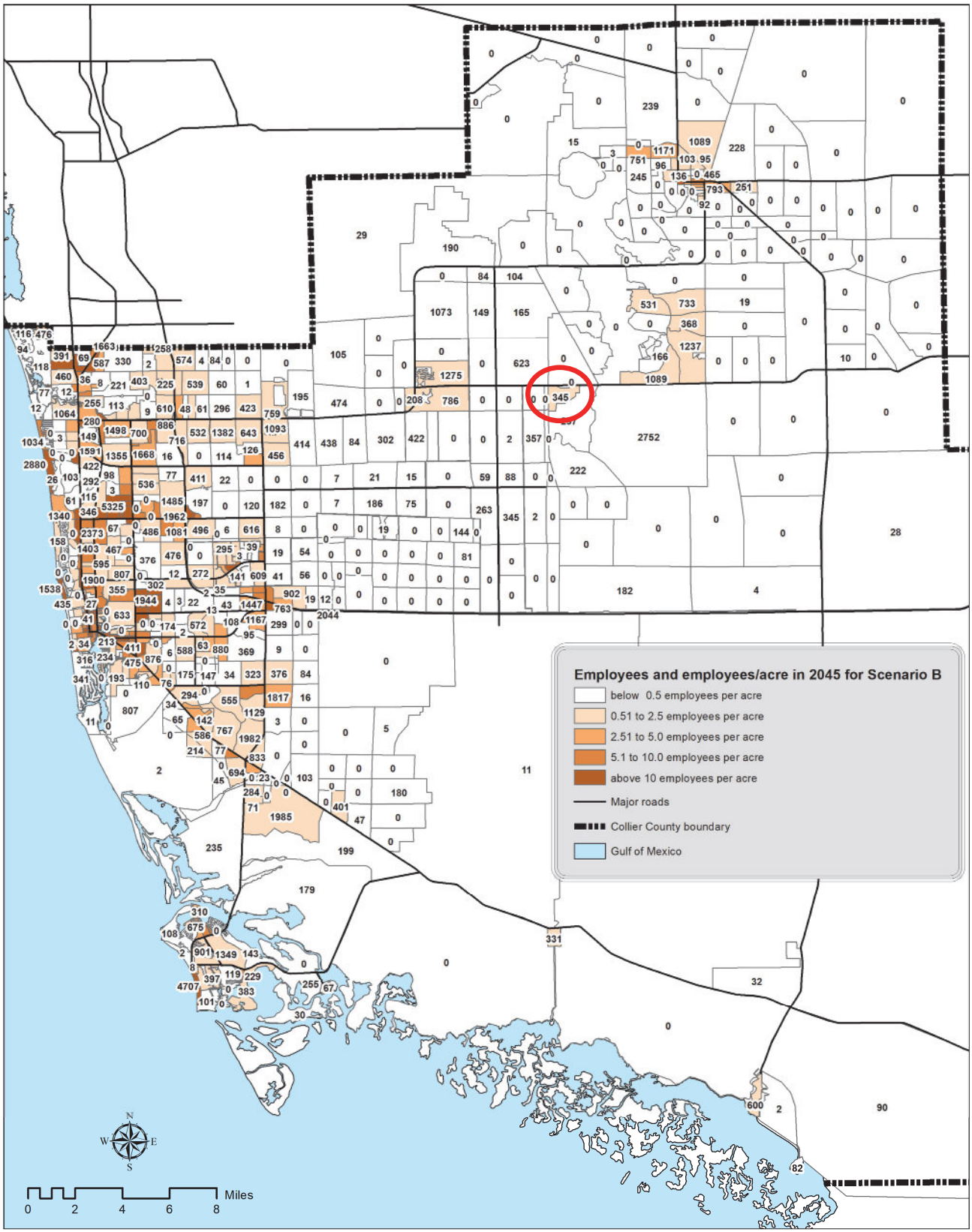

***Figure 22**, Employees, in each TAZ and per acre, in 2045 in Scenario B*

Variations Between Year 2015 and Scenarios A & B

Figure 23 summarizes county-wide variations between the base year (2015) and Scenarios A and B for 2045.

Figure 23

SOCIO-ECONOMIC DATA	Year 2015 (2015 SE data)	Scenario A (Original CIGM)	Scenario B (BEBR Medium)
Single-Family Dwelling Units	102,622	163,366	151,104
Population in Single-Family Units	184,377	329,398	300,152
Multi-Family Dwelling Units	115,147	132,547	130,655
Population in Multi-Family Units	173,386	216,838	210,085
Residential Population (in SF + MF units)	357,763	547,290	510,237
Hotel/Motel Rooms	8,817	9,642	9,380
Students in School (including colleges)	67,922	79,817	75,117
Employees (at place of work)	143,044	223,011	212,780
Workers (at place of residence)	179,594	213,735	194,090

Detailed SE Datasets for 2015 and 2045

The full SE dataset for 2015, as prepared by Florida DOT, can be downloaded in GIS format from: www.spikowski.com/details/CollierMPOscenarios.html

The full datasets for both 2045 scenarios are available in Excel format from the same address. These Excel files can be mapped and viewed in GIS by using the TAZ15_ fields to link the Excel files to the latest TAZ boundaries in the 2015 dataset.