Chapter 5: Land Use and Socioeconomic Data Forecast

Introduction

This chapter summarizes the socioeconomic data forecast developed for the Long Range Transportation Plan. Lake County has previously used the procedures contained in this chapter to develop socioeconomic data to be used for travel demand forecasting. This chapter provides an overview of the socioeconomic data development methodology and results. Detailed information and results can be found in Technical Appendix Section 5B. Attention is directed to the fact that this chapter addresses forecast data prepared only for the Lake County portion of the Lake~Sumter MPO. Sumter County data is being prepared as part of a separate work effort by others.

Socioeconomic data, such as population and employment information, are an integral component of travel demand forecasting models used for transportation planning. The Lake~Sumter Metropolitan Planning Organization participates in the development and maintenance of this information within Lake County for the Central Florida Regional Planning Model, Version 4 (CFRPM-IV). This model is historically updated on a five-year cycle, thus requiring an update to the input data including base year and forecast socioeconomic data. This five-year update cycle is concurrent with the Long Range Transportation Plan update cycle.

SAFETEA-LU continued the TEA-21 requirements regarding the need to identify projected transportation demand of persons and goods in the metropolitan planning area over the period of the plan. Socioeconomic data, including population, hotel occupancy, school enrollment, and employment, was projected through Year 2025, as explained below.

Methodology

The socioeconomic data forecast is a multi-step process that can be generalized into four steps:

1. Development of control totals
2. Determination of developable lands
3. Input of approved developments, manual adjustments, and overrides
4. Allocation of growth to traffic analysis zones

These steps are discussed in greater detail below.

Development of Control Totals

Control Totals are countywide totals of population, dwelling units, and employment that are used to establish a theoretical level of development throughout the county in the forecast year. These control totals are developed by considering the historical growth rate of the county and the population projections forecasted by the University of Florida Bureau of Economic and Business Research (BEBR). The Bureau publishes three forecasts, a high, medium, and low growth projection for each county in Florida. These projections for Lake County are tabulated in Table 5-1.

Table 5-1: Bureau of Business and Economic Research Population Projections

	2000 Population	2005	2010	2015	2020	2025
BEBR Low		244,000	266,800	285,800	301,000	311,900
BEBR Medium	211,503	256,700	295,000	332,900	370,800	407,200
BEBR High		269,600	326,100	386,600	451,500	519,800

Through discussions with MPO Staff, Lake County Staff, and local government staff, it was determined that the optimal control total for population would be an average of the BEBR Medium and BEBR High population projection forecast. The employment control total maintained the existing mix of employment to population. Table 5-2 summarizes the control totals for population, and employment.

Table 5-2: Population and Employment Control Totals

Year	Population	Employees	Increase from 2000	
			Population	Employees
2000	211,503	87,318	N/A	N/A
2005	263,150	103,785	51,647	16,467
2010	326,550	129,279	115,047	41,961
2015	369,750	146,935	158,247	59,617
2020	411,150	164,004	199,647	76,686
2025	463,500	185,580	251,997	98,262

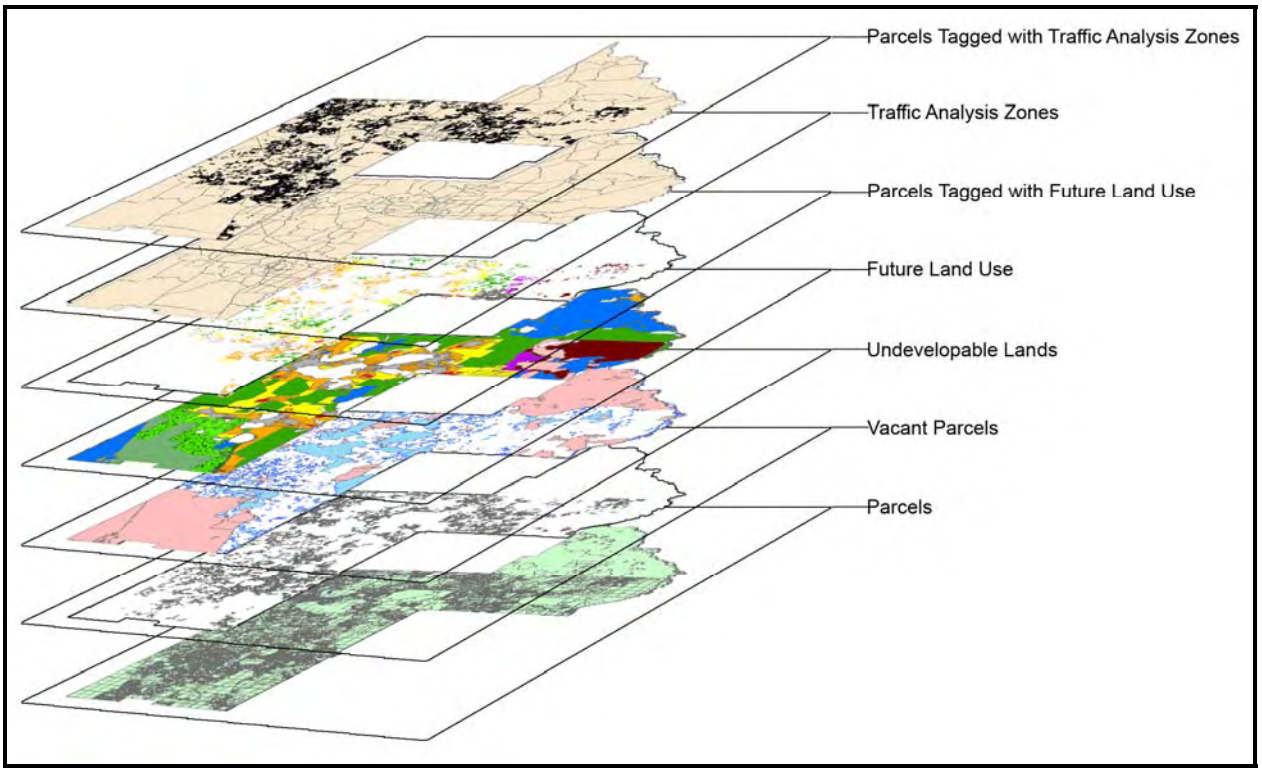
Determination of Developable Lands

Developable Lands are determined through a geographic information systems process involving the following data sets:

- Vacant parcels from the year 2000
- The Future Land Use Plan from the Lake County Adopted Comprehensive Plan
- The traffic analysis zones used in the CFRPM-IV
- Locations of master planned unit developments and developments of regional impact
- Environmentally sensitive land, such as the Green Swamp, Wekiva Basin and the Ocala National Forest
- Lakes and rivers
- Other lands that are unable to be developed

This process begins with year 2000 parcel data because the population at the year 2000 is known through efforts from the US Census and reviewed by the Florida Department of Transportation for use in the model. The parcel data is queried based on the Florida Department of Revenue Use Code to determine the vacant lands. From these vacant lands, undevelopable lands are removed. Undevelopable lands include environmentally sensitive lands, lakes and rivers, and other undevelopable lands. Also, during this process, master planned unit developments and developments of regional impact are removed because they are going to be input separately into the land use allocation model. The remaining vacant parcels are tagged with their future land use category. Finally, these parcels are tagged with their traffic analysis zone (TAZ). The result of this is a table that can be queried for the amount of acreage for each future land use category for each TAZ. This process is graphically illustrated in Figure 5-1, below. The Future Land Use Map that was used in this process is included in Appendix 5A.

Figure 5-1: Determination of Developable Lands GIS Layers



Input of Approved Developments and Other Manual Inputs

Approved developments and other manual inputs are input into the future land use allocation model separately because the development amounts, locations, and timeframes are known. Manually inputting these items ensures that the allocation of development accurately reflects "facts on the ground."

Allocation of Growth to Traffic Analysis Zones

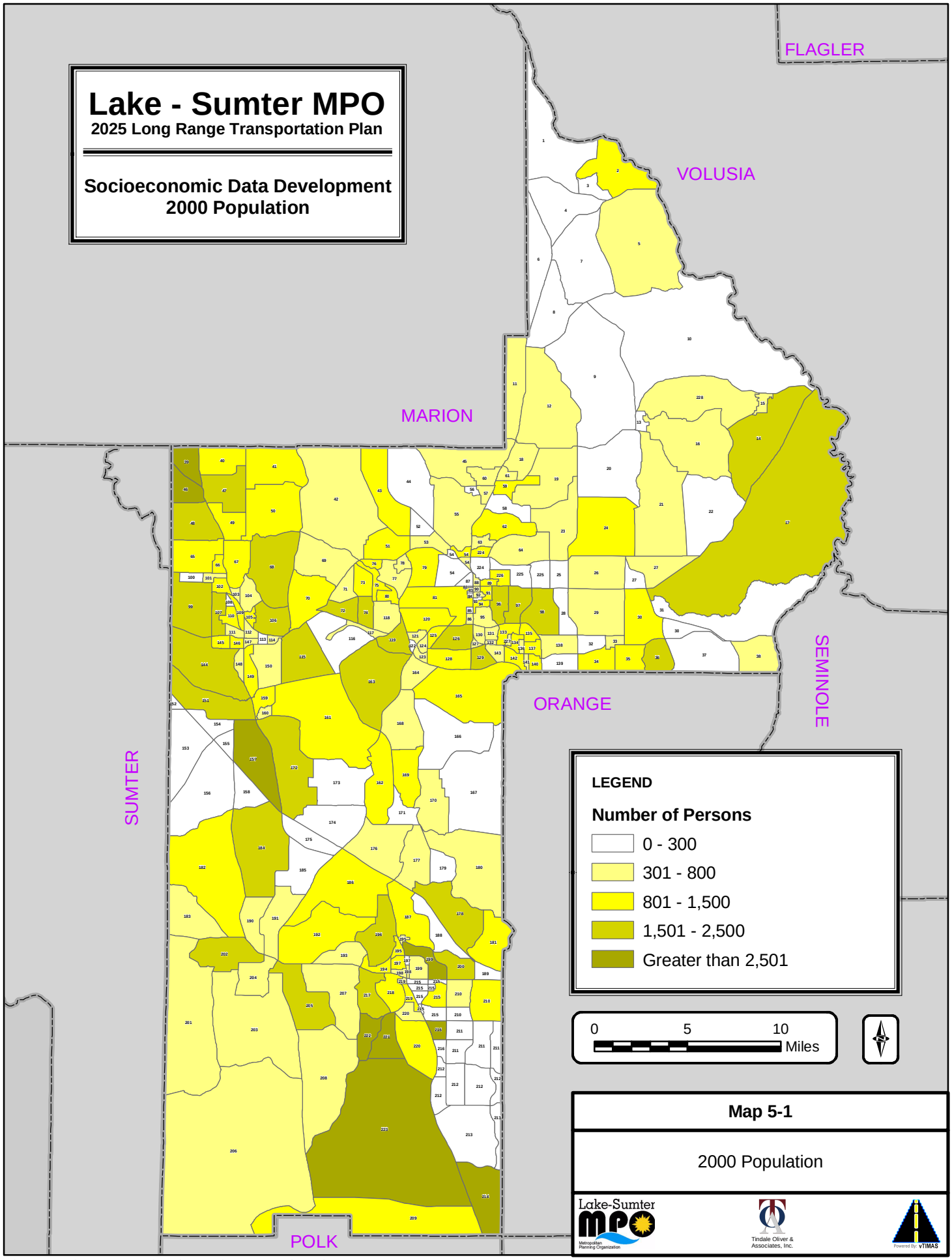
The allocation of housing and employment growth to the individual zones is undertaken in a Microsoft Excel spreadsheet that models the growth based on the gravity model used to determine the propensity to grow based on the distance away from existing activity centers. The gravity model provides an attractiveness factor that is based on the size of the activity center divided by the square of the distance from the activity center. Each traffic analysis zone has the attractiveness factor calculated for it, and zones that have a higher attractiveness factor develop faster than those zones that have a lower factor.

Utilizing the developable lands by traffic analysis zone and future land use category, the allocation model projects the amount of population and dwelling unit growth in each traffic analysis zone.

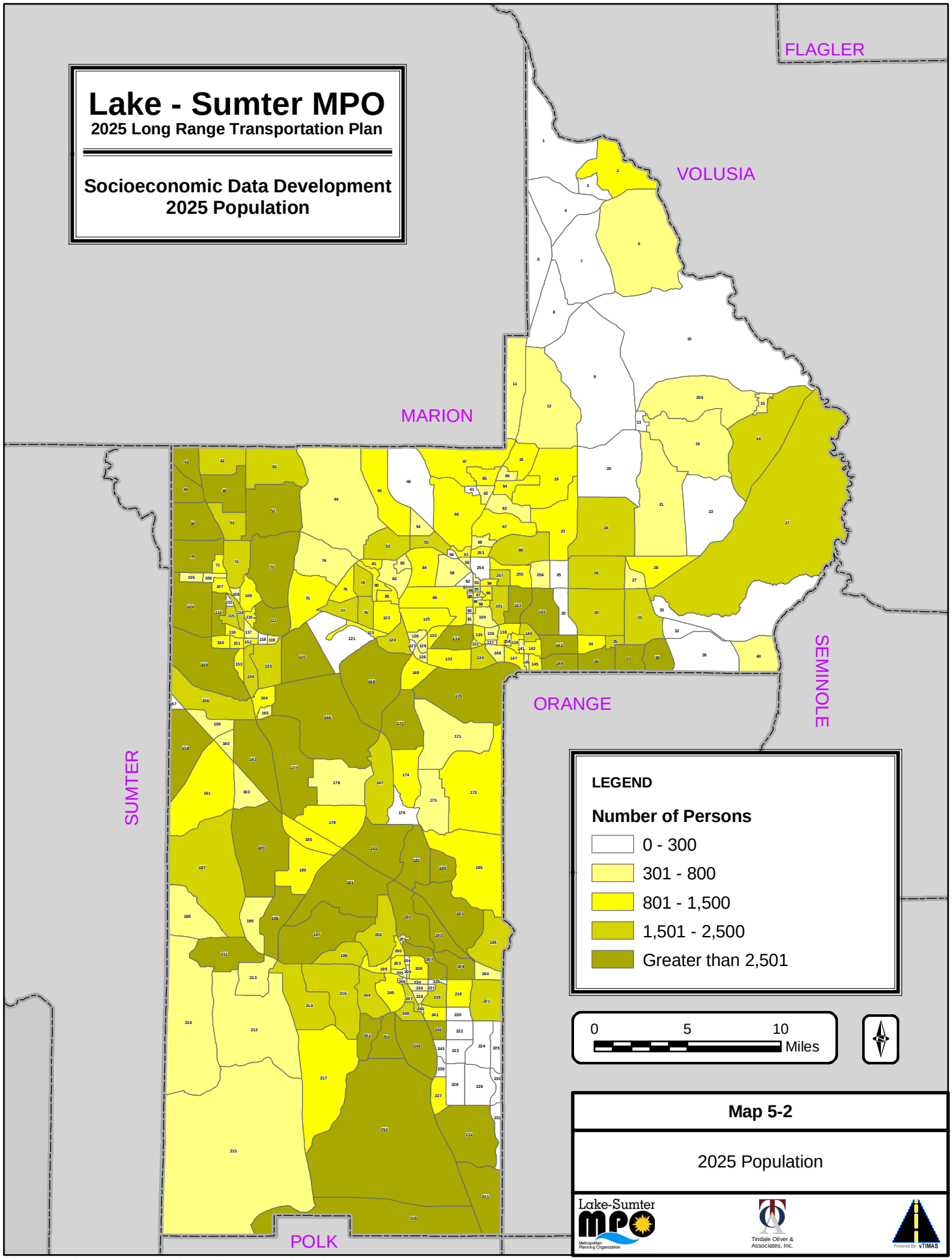
Results of forecast

The results of the forecast are projections of population, employment, hotels, motels, schools, and other variables that are used as an input to the travel demand model. Detailed results can be found in Technical Appendix Section 5B, and the following maps are provided to summarize the base year and forecast socioeconomic data:

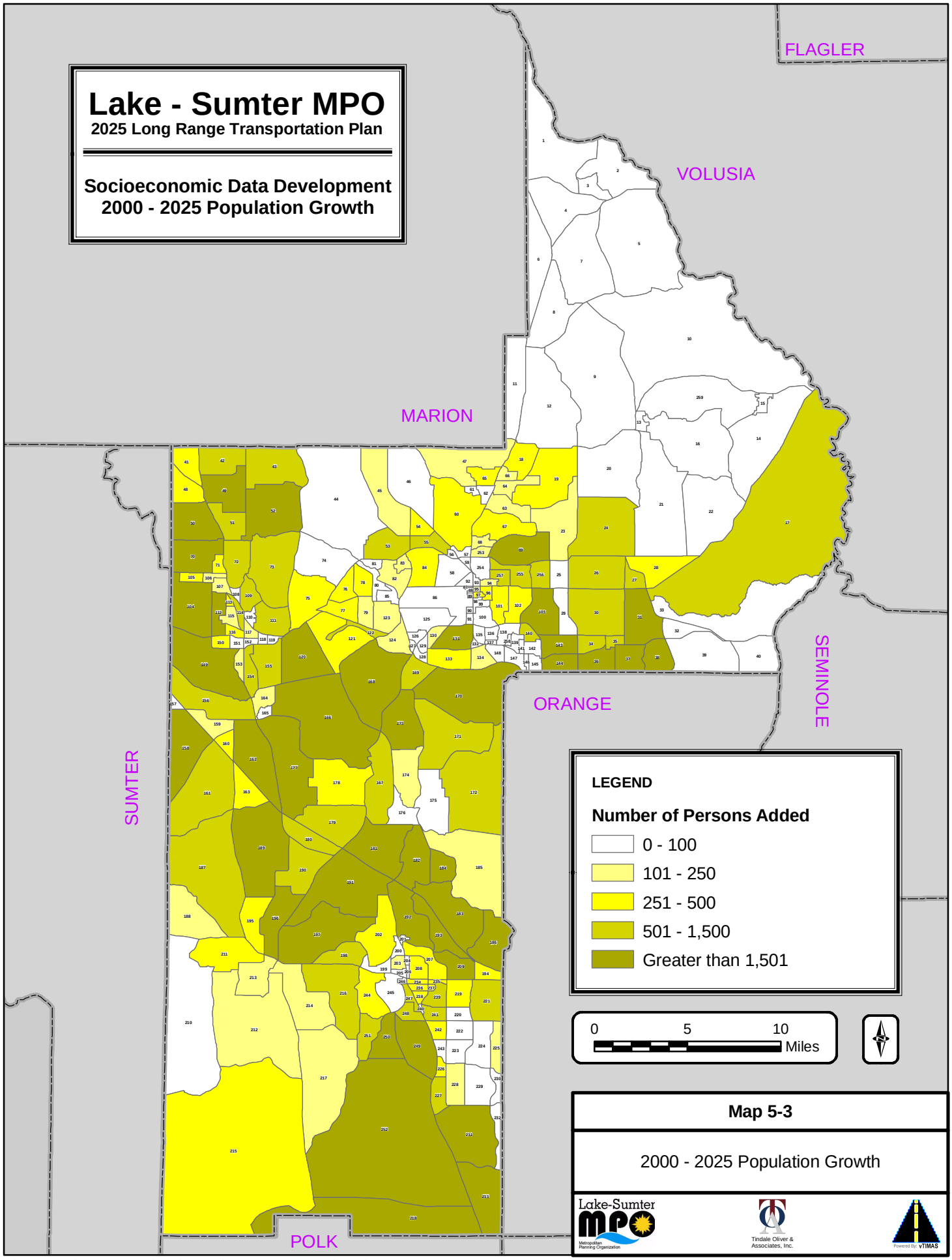
- Map 5-1 – Base Year 2000 Population
- Map 5-2 – Forecast 2025 Population
- Map 5-3 – Forecast 2000-2025 Population Growth
- Map 5-4 – Base Year 2000 Total Employment
- Map 5-5 – Forecast 2025 Total Employment
- Map 5-6 – Forecast 2000-2025 Total Employment Growth



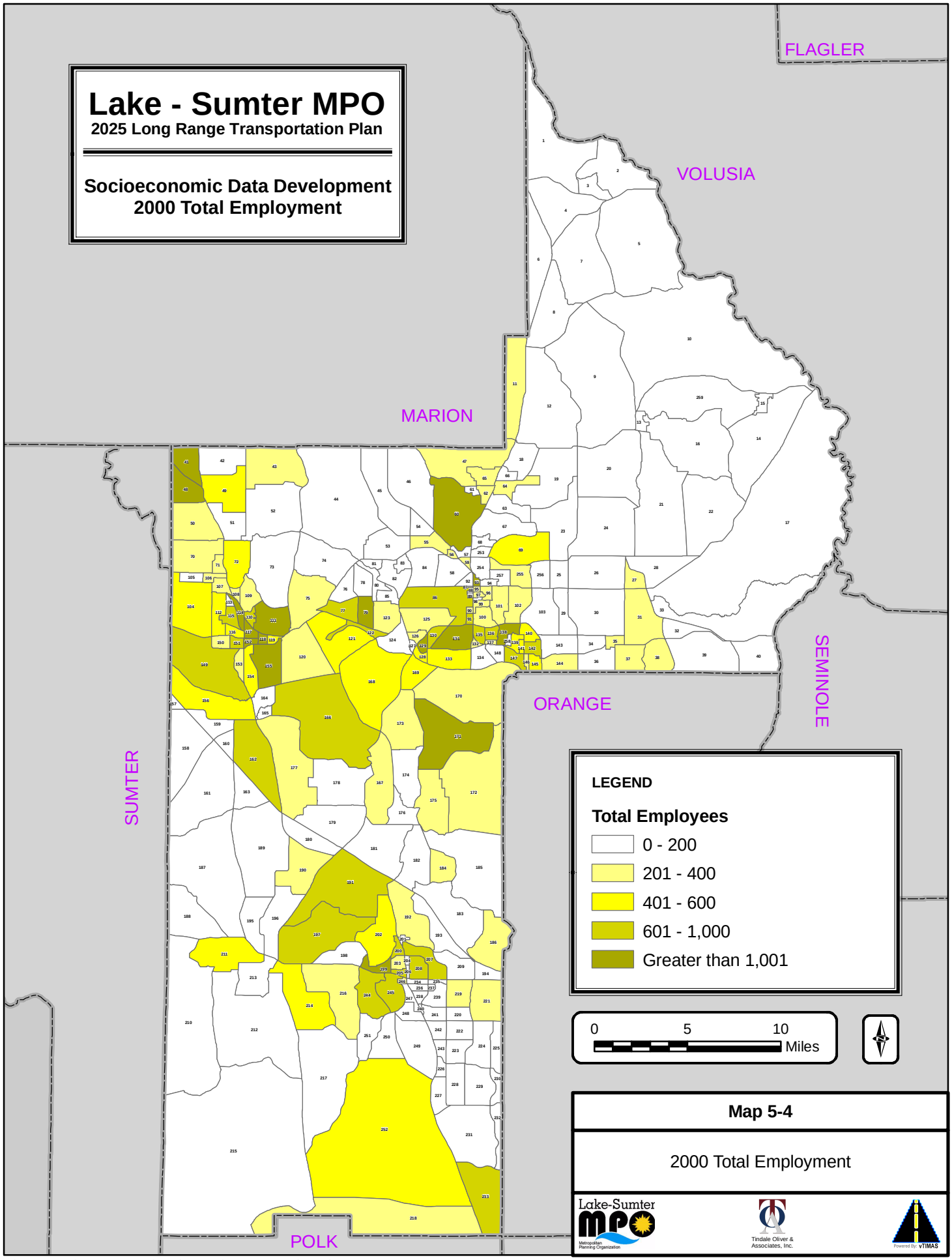
G:\37401.04_Lake_Sumter_LRTP\Maps\SEDATA\5-1-2000Pop_doc.mxd



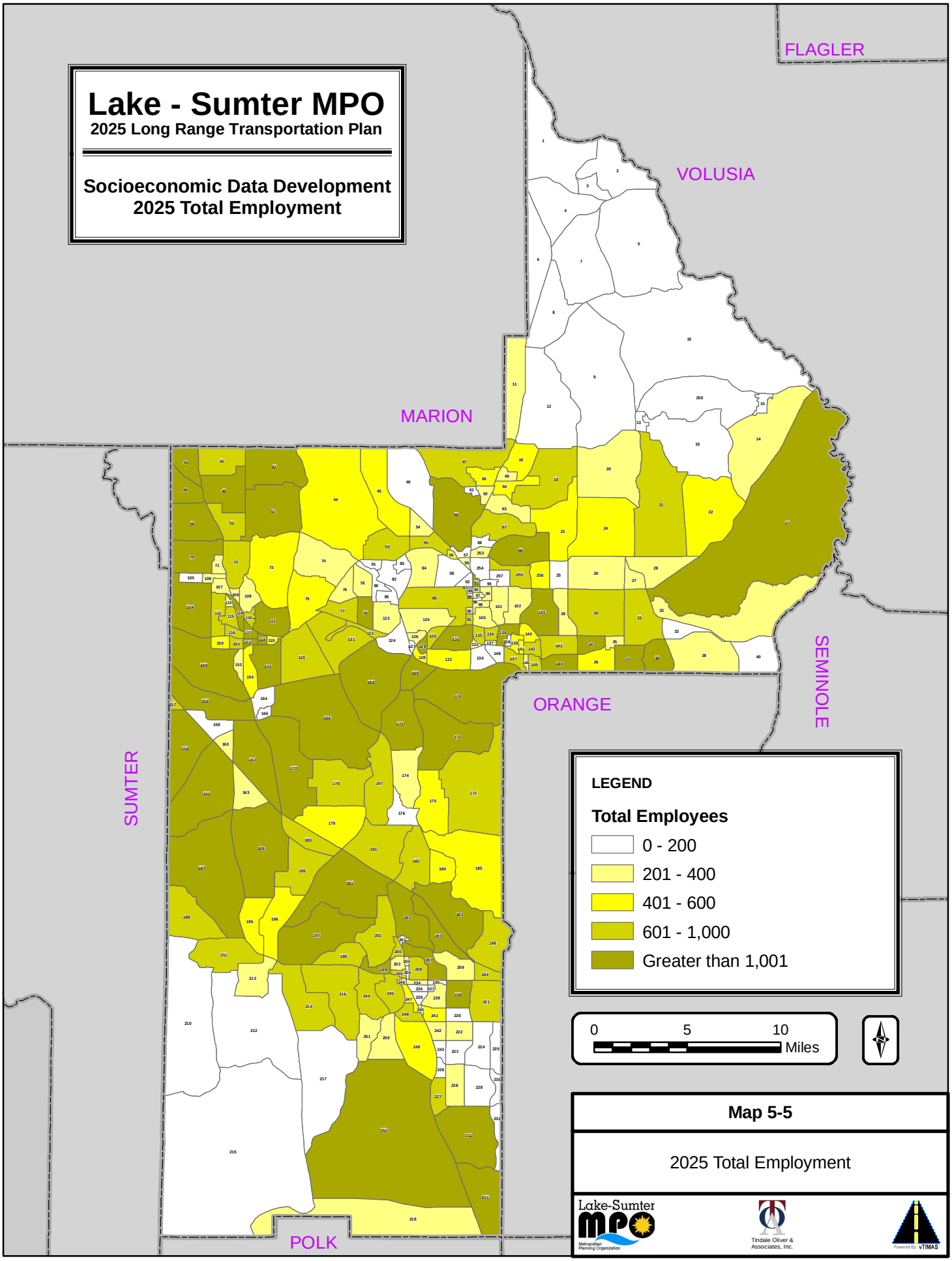
G:\37401.04_Lake_Sumter_LRTP\Maps\SEDATA\5-2-2025Pop_doc.mxd



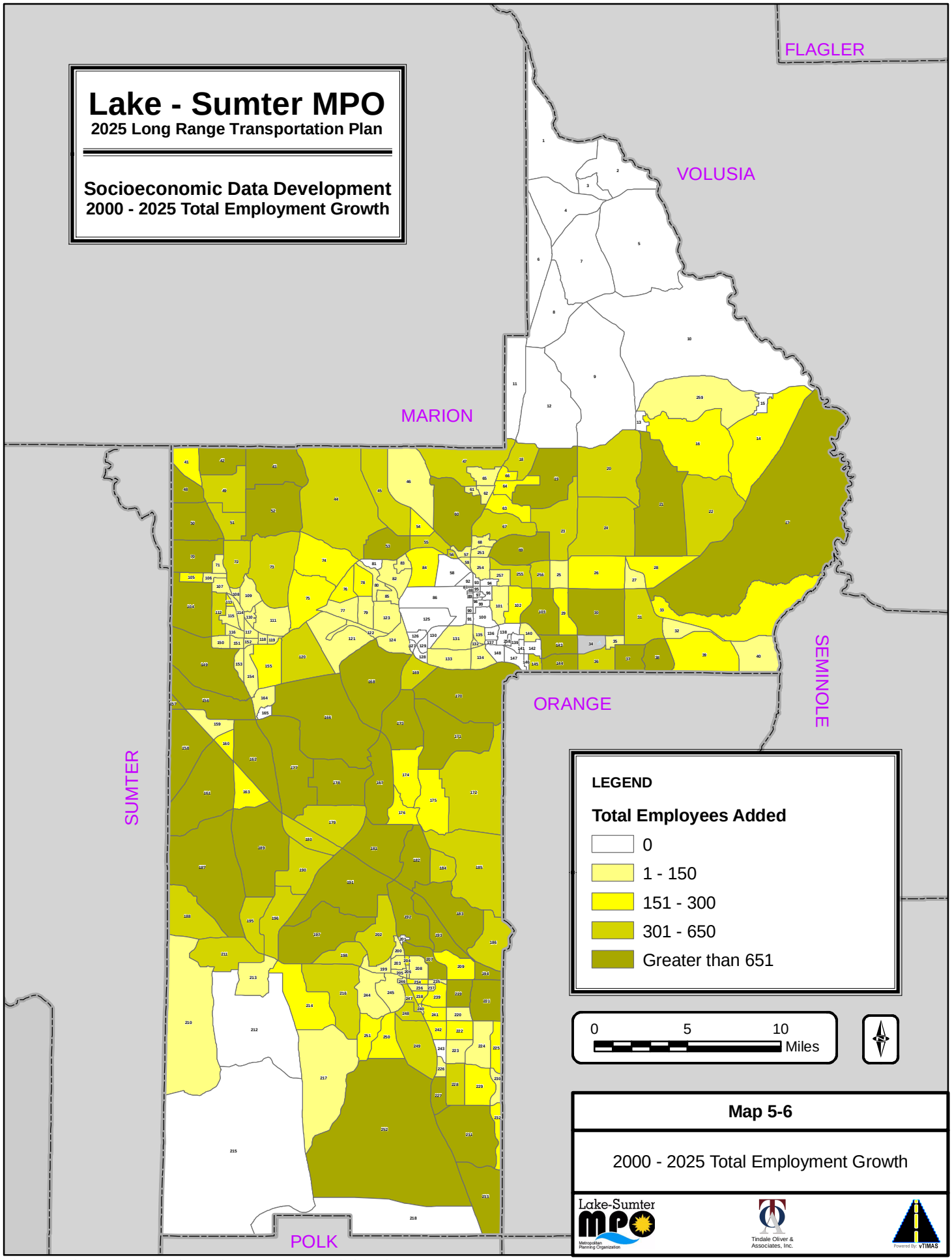
G:\37401.04_Lake_Sumter_LRTP\Maps\SEDATA\5-4-2000-2025PopGro_doc.mxd



G:\37401.04_Lake_Sumter_LRTP\Maps\SEDATA\5-4-2000-Emp_doc.mxd



G:\37401.04_Lake_Sumter_LRTP\Maps\SEDATA\5-5-2025-Emp_doc.mxd



G:\37401.04_Lake_Sumter_LRTP\Maps\SEDATA\5-6-2000-2025-EmpGrowth_doc.mxd

Conclusion

The data sets developed as part of this project represent a cooperative effort between the Lake~Sumter Metropolitan Planning Organization, the Florida Department of Transportation, Lake County, and the local city governments in Lake County. Numerous review opportunities led to the development of the refined socioeconomic data. This socioeconomic data is an input to the Central Florida Regional Planning Model for the purposes of transportation planning. Application of this data for other uses should be carefully reviewed prior to actual use.

These data sets should also be reviewed periodically to ensure that ongoing growth is adequately provided for in the data files at the traffic analysis zone level. This is especially recommended for areas of the County that are experiencing significant changes in employment due to new development or redevelopment.

Recommendations for Enhancements

The methodology used to identify the locations of employment growth resulting from redevelopment was based on the analysis that could be completed within the scope of services using the best available data at the time the forecasts were developed. This necessitated the use of existing data and data that could be readily obtained. Overall, the recommended level of redevelopment was acceptable to the local government representatives who reviewed the data at the Traffic Analysis Zone unit of analysis. Only slight modifications were recommended as a result of these reviews. The opportunity exists for a more refined consideration of redevelopment growth in the future should the resources become available. This more refined analysis should attempt to identify redevelopment growth based on data at the parcel level. This parcel level data should include the existing quantity of employment at the parcel and the allowable growth based on the future land use identified for the parcel in the Comprehensive Plan. This revision to the methodology would more adequately reflect the variance of intensities of development from one location to another.