2. OVERVIEW – TRANSPORTATION DEMOGRAPHICS

POPULATION DEMOGRAPHICS

Demographic Characteristics

The purpose of this chapter is not to provide a detailed demographic analysis, but rather to provide a "snapshot" of demographic characteristics that may have significant effects on the transportation system. The latest data available is used in tables and charts. In most cases 2010 Census data can be applied, in other cases 2000 Census data or mid-decade estimates are the latest available. In addition, American Community Survey (ACS) data was used when available (ITCTC considers ACS data to be more accurate than standard Census Estimate data).

According to the 2010 Census, Tompkins County grew in population by 5,063 persons between 2000 and 2010, representing an annual average increase of approximately 0.5% (see **TABLE 1**). The City of Ithaca and all nine of the Towns in the County showed population increases from 2000 to 2007.

Regarding population changes in the six villages in Tompkins County, the total population in all villages decreased by 0.2% per year and only 2 of the 6 villages, Trumansburg and Lansing, had any significant gain in population (see **TABLE 4**).

A review of the 2000-2010 population changes by Census-defined "urban" and "rural" areas confirms the notion that Tompkins County continues to become more urbanized demographically (see **TABLE 2**). This is a trend that was noted in previous Long Range Transportation Plans (LRTPs). As the area becomes more urbanized, the travel patterns and behaviors of its residents will continue to change.

TABLE 3 provides a more detailed view of the area's demographic changes in terms of *population density* (persons per square mile,) for the 2000-2010 period for the Towns and the City of Ithaca, while **TABLE** 4 show similar information for the County's villages. Population density based on 2010 Census block data is presented in **FIGURE 3**. While pockets of urban density can be found throughout the County, representing traditional agricultural-community development patterns, it is apparent from this figure where the urbanized areas (i.e., 1,000 persons/mile^2 or more) lie. By far the greatest concentration of population lies in the urbanized area of the City of Ithaca. Other population density pockets are centered on the villages of Cayuga Heights, Groton, Dryden and Trumansburg. Furthermore, the map displays how density data can be correlated to several important community resources: the location of the major employment centers (e.g., Cornell University, Ithaca College, Route 96-B industrial corridor, the Central Business District (CBD), and the northeast industrial corridor); the location of sanitary sewer and water service areas; and the ease and availability of transportation services/infrastructure.

The number of persons per household is an important factor in determining trip rates for an area. Large families tend to generate fewer trips per person than do smaller families because there is a tendency towards increased vehicle occupancy with each trip. In Tompkins County the number of persons per household (pph) decreased slightly from 2.32 in 2000 to 2.27 in 2010 (see **TABLE 5**). This slight decrease continues a trend that goes back to at least 1980. PPH decreased from 1990 (2.46) to 2000 (2.32). The figure for 1980 was 2.55pph, evidence of the length of this trend. While these figures are slightly lower than national averages, probably due to the influence of the university community on the area's demographics, they do correspond to national trends towards smaller household sizes.

TABLE 1					
Population Totals for Tompkins County					
Civil Division	**1990 Population (% of Total)**	**2000 Population (% of Total)**	**2010 Population (% of Total)**	**2000-2010 Numeric Change (% of Gain)**	**2000-2010 Percent Change**
Town of Caroline	3,044 (3.2%)	2,910 (3.0%)	3,282 (3.2%)	372 (7.4%)	12.8%
Town of Danby	2,858 (3.0%)	3,007 (3.1%)	3,329 (3.3%)	322 (6.4%)	10.7%
Town of Dryden	13,251 (14.1%)	13,532 (14.1%)	14,435 (14.2%)	903 (17.8%)	6.7%
Town of Enfield	3,054 (3.3%)	3,369 (3.5%)	3,512 (3.5%)	143 (2.8%)	4.2%
Town of Groton	5,483 (5.8%)	5,794 (6.0%)	5,950 (5.9%)	156 (3.1%)	2.7%
City of Ithaca	29,541 (31.4%)	28,775 (29.8%)	30,014 (29.6%)	1,239 (24.5%)	4.3%
Town of Ithaca	17,797 (18.9%)	18,710 (19.4%)	19,930 (19.6%)	1,220 (24.1%)	6.5%
Town of Lansing	9,296 (9.9%)	10,521 (10.6%)	11,033 (10.9%)	512 (10.1%)	4.9%
Town of Newfield	4,867 (5.2%)	5,108 (5.3%)	5,179 (5.1%)	71 (1.4%)	1.4%
Town of Ulysses	4,906 (5.2%)	4,775 (5.0%)	4,900 (4.8%)	125 (2.5%)	2.6%
Total County	**94,097 (100.0%)**	**96,501 (100.0%)**	**101,564 (100.0%)**	**5,063 (100.0%)**	**5.3%**

Source: 1990, 2000 and 2010 Decennial Census

Note: Village population statistics are included as part of respective Town totals

TABLE 2				
Population Trends in Urban and Rural Areas				
Census Area	**2000**	**2010**	**Numeric Difference**	**Percentage Change**
Urban	53,528	59,636	6,108	11.4%
Rural	42,973	41,928	-1,045	-2.4%
Total	**96,501**	**101,564**	**5,063**	**5.3%**

Source: 2000 and 2010 Decennial Census

TABLE 3						
Population, Size and Density Figures for Tompkins County 2000-2010 (City of Ithaca and Towns)						
Civil Division	**Total Land Area (mi^2)**	**2000 Population**	**2000 Population Density (pop/mi^2)**	**2010 Population**	**2010 Population Density (pop/mi^2)**	**2000-2010 Change (pop/mi^2)**
Town of Caroline	55	2,910	52.91	3,282	59.67	6.76
Town of Danby	53.6	3,007	56.1	3,329	62.1	6.00
Town of Dryden	93.9	13,532	144.11	14,435	153.73	9.62
Town of Enfield	36.9	3,369	91.3	3,512	95.18	3.88
Town of Groton	49.6	5,794	116.81	5,950	119.96	3.15
City of Ithaca	5.5	28,775	5,231.18	30,014	5,457.09	225.91
Town of Ithaca	29.1	18,710	642.95	19,930	684.88	41.93
Town of Lansing	60.7	10,521	173.33	11,033	181.76	8.43
Town of Newfield	58.9	5,108	86.72	5,179	87.93	1.21
Town of Ulysses	33	4,775	144.69	4,900	148.49	3.80
Total County	**476.1**	**96,501**	**202.69**	**101,564**	**213.33**	**10.64**
Source: 2000 and 2010 Decennial Census						

TABLE 4						
Population Size and Density for the Villages of Tompkins County 1990-2010						
Civil Division	**Total Land Area (mi^2)**	**2000 Population**	**2000 Population Density (pop/mi^2)**	**2010 Population**	**2010 Population Density (pop/mi^2)**	**2000-2010 Change (pop/mi^2)**
Village of Dryden	1.7	1,832	1,077.65	1,838	1,081.18	3.53
Village of Freeville	1.1	505	459.09	520	472.73	13.64
Village of Groton	1.6	2,470	1,543.75	2,363	1,476.88	-66.87
Village of Cayuga Heights	1.8	3,738	2,076.67	3,729	2,071.67	-5.00
Village of Lansing	4.6	3,417	742.83	3,529	767.17	24.34
Village of Trumansburg	1.2 (1.36)	1,581	1,317.50	1,797	1,321.32	3.82
Source: 2000 and 2010 Decennial Census						

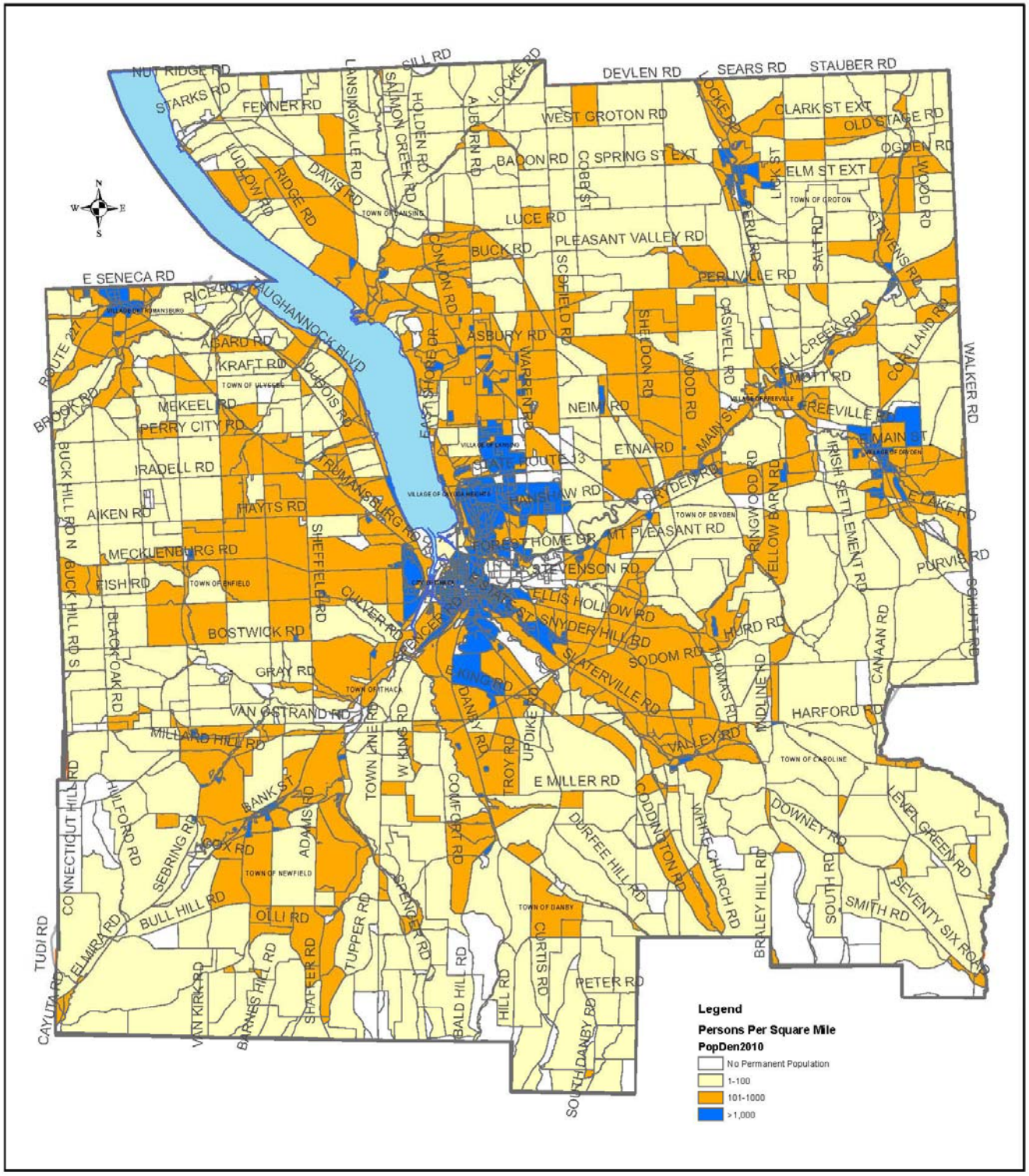


Fig. 3

Persons per Sq. Mile in Tompkins County 2010 by Census Block

2 1 0 2 Miles

Scale

TABLE 5										
Persons per Household in Tompkins County										
	Population			**Households**			**Population Change**	**Household Change**	**Persons per household (excluding group quarters)**	
	1990	**2000**	**2010**	**1990**	**2000**	**2010**	**2000-2010**	**2000-2010**	**2000**	**2010**
Tompkins County	94,097	96,501	101,564	33,338	36,420	38,967	5,063 (5.3%)	2.547 (7.0%)	2.32	2.27
Source: 1990 Census, 2000 Census, and 2010 Census.										

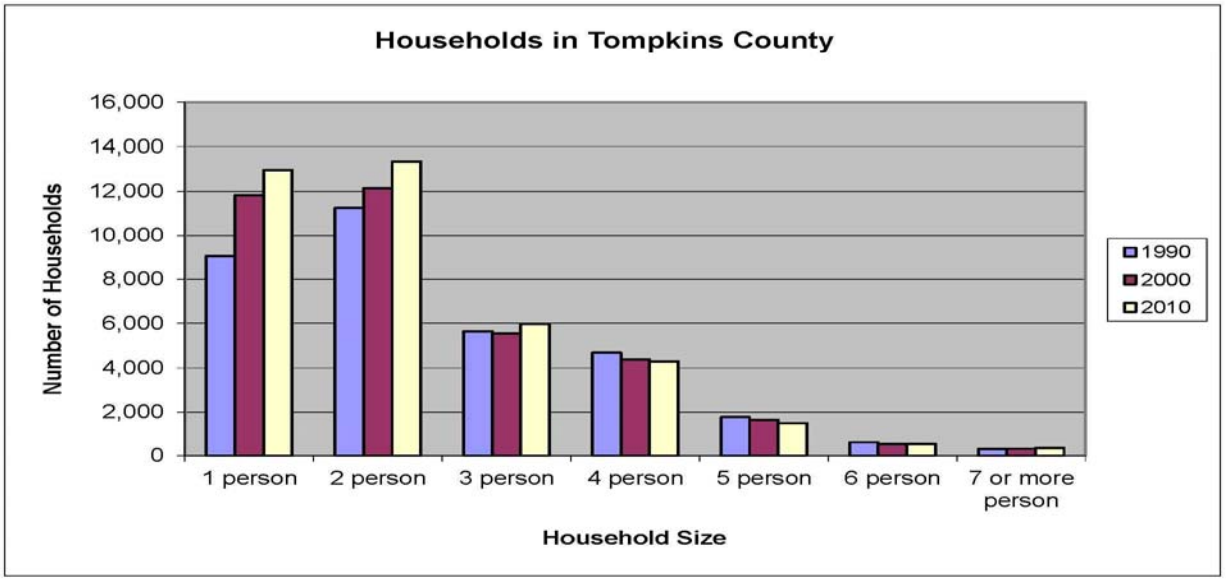


FIGURE 4
Source: 1990 Census, 2000 Census, and 2010 Census

Another interesting observation is the change in household size as a percentage of the total population. **TABLE 5** indicates that the average number of persons per household continues to decrease from 2000 to 2010. **FIGURE 4** shows how these changes are occurring within the total population. There were reductions in the percentage of total population residing in large families (4, 5 and 6 persons) since 1990, while there was the significant increase in the number of one (1) and two (2) person households in Tompkins County.

A summary review of population by age group (see **FIGURE 5** and **TABLE 7**) reveals the largest increase occurs in the 45 to 64 year old cohort. An interesting observation in this table is the shift from the 25 to 44 year old group to the 45 to 64 year old group, from 1990 to 2007. This is reflective of the aging of the baby-boom generation. The 45 to 64 year old group has increased in size by 56.5% since 1990. The phenomenon establishes the trend for a significant portion of the population. The majority of the changes are probably due to natural cohort variation (and the way the cohorts have been reported). The figures in this table demonstrate the national trend towards our aging society.

Due largely to the influence of the university/colleges, local demographics indicate that there are relatively high rates of education in the Ithaca-Tompkins area. The 2007 ACS Three-Year Estimate figures indicate 50% of the Tompkins County population aged 25 and older have completed four plus years of college; the corresponding figure for the City of Ithaca is 64%.

Tompkins County has a substantial student population of approximately 25,000. The bulk of the students attend Cornell University and Ithaca College, both within the Ithaca urban area. Many of these students are year-round residents, but most reside in Tompkins County only during the school year. Therefore, they create a significant seasonal impact in the demand for services including transportation. ITCTC staff and other transportation professionals in the county are aware of this dynamic. Transportation studies and data gathering efforts are routinely coordinated with student schedules in order to capture the true peak in the travel demand.

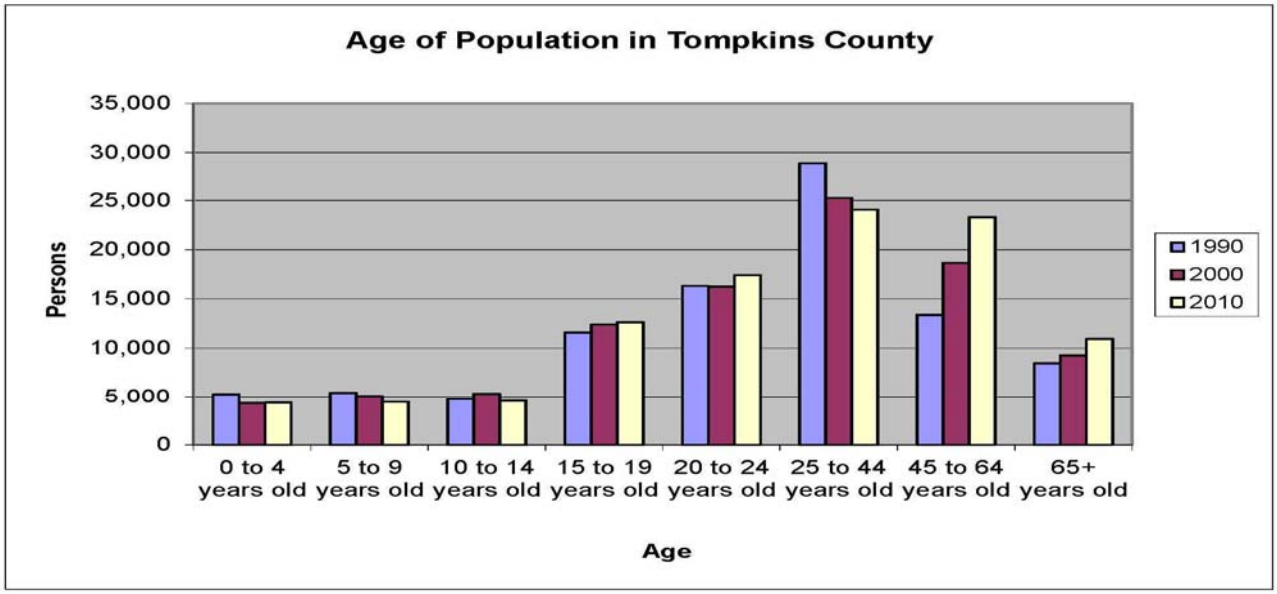


FIGURE 5
Source: 1990 Census, 2000 Census, and 2005-2007 ACS Three-Year Estimate

Employment Characteristics

The ITCTC maintains employment information (i.e. number of jobs) at a Traffic Analysis Zone level of detail. This information, which has been provided by the Census in its 2010 Census Transportation and Planning Package, is crucial to the development of a travel demand model tool used by the ITCTC. Census figures show that ***education*** is, by far, the leading employment sector in Tompkins County. **FIGURE 6** provides a graphical comparison between 1990, 2000, and 2007.

Economic trends have an impact on transportation. For example, it is well known that different types of businesses have different trip generation potential; major retail centers will have higher trip generation impacts than will basic manufacturing locations (i.e., shoppers versus employees).

Other observations can be made regarding the socioeconomic profile of the County's residents. For instance, the unemployment rate in Tompkins County is consistently one of the lowest in the State of New York, and yet there are still many pockets of poverty. While the influence of higher education includes a measure of economic stability, the cost of living in Tompkins County is relatively high, affecting housing and transportation decisions. The high cost of living, particularly in the urbanized area, also results in reduced discretionary income affecting retail and other sectors of the economy.

Population increases and low unemployment are two factors that have resulted in increased demand and price pressure on the housing market. Numerous other factors, such as the disproportional demand for rental units from college students, are also influencing the housing sector. Tight housing supply and high prices have pushed people further out of urban areas, fueling sprawl and longer trip lengths. This has resulted in higher tax and service fees in the core urban areas as they cope with maintaining their tax base while incurring increasing service and infrastructure maintenance costs. While this plan does not directly address these issues, it is important to recognize the complex interactions between employment, economic and regulatory factors and the transportation sector.

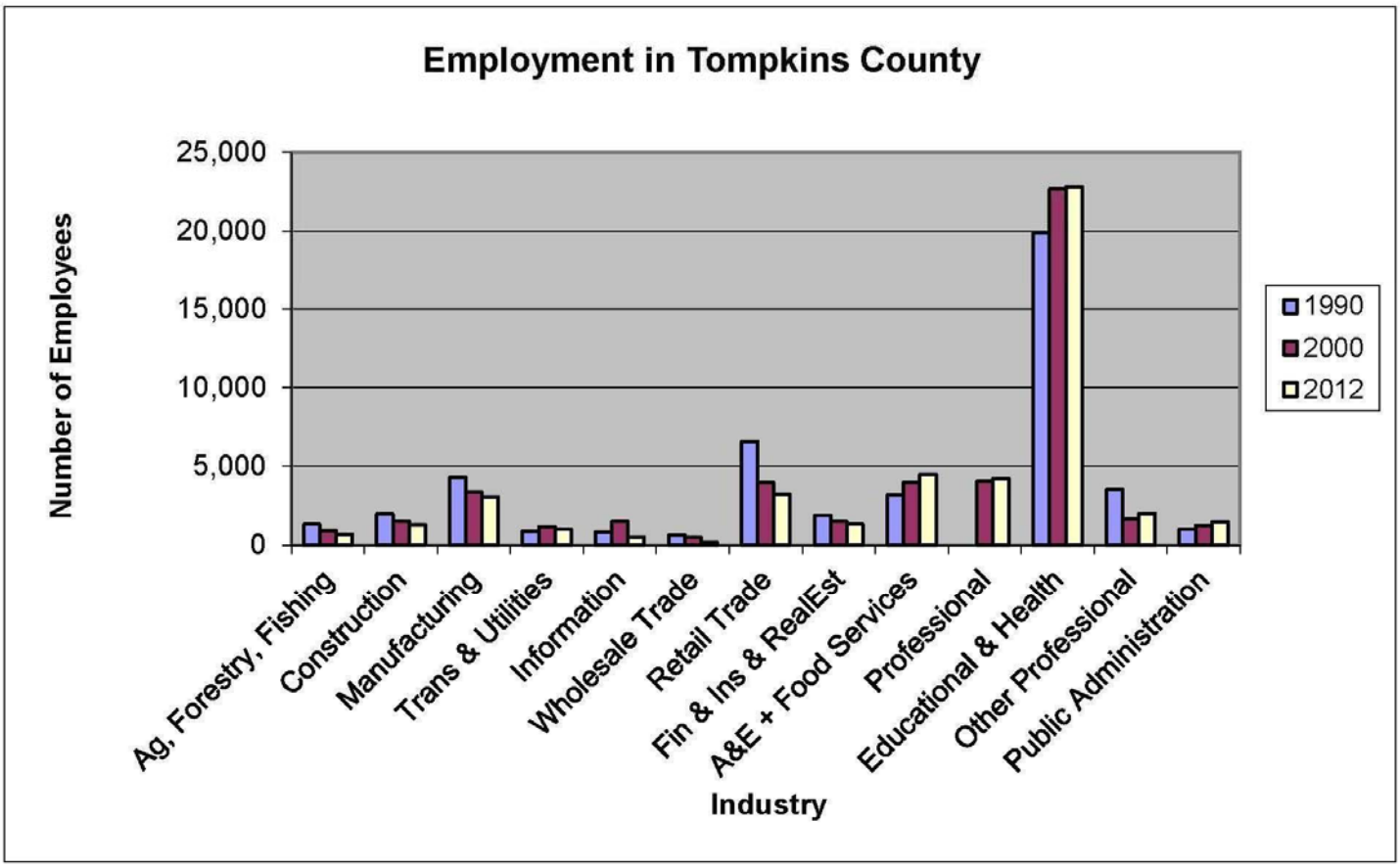


FIGURE 6
Source: 1990 Census, 2000 Census, and 2012 Census ACS

TRAVEL TRENDS & CHARACTERISTICS

General Travel Trends

This section presents uses data from the *2010 American Community Survey,* and the *2009 National Household Transportation Survey* (NHTS). The NHTS data include information specific to the Ithaca urbanized area. Data sources are identified throughout the text and tables. This is the most recent locally generated trip based data available for development of the 2035 LRTP. Where appropriate national and New York State data is presented in addition to Tompkins County figures. The data that is available through the census and NHTS continues to provide an excellent starting point for the analysis of general travel trends and characteristics in the greater Ithaca-Tompkins County area.

TABLE 6 and its accompanying figures compare the 1995, 2001 and 2009 national, state and local data on the basis of Person Trips by Trip Purpose (reported in relative percentages). In NHTS: "Earning Living" means "to and from work" and "work related" trips; "Family/Personal" means "family and personal errands"; "Civic/Education/ Religious" means "to and from church", "to and from school" and "to and from civic events" trips; "Social/ Recreational" means "gym/exercise", "rest, relaxation, vacation", " visit friends and family", "visit public place", and/or "other social/recreational event" trips.

Earn Living trips are most responsible for peak hour traffic trends by the way they cluster in the mornings and evenings. Generally, peak hours traffic creates the "rush hour", or the period of time when the majority of people are on their way to or from work. Because of the way this 22.7% of trips are concentrated in a specific period of time and along certain corridors, work trips are responsible of much of the local daily congestion. For this reason they receive much of the attention of planners and engineers seeking to address congestion at peak times. However, the bulk of trips on our roadways (approximately 77%) are not work related. These trips also need to be considered when determining travel trends and characteristics.

Person Trips by Mode of Transportation data is presented in **TABLE 7** and its accompanying figures comparing 1995, 2001 and 2009 estimates. One important trend from the comparison includes a reduction in the use of ***Private Vehicles*** as a percentage of trips per day in Tompkins County, from 83.1% in 1995 to 80.5% in 2001 to 73.1% in 2009. Similar but less pronounced reductions are reflected in the national and state figures. State figures are relatively low thanks to the influence of New York City and its extraordinary transit use levels. ***Walking*** as a mode of transportation showed increase percentages from 1995 to 2009 in the National, State and County figures. County increases in the percent of Walk trips date back to 1990 at 7.8%, compared to 1995 (10.7%), 2001 (14.8%) and 2009 (18.2%).

Public Transportation use, as a percent of total daily trips, was below the national average for 1995 and 2001. However, the most significant change arose from the creation of Tompkins Consolidated Area Transit in 1998 and TCAT's re-organization in 2005 (as a non-profit corporation). Public transportation ridership (transit plus paratransit ridership) grew from 2,360,400 in 1995 to well over 4,000,000 in 2013. The growth in ridership is reflected in the NHTS estimates of 2009 at 5% if trips using public transportation.

Table 6									
Person Trips per Day by Trip Purpose - 1995, 2001 and 2009 Estimates									
	Remainder of US			New York State			Tompkins County		
Trip Purpose	**1995**	**2001**	**2009**	**1995**	**2001**	**2009**	**1995**	**2001**	**2009**
% Earning Living	20.3%	18.8%	18.9%	19.8%	19.4%	18.5%	19.6%	18.4%	22.7%
% Family / Personal	45.7%	43.9%	42.8%	45.9%	43.4%	43.6%	44.5%	42.6%	38.6%
% Civic / Education / Religious	8.8%	9.8%	9.7%	9.3%	9.7%	9.6%	11.4%	11.4%	7.0%
% Social / Recreational	24.9%	26.6%	27.8%	25.0%	26.3%	27.2%	24.2%	26.4%	29.9%
% Other	0.2%	0.8%	0.8%	0.0%	1.2%	1.1%	0.2%	1.2%	1.8%
Source: 2009 NHTS Comparison Study, App. C, Chapter 2: Table 2, and Chapter 6: Table 2									

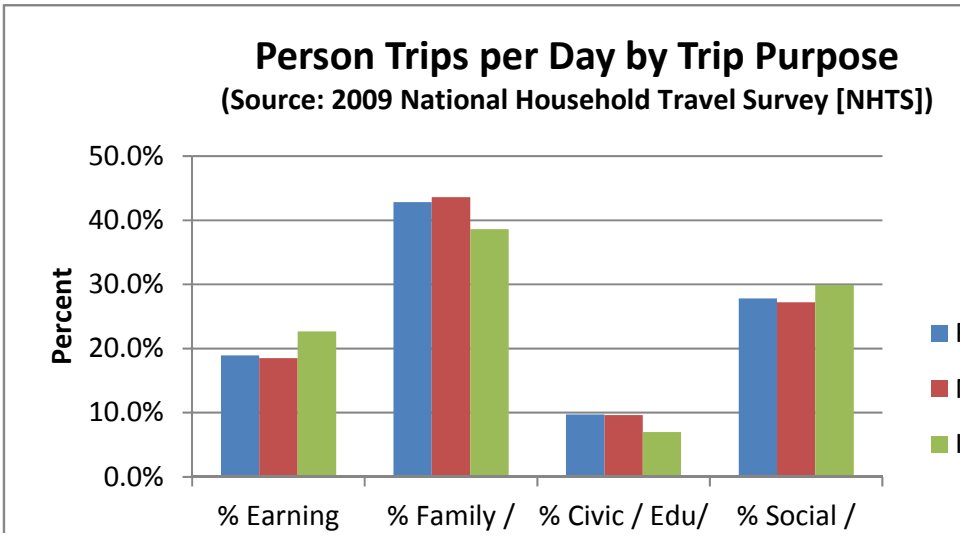


FIGURE 7

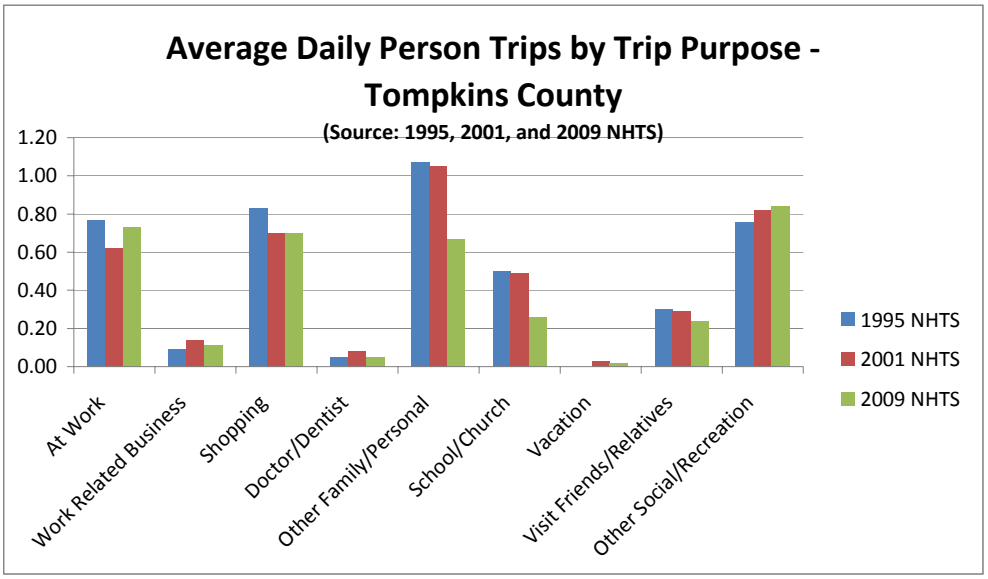


FIGURE 8

NOTE: in the NHTS: "Shopping" means "shop/errands", "buy goods", "buy services", "buy gas", "meals", "get/eat meal", and /or "coffee/ice cream/snacks"

Table 7									
Person Trips per Day by Mode of Transportation - 1995, 2001 and 2009 Estimates									
	Remainder of US			New York State			Tompkins County		
Trip Purpose	**1995**	**2001**	**2009**	**1995**	**2001**	**2009**	**1995**	**2001**	**2009**
% Private Vehicle	90.7%	87.8%	85.0%	70.2%	65.7%	62.3%	83.1%	80.5%	73.1%
% Public Transit	1.2%	1.0%	1.2%	9.8%	9.5%	9.9%	1.5%	1.0%	5.0%
% Walk	5.0%	7.9%	9.7%	15.4%	20.0%	22.0%	10.7%	14.8%	18.2%
% Other	3.1%	3.3%	4.1%	4.6%	4.6%	5.6%	4.8%	3.8%	3.7%
Source: 2009 NHTS Comparison Study, App. C, Chapter 2: Table 2, and Chapter 6: Table 2									

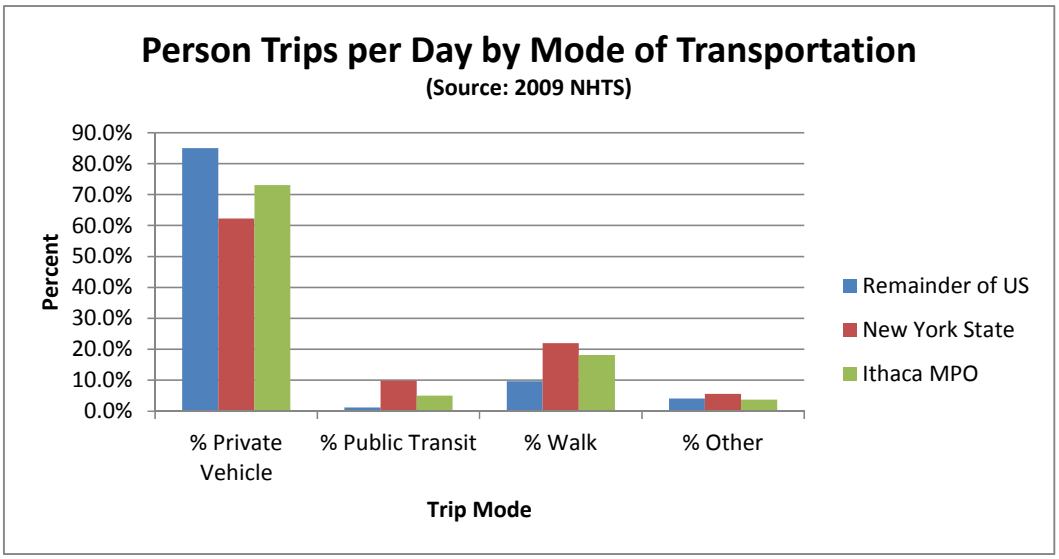


Fig 9

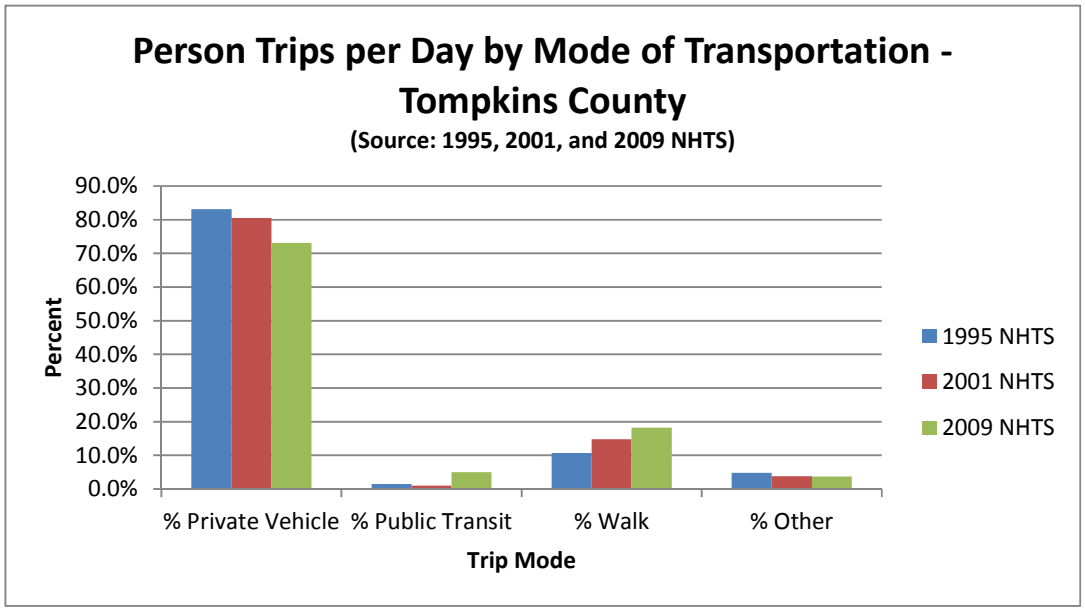


Fig.10

Commuting

Tompkins County is a net labor importer. Meaning that the number of non-resident workers in Tompkins County is greater than the number of people who reside in Tompkins County and work outside the county (see **TABLE 8**). Based on the 2010 Census the total number of persons working within Tompkins County was 59,599, while the number of persons that live and work in Tompkins County is only 49,414. Approximately 9.7% (4,838 *of* 49,414) of Tompkins County's resident workers commuted out of the county for work in 2010. Meanwhile approximately 15,023, or 25% of total workers in Tompkins County, commuted from more than eight other counties. The total net number of in commuters is 10,185. Cortland County contributed the greatest number of workers to Tompkins County (3,194) followed closely by Tioga County (2,802), while Cortland County received the most workers (1,592) from Tompkins County.

Similar trends to those described above were reported in the LRTP using 1980, 1990 and 2000 Census data. This provides strong and persistent evidence of Tompkins County as a regionally important center of economic activity.

Journey-to-Work

The U.S. Census and the American Community Survey collected journey-to-work data as part of Census 2010. This data is the best available information for the LRTP that can be referenced for all municipalities in the county.

TABLE 9 provides 2010 Census information on the distribution of the work trips by mode for each town in Tompkins County. **TABLE 10** provides similar data for Tompkins County villages. This table gives a good indication of where the largest numbers of users for each mode are located. This information is useful in determining potential current and future demand for bicycle facilities, pedestrian facilities, ridesharing (carpooling) programs, transit routes, and other facilities at a localized scale. The Census counts only one work trip for each worker and assumes that all work trips originate at home and terminate at the work site.

The 2010 journey-to-work data indicate that in Tompkins County 58% of the workforce drive alone to work, a slight decline from 59.8% in 2000. Although not large, the drop in the percentage of drive alone vehicles is a welcome sign. Drive alone trips will need to be reduced significantly over the next 20 years to meet carbon emission goals established in the Tompkins County Comprehensive Plan.

TABLE 9 countywide data for non-drive alone modes of transportation used in the journey to work show that 11.3% rideshare (carpool), 15.7% walk to work, 6.5% use public transportation, 1.7% bicycle or use other means. A total of 6.7% of workers reported working at home. It is important to note particularly that the walking to work percentage for Tompkins County (15.7%), the City of Ithaca (42.4%) and the Town of Ithaca (19.9%) are all substantially higher than the national and state averages of 2.82% and 6.4% respectively.

In total, 35.2% of work based trips in Tompkins County use a mode other than a drive alone. This does not include those 6.7% of workers that work at home. These are enviable figures compared to many other urbanized areas but, clearly, there is room for improvements and Tompkins County strives to reduce carbon emissions, fossil fuel use and provide more equitable transportation options. To meet those goals the Tompkins County transportation system must be ready to accommodate and encourage increased use of transit, ridesharing (carpool), vanpooling, bicycling and walking not just for work based trips, but for all trip needs, i.e. family and personal business, social/recreational, educational.

While it may seem that the recommendations of this Plan place an unusually high emphasis on transit, ridesharing (carpool), bicycle and pedestrian strategies and investments, consider that Tompkins County is already benefiting from lower car dependency for the trip to work. When combined into a category termed by some as "alternative modes of transportation", transit, ridesharing, pedestrian and bicycle trips account for the following percentages of work trips: 18.4% for the U.S., 40.8% for New York State, and 34.6% for Tompkins County (the figures for New York State are skewed by the disproportionally large participation in public transportation in the New York City metro area). Regardless, the 34.6% figure for Tompkins County is almost twice the national average and represents a significant number of trips that are taking place moving more people in fewer vehicles, or better yet without vehicles. These alternative modes have reduced automobile traffic congestion levels and vehicular emissions, and contribute to increased transportation system efficiency. Other programs like vanpools, car sharing, guaranteed ride home, etc. can also contribute to shifting travelers to non-drive alone modes.

The graphics in **FIGURES 11** shows historical data (1970-2007) of journey-to-work modes for Tompkins County. One interesting factor to note is the high rate of carpool in 1980 (22.7%), during an oil crisis. The current (2010) Tompkins County rate of carpool is 11.3% or approximately half of what it was in 1980. When projecting increased carpool in 2035 for Tompkins County we considered that we already have a precedent for higher carpool rates in the not so distant past.

About Congestion

As explained in the TDM Encyclopedia, a resource of the Victoria Transport Policy Institute, "traffic congestion is a non-linear function, meaning that a small reduction in urban-peak traffic volume can cause a proportionally larger *reduction in delay*. For example, a 5% reduction in traffic volumes on a congested highway such as from 2,000 to 1,900 vehicles per hour may cause a 10-30% reduction in delay. As a result, *even relatively small changes in traffic volume on congested roads can provide relatively large reductions in traffic delay*" (Victoria Policy Transport Institute, 2003). Therefore, polices and project that move even a small percentage of trips from automobiles to alternative modes will result in noticeable reductions in congestion and improved performance of the roadway system. Additional secondary benefits will result from lower emissions, more active lifestyles, reduced energy consumption, reduce costs in roadway system expansion, etc.

There continues to be a need for additional travel data information, particularly for alternative modes. It is important to appreciate the important role that these modes of transportation can play in the local transportation system, specially now that climate change and sustainability serve as backdrops to all transportation planning activities.

In summary, the general travel patterns for the greater Ithaca-Tompkins County show strong participation in walking, public transportation, and bicycling for most purposes and particularly for the means of transportation to work. However, overall there continues to be a significant dependency on the automobile and drive alone trips, to fulfill transportation needs. Limited local financial resources and the growing evidence of the negative externalities of continued over dependency on the automobile as the principal mode of transportation, have made it particularly important to understand and seek to maximize the role of transportation modes that serve as alternatives to the automobile.

Vehicle Population

Statistics compiled by New York State Department of Motor Vehicles Data Processing show the number of personal vehicles registered in Tompkins County has increased steadily from 1998 to 2011 (see **TABLE 11**). The 2010 Census data also provides information on the number of "vehicles available", defined by the Census as: *"the number of passenger cars, vans, and trucks of one ton capacity or less kept at home and available for the use of the household members.* Vehicles that are rented or leased for one month or more, company vehicles and police and government vehicles are included if they are kept at home for non-business purposes. Dismantled or immobile vehicles are excluded. Vehicles that are kept at home but used only for business purposes are excluded". There is a crucial difference between vehicles registered and vehicles available, particularly in an area with a large college student population and many out of state registered vehicles. **FIGURE 12** provides information on frequency of households based in number of vehicles available over time in Tompkins County. The number of two and three vehicle households has increased in the decade between 2000 and 2010.

Driving Population

In Tompkins County there were 61,949 driver's licenses in force in 2011. The number of driver's licenses increased steadily over the period form 1980 to a peak in 2003. Since then figures have fluctuated. Macro economic and demographic factors may be having an impact on the number of people with driver's licenses (see **TABLE 13**).

Trip Length

Trip length is a function of the time, speed, and distance of the average trips, in a given study area. Trip length is usually reported in terms of time or distance. Trip length statistics are best obtained as part of a travel survey effort. Such data does not currently exist for Tompkins County. However, the Census gathers data on travel time to work as part of its Journey-to-Work effort. As explained before, the Journey-to-Work data is of importance to transportation planning because of its impact on the peak travel period.

FIGURES 13 shows the total number of workers by travel time to work for a subset of the population: workers over age 16 not working at home. This is the same data shown in tabular form in **TABLES 14** and **15.**

The general distribution of workers across travel time categories has not changed dramatically as can be seen in **FIGURE 13**. The pattern continues unchanged where the bulk of the workers in Tompkins County take from 10 to 29 minutes to reach their place of employment. Overall, the average travel time to work has been increasing since 1980 (15.7 minutes) to 2012 (18 minutes).

Traffic Accidents

National statistics show that despite the continued increase in the number of vehicles registered, number of licensed drivers, and the amount of vehicle miles of travel, the fatality rate for all highway modes continued to decline. Many factors may interact to explain the decreasing fatality rates. For highway modes, promotion of safety belt, child safety seat, and motorcycle helmet usage, and measures to discourage drunk driving and distracted driving have all had a beneficial effect. So, too, have improvements in vehicle and highway design and greater separation of traffic. Finally, some of the decrease in transportation fatalities may be a consequence of better and prompter medical attention for victims of transportation crashes and accidents.

The NY State Department of Transportation unveiled a new automated accident reporting system in 2008 called Accident Location Information System (ALIS). **TABLE 16** and **TABLE 17** show the total number of vehicle crashes and the vehicle crash rates respectively, over a five-year period from 2008-2012. These figures establish a benchmark from which the ITCTC will be able to track crashes and crash rates in future years.

TABLE 8				
TOMPKINS COUNTY COMMUTATION PATTERNS	**Total 2000**	**Total 2010**	**Percent 2000**	**Percent 2010**
Persons working in Tompkins County	**57,032**	**59,599**	-----	-----
Workers living in Tompkins County	**47,394**	**49,414**	-----	-----
NET INCOMMUTATION	**9,638**	**10,185**	-----	-----
Persons living in Tompkins County and working in:				
Tompkins County	43,319	44,576	91.4%	90.2%
Cortland County	1,516	1,592	3.2%	3.2%
Cayuga County	297	450	0.6%	0.9%
Chemung County	442	231	0.9%	0.5%
Onondaga County	299	339	0.6%	0.7%
Seneca County	196	187	0.4%	0.4%
Tioga County	217	310	0.5%	0.6%
Schuyler County	110	219	0.2%	0.4%
Broome County	244	221	0.5%	0.4%
Other	754	1,289	1.6%	2.7%
Persons working in Tompkins County and living in:				
Tompkins County	43,319	44,576	76.0%	74.8%
Tioga County	2,846	2,802	5.0%	4.7%
Schuyler County	1,608	1,844	2.8%	3.1%
Cortland County	2,605	3,194	4.6%	5.4%
Cayuga County	1,814	1,978	3.2%	3.3%
Seneca County	1,289	1,270	2.3%	2.2%
Chemung County	970	1,261	1.7%	2.1%
Onondaga County	500	332	0.9%	0.5%
Broome County	383	475	0.8%	0.7%
Other	1,698	1,867	3.0%	3.2%
Source: 2000 Decennial Census and 2010 5 American Community Survey				

TABLE 9								
Means of Transportation to Work								
Civil Division	**Drive Alone**	**Carpool**	**Public Transportation**	**Bicycle**	**Walk**	**Work at Home**	**Taxi, MCycle, Other**	**Total**
Town of Caroline	1,131 (62.3%) 4.0%	462 (25.4%) 8.4%	37 (2.0%) 1.2%	33 (1.9%) 6.0%	40 (2.2%) 0.5%	113 (6.2%) 3.4%	0 (0.0%) 0.0%	1,816 (100.0%) -2.9%
Town of Danby	1,546 (77.3%) 5.5%	196 (9.8%) 3.6%	10 (0.5%) 0.3%	0 (0.0%) 0.0%	63 (3.2%) 0.8%	70 (3.5%) 2.1%	114 (5.7%) 38.1%	1,999 (100.0%) -3.7%
Town of Dryden	5,771 (78.6%) 20.4%	823 (11.2%) 15.0%	216 (2.9%) 6.8%	20 (0.3%) 3.6%	128 (1.7%) 1.7%	357 (4.9%) 10.9%	27 (0.4%) 9.0%	7,342 (100.0%) -15.2%
Town of Enfield	1,229 (73.7%) 4.4%	192 (11.5%) 3.5%	28 (1.7%) 0.9%	9 (0.5%) 1.6%	37 (2.2%) 0.5%	154 (9.2%) 4.7%	19 (1.1%) 6.4%	1,668 (100.0%) -3.6%
Town of Groton	2,398 (79.5%) 8.5%	307 (10.2%) 5.6%	62 (2.1%) 2.0%	0 (0.0%) 0.0%	66 (2.2%) 0.9%	177 (5.9%) 5.4%	7 (0.2%) 2.3%	3,017 (100.0%) -6.1%
City of Ithaca	3,771 (28.7%) 13.4%	1,167 (8.9%) 21.3%	1,334 (10.2%) 42.0%	283 (2.2%) 51.0%	5,575 (42.4%) 73.0%	982 (7.5%) 29.9%	33 (0.3%) 11.0%	13,145 (100.0%) -28.1%
Town of Ithaca	4,543 (49.4%) 16.1%	1,097 (11.9%) 20.0%	1,006 (10.9%) 31.6%	186 (2.0%) 33.5%	1,515 (16.5%) 19.9%	819 (8.9%) 25.0%	28 (0.3%) 9.4%	9,194 (100.0%) -18.5%
Town of Lansing	4,268 (72.6%) 15.1%	742 (12.6%) 13.5%	385 (6.5%) 12.1%	12 (0.2%) 2.2%	102 (1.7%) 1.3%	345 (5.9%) 10.5%	29 (0.5%) 9.7%	5,883 (100.0%) -11.3%
Town of Newfield	1,808 (80.3%) 6.4%	239 (10.6%) 4.4%	13 (0.6%) 0.4%	0 (0.0%) 0.0%	7 (0.3%) 0.1%	167 (7.4%) 5.1%	17 (0.8%) 5.7%	2,251 (100.0%) -5.5%
Town of Ulysses	1,772 (75.1%) 6.3%	263 (11.2%) 4.8%	89 (3.8%) 2.8%	12 (0.5%) 2.2%	100 (4.2%) 1.3%	98 (4.2%) 3.0%	25 (1.1%) 8.4%	2,359 (100.0%) -5.1%
Tompkins Co	28,237 (58.0%)	5,488 (11.3%)	3,180 (6.5%)	555 (1.1%)	7,633 (15.7%)	3,282 (6.7%)	299 (0.6%)	48,674 (100.0%)
New York State	53.96%	7.14%	26.81%	0.50%	6.40%	3.88%	1.31%	100%
National – US	76.14%	10.03%	4.98%	0.56%	2.82%	4.27%	1.20%	100%

Source: Census: 2010 5 American Communtiy Survey. Percentages may not add to 100% due to rounding.

Note: Row percentages are provided to the right of the numeric entry, while column percentages appear below the number (% of Tompkins County total)

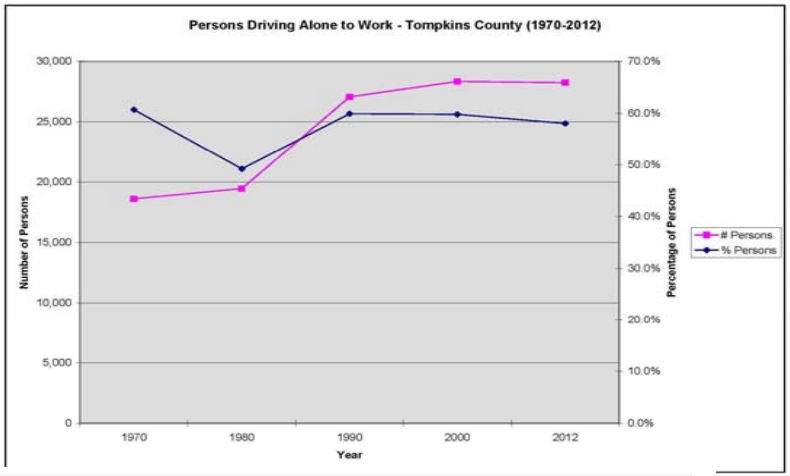
TABLE 10

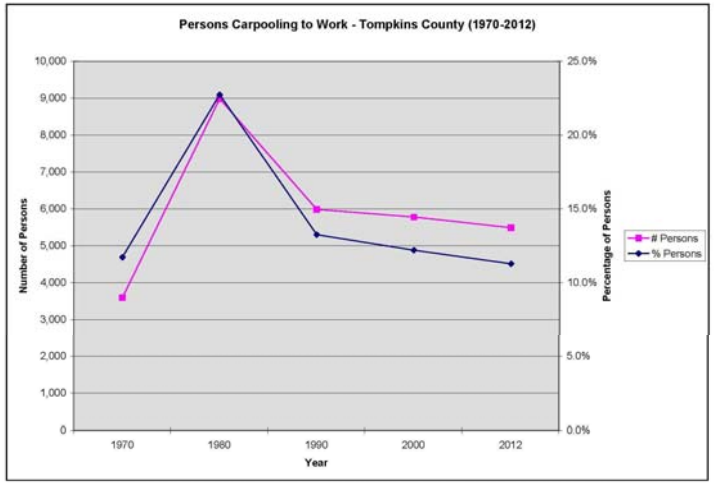
Means of Transportation to Work – Census ACS 2010 5

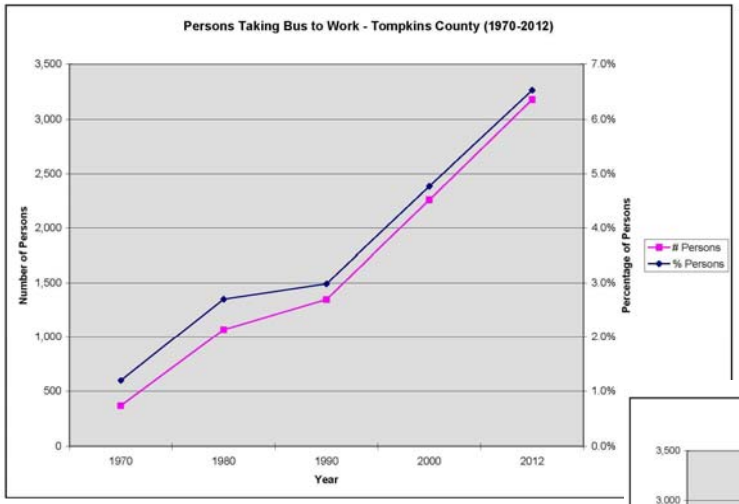
Civil Division	Drive Alone	Carpool	Public Transportation	Bicycle	Walk	Work at Home	Taxi, MCycle, Other	Total
Village of Cay. Hgts	801 (48.6%) 2.8%	159 (9.7%) 2.9%	175 (10.6%) 5.5%	50 (3.0%) 9.0%	310 (18.8%) 4.1%	152 (9.2%) 4.6%	1 (0.1%) 0.0%	1,648 (100.0%) 3.4%
Village of Dryden	550 (64.2%) 2.0%	244 (28.5%) 4.5%	21 (2.5%) 0.7%	0 (0.0%) 0.0%	20 (2.3%) 0.3%	22 (2.6%) 0.7%	0 (0.0%) 0.0%	857 (100.0%) 1.8%
Village of Freeville	220 (83.0%) 0.8%	22 (8.3%) 0.4%	4 (1.5%) 0.1%	0 0.0%	7 (2.6%) 0.1%	12 (4.5%) 0.4%	0 (0.0%) 0.0%	265 (100.0%) 0.5%
Village of Groton	770 (72.1%) 2.7%	180 (16.9%) 3.3%	12 (1.1%) 0.4%	0 (0.0%) 0.0%	47 (4.4%) 0.6%	52 (4.9%) 1.6%	7 (0.7%) 2.3%	1,068 (100.0%) 2.2%
Village of Lansing	967 (55.5%) 3.4%	301 (17.3%) 5.5%	341 (19.6%) 10.7%	12 (0.7%) 2.2%	24 (1.4%) 0.3%	89 (5.1%) 2.7%	10 (0.6%) 3.4%	1.744 (100.0%) 3.6%
Village of Trumansburg	535 (66.5%) 1.9%	85 (10.6%) 1.6%	61 (7.6%) 1.9%	12 (1.5%) 2.2%	69 (8.6%) 0.9%	30 (3.7%) 0.9%	12 (1.5%) 4.0%	804 (100.0%) 1.7%
Tompkins Co.	28,237 (58.0%)	5,488 (11.3%)	3,180 (6.5%)	555 (1.1%)	7,633 (15.7%)	3,282 (6.7%)	299 (0.6%)	48,674 (100.0%)
New York State	53.96%	7.14%	26.81%	0.50%	6.40%	3.88%	1.31%	100%
National – US	76.14%	10.03%	4.98%	0.56%	2.82%	4.27%	1.20%	100%

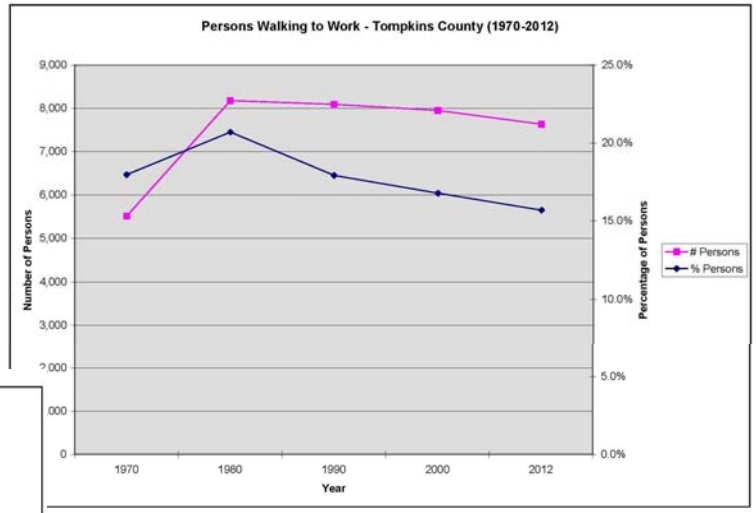
Source: Census: 2010 5 American Communtiy Survey. Percentages may not add to 100% due to rounding.

Note: Row percentages are provided to the right of the numeric entry, while column percentages appear below the number (% of Tompkins County total)









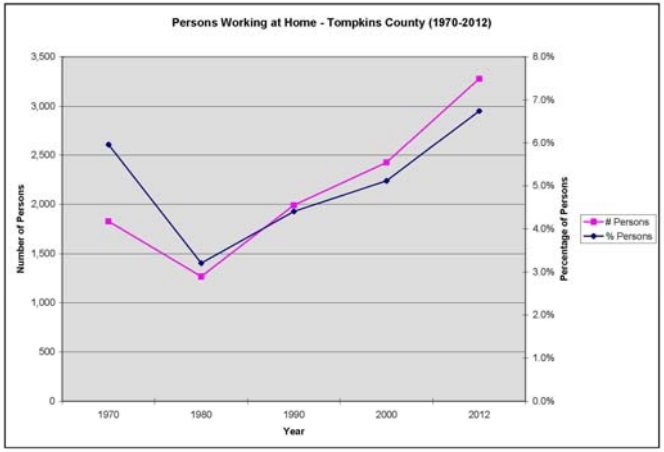


FIGURE 11– Journey-to-Work History (Tompkins County)
Source: 1970, 1980, 1990,and 2000 Census; 2012 CTPP

TABLE 11											
Total Vehicle Registrations in Tompkins County											
Year	**Personal Vehicles**	**Commercial Vehicles**	**Trailers**	**Motor-cycles**	**Mopeds**	**Buses**	**Taxi**	**Ambu-lance**	**Rental Cars**	**Farm**	**Total**
1998	44,829	10,643	2,561	1,535	107	40	68	9	70	53	59,915
2000	47,182	10,733	2,903	1,592	88	33	69	9	69	57	62,735
2003	49,042	9,442	2,480	1,915	94	32	62	9	35	52	63,163
2007	50,985	8,136	2,918	2,466	146	80	77	13	18	63	64,902
2011	51,695	7,198	3,099	2,984	150	72	62	14	20	92	65,386
Source: New York State Department of Motor Vehicles - Statistics											

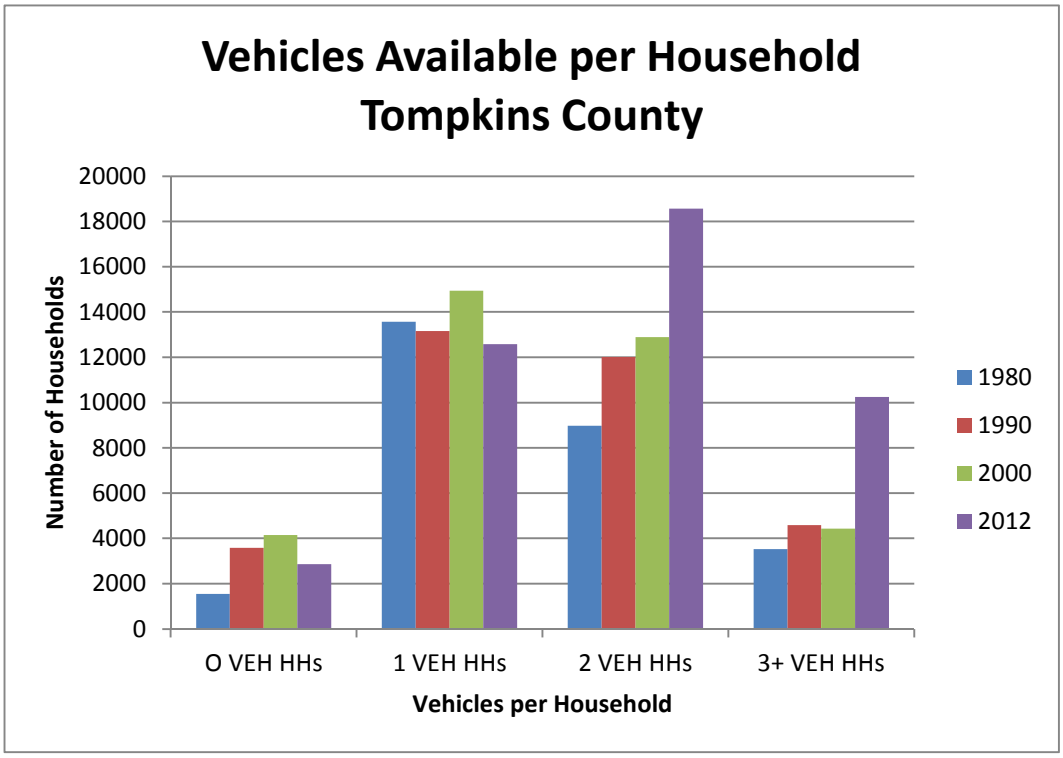


FIGURE 11
(Source: 2012 CTPP)

TABLE 13	
Tompkins County Total Number of Driver's Licenses (1988-2011)	
1988	52,996
1989	53,350
1990	54,405
1998	56,653
2002	60,479
2003	63,529
2004	62,513
2005	61,418
2006	61,482
2007	62,808
2011	61,949
Source: New York State Department of Motor Vehicles - Statistics	

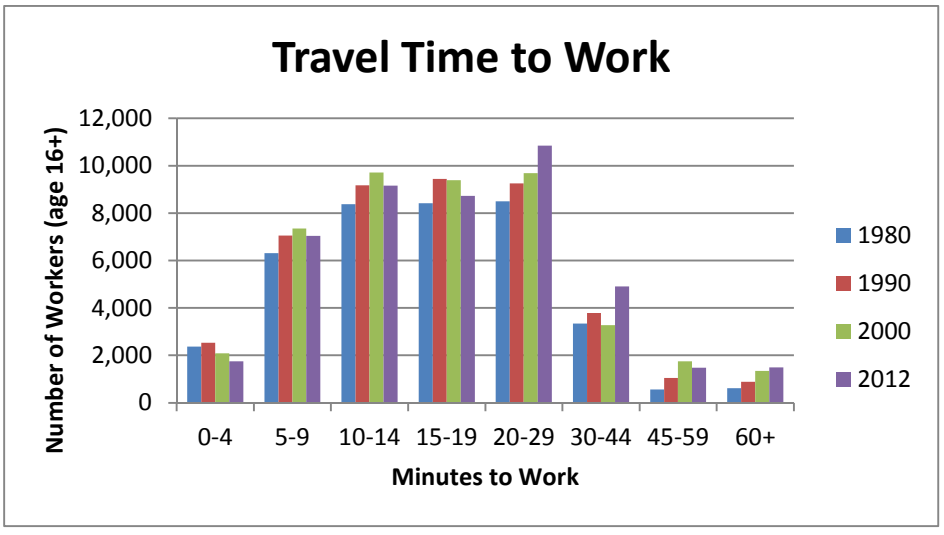


FIGURE 12
(Source: 2012 CTPP)

TABLE 14			
Travel Time to Work (Workers Age 16+, Not Working at Home) – Tompkins Co.			
Travel Time (minutes)	**1990 (% of Total)**	**2000 (% of Total)**	**2012 (% of Total)**
0 – 4	2,529 (5.9%)	2,084 (4.4%)	1,748 (3.9%)
5 – 9	7,057 (16.3%)	7,349 (15.5%)	7,042 (15.5%)
10 – 14	9,171 (21.2%)	9,717 (20.5%)	9,156 (20.2%)
15 – 19	9,449 (21.9%)	9,395 (19.8%)	8,729 (19.2%)
20 – 29	9,252 (21.4%)	9,691 (20.45%)	10,845 (23.9%)
30 - 44	3,792 (8.7%)	3,268 (6.9%)	4,907 (10.8%)
45 - 59	1,051 (2.4%)	1,749 (3.7%)	1,472 (3.2%)
60+	884 (2.1%)	1,343 (2.8%)	1,493 (3.3%)
Total	**43,185**	**47,394**	**45,392**
Source: 1990 and 2000 Decennial Census and 2012 5 American Community Survey			

TABLE 15				
Mean Travel Time to Work (Workers Age 16+, Not Working at Home) Tompkins County				
Travel Time (Minutes)	**1980**	**1990**	**2000**	**2012**
Total	**15.7**	**16.0**	**17.8**	**18.0**
Source: Census 1970-2000 Decennial Census and 2012 American Community Survey				

TABLE 15							
Vehicle Crashes in Tompkins County							
Year	**Total Crashes**	**Bicycle Crashes**	**Pedestrian Crashes**	**Deer Crashes**	**Total Injuries**	**Total Fatalities**	**Property Damage**
2008	3,421	28	39	742	801	9	2,134
2009	3,441	26	32	721	741	6	2,163
2010	3,589	23	38	732	664	12	2,170
2011	3,572	13	27	784	633	7	2,106
2012	3,398	21	42	718	653	15	2,010
Source: New York DOT - Accident Location Information System (ALIS)							

Table 16								
Accident Rates in Tompkins County (Crashes per million vehicle miles)								
	total accs per mill-VMT	bicyle accs per mill-VMT	ped accs per mill-VMT	deer accs per mill-VMT	injuries per mill-VMT	severe inj per mill-VMT	fatalities per mill-VMT	prop damage per mill-VMT
2008	8.98	0.09	0.10	1.74	2.06	0.30	0.02	5.47
2009	9.28	0.07	0.09	2.16	2.01	0.27	0.02	5.78
2010	9.62	0.06	0.10	1.95	1.81	0.30	0.03	5.78
2011	9.68	0.05	0.09	2.09	1.72	0.30	0.02	5.68
2012	9.15	0.06	0.12	2.11	1.76	0.33	0.04	5.41
2013	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Source: New York DOT - Accident Location Information System Annual Tompkins County VMT from NYSDOT								

*'Severe injuries' include skull fractures, internal injuries, broken or distorted limbs, unconsciousness, severe lacerations, and unable to leave the scene without assistance.