

## **Appendix E**

**Impact of Southeast Michigan's New Economic  
Reality on Regional Pollutant Emissions**

**Provided by SEMCOG**

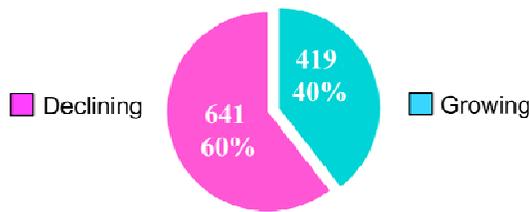
## The Impact of Southeast Michigan's New Economic Reality on Regional Pollutant Emissions

While substantial emission reductions have been achieved through implementation of local and national controls included in the PM2.5 State Implementation Plan for Southeast Michigan, significant additional reductions have occurred as a result of the economic transformation that has taken place in the region.

Since 2000, Southeast Michigan has lost over 116,000 people and 400,000 jobs. The recent loss of jobs is almost entirely due to the permanent downsizing of the American auto industry and the overall decline of the manufacturing sector. Since the early 1900s, manufacturing had been the predominant source of jobs in Michigan. However, this has changed significantly over the past decade. Between 2002 and 2007, the state lost nearly 404,000 auto-related jobs, while gaining just over 200,000 jobs in non-manufacturing sectors (Figure 1).

Figure 1  
Growing and declining industries in Michigan, 2002-2007

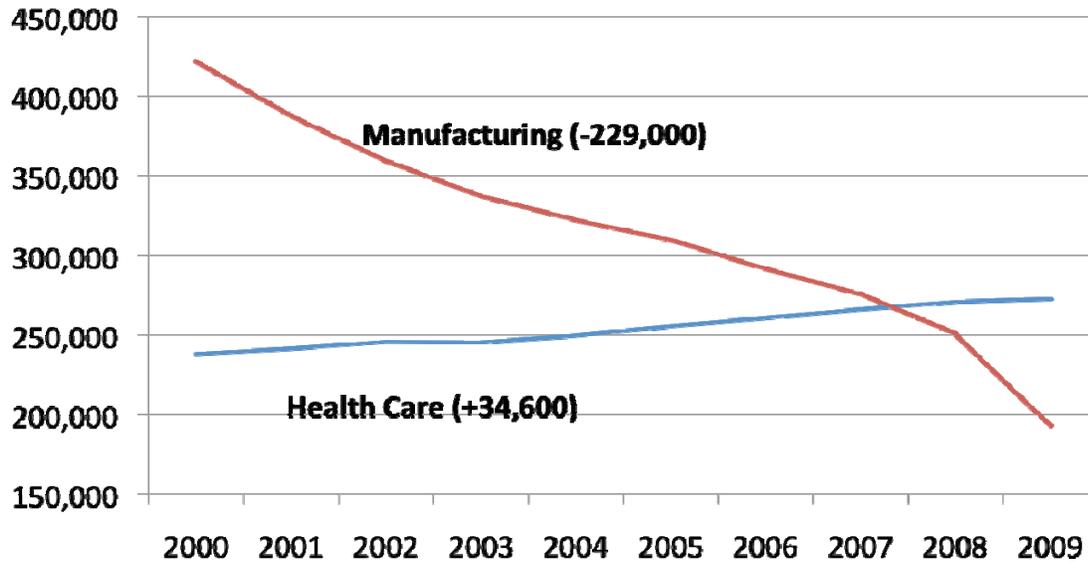
	Number of Industries	Employment				Average Wage	
		2002	2007	Change	% Change	U.S.	MI 2007
Growing	419	1,493,461	1,698,384	204,923	13.7%	12.2%	\$36,000
e.g. temporary help services, restaurants, hospitals, home health care services.							
Declining	641	2,224,534	1,820,614	-403,920	-18.2%	0.6%	\$50,000
e.g. automobile manufacturing, managing offices, vehicle parts manufacturing.							



Source: U.S. Bureau of Labor Statistics, Don Grimes

There is national recognition that the American auto industry and the manufacturing sector as a whole, will never return to its precession size and that future jobs in the region will need to come from other sectors. Indeed, this transition is already taking place. By the end of 2007, the number of health care jobs in Southeast Michigan had actually surpassed the number in manufacturing (Figure 2).

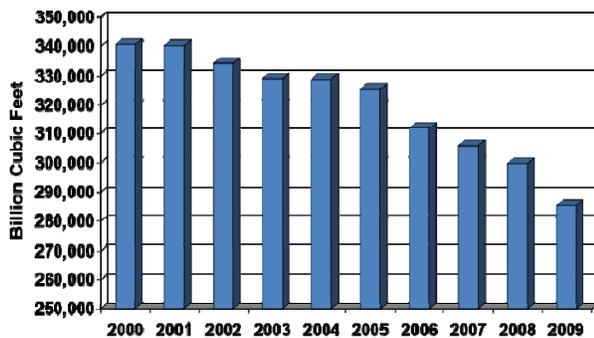
Figure 2  
 Employment is shifting to less polluting sectors  
 Manufacturing vs. health care jobs, Southeast Michigan, 2000-2009



Source: SEMCOG analysis of Michigan Labor Market Information data

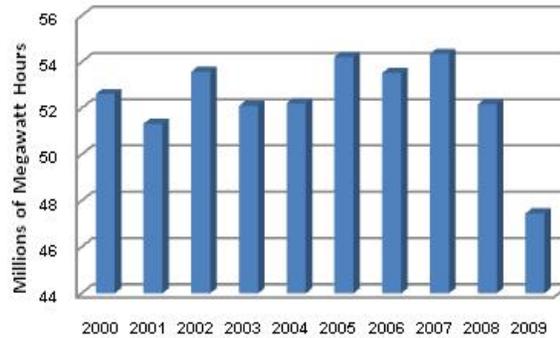
The transition away from manufacturing to a more service and retail based economy has resulted in lower utility consumption. Figures 3, 4 and 5 show the decline in natural gas, electricity and water use over the past decade. Lower utility use means lower pollutant emissions from these sources.

Figure 3  
 The region is consuming less natural gas  
 Consumers Energy gas deliveries



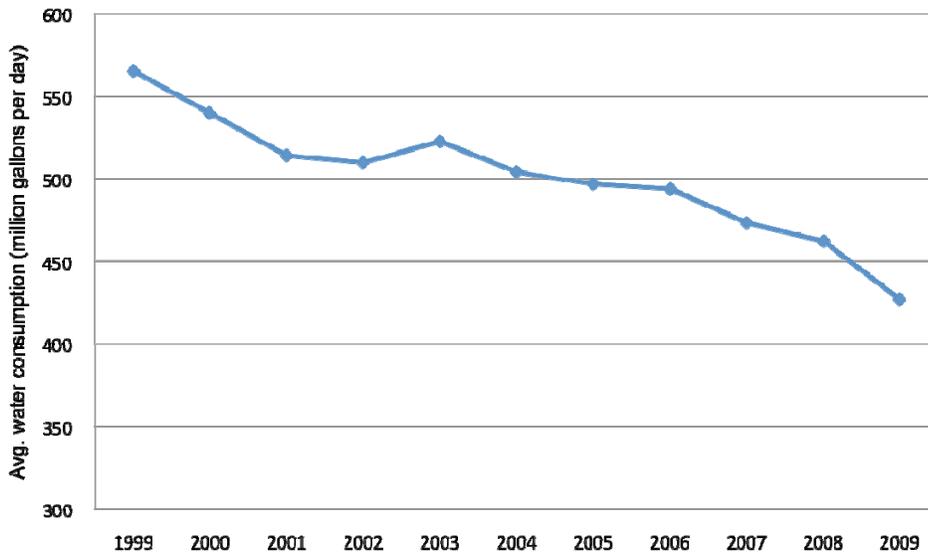
Source: Consumers Energy

Figure 4  
 The region is also consuming less electricity  
 DTE electricity deliveries



Source: DTE Energy

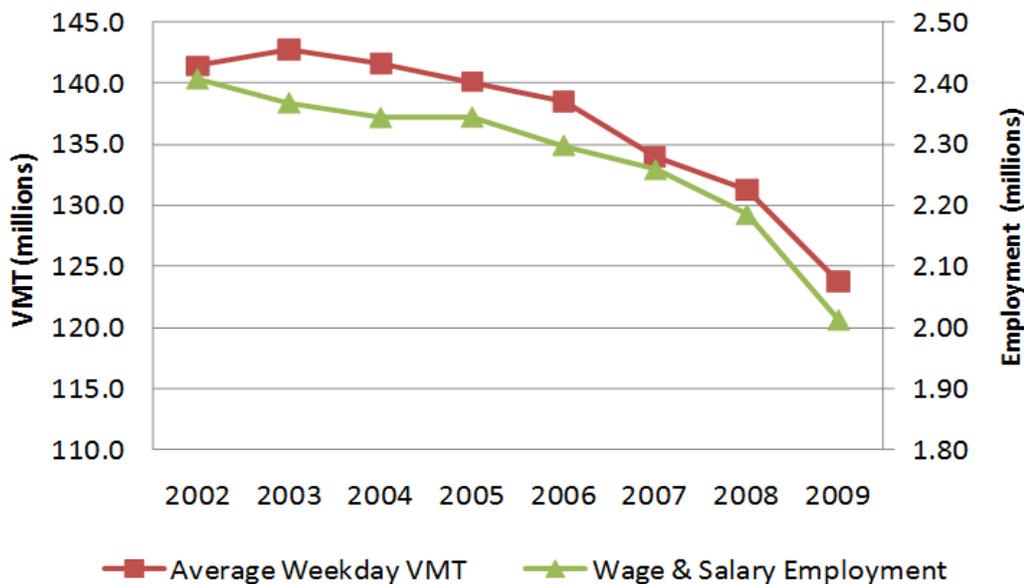
Figure 5  
 Water use is also declining  
 Average daily water use, Detroit Water and Sewerage Department



Source: The Foster Group

In addition to the reduction in manufacturing activity and the resulting decline in stationary source pollution, Southeast Michigan has also experienced a significant decrease in vehicle miles of travel (VMT). Since 2002, VMT has declined 13 percent. As would be expected, this decrease has closely mirrored the decline in regional employment (Figure 6).

Figure 6  
 As jobs have declined, so has travel  
 Changes in Southeast Michigan employment and travel, 2002-2009

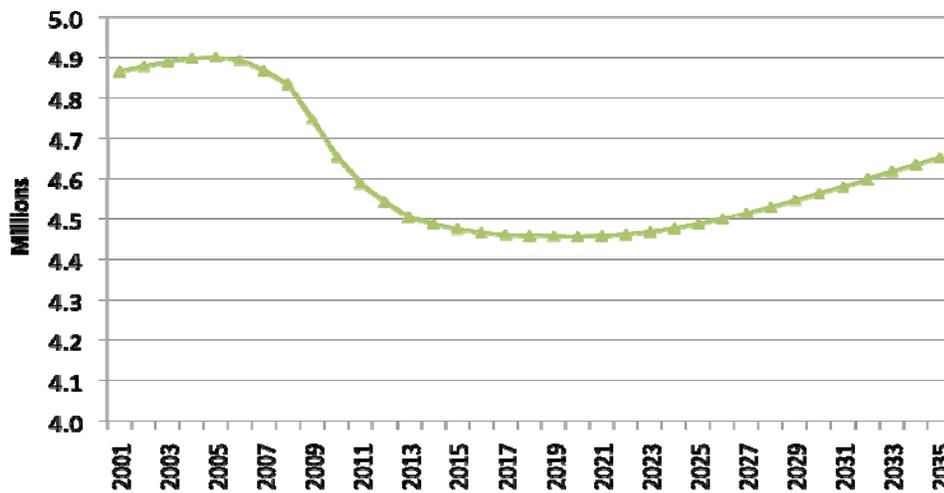


Source: SEMCOG and U.S. Bureau of Economic Analysis

It is important to understand that these economic changes are not a temporary artifact of the current nation-wide recession. As noted earlier, the changes in Southeast Michigan began long before 2008. Employment has been dropping since 2000 and population, which had shown little growth over the last 40 years, began to decline in 2006.

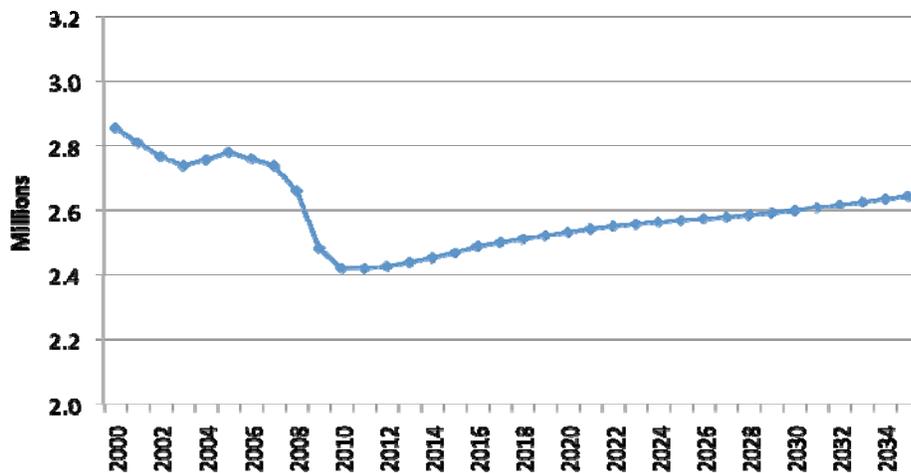
Furthermore, the latest demographic forecasts for the region do not predict much change in this trend for the foreseeable future. The latest forecast from the Southeast Michigan Council of Governments (SEMCOG) shows that by 2035 the region will still have 196,000 fewer people and 213,000 fewer jobs than it had in 2000 (Figures 7 and 8).

Figure 7  
 Southeast Michigan will have 196,000 fewer people in 35 years  
 Actual and projected population, 2001-2035



Source: SEMCOG

Figure 8  
 Southeast Michigan will have 213,000 fewer jobs in 35 years  
 Actual and projected employment, 2000-2035



Source: SEMCOG

As previously shown, the amount of travel in the region is closely tied to the amount of employment. Thus, fewer jobs in the future will also mean less vehicle miles of travel. This reduction, on top of the already expected pollutant decrease from fleet turnover, means on-road mobile source emissions will continue to decline significantly in the future.

The above weight of evidence, coupled with the dramatic decrease in monitored PM2.5 concentrations in the region, clearly indicates that significant and permanent emission reductions have occurred in Southeast Michigan and will remain for the foreseeable future.