

EXISTING TRAVEL CONDITIONS

Motorists in McHenry County have nearly uninterrupted travel between communities but experience frequent delays in towns. Bicyclists and pedestrians have good networks within neighborhoods but have difficulty crossing and traveling along roadways with heavy, motorized traffic. Outside of towns, bicyclists find the low traffic paved roadways west of Illinois Route 47 adequate, while pedestrians lack basic accommodations.

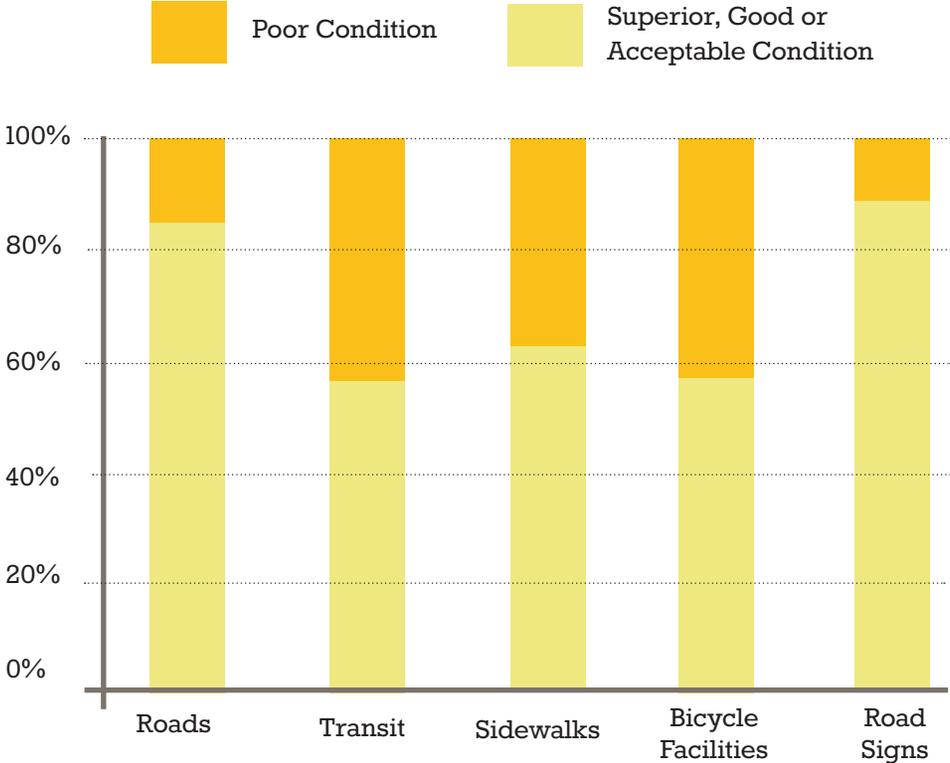


Figure 38: Current Conditions Survey Results

As part of the public involvement process, a survey was created on-line to gauge how people felt about transportation in the County and what were the most pressing priorities. The general survey had 127 responses. Transit received the greatest number of high and medium priority responses with additional responses suggesting transit is poor to just acceptable in the County (see Figure 38). Roads received the next highest priority ranking even though most indicated a belief that the roads are in good condition in the County. Bicycle facilities and sidewalks were not as high of a priority as roads, but were rated as being in poorer condition. The network in McHenry County supports mixed commercial, residential and industrial areas, new commuter rail stops and has enabled large agglomerations of retail, entertainment, and restaurants along U.S. 14, Randall Road, and Illinois Route 31. The traffic attracted to these areas often conflicts with commuter travel during the week and with tourists on the weekends. To comprehensively evaluate existing and future traffic conditions, a digital model was created based on population and employment forecasts provided by CMAP and current travel patterns. To understand transit use, ridership and service frequency reports from Pace and Metra were used. For both the motorized vehicle modeling and the transit use analysis, predicted conditions were visually verified. McHenry County Division of Transportation staff set-up special bicycle and pedestrian counters at several locations throughout the County to gauge bicycle and pedestrian volumes as well.



BICYCLE AND PEDESTRIAN ANALYSIS RESULTS

In 2008, the McHenry County Division of Transportation undertook a comprehensive effort to identify and map the County's paths and trails implemented by the McHenry County Conservation District, local park districts, local public works departments, and others. During this exercise, large networks were identified in Cary and in Lake in the Hills. These and other local networks tend to build off of McHenry County Conservation District paths, especially the Prairie Trail. However, many gaps in the networks were identified, in particular near railroad and major highway crossings.

To measure current use levels, the McHenry County Division of Transportation purchased and has been using cameras along bicycle and pedestrian facilities to count daily use. Since October 2011, daily bicycle and pedestrian counts have been conducted at seven locations. The highest daily count recorded (895) was on a Saturday in August on the Prairie Trail over Rakow Road (See Figure 39).

It is assumed that dry days with comfortable temperatures are ideal for bicycling and walking and would therefore have the greatest counts. Late season counts were taken on the Prairie Trail in McHenry at Illinois Route 120 to measure demand on bad weather days. Even with snow on the ground, the Prairie Trail in McHenry had 33 bicycle and pedestrian trips on November 30, 2011.

Figure 39: Bicycle and Pedestrian Daily Counts

| | Low Count | High Count | Dates |
|--|-----------|------------|-------------------------------------|
| Prairie Trail at Rakow Road Overpass | 844 | 895 | August 11 and August 12, 2012 |
| Prairie Trail in Crystal Lake at Berkshire Dr. | 184 | 488 | October 6 through October 9, 2011 |
| Prairie Trail at U.S. 14 Underpass | 272 | 390 | August 23 and August 24, 2012 |
| Walkup Road at Veteran's Acres Park (after path completed) | 174 | 256 | July 13 and July 14, 2013 |
| Ridgefield Trace between Walkup Rd. and Community College | 30 | 44 | August 24 through August 26, 2013 |
| Walkup Road at Hillside (before path completed) | 20 | 37 | September 11 and September 12, 2012 |
| Prairie Trail in McHenry at IL 120 | 33 | | November 30, 2011 |

TRANSIT USE ANALYSIS RESULTS

Consultants TransSystems and Cindy Fish were hired to undertake an analysis of the current transit operations and market for transit services in the County. A group was formed to guide the study. This group included the RTA, Metra, Pace, IDOT, McHenry County Council of Governments, Pioneer Center, Council of Mayors and MCDOT. The analysis identified that Harvard, Woodstock, Crystal Lake, and McHenry have the highest levels of transit service yet still have unmet needs. These areas have regular commuter rail service, scheduled bus service, and dial-a-ride transit services available. Huntley, Algonquin, Lake in the Hills, Marengo, Island Lake, and Spring Grove have sizeable transit markets that are being served only by local and limited dial-a-ride transit services. The unmet demand for transit services in these areas will only grow with time along with these communities.

Like motorized vehicles, meeting the County's transit service needs requires a balance of regional and local transit services. The ability to meet the identified needs requires effective regional transit services through expanded commuter rail, regional bus services, park and ride lots while providing frequent and reliable local services.

The analysis called for the restructuring of the existing Pace routes 806 and 807 as well as refining the scheduling of Route 808. The analysis also indicated that the Metra Union Pacific Northwest Upgrades being pursued by Metra Commuter Rail would help meet existing needs.

A traffic demand model for motorized vehicles was completed by Civiltech Engineering, Inc. in 2008 for McHenry County. The model measured the distribution and volume of motorized vehicle use during peak travel periods. In the morning and afternoon, the model measured vehicle volumes for a two-hour peak period. The modeling tool confirmed significant motorized vehicle traffic congestion along Illinois Route 47, Illinois Route 31, U.S. Route 14, and Randall Road. Major intersection bottlenecks were identified in Algonquin, Barrington Hills, Crystal Lake, Huntley, Lakewood, Lake in the Hills, Marengo, McHenry, Prairie Grove, Richmond, and Woodstock. The model measured a greater concentration (14% more miles and 19% more hours) of motor vehicle traffic during the afternoon rush hour than the morning rush hour. This causes the afternoon to have 48% more miles of congested travel and 41% more hours of delay than the morning (see Figure 40).

FUTURE TRAVEL CONDITIONS

Based on population and employment forecasts provided by CMAP and current travel patterns, the demand model created by Civiltech Engineering, Inc. was used to measure the County’s roadway system’s ability to accommodate increases in traffic volumes. The forecasted year used for the modeling was the year 2030. Because of the deep economic recession beginning in 2007, little growth has occurred in the County in the last 6 years. For the purposes of this plan, the model outputs for the year 2030 are applied to the year 2040 based on an assumption of urban growth in the County responding again to growth in the Chicago region. For these reasons, the future model of motorized traffic is useful in studying the County’s needs but cannot be used independently to define the County’s needs.

The model predicts that current travel flow patterns will be maintained for the foreseeable future. There is no evidence that the widely dispersed commuter patterns will tighten or consolidate in any noticeable fashion. Overall travel times for motorists in McHenry County will increase modestly between today and the year 2040. Rush hour times will likely increase significantly. By 2040, a trip taken between McHenry County and Cook County during the afternoon rush will take 51% longer (see Figure 41). Outside of the morning and afternoon rush hours, the trip will take 12% longer (see Figure 42). By 2040

| | A.M. Peak | P.M. Peak | % Difference in Peaks |
|-----------------------------------|-----------|-----------|-----------------------|
| Vehicle Miles of Travel | 820,684 | 937,746 | 14% |
| Vehicle Hours of Travel | 21,568 | 25,696 | 19% |
| Congested Vehicle Miles of Travel | 101,515 | 150,032 | 48% |
| Vehicle Hours of Delay | 2,793 | 3,930 | 41% |

Figure 40: Existing Peak Hour Motor Vehicle Use

Figure 41: Existing Peak Hour Motorized Vehicle Performance Measures

| Morning Peak | Today | 2040 | Percent Change |
|-----------------|---------|-----------|----------------|
| Miles Traveled | 820,684 | 1,162,223 | 41.6 |
| Hours Traveled | 21,568 | 32,304 | 49.8 |
| Congested Miles | 101,515 | 190,080 | 87.2 |
| Hours of Delay | 2,793 | 5,946 | 112.9 |
| Afternoon Peak | Today | 2040 | Percent Change |
| Miles Traveled | 937,746 | 1,315,137 | 40.2 |
| Hours Traveled | 25,696 | 38,822 | 51.1 |
| Congested Miles | 150,032 | 302,495 | 101.6 |

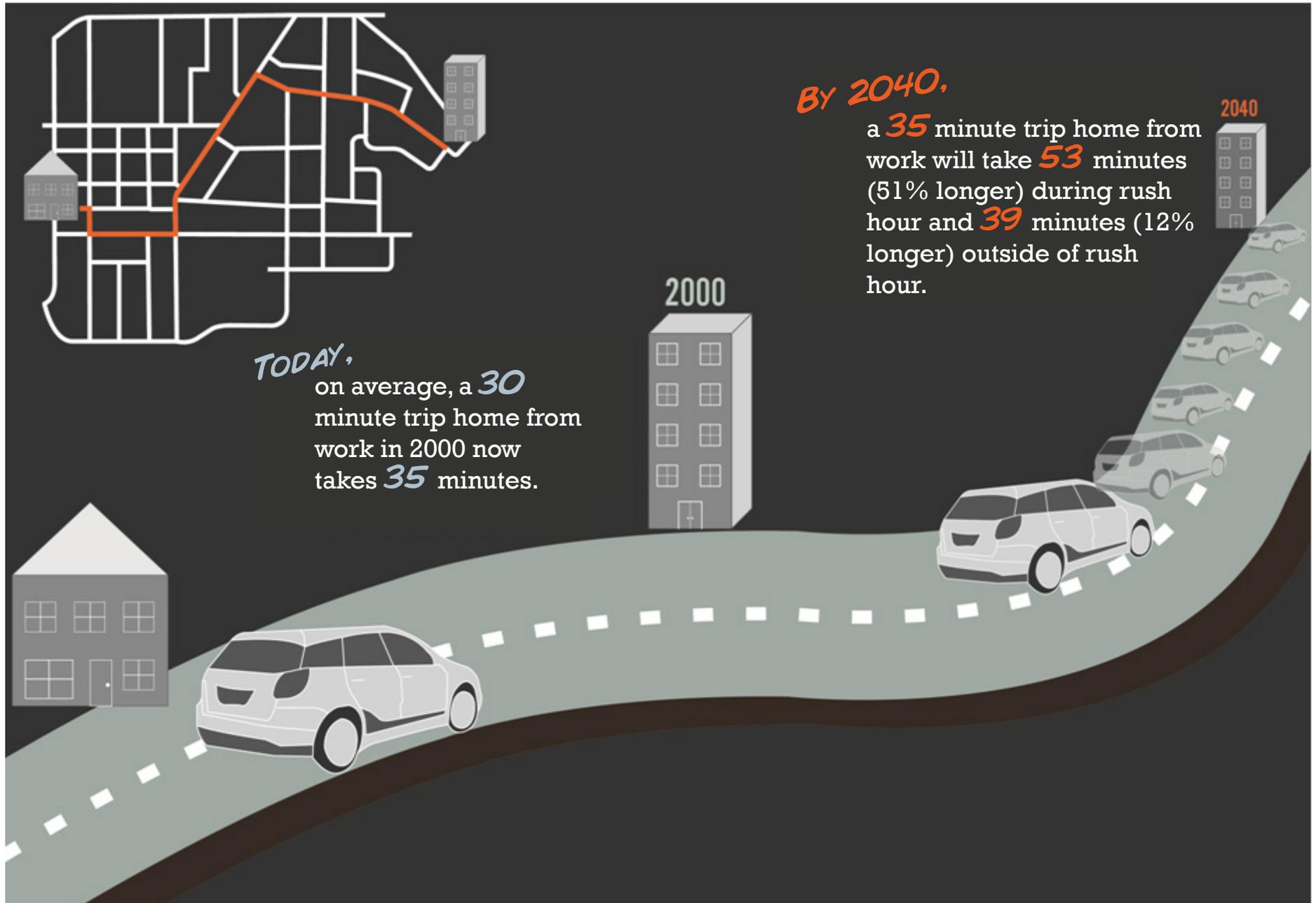


Figure 42: McHenry County Commute Times

By 2040, the model forecasts motorized traffic to stress the capacity of nearly the entire road network east from Illinois Route 47 during the afternoon peak period. Additional congestion is likely in Harvard and Marengo at the intersections of State and U.S. Highways. The total number of miles traveled by motorized vehicles in the County is forecasted to increase 42% during the morning rush hour and 40% during the afternoon rush hour (see Figure 40). By 2040, the model forecasts that the 40% increase in motorized traffic during peak hours will double the number of miles traveled in congestion and will more than double the amount of hours of delay experienced by drivers.

The model predicts that the greatest increases in congestion will happen on the municipal street networks. Between today and the year 2040, local streets will handle a growing percentage of congestion (in terms of hours of delay and miles of congested travel). This seems reasonable as many of the major highways in the southeast have been or will shortly be built to maximum capacity.

Figure 43: Miles Traveled by Road Volume / Capacity at PM Peak

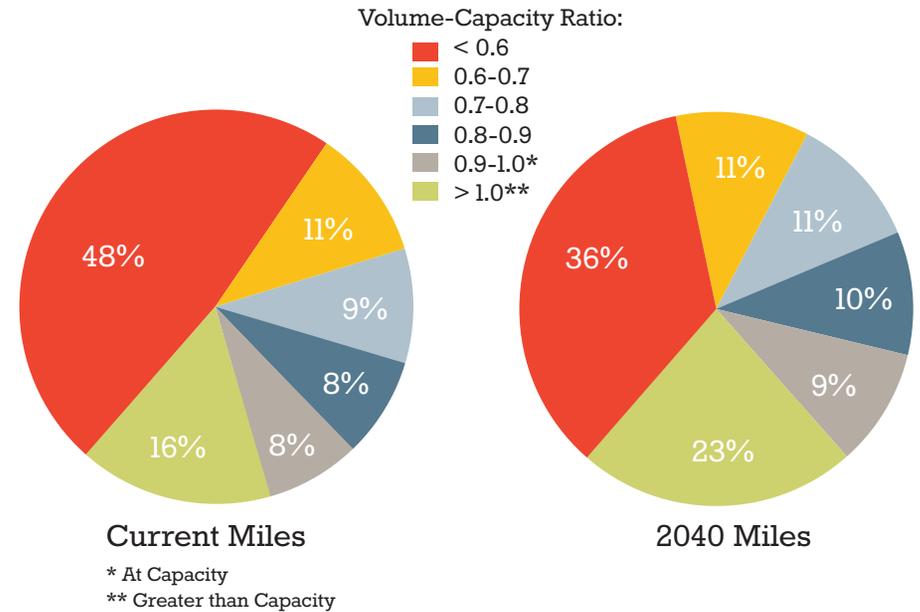


Figure 44: Current Congested Roadway Miles Traveled During PM Peak

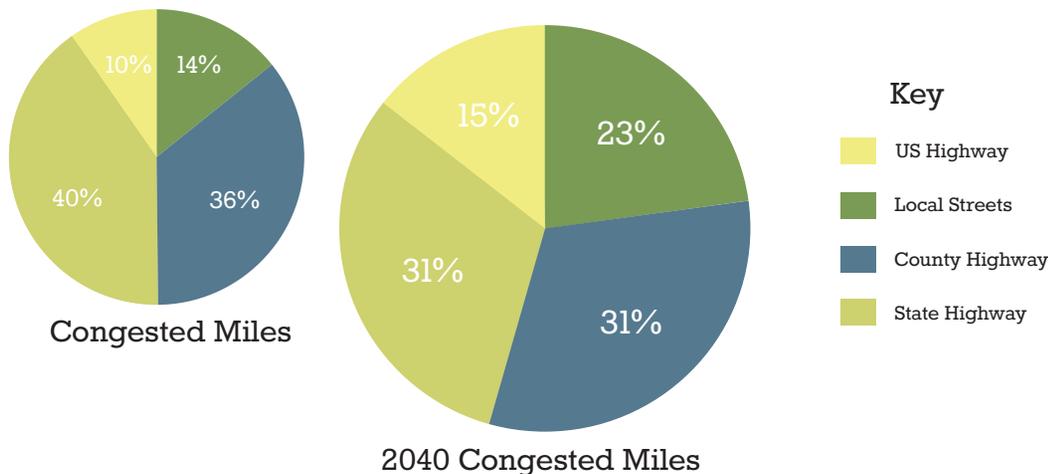
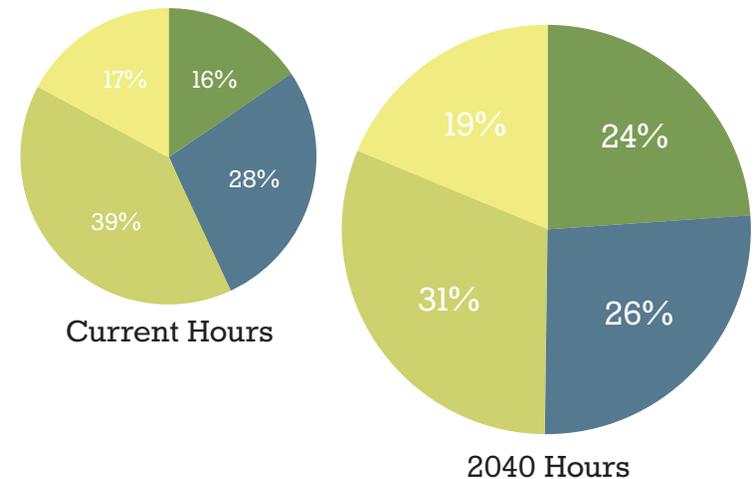


Figure 45: Hours of Delay by Roadway Type during PM Peak



Congestion has different effects depending on what has been built on either side of the roadway. Unlike federal, state, and County routes, most of the local street networks have not had and are not likely to have substantial increases in capacity or operational capability. This would be done by adding lanes of traffic and/or adding more traffic control measures such as median barriers, roundabouts, and traffic signals. Houses and businesses are typically built with inadequate setbacks for new lanes of traffic to be added.

As congestion builds on local streets, access to adjacent properties becomes limited and tends to lower residential property values or increase demand for other land uses. Congestion on major highways has less of an effect on adjacent land use. Property owners along major highways are more likely to have bought the property because of existing or anticipated heavy volumes of motorized vehicle traffic. Although a business may have fewer customers during certain times of the week as roadway congestion increases, the business is still likely to remain because other roadways do not provide such exposure to the public. As the old business saying goes, it is all about “location, location, location!”

Given the growth of congestion on the local street network, a two-pronged approach to addressing congestion seems prudent. First, additional capacity for motorized vehicles should be added to highways to accommodate peak hour volumes in ways that fully consider the costs of the new controls and restrictions. For example, adding lanes to accommodate peak hour traffic and then prohibiting right-turns on red during the entire day encourages people to disobey the prohibition in light traffic conditions. Additionally, limiting access to a major highway at few locations helps peak hour flows but increases the time and distance for locals trying to access businesses unnecessarily during off-peak hours.

Secondly, encouraging people to walk or bicycle to local destinations is likely to result in real declines in motor vehicle volumes in certain areas of the County. As motorized traffic loads grow on the local street networks, people will increasingly choose walking or bicycling because of convenience. The pace of this process by which people drive less will depend on many factors including land use zoning changes that encourage commercial and industrial uses closer to neighborhoods and whether or not public works departments work to accommodate a growing demand for bicycle and pedestrian transportation infrastructure.



Figure 46: Woodstock Square