

over the past several years and is projected to continue to decline for the foreseeable future. The Township may solicit other funding sources for specific projects. Methods of funding road improvements are discussed later in this chapter.

In addition to the Road Commission's planned road projects, the DDA will be improving the intersection at Grand River/Milford Road/Pontiac Trail to eliminate this 5-point intersection by terminating Pontiac Trail before it reaches Grand River Avenue, and by closing New Hudson Road. This road project will also include the streetscape and pedestrian enhancements consistent with the Lyon Center Vision Plan. Grand River Avenue will be reconstructed with curb and gutter and new pavement, from the east ring road to just west of the 5-point intersection. All of this work is scheduled to take place in 2012 or 2013.

Circulation System Deficiencies

Traffic volume has increased significantly in the Township since the 1990s. However, the rate of growth experienced during that time is not projected to continue. According to SEMCOG projections, the population of the Township will continue to grow, but slowly. The 2010 population estimate for Lyon Township is 14,542; it will reach nearly 20,200 by 2035. This projection in population is significantly less than the 2004 projection of nearly 50,000 by 2030. Based on traffic engineering standards of 9.6 daily vehicle trips per household, this growth can be expected to create 14,467 new trips daily by 2015, and another 23,117 new trips daily by 2035.

While the Township will continue to see a growth in traffic on its roadways, this growth is far more manageable than previously predicted (based on population projections).

An estimate of the volume of traffic that could be expected on Township roads at build-out can be made under the assumption that traffic growth will be distributed on roads in the same way that existing traffic is distributed. If traffic growth is distributed uniformly, Pontiac Trail can be expected in 2010 to carry 35,804 trips daily between Nine Mile and Ten Mile Roads, and several segments of Pontiac Trail, Ten Mile Road, Grand River, and Kent Lake can be expected to carry 20,000 daily trips or more.

Approximately 11% of daily trips will be made during the period of heaviest traffic, or "peak hour," per the Institute of Transportation Engineers. During the peak hour on a weekday in 2010, an estimated 3,938 vehicles will drive the section of Pontiac Trail in downtown South Lyon (see Table 7-2). The intersection of Pontiac Trail, Milford Road, and Grand River Avenue will see 3,646 vehicles during peak hour under this estimation.

Table 7-2

Road Segment	PROJECTED TRAFFIC VOLUMES					
	Projected 24-hour Traffic Volumes			Projected Peak Hour Volumes		
	<u>2010</u>	<u>2020</u>	<u>2030</u>	<u>2010</u>	<u>2020</u>	<u>2030</u>
Pontiac Trail, north of 8 Mile	20,233	23,866	27,499	2,226	2,625	3,025
Pontiac Trail, north of 9 Mile	29,859	34,479	39,099	3,284	3,793	4,301
Pontiac Trail, north of 10 Mile	14,492	14,614	14,736	1,594	1,607	1,621
Pontiac Trail, north of 11 Mile	14,963	16,547	18,131	1,646	1,820	1,994
Ten Mile Road, east of Chubb	15,774	19,155	22,536	1,735	2,107	2,479
Ten Mile Road, east of Currie	15,361	18,443	21,526	1,690	2,029	2,368
Grand River, east of Kent Lake	7,507	9,044	10,580	826	995	1,164
Grand River, east of Martindale	5,899	5,618	5,337	649	618	587
Grand River, east of Milford	14,298	16,442	18,586	1,573	1,809	2,044
Grand River, east of Old Plank	18,056	22,589	27,122	1,986	2,485	2,983
Milford, north of 10 Mile	8,308	10,163	12,018	914	1,118	1,322
Milford, north of 11 Mile	8,321	10,303	12,285	915	1,133	1,351
Milford, north of 12 Mile	10,103	12,785	15,467	1,111	1,406	1,701

¹ Peak hour/design hour volumes are equal to 13.6 percent of 24-hour volumes (Institute of Transportation Engineer’s standard).

After future traffic levels are projected, they may be compared to road capacity. According to the Institute of Traffic Engineers, a 2-lane rural highway under ideal conditions could carry between 1,800 and 2,000 passenger cars per hour. This is affected by several factors, however, including the flow rates in each direction, the speed of travel, the number of driveways and other access points, the variance in speed in the traffic stream, and the availability of passing sight distance. Variance in speed is especially a factor when the traffic flow includes trucks or recreational vehicles. Computation of exact capacity for a road segment would require detailed study of these factors, but typical conditions reduce capacity to around 1,320 vehicles per hour at Level of Service “C” (where traffic flow is heavy, but stable).

The analysis presented above indicates that, in the absence of major road improvements or other changes, it is likely that the level of traffic congestion experienced today will likely remain the same or improve in the future. Several segments will likely need improvements based on the increased number of vehicles that will be using them in the future. These include Grand River, east of Old Plank, Grand River, east of Kent Lake, and Ten Mile, east of Chubb. Funding for road improvements is extremely limited. In this context, land use plans and zoning should be carefully considered for their impacts on a limited road system.

Freeway Access. The issue of “road deficiencies” deals with much more than just road capacity. Of equal importance are efficient movement of traffic, public safety, and convenience. Consideration of these other issues focuses attention of the I-96 access. The existing interchange at Kent Lake Road is inadequate for the following reasons:

- Jogs in Kent Lake Road about one quarter mile south of the interchange and at Silver Lake Road diminish its capacity to carry traffic to the freeway.
- The Kent Lake Road interchange is adjacent to Grand River Avenue, creating confusing and hazardous road connections.

No improvements to the Kent Lake Road interchange are proposed by MDOT at this time.

Intersection Improvements. In addition to road capacity, improvements are or will be needed at certain intersections. Accident data provide one indication of intersection deficiencies. Accident data from 2008 indicate that the problem intersections are:

- Kent Lake and Grand River
- 11 Mile and Martindale
- 8 Mile and Pontiac Trail
- 8 Mile and Griswold
- 8 Mile and Currie
- 8 Mile and Napier
- Grand River/Pontiac Trail/Milford 5-point intersection
- Pontiac Trail and Silver Lake

The 5-point intersection at Grand River/Pontiac Trail/Milford Road will receive major improvements as part of the major road enhancement project planned for 2013. These improvements include closing Pontiac Trail to eliminate a conflict point at this intersection.

Access Control. The capacity of a highway or road and traffic safety can quickly deteriorate if development is allowed to occur without proper attention to access control. Access control is a particular concern along Grand River Avenue and Pontiac Trail, where most of the intensive development in the Township exists and is planned to occur. As the ring road is developed in New Hudson and new land is available for development, access control must be managed. As developments are proposed, attention must be focused on spacing between driveways, driveway design, potential for shared access, the need for acceleration/deceleration lanes, number of driveways per site, sight lines, and similar considerations.

In addition to the intersection and pedestrian improvements planned for the New Hudson area, the Lyon Center Vision Plan also includes the consolidation of driveways and the provision of on-street parking.

Non-Motorized Traffic. As more families move into the Township, there will be more bicyclists and pedestrians. Pathways are a necessity for residents of all ages and abilities since most recreational facilities and retail establishments are located beyond walking distance. Pedestrian and bicycle options that were once considered amenities in communities are now considered necessities.

Lyon Township has successfully incorporated new paths and sidewalks into new developments. However, the Township must recognize that non-motorized traffic and motorized traffic cannot be thought of independently. As previously discussed, streets must now be designed in consideration of different modes of transportation and pedestrian abilities. These streets, known as “complete streets,” have the potential to reduce the number conflicts between cars, bicyclists and pedestrians, even as traffic volumes increase. The Township should continue to work with private developers and the RCOC to ensure that multiple transportation options are incorporated into planned road improvements.

There are several alternatives to accommodate non-motorized traffic: conventional sidewalks, paved shoulders that are dedicated and marked for bicycle use (subject to RCOC approval); or separate bicycle pathways adjacent to the road. Providing a complete street is more than just providing a pathway or bicycle lane along the side of the roadway. Safe and convenient crossings (crosswalks, pedestrian islands, etc.), signage, and markings must be incorporated into the road design, too.

Access to Undeveloped Lands. The road system in many communities is inadequate because the traffic is confined to major thoroughfares and local roads, rather than being spread out on a complete road network. One of the keys to developing a road network is to preserve road corridors for future collector and minor arterial roads as development occurs. As new development does occur, the Township must be sensitive to the need to preserve road corridors along section and quarter section lines, thereby building on the existing road network. Another way to create a road network is to design adjoining subdivisions so their roads connect to each other.

Private Roads. Many residential neighborhoods were developed with private roads. Property owners throughout the Township split their property in a manner that avoided the platting requirements of the Land Division Act, and then installed private gravel roads to provide access to the new parcels. This method of dividing large tracts of land has resulted in an inefficient road network. Many of these private roads do not meet current engineering and design standards and cannot be easily accessed by emergency vehicles.

There are also liabilities associated with private roads. The most serious deficiency, from a transportation planning point-of-view, is that private roads typically do not relate to the rest of the road system. Usually, private roads are dead-end roads that do not link with other private or public roads, other than the public road that provides primary access. Private roads are often not spaced according to sound transportation criteria. In short, private roads are in conflict with the goal of developing an efficient road network. Private roads also suffer from lack of maintenance, so their capacity diminishes over the years.

In spite of their deficiencies, private roads provide a means of access that many residents find satisfactory. Recognizing the continued use of private roads, the Township adopted a Private Road Ordinance in 1990. Recently, the Ordinance was amended to prohibit the construction of new private roads in the Township and addresses existing private road deficiencies, including road extension, and maintenance requirements.

Recommendations

Three broad considerations form the basis for the road system improvement recommendations which follow. These considerations include:

1. The projections of future trip generation on Township roads. Trip generation is based on projected population growth and other development activity, as reflected on the Township's future land use map and in regional forecasts.
2. Road system deficiencies identified previously in this chapter.
3. The continued "philosophy" of the Township with respect to development of and improvement to the road system.

The philosophy of the Township is an important consideration. Most residents would probably agree that the Township needs a transportation system that allows for quick, efficient, safe, and convenient access, that accommodates pedestrians, bicyclists, and vehicles throughout the Township. Many residents, however, would be willing to compromise on "efficiency" and "convenience" for the purposes of preserving rural character. Furthermore, residents probably would be willing to continue using the indirect routes to their homes and other destinations if it meant that the level of regional pass-through traffic could be kept to a minimum. All proposed road improvements, whether they involve new roads or widening or reconstruction of existing roads, should be evaluated and designed to avoid or minimize impact on wetlands, valuable natural resources, and neighborhoods.

Based on these considerations, the following recommendations are offered as solutions to the transportation deficiencies in Lyon Township:

- **Upgrade the Existing Road System.** Upgrading the existing roads should take precedence over new road construction proposals. Priority improvements are as follows:
 1. The Pontiac Trail/Milford Road/Grand River intersection must be upgraded. Closing Pontiac Trail, consolidating driveways, providing on-street parking, and beautification enhancements are required pursuant to the Lyon Center Vision Plan. Construction of these improvements is anticipated in 2011.

Other intersections that need improvement are identified on Map 11.