

# Chapter 5

## Transportation Analysis

### Background

The organization of a community's transportation network will have some effect on future land use development. Proximity and accessibility to major highway systems increase a community's economic competitive edge. It also provides an efficient means in which to move commuters to and from centers of employment. Road system mechanics (direction of traffic flow, road conditions, etc.) may dictate the frequency in which a specific road is utilized, as well as the number of accidents that may occur on a particular stretch of road.

### Network Hierarchy

Kimball Township's public transportation system is comprised primarily of a three-tier system of roadways: federal highways, county roads and local roads.

Interstate highways are the highest order of roadway found in Kimball Township. These roads are designed to move the largest amount of traffic the longest distances at the quickest speeds. Kimball Township is served by two different interstate routes, Interstate 69, running east-west and Interstate 94, running north-south. These roadways provide important links to larger urban areas and associated centers of employment, industry, commerce and recreation both inside and outside the State, as well as Canada.

The next highest order of roadway found in Kimball Township is county roads. These roadways are the result of early land subdivision methods. Roads were set in a grid pattern at ninety-degree angles, spaced at one-mile intervals and followed designated Township section lines in both north-south and east-west directions. They can be either paved or unpaved as shown in **Figures K and L**.

County-level road systems provide day-to-day transportation access throughout the Township, as well as to larger urban centers like Port Huron, the tri-cities of Flint, Saginaw and Bay City and northern portions of Detroit. They also connect the Township to the interstate highway systems.



Figure K  
Typical unpaved county road



Figure L  
Typical paved county road

The lowest order of roadway found in Kimball Township is local roads. These roads allow for efficient transportation access between neighborhoods, as well as between local commercial nodes within the Township. Generally, they are used for quick trips (less than one mile) and are designed to handle the fewest number of vehicles.

The Transportation Analysis Map graphically depicts the aforementioned roadway hierarchy.

## The Aesthetic Character of Kimball Township’s Road Network

Generally speaking, lands in Kimball Township located along section line roads in areas designated by current zoning as “agricultural” (primarily in the western half of the Township) possess deep building setbacks, accentuating the “county-like” setting of the area. Many residences in outlying areas are well-buffered from these roads by strips of cropland, woodlots or fences which front these “country” roads, providing an aesthetically pleasing character to the Township’s road network (**Figure M**).

Older residential areas that are closer to commercial nodes, such as Sparlingville and Smiths Creek tend to be situated on parcels with shallow road setbacks, which in turn lends a “small-town” character to the area as well.



*Figure M*  
Kimball Township possesses many aesthetically pleasing “country” roads.

## Traffic Controls

Traffic controls are provided at virtually all intersections of Township section line roads. Traffic control devices include the standard traffic signals with green, amber and red lights and flashing signals with red and amber lights. Traffic controls are also provided at most railroad crossings. The majority of the crossings consist of a red crossing signal and crossing gates. Others consist only of stop signs. All railroad crossings in the Township appear to be in good working order.

## Safety Issues

As part of the Master Plan process, Wade-Trim conducted a windshield survey of current road conditions for the Township.

From the results of this survey, it appears as though Kimball Township’s transportation network is functioning at an adequate level. However, there are instances where lack of road maintenance is a concern. Upon observation, the following roadways were found to be in the most immediate need of maintenance:

- Smiths Creek Road, from CN Railroad track to Mayer Roads.
- Flinchbaugh Road, entire course.
- Ashley Road, between Allen and Range Roads

The following two areas of concern regarding safe travel within the Township were also identified as a result of the survey: 1) obstructed clear vision zones and 2) excessive curb cuts. The following text identifies the specific geographic locations within the Township for these trouble spots and a general description of each safety concern. These areas are also identified graphically by the Transportation Analysis Map.

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## Obstructed Clear Vision Zones

Obstructed views occur when there is not enough of a clear vision zone to provide an adequate view of the roadway, or of other vehicular traffic at an intersection, along a curve, or in a sloped area. The Transportation Analysis Map identifies the locations of obstructed clear vision zones within Kimball Township.

Areas with significant site vision obstructions were identified at the corner of Atkins and Wadhams Roads. In this particular location, traffic entering Wadhams Road from Atkins Road do so at an odd angle in comparison to the normal linear flow of traffic. In addition, traffic heading southbound on Wadhams Road has little time to react to drivers entering Wadhams Road from Atkins Road. Atkins Road drivers enter on to southbound Wadhams Road from a blind hill access point. In addition, drivers traveling southbound on Wadhams from the Black River Bridge must make quick speed adjustments at this location. The adjustments begin as they ascend the hill to the time they reach the traffic signal located at the intersection of Wadhams and Lapeer Roads, a distance of approximately 1,000 feet. The location is very dangerous when traffic is at its heaviest.

Another roadway intersection that presents obstructed clear vision zones was identified at the corner of Richman and Griswold Roads. Topography is again an issue at this location. Traffic moving westbound on Griswold Road is partially obscured to motorists entering the intersection from Richman Road by a hilltop on the eastern side of the road. Motorists must take extra precaution when entering Griswold Road from Richman Road.

## Excessive Curb Cuts

Excessive curb cuts result when driveways, created by residential, commercial or industrial uses are allowed access to a local, collector or minor arterial road in an uncontrolled fashion. This type of access is very dangerous. It allows vehicles to pull out or stop in too many locations, leaving drivers to guess what type of maneuver other drivers may attempt within their path of travel. The Transportation Analysis Map identifies the locations of excessive curb cuts within Kimball Township.

Excessive curb cuts exist most frequently near the nodal region of Wadhams, along Lapeer Road and along Wadhams Road, both north and south of the I-69 freeway interchange. The high numbers of curb cuts are somewhat due to the high-density commercial character of the area. A potential solution to this problem may be the implementation of shared driveways in order to access these properties.

## Traffic Counts

Traffic count data for county roads was obtained from the St. Clair County Road Commission for the years 1994 through 1999. In all cases, counts reflect average daily traffic (ADT). ADT refers to the average traffic volume over a 24 hour period, generally calculated anytime between noon on Monday and noon on Friday. Weekend trips frequently contain a different mix and frequency than do those during the week. Traffic counts for selected locations around the Township are shown on the Transportation Analysis Map.

The largest traffic count on a county road was recorded on Wadhams Road, just north of the I-69 highway interchange, with a 24-hour count of 17,553 vehicles. Other significantly traveled county roads are Range and Lapeer Roads.

It is unknown if the Township's current transportation system will be able to handle an increase in future traffic volumes. Much of the transportation infrastructure in the Township was designed at a time when the area was sparsely populated. As the population of Kimball Township continues to grow, it is expected that development will take place in areas that already experience high traffic volumes such as Range, Lapeer and Wadhams Roads. Further, development in these areas will increase traffic volume and may promote congestion along these roads. Likewise, development in the more rural portions of the Township may impose a strain on the local road system.

As much of the Township is currently occupied by large-lot, residential development, it is expected that a large amount of infill development will soon begin to occur, dispersing the anticipated increase in population into pastoral areas, slowly converting these large lots into smaller lots over time. As this process takes place, county roads designed for the less intensive traffic volumes of the past will see increased ADT levels. Many of these roads will need to be modified in such a way to handle the increase in traffic. The future increase in ADT levels will require additional expenditures to make these modifications and maintain the roads that carry this traffic.

# Accident Locations

Most accidents in Kimball Township are associated with the more densely populated residential areas and they typically consist of “fender benders.” Data acquired from the St. Clair County Road Commission and the Southeast Michigan Regional Council of Governments (SEMCOG) for the years 1994-1999 was used when analyzing accidents on both county and local roads. As a result of this analysis, a listing of the top ten accident locations for the Township was developed. The results of this analysis are provided in **Table 5-1**. In addition, the top ten accident sites within the Township are displayed in the Transportation Analysis map.

As a result of the analysis, accidents within the Township occur most frequently along Township section line roads, such as Range Road, and primary county roads, like Wadhams Road. In fact, all ten identified high-crash intersections involved either Wadhams Road or Range Road in some fashion. The intersection having the highest crash occurrence was at Lapeer and Wadhams Road with 89 total crashes during the period 1994-1998, which amounts to an average of 17.8 crashes annually.

The highest number of crashes involving Township roadways during the period 1994-1998 were categorized as Personal Damage Only (PDO) crashes, where there were no fatalities or injuries reported, rather, only damage to personal property was involved. With regard to the top ten roadways identified by the SEMCOG survey, the PDO category accounted for approximately 69 percent of all crashes, while crashes which resulted in some form of personal injury accounted for approximately 30 percent of all crashes. Fatal accidents accounted for less than one percent of all total crashes involving the top ten identified roadways.

**Table 5-1.  
Top 10 High-Crash Intersections  
Kimball Township, St. Clair County Michigan  
1994-1998**

Rank	Intersection		Total Crashes	Annual Average	Crashes Per Year					Crashes by Severity*				
	Road 1	Road 2			1998	1997	1996	1995	1994	Fatal	A-level	B-level	C-level	PDO
1	Lapeer Rd.	Wadhams Rd.	89	17.8	18	21	18	16	16	0	4	5	12	68
2	Gratiot Ave.	Range Rd.	62	12.4	14	10	9	14	15	1	3	7	8	43
(tie) 3.	Lapeer Rd.	Range Rd.	37	7.4	8	6	10	8	5	0	1	2	3	31
(tie) 3.	Range Rd.	Dove Rd.	37	7.4	7	3	9	7	11	0	5	3	4	25
5	EastBound I-94	Range Rd.	34	6.8	8	6	11	6	3	0	0	4	7	23
(tie) 6.	Ravenswood Rd.	Range Rd.	26	5.2	4	4	5	8	5	0	2	5	3	15
(tie) 6.	Smiths Creek Rd.	Wadhams Rd.	26	5.2	3	4	4	6	9	3	4	7	4	8
(tie) 8.	Range Rd.	Griswold Rd.	25	5.0	7	5	5	4	4	0	2	1	7	15
(tie) 8.	Griswold Rd.	Wadhams Rd.	25	5.0	4	4	5	7	5	1	0	4	2	18
10	Wadhams Rd.	North River Rd.	23	4.6	5	5	6	6	1	0	1	0	4	18
<b>Totals</b>			<b>384</b>	<b>76.8</b>	<b>78</b>	<b>68</b>	<b>82</b>	<b>82</b>	<b>74</b>	<b>5</b>	<b>22</b>	<b>38</b>	<b>54</b>	<b>264</b>

**\*Crash Severity Definitions:**

Fatal - A crash in which the most severe injury sustained by any person involved in the crash was a fatal injury.

A-level - A crash in which the most severe injury sustained by any person involved in the crash was an A-level (incapacitating) injury.

B-level - A crash in which the most severe injury sustained by any person involved in the crash was a B-level (non-incapacitating but visible) injury

C-level - A crash in which the most severe injury sustained by any person involved in the crash was a C-level (possible) injury.

PDO (Property Damage Only) - A crash which resulted in no fatalities or injuries, with a maximum value of \$400.00 as a reporting threshold.

Source: Southeast Michigan Regional Council of Governments (SEMCOG), 1998