

6 Transportation

A transportation system supports the growing economy of a community, which provides opportunities for its residents and visitors. These opportunities enhance the community's standard of living. Of particular importance in smaller communities is the local road system, since it generally has the greatest direct input and investment by the local government.

A well-designed road system can result in many benefits and long term cost savings for a community. Being an integral aspect of the town, it plays a major role in the efficiency, safety and overall desirability of the community as a place to live and work.

6.1 Existing Road Systems

In analyzing the road system, several aspects and factors should be examined to discern possible shortcomings as well as plan for future needs. Analysis of traffic patterns through the examination of the road system, review of traffic counts, study of accident reports, discussion with individuals at the local, county and state levels, and finally, a field survey of the roads can assist in providing possible recommendations relevant to the system.

To begin the analysis for the town of St. Germain, an examination of the existing road system was completed. As Map 6-1 depicts, the town's road configuration does not follow the typical rural roadway pattern of primarily north-south and east-west roads. Rather, the abundance of natural features within the town, including its many lakes, creeks, and forested areas tend to direct roadway patterns.

The road system is composed of three levels of government jurisdiction. These include the town system encompassing the local roads, the county system of trunk highways, and the state and federal highway systems. Map 6-1 identifies the existing road patterns as well as the jurisdictional layout. The map illustration identifies that the local roads comprise the greatest mileage. However, in terms of the functional role and the amount of traffic carried by each type, STH 70 is the most significant.

The three levels of jurisdictional roadway, state and federal, county, and local, often times are considered to approximate the functional classification of roads used for planning and design purposes. The division of roadways into the functional classes, arterials and collectors, represents the principal service the roadway is intended to serve. The functional classification is generally the basis of what governmental body funds, constructs, and maintains the various levels of roadway. This classification for rural areas often results in the use of the state and federal roads as arterials, while county and town roads serve as collectors within the system (see Map 6-1).

Although the definitions are somewhat formal, they attempt to explain the principal role of each type of roadway. While the four classes appear to be set apart, the sharp distinctions are actually more subtle. For discussion and planning purposes, however, these more specific definitions are applied.

Principal Arterial (Freeways)

The principal function is to provide the most efficient movement for relatively large volumes of traffic at increased speeds. Movement to and from other road facilities is limited to controlled interchanges. Regional movement of traffic contributes an increasing portion of the traffic counts.

Minor Arterial

The principal function is to provide efficient traffic movement for larger volumes of traffic. Little or no direct access is strived for with non-local destinations comprising a major portion of the traffic.

Major Collector

The principal function is to provide an intermediary link between efficient movement of arterials and accessibility of local roadways. They serve to funnel or collect traffic from local roadways to arterials. More efficiency of movement is strived for in favor of accessibility.

Minor Collector (Local Roadways)

The principal function is to provide traffic with access to and from property. Accessibility for vehicles and pedestrians is emphasized and efficiency of movement is secondary.

As previously noted, these functional classifications generally equate with the jurisdictional divisions. In the more developed, larger urban communities, this relationship may not be as rigid, whereas the local community constructs and maintains all classes of the roadway system. In the typical rural transportation system, however, the jurisdictional and functional classifications maintain a closer relationship. The greatest emphasis of traffic in rural areas is generally on non-local efficient movement whereas local access is secondary due to relatively low population densities.

Based on the qualifications of the roadway classifications, the town of St. Germain has the service of one minor arterial, STH 70. STH 70 is located in the southern portion of the town and runs in an east - west direction. This highway provides for larger volumes of traffic entering the downtown area of the town, and provides access to STH 45 and STH 17 east of St. Germain and STH 51 west of St. Germain.

MAP 6-1

TRANSPORTATION DATA EXISTING CONDITIONS

Town of St. Germain
Vilas County,
Wisconsin



LOCATION	% CHANGE 1987-1995	PROJECTED % CHANGE 1995-2019
A S.T.H. "70" AT WESTERN TOWN BORDER	45.9	N/A
B C.T.H. "C" NORTH OF INTERSECTION WITH S.T.H. "70"	46.7	N/A
C S.T.H. "155" AT NORTHERN TOWN BORDER	75.4	66.7
S.T.H. "155" WEST OF NORTHERN INTERSECTION WITH LOST LAKE DRIVE WEST	59.7	68.4
E S.T.H. "70" WEST OF INTERSECTION WITH S.T.H. "155"	24.5	N/A
F S.T.H. "155" NORTH OF INTERSECTION WITH S.T.H. "70"	109.1	60.0
G S.T.H. "70" SOUTH OF INTERSECTION WITH S.T.H. "155"	94.0	N/A
H S.T.H. "70" WEST OF INTERSECTION WITH C.T.H. "C"	82.1	67.3

- Five Intersection Accidents
- Four Intersection Accidents
- Three Intersection Accidents
- Two Intersection Accidents
- One Intersection Accident
- Minor Arterial
- Major Collector
- Minor Collector
- Surface Water
- Town Border
- Parcel Lines
- Local Road
- County Roads
- State Road
- 36 Section Numbers

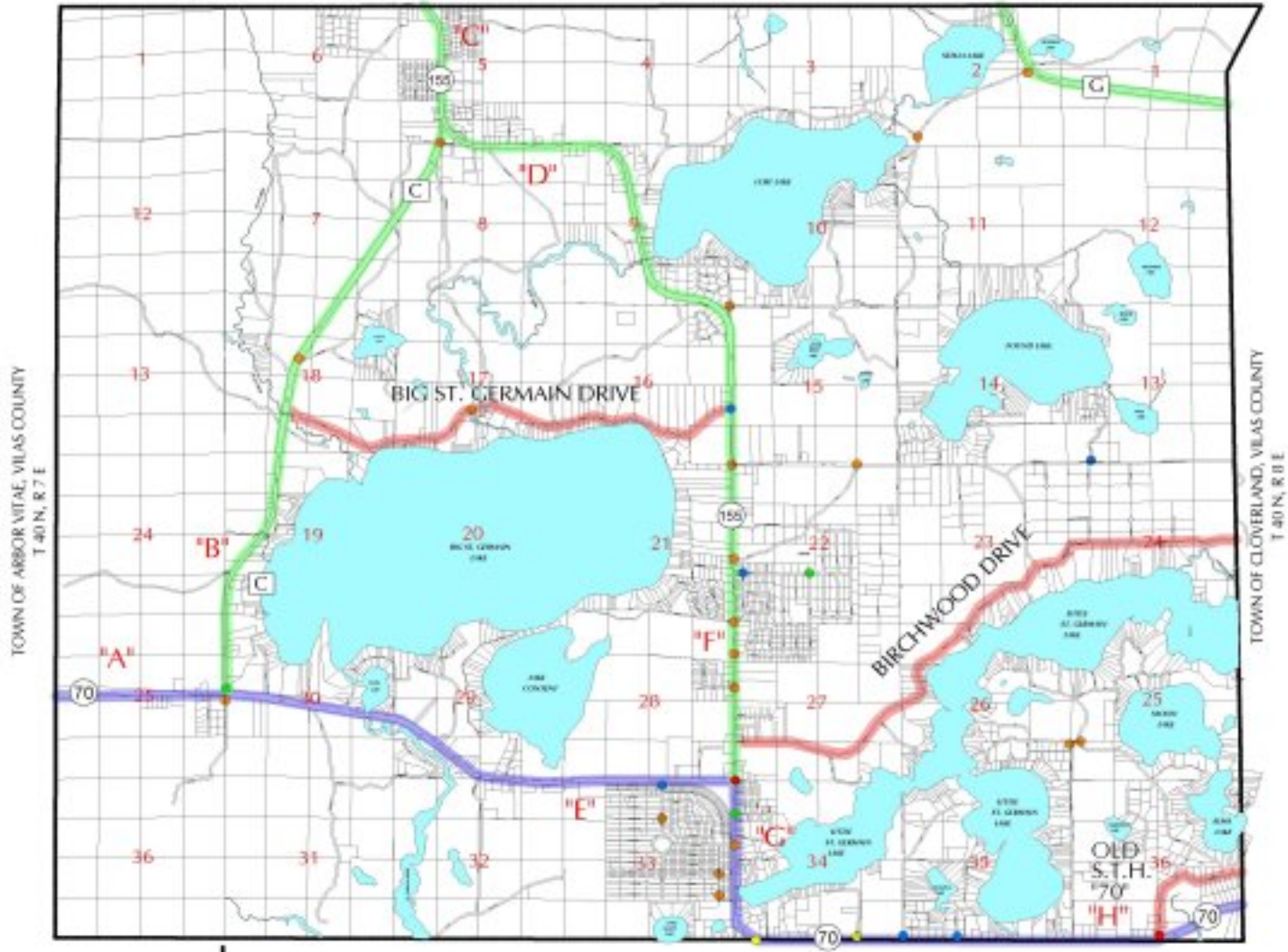
This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

Source: Wisconsin Dept. of Transportation, Annual Average Daily Traffic, 1986, 1992, 1995;
Wisconsin Dept. of Transportation Bureau of System Planning, Traffic Analysis:
Forecasting Section Traffic Planning Reports, 1997.



TOWN OF PLUM LAKE, VILAS COUNTY
T 41 N, R 7 E

TOWN OF PLUM LAKE, VILAS COUNTY
T 41 N, R 8 E



TOWN OF ARBOR VITAE, VILAS COUNTY
T 40 N, R 7 E

TOWN OF CLOVERLAND, VILAS COUNTY
T 40 N, R 8 E

TOWN OF WOODRUFF, ONEIDA COUNTY
T 40 N, R 7 E

TOWN OF NEWBOLD, ONEIDA COUNTY
T 40 N, R 8 E

In addition to the minor arterial, there are three major collectors in the town, including STH 155, CTH C, and CTH G. STH 155 runs in a north - south direction and dissects the town into the east side and west side. It provides a route for traffic entering or leaving St. Germain and Sayner, and provides access to and from STH 70 in the southern portion of the town. CTH C, located in the western portion of the town, provides a link between STH 155 and STH 70. A small portion of CTH G cuts through the northeast corner of the town, providing a link between CTH N just north of St. Germain and STH 45 located east of St. Germain.

Lastly, two minor collectors exist in the town which include the town roads of Big St. Germain Drive and Birchwood Drive. Big St. Germain Drive follows the north shoreline of Big St. Germain Lake in the western portion of the town, providing a link between CTH C and STH 155. Birchwood Drive is located in the eastern portion of the town provides the main access route to Little St. Germain Lake, West Bay Lake, South Bay Lake, East Bay Lake, Moon Lake Alma Lake and Wakefield Lake. It connects with STH 155, then circles the lakes, and ultimately connects with STH 70 in the southeastern corner of the town.

To further assist in the classification of roads within the roadway system, the following table identifies the basic criteria used to determine the functional class of each road within a community. (See Table 6-1, Year 2010 Rural Area Highway Functional Classification Criteria.)

Table 6-1
Year 2010 Rural Area Highway Functional Classification Criteria

Functional Classification	Traffic Volume	<u>Basic Criteria</u>			Supplemental Criteria or must meet both of these plus 90% of traffic volume
		Must meet any two of these or the parenthetical traffic volume alone			
		Population Service	Land Use Service	Spacing	
Principal Arterial	>3,000	Connect places 50,000 with other places 50,000. Connect places 5,000 with places 50,000.	Provide access to 12 large attractions	Maximum 30 miles	None for Principal Arterials
Minor Arterial	>1,000	Connect places 5,000 with other places 5,000. Connect places 1,000 with places 5,000 or with principal arterials	Serve all traffic generating activities with an annual visitation 300,000 if not served by a principal arterial	Maximum 30 miles	<ol style="list-style-type: none"> 1. Alternative population connection. 2. Major river crossing restrictive topography.
Major Collector	>500 (>2,000)	Connect places 1,000 with other places 1,000. Connect places 500 with places 1,000 or higher function route. Connect places 500 with other places 500 or higher function route. Connect places 100 with places 500 or higher function route.	Land use service index ≥ 16 . Provides access to smaller attractions (i.e., airports, schools factories, parks, etc.)	Maximum 10 miles	<ol style="list-style-type: none"> 1. Alternate population connection. 2. Major river crossing. 3. Restrictive topography. 4. Interchange with freeway. 5. Parallel to a principal arterial.
Minor Collector	>200 (>800)	Connect places 100 with other places 100. Connect places 50 with places 100 or higher function route.	Land use service index ≥ 8 . Serves same type of attractions as major collector.	Maximum 10 miles	<ol style="list-style-type: none"> 1. Alternative population connection. 2. One major river crossing. 3. Restrictive topography. 4. Interchange with freeway. 5. Parallel to a principal arterial.

Source: Wisconsin Department of Transportation.

6.2 Traffic Counts

Annual average daily traffic counts (ADT's) for 1987, 1992 and 1995 for eight locations in St. Germain are presented in Table 6-2. In addition, the change in annual average daily traffic counts from 1987 to 1995 for these locations can be reviewed on Map 6-1.

**Table 6-2
Annual Average Daily Traffic Counts
Town of St. Germain
1987-1995**

Location	1987	1992	1995	% Change 1987-1995	# Change 1987-1995
A STH 70 at western town border	2330	2870	3400	45.9	1070
B CTH C north of intersection with STH 70	750	1330	1100	46.7	350
C STH 155 at northern town border	1710*	1520	3000	75.4	1290
D STH 155 west of northern intersection with Lost Lake Drive West	1190	1410	1900	59.7	710
E STH 70 west of intersection with STH 155	2490	3050	3100	24.5	610
F STH 155 north of intersection with STH 70	2630*	3030	5500	109.1	2870
G STH 70 south of intersection with STH 155	4690	5200	9100	94.0	4410
H STH 70 west of intersection with CTH O	3020*	4710	5500	82.1	2480

*Denotes 1986 ADT data

Source: Wisconsin Department of Transportation, Annual Average Daily Traffic, 1986, 1992, 1995.

As expected, the two highest daily traffic volumes in all four reference years are found on the minor arterial STH 70 at location G, which experienced traffic counts ranging from 4,690 in 1987 to 9,100 in 1995, and at location H which experienced traffic counts ranging from 3,020 in 1987 to 5,500 in 1995.

STH 70 experienced high volumes of traffic at various other locations also. The major collector STH 155 also experienced high volumes of traffic, with its highest volume at location F, at which 5,500 motor vehicles were counted in 1995. The largest percentage increase in volume from 1987 to 1995 occurred along STH 155, recording an additional 2,870 motor vehicles or an increase of 109.1%. A large increase was also recorded along STH 70 south of its intersection with STH 155, experiencing an increase of 4,410 motor vehicles or 94.0%. In addition, five other locations (A-D and H) experienced significant increases in traffic volume, increasing by approximately 50% or more between 1987 and 1995. The location with the smallest increase in traffic volume was STH 70 west of its intersection with STH 155, which experienced a 24.5% increase in volume.

In addition to actual annual average daily traffic counts, traffic count forecasts were prepared by the WDOT for several locations within the town of St. Germain. The forecasts project future ADT's for the year 1999, 2009, and 2019. This data is presented in Table 6-3. Map 6-2 identifies the projected change in ADT's from 1995 to 2019 for these specific locations. Please note that these forecasts assume that no significant new traffic generators will be developed in the area in the near future.

**Table 6-3
Traffic Count Forecasts
Town of St. Germain
1995-2019**

Location	1995	1999	2009	2019	% Change 1995-2019	# Change 1995-2019
C STH 155 at northern town Border	3,000	3,400	4,200	5,000	66.7	2,000
D STH 155 west of northern intersection with Lost Lake Drive West	1,900	2,100	2,700	3,200	68.4	1,300
F STH 155 north of intersection with STH 70	5,500	6,300	7,700	8,800	60.0	3,300
H STH 70 west of intersection with CTH O	5,500	6,000	7,600	9,200	67.3	3,700

Source: Wisconsin Department of Transportation, Bureau of System Planning, Traffic Analysis and Forecasting Section, Traffic Planning Reports, 1997.

TOWN OF PLUM LAKE, VILAS COUNTY
T 41 N, R 7 E

TOWN OF PLUM LAKE, VILAS COUNTY
T 41 N, R 8 E

MAP 6-2

TRANSPORTATION DATA FUTURE CONDITIONS

Town of St. Germain
Vilas County,
Wisconsin



TOWN OF ARBOR VITAE, VILAS COUNTY
T 40 N, R 7 E

TOWN OF CLOVERLAND, VILAS COUNTY
T 40 N, R 8 E

- 5500 1995 Traffic Forecasts
- 6000 1999 Traffic Forecasts
- 7600 2009 Traffic Forecasts
- 9200 2019 Traffic Forecasts
- Surface Water
- Town Border
- Parcel Lines
- Roads
- County Roads
- State Roads
- 36 Section Numbers

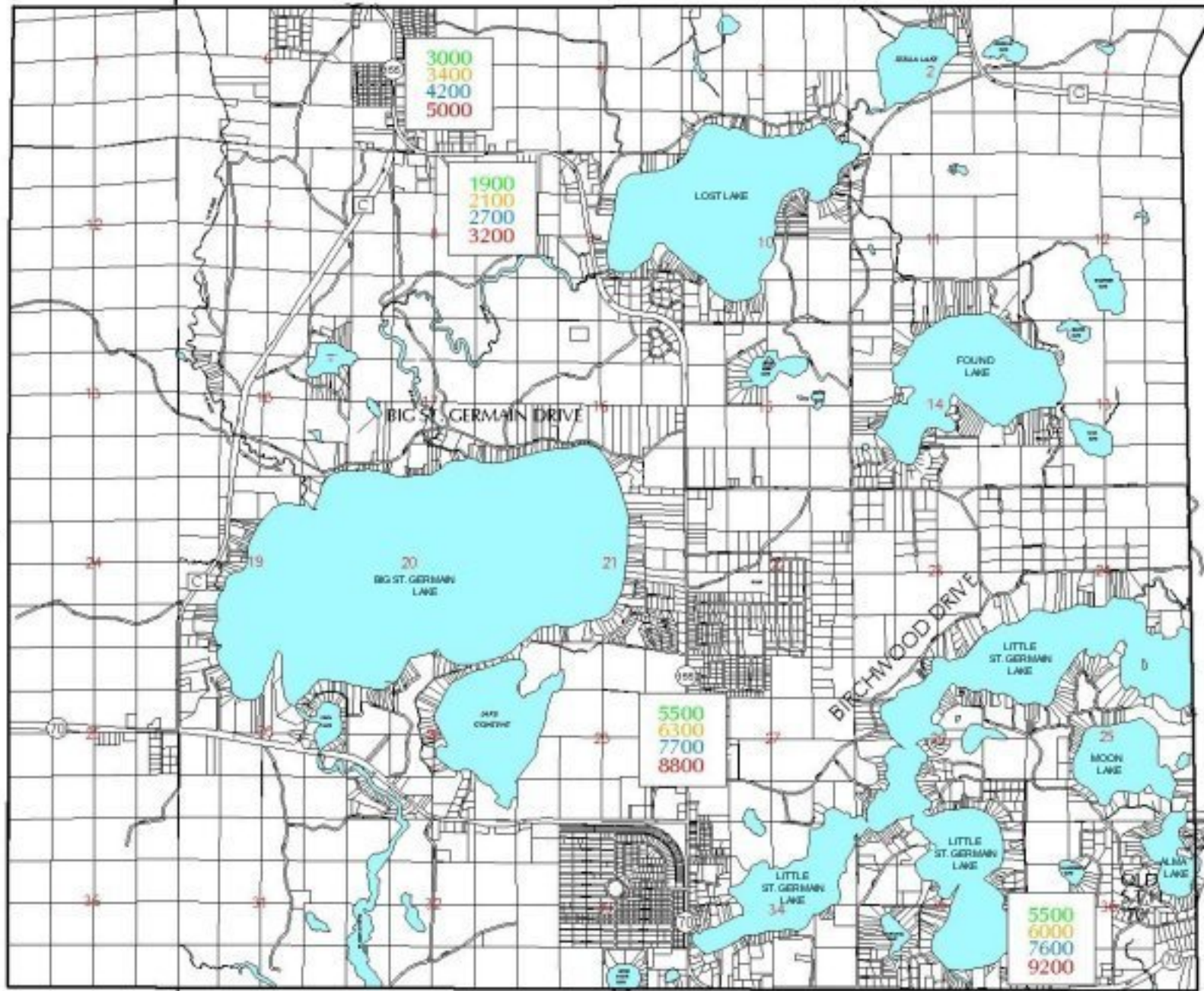
This drawing is neither a legally recorded map nor a survey and is not intended to be used as one. This drawing is a compilation of records, information and data used for reference purposes only.

Source: Wisconsin Dept. of Transportation, Bureau of System Planning
Traffic Analysis Forecasting Section, Traffic Planning Reports, 1997.

0 2000 4000 6000 8000 Feet



MAP 06-02-01-01 01/06 TO 1/06 1/06



TOWN OF WOODRUFF, ONEIDA COUNTY
T 40 N, R 7 E

TOWN OF NEWBOLD, ONEIDA COUNTY
T 40 N, R 8 E

The WDOT projects that all of the locations presented in Table 6-3 will experience considerable increases in traffic volumes between 1995 and 2019, increasing between approximately 60.0 and 70.0%. The greatest percent increase is expected to occur on STH 155 at location D, which is projected to increase from 1,900 motor vehicles per day in 1995 to 3,200 in 2019, an increase of 68.4%. ADT's at locations C, F and H are expected to increase by 66.7, 60.0, and 67.3%, respectively.

6.3 Accident Locations

To further analyze the town of St. Germain's road system, the frequency, location of, and causes of motor vehicle accidents can be used to identify problem areas. The frequency of motor vehicle accidents tend to correlate directly with traffic volumes, however the design and condition of the road may also have an impact on the accident rate. Table 6-4, Motor Vehicle Accident Summary, displays the number of accidents for roads which have experienced greater than four motor vehicle accidents from 1991 to 1997 as reported by the Department of Motor Vehicles. The "other" category includes all other accidents from locations that individually had three or fewer motor vehicle accidents from 1991 to 1997.

Table 6-4
Motor Vehicle Accident Summary
Town of St. Germain
1991-1997

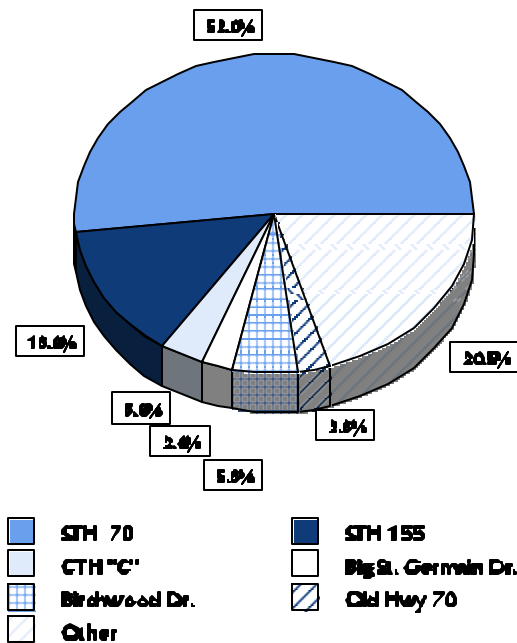
Accident Location	1991	1992	1993	1994	1995	1996	1997	Total
STH 70	18	23	18	23	25	28	22	157
STH 155	6	7	9	8	4	3	4	41
CTH C	4	1	---	---	1	2	3	11
CTH G	---	2	1	---	---	2	---	5
Big St. Germain Dr.	3	---	1	---	1	1	2	8
Birchwood Dr.	3	---	3	3	1	4	2	16
Found Lake Rd.	---	1	---	1	1	1	---	4
Four Corner La.	---	---	1	1	---	1	3	6
Indian Tr.	---	---	---	---	2	1	2	5
Juve Rd.	---	1	---	1	2	1	---	5
Old Hwy 70	1	---	1	1	1	1	2	7
Shields Rd.	1	---	---	2	1	1	---	5
Other*	3	4	1	6	5	5	8	32
Total	39	39	35	46	44	51	48	302

* Note: Denotes all locations with three or less accidents from 1991-1997.

Source: Wisconsin Department of Transportation

The town of St. Germain had 302 motor vehicle accidents from 1991 to 1997. As expected, the roadways with the greatest traffic volumes (STH 70 and STH 155) also had the greatest number of motor vehicle accidents. STH 70 alone experienced 52.0% of the total number of motor vehicle accidents between 1991 and 1997, or 157 accidents. STH 155 was the location of 41 accidents or 13.6% of the town's motor vehicle accidents during this same period. As for local roads, the greatest number of traffic accidents occurred on Birchwood Dr., which was the location of 16 accidents, followed by Big St. Germain Drive on which there were eight accidents, and Old Highway 70 which had seven accidents reported. Figure 6-1 illustrates the number of accidents experienced within the town of St. Germain between 1991 and 1997.

**Figure 6-1
Motor Vehicle Accident Summary
Town of St. Germain
1991-1997**



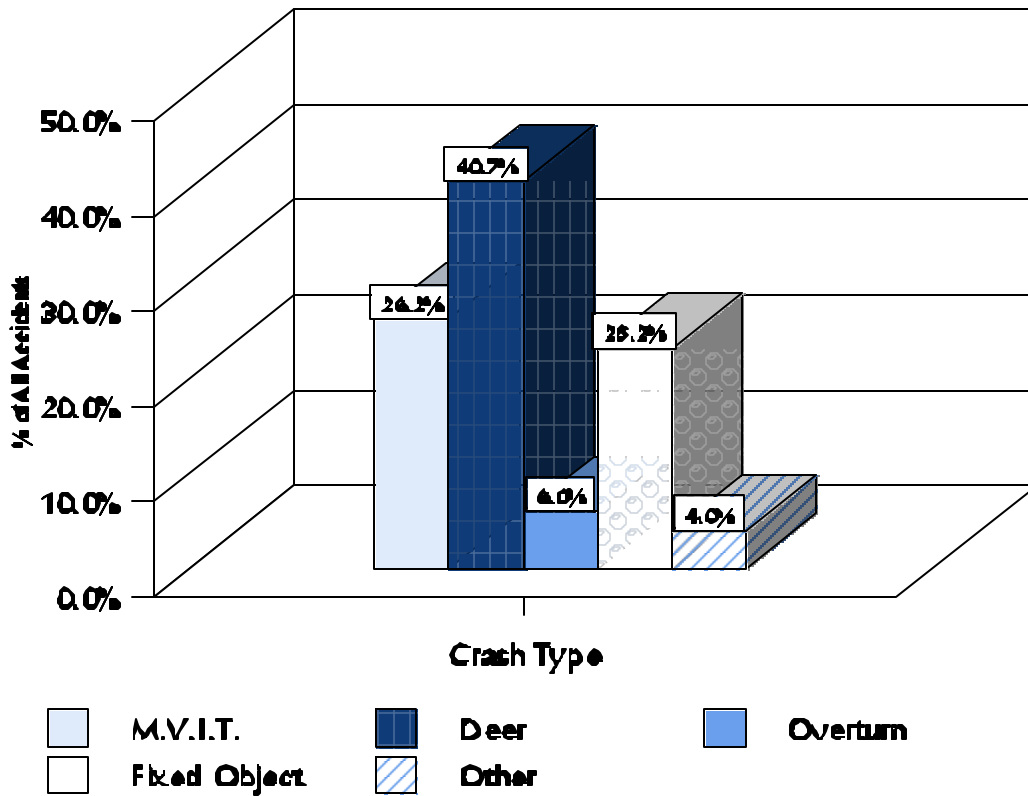
Source: Wisconsin Department of Transportation

In addition to analyzing the number of crashes per roadway, a review of the trends for intersection motor vehicle accidents can provide insight to problem areas within the town roadway system. Map 6-1 displays the locations of intersection accidents from 1991-1997. The intersections are classified by location and number of accidents, which range from one to four. The intersections of STH 70 and STH 155, STH 70 and CTH J, and STH 70 and Halberstadt Road had the greatest number of accidents with four each during the period between 1991 and 1997. Numerous intersection locations experienced one, two or three accidents during this time frame. It should be understood however, that roadways with

greater volumes of traffic have an increased risk of accidents, which is the case for the above mentioned roadways. The number accidents which occurred at each intersection are not significant enough to cause concern, even at those which experienced four accidents, as the number of accidents is spanned over a seven year time period.

Further analysis of motor vehicle accidents by type of crash provides greater detail into the cause of motor vehicle accidents within the town of St. Germain. Figure 6-2, Total Accidents by Crash Type, displays the types of crashes from 1991 to 1997.

**Figure 6-2
Total Accidents by Crash Type
Town of St. Germain
1991-1997**



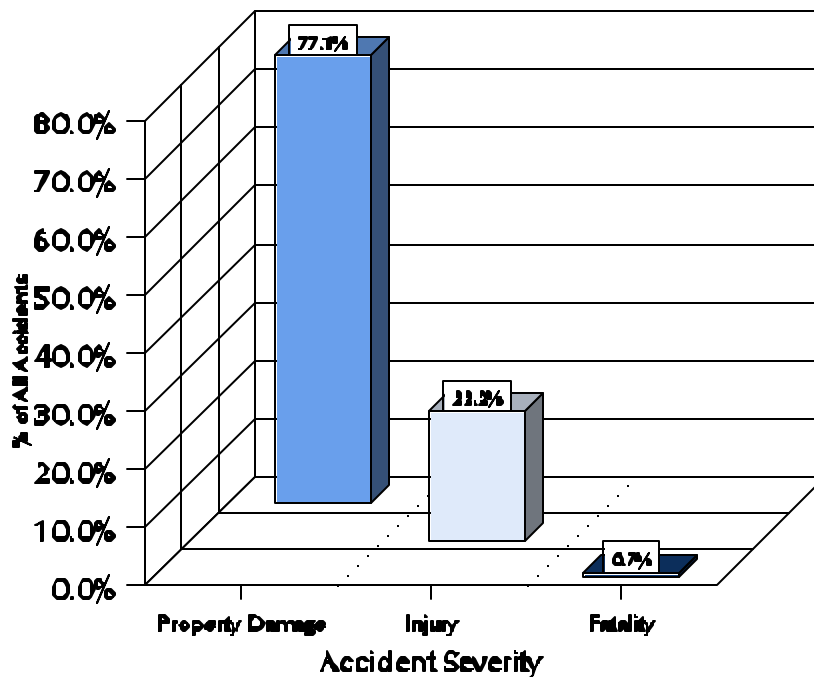
Source: Wisconsin Department of Transportation

The figure presents that the greatest attributable cause, or type of crash, from 1991-1997 was deer, comprising 40.7% of all accident types. The second most common crash type was motor vehicle in transit (M.V.I.T.), accounting for 26.2% of all accidents. Fixed objects such as trees, ditches, utility poles, traffic sign posts, mailboxes, etc., accounted for 23.2% of all accidents, followed by overturns

which included 6% of all accidents in the town. "Other" types of accidents including crash types such as objects on the road, objects not fixed, parked vehicles, other animals, etc., comprised the remaining 4% of all accidents in the town.

The severity of the accidents is also a concern in determining if roadway conditions are attributed to fatalities or injuries. Figure 6-3 displays the severity of all motor vehicle accidents from 1991 to 1997.

Figure 6-3
Severity of Motor Vehicle Accidents
Town of St. Germain
1991-1997



Source: Wisconsin Department of Transportation

6.4 Existing Street Conditions

To assess the condition of the town's roadways, the town of St. Germain has established two town road improvement programs. One is a budgeted surfacing program which allows for the surfacing of approximately five miles of town roads per year, and the other is a five year plan to surface gravel roads within the town.

6.5 Air Transportation

Air passenger services available to the town of St. Germain residents include the facilities in Woodruff and Rhinelander. The Lakeland Airport in Woodruff is located within 20 miles of St. Germain and provides a variety of services including flight instruction, airplane rides, air ambulance service, charter flights and commuter service to Chicago and Eagle River.

The nearest commercial air service available to town of St. Germain residents is the Rhinelander/Oneida County Airport located approximately 20 miles south of the town of St. Germain. The airport provides two commercial airline carriers: Northwest Airlinck and United Express. These two commercial carriers offer commuter flights to three midwest airports including those located in Detroit, Michigan; Minneapolis, Minnesota; and Chicago, Illinois. The total commercial passenger traffic for the Rhinelander/Oneida County Airport for 1997 was 70,000 persons. Airport administration estimates 1998 air traffic to reach or surpass 80,000 persons, and projects future flight volumes to continue to increase. Additional passenger services at the airport include private air charters through the Rhinelander Flying Service.

6.6 Rail Transportation

Railroad facilities do not exist in the town of St. Germain, and such facilities are not located in close enough proximity to the town to make use of rail service. The nearest railroad is Wisconsin Central Limited located in Rhinelander, approximately 20 miles from the town.

6.7 Planned Transportation Improvements

State Highway Projects

The only state highway project planned for the town of St. Germain by the WDOT is completing the resurfacing/maintenance of STH 155 and STH 70 from St. Germain into Sayner in 1999. The project is expected to have a life of six years, and therefore will possibly need more extensive work performed on it in the year 2005 or after.

On a general basis, however, the transportation district in which St. Germain is included has allocated funds for district wide special pavement marking and bridge approach slabs to occur by the year 2003.

County Highway Projects

The Vilas County Highway Commission indicated that to date, there are no proposed county highway improvements/projects upcoming within the town of St. Germain.

6.8 Transportation Recommendations

Based on the information presented in this chapter, several recommendations are provided to the town to improve its transportation system.

- ◆ The town should continue with its established road improvement programs (pavement management system). The implementation of a this type of "formalized" technique allows for more effective pavement management. In addition, it provides the town with a detailed, defensible document to assist in making informed decisions regarding road maintenance and repair. The town should make sure that the pavement management system include the following:
 - A detailed inventory and description of all the roads within the town.
 - A detailed surface condition survey of all the roads within the town.
 - Definition of the town's goals and objectives with respect to their road maintenance and repair.
 - Establishment of a long-term maintenance schedule which prioritizes road maintenance and repair needs based on condition evaluations.

If all of the above items are not included in the town's current pavement management programs, the town may want to consider using a different method of evaluating roadway conditions called the PASER (Pavement Surface Evaluation and Rating) system. PASER system manuals for both asphalt and gravel road surfaces can be obtained from:

Wisconsin Transportation Information Center UW-Madison
Room 741
432 North Lake Street
Madison, WI 53706
Phone: 800-442-4615

Specifically, this type of system would allow the town to 1) select appropriate treatments for each road section, 2) evaluate road sections competing for immediate attention, 3) anticipate future deterioration and apply inexpensive maintenance options while they are still feasible, and 4) justify budgets for roadway improvements that are adequate to keep the roads in good condition so they will remain less expensive over the long term. An example of the PASER rating system is provided in Appendix 6-1, along with a discussion of the benefits of pavement management, which it appears the town is already aware of and benefiting from.

- ◆ The town should consider purchasing software to assist in estimating the costs of road construction/maintenance. A program called "PASERWARE" is available through the Wisconsin Department of Transportation which allows for the easy determination of estimated road construction/maintenance costs. The program works in conjunction with a completed PASER evaluation to calculate costs. For further information regarding this program, contact

the Wisconsin Department of Transportation at the address provided above. A brief example of how PASERWARE is implemented is provided in Appendix 6-1.

- ◆ The town should adhere to the recommendations set forth by the Downtown Concept Plan with regards to parking and pedestrian access in the downtown area. Section 13, Downtown Development and Design, provides a more detailed discussion regarding parking and pedestrian accommodations in the downtown district.
- ◆ Pedestrian linkages, i.e. sidewalks and trails, must be given equal precedence to roadways in development proposals, especially within the downtown district.
- ◆ The town should limit the number of driveway access points on local streets to improve traffic flow and maintain safety. When constructed, driveways should be adequately spaced to minimize vehicle conflict.
- ◆ The town should require traffic impact studies for large-scale developments which have the potential to create on-site and off-site traffic problems.
- ◆ The town should consider developing an official map to govern the locations of future streets within the town.
- ◆ The town of St. Germain should ask to be placed on the public notification list of the District 7 Wisconsin Department of Transportation to have a more active role in long-range transportation planning and development in the area. This will be especially beneficial for future downtown planning with regards to projects proposed for STH 70 and STH 155, especially since it is projected that extensive work may be needed on these highways in the year 2005 or after.