

10 Growth Forecasts

Based on historic and current trends, projections can be built regarding population and housing units. The projections are used to estimate growth rates and land demand projections in the town, and how the land use plan can best accommodate anticipated residential and commercial growth.

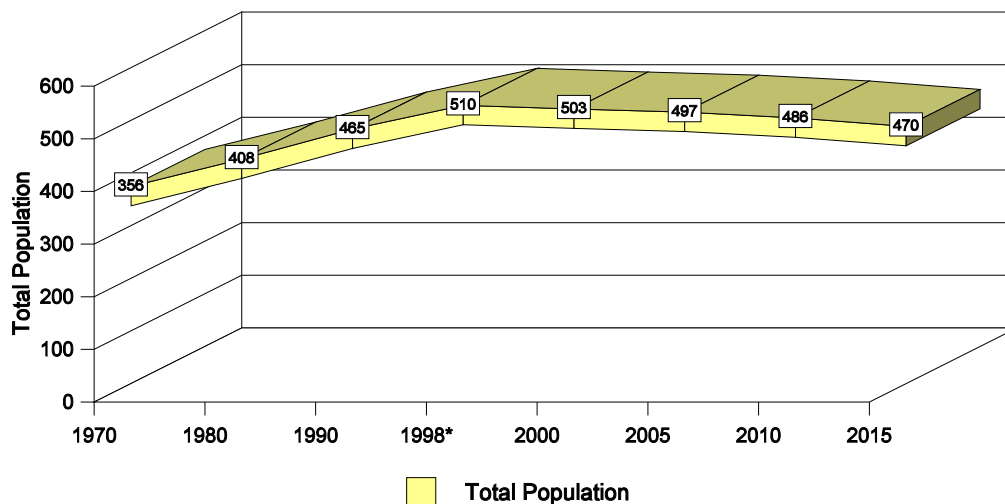
10.1 Population Trends and Projections

Wisconsin Department of Administration (WDOA) Projections

In 1993 the Wisconsin Department of Administration's (WDOA) Demographic Services Center prepared baseline population projections to the year 2015 for communities and counties of the state. The WDOA utilized a projection formula that calculates the annual numerical population change (yearly population estimates), and which estimated extended community population projections.

The projections prepared by the WDOA are presented in Figure 10-1. The WDOA projections predict Plum Lake will experience a population decline of 7.8% from the 1998 population estimate to the year 2015.

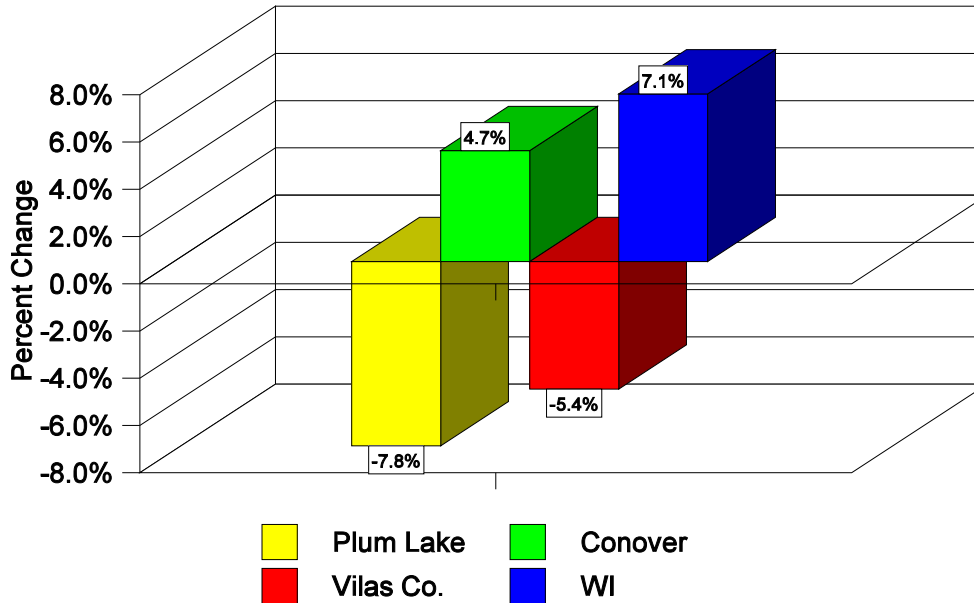
Figure 10-1
Population Trends and Projections
Town of Plum Lake
1970 - 2015



Source: Wisconsin Demographic Services Center *Official Municipal Population Projections 1990 - 2015*. *Wisconsin Department of Administration Official Population Estimate 1998.

Figure 10-2 presents a comparison of the projected percent change in population from the 1998 population estimate to the 2015 population projection for the towns of Plum Lake and Conover, Vilas County, and the state of Wisconsin.

**Figure 10-2
Comparative Population Projections
Town of Plum Lake and Selected Areas
1998-2015**



The comparison of the population projections from 1998 to 2015 presents some interesting information. The Town of Plum Lake and Vilas County are projected experience population declines between 1998 and 2015, however, their actual population changes will likely be different than the projection. While the projections by the WDOA are based on sophisticated modeling using population trends and economic conditions, the attractiveness of the area for year-round recreational opportunities and the ability of commerce and freedom of location afforded throughout the Internet will likely contradict these projections. The town can expect, as the regional trends have identified, that many of the seasonal/recreational homes will be converted to year-round retirement homes while new families continue to discover the abundance of recreational opportunities and natural beauty in the area.

Population Projections Based on Recent Building Permit Data

A comparative method of projecting population growth (1990 to 2015) is based on building permit activity trends. Plum Lake’s 19-year average of nine housing units per year was used to calculate the straight-line housing projection from 1998 to 2015. The population projections were derived by using the projected number of total housing units based on the 19-year permit

trend and calculating the total number of occupied units, which was 26.4% in 1990. The number of occupied units was then multiplied by the projected number of persons per household to establish the projected population. The results of these calculations is presented in Table 10-1 and compared to the WDOA forecast.

Table 10-1
Population Projections Based on Building Permit Activity Data
Town of Plum Lake
1990-2015

	1990	1998	2000	2005	2010	2015
Total Housing Units	693	786	804	849	894	939
Occupied Units (18.9% of total units)	183	208	212	224	236	248
Persons Per Household	2.54	2.46	2.44	2.36	2.27	2.20
Total Population	465	510	518	529	536	545

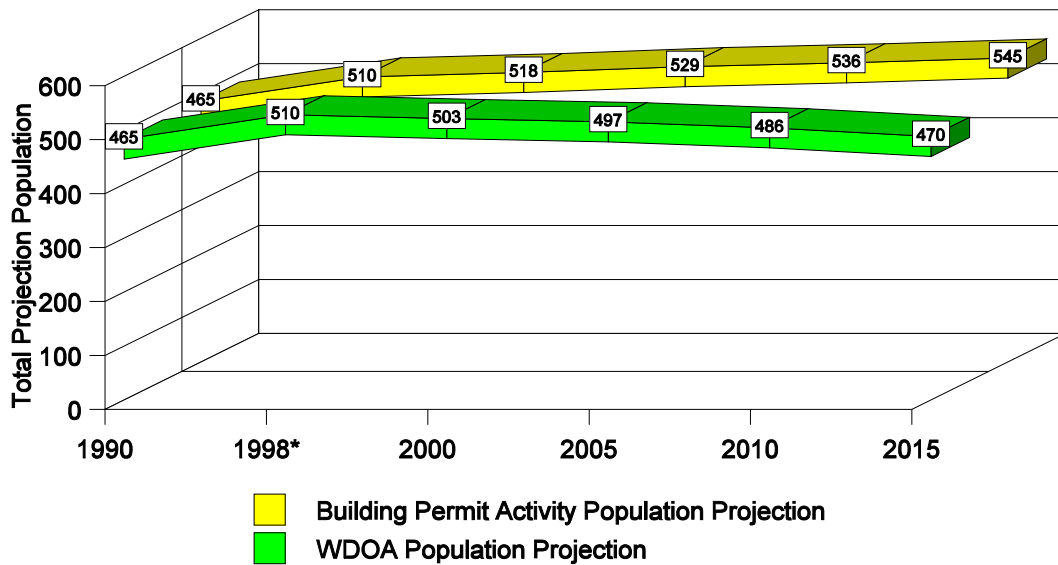
Source: 1990 U.S. Census Data; WDOA Wisconsin Household Projections by Household Types 1990-2015, whereby the increments used to obtain the projected number of persons per household for the Town of Plum Lake were based on Vilas County's projection increments; Vilas County Zoning Office, Building Statistics, 1980-1998; Foth & Van Dyke, 1998.

Based on the derived projection presented in Table 10-1, the Town of Plum Lake's population is projected to increase steadily from an estimated 510 persons in 1998 to 545 persons in the year 2015. This represents an increase of approximately 35 persons or 6.9%, over the 17-year period.

Comparative Population Projections

For comparison purposes, Figure 10-3 presents the WDOA population projections and the derived population projection based on the building permit activity trend. The figure depicts the differences between projections which should be used as parameters for the actual population growth in Plum Lake by 2015.

**Figure 10-3
Comparative Population Projections
Town of Plum Lake
1990-2015**



Source: WDOA *Official Municipal Population Projections*, Vilas County Annual Zoning Report 1990 - 1998, Foth & Van Dyke derived population projections 1999; *Official Population Estimates, WDOA Demographic Services Center, 1998.

Summary of Population Projections

Population projections calculated by the WDOA, and those derived by Foth & Van Dyke based on building permit activity, create a range which the Town of Plum Lake can use as a guide for future development needs and services. The WDOA population projection predicts a population *decline* of 7.8% between the 1998 estimate and the year 2015, while Foth and Van Dyke's building permit-based projection anticipates a 6.9% *increase* over the same period. This comparative trend analysis creates a range for which to plan by from a loss of 40 persons to a gain of 35 persons.

In comparison, during the eight-year period from 1990 through 1998, the town's population increased by 45 persons, representing a growth rate of 9.7%. Overall, the 1998 estimated population of 510 persons already exceeds the WDOA's population projections through the planning period. Therefore, it is anticipated that the actual population level will continue to increase ahead of the WDOA projection, and will likely follow a growth pattern similar to that projected by Foth & Van Dyke.

10.2 Housing Unit Projections

In conjunction with population projections, housing units projections are calculated to determine future land use needs and acreage demands as well as future demands on the town's public facilities and services. To begin the housing unit projections, a review of the average Plum Lake household size was completed relative to change in the projected persons per household. As presented in Table 10-2, the number of persons per occupied housing unit is projected to decline between the year 1990 and 2015 for the Town of Plum Lake.

Table 10-2
Projected Persons Per Household
Town of Plum Lake, Vilas County and Wisconsin
1990 - 2015

Year	1990	1995	2000	2005	2010	2015
Town of Plum Lake	2.54	2.52	2.44	2.36	2.27	2.20
Vilas County	2.40	2.38	2.30	2.22	2.13	2.06
State of Wisconsin	2.61	2.59	2.55	2.51	2.46	2.41

Source: Department of Administration, Division of Energy and Demographic Services, Demographic Services Center, Wisconsin Household Projections by Household Type 1990-2015, December 1993; U.S. Bureau of the Census, 1990 Census of Population and Housing, STF3A.

Note: The increments used to obtain the projected household size for the Town of Plum Lake were taken from Vilas County's projection increments according to the Demographic Services Center.

Housing Unit Projections Based on WDOA Data

Housing unit projections are an important element to understand potential land demands. Specifically, the projections are used to allocate required acreage to accommodate the expected increase in residential development, and to some degree the commercial development need, throughout the planning period.

Projections in Table 10-3 are based on the number of year-round housing units, which includes all occupied units and vacant units which are for sale, for rent, or rented or sold but not yet occupied. It does not include seasonal units which include those units for seasonal, recreational, occasional, or other use. The projections for seasonal housing units will be presented following the year-round housing projections. Table 10-3 provides the total year-round WDOA housing unit projections for the Town of Plum Lake.

Table 10-3
Projected Number of Year Round Housing Units
Town of Plum Lake
1990-2015

Characteristics	1990	1998*	2000	2005	2010	2015
Population	465	510	503	497	486	470
Person Per Household	2.54	2.46	2.44	2.36	2.27	2.20
Occupied Units (@91.0%)	183	208	206	211	214	214
Vacant Year Round Units (@9.0%)	18	20	20	21	21	21
Total Year Round Units	201	228	226	232	235	235

*1998 population estimate, WDOA Demographic Service Center.

Source: U.S. Bureau of the Census, 1990 Census of Population and Housing, STF1A; WDOA Demographic Service Center, Official Municipal Population Projections 1990-2015.

Note: The increments used to obtain the projected household size for the Town of Plum Lake were taken from Vilas County's projection increments according to the Demographic Services Center.

The important information presented in this projection table is the projected addition of seven year-round housing units between the estimated number of housing units in the town in 1998 and the year 2015, a 3% increase overall. Based on the 1998 estimates, growth is ahead of year 2000 projections.

Projected Seasonal and Recreational Housing Growth

Utilizing the year-round housing unit projections for the Town of Plum Lake from 1998 to 2015, projections for the number of seasonal housing units were calculated for the same period. These projections were presented in Table 10-4.

Similar to the year-round housing unit projections, 1998 seasonal housing units are ahead of year 2000 projections and are projected to increase by 3% for an additional 17 units by 2015. Overall, Plum Lake can expect the total number of housing units to slowly and gradually increase from an estimated 786 units in 1998 to approximately 810 total housing units in 2015 based on the WDOA information. This projection indicates the town will experience significantly less growth through the planning period than was experienced more recently between 1990 and 1998 whereby an estimated 93 units were added in the town, resulting in a 13.4% increase in housing units during this 8-year time period. These projections are presented graphically in Figure 10-4.

Table 10-4
Projected Number of Seasonal Housing Units
Town of Plum Lake
1990-2015

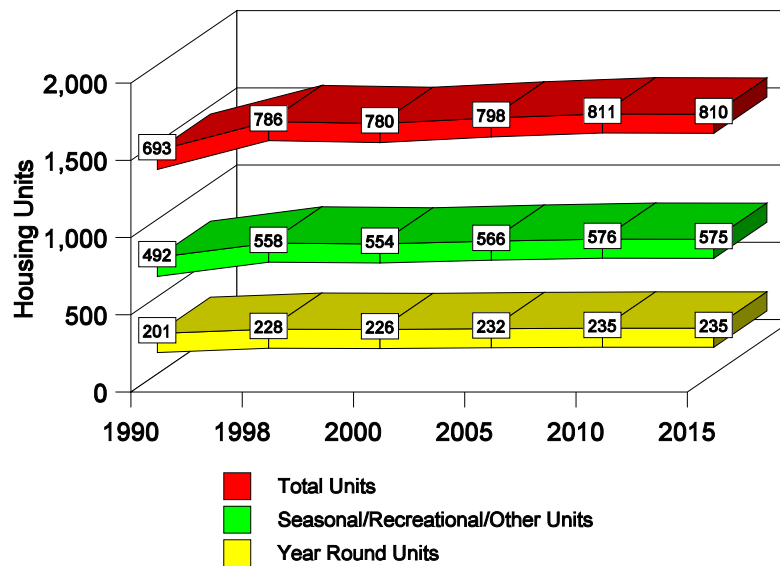
Housing Units	1990	1998*	2000	2005	2010	2015
Year Round Units (@ 29%)	201	228	226	232	235	235
Occupied Units	183	208	206	211	214	214
Vacant Year Round Units	18	20	20	21	21	21
Seasonal Units (@ 71%)	492	558	554	566	576	575
Total Housing Units	693	786	780	798	811	810

*1998 total housing unit estimate derived from 1991-98 building permits in addition to 1990 total housing units.

Source: U.S. Bureau of the Census, 1990 Census of Population and Housing, STF1A; WDOA Demographic Service Center, Official Municipal Population Projections 1990-2015.

Note: Projections based on actual 1990 census data where occupied units accounted for 26.4 percent, vacant year round 2.6 percent, and vacant other 71 percent of the total housing units in the Town of Plum Lake.

Figure 10-4
Projected Number of Housing Units
Town of Plum Lake
1990-2015



Source: U.S. Bureau of the Census, 1990 Census of Population and Housing, STF1A; WDOA Demographic Service Center, Official Municipal Population Projections 1990-2015.

Note: Projections based on actual 1990 census data where occupied units accounted for 26.4 percent, vacant year round 2.6 percent, and vacant other 71 percent of the total housing units in the Town of Plum Lake.

Housing Unit Projections Based on Recent Building Permit Activity

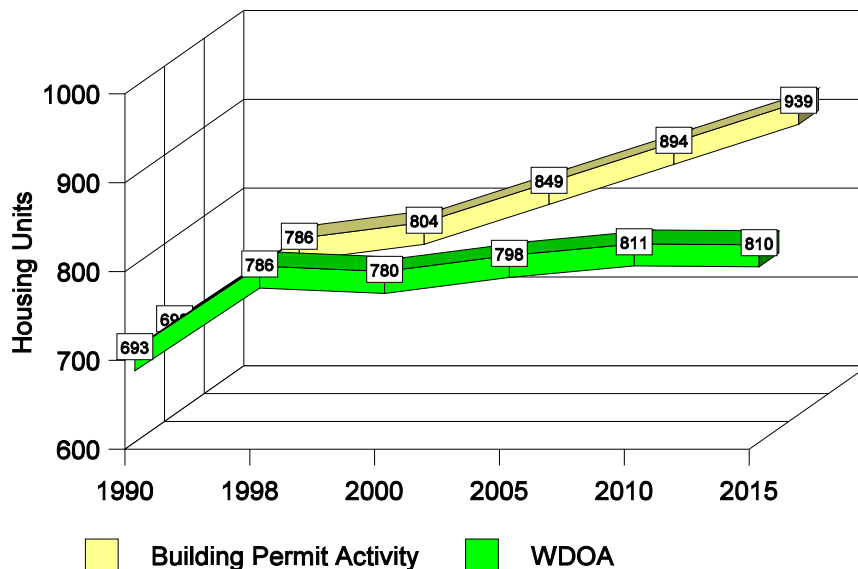
An additional measure that assists in the illustration of the growth in residential housing units for the Town of Plum Lake is an analysis of building permit activity trends. Table 9-4, shown previously in Section 9, displays the building permit activity in the town from 1980 through 1998 which includes single-family units, multi-family units, and mobile homes or trailers. The 19-year average of nine building permits for residential housing units issued annually in Plum Lake was used to calculate the number of additional housing units from 1998 to 2015. This projection is presented in Figure 10-5 in comparison with the WDOA projection.

The total number of housing units for Plum Lake is projected to reach 939 units by the year 2015, which is 129 more units than that projected based on the WDOA data.

Comparative Housing Projections

Figure 10-5 illustrates both the WDOA housing unit projections and the projection prepared based on recent building permit activity data. The figure depicts the differences between projections which should be used as parameters for the anticipated growth in housing units in Plum Lake through the year 2015.

Figure 10-5
Comparative Housing Unit Projections
Town of Plum Lake
1990-2015



Source: Vilas County Zoning Office Annual Reports, 1990 - 1998. U.S. Bureau of the Census, 1990 Census of Population and Housing, STF1A; WDOA Demographic Service Center, Official Municipal Population Projections 1990-2015.

The WDOA and building permit projections were then divided into the different types of housing units, including: single-family units, multi-family units, and other units. This division of the total housing unit projections by housing types uses the 1990 percentages of housing types provided in the 1990 Census of Population and Housing for the Town of Plum Lake.

Table 10-5
Projected Housing Units by Type
Town of Plum Lake
1990 - 2015

Type of Housing Units	WDOA						Building Permits				
	1990	1998	2000	2005	2010	2015	1998	2000	2005	2010	2015
Single Family* (92.2%)	639	725	719	736	748	747	725	741	783	824	866
Multi-Family (2.0%)	14	16	16	16	16	16	16	16	17	18	19
Other** (5.8%)	40	45	45	46	47	47	45	47	49	52	54
Total Units	693	786	780	798	811	810	786	804	849	894	939

* Single family includes attached units, detached units, and mobile homes or trailers.

**Other housing units refers to living quarters that are occupied, or could be occupied, which do not fall into any of the other categories. Examples include houseboats, railroad cars, campers, vans, etc.

Source: U.S. Census of Population and Housing 1990, STF 1 Table H41; Foth & Van Dyke housing unit projections calculated from Wisconsin Department of Administration population data.

The projection of total housing units by type of housing assumes the 1990 percent of housing units by type will remain the same until 2015. Single-family units account for the largest share of housing units with 92.2% of all housing units.

Summary of Housing Unit Projections

The projections prepared using building permit trends from 1980 to 1998 are more aggressive when compared to the projections prepared utilizing WDOA data. Utilizing the building permit activity trends, it is projected that Plum Lake will have 939 total housing units by the year 2015, an increase of 153 units (19.5%) from the estimated number of housing units in the town in 1998 (786). In contrast, WDOA data projects the town will have 810 total housing units, an increase of 24 units (3.1 %) over the same planning period. The projections vary by 129 housing units.

The WDOA estimated that there were 693 total housing units in 1990. However, between 1991 and 1998, there were 93 building permits issued for residential housing units in the Town of Plum Lake, resulting in an estimated 786 housing units in the town in 1998. This indicates that in 1998 the town had already surpassed the WDOA housing unit projection for the year 2000. Therefore, it is likely that the projected number of housing units for the town will be closer to the number of housing units as projected utilizing building permit activity trends, but likely not as high.

10.3 Residential Land Use Acreage Needs

Projections of future land use types are a fundamental element in the development of the Preferred Land Use Map. To achieve "managed growth", demands for acreage to accommodate different land use types must be forecasted and ultimately located on the Preferred Land Use Map.

In the Town of Plum Lake, adequate acreage for planned residential is required to accommodate foreseeable needs and react to anticipated demands.

To accomplish this task, housing unit projections were utilized to develop Table 10-6. Table 10-6 compares anticipated residential acreage demands based on WDOA and building permit projections. The comparison timeline covers a 25 year period from 1990-2015 and is based on the composition of 100% single family units, which includes mobile homes. As a percentage of land use, single family residential occupies over 92.2 percent of the existing residential land use in the town. The densities of the unit projections were based on input from the Plum Lake Land Use Planning Committee and assumptions relative to the location of the anticipated development. The building permit forecast was based on the average number of residential housing units (10 new units) that were permitted in the Town of Plum Lake over the last 19 years (1980-1998). The WDOA projection was based on official census projections.

**Table 10-6
Residential Acreage Projections
1998-2015**

Parcel Size	Estimated % of Developments	WDOA		Building Permit	
		Potential Dwelling Units	Acreage Requirements	Potential Dwelling Units	Acreage Requirements
10 acres or more	10%	2.0	20.0	15.0	150.0
5.0 acres	10%	2.0	10.0	15.0	75.0
2.5 acres	30%	7.0	17.5	46.0	115.0
1.5 acres	30%	8.0	12.0	46.0	69.0
1.0 acre or less	20%	5.0	5.0	31.0	31.0
Total	100%	24.0	64.5	153.0	440.0

Source: WDOA U.S. Bureau of the Census, 1990 Census of Population and Housing, STF1A; WDOA Demographic Service Center, Official Municipal Housing Unit Projections 1990-2015. Foth & Van Dyke Estimates & Projections

* Required units 1990-2015.

Based on Table 10-6, the Town of Plum Lake could see a residential acreage need range of between 64.0 acres and 440.0 acres from 1998-2015. The acreage associated with residential need is based on assumptions of continued growth and development occurring in accordance with the percentages allocated in Table 10-6. It is likely that the projected number of housing units for the town will be closer to the number of housing units as projected utilizing building permit activity trends, but likely not as high.

10.4 Commercial Land Use Acreage Needs

Given the Town of Plum Lake's high seasonal residential and relatively low commercial base in the town, commercial need can be difficult to forecast. To that end, the Town of Plum Lake Land Use Plan used two different alternatives to forecast commercial acreage need. The first option calculated a percentage of commercial land use to total land use to develop a commercial (business) development ratio. The development ratio option anticipates a direct relationship to service demands and population levels. The second option for forecasting commercial land demand projections consisted of analyzing the average number of commercial building permits issued over the last 19 years (1980-1998). The average number of permits were straight-line forecasted throughout 2015, with each permit attributed a land acreage to calculate demands and potential property conversions to commercial use.

**Table 10-7
Commercial Acreage Projections
1998-2015**

Option 1: Acreage - Population Ratio¹

Existing Commercial ² Acreage - 1998	Existing Population 1998	WDOA Population Projection		Building Permit Population Projection	
		Projected Commercial Acreage 2015	Projected Population 2015	Projected Commercial Acreage 2015	Projected Population 2015
165.3	510	152.3 (-13 ac)	470	176.6 (11.3 ac)	545

¹Ratio = Acreage divided by population.

²Includes home based business.

Option 2: Commercial Permit Forecast

Total Commercial Building Permits 1980-1998	Potential Commercial Building Permits 1999-2015	Acreage Required 2.0 Ac/Permit
10	9	18

The acreage-population ratio (Option 1) anticipates a loss of commercial acreage as it is based on forecasted population levels that have already been exceeded by the 1998 estimated population. Therefore, Option 1 may not be a reliable indicator of future commercial land needs. Option 2, based on commercial permits, anticipates 11.3 acres of commercial land may be needed if future permit activity develops at one unit per two acres and mirrors past volume. The town could experience population increases without increases in commercial acreage, therefore the forecast is only advisory.

The plan acknowledges, based on the existing location and type of business, continued business growth in Plum Lake most likely will be home-based businesses, followed by service related business. Specific areas have been targeted for future community and highway commercial, as well as light industrial uses. Please reference Section 12.4, Growth Accommodations, that discusses future commercial areas in the expanded planned downtown district in Sayner.