



Comparison of Oshtemo Township's ISO Evaluation. 1999 vs. 2012

*Summary Report for the
Oshtemo Township Board.*

October 9, 2012



WHAT IS ISO?

The Insurance Services Office (ISO) collects and evaluates information from communities in the United States on their structural fire suppression capabilities. Using nationally recognized standards developed by the National Fire Protection Association (NFPA) and the American Water Works Association, ISO's Public Protection Classification (PPC) program evaluates communities according to a uniform set of criteria. The four criteria used in determining a community's PPC are:

- **Receiving and Handling Fire Alarms**, includes telephone systems, telephone lines, staffing, and dispatching systems.
- **Fire Department**, includes equipment, staffing, training, and geographic distribution of fire companies.
- **Water Supply**, includes the condition and maintenance of hydrants, alternative water supply operations, and a careful evaluation of the amount of available water compared with the amount needed to suppress fires at a rate of up to 3,500 gallons per minute (gpm).
- **Needed Fire Flows**, which are representative building locations used to determine the theoretical amount of water necessary for fire suppression purposes.

The fire department's grade entails only 50% of this evaluation. The remaining is split between the dispatch center (Kalamazoo County Sheriff Department (KCSD)), which is 10%, while the water system (Kalamazoo City Water Department) encompasses the remaining 40%. (See figure 1)

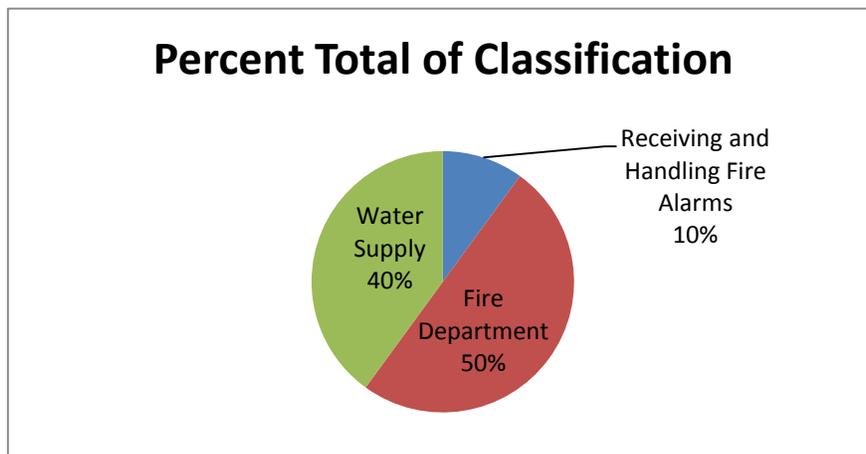


Figure 1

ISO GRADING SCALE

The final compilation of these three components results in an overall score, or Class, ranging from 1 to 10. A Class 1 rating represents an exemplary fire suppression program, while a Class 10 rating indicates that the area's fire suppression program does not meet ISO's minimum criteria. Figure 2 illustrates the credit points necessary for each classification.

Note: There are only 61 communities in the United States that have obtained a class 1 rating and none are in Michigan.

Class	Credit Points		
1	90.00	or	more
2	80.00	to	89.99
3	70.00	to	79.99
4	60.00	to	69.99
5	50.00	to	59.99
6	40.00	to	49.99
7	30.00	to	39.99
8	20.00	to	29.99
9	10.00	to	19.99
10	0	to	9.99

Figure 2

It is imperative for readers of this report to understand that ISO evaluates **ONLY** the community's ability to suppress hostile fires involving structures. They give no credit or recognition of the other vital services this department provides such as emergency medical care, technical rescue, hazardous materials mitigation, response to natural or manmade disasters or even smaller fires such as wildland or vehicles. Interestingly, the ISO system also fails to credit cost effective preventative efforts such as public fire prevention education and fire code enforcement.

A COMPARISON OF OSHTEMO'S RATING IN 1999 AND 2012

HOW DID OSHTEMO RATE IN 1999?

Oshtemo was last evaluated in 1999 which resulted in a split rating of our township.

With Fire Hydrants: The first area is where water is immediately available from nearby fire hydrants. This is commonly referred to as being a "hydranted" area. A class 4 rating was awarded to properties in the community that meet the criteria listed below.

1. Are located within five (5) road miles of a fire station.
Note: Oshtemo has three fire stations.
2. Have a needed fire flow of less than 3,500 gallons per minute (GPM).
Note: Most homes fall well within this requirement.
3. Are within 1,000 feet of a fire hydrant.

The rating prior to 1999 was a class 6 so this was a dramatic improvement for the Township's residents.

No Fire Hydrants: A class 9 was placed on the rest of our community where water must be trucked to the scene via fire engines (tankers / tenders).

HOW DOES OSHTEMO RATE IN 2012?

ISO's protocol is to evaluate each community every 10 years or when their staffing allows. Oshtemo's most recent evaluation was this year. A summary of the 2012 evaluation shows some improvement to both the hydranted areas as well as the rural regions.

SUMMARY OF 2012 OSHTEMO EVALUATION:

With Fire Hydrants: In 1999 we had received a class 4 rating with a score of 60.86 squeaking us in by just .86 points. The new rating of 63.11 has hardened our position in the class 4 category. Although our improvement was not enough to push us into the next higher class, it represents a 30% improvement within class 4.

No Fire Hydrants:

The 2012 evaluation has resulted in an improved public protection classification from a class 9 to a class 8B. Class 8B is a special classification that recognizes a superior level of fire protection in an otherwise Class 9 area. It is designed to represent a fire protection delivery system that is superior except for a lack of a water supply system (fire hydrants). Although not listed in ISOs grading scale (Figure 2), it lays between class 8 and 9. The actual scores received in 1999 and 2012 are shown in Table 1.

Table 1 - Summary Comparison 1999 vs. 2012

<u>Feature</u>	<u>Credit Earned 1999</u>	<u>Credit Earned 2012</u>	<u>Credit Available</u>
Receiving & Handling Alarms	6.65	7.46	10
Fire Department	26.12	27.25	50
Water Supply	35.28	35.00	40
Divergence *	-7.19	-6.60	-
Total Credit	60.86	63.11	100

*** Divergence:**

The Divergence factor mathematically reduces the total score based upon the relative difference between the fire department and water supply scores. In our case, the water supply score is better than the fire department, therefore the final score received a reduction of 6.60.

A SUMMARY OF THE COMPARATIVE SCORES IN EACH CATEGORY FOR 1999 AND 2012

The 2012 ISO evaluation found that Oshtemo Township improved in all the sub categories shown in Table 2 with the exception of the features noted below.

Receiving and Handling Alarms (Dispatch Center):

In our case, the category of Receiving and Handling Alarms is a function of the Kalamazoo County Sheriff Department's 911 center also known as a Public Safety Answering Point (PSAP). Oshtemo Township has absolutely no control over this PSAP. There was a significant downturn in the score given to operators (53% lower in 2012) yet countered by an even greater upswing in dispatch circuits (131%). The bottom line is that there was a gain of .81 credits or 12% which contributed to the increase in our overall score.

Fire Department:

Another area where points were lost was in the fire department feature of ladder service and distribution. The 2012 ladder feature score was 26% lower than in 1999 and in the 2012 distribution feature score was 56% lower than in 1999. The reason for both of these loses is tied to the growth of Oshtemo. In 1999 the evaluation of our township noted the need for only one ladder company. Due to our remarkable growth, we are now required to have two ladder companies to receive full credit. The same applies to the distribution of our fire stations. The growth of structures within Oshtemo without adding fire stations resulted in this lower score.

It should also be noted that in 2012 we replaced our only ladder truck which was then 28 years old. Had we chosen not to do that, and thus abandon providing ladder service entirely, we would have lost all credits for

ladder and reserve ladder service. In addition, there would have been added losses in the features of distribution, pumping capacity all resulting in an even greater divergence penalty. The resulting final score would have assuredly dropped us at least one full class if not two.

Water Supply:

Although the credit for water supply went down 0.28 credit points, it actually helped to improve our final total credit score by reducing the divergence penalty 0.59 points.

From a numbers standpoint, this looks good on paper. However, further evaluation discovers that this decline in the water supply score is in the inspection and condition feature. With the maximum available credit of 3.00, a 0.60 credit point drop actually equates to a 25% loss. In the absence of specifically known casual factors, it is reasonably theorized that the water department has reduced its field maintenance program.

Oshtemo Township has no authority over the activities of Kalamazoo’s water department. It is also realized that when we are facing a rapidly progressing fire and this water system fails unexpectedly, a negative outcome is foreseeable and the initial criticism will unjustifiably befall the Township.

Table 2 provides a detailed description of the credits earned by year, the total credits available, the percentage of available credits earned in 2012, and a comparison of the 1999 and 2012 results in each category and feature.

Table 2 - Details of Results

Feature	Credits earned by year		Total Available Credit	% of Credit Received in 2012	Comparing 1999 to 2012	
	1999	2012			Numerical credit change	% change
Receiving and Handling Alarms						
Telephone Credit	1.9	2	2	100%	0.1	5%
Operators	3	1.41	3	47%	-1.59	-53%
Dispatch Circuits	1.75	4.05	5	81%	2.3	131%
Section Total	6.65	7.46	10	75%	0.81	12%
Fire Department						
Engine Companies	8.69	9.84	10	98%	1.15	13%
Reserve Pumpers	0.88	0.78	1	78%	-0.1	-11%
Pumper Capacity	5	5	5	100%	0	0%
Ladder Service	3.01	1.72	5	34%	-1.29	-43%
Reserve Ladders & Service Trucks	0.09	0.33	1	33%	0.24	267%
Distribution	1.97	1.1	4	28%	-0.87	-44%
Company Personnel	2.88	3.17	15	21%	0.29	10%
Training	3.6	5.31	9	59%	1.71	48%
Section Total	26.12	27.25	50	55%	1.13	4%
Water Supply						
Supply System	30.88	31.2	35	89%	0.32	1%
Hydrants	2	2	2	100%	0	0%
Inspection and Condition	2.4	1.8	3	60%	-0.6	-25%
Section Total	35.28	35	40	88%	-0.28	-1%
Divergence *	-7.19	-6.6			0.59	-8%
Total Credit	60.86	63.11	100	63%	2.25	4%

HOW OSHTEMO COMPARES TO THE REST OF MICHIGAN.

It is important to note that Oshtemo Township is performing at a relatively high degree of efficiency. Considering that our chosen staffing model is primarily based on the availability of paid on-call Oshtemo Township citizens, we are accomplishing our mission at a relatively low cost yet reaching a high degree of performance.

That performance is emphasized by the fact that we have significantly strengthened our public protection class 4 (PPC) rating for areas with fire hydrants. When compared to Michigan's 1,987 rated fire departments, Oshtemo Township has placed in a group that is in the top 6 percent of all rated departments. (See Figure #3 below)

Our improvement from a PPC class 9 to a PPC 8B for areas without fire hydrants is also a blessing to our residents and a credit to our Department. Figure 3 shows that the single largest PPC is class 9. Making this transitional leap places Oshtemo in a group at the 37th percentile. This is significant for Oshtemo yet possibly not the final stop.

We are continuing to work with ISO to seek further improvement of this classification through an in-depth evaluation of our water shuttling capability. Since Oshtemo does not have water tankers in its fleet, this will involve the strong supportive efforts by our neighboring jurisdictions of Texas, Alamo and Mattawan.

The Figure 3 below shows the number of Michigan fire departments within each classification.

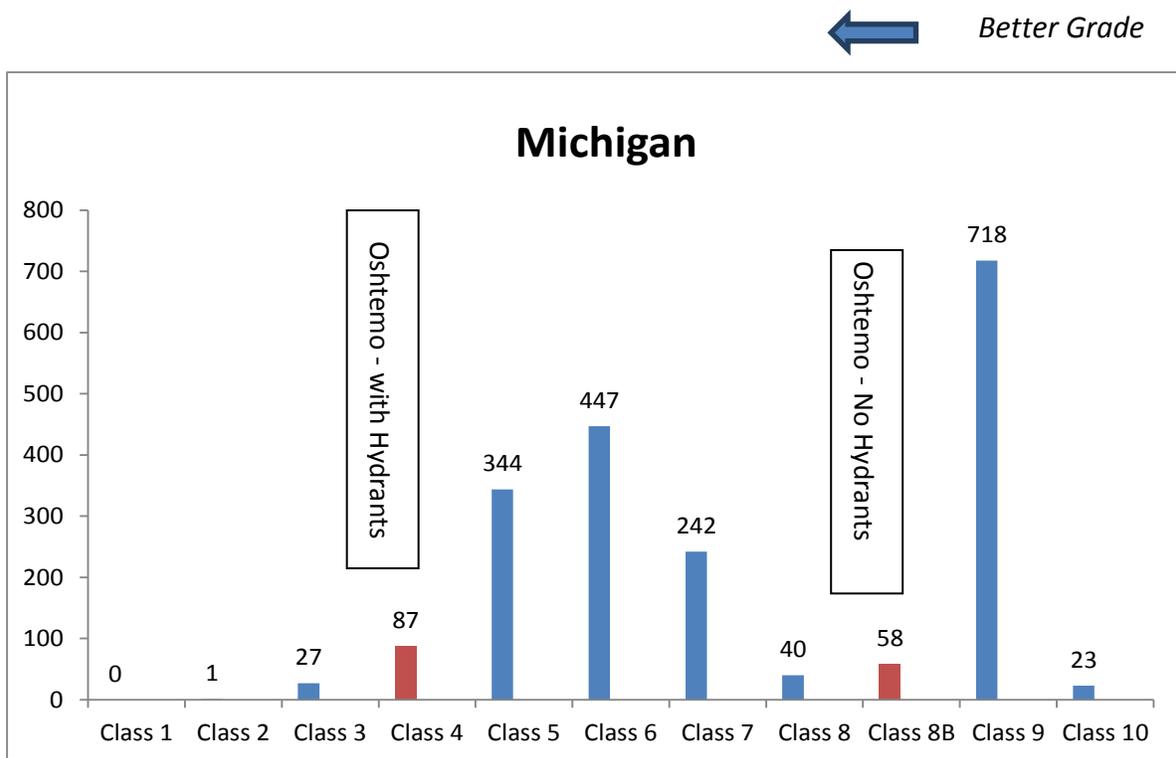


Figure 3

CLOSING STATEMENTS

This evaluation is a testament to the immediate readiness of your Fire and Rescue Department for this moment in time. However, it is also a reflection of years of preparation by current and former elected officials, citizens who have become department members, and the unwavering support of a strong community base that appreciates the excellent quality of life found in Oshtemo Charter Township.

ISO Public Protection Class 4 / 8B



*Serving you with
Respect, Responsibility and Pride.*