

Item 580.A.1 "Facilities and Aids" (continued)	Earned Credit	Credit Available
<p>Training Area* For maximum credit, a fire department training area of at least 2.0 acres in size should be available for single and multi-company drills.</p> <p>A training area of 0 acres is provided. Training is conducted on streets or other areas.</p>	10.00	10
Review of Facilities and Aids (FA) total:	13.00	35
Item 580.A.2 "Use"		
<p>a. Half-day (3 hours) drills, 8 per year (0.05 each) For maximum credit, all members should participate in 8 half-day, single company drills.</p> <p>There were an average of 8.00 single company half-day drills.</p>	0.40	0.40
<p>b. Half-day (3 hours) multiple-company drills, 4 per year (0.10 each): For maximum credit, all members should participate in 4 half-day multiple company drills.</p> <p>There were an average of 4.00 multiple company drills.</p>	0.40	0.40
<p>c. Night drills (3 hours), 2 per year (0.10 each): For maximum credit, all members should participate in two 3-hour night drills per year.</p> <p>There were an average of 2.00 night drills.</p>	0.20	0.20
Factor for "Use" subtotal -	1.00	
Average percentage participating in drills -	72%	
Factor for Use (FU):	0.72	1.0
Review of Facilities and Aids (FA) total:	13.00	35
"Facilities, Aids and Use" subtotal -	9.36	
Deduction for incomplete or missing records -	-0.00	

Note: A single company drill may receive credit under a and c; A multiple-company drill may receive credit under a, b, and c.

***Note:** If the Drill Tower, Fire Building, Combustible Liquids Pit or Training Area do not achieve at least 10 points, Credit will be given for the use of buildings, streets and open areas (other than formal training grounds), but not both.

After the items under Item "Facilities and Aids" are summed and the factor for "Use" is established, the credit for "Facilities, Aids and Use" is determined by multiplying the total possible points (35 points) by the factor for "Use" (up to 1.0) and subtracting any deductions for record keeping to determine the credit.

The points calculated for "Facilities, Aids and Use" for Prairie du Chien resulted in the following: **Facilities, Aids and Use = 9.36 points**

Specialized Training	Earned Credit	Credit Available
<p>B. Company Training</p> <p>For maximum credit, each firefighter should receive 20 hours per month in structure fire related subjects as outlined in NFPA 1001.</p> <p>There was an average of 4.00 hours per month of company training received by company members and participation was 72% of those eligible to participate.</p> <p>0.00 points will be deducted for missing or incomplete records.</p>	3.60	25
<p>C. Classes for Officers</p> <p>For maximum credit, each officer should receive 2 days of leadership, management, supervisory, and incident management system training per year as outlined in NFPA 1021.</p> <p>There was an average of 2.00 days devoted to officer classes and participation is 88% of those eligible to participate.</p> <p>0.00 points will be deducted for missing or incomplete records.</p>	13.20	15
<p>D. Driver and Operator Training</p> <p>For maximum credit, each driver and operator should receive 4 half-day sessions of driver/operator training per year in accordance with NFPA 1002 and NFPA 1451.</p> <p>There were 2.00 half-day sessions received per year by drivers and operators and participation was 100% of those eligible to participate.</p> <p>0.00 points will be deducted for missing or incomplete records.</p>	1.00	2
<p>E. New Driver and Operator Training</p> <p>For maximum credit, each new driver and operator should receive 40 hours of driver/operator training per year in accordance with NFPA 1002 and NFPA 1451.</p> <p>There were 20.00 hours received per year by new drivers and operators and participation was 100% of those eligible to participate.</p> <p>0.00 points will be deducted for missing or incomplete records.</p>	1.00	2
<p>F. Training on Hazardous Materials</p> <p>For maximum credit, each firefighter should receive ½ day of training for incidents involving hazardous materials in accordance with NFPA 472.</p> <p>There were 0.70 days of training received per year and participation was 71% of those eligible to participate.</p> <p>0.00 points will be deducted for missing or incomplete records.</p>	0.50	1

Specialized Training (continued)	Earned Credit	Credit Available
<p>G. Recruit Training</p> <p>For maximum credit, each firefighter should receive 240 hours of structure fire related training in accordance with NFPA 1001 within the first year of employment or tenure.</p> <p>There were 60.00 hours received per year and participation was 100% of those eligible to participate.</p> <p>0.00 points will be deducted for missing or incomplete records.</p>	1.25	5
<p>H. Pre-Fire Planning Inspections</p> <p>For maximum credit, pre-fire planning inspections of each commercial, industrial, institutional, and other similar type building (all buildings except 1-4 family dwellings) should be made twice per year by company members. Records of inspections should include up-to date notes and sketches.</p> <p>There are 7.00% of the buildings inspected at a yearly frequency of 0.50. Participation is 37.00%.</p> <p>0.00 points will be deducted for missing or incomplete records.</p>	0.45	15

To determine your credit for Training, the points credited in Item 580.A through 580.H are summed.

For maximum credit, records should be kept of all training. NFPA 1401 outlines the appropriate manner in which to accomplish this. A deduction of up to 20 points (20% for each Item) is made for a lack of records. A deduction of 10% is made for incomplete records and 20% for no records for each sub item.

A total of 0.00 points is deducted to reflect a deficiency of record keeping for Prairie du Chien.

Finally, this sum is divided by 100 and then multiplied by the 9 points available for the "Credit for Training (CT)". These points calculated for Prairie du Chien resulted in the following:

CT = 2.70 points

The final step in determining the Credit for Fire Department is to add up the following eight components:

Item	Earned Credit	Credit Available
513. Credit for Engine Companies (CEC)	9.71	10
523. Credit for Reserve Pumpers (CRP)	0.64	1
532. Credit for Pumper Capacity (CPC)	5.00	5
549. Credit for Ladder Service (CLS)	4.55	5
553. Credit for Reserve Ladder and Service Trucks (CRLS)	0.11	1
561. Credit for Distribution (CD)	3.07	4
571. Credit for Company Personnel (CCP)	5.45	15
581. Credit for Training (CT)	2.70	9
Total Credit	31.23	50

If the score Prairie du Chien achieved for the fire department was translated into a 100-point scale instead of the 50-points actually used, the relative Fire Suppression Rating Schedule classification for this section of the review would be a (relative) **Class 4**.

Water Supply

Forty percent of a community's overall score is based on the adequacy of the water supply system. The ISO field representative evaluated:

- representative building locations in the city to determine the theoretical amount of water necessary for fire suppression purposes (needed fire flow up to 3,500 gpm)
- fire hydrants: size, type and installation to determine the capacity of the fire hydrants
- hydrants: inspection and condition to review the fire hydrant inspection frequency, the completeness of the inspections and the condition of the hydrants

Item 616 – Credit for Supply System

The first item reviewed was Item 616 “Credit for Supply System (CSS)”. This item reviews the rate of flow that can be credited at each of the needed fire flow tests locations considering the supply works capacity, the main capacity and the hydrant distribution. The lowest flow rate of these items is credited for each representative location reviewed. A water system capable of delivering 250 gpm or more for a period of two hours plus consumption at the maximum daily rate at the fire location is considered minimum in the ISO review.

To determine the score for Item 616 “Credit for Supply System”, three sub items (Item 612 “Supply Works Capacity”, Item 613 “Main Capacity” and Item 614 “Hydrant Distribution”) need to be evaluated.

We calculate the supply works capacity for each representative needed fire flow test location. In doing this, ISO considers a variety of water supply sources. These would include public water supplies, emergency supplies (usually accessed from neighboring water systems), suction supplies (usually evidenced by dry hydrant installations near a river, lake or other body of water), and a supply developed by a fire department using large diameter hose or vehicles to shuttle water from a source of supply to a fire site. The result is expressed in gallons per minute (gpm).

The normal ability of the distribution system to deliver Needed Fire Flows (NFF) at the selected building locations is reviewed. The results of a flow test at a representative test location will indicate the ability of the water mains (or fire department in the case of fire department supplies) to carry water to that location.

The hydrant distribution is reviewed within 1,000 feet of representative test locations measured as hose can be laid by apparatus. Credit is allowed up to 1,000 gpm from each hydrant within 300 feet of the location, 670 gpm from hydrants within 301 to 600 feet of the location and 250 gpm from hydrants within 601 to 1,000 feet of the location. The normal distribution of hydrants in the vicinity of test locations considered in Items 612 and 613 are evaluated. These hydrant distribution allowances are based upon a standard fire hydrant with a pumper outlet conforming to the American Water Works Association (AWWA) Standard C-502 or C-503. In addition, they are based upon a standard complement of 1,200 feet of 2½ inch fire hose. If a hose diameter greater than 2½ inch is carried by all in-service pumpers, the hydrant distribution credit may be greater than that stated above due to the reduced friction loss in the larger diameter hose.

Where there are 2 or more systems or services distributing water at the same location, credit is given on the basis of the joint protection provided by all systems and services available.

- A. Sub-standard type hydrants with at least one fire department outlet are considered if they are capable of delivering at least 250 gpm.
- B. A cistern or other suction point must be capable of supplying 250 gpm for at least 2 hours to be recognized.
- C. The maximum credit for a hydrant may be limited by A or B above and is limited by the number and size of outlets as follows:

	MAXIMUM CREDIT
At least one pumper outlet	1,000 gpm
Two or more hose outlets, no pumper outlet	750 gpm
One hose outlet only	500 gpm

For maximum credit in the FSRS, the needed fire flows should be available at each location in the district. Needed fire flows of 2,500 gpm or less should be available for 2 hours; and needed fire flows of 3,000 and 3,500 gpm should be obtainable for 3 hours.

A variety of buildings were used as representative building locations in the city to determine the theoretical amount of water necessary for fire suppression purposes (needed fire flow).

The points calculated for Prairie du Chien resulted in the following:

CSS = 33.89

Item 621 – Credit for Hydrants

The second item reviewed is Item 621 “Credit for Hydrants (CH)”. This item reviews the number of fire hydrants of each type compared with the total number of hydrants.

For maximum credit in the FSRS, all hydrants should have a pumper outlet, 6 inch or larger branch connection, uniform size operating nut and should operate in a uniform direction in accordance with AWWA C-502 *Standard for Dry-Barrel Fire Hydrants* or AWWA C-503 *Standard for Wet-Barrel Fire Hydrants*.

For maximum credit, all suction supply points should be equipped with a dry hydrant with a 6 inch or larger pipe and fittings, a minimum number of 90 degree elbows (preferably no more than two), and suction screen placement so that the dry hydrant will deliver the design capacity (usually 1,000 gpm) as specified in NFPA 1142, *Standard on Water Supplies for Suburban and Rural Fire Fighting*.

There are a total of 306 hydrants in the city.

620. Hydrants, - Size, Type and Installation	Earned Credit	Credit Available
A. With a 6-inch or larger branch and a pumper outlet with or without 2½-inch outlets There are 256 hydrants that have a 6-inch or larger branch and a pumper outlet.	83.66	100
B. With a 6-inch or larger branch and no pumper outlet but two or more 2½-inch outlets, or with a small foot valve, or with a small barrel There are 50 hydrants that have a 6-inch or larger branch but no pumper outlet, or have a small foot valve or with a small barrel.	12.25	75
C. With only a 2½-inch outlet There are 0 hydrants with only a 2½-inch outlet.	0.00	25
D. With less than a 6-inch branch There are 0 hydrants with less than a 6-inch branch connection.	0.00	25
E. Flush Type There are 0 hydrants that are of the flush type.	0.00	25
F. Cistern or suction point There are 0 locations that are considered a cistern and/or a suction point.	0.00	25
Total	95.92	100

Note 1: 2 points are deducted for each 10 percent of the hydrants that are not operating in a uniform direction of the majority, or with an operating nut different from the majority.

Of the 306 hydrants that were reviewed, 0% did not operate in the direction of the majority and 0% had a different size operating nut.

Note 2: 10 points are deducted if more than one type hose thread is used for pumper or hose outlets. Of the 306 hydrants that were reviewed, none had a different hose thread than the majority. There were no points deducted for this item.

To determine your "Credit for Hydrants", the points credited in Item 620.A through 680.F are summed. A deduction of 2 points is made for each 10% of hydrants not operating in a uniform direction of the majority, or with an operating nut different from the majority. A deduction of 10 points is also made if more than one thread is used for pumper or hose outlets. The sum is divided by 100 and then multiplied by the 2 points available for the "Credit for Hydrants (CH)". The points calculated for Prairie du Chien resulted in the following:

CH = 1.92

Item 630 – Credit for Inspection and Condition

The third item reviewed is Item 630 "Credit for Inspection and Condition (CIC)". This item reviews the fire hydrant inspection frequency, the completeness of the inspections and the condition of hydrants. Inspection and condition of hydrants should be in accordance with AWWA M-17, *Installation, Field Testing and Maintenance of Fire Hydrants*.

A. Inspection (HI):

The frequency of inspection is the average time interval between the 3 most recent inspections.

Frequency of Inspections	Points
½ year	100
1 year	80
2 years	65
3 years	55
4 years	45
5 years or more	40

Note 1: The points for inspection frequency are reduced by 10 points if the inspections are incomplete or does not include a flushing program. An additional reduction of 10 points are made if hydrants are not subjected to full system pressure during inspections. If the inspection of cisterns or suction points does not include actual drafting with a pumper, or back-flushing for dry hydrants, 40 points are deducted.

B. Condition (HF):

A factor (HF) is determined from the following list of conditions according to the actual condition of hydrants examined compared with the total number examined during the survey:

Condition	Factor
Standard (no leaks, opens easily, conspicuous, well located for use by pumper)	1.0
Usable (with some defects and/or impediments to use)	0.5
Not Usable	0.0

For maximum credit in the Schedule, all hydrants should be inspected twice a year. The inspection should include operation of the fire hydrant, a test for leaks (using domestic pressure), and a flushing of the hydrant. Records should be kept of inspections.

Water System: Prairie du Chien Water Dept

Item 630.A "Inspection (HI):"		Time Interval
Most recent inspection was May 01, 2010		
1 st prior inspection was Oct 01, 2009		0.5 year
2 nd prior inspection was May 01, 2009		0.5 year
Review of Inspection (HI):	Earned Credit	Credit Available
	100	100

For maximum credit in the Schedule, all hydrants should be conspicuous, well located for use by a pumper and in good condition. There were 34 hydrants examined in this FSRS item.

Item 630.B "Condition (HF):"		Maximum Factor
Standard: There were 34 hydrants considered in standard condition.		1.0
Usable: There were 0 hydrants considered in usable condition.		0.5
Not Usable: There were 0 hydrants considered not usable.		0.0
Review of Condition (HF):	Earned Credit	Credit Available
	1.00	1.0

The points calculated for the inspection and condition of hydrants for Prairie du Chien resulted in the following:

CIC = 3.00

The final step in determining the credit for Water Supply is to add up the following three components:

Item	Earned Credit	Credit Available
616. Credit for Supply System (CSS)	33.89	35
621. Credit for Hydrants (CH)	1.92	2
631. Credit for Inspection and Condition (CIC)	3.00	3
Total Credit	38.81	40

If the score Prairie du Chien achieved for the water supply system was translated into a 100 point scale instead of the 40 points actually used, the relative Fire Suppression Rating Schedule classification for this section of the review would be a (relative) **Class 1**.

Divergence

Divergence considers a difference between the protection provided by the Fire Department and the Water Supply. This difference would prevent the better feature from being utilized to its fullest extent. Therefore, an adjustment is made to reflect any difference between these two features. Because of the difference in total weights assigned to the two features, the total for the Fire Department, which has the higher total weight, is adjusted to make the comparison reflect the relative adequacies of the two features.

The expression $\{[(CWS) - 0.8(CFD)]\}$ in the following formula is the Divergence calculation:

$$PPC = \frac{[(CFA + CFD + CWS) - 0.5 \{[(CWS) - 0.8 (CFD)]\}]}{10}$$

$$PPC = \frac{[(8.00 + 31.23 + 38.81) - 0.5 \{[(38.81) - 0.8 (31.23)]\}]}{10}$$

Summary of Public Protection Classification Review

Completed by ISO on Jul 15, 2010

for

Prairie du Chien

FIRS Item	Earned Credit	Credit Available
Receiving and Handling Fire Alarms		
414. Credit for Telephone Service	2.00	2
422. Credit for Operators	3.00	3
432. Credit for Dispatch Circuits	3.00	5
440. Credit for Receiving and Handling Fire Alarms	8.00	10
Fire Department		
513. Credit for Engine Companies	9.71	10
523. Credit for Reserve Pumps	0.64	1
532. Credit for Pumper Capacity	5.00	5
549. Credit for Ladder Service	4.55	5
553. Credit for Reserve Ladder and Service Trucks	0.11	1
561. Credit for Distribution	3.07	4
571. Credit for Company Personnel	5.45	15
580. Credit for Training	2.70	9
590. Credit for Fire Department	31.23	50
Water Supply		
616. Credit for Supply System	33.89	35
621. Credit for Hydrants	1.92	2
631. Credit for Inspection and Condition	3.00	3
640. Credit for Water Supply	38.81	40
Divergence		
700: Divergence	-6.91	--
Total Credit	71.13	100.00

Community Classification = 3

If the individual scores Prairie du Chien achieved for receiving and handling fire alarms; fire department; and water supply were translated into a 100 point scale instead of the (10, 50 and 40) points actually used, the relative Fire Suppression Rating Schedule classification for each of these sections would be:

Receiving and Handling Fire Alarms: a (relative) **Class 2**

Fire Department: a (relative) **Class 4**

Water Supply: a (relative) **Class 1**