

# ***DISTRICT XI POWER RATING SYSTEM***

*Approved 6/8/16*

Usage: To be used in all self-contained District XI Team Championship sports. To be used in sub-regionals where agreements with other districts have been reached.

The power rating will be a combination of the team's weighted winning percentage (TWWP) and their opponents' weighted winning percentage (OWWP). The power rating would be the sum of 59 percent of the team's TWWP and 41 percent of the team's OWWP.

## **Step 1. CALCULATING TEAM WEIGHTED WINNING PERCENTAGE (TWWP)**

The TWWP is based on the results of all games that a team plays. It values wins and losses by the classification of the opponent. The TWWP is calculated by dividing the WEIGHTED WIN VALUE by the sum of the WEIGHTED WIN VALUE and WEIGHTED LOSS VALUE.

### **WEIGHTED WIN - LOSS VALUES**

#### **6 CLASS SYSTEM (Baseball, Basketball, Football, Softball)**

<u>CLASS</u>	<u>WIN</u>	<u>LOSS</u>	<u>TIE (Win/Loss)</u>
AAAAAA	1.25	0.75	0.6125/0.375
AAAAA	1.15	0.85	0.5525/0.425
AAAA	1.05	0.95	0.5025/0.475
AAA	0.95	1.05	0.475/0.5025
AA	0.85	1.15	0.425/0.5525
A	0.75	1.25	0.375/0.6125

#### **4 CLASS SYSTEM (Soccer, Girls Volleyball)**

<u>CLASS</u>	<u>WIN</u>	<u>LOSS</u>	<u>TIE (Win/Loss)</u>
AAAA	1.15	0.85	0.575/0.425
AAA	1.05	0.95	0.525/0.475
AA	0.95	1.05	0.475/0.525
A	0.85	1.15	0.425/0.575

#### **3 CLASS SYSTEM (Field Hockey)**

<u>CLASS</u>	<u>WIN</u>	<u>LOSS</u>	<u>TIE (Win/Loss)</u>
AAA	1.1	0.9	0.55/0.45
AA	1.0	1.0	0.5/0.5
A	0.9	1.1	0.45/0.55

#### **2 CLASS SYSTEM (Golf, Girls Tennis, Boys Tennis, Boys Volleyball, Wrestling)**

<u>CLASS</u>	<u>WIN</u>	<u>LOSS</u>	<u>TIE (Win/Loss)</u>
AAA	1.05	0.95	0.525/0.475
AA	0.95	1.1	0.475/0.525

#### **1 CLASS SYSTEM**

CLASS	WIN	LOSS	TIE (Win/Loss)
A	1.0	1.0	0.5/0.5

District XI opponents, PIAA Non-District XI opponents, Non-PIAA opponents

\*\*All games against **PIAA District XI** opponents will count in calculating a team's TWWP and OWWP using the classification system above.

\*\*All games against **PIAA non-District XI** opponents will count in calculating a team's TWWP. OWWP will be used by calculating the non-DXI school's record in such a manner:

Non D-XI 4A opponent	wins x 1.3	losses x 0.7 = OWWP for that opponent
Non D-XI 3A opponent	wins x 1.2	losses x 0.8 = OWWP for that opponent
Non D-XI 2A opponent	wins x 1.1	losses x 0.9 = OWWP for that opponent
Non D-XI A opponent	wins x 1.0	losses x 1.0 = OWWP for that opponent

\*\*Games against **NON-PIAA** opponents will be considered as a part of your record only. No calculations will factor in to the power rating system.

EXAMPLES

*6 CLASS SYSTEM – Football Example*

Game	Class	Result	WW	WL	Game	Class	Result	WW	WL
1	AAAAAA	W	1.25		7	AAAA	L		1.05
2	AAA	W	0.95		8	A	L		1.25
3	AA	L		1.15	9	Non-PIAA	L		
4	AAAAA	L		0.85	10	AAA	W	0.95	
5	AAA	W	0.95		TOTALS		5-5	4.95	4.30
6	AA	W	0.85		TWWP =		4.95/(4.95+4.3)	<b>= 0.535135</b>	

*4 CLASS SYSTEM*

Game	Class	Result	WW	WL	Game	Class	Result	WW	WL
1	A (Team 1)	W	0.85		10	AAA (Team 2)	W	1.05	
2	AAA (Team 2)	W	1.05		11	A (Team 9)	W	0.85	
3	AA (Team 3)	L		1.05	12	A (Team 6)	T	0.425	0.575
4	AAA (Team 4)	T	0.525	0.475	13	AA (Team 3)	L		1.05
5	AAA (Team 2)	W	1.05		14	AAA (Team 4)	L		0.95
6	AA (Team 7)	W	0.95		15	A (Team 6)	W	0.85	
7	A (Team 1)	L		1.15	16	A (Team 7)	W	0.85	
8	AA (Team 5)	W	0.95		TOTALS		9-5-2	9.4	5.25
9	Non-PIAA	L			WWP =		9.4/(9.4+5.25)	<b>=0.641638</b>	

**Step 2. CALCULATING OPPONENTS' WEIGHTED WINNING PERCENTAGE (OWWP)**

The OWWP is calculated by totaling the weighted win values and weighted loss values of all of the team's opponents; then, dividing the total of the weighted win values by the sum of the totals of the weighted win values and the weighted loss values. Non-PIAA opponents will not be included in calculating the OWWP. If you play your opponent more than once, their totals will be included for each time they are played.

**EXAMPLES**

*6 CLASS SYSTEM – Football Example*

Game	Class	Result	WW	WL	Game	Class	Result	WW	WL
1	AAAAAA	W	4.2	6.4	7	AAAA	L	10.4	1.6
2	AAA	W	6.3	2.6	8	A	L	6.3	2.4
3	AA	L	8.6	1.1	9	Non-PIAA	L		
4	AAAAA	L	7.4	1.8	10	AAA	W	6.4	3.4
5	AAA	W	1.1	8.7	TOTALS			55.2	33.2
6	AA	W	4.5	5.1	OWP = 55.2/(55.2+33.2) =			<b>0.624434</b>	

*4 CLASS SYSTEM*

1	A (Team 1)	W	7.8	9.4	10	AAA (Team 2)	W	2.2	13.4
2	AAA (Team 2)	W	2.2	13.4	11	A (Team 9)	W	14.4	0.8
3	AA (Team 3)	L	13.2	1.6	12	A (Team 6)	T	7.4	9.2
4	AAA (Team 4)	T	6.6	12.2	13	AA (Team 3)	L	13.2	1.6
5	AAA (Team 2)	W	2.2	13.4	14	AAA (Team 4)	L	6.6	12.2
6	AA (Team 7)	W	8.8	5.4	15	A (Team 7)	W	8.2	5.4
7	A (Team 1)	L	7.8	9.6	16	A (Team 8)	W	4.4	10.6
8	AA (Team 5)	W	9.6	5.6	TOTALS			114.6	123.8
9	Non-PIAA	L			OWP = 114.6/(114.6+123.8) =			<b>0.4807047</b>	

## **CALCULATING POWER RATING**

The Power Rating is the sum of 59% of the TWWP and 41% of the OWWP. This number will not be over 1.000.

### **EXAMPLES (USING THE CALCULATIONS ABOVE)**

#### *6 CLASS SYSTEM*

$$\begin{aligned}\text{TWWP: } & 0.535135 * 0.59 = 0.31573 \\ \text{OWWP: } & 0.624434 * 0.41 = 0.256018 \\ & 0.31573 + 0.256018 \\ \text{POWER RATING} & = \mathbf{0.571748}\end{aligned}$$

#### *4 CLASS SYSTEM*

$$\begin{aligned}\text{TWWP: } & 0.641638 * .59 = 0.378566 \\ \text{OWWP: } & 0.480705 * .41 = 0.197089 \\ & 0.378566 + 0.197089 \\ \text{POWER RATING} & = \mathbf{0.575655}\end{aligned}$$

## **TIE BREAKING CRITERIA**

- #1 – Head to Head
- #2 – Best TWWP
- #3 – Unweighted Winning Percentage against common Regular Season
- #4 – Unweighted Winning Percentage against Regular Season
- #5 – Unweighted Winning Percentage of Common Regular Season
- #6 – Unweighted Winning Percentages of Regular Season Opponents
- #7 – Lowest Points/Goals Yielded Average against Common Opponents
- #8 – Lowest Points/Goals Yielded Average
- #9 – Coin Toss