

DISTRICT II POWER RATING SYSTEM

Approved 7/1/18

Usage: To be used in all self-contained District II Team Championship sports with the exception of Boys & Girls Golf, Cross Country, Boys and Girls Track, Swimming and Wrestling. It is also 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 (Girls Tennis, Boys Tennis, Boys & Girls Lacrosse, Boys Volleyball)

| <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

| <u>CLASS</u> | <u>WIN</u> | <u>LOSS</u> | <u>TIE (Win/Loss)</u> |
|--------------|------------|-------------|-----------------------|
| A | 1.0 | 1.0 | 0.5/0.5 |

District II opponents, PIAA Non-District II opponents, Non-PIAA opponents

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

All games against **PIAA non-District II that do not use Gimp Software database (D1, 5, 6, 7, 8, 9, 10, 12) opponents will count in calculating a team's TWWP. OWWP will be used by calculating the non-DII school's record in such a manner:

| | | |
|----------------------|-------------|--|
| Non D-II 6A opponent | wins x 1.25 | losses x .75 = OWWP for that opponent |
| Non D-II 5A opponent | wins x 1.15 | losses x .85 = OWWP for that opponent |
| Non D-II 4A opponent | wins x 1.05 | losses x .95 = OWWP for that opponent |
| Non D-II 3A opponent | wins x .95 | losses x 1.05 = OWWP for that opponent |
| Non D-II 2A opponent | wins x .85 | losses x 1.15 = OWWP for that opponent |
| Non D-II A opponent | wins x .75 | losses x 1.25 = OWWP for that opponent |

All games against **PIAA District 3, 4, and 11 opponents will use their actual OWWP.

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) = 0.535135 | | |

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 | | | TWWP = | | 9.4/(9.4+5.25) = 0.641638 | | |

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) = 0.624434 | | | | |

4 CLASS SYSTEM

| Game | Class | Result | WW | WL | Game | Class | Result | WW | WL |
|------|--------------|--------|------|------|--|--------------|--------|-------|-------|
| 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) = 0.4807047 | | | | |

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

THE POWER RATING SYSTEM WILL BE APPLIED TO THE DISTRICT 2 CHAMPIONSHIP BRACKETS IN THOSE SPORTS IN WHICH IT IS UTILIZED AS FOLLOWS:

- The power rating system will be utilized to determine seeding in all District II team tournaments, with the exception of Boys & Girls Cross Country, Golf, Boys & Girls Track, Boys & Girls Swimming, and Wrestling. In Wrestling, league winning percentage will continue to determine seeding in the team championships. In Cross Country, Track, and Swimming all teams will compete for the team championship.
- In classifications in all sports in which there are 8 or less member schools in that classification, all of those teams will be eligible for the district tournament.
- In classifications in all sports in which there are more than 8 members, the top 8 qualifiers, as determined by the power rating system, will be eligible for the district tournament.
- In classifications in all sports in which there are more than 8 members, any other school that has an overall winning percentage of .500 or better will also be eligible for the district tournament.
- In those championships in which we are combined with another district to form a subregional, we will continue to meet on a sport by sport basis with the other district involved in the subregional and develop a format that is agreed upon by both districts.