**Weather Analysis For Berthold Indian Reservation**

With consideration of a demonstration flight during the September to January timeframe, an overall analysis and summary, using the charts provided below, is as follows:

September:

* Favorable temperatures average range of 52F to 72F
* Favorable Average dry days of 26
* Average wind at 10mph at surface
* Favorable visibility with average cloud coverage of 26%
* Highest average percipitation amounts during test window
* Highest convective activity chances (thunderstorms/windshear/turbulence)
* Highest hours of sunlight at 258 hours

October:

* Favorable tempertures average 38F to 54F
* Favorable average dry days of 26
* Average wind of 11mph at surface
* Visiblility average cloud coverage of 28%
* Moderate convective activity chances
* Second highest hours of sunlight at 206 hours

November:

* Acceptable temperatures average range 24F to 38F
* Acceptable average dry days of 23
* Average wind at 10mph at surface
* Acceptable visbility with average cloud coverage of 45%
* Favorable percipitation amounts, minimal convective activity
* Drop in hours of sunlight of 175 hours

December:

* Unfavorable temperatures average 10F to 23F
* Nominal average dry days of 22
* Average wind at 10mph at surface
* Nominal visiblility with average cloud coverage of 58%
* Favorable preciptiation amounts, nominal convective activity
* Nominal hours of sunlight of 119 hours

January:

* Unfavorable temperatures average 6F to 21F
* Nominal average dry days of 22
* Average wind at 10mph at surface
* Unfavorable visiblity with average cloud coverage of 60%
* Favorable precipitation amounts, nominal convective activity
* Unfavorable hours of sunlight of 112 hours

Other pertitenant weather information for test flight:

At 30, 40, and 50 meters altitude, mean wind is most favorable to least favorable in the following order of months: January, September, December, October, November. Mean winds increase on average of 1mph per 10 meters of altitude from surface to 50 meters. Refer to charts below for daily means.

Prevailing wind shifts with weather patterns, but is most predominant from the north/northwest between 250 and 360 degrees at an average between 9-15 mph. During seasonal shifts, there is also predominant winds from the south between 150 to 210 degrees at an average of 6-8 mph.

*The following is an annual, 12-month, climate average product for the Fort Berthold Indian Reservation. The averages are based on historical weather data collected over the past 10 years from 2014-Present. Information was obtained from weatherwx.com*

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*The below meteorological data was obtained by a published Tribal Renewable Energy Technical Report collected and analyzed by Disgen, contracted with Western EcoSystems Technology Inc, during an on-site monitoring program that captured daily average wind speeds at 30/40/50 meters, wind shear, meteorological hazards, turbulence intensity, prevailing wind, and local climatology that will be useful in the planning and risk mitiagation/management during the prototype demonstration of the MHA grant. The full report can be reviewed at,* [*Three Affiliated Tribes Renewable Energy Feasibility Study*](https://www.energy.gov/sites/default/files/2016/02/f29/3tribes06final.pdf), <https://www.energy.gov/sites/default/files/2016/02/f29/3tribes06final.pdf>.

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Other information, such as turbulence and meteorological hazards can be referenced from this report.