

## Section 5: Risk Assessment

A risk assessment has been prepared for the Bad River Band to identify hazards believed to pose the greatest risk to residents and tribal resources, to profile the extent and severity of past hazards, and to assess the Bad River Band’s vulnerability to future hazard events. Through the risk assessment process, the Tribe will be able to more effectively evaluate potential hazard mitigation measures and develop useful strategies to address the risks associated with the profiled hazards.

The Tribal Mitigation Planning Team (TMPT) completed an exercise to identify and rate the natural hazards within this jurisdiction. The TMPT reviewed a list of all potential hazards and identified those that are most likely to impact the Bad River Reservation.

The following three categories of rankings of High, Moderate, and Low Priorities were influenced by the Planning Team’s definition of “damages”, which we define as *“results of an event(s) that may create a threat to human health and safety, and/or anything that disrupts the predictable daily routine of the community and its expected quality of life, and/or threatens irreplaceable cultural resources.”*

**Table 3: Bad River Band Hazard Ranking**

| Hazards                    | Frequency* | Anticipated Risk** | Impact Severity*** | Comments   |
|----------------------------|------------|--------------------|--------------------|--|
| <b>HIGH PRIORITY</b>       |            |                    |                    |  |
| Flooding                   | High       | High               | High               | Flooding is a reoccurring event and major concern near the intersection of the Bad and White Rivers. Flooding on smaller waterways, such as Denomie Creek, can impact tribal assets. Winter snow/ice melt and summer storms contribute to water volumes. |
| Winter Snow and Ice Storms | High       | High               | High               | Climate change may cause more ice than snow in future winter storms  |
| Contaminated Waterways     | Low        | Moderate           | High               | Resulting from pipeline releases/leaks, overturned truck on roads, accidental spills, etc.   |
| Wildfires                  | Low        | Moderate           | High               | Forest land is 85% of total Reservation acreage. BIA may have more historical records.   |

| Hazards   | Frequency* | Anticipated Risk | Impact Severity** | Comments  |
|---|------------|------------------|-------------------|---|
| <b>MODERATE PRIORITY</b>                        |            |                  |                   |   |
| Tornadoes                                       | Low        | Low              | High              | Moderate risk (1 in 25 years)   |
| Coronal Mass Ejection or Electro-Magnetic Pulse | Low        | Low              | High              | Other mitigations can reduce affects  |
| Severe T-Storms and High Winds                  | Moderate   | High             | Moderate          | Frequent throughout summer season, downed power lines/trees and flash floods  |
| Extreme Cold                                    | Moderate   | Moderate         | Moderate          | Can be worsened by high winds   |
| Heat Waves                                      | Moderate   | Moderate         | Moderate          |   |
| Coastal Erosion and Riverbank Erosion           | Moderate   | Moderate         | Moderate          | The Reservation contains 38 miles of Lake Superior shoreline and 205 miles of mapped perennial streams.   |
| Drought   | Low        | Low              | Moderate          | Moderate concern for an extended event; more impacts likely on land that will affect wildlife, vegetation manomin, surface water, etc.; may have short and long-term impacts  |
| <b>LOW PRIORITY</b>                             |            |                  |                   |   |
| Storm Surges or Seiches                         | Low        | Low              | Low               | Storm surges are temporary rises in water level caused by storm winds blowing across miles of open water and dragging some water towards the down-wind shore. Seiches are periodic oscillations of water level caused by some atmospheric disturbance (e.g., changes in atmospheric press, major shifts in direction of strong winds).<br><a href="http://seagrant.wisc.edu/Home/Topics/CoastalEngineering/Details.aspx?PostID=694">http://seagrant.wisc.edu/Home/Topics/CoastalEngineering/Details.aspx?PostID=694</a> |
| Hail  | Low        | Low              | Low               |   |

| <b>Hazards</b>                      | <b>Frequency*</b> | <b>Anticipated Risk</b> | <b>Impact Severity**</b> | <b>Comments</b>  |
|-------------------------------------|-------------------|-------------------------|--------------------------|--|
| Dam or Levee Failure                | Low               | Low                     | Low                      | White River Hydro is a dam operated by Xcel located upstream of the Reservation. The last time the dam broke was in 1909. Sediment released from dam failure or maintenance also impacts downstream resources. |
| Smoke and ash from nearby wildfires | Low               | Low                     | Low                      |  |
| Non-Convective winds                | Low               | Low                     | Low                      | Winds not associated with thunderstorms; geography and ground cover affect impacts greatly.  |

\*Definition of Frequency: Identified past risk of threats and hazards from available documentation.

\*\*Definition of Anticipated Risk: Likelihood of threats and hazards occurring in the future.

\*\*\*Definition of Impact Severity: Likelihood of damage from each threat and hazard in the future.