During the coldest months of the year, weather systems bring a variety of winter weather to most of the continental United States in the form of snow, sleet, and freezing rain, which along with strong winds, low clouds, and reduced visibilities, may create dangerous conditions. These weather conditions can create major disruptions in air travel, leading to delays and cancellations of hundreds or thousands of flights, thus affecting the plans of millions of travelers. To assess the specific meteorological factors that prompt flight delays and cancellations in the Midwest region of the United States during wintertime, a comprehensive study was performed on nine of the largest airports (by passenger boardings) in the area.

Flight delay and cancellation data from eleven winter seasons (2005–06 to 2015–16) were collected from the Bureau of Transportations Statistics (BTS) and analyzed along with climatological data from the National Centers for Environmental Information (NCEI). A classification scheme was developed, and each flight was categorized according to the meteorological factor that could have prompted its delay. The results of the study revealed that
visibility was the main meteorological factor affecting Midwestern airports, with low ceilings a close second. Blizzards were the main cause for flight cancellations. Two case studies, one of a lake-effect snow event that caused major delays, and another of a large blizzard that prompted severe disruptions across the area, were performed as well.