

**Metrodome Collapsed**  
**Minneapolis, Minnesota**

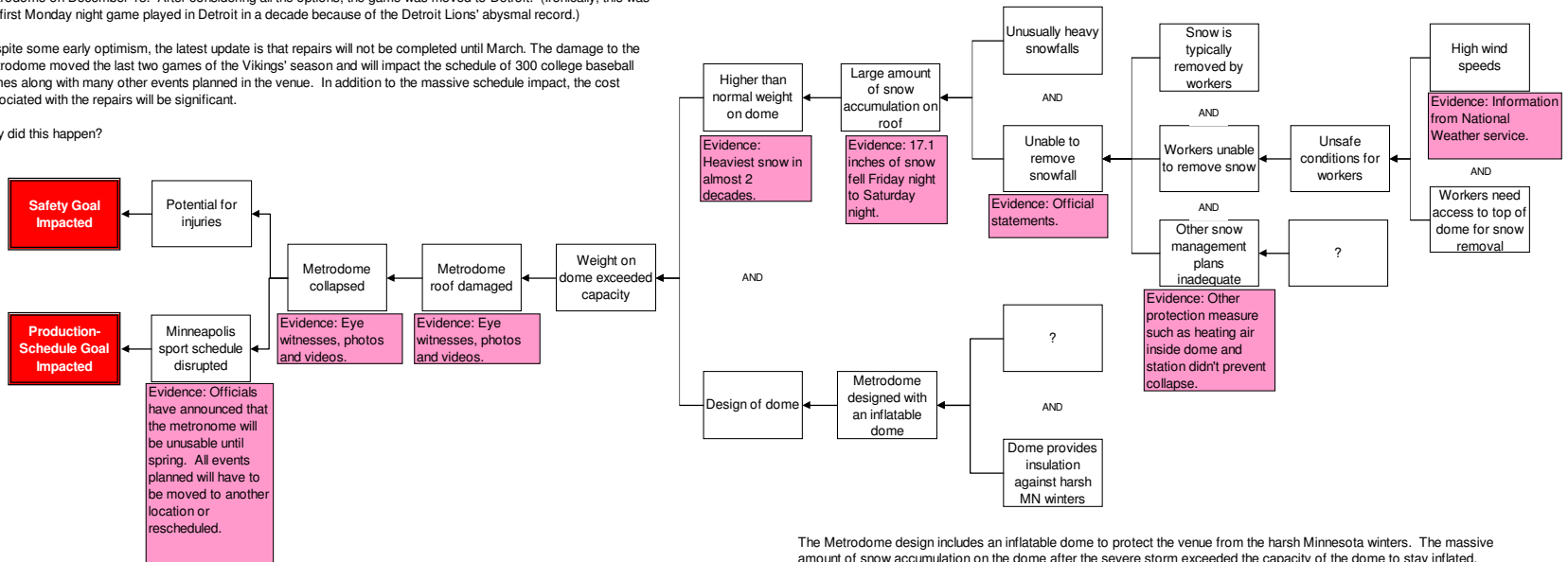
**December 12, 2010**

At about 5 am in the morning on Sunday, December 12, 2010, the roof of the Metrodome collapsed under the weight of snow accumulated during the heaviest snow storm in almost two decades. According to the National Weather Service, Minneapolis received a whopping 17.1 inches of snow between Friday and Saturday night.

The Metrodome is home to the Minnesota Vikings and its collapse set off a multicity scramble as the NFL worked to reschedule the Monday night game between the Vikings and the Giants that was planned to take place in the Metrodome on December 13. After considering all the options, the game was moved to Detroit. (Ironically, this was the first Monday night game played in Detroit in a decade because of the Detroit Lions' abysmal record.)

Despite some early optimism, the latest update is that repairs will not be completed until March. The damage to the Metrodome moved the last two games of the Vikings' season and will impact the schedule of 300 college baseball games along with many other events planned in the venue. In addition to the massive schedule impact, the cost associated with the repairs will be significant.

Why did this happen?



The Metrodome design includes an inflatable dome to protect the venue from the harsh Minnesota winters. The massive amount of snow accumulation on the dome after the severe storm exceeded the capacity of the dome to stay inflated. The dome is made of two layers of materials (the outside layer is Teflon coated fiberglass and the inner layer is made from a proprietary acoustical fabric) and air is constantly pumped into the space between the layers to keep it inflated. The massive weight of the snow tore the roof in several places and it collapsed.

The high winds that accompanied the snow fall were also one of the causes contributing to this accident. When there are heavy snow falls, workers typically climb on the roof of the Metrodome and use steam and high powered hot water hoses to melt snow and limit accumulation. Workers were unable to access the roof due to safety concerns because of the strong winds. Additionally, the other measures used to prevent accumulation were inadequate. These measures include pumping hot air into the dome and heating the stadium to about 80 degrees to help melt snow.

**Cause Map**  
**Intermediate Level**

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