Winter Weather Severity Index – WSSI

WSSI is a tool from the National Weather Service that forecasts the potential impacts of winter storms.
Winter Weather Severity Index – WSSI

- **WSSI is:**
  - A tool to help communicate a general level of potential societal impacts and spatial distribution of them.
  - Offers “Actionable Information” for NWS partners in their goal to mitigate impacts due to winter storms.

- **WSSI is NOT:**
  - A specific forecast for specific impacts.
  - Not meant to be the sole source of information about a winter storm.
  - Should always be used in context with other NWS forecast and warning information.
  - Does not account for conditions that have occurred prior to the creation time. It only uses forecast information.

- **Made up of 6 components:**
  - **Snow Amount:** Potential impact from snow amount and snow rate
  - **Snow Load:** Potential impact from the weight of snow on structures
  - **Ice Accumulation:** Potential impact from the ice accumulation and wind
  - **Flash Freeze:** Potential impact from rapid decreases in temperature from above to below freezing with the presence of liquid water
  - **Blowing Snow:** Potential impact from falling snow combined with wind
  - **Ground Blizzard:** Potential impact from snow on the ground combined with wind
Winter Weather Severity Index – Components

**Snow Amount Index**: highlight areas in which impacts, especially transportation, could be overwhelmed due to either total snow amounts of snow or the rate at which the snowing is falling.

**Snow Load Index**: highlight areas where the weight of the snow could result in damage to trees and power lines.

**Ice Accumulation Index**: developed to account for the combined effects of ice accumulation and wind which can produce widespread tree damage, transportation shutdown and utility problems.

**Flash Freeze Index**: depicts severity primarily to transportation of situations where temperatures rapidly fall below freezing during or just after precipitation.

**Blowing Snow Index**: highlight areas where blowing/drifting snow is expected to occur and result in transportation related problems.

**Ground Blizzard Index**: highlight areas where pre-existing snow combined with very strong winds results in ground blizzard conditions, which result in a significant impact to transportation.
Use of non-Meteorological Data to help forecast impacts

**Urban Areas** (defined from US Census Bureau)
- Used in the Ice Accumulation Index & Snow Amount Index
- Give 25% increase to impact

**Land Use / Coverage**
- Used in the Blowing Snow Index & Ground Blizzard Index
- Decreases impacts for areas of reduced wind (such as forests and high density commercial/residential areas) compared to areas without reductions (such as cropland and grassland)

**Forest Classification**
- Used in the Snow Load Index
- Demarks forestland described as conifer vs. deciduous
  - Conifer trees can handle more snow than deciduous trees