

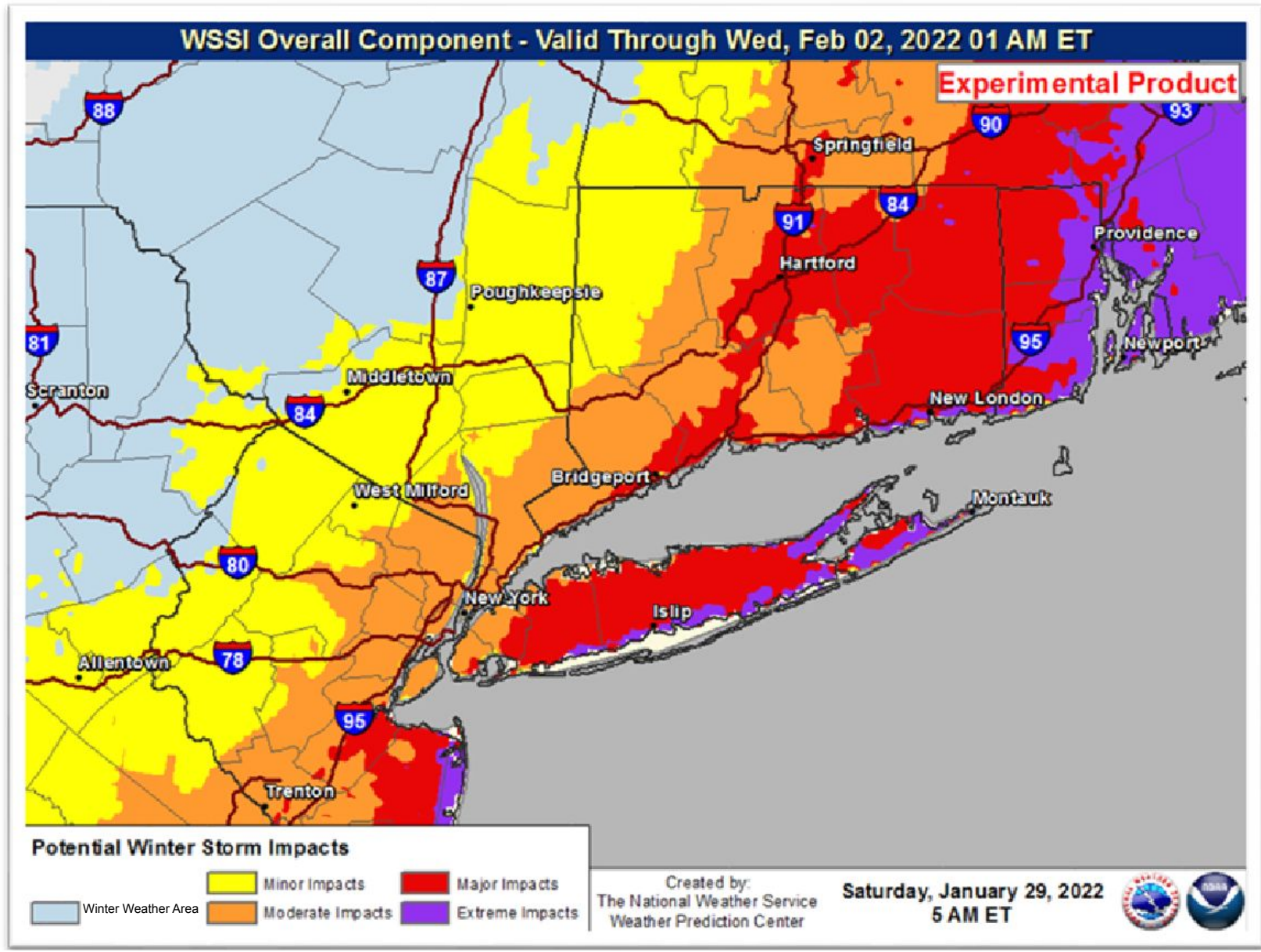
Winter Weather Severity Index – WSSI



WSSI is a tool made to communicate impacts from winter storms using National Weather Service forecast data

Potential Winter Storm Impacts	
	Winter Weather Area Expect Winter Weather. • Winter driving conditions. Drive carefully.
	Minor Impacts Expect a few inconveniences to daily life. • Winter driving conditions. Use caution while driving.
	Moderate Impacts Expect disruptions to daily life. • Hazardous driving conditions. Use extra caution while driving. • Closures and disruptions to infrastructure may occur.
	Major Impacts Expect considerable disruptions to daily life. • Dangerous or impossible driving conditions. Avoid travel if possible. • Widespread closures and disruptions to infrastructure may occur.
	Extreme Impacts Expect substantial disruptions to daily life. • Extremely dangerous or impossible driving conditions. Travel is not advised. • Extensive and widespread closures and disruptions to infrastructure may occur. • Life-saving actions may be needed.

www.wpc.ncep.noaa.gov/wwd/wssi/WSSI_user_guide_2022.pdf



- **WSSI is:**

- A tool designed to help maintain situational awareness and to help communicate a general level of potential societal impacts and their spatial distribution for winter weather. It highlights regions and localities with the forecasted potential of damaging and life-threatening effects brought on by winter weather. Provides ‘actionable information’ for 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.
- It 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.

- **WSSI Components:**

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

Winter Weather Severity Index – Components



Albany, NY
WEATHER FORECAST OFFICE



Snow Amount Index: Highlight areas in which impacts, especially transportations could be overwhelmed due to either total snow amounts of snow or the rate at which the snowing is falling. Climatology of the area is taken in account; not just snow amount but also frequency.



Snow Load Index: Highlight areas where the weight of the snow could result in damage to trees, powerlines, structures and exhaustive snow removal (“heart attack snow”).



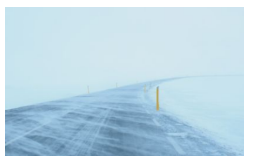
Ice Accumulation Index: Developed to account for the combined effects of ice accumulation and wind which can produce widespread tree damage, transportation shutdowns and impacts to infrastructure.



Flash Freeze Index: Depicts severity primarily to transportation (vehicle and pedestrian) where temperatures rapidly fall below freezing in the presence of liquid water. It also accounts for melted snow.



Blowing Snow Index: Highlight areas where blowing/drifting snow is expected to occur and result in transportation related problems. In general, the blowing snow significance increases as the precipitation rate and wind speed increase.



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. Land use and type is taken into account.

Urban Areas (defined from US Census Bureau)

- Used in the Ice Accumulation Index & Snow Amount Index
- Give 25% increase to impact

Land Use / Coverage - Updated 2023

- 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 Density - Updated 2023

- Used in the Snow Load Index & Ice Accumulation Index
- Coniferous, deciduous and combined maximum forecast density

Winter Weather Severity Index – Interpretation



The WSSI Overall Component graphic shows the highest impact category from any of the 6 components.

You will need to look at the individual components to see what is driving the overall impact graphic.

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