

Wisconsin climate will feel more southerly

Intense storms and prolonged dryspells expected for summer, with more rainfall for fall, winter, and spring

Key Message

Over the next 100 years, our “Up North” climate is expected to become more like southeastern Wisconsin, whose climate is expected to become more like states to the south.

Weather is difficult to predict, but stepping back to observe the history of weather for a place over time enables scientists to view climate patterns and judge deviations from historical averages.

Understanding that our global climate is changing does not let us say if or how much it will rain in Milwaukee or Madison tomorrow, but it does let us predict how likely rain is from season to season and year to year. This information is essential for stormwater engineers and managers.

Those trends are changing.

Downscaled Model Predictions

By “downscaling” multiple global climate models for Wisconsin, we can express confidence that temperatures are likely to increase across the state. The average annual precipitation totals for Wisconsin may not change much; but precipitation is expected to increase during fall, winter, and spring.

With higher low temperatures during the coldest months, that means rain in winter instead of snow. Summers may become generally drier, but storms will be more intense when it does rain. This will lead to an increased burden of stormwater on conveyance systems, which are already inadequate to handle flows.

Wisconsin’s future climate can be thought of as analogous to 20th century climates hundreds of miles to the south. In less than 50 years, our “Up North” climate will look more like southeastern Wisconsin of the

We expect a warmer Wisconsin with less snow, more rain, and more intense storms.

More stormwater means higher disease risk and health care costs.

Policy Recommendation

Planners must anticipate how local climate is likely to change and reassess their assumptions.

20th century. Southeastern Wisconsin’s climate will look like states to our south.

Local planners and managers should take note.

Climate Variability, Public Health & Societal Costs

Wisconsin’s climate has already been changing over the past half-century.

Average annual precipitation has increased.

Extreme precipitation trends have increased.

Nighttime low temperatures have increased. The number of extremely cold days has decreased. The growing season has lengthened between one and three weeks depending on location.

More heat waves and rising nighttime temperatures are expected, along with heat-related hospital admissions, raising health care costs to society. A significant impact may fall on the uninsured, with taxpayers footing the bill to care for our most vulnerable.

Increasing average low temperatures have been associated with increased disease incidence, making the most vulnerable more so.

Warming, combined with more severe storms and increased risk of waterborne disease, presents a negative public health double-whammy.

We have not fully quantified the health risks or costs of projected climate change for Wisconsin, but wise policy will take both into account. Decision-makers currently lack the most complete information to plan for future risk.

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