

NOAA Climate Services User Engagement

CIVIL INFRASTRUCTURE



OVERVIEW

Infrastructure systems, such as buildings, schools, roads, bridges, water lines, communication systems, and power plants, are a fundamental part of daily life. Climate change can affect these systems and have significant impacts on society. Many different groups are involved in setting and regulating standards, designing and constructing buildings and systems, and operating and managing these facilities and systems. Relevant long- and short-term weather and climate information is critical for these purposes.

KEY STAKEHOLDERS

NOAA works with various groups, both as an actionable information provider and as an applied research partner, to examine the effects of weather and climate on civil infrastructure:

- Federal regulatory, environmental, and water resources agencies
- State natural resource and transportation departments
- State environmental agencies
- County and city governments
- Insurance companies
- Professional societies and trade groups

SECTOR NEEDS

NOAA is partnering with the civil infrastructure sector to translate climate data into accessible, useful, and accurate products.

For example:

- Using climate data to design and construct buildings to withstand hurricane-force winds.
- Using historic precipitation data to build roads above potential flood levels.
- Using ice thickness (due to freezing rain) for structural design consideration.

NOAA DATA AND PRODUCTS

There are many different types of useful climate information available. Examples include:

- The *Global Historical Climate Network*, which contains worldwide historical temperature and precipitation data.
- *Dynamic Normals*, which provides daily and monthly averages and extremes for a given location.
- An *Air Freeze Index*, a measure of how much and how often air temperatures are above and below freezing during the winter, useful for determining if Frost-Protected Shallow Foundations (FPSF) should be utilized.



The Great Flood of 1993 caused flooding along 500 miles of the Mississippi and Missouri river systems. The photo shows the flood's effects on U.S. Highway 54, just north of Jefferson City, Missouri.