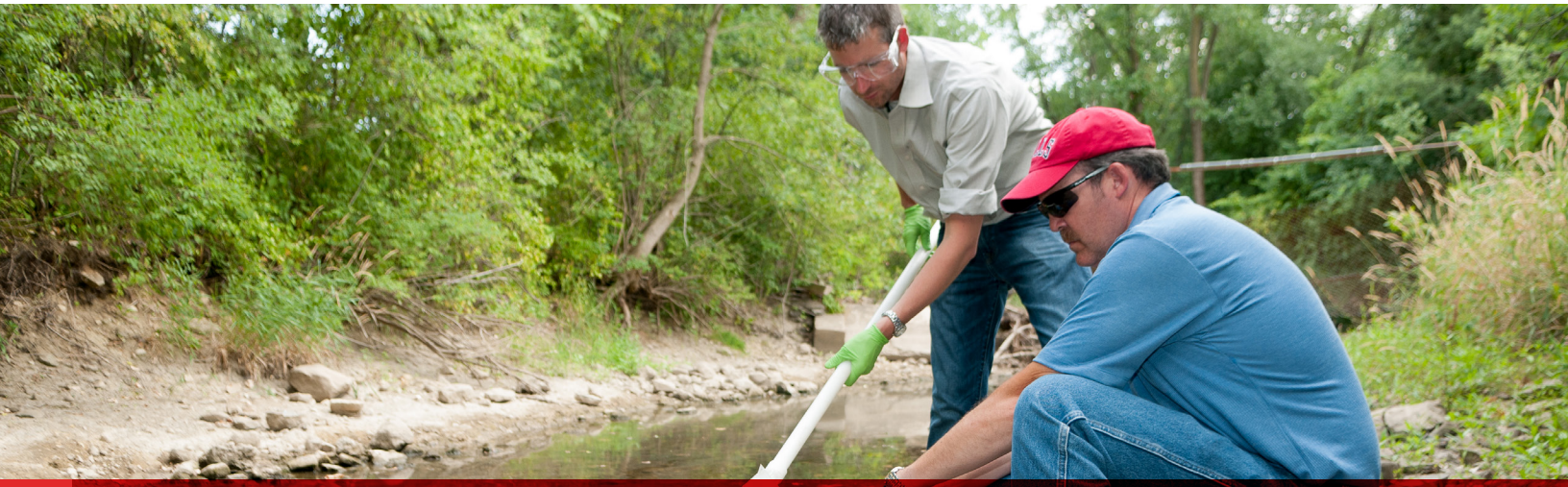
Argonne NATIONAL LABORATORY



INTEGRATED APPROACH TO **CLIMATE CHANGE VULNERABILITY** ASSESSMENT AND ADAPTATION PLANNING

To determine potential risks associated with climate-related impacts on its mission, scientific programs, site operations, and personnel, Argonne National Laboratory conducted a Climate Change Vulnerability Assessment in fiscal year 2017 (FY 2017).

This assessment was the major deliverable of the Climate Change Assessment working group, an integrated project team comprised of operations and programmatic division personnel with expertise in areas including climate change risk, climate modeling, building and utility operations, emergency operations and response, strategic planning, and employee health, environment, and safety. Data associated with climate change risks produced by the National Oceanic and Atmospheric Administration (NOAA) climate toolkit and site storm-water modeling efforts completed by the U.S. Geological Survey (USGS) were also incorporated into the analysis. Based on these predictive climate models, the following events may have increased potential to impact the site's mission and operations:

- Extreme precipitation (snowfall) lasting several days; occurs approximately once per year.
- Extreme precipitation (flooding) causing localized road closures and building service-floor flooding; occurs several days per year.

The 551 substation, a critical component of high-voltage electrical infrastructure.

- Extreme sustained cold weather lasting approximately 1 or 2 days; occurs once per year to once every other year.
- Extreme heat events (heat waves) lasting approximately 2 days; occurs approximately 10 to 15 times per year.

U.S. DEPARTMENT OF ENERGY

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Argonne's snow management operations use a variety of equipment and tools to provide a safe environment for working and visiting the laboratory.

Adaptation planning associated with the projected climate impacts will be integrated into Argonne's FY 2018 Facility and Infrastructure Strategic Investment Plan. This document details the planned building and utility repair and modernizations required to support Argonne's mission-critical programs, scientific core capabilities, and major initiatives. Design considerations that take future climate-related risks into account will be incorporated into those planned investments. Some specific examples of projects that incorporate the assessment findings include high-voltage electrical and water system utilities. In both cases, planned investments to increase capacity and redundancy and/or make necessary repairs, replacements, or upgrades to support projected scientific growth consider impacts associated with increased temperatures, precipitation, and/or drought conditions identified in the Climate Change Vulnerability Assessment.

To protect its employees, Argonne continues to implement and update several safety procedures and protocols for working in extreme weather conditions. In addition, lab-wide alerts are issued via email, text, and public address systems to notify the broader Argonne population of events including extreme heat, extreme cold, and intense periods of precipitation (e.g., snowstorms). In preparation for extreme weather events, Argonne's Emergency Operations Center and the Argonne Fire Department conduct yearly training to simulate responding to catastrophic events. In FY 2017, these groups coordinated with local municipalities to simulate a severe weather event that resulted in the partial collapse of multiple Argonne buildings and required the rescue of "victims." Training event scenarios will continue to be updated to prepare for projected future site risks including those attributed to changes in climate identified as part of the vulnerability assessment.

FOR MORE INFORMATION PLEASE EMAIL
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