Transportation Resilience Improvement Plan

# Building resilience for northeastern Illinois' transportation system

Northeastern Illinois is feeling the effects of climate change. More intense storms are worsening flooding, making roads impassable, causing transit service delays, and damaging critical infrastructure. Temperatures are also on the rise, resulting in more frequent and intense heatwaves that can harm travelers and disrupt transit. In the future, these impacts are projected to become more frequent and intense across the region.

As the federally designated metropolitan planning organization for northeastern Illinois, the Chicago Metropolitan Agency for Planning (CMAP) seeks to improve the transportation network's resilience to extreme weather and climate change. To do this, **CMAP is developing a Transportation Resilience Improvement Plan (TRIP) that will identify transportation assets vulnerable to climate change and prioritize them for equitable resilience investments**.

TRIP will inform transportation planning and decision making at CMAP and throughout the region. It will also meet the Federal Highway Administration's Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program requirements — and position northeastern Illinois to compete for PROTECT funds as well as other resilience funds.

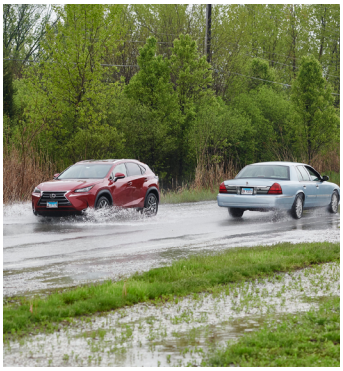
## Risk-based vulnerability assessment

The first phase in developing TRIP is to assess climate risks to and vulnerabilities of the transportation system by:

- Evaluating recent trends and latest projections to understand future climate change
- Identifying which components of the transportation system are most likely to be impacted by climate-related events
- Determining clusters of transportation assets and climate risk across the region
- Assessing where extreme heat poses the most risk to transit riders

## Key findings

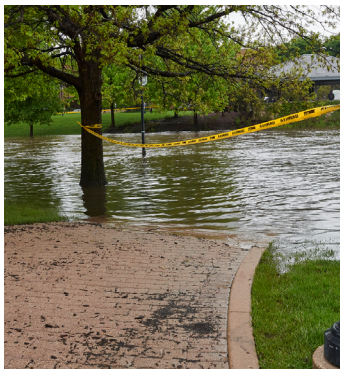
Flooding poses the biggest threat, impacting all transportation infrastructure, service operations, and users.



**34%** of road miles studied have high or very high risk, meaning they could experience up to two or more feet of flooding during a 500-year flood event by mid-century.


**64%** of CTA bus stops and **47%** of Pace bus stops are exposed to flooding.


**36%** of CTA stations and **31%** of Metra stations are at risk of flooding.



**28%** of regional trails have high flood risks and **33%** have very high flood risk. Many trails follow waterways and are particularly vulnerable to flooding.

Extreme heat and severe storms impact transportation service operations and active transportation users. These hazards also threaten rail infrastructure, electrical service, and backup power. However, not all transit riders are equally affected by heat:

Heat vulnerability is influenced by extreme temperatures, social and health factors, and transit stop conditions

When accounting for these risk factors, more than half of bus stops and rail stations have high or very high transit rider vulnerability. Urban areas demonstrate higher vulnerability than non-urban areas, with higher concentrations in Chicago's south and west sides

## What's next

Following this vulnerability assessment, the next phase is to develop a regional Transportation Resilience Improvement Plan by late 2025. The vulnerability assessment supports regional transportation resilience planning by identifying and prioritizing resilience projects that will, in turn, be eligible for increased federal funding. CMAP and regional partners can also use the assessment data, which is available on CMAP's Data Hub, to inform more immediate transportation planning and programming activities that increase climate resilience throughout northeastern Illinois.

**Have questions?**

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cmap.is/vulnerability-assessment

Scan the QR code to read the full risk-based vulnerability assessment

Chicago Metropolitan Agency for Planning