

TRB Research Needs Statements*Weather Related Emergency Planning and Operations for Rail Transit Systems*

Task: To establish a baseline state-of-practice and identify industry best practices on how rail transit systems make service, facility and contingency plans for weather-related emergencies including coastal flooding, torrential rains, snow condition, and extreme cold.

Objective: Creation of a standardized guidebook that will serve as an industry reference for methods that transit systems have used for system operations in inclement weather”. The aim is to create a guidebook that can be embraced and adopted by rail transit systems in the United States.

Research Need/Goals:

The task will focus on various aspects of weather planning: (a) pre-weather decision-making on reasonable service levels, preventive measures, and evacuation planning; (b) securing equipment and facilities to prevent weather damage and additional service disruption; (c) preventing service and equipment from becoming stranded and appropriate evacuation procedures in the unlikely event of stuck trains; (d) post-weather decision-making on re-opening the system, restoring service, and repairing damage.

The guidebook will establish practical approaches for agencies’ internal decisions making process and coordination mechanism to facilitate service and facility operations in inclement weather. It will also detail standards and methods used by agencies to determine and classify weather hazards, technical criteria used for decision-making (as to level of service, evacuation needs, and system security needs), methods and products used to address specific weather issues (pumps, dams, gates, power isolation devices, underground equipment storage), and post-weather procedures. The guidebook will also address crewing issues during weather emergencies for management, operations, and maintenance crews, including crew safety, provision of shelter, and unique crewing issues during weather emergencies. Case studies of site-specific experience and creative solutions used to overcome these situations will be included in the guidebook. The guidebook will address specific types of infrastructure and particular weatherproofing needs, including: elevated structures in wind; tunnel portals, underground stations, and open storage yards in floods; weight of snow on canopies and other sheltering structures; snow drifts on at-grade rights-of-way.

User Community:

- U.S. Transit Agencies
- U.S. Commuter Railroads, where appropriate
- Municipal and State Emergency Planning Authorities
- Transit Planners and Researchers

Sponsoring Committee: AP065, Rail Transit Systems

Source Info: Committee members and friends

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Index Terms: Rail transit, Subway, Rapid transit, Weather, Inclement weather, Emergency management, Evacuation, Flooding, Cold weather, Weather damage