



U.S. Department of Transportation  
Federal Transit Administration



# Smart, Shared, and Social: Enhancing All-Hazards Recovery Plans with Demand Management Technologies

## Background

This report summarizes the activities and results of a project to develop an all-hazards emergency transportation recovery plan for Portland, Oregon. The Federal Transit Administration (FTA) funded this project as part of a broader initiative to support technologies, methods, practices, and techniques that improve public transportation systems in the area of all-hazards emergency response and recovery. The first phase of the project was to develop, test, and refine an integrated all-hazards emergency transportation recovery plan, working directly with organizations that are involved in transit, transportation planning and transportation demand management (TDM) in the Portland region. The project was a partnership among the City of Portland, TriMet, and Portland State University. The key goal was to address the need for post-disaster access and mobility when infrastructure capacity has been reduced by both damage and the needs of emergency responders and recovery activities and to jumpstart the region on the road to social and economic recovery. The second phase of the project was to develop a training course on emergency transportation recovery planning using the Portland plan as a prototype. The course was offered in six locations across the U.S. This project provides examples and tools for other regions and agencies to develop a transportation recovery plan.

## Objectives

The objective of this project was two-fold. The first phase was to develop, test, and refine an integrated all-hazards emergency response and recovery transportation plan working directly with organizations that are involved in public transportation and transportation demand management (TDM) in the Portland region. The second phase was to develop a training course on emergency transportation recovery planning using the Portland plan as a prototype.

## Findings and Conclusions

*Recovery planning is an important component of emergency preparedness, and communities that are more prepared for events will be more resilient to their impacts.*

A key outcome of the project was the acknowledgement that the fields of transportation planning and emergency management (personnel and departments) do not typically interact together. The planning process and trainings brought these individuals and departments together to work on recovery planning. A significant outcome of the project was the enhanced relationships with these agencies and individuals and increased understanding of the priorities, needs, and language used.

Based on a comparison of the content of existing regional transportation and emergency management plans and interviews with staff from agencies and organizations in the region and across the U.S., Federal guidance, and other research, several key findings from this project emerged:

- Recovery is not clearly understood. The interviews and discussions with training participants demonstrated that the words “recovery” and “response” are often used interchangeably by many agency personnel. It is important that a plan clearly defines recovery and its place in the emergency management process while recognizing the overlap with response.
- There are limited examples of transportation recovery plans and need of training and only a few examples of transportation recovery plans in place, and there is a demonstrated need shown by project participants for more guidance. Developing a database of recovery cases, examples, tools, and plans would help agencies, cities, and regions learn from others.
- Transit agencies need to be an important part of the planning. During large-scale emergency events, transit plays a crucial role in the movement of people, especially those in underserved communities, and can play important roles in recovery after specific types of disasters in helping communities restore life-sustaining services and access to jobs.
- Different stages of recovery require different actions and protocols. A transportation plan should lay out the roles and responsibilities of all public and private organizations across the stages of recovery and link to additional recovery activities such as housing, economic development, and utilities.
- Long-range planning should be more prominent in transportation recovery. Response planning is more closely aligned with emergency management, and recovery planning is more closely aligned with long-range planning.
- Performance measures need to be developed as part of the planning process. Cities and regions that develop transportation recovery plans will want to consider how to evaluate their efforts.

## Benefits

The research and activities conducted under this project developed a knowledge base of transportation recovery planning, which includes a literature review, case studies, a model plan, tools, and training resources (see <https://trec.pdx.edu/research/project/1185>). It is the hope that this project may also provide guidance to other regions and transportation and transit agencies that seek to develop their own recovery plans. Recovery planning is an important component of emergency preparedness, and communities that are more prepared for events will be more resilient to their impacts. The challenges, barriers, and lessons learned detailed in this report and the associated documents are common to other regions, as noted during the trainings. This project can help move forward the much-needed efforts in the U.S. of transportation recovery planning.

## Project Information

### FTA Report No. 0151

This research project was conducted by John MacArthur, Sustainable Transportation Program Manager of the Transportation Research and Education Center (TREC) at Portland State University, and Sarah J. Siwek of Sarah J. Siwek & Associates, Inc. For more information, contact FTA Project Manager Roy Chen at (202) 366-0462 or [RoyWeishun.Chen@dot.gov](mailto:RoyWeishun.Chen@dot.gov). All research reports can be found at <https://www.transit.dot.gov/about/research-innovation>.