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Transportation Security

14 Transportation Security

Transportation security issues and protecting the transportation system from threats and disruptions is an important topic. The attacks on the World Trade Center in September 2001 and Hurricane Katrina in September 2005 each demonstrated the vulnerability of our transportation system in different but important ways. These events also highlighted the need for coordinated emergency planning and management to deal with such disasters. It is essential to have emergency management infrastructure systems in place in advance of disasters to best handle emergency response. It is also essential to take steps to protect our transportation infrastructure itself from potential security threats.

Transportation security is also a key component of the Massachusetts long-range state transportation plan, A Framework for Thinking – A Plan for Action (2006). One of the eight guiding principles of the state plan is that “the transportation system of the Commonwealth of Massachusetts shall be secure, with all modes and users protected against external threats.” Similarly, transportation security is one of the eight planning factors required by SAFETEA-LU to be considered by transportation planning organizations during their planning processes.

In Franklin County, many of the planning efforts related to the region’s transportation security are relatively recent, having begun within the last five to ten years. There has been some attention paid to the need for planning for evacuations in the face of an emergency – such as flooding, a hazardous spill, etc.; however, these planning efforts have been stepped up significantly in recent times. There has also been a new focus on increasing the security of transportation facilities themselves. This chapter provides a summary of the transportation security activities currently occurring within the Franklin County region and makes recommendations for future transportation security planning.

Emergency Planning Activities

To date, emergency planning activities in Franklin County have focused on general emergency preparedness and training, and on the coordination between towns and agencies in response to a disaster. There has been a large emphasis on training, improving emergency communications infrastructure, and evacuation planning.

Two major committees working on emergency planning in Franklin County are the Franklin County Regional Emergency Planning Committee and the Western Regional Homeland Security Advisory Council.

Franklin County Regional Emergency Planning Committee

The Franklin County Regional Emergency Planning Committee (REPC) was established in 2000, at the request of Franklin County towns. The REPC is staffed by the FRCOG, and the REPC has a broad membership, including public safety officials, health professionals, industry executives, local government workers, and other community members. The initial focus of the Emergency Planning Committee was to assist all municipalities in the county in meeting federal and state mandates for emergency planning. The federal Emergency Planning and Community Right to Know Act (EPCRA), passed in 1986, requires communities to develop emergency planning under a local Emergency Planning Committee, and to maintain data on hazardous materials. Massachusetts General Law (Chapter 21E) and Executive Order 242 also require planning by communities for emergencies. The focus of the REPC has now been expanded to address all areas of emergency preparedness in the region.

The FRCOG and the REPC sponsor and provide workshops for emergency response staff and local community leaders in the region to meet local and state training requirements regarding emergency incident management and hazardous materials handling and spills. The REPC also oversees the formation of volunteer Community Emergency Response Teams (CERTs), and training for the CERT

teams. CERT team members have a wide variety of general and technical skills. A group of residents that have received the CERT training has formed the Franklin County Community Emergency Response Team. A related group is the Franklin County Medical Reserve Corps (MRC), a team of volunteers with experience and expertise in health care and related fields. The Franklin County CERT and MRC teams can provide important support to first responders during a critical incident, and can also assist with non-emergency projects that improve the health and safety of a community. Both the CERT and MRC programs are part of the federal Citizens Corps initiative, which is funded through the Department of Homeland Security's Office of State and Local Government Coordination and Preparedness.

In December 2008, CERT and MRC provided over 250 volunteer hours of support during a severe ice storm to aid in shelter operations and emergency communication in the Towns of Heath, Warwick, Shelburne, Conway, and Gardner.

In 2009, the REPC secured \$83,500 from the Western Region Homeland Security Advisory Committee to fund four regional exercises on the following topics: Moore Dam Flooding, Mass Casualty, Hazardous Material Evacuation, and Tactical Communications.

Western Region Homeland Security Advisory Council

The Western Region Homeland Security Advisory Council (WRHSAC) was created in 2004 with the charge of improving the region's ability to respond to large-scale emergency incidents or disasters (WRHSAC web site: www.wrhsac.org). The WRHSAC covers the 101 cities and towns in Franklin, Berkshire, Hampden, and Hampshire Counties, and is one of five similar councils in Massachusetts, each one covering a different part of the state. The fifteen original members of the WRHSAC were appointed by former Governor Mitt Romney. Subsequent members are appointed by the Massachusetts Executive Office of Public Safety (EOPS). WRHSAC's voting members represent regional transit, fire services, law enforcement,

emergency medical services, public works, corrections, public health, hospitals, emergency management, and public safety communications. There are also ex-officio members from the Massachusetts Emergency Management Agency (MEMA), from the EOPS, which oversees the council, and from the FRCOG. The FRCOG serves as the fiduciary, the financial agent for the council. Funding for the council's activities comes from the federal Department of Homeland Security's Office of State and Local Government Coordination and Preparedness.

The Western Region Homeland Security Advisory Council works with the regional planning agencies in each region, and a variety of state agencies. The six primary goals of the council, as listed on the council's web site, are:

- Identify threats and vulnerabilities within the region;
- Plan regionally to protect critical infrastructure and key assets;
- Train first responders and local officials;
- Improve interoperability
- Gather and share information between communities and agencies; and
- Conduct multi-jurisdictional exercises for large-scale incident management¹.

In 2004, the WRHSAC prepared the Western Massachusetts Regional Homeland Security Plan. This plan, which is submitted to the Massachusetts Executive Office of Public Safety (EOPS) is updated annually, and describes the WRHSAC's proposed investments and projects for each year. The FRCOG and the other regional planning agencies that are part of the WRHSAC, the Berkshire Regional Planning Commission and the Pioneer Valley Planning Commission, have been working to develop tools to strengthen the region's response to large-scale natural and man-made disasters. These tools include the following: a regional mutual aid agreement to facilitate the sharing of resources among towns; information on priority critical infrastructure; and evacuation planning for special needs populations.

¹ Western Region Homeland Security Advisory Council Website. www.wrhsac.org

Since 2009, the WRHSAC has been involved with the statewide interoperability Executive Committee. The WRHSAC coordinated the purchase and expansion of an information sharing system for police, fire, and Sheriff's Departments of Franklin, Hampden, Berkshire, and Hampshire Counties.

Also, improvements were made to the interoperable emergency communication system for police, fire, and EMS. An emergency preparedness planning conference was held in each western county for agencies providing support to individuals requiring additional assistance. Ongoing development of the Regional Evacuation and Sheltering Plan has occurred, including the completion of a shelter assessment survey and the development of Transportation/Evacuation modeling software to be used in plan and exercise development. Sheltering supplies and trailers were purchased and strategically located throughout the region.

Local Public Health

The Fall of 2009 was a challenging year for Local Public Health, which is a combination of Local Boards of Health and Mohawk Area Public Health Coalition (MAPHCO). In response to the H1N1 Pandemic, Local Public Health, and FRCOG held coordinated H1N1 Vaccine Emergency Dispensing Sites (EDSs) across the Franklin County region. More than 20 EDSs were held, at least two in each sub region of the county.

This was accomplished by an unprecedented cooperation between Local Public Health in 26 towns with support from FRCOG including: buying supplies centrally and distributed to each EDS; hiring Regional Planning Nurses to work at the EDSs; and Greenfield acting as the central depot for the vaccine. Local Public Health and FRCOG staff met weekly as a Joint Information Center (JIC) to develop weekly messages and coordinate distribution of information on H1N1. Finally, relationships between Fire, Police, EMS, Local Public Health and all the schools were improved as they worked together to ensure that anyone who

wanted to receive the vaccine had free and easy access.

Improvements to Communications Infrastructure

Over \$5 million has been invested into the Franklin County Emergency Communication System (FCES) which is a model interoperable public safety radio communication system. This eleven-site system replaced one that was originally constructed in the 1950s. Nine of the sites host two simulcast channels, one for Fire and one for Police, for countywide communications. Shelburne Control serves as the regional 911 and emergency dispatch center for Franklin County. The dispatch center, which is located at the Massachusetts State Police B-2 barracks in Shelburne, is the largest regional dispatch center in Massachusetts.

The Franklin County Emergency Communication System Oversight Committee (FCES Oversight Committee) ensures that the region's interoperable radio communications systems is operated, maintained, expanded, and upgraded to fully serve all areas and users in Franklin County to the extent possible. The committee includes representation from fire, police, EMS, the FRCOG, and Shelburne Control.

The new radio system is not yet coordinated with the radio system used by the Franklin Regional Transit Authority (FRTA), and this is an area where improved communication may be warranted. Currently, if FRTA buses are needed to assist with an evacuation, a portable radio that links to the regional radio system could be provided to the FRTA main office to allow the FRTA to communicate with emergency personnel. The FRTA could then use its own radios to communicate with its bus drivers.

Other important communications tools that are useful for emergency planning, but have not yet been fully implemented or coordinated with the upgraded radio communications, include intelligent transportation system (ITS) technologies and high-

The MBI has received a \$45 million grant from the American Recovery and Reinvestment Act (ARRA). The MassBroadband 123 project plans to build an open access, middle mile fiber network serving the western and north central area of Massachusetts. The project will install 1,388 total miles of fiber and conduit. A total of 1,492 anchor institutions will be connected directly to the network. Within three miles, it will reach 95 percent of all residents, business and anchor institutions and is estimated to create approximately 2,200 jobs. The project is anticipated to be fully completed within 2.5 years. This network will provide the essential foundation for economic growth and stability to this region.

The I-91 fiber portion of the project installed 55 miles of 288-strand fiber from Connecticut to the Vermont border. This was the first segment of a regional Western Massachusetts fiber optic-ring that will bring broadband to unserved citizens in the region for years to come. The conduit will be available for lease by private telecommunication fiber providers, which will encourage and ease the expansion of telecommunications facilities throughout the Pioneer Valley and Franklin County. ITS components installed along the corridor include variable message signs, cameras, and weather sensors, all of which will help make I-91 less congested, safer and a more secure highway. In the long-term, this ITS technology can also be coordinated with current emergency response systems to enhance the region's ability to manage large-scale emergency events and facilitate evacuations if necessary.

In 2010, the MBI signed a Memorandum of Understanding (MOU) with the Department of Conservation and Recreation (DCR) to facilitate access to their fire towers. This will provide easier access to install wireless broadband systems, reduce the cost of deployment, reduce the need for new towers, and allow for faster permitting.

Emergency Planning for the Vermont Yankee Nuclear Plant

The Vermont Yankee Nuclear Power Station, owned by Entergy, is located in Vernon, Vermont, just north of Franklin County. An Emergency Planning

Zone (EPZ) for the facility has been established for an approximate ten-mile area around the facility, and plans have been developed for warning and protecting residents within this zone. The EPZ includes the entire Towns of Bernardston and Leyden, and portions of the Towns of Colrain, Gill, Greenfield, Northfield, and Warwick. Residents of the EPZ are provided with written information on what to do in the event of an emergency at the nuclear power station. This information is distributed annually to residents through an emergency public information calendar produced as a public service by Vermont Yankee, the Massachusetts Emergency Management Agency (MEMA), and the Massachusetts Department of Public Health. Residents of the Emergency Planning Zone are also provided with tone-alert radios that will sound in the event of an emergency at Vermont Yankee or natural disasters (and for weekly testing). In the event of an emergency at the plant, warnings would also be issued through outdoor emergency sirens (Bernardston, Colrain, and Northfield only), broadcasts from loudspeakers on emergency vehicles, and special announcements on local Emergency Alert System radio stations.

The emergency plans for Vermont Yankee include details on what residents should do if they are instructed to evacuate or to shelter-in-place and stay where they are. All the schools and daycare centers within the Emergency Planning Zone (EPZ) have emergency plans of their own, and in the case of an emergency, school and daycare children would be moved to reception centers and host facilities outside of the EPZ. If an evacuation is necessary, information will be provided through Emergency Alert System radio stations on which evacuation routes residents should take. The wind direction may affect the recommended evacuation route, though the primary evacuation corridors include I-91, Route 2/2A, Route 63, and Route 5/10. Residents will be directed to a reception center at the Greenfield Community College main campus where assistance for evacuees will be available. Alternative reception centers serving the Emergency Planning Zone are the Bellow Falls Union High School in Bellow Falls, Vermont, and Keene State College in Keene, New Hampshire. At the reception

centers, emergency workers will help evacuees receive information on other family members, and will direct people needing a place to stay to a mass care shelter that will provide meals and lodging. The emergency plans include provisions for assisting residents with special needs.

Challenges for Large-Scale Evacuations

Consideration of the transportation network in evacuation planning is essential and due to its rural nature, there are several challenges for large-scale evacuations in Franklin County. A map is contained at the end of the chapter which shows the main evacuation routes for the region. These routes have been identified by local communities through their emergency planning processes and the creation of their Comprehensive Emergency Management Plans (CEM Plans) that all municipalities are required to develop.

The cause of any large scale emergency in Franklin County will significantly impact an evacuation. An evacuation caused by a flood, for example, will place a significant strain on the remaining available transportation network to be used in an evacuation. Additionally, as has been demonstrated in the Harriman Dam Evacuation Plan, several of the areas' critical facilities and shelters will be inundated by a flood, thus making them inaccessible. An evacuation resulting from other catastrophes and hazards may take a very different form. A hazardous spill may bisect the county and sever access to the two primary roadways in the region - Interstate 91 and Route 2. It is for this very reason that the potential impacts of several different emergency situations be evaluated for the county to identify barriers and constraints to an evacuation.

In 2009, the Federal Highway Administration (FHWA) developed a report entitled *Good Practices in Transportation Evacuation Preparedness and Response*.² The purpose of this report was to document the results of a workshop series regarding emergency planning. The workshops were organized into three phases which consist of:

² Good Practices in Transportation Evacuation Preparedness and Response: Results of the FHWA Workshop Series. Federal Highway Administration (FHWA), August 2009.

(1) Preparation and Activation, (2) Response, and (3) Re-entry and Return to Readiness. The preparation and activation phase refers to the stage in which emergency communication and evacuations plan are developed and first notification of an emergency is received. During this stage, pre-evacuation planning occurs and an evacuation plan is implemented. Communication and activation are the key tenants of this phase. The evacuation planning efforts described herein seek to provide a foundation for development of formal evacuation plans and fall into the preparation category. Formal evacuation plans, however, will plan for all three phases, from activation of the plan to re-entry and return to readiness following an event. These three phases outline the major components of an evacuation plan and illustrate the complexity of factors which go into a safe and efficient evacuation.

A safe transportation system protects users from hazards, including hazards resulting from climate-related stresses on the system. It is expected that more extreme weather events will lead to more precipitation and flooding. It is critical that infrastructure be planned and maintained to be able to withstand a higher frequency of these events. Furthermore, such events may be more severe in the future, so a revised examination of potential flooding areas and critical infrastructure should be performed. The FRCOG has been working with the Berkshire Regional Planning Commission (BRPC), Pioneer Valley Planning Commission (PVPC), and the University of Massachusetts Transportation Center (UMTC) to prepare preliminary evacuation plans for Western Massachusetts. Most recently, two emergency scenarios were evaluated for Franklin County which consist of (1) a failure of the Harriman Dam, and (2) a four-county Hurricane evacuation.

Harriman Dam Failure Case Study

The FRCOG worked in conjunction with the University of Massachusetts Transportation Center (UMTC) to develop a preliminary evacuation plan for Franklin County communities in the event of a failure of the Harriman Dam. Located in south central Vermont, Lake Harriman is a man-made lake

which was created by the New England Power Company in 1932 to facilitate hydroelectric power. The lake was created by flooding 2,200 acres of surrounding farms and woodland. Via use of a spillway, water from the Harriman Dam feeds into the Deerfield River which traverses through Franklin County, beginning at its northwestern border with Vermont. A structural failure of the Harriman Dam would have devastating consequences for Franklin County. The purpose of this analysis was to evaluate the transportation network during an evacuation as well as to identify areas that are expected to become inundated (flooded). The UMTC performed the modeling of this scenario.

The Deerfield River traverses through several communities in the western part of the county, and it is very important to understand how adjacent communities' roadways, emergency personnel and resources may be impacted. The village centers that would be impacted include Charlemont, Shelburne Falls, Greenfield, Turners Falls, and Deerfield. By becoming familiar with the inundation areas and better understanding the limitations of the transportation network during such an event, local emergency planners can make more informed emergency planning decisions to help maximize the safety and efficiency of an evacuation. This analysis consisted of the preliminary assessment of the impacts of a flood on the transportation network and its ability to accommodate an evacuation. The results of this analysis estimated the amount of new trips generated by the evacuation on the transportation network, an analysis of the availability of evacuation modes such as the personal automobile, assessed the expected capacity of shelters in the region, and identified critical locations in the transportation network. The resulting recommendations were identified based on the results of this analysis and are aimed at local officials and emergency personnel charged with planning for an evacuation following failure of the Harriman Dam.

A supplemental report to the Harriman Dam Failure Case Study was developed after the identification of a need for more specific recommendations for each of the towns in the inundation area. These Town

Recommendations provide a closer look at each of the communities which are impacted by the flood. More specifically, a closer analysis of the critical facilities for each of the towns directly impacted by failure of the Harriman Dam has been performed. These recommendations are to be used only as a starting point for the development of specific emergency plans in each of the towns. In addition to the supplemental report, more detailed maps were created for each of the inundated sections to help towns develop more detailed evacuation plans.

Four County Hurricane Evacuation Case Study

The FRCOG worked in conjunction with the Berkshire Regional Planning Commission (BRPC), Pioneer Valley Planning Commission (PVPC), and the University of Massachusetts Transportation Center (UMTC) to evaluate an emergency scenario in which a hurricane forces a full evacuation of all four of the Western Massachusetts counties (Berkshire, Franklin, Hampshire, and Hampden). The hurricane was modeled to split the region in two, sending people to the east and west. This analysis sought to determine the impacts of a hurricane evacuation on the transportation network of Western Massachusetts.

This study was developed to help emergency planners create formal evacuation plans in the event of a hurricane. The information contained in the study will assist with critical evacuation planning decisions, such as evacuation routes and timing. Potential travel times can be relayed to the public to inform them of what routes might be significantly delayed. Some routes in the network may be underutilized. Through this methodology, the routes can be discovered and then that information can be reported to the public. Some additional implications of this research help identify alternatives to evacuation if evacuation is not possible or feasible. This may include the use of additional shelters which can be stocked with extra food, water, and beds. Buses can be diverted to serve these areas. The citizens of these counties can be notified via radio or television about the availability of extra buses or shelter space.

Transport of Hazardous Materials

In August 2006, the Franklin County Regional Emergency Planning Committee (REPC),³ completed the creation of a Regional Hazardous Materials Emergency Plan (HMEP) with support from the Franklin Regional Council of Governments. The development of the HMEP served several purposes, including compliance with the statutory requirements that all local Emergency Planning Committees develop, exercise, and annually review a Hazardous Materials Emergency Plan. Also, no regionally focused planning tool had previously existed to describe and analyze hazardous threats in Franklin County. Third, a regional plan was needed to standardize hazardous materials release reporting, notification, and response. The creation of the HMEP was funded through a congressional earmark to the FRCOG. The HMEP is formally updated every three years, but reviewed annually. Among the HMEP's priorities is addressing the potential issues associated with the freight transport of hazardous materials and having an emergency plan for hazardous material spills. The HMEP assumes that virtually all railway and road corridors transport hazardous materials at some times, and that consequently any rail line or roadway can be a potential hazardous material spill site.

The HMEP includes an analysis of the level of hazardous material transported in the region on major roadways and on rail lines. This analysis is based on a one-time study of the level of general freight transport on rail facilities and major roadways, and the amount of freight traffic that contained hazardous materials. This study was conducted in 2003. The study estimated that approximately 13 to 15 trucks per hour traveling through the region contain hazardous materials. Most of these trucks are on Interstate 91. For rail transport, it was estimated that there are 100 to 130 train cars with hazardous materials passing through the region each day. The study also found that up to 500 rail cars were stopped at the East Deerfield Rail Yard at any given time, with 20 to 50 of them containing hazardous materials. The only known

significant transportation change since the 2007 report is the increase in ethanol transport by rail through the county. A training activity to address this topic is planned within the next year according to the Chair of the Franklin County Emergency Preparedness Committee.

Chemical Incident Exercises and Response

The Franklin County Regional Emergency Planning Committee (REPC) has conducted several training exercises in the last few years for dealing with chemical spills. The most recent training was a Hazardous Material tabletop exercise held on October 22, 2009. This exercise simulated a transportation-related release and public evacuation protocol. Another upcoming training will address the increased ethanol transportation by rail in Franklin County as stated above. The REPC has been called out on nine different occasions since 2007 to assist with actual chemical incidents in Franklin County.

GIS Tools for Chemical Incident Response

The FRCOG maintains hazardous material facility location maps within the region using Geographic Information Systems (GIS) and Tier II Submit software provided by the Environmental Protection Agency (EPA). Hazardous material facilities (Tier II facilities) are required by the EPA to submit their information via electronic format to the Regional Emergency Planning Committee (REPC) annually. The FRCOG is responsible for importing that data and submitting the information. The FRCOG is also responsible for creating localized maps of facilities and surrounding critical infrastructure (such as schools, hospitals and bridges) using Pictometry software. Pictometry is an aerial software program that allows users to use existing map data layers with aerial photos. Aerial photos are used to determine the exact location of each facility along with GPS coordinates. Two maps are then created, a town wide map showing all the Tier II facilities within the town and an aerial photo map of each Tier II facility. The maps also contain critical information regarding the types and quantities of the chemicals stored at the facility. The localized aerial photo map depicts the evacuation and isolation zones if a chemical release were to occur.

³The Franklin County Local Emergency Planning Committee (LEPC) was renamed the Franklin County Regional Emergency Planning Committee (REPC) in 2007.

Each chemical has a different evacuation zone depending on the chemical makeup. Finally, a third county-wide map is created illustrating all the major roads and rail lines that are used to transport chemicals, which shows critical infrastructure and its proximity to sites that house hazardous materials. This mapping and evacuation information is used by the REPC to create emergency response plans.

Natural Hazard Mitigation Planning

Since 2002, the FRCOG has worked with twenty-three Franklin County towns to create local natural hazard mitigation plans. The FRCOG has also developed the Franklin County Regional Natural Hazards Mitigation Plan which is updated annually with a formal update every three years). The creation of the hazard mitigation plans has been funded through grants from the Massachusetts Emergency Management Agency (MEMA) and the Massachusetts Department of Conservation Services (DCS). The creation of the hazard mitigation plans has been overseen by the Franklin County Regional Emergency Planning Committee (REPC). The REPC is responsible for preparing an All Hazards Plan for the region, and the Regional Natural Hazards Mitigation Plan is an important component of the All Hazards Plan.

The Federal Emergency Management Agency (FEMA) and the Massachusetts Emergency Management Agency (MEMA) define hazard mitigation as any sustained action taken to reduce or eliminate long-term risk to people and property from natural hazards such as flooding, snow and ice storms, high winds, hurricanes, wildfires, earthquakes, tornadoes, micro-bursts, ice jams, landslides and wildfires. Mitigation efforts undertaken by communities can help to minimize damage to: infrastructure, such as roads, sewers, utility transmission lines, and water supplies; buildings; and natural, cultural, and historic resources.

Planning efforts like the creation of the Regional Natural Hazards Mitigation Plan focus on pre-disaster planning and the mitigation of potential hazards. Pre-disaster planning emphasizes actions that can be taken before a natural disaster occurs. Future property damage and loss of life can be

reduced or prevented by a mitigation program that addresses the unique geography, demography, economy, and land use of a region within the context of each of the specific potential hazards that could threaten the region.

Currently, the FRCOG Planning Department is working to update the Regional Natural Hazard Mitigation Plan for Franklin County, which expired in June, 2010. Staff will be working closely the Franklin County Regional Emergency Planning Committee (REPC) during the plan update process. The REPC, which includes representatives from all 26 Franklin County towns, has chosen an "all hazards" approach to emergency planning. This approach addresses planning for hazardous materials emergencies as well as other natural, technological, and man-made events that call for a similar inter-town, inter-disciplinary response. FRCOG staff and the REPC will be carefully reviewing and updating the key strategies and recommendations in the 2005 Regional Natural Hazard Mitigation Plan.

For the ongoing 2010 update of the 2005 regional and local natural hazard mitigation plans, the FRCOG is in the process of collecting data and compiling research on nine hazards: flooding, winter storms, hurricanes, tornadoes, wildfires, earthquakes, ice jams, landslides and dam failures. The FRCOG will also update the region-wide maps of critical facilities including schools, hospitals, shelters, police and fire stations, emergency operations centers, major roads and bridges. The FRCOG will examine the spatial relationships between the identified hazards and the critical facilities. For example, where are schools located in relation to natural hazards such as flooding or inundation areas resulting from dam failures? What roads and bridges are most likely to become impassable during a severe winter storm or if area rivers flood? The updated plan will then identify and assess the policies, programs, and action items that the region can implement to protect against future disaster damages, and established goals for this implementation.

The major vulnerabilities to the transportation network and transportation access identified in the 2005 Regional Natural Hazards Mitigation Plan concern two main hazards: flooding and severe winter storms.

Flooding and Evacuations

Franklin County has several major rivers and numerous tributaries which are susceptible to annual flood events. The major rivers in the region include the Connecticut, the Deerfield, and the Millers. Some of the tributaries to these rivers which are prone to flooding include the Green River and the Sawmill River. The FRCOG is updating maps for each town in Franklin County showing which roads are the most likely to flood. These maps have just recently become very important due to the severe and widespread flooding that resulted from Hurricane Irene in August of 2011.

The dam projects in the region, while reducing the year-to-year risk from flooding, have also introduced a different type of risk: catastrophic flooding resulting from dam failures. While the risk of dam failures is low, the consequences are disastrous. The Regional Natural Hazard Mitigation Plan will include updated maps of the areas of inundation from dam failures and estimates of the maximum amount of time available for evacuations. One issue with evacuations is the potential flooding of roadways and washing out of bridges along the planned evacuation routes.



Flooding and Road Damage from Hurricane Irene, 2011

The Massachusetts Department of Conservation and Recreation (DCR) regulates the dams in the state. According to the DCR office of Dam Safety, there are nineteen High Hazard dams in Franklin County, which are defined as dams at which dam failure will likely result in loss of life and serious damage to homes, important public utilities, highways, railroads, or industrial or commercial facilities. Franklin County is also at risk from major dams upstream in Vermont and New Hampshire, such as the Harriman Dam, which was discussed earlier. The FRCOG has requested updated GIS datalayers of inundation areas from Trans Canada, the owner of the Harriman Dam, and the US Army Corps of Engineers and will seek funding to develop evacuation plans for schools and other critical facilities located in those areas.

Severe Winter Storms

Severe snow and ice storms disrupt regional transportation routes, and in some instances essential utilities such as electricity. State and local highway departments are well prepared to clear snow and treat icy road conditions. However, given the significant amount of road miles in Franklin County, including many unpaved roads, this can take a long time. The risk of injury is particularly increased if the weather conditions are poor during commuting hours or during the times that school buses are trying to bring children home. For reducing motor vehicle crashes during storms and to provide access for emergency vehicles, the Regional Hazard Mitigation Plan recommends that towns should discourage development on roads with slopes in excess of 10 percent. The plan also suggests that towns can promote the installation of underground utilities to reduce power outages and downed power lines in roadways, by including underground utilities installation as a requirement for new development, particularly in residential subdivisions. Recommendations for regional actions include having the REPC or FRCOG distribute model subdivision regulations to all Franklin County towns to limit the steepness of new roads, and model driveway regulations for new construction to prevent runoff and icing on roads. Another recommendation is to identify and investigate potential alternative modes of transportation for

work commutes for emergency personnel and employees at critical facilities such as hospitals and nursing homes during severe winter storms.



The aftermath of the 2008 ice storm

Other Key Strategies and Recommendations of the Regional Natural Hazards Mitigation Plan

The Regional Natural Hazards Mitigation Plan also contains a number of other strategies and recommendations, some related to emergency planning in general. Key strategies and recommendations include the following:

- Improve hazard assessment information to direct development away from areas that are vulnerable to natural hazards;
- Develop an outreach program to increase public awareness of the risks associated with natural hazards;
- Identify locations for evacuation shelters for large-scale emergencies;
- Support regional and local planning efforts to mitigate natural hazards;
- Support current regional committees' activities to increase collaboration and coordination among public agencies, non-profit organizations, and businesses; and
- Coordinate and integrate natural hazard mitigation activities as appropriate with emergency operations and plans; make the natural hazard and risk assessment mapping from the Regional Natural Hazards Mitigation Plan available to emergency responders and planning officials.

Security of Transportation Facilities

Public Airports

Since September 11, 2001, greater attention has focused on security at the nation's major airports. In Massachusetts, attention to airport security has included the state's small airports as well. The MassDOT's long-range transportation plan, *A Framework for Thinking (2006)* indicates that "Massachusetts was the first state to bring forth security regulations, and is still leading the country, on security issues for small airports" (page 202).

The Massachusetts Aeronautics Commission (MAC) oversees and regulates the public-use airports in Massachusetts, excluding Logan and Hanscom Airports. There are two public-use airports located in Franklin County. They are the Turners Falls Municipal Airport in Montague, and the Orange Municipal Airport in Orange. Both airports are classified as "general aviation" airports, which means that they have no scheduled passenger or freight air service. They provide facilities for privately-owned personal and corporate aircraft, and are also used for a variety of other aviation activities, such as flight instruction, charter services, aerial photography, parachuting and similar activities.



Aerial view of the Turners Falls Airport

Since 2001, the MAC has established a number of policies and programs to increase airport security. The MAC has funded security enhancements at municipal airports including security fencing, access control systems, and video monitoring. The MAC has also implemented a statewide badge program for aircraft users and airport tenants, and all badges have been entered into centralized state database.

Additionally, the MAC now requires that each public-use airport develop and implement an airport security plan, and that the plan be consistent with MAC security guidelines and regulations.

Both the Orange Municipal Airport and the Turners Falls Municipal Airport have created airport security plans for their facilities. They have both implemented the use of badges for aircraft users, and have made security improvements onsite, including new perimeter fencing and gates at vehicle access points. The Orange Municipal Airport manager also indicated to the FRCOG that the Orange Airport has improved lighting in high security areas; the airport staff meets regularly with local law enforcement officials to discuss airport security issues, and the local police have increased the number of their patrols to the airport during the day and evening.

Regional Transit Center

The Regional Transit Center in downtown Greenfield is currently under construction. Once the transit center is completed, it will help improve transit service and security for bus riders in the region. There are currently no transit centers or indoor facilities for bus riders in Franklin County. The Regional Transit Center will be open during the hours of transit service and will provide a well-lit, sheltered waiting area for riders.



Regional Transit Center under Construction

The Regional Transit Center will serve as a hub for regional transit services that will also provide connections to other transportation modes such as

intercity bus carriers, demand response services, local taxis, and bicycling, walking and soon passenger rail.

Recommendations for Transportation Security

- Continue monitoring **security at the region's two public-use airports**, the Orange Municipal Airport and the Turners Falls Municipal Airport, and to implement additional security measures as necessary.
- Continue working with the FRTA on the **construction of the Franklin Regional Transit Center**, a multimodal facility that will enhance security for transit system users.
- Continue working with the Franklin County Regional Emergency Planning Committee (REPC) and the Western Region Homeland Security Advisory Committee (WRHSAC) to **expand the region's preparedness to manage emergency incidents**, including those that impact the regional transportation network.
- Continue working with the REPC and WRHSAC to **provide training workshops to emergency response personnel** on hazardous materials management and spills.
- Encourage the REPC and WRHSAC to hold additional multi-jurisdictional **exercises for large-scale incident management and evacuations**.
- Continue **maintaining and upgrading information on transportation resources in the region** that can be used in the case of an emergency event, and to encourage the establishment of mutual aid agreements between towns and memorandums of understanding with businesses to facilitate access to those transportation resources when needed.
- With assistance from the REPC and WRHSAC, continue operability and management of the new **radio communications system**.
- Assist MassDOT with the expansion of **Intelligent Transportation System**

infrastructure, including cameras, weather sensors, and variable message signs, along I-91 and Route 2.

- Explore ways in which the enhanced **ITS and telecommunications infrastructure** can be coordinated with the current emergency communications systems and utilized for emergency management.
- Explore options for expanding the **radio communication capabilities** between emergency management personnel and the Franklin Regional Transit Authority.
- Continue working with the REPC and the WRHSAC on **evacuation planning in the region**, including the preparation of evacuation plans for special needs populations.
- Work with the REPC and WRHSAC to identify locations for **evacuation shelters** for large-scale emergencies.
- Assist employers and critical facilities with the creation of plans for continued **operations and employee transportation in the event of an emergency** in the region.
- Develop and distribute **model subdivision regulations** to all Franklin County towns to limit the steepness of new roads, and model driveway regulations for new construction to prevent runoff and icing on roads.
- Develop an outreach program to increase the **public awareness of the risks associated with natural hazards**, and encourage development to locate away from areas that are vulnerable to natural hazards.
- Support regional and local planning efforts to **mitigate natural hazards**; and coordinate and integrate natural hazard mitigation activities as appropriate with emergency planning and operations.
- Develop **evacuation plans for schools and other critical facilities** located in potential inundation areas from a failure of the Harriman Dam.