

**HAZARD MITIGATION PLAN UPDATE  
ANNEX FOR THE  
MASHANTUCKET PEQUOT TRIBAL NATION**

**Southeastern Connecticut Council of Governments  
Multi-Jurisdictional Hazard Mitigation Plan Update**

**ADOPTED MAY 20, 2013**

**MMI #3570-05**



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## 1.0 INTRODUCTION

### 1.1 Purpose of Annex

The purpose of this HMP annex is to provide an update to the natural hazard risk assessment and capability assessment provided in the previous HMP, and to evaluate potential hazard mitigation measures and prioritize hazard mitigation projects specific to mitigating the effects of natural hazards on the Mashantucket Pequot Tribal Nation. Background information and the regional effects of pertinent natural hazards are discussed in the main body of the Southeastern Connecticut Council of Governments (SCCOG) Multi-Jurisdictional Hazard Mitigation Plan. Thus, this annex is designed to supplement the information presented in the Multi-Jurisdictional HMP with more specific detail for the Mashantucket Pequot Tribal Nation and is not to be considered a standalone document.

The primary goal of this hazard mitigation plan annex is to identify particular vulnerability to natural hazards and potential mitigation measures for such natural hazards in order to ***reduce the loss of or damage to life, property, infrastructure, and natural, cultural, and economic resources***. This includes the reduction of public and private damage costs. Limiting losses of and damage to life and property will also reduce the social, emotional, and economic disruption associated with a natural disaster.

Unlike the municipalities in the SCCOG region, an Indian Tribal Government with an approved Tribal Mitigation Plan in accordance with 44 Code of Federal Regulations (CFR) 201.7 may apply for assistance from FEMA directly as a grantee under the various grant programs. Because the Mashantucket Pequot Tribal Nation has coordinated with the State of Connecticut through SCCOG in the development of this multi-jurisdictional HMP, the Tribe also has the option of applying as a Subgrantee through the State. The Mashantucket Pequot Tribal Nation can determine, on a case-by-case basis, how it wishes to apply with respect to each grant program offered under each Presidential Disaster Declaration.

Given the “Tribal Multi-Hazard Mitigation Planning Guidance” that was released by FEMA in March 2010, a major rewrite of the HMP annex was determined by SCCOG to be the best method of updating the 2005 HMP to address all the requirements of 44 CFR 201.7. For the purposes of this plan, the term “public” includes but is not limited to tribal residents, tribal members, those employed on the Reservation, and visitors to tribal lands.

### 1.2 Setting

Prior to the settlement of Connecticut by Europeans, the Pequots had approximately 8,000 members and inhabited 250 square miles in southeastern Connecticut which they had occupied for thousands of years. The Pequot War of 1636-1638 had a devastating effect on the Pequots. Following the war, the Mashantucket Pequot Tribe was recognized by the Connecticut Colony in the Treaty of 1638 where the Treaty divided the Pequots into two Tribes: The Pawcatuck Pequots and the Mashantucket Pequots. The Mashantucket Reservation was established on 989 acres in its present location in 1666, making it one of the oldest, continuously occupied Indian reservations in North America.

Over the next 200 years, the Tribe battled to keep its land. The 1774 Colonial census indicated that there were 151 tribal members in residence at Mashantucket. The Tribal population was

further reduced in the 19<sup>th</sup> century as tribal members moved from the Reservation in search of work. By 1856, illegal land sales had reduced the size of the Reservation to 213 acres, limiting the amount of land available to the Tribe.

By the 1970's, only two residents remained on the Reservation. The Mashantucket Pequots began to encourage tribal members to move back to the Reservation under the impetus to restore their land base and community, develop economic self-sufficiency, and revitalize tribal culture. The Tribe filed suit against neighboring land owners in 1976 to recover the land illegally sold by the State of Connecticut in 1856. The neighboring land owners concurred that the sale was illegal and, with the assistance of the State of Connecticut, the Mashantucket Pequot Indian Land Claims Settlement Act was enacted by the U.S. Congress in 1983. This granted the Tribe Federal recognition, provided funds for the purchase of 800 acres of land, and enabled the Tribe to place in trust the land covered in the Settlement Act.

The Tribe began several economic ventures over the next two decades, including agriculture (sale of cord, wood, maple syrup, garden vegetables, and swine, as well as establishing a hydroponic greenhouse), began a sand and gravel operation, and opened a restaurant. In 1986 the Tribe opened its first bingo hall, and followed this venture into high stakes gaming by opening the first phase of Foxwoods Resort Casino in 1992, which attracts tourists from around the world. Visitors utilize Route 214 and Route 2 to access tribal lands from larger highways in Connecticut.

Today, the Mashantucket Pequot Tribal Reservation is comprised of approximately 2,261 acres surrounded almost entirely by parcels within the northeastern section of Ledyard, with a small portion of the Reservation surrounded by parcels in southern Preston. Approximately 330 tribal members live on the Reservation.

The Mashantucket Pequot Tribal Nation owns an additional 3,805 acres of land considered as fee lands outside the Reservation, most of which are located in the municipalities of Ledyard, Preston, and North Stonington. [Refer to Appendix A for a complete listing of fee properties owned by the Mashantucket Pequot Tribal Nation.] These lands are considered as part of their respective towns and are therefore discussed in the annexes for their respective municipalities. However, given the magnitude of land owned by the Mashantucket Pequot Tribal Nation outside of the Reservation, the discussion in this annex may include reference to fee lands, where appropriate. The figure within this annex depicts the boundaries of the Reservation and fee lands outside the Reservation that constitute the tribal planning area.

### **1.3 Plan Development**

The 2005 HMP and its annexes were developed through a series of meetings and the completion of written questionnaires, personal interviews, and workshops as described in the Multi-Jurisdictional HMP update. Since that time, the HMP has been available in Tribal governmental offices and available to emergency personnel. Tribal residents were encouraged to contact Fire & Emergency Services or Public Works with any concerns regarding emergency response or potential projects related to natural hazard damage.

Based on the existing plan, existing information, and hazards that have occurred since 2005, SCCOG determined that the following data collection program would be sufficient to collect data to update the Multi-Jurisdictional plan and each annex. Public notices distributed regarding this plan were delivered to the general public via SCCOG.

- ❑ Representatives of the Mashantucket Pequot Tribal Nation met with FEMA in the autumn of 2011 to discuss updating the Tribal annex.
- ❑ The SCCOG issued a press release on November 20, 2011, announcing a public information meeting on the multi-jurisdictional HMP update. This press release was published in the Norwich Bulletin and The Day. This notice was also posted on the SCCOG website. The public information meeting was held on December 13, 2011, at the SCCOG office.
- ❑ A data collection meeting was held with the Mashantucket Pequot Tribal Nation on January 24, 2012, to discuss the scope and process for updating the plan and to collect information. The Fire & Emergency Services Department coordinated the local planning team which included members of Fire & Emergency Services, Public Works, Community Planning and Property Management, and Natural Resources Protection & Regulatory Affairs departments. The meeting focused on reviewing each section of the existing hazard mitigation plan and annex, critical facilities, and various types of hazards that have affected the Tribe and that should be addressed in the update.
- ❑ The draft that SCCOG sent for State review was posted on the SCCOG website ([www.seccog.org](http://www.seccog.org)) for public review and comment. In addition, a hard copy was made available in the SCCOG office in Norwich. A press release announced the availability of the HMP for review, providing residents, tribal members, and other stakeholders throughout the SCCOG region the opportunity to review and comment on a relatively complete draft with all annexes. Comments received from the public were incorporated into the final draft where applicable following State and Federal comments and, then, approved by FEMA. However, these comments did not fully reflect the concerns of the Mashantucket Pequot Tribal Nation. For this reason, the HMP was further revised, thus requiring that same be resubmitted to SCCOG and FEMA for review and approval. Tribal Members were encouraged to comment on the revised draft annex through regular public notice mechanisms (which include posting notices on the Mashantucket Pequot Tribal Nation’s internal website).

The Mashantucket Pequot Tribal Nation must adopt the HMP update within one year of FEMA’s “approval pending adoption” of its resubmitted annex. If it misses this deadline, the Mashantucket Pequot Tribal Nation will be required to develop and resubmit its own single-jurisdiction tribal-level plan.

#### **1.4 Progress Monitoring**

Following adoption, the Fire & Emergency Services Department will continue to administer this HMP (as it has since 2005) under the authority of the Tribal Council and will be the local coordinator of the HMP. The Fire & Emergency Services Department will coordinate with responsible departments as listed in Table 11-1 and ensure that the recommendations of this HMP are considered or enacted. Refer to Section 1.8 of the Multi-Jurisdictional HMP for a description of how the local coordinator will perform progress monitoring. The majority of recommendations in this annex can be accomplished within or with only a slight increase in the operating budgets of the various departments. Projects that require capital improvements or additional funding will need to be approved by the Tribal Council.

The Mashantucket Pequot Tribal Nation plans to incorporate this HMP as a direct annex to its Emergency Management Plan (EMP). This will occur at the next EMP update following HMP adoption. The HMP will also be on file in the Public Works, Community Planning and Property Management Department to assist in guiding growth decisions. See Section 2.5 for recommendations related to integrating the findings of this HMP into other Tribal planning documents. The Tribe will continue to encourage Tribal residents to contact the Fire & Emergency Services Department and/or the Public Works, Community Planning and Property Management Department with concerns related to natural hazards through regular public notice mechanisms (which include, but are not limited to, posting notices on the Mashantucket Pequot Tribal Nation's internal website). This level of public coordination is believed sufficient given the relatively disaster-resilient nature of the Reservation and the relatively low number of residents.

The Mashantucket Pequot Tribal Nation will review the status of plan recommendations each year. The Fire & Emergency Services Department will be in charge of overseeing recommended projects and coordinating an annual meeting with applicable departments (those listed in Table 11-1) and other interested departments. Refer to Section 1.8 of the Multi-Jurisdictional HMP for a list of matters to be discussed at the annual meeting, including a review of each recommendation and progress achieved to date, or reasons for why the recommendation has not been enacted. The Fire & Emergency Services Department will keep a written record of meeting minutes and the status of the recommendations. These records of progress monitoring will form the basis for the next HMP update.

The Mashantucket Pequot Tribal Nation understands that the multi-jurisdictional HMP and this annex will be effective for five years from the date of FEMA approval of the first SCCOG jurisdiction regardless of the date of adoption by the Tribe. The Tribe plans to update its HMP during 2016-2017.

## **1.5 Assurances**

Should grant funding be available for a particular project, the Fire & Emergency Services Department will secure permission from the Tribal Council to apply for said funding. The Mashantucket Pequot Tribal Nation understands that it must comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding. The Mashantucket Pequot Tribal Nation further understands that it will need to amend its plan to reflect new or revised Federal regulations or statutes, or changes in Tribal law, organization, policy, or tribal agency operation. The amendment can be added as an annex and later incorporated directly during the next HMP update. Adoption of this HMP update at the Tribal level indicates that the Mashantucket Pequot Tribal Nation agrees to these Federal assurances.

## **2.0 COMMUNITY PROFILE**

### **2.1 Physical Setting**

The Mashantucket Pequot Tribal Nation's Reservation is located in the vicinity of Cedar Swamp, a large forested wetland located along Indiantown Brook and Shewville Brook. The commercial developments associated with Foxwoods Resort Casino and MGM Grand at Foxwoods are located east of Cedar Swamp along Route 2. Tribal homes are located to the west and southwest of Cedar Swamp and north of Route 214 on lands characterized by small hills and valleys that are predominantly wooded. Elevations range from approximately mean sea level near the Thames River to approximately 100 feet above sea level along Shewville Brook to approximately 350 feet above sea level among the Tribal residences.

Geology is important to the occurrence and relative effects of natural hazards such as earthquakes. Thus, it is important to understand the geologic setting and variation of bedrock and surficial formations in lands controlled by the Mashantucket Pequot Tribal Nation.

Mashantucket contains eight bedrock types which lie in fairly west-east bands across the Reservation. These include the Quinebaug Formation, Dioritic phase of Preston Gabbro, Preston Gabbro, Waterford Group, Hope Valley Alaskite Gneiss; Plainfield Formation, Quartzite unit in Plainfield Formation, and the Mamacoke Formation. The formations are dominated by gneiss, a relatively hard metamorphic rock.

A total of four fault lines are mapped on the Reservation. The Honey Hill Fault tracks northwest to southeast across the northern section of the Reservation, running beneath Cedar Swamp, MGM Grand at Foxwoods, and Foxwoods Resort Casino. The Honey Hill Fault is a thrust fault, mostly Devonian or Ordovician in origin. An unnamed high angle fault believed to be Jurassic in origin passes the western edge of the Reservation, intersecting the Honey Hill Fault near the Preston-Ledyard boundary. A minor unnamed fault tracks from this area to intersect with the Honey Hill Fault beneath Foxwoods Resort Casino. Finally, a minor unnamed fault tracks along Route 2 east of Foxwoods Resort Casino. Refer to the Multi-Jurisdictional HMP for the general location of these fault lines.

The Reservation's surficial geologic formations are dominated by glacial till and swamp formations. Refer to the Multi-Jurisdictional HMP for a generalized view of surficial materials. MGM Grand at Foxwoods is underlain by glacial till, while Foxwoods Resort Casino is underlain by a combination of glacial till, sand, sand and gravel, and gravel. Cedar Swamp consists of swamp formations, which change to alluvium and sand and gravel along Indiantown Brook and Shewville Brook. The southern and western portions of the Reservation are almost entirely glacial till with some areas of swamp. Till contains an unsorted mixture of clay, silt, sand, gravel, and boulders deposited by glaciers as a ground moraine. The amount of stratified drift present is important as areas of stratified materials are generally coincident with floodplains. These materials were deposited at lower elevations by glacial streams, and these valleys were later inherited by the larger present day streams and rivers. However, the smaller glacial till watercourses can also cause flooding. The amount of stratified drift also has bearing on the relative intensity of earthquakes and the likelihood of soil subsidence in areas of fill.

## **2.2 Land Use and Development Trends**

Prior to 1983, development on the reservation was relatively sparse and predominantly residential. Following Federal recognition in 1983, the Tribe began to develop new buildings for residences and for its commercial enterprises. According to the Building Official, buildings in place prior to 1992 meet whatever Connecticut Building Code was in effect at that time. Most buildings on the Reservation were constructed in the 1990's; therefore, these buildings are constructed to the 1990 Connecticut Building Code. Buildings constructed between 1998 and 2004 are constructed to the 1996 BOCA Building Code, while more recent buildings are constructed to meet the 2003 International Building Code.

Today, the overall land use patterns of the Reservation are well-established. The Mashantucket Pequot Tribal Nation employs thousands of employees throughout its various enterprises. The Public Works, Community Planning and Property Management Department manages approximately 8.5 million square feet of building space. The water and sewer systems of the Tribe are capable of supporting all existing growth and anticipated growth per its Water Supply Plan. Foxwoods Resort Casino and MGM Grand at Foxwoods are the commercial fixtures of the Reservation, providing gaming, hotel, and entertainment amenities. They located in the eastern portion of the Reservation along Route 2.

The last large development project to be completed was MGM Grand at Foxwoods in 2008. This casino has over three million square feet of interior space. Other than this project, only few homes have been added to the Reservation since 2005. Tribal officials note that additional development is proposed for the future. In particular, a large retail outlet center is planned for development between MGM Grand at Foxwoods and Foxwoods Resort Casino with frontage near Route 2. No industry is located on the Reservation, but a sand and gravel operation is located on fee lands in North Stonington.

The Mashantucket Pequot Tribal Nation has several areas that they deem sacred. One notable site is the Mashantucket Pequot Burial Ground located on Fanning Road. Other areas are located on fee lands outside of the Reservation. Throughout its ancestral homeland are culturally significant areas that the Tribe wishes to protect and conserve for future generations. The Mashantucket Pequot Tribal Nation has determined that the best way to protect these areas is to identify them only in internal documents. When and if sacred or historic sites are threatened or damaged by hazard events and can benefit from FEMA assistance, the Mashantucket Pequot Tribal Nation will work with FEMA as required to incorporate same.

## **2.3 Drainage Basins and Hydrology**

The Reservation drains to two regional basins: the Thames Main Stem and the Southeast Eastern Complex. The majority of the Reservation associated with Cedar Swamp drains towards the Thames River through Indiantown Brook and Shewville Brook. While Indiantown Brook drains a relatively large area of Preston and North Stonington prior to entering the Reservation, the large capacity of Cedar Swamp mitigates watercourse flooding issues.

The southern portion of the Reservation drains to Williams Brook in Ledyard. A very small section along Route 214 drains to Lantern Hill Brook in North Stonington.

## 2.4 Governmental Structure

The Mashantucket Pequot Tribal Nation is governed by its Tribal Council. Each member of the seven-member Tribal Council is elected by Tribal membership to three-year terms and collectively makes the laws governing the Tribe and its properties, manages its natural resources, and maintains relationships with local, State, and Federal governments as well as with other Tribal nations. The Tribal Council has the authority to enact laws and adopt resolutions such as that required for this HMP. The Chairman of the Tribal Council is the de facto Chief Executive Officer of the Tribe.

The Mashantucket Pequot Tribal Nation has several departments that manage the various facets of Tribal life. Departments directly related to natural hazard mitigation include its Finance Department, Natural Resources Protection & Regulatory Affairs Department, Public Safety Departments (Police, Fire & Emergency Services, Security, and Dispatch), and its Chief of Staff. These are described below:

- ❑ The Finance Department tracks Tribal expenditures and oversees budgets. Coordination with this department is important for long-term capital projects.
- ❑ The Natural Resource Protection & Regulatory Affairs Department oversees several offices.
  - Building Code Enforcement mitigates potential damages by ensuring that construction is to industry standards, identifies deficiencies in existing buildings through property inspections, and ensures that preparedness activities do not violate applicable building codes.
  - The Natural Resources Protection office, the Tribal Land Use Commission, and the Tribal Historic Preservation Officer review all development plans and ensure that it is performed in an environmentally sound manner and will not have impacts that are detrimental to the Tribe's natural resources or sacred sites. These groups work closely with the Public Works, Community Planning and Property Management Department on these issues. The Tribe also has a full-time Environmental Monitor in the Natural Resources Protection Department who patrols Tribal land for any issues.
- ❑ Public Safety Departments maintain peace and ensure the protection and safety of all persons and property within Mashantucket. Duties related to natural hazard mitigation include planning and coordination of personnel, equipment, shelters, and other resources necessary during an emergency.
  - Dispatch (Mashantucket Pequot Tribal Police Law Enforcement Radio Communications Center) is responsible for continually monitoring weather conditions and distributing weather messages to the Emergency Manager and other personnel. They issue bulletins to notify the Tribe, State, and surrounding Towns when Reservation roads will be closed for repairs or emergencies, and broadcast again when work is completed. They also activate the Reverse 9-1-1 system when necessary to deliver severe weather warnings.
  - Day-to-day duties of the Police Department include crime prevention, criminal investigations, traffic enforcement, motor vehicle accident investigations, and patrols. Prior to a hazard event, they will patrol all trust lands advising residents to seek shelter

from the impending event if time allows. They isolate areas damaged by natural hazards such that only authorized emergency personnel or investigators can access the area.

- The Fire & Emergency Services Department is the primary agency involved with hazard mitigation through emergency services and public education. Emergency Medical Services are contracted out and operate out of the Emergency Operations Center. Patients are delivered to Tribal Health Services or to Backus Hospital if advanced care is necessary.
- The Chief of Staff oversees many day-to-day operations of the Tribe through its various offices.
  - The Public Works, Community Planning and Property Management Department oversees building management, construction quality assurance and control, housing, and public works. It is tasked with designing safe facilities; maintaining up-to-date maps; reducing environmental impacts; recommending actions to reduce losses from natural hazards; providing services including comprehensive solid waste collection, recycling, and disposal; maintaining infrastructure of roads and bridges; conducting snow removal and deicing on roads; removing trees and tree limbs in rights-of-way; and maintaining and upgrading storm drainage systems to prevent flooding caused by rainfall.
  - The Utilities Department oversees and provides electric, water, sewer, and gas service to the Reservation and surrounding communities. It ensures reliability of services and conducts flow tests on fire hydrants.

In addition to the departments described above, the Tribe has several other departments similar to surrounding municipalities, including Records Management, Education, Tribal Health Services, Human Resources, attorneys, etc. Thus, the Mashantucket Pequot Tribal Nation is technically, financially, and legally capable of implementing mitigation projects for natural hazards.

As discussed in the next section and the historic record throughout this annex, the Reservation is relatively disaster-resilient and as such has not focused on mitigation activities. Instead, the Mashantucket Pequot Tribal Nation has made a concerted effort to perform environmentally-friendly building solutions and utilize best management practices in construction. These practices have had the secondary effect of reducing vulnerability to natural hazards (e.g., utilities have been placed underground, and no development has occurred in floodplains) such that hazard mitigation is minimally addressed in Tribal land use regulations except as noted below.

## **2.5 Review of Existing Plans and Regulations**

In general, the Tribe is fairly disaster resilient and as such hazard mitigation is not directly addressed in any planning documents with the exception of the Emergency Management Plan (EMP). These documents are discussed below.

The Tribe's EMP provides general procedures to be instituted by the Fire & Emergency Services Department and other Tribal Departments in case of an emergency. Emergencies can include but are not limited to fires, earthquakes, or severe weather events such as tornadoes, hurricanes, snow and ice storms, and nor'easters. The Tribe plans to add this HMP as an Annex to its EMP following adoption.

- ❑ Annex I covers the responsibilities of Public Works, Community Planning, and Property Management during an emergency. These departments respond as directed by the Emergency Operations Center (EOC) during an emergency.
  - During an emergency, Building Code Enforcement arranges to isolate damaged areas and to disconnect utilities. Following the emergency, it coordinates utility restorations and assists in the damage assessment for insurance and legal purposes.
  - During an emergency, Public Works, Community Planning, and Property Management compile data regarding strike and incident impact areas. Following the emergency, they repair all damaged areas as rapidly as possible, and coordinate with other Tribal Departments regarding potable water, structural viability, and safe utility operation.
  
- ❑ Annex M, the Severe Weather Annex, outlines the responsibilities of Tribal personnel during a severe weather event. These responsibilities include monitoring, broadcasting warnings (through Reverse 9-1-1 or patrols), preparing shelters, and coordinating supplies. The annex contains a list of NOAA weather watches and warnings and specific instructions to be issued to the public to ensure their long-term preparedness in case of a severe weather event such as a winter storm or a hurricane.

The Tribe does not maintain many of the planning documents typical to municipalities, such as a Plan of Conservation and Development, Zoning Regulations, Subdivision Regulations, Wetland Regulations, Open Space Plans, and Transportation Plans. Instead, they utilize other documents within the Planning & Community Development office to guide growth decisions, including tribal regulations, Tribal planning documents, consultant reports, and regional hazard information. Within certain documents are regulations that govern new development and conservation planning. For example, open space is set aside for any development encroaching on wetlands. These plans were reviewed by the Public Works, Community Planning and Property Management Department and it was suggested at the data collection meeting that there may be opportunities for more formally integrating the findings and recommendations of this HMP into Tribal planning documents.

The most notable existing Tribal regulation pertinent to hazard mitigation is that the Tribe utilizes the 1% annual chance and 0.2% annual chance floodplains as defined by FEMA. Based on current GIS maps and information obtained through FEMA's Flood Hazard Mapping Program [Flood Insurance Rate Maps (FIRMs) and risk assessments], no structures on the Reservation exist within the floodplains, nor will any be allowed to be constructed in said areas in the future. Given this, the Mashantucket Pequot Tribal Nation does not presently participate in the National Flood Plan Insurance Program; however it will reevaluate the need for participation after receipt of notification that updates have been completed relative to pertinent FIRMs and risk assessments.

Enforcement of Building Codes is an important mitigation measure. Refer to Section 2.2 for a discussion of building codes in use by the Tribe over the past several decades. In some cases, the Tribe's building code exceeds the State of Connecticut building code. Building Code Enforcement is part of the Natural Resources Protection and Regulatory Affairs Department. Utilities are located underground except for Coachman Pike where the bedrock is too shallow.

## **2.6 Critical Facilities, Sheltering Capacity, and Evacuation**

The Mashantucket Pequot Tribal Nation considers several facilities to be critical to ensure that emergencies are addressed while day-to-day management of the Tribe continues. These include the Public Safety Building, the Community Center, the Co-Generation Plant, the Child Development Center, and Public Works. These are described below. Critical facilities are presented figures throughout this annex. No facilities are located within a 1% annual chance floodplain or a 0.2% chance annual floodplain as defined by FEMA.

### **Mashantucket Pequot Public Safety Building & Communication Capabilities**

The Public Safety Building is located at the intersection of Route 214 and Pequot Trail. This building houses the Tribe's Police, Fire & Emergency Services, and Dispatch departments. The Tribe's Emergency Operations Center (EOC) is located in this building. This building has a generator that can provide 100% power.

The Tribe utilizes radios, phones, email, and its own Reverse 9-1-1 system to communicate during emergencies. The Tribe's ability to communicate within the Reservation and with its neighbors is considered excellent; however, recent events revealed a potential communication vulnerability – the ability to charge mobile/smart phones during power outages. The Tribe is stocking phone batteries to mitigate this issue in the future.

### **Mashantucket Pequot Community Center**

The Community Center, located on Matt's Path, is also the Tribe's Government Center.

### **The Mashantucket Pequot Tribal Nation Co-Generation Plant**

This facility, located on Muhshee Mahchaq, provides electricity, heating, and cooling to Foxwoods Resort Casino and some other Tribal buildings. It supplies approximately 60% of the electricity utilized by the Tribe, with an external supplier providing the balance of electricity used on. The facility relies on Natural Gas provided by an external supplier to generate power.

### **The Mashantucket Pequot Tribal Nation Child Development Center**

This education facility on Ephraim's Path services up to 100 Tribal children of various ages, including several with special needs.

### **Mashantucket Pequot Public Works**

This facility on Pequot Trail houses all of the tools and equipment necessary for debris, snow, ice, and tree removal. It also stores salt for treating roads during the winter. It is the primary fueling station for all heavy equipment and emergency services vehicles.

## Shelters

The primary shelter facility is MGM Grand at Foxwoods. This building can house 200 people and, combined with Foxwoods Resort Casino, has 18 large back-up generators. It is also connected to the Tribe's Co-Generation Plant.

The Community Center is considered to be the secondary shelter. It can shelter approximately 100 people and has a generator. It is also connected to the Tribe's Co-Generation Plant.

In the case of a regional or large-scale emergency, people could be sheltered at the casino or in the hotels. These facilities are located off Route 2 and are constructed to current building codes. If the hotels needed to be evacuated for some reason, the Tribe has agreements with hotels throughout the Northeast to house evacuees. The Tribe also has mutual aid agreements through SCCOG to house shelterees if necessary.

## Backup Equipment

The Tribe has 18 large backup generators to provide emergency backup power to the casino. They also have 13 portable generators for use during emergencies. In case of an extended power outage, residents would be directed to the shelter locations for showering, charging batteries, etc. If a resident had a particular medical condition that required electricity and could not be moved, the Tribe would install one of the portable generators at the residence.

## Evacuation

Transportation corridors are well-developed. There are two major roads in and out of the nation (Route 2 and Route 214), many interior roads, and few areas where it may prove difficult to reroute traffic during an emergency. Fee lands in Ledyard and North Stonington generally link into the Route 2 or Route 214 corridors for evacuation purposes, providing access to Interstate 95 and Interstate 395.

## **2.7 Status of 2005 Plan Recommendations**

The previous HMP included several general recommendations related to mitigating natural hazards. The recommendations and a summary of actions taken over the past several years towards those actions are listed below. Where progress was indicated, the progress was paid for out of the Tribe's operating budget.

- Evaluate the Hazard Resistant Nature of Critical Facilities – This is ongoing as part of updates to the Tribe's EMP. In general, tribal critical facilities are relatively disaster-resilient since they are not located in FEMA Special Flood Hazard Areas and are constructed to building codes that meet or exceed industry standards. *This recommendation remains valid as part of all EMP updates.*
- Comprehensive Evaluation of Emergency Communication Capabilities Throughout the Reservation – This is ongoing along with EMP updates. Tribal communication capabilities are considered robust and the Tribe can communicate with all interior departments and with surrounding communities. *This recommendation remains valid.*

- ❑ Develop a Flood Audit Program – The Tribe has only minor issues with flooding. Hillside drainage and basement flooding are the primary issues. In addition, Tribal regulations prohibit development in mapped floodplains. *A formal audit program was therefore not pursued and is not carried forward in this HMP update.*
- ❑ Hazardous Materials Spills on Major Roadways / Railroads – The Tribe has improved all of its roads throughout the Reservation. They are also part of the Eastern Connecticut Hazardous Materials Response Team. The Tribe provides emergency personnel with maps of drainage infrastructure such that spills can be properly contained. These maps are on file at the EOC. *This recommendation is not carried forward in this HMP update.*
- ❑ Review of Transportation Facilities to Identify Critical Risks – This is ongoing as part of EMP updates. *This recommendation remains valid.*
- ❑ Distribute or Post Public Information Regarding Hazards on the Reservation – All employees are required to attend safety training and this training is reinforced with information made available via bulletin boards, kiosks, internal websites, and email. Seasonal notices are forwarded to all residents via email, posted on secured websites and, when appropriate and feasible, delivered door-to-door before, during, and after storms. The Tribe has a Reverse 9-1-1 system. *The Tribe will continue to maintain these public information measures in the future.*
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least monthly or following any use of the facilities. *This recommendation remains valid.*
- ❑ Maintain Emergency Personnel Training as Well as Maintain and Update Emergency Equipment and Response Protocols – This is done monthly or quarterly depending on the training, with equipment upgrades occurring to the extent the budget will allow. *This recommendation remains valid.*
- ❑ Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – Nearly all power lines are underground. There are no plans to move the remaining lines underground at this time as it will not be cost-effective to do so. *This recommendation remains valid.*
- ❑ Complete an Earthquake Survey of all Critical Facilities and Infrastructures – The Tribe is located in a very low risk category for earthquakes per the building code. They attempt to exceed seismic requirements when constructing new buildings and as such the Tribe feels that the majority of its buildings are relatively earthquake-resistant. *A formal earthquake survey has not been performed and there are no plans to perform such a survey in the future given the low occurrence of this hazard type.*
- ❑ Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – Inspections are performed annually by Public Works. The Tribe also cleans catch basins on State roads nearby the Reservation. The Natural Resources Protection Department observes ponds and their infrastructure for sediment removal purposes. These maintenance programs will continue in the future. *This recommendation remains valid.*

- ❑ Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – The Tribe believes that its fire protection is adequate. The Utilities Department performs regular fire flow testing. The existing hydrant systems provide excellent pressure and the coverage range is considered to be good. The most vulnerable area is believed to be the limited access area in the central part of the Reservation. *This recommendation remains valid.*

### **3.0 INLAND FLOODING**

#### **3.1 Setting / Historic Record**

There are no notable flooding issues associated with watercourses on the Reservation. The majority of drainage systems are recent and oversized as compared to the specifications in the Connecticut Department of Transportation Drainage Manual. Thus, nuisance flooding occurs only in limited areas.

- ❑ Basement flooding is the most typical type of flooding to occur on the Reservation. For example, a total of 28 basements were pumped on the Reservation due to the March 2010 heavy rainfall.
- ❑ The only known drainage issue is at the intersection of Route 214 and Trolley Line Boulevard. Extreme rainfall can cause the drainage system in the area to backup.

Areas just off of the Reservation either on or near fee lands are more susceptible to inland flooding as indicated by the historic record since 2005:

- ❑ The March 2010 rains caused flooding in and around the former Silica Mine operated by the Tribe on Lantern Hill Road. The pond overflowed causing a washout of Lantern Hill Road downstream. The Tribe received federal funding to repair the road.
- ❑ The March 2010 rains also caused three washouts on the Route 2 bypass that were subsequently repaired.
- ❑ A small bridge on Shewville Road was almost overtopped during the March 2010 rains.

#### **3.2 Existing Programs, Policies, and Regulations**

The Mashantucket Pequot Tribal Nation utilizes the 1% annual chance and the 0.2% annual chance floodplains as defined by FEMA. No development exists within these floodplains, nor will development be allowed in such areas in the future. Therefore, the Mashantucket Pequot Tribal Nation does not currently budget for flood mitigation activities along watercourses. Other programs that have the secondary benefit of providing flood mitigation were discussed in Section 2.4.

Drainage systems for new construction have all been oversized since the Tribe realizes that research has shown that the incidence of rainfall in southeastern Connecticut has been increasing over time. This policy of over-sizing drainage systems has helped to minimize flooding issues on the Reservation. Public Works cleans and inspects catch basins and culverts at least annually or more often if problems are noted.

The Tribe accesses weather reports through the National Weather Service. During large storm events, the Fire & Emergency Services Department is prepared to respond to Tribal residents whose basements require pump outs, and Public Works is prepared to put up warning signs near the flood-prone intersection at Route 214 and Trolley Line Boulevard.

### **3.3 Vulnerabilities and Risk Assessment**

This section discusses specific areas at risk to flooding within the Reservation. Areas located on fee lands outside of the Reservation are not considered.

#### **3.3.1 Vulnerability Analysis of Areas along Watercourses**

The major water bodies nearby the Reservation include Indiantown Brook, Shewville Brook, Cedar Swamp, and an unnamed swamp that drains to Shewville Brook located west of Cedar Swamp (Figure 3-1). These water bodies have Special Flood Hazard Areas (SFHAs) mapped by FEMA. However, no development is located in these areas on Reservation lands. Only four areas of infrastructure are located within the 1% annual chance floodplain: a portion of Trolley Line Boulevard near the Utilities Building; a portion of Muhshee Mahchaq near the waste water treatment facility, a portion of Shewville Road in the western portion of the Reservation, and part of the western filtration beds off of Muhshee Mahchaq. It is not an issue for the filtration beds to be temporarily flooded.

The Tribe's Northern Wellfield is located on the northeastern side of Cedar Swamp and is also in the SFHA. Some of the wells are located below the flood elevation. Because the Tribe utilizes a filtration plant for groundwater that meets the requirements for surface water treatment under the Safe Drinking Water Act, flooding is not a direct concern.

#### **3.3.2 Vulnerability Analysis of Private Properties**

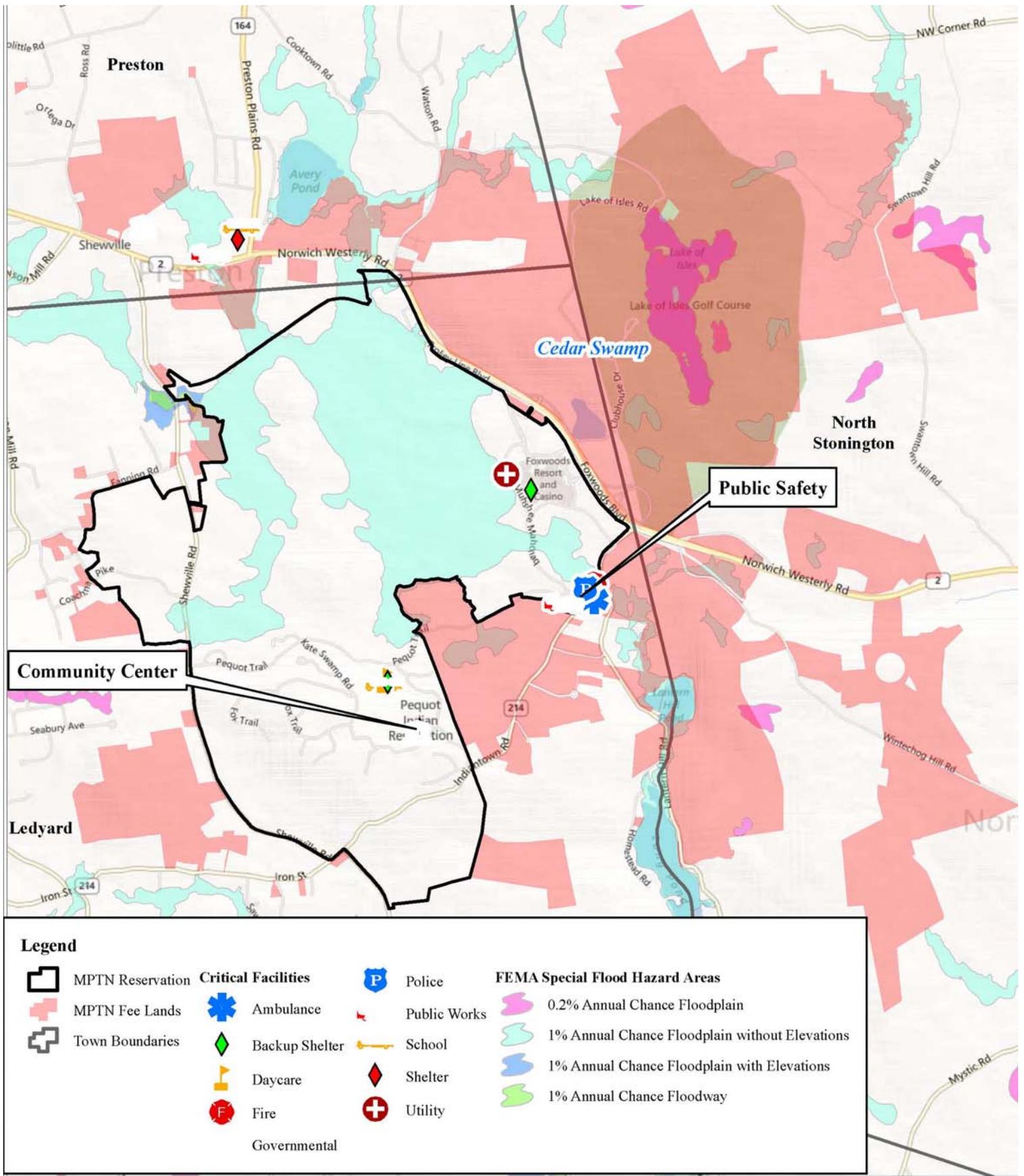
No residential, commercial, or industrial development on the Reservation is located within FEMA SFHAs, and drainage systems are all recent and oversized. The poor drainage flooding near the intersection of Route 214 and Trolley Line Boulevard does not impact any structures. Thus, there are no flooding issues to structures on the Reservation. The risk of flooding is therefore considered to be minimal and the *HAZUS-MH* software was not run to calculate the economic effect of flooding to Reservation lands.

#### **3.3.3 Vulnerability Analysis of Critical Facilities**

As shown on Figure 3-1, no critical facilities associated with the Mashantucket Pequot Tribal Nation are located within FEMA SFHAs. Tribal personnel indicate that such facilities have no issues with flooding. The risk of flooding to critical facilities is therefore considered to be minimal.

### **3.4 Potential Mitigation Measures, Strategies, and Alternatives**

General potential mitigation measures that can be taken to reduce the effects of inland flooding were discussed in Section 3.7 and in Section 11.2.2 of the Multi-Jurisdictional HMP. Recommendations pertinent to all natural hazards that could affect the Reservation are listed in Section 11 of this annex along with general and specific measures to mitigate inland flooding under the categories of prevention, property protection, emergency services, public education and awareness, natural resource protection, and structural projects.



SOURCE(S):  
SCCOG, FEMA,  
Mashantucket Pequot Tribal Nation

**Figure 3-1: FEMA Special Flood Hazard Areas**

LOCATION:  
**Mashantucket, CT**

## **4.0 COASTAL FLOODING & STORM SURGE**

### **4.1 Setting / Historic Record**

The Mashantucket Pequot Tribal Nation is not located along the coastline or along any tidally-influenced river. It is also not located in a potential hurricane surge zone. No coastal flooding or storm surge has affected the Reservation since the last HMP. Therefore, the Reservation is considered to be immune to the direct effects of coastal flooding and storm surge.

### **4.2 Existing Programs, Policies, and Regulations**

The Tribe does not have any regulations in affect to restrict development due to coastal flooding hazards.

The Tribe understands that shelter space at the casino and hotel may need to be utilized if a regional evacuation occurred due to a coastal flooding event as managed through its mutual aid agreements with SCCOG. The Tribe is prepared for this potential circumstance.

### **4.3 Vulnerabilities and Risk Assessment**

No areas of the Reservation are vulnerable to coastal flooding or storm surge.

### **4.4 Potential Mitigation Measures, Strategies, and Alternatives**

No mitigation measures for reducing the impact of coastal flooding or storm surge on the Reservation are necessary or are proposed at this time.

## **5.0 HURRICANES AND TROPICAL STORMS**

### **5.1 Setting / Historic Record**

Several types of hazards may be associated with tropical storms and hurricanes including heavy or tornado winds, heavy rains, and flooding. Wind hazards are widespread and can affect any part of the Reservation. However, some buildings on the Reservation are more susceptible to wind damage than others.

The last major hurricane or tropical storm wind event to affect the Reservation was associated with Hurricane Irene in August 2011. Trees were felled throughout the Reservation, with areas along roads and near residences the hardest hit areas. Some residents were without electricity for up to 10 days following the storm. The Co-Generation Plant was not affected and the casino was back online in 12 hours following the storm. The Lake of Isles area in North Stonington, located on fee lands, was also particularly hard hit during the storm.

### **5.2 Existing Programs, Policies, and Mitigation Measures**

Wind loading requirements for new buildings are addressed through the Building Code utilized by the Tribe. Tribal personnel note that recent tribal buildings all meet or exceed industry standards for wind loading, which is 115 miles per hour on the Reservation.

Parts of trees (limbs) or entire tall and older trees may fall during heavy wind events, potentially damaging structures, utility lines, and vehicles. Utility lines are located underground throughout the Reservation, with the exception of Coachman Pike due to shallow bedrock.

The Natural Resources Protection Department is in charge of maintenance and preservation of trees on the Reservation. The Tribe attempts to save trees as much as possible when they do not present safety concerns. The Tribe contracts with an external contractor to perform tree maintenance in Mashantucket. An external supplier of electricity performs maintenance of trees along Route 2, and the Town of Ledyard is responsible for maintaining other trees nearby the Reservation. An external gas supplier has utilities in the area, but they are located underground.

The Mashantucket Pequot Tribal Nation produces approximately 60% of its electricity needs at its Co-Generation Plant. The remaining electrical service is provided by an external supplier. In the case of an extended power outage, residents would be directed to the shelter at MGM Grand at Foxwoods for sleeping, charging, or showering. The Tribe also has additional programs in place as noted in Section 2.6. The Tribe further understands that shelter space at the casino and hotel may need to be utilized if a regional evacuation occurred through its regional mutual aid agreement with SCCOG.

Storms often are tracked well in advance of reaching Connecticut. The Tribe can access National Weather Service forecasts via the internet as well as listen to local media outlets (television, radio) to receive information about the relative strength of the approaching storm. As noted in Section 2.4, Dispatch is responsible for monitoring and relaying storm-

related information to emergency personnel, Tribal residents, and neighboring communities. This information allows the Tribe to activate its EMP and encourage residents, employees, and guests to take protective measures as appropriate.

### **5.3 Vulnerabilities and Risk Assessment**

Although Tribal lands are located inland from the Connecticut shoreline, the Reservation is still vulnerable to hurricane and tropical storm wind damage. One particular concern to the Tribe is the blockage of roads and damage to the electrical power supply from falling trees and tree limbs as occurred during Hurricane Irene.

Direct wind damage to newer buildings from hurricane or tropical storm-level winds is rare on the Reservation since very few buildings on the Reservation pre-date the 1970's. Commercial structures, such as the casino and hotel, were constructed to meet or exceed building codes at the time of construction. While older buildings on the reservation are particularly susceptible to roof and window damage from high wind events, this risk will be reduced with time as these buildings are remodeled or replaced with buildings that meet or exceed current codes.

The Mashantucket Pequot Tribal Nation has several sacred sites that are vulnerable to wind damage. Some, like the Mashantucket Pequot Burial Ground, are undeveloped areas where the effects of hurricanes will not diminish the sacred nature or heritage of the site. Others, like the Mashantucket Pequot Tribal Nation Museum, are relatively resilient to wind damage as they are relatively recent construction. However, other sites may be vulnerable to the effects of wind damage although the Tribe does not wish to discuss such areas herein. Despite this vulnerability, these sites are both historic and sacred and therefore no mitigation activities are planned. Future renovation activities at these locations may take into account the effects of wind.

The potential economic effect of wind damage to SCCOG was evaluated in the Multi-Jurisdictional HMP. A separate analysis was not performed specifically for the Reservation.

### **5.4 Potential Mitigation Measures, Strategies, and Alternatives**

General potential mitigation measures that can be taken to reduce the effects of wind damage from hurricanes and tropical storms were discussed in Section 5.7 and in Section 11.2.3 of the Multi-Jurisdictional HMP. General recommendations pertinent to all natural hazards that could affect the Reservation are listed in Section 11 of this annex along with general and specific measures pertinent to reducing wind damage on the Mashantucket Pequot Tribal Reservation under the categories of prevention, property protection, emergency services, public education and awareness, natural resource protection, and structural projects.

## **6.0 SUMMER STORMS AND TORNADOES**

### **6.1 Setting / Historic Record**

Similar to hurricanes and winter storms, wind damage associated with summer storms and tornadoes has the potential to affect any area of the Reservation. Furthermore, because these types of storms and the hazards that result (flash flooding, wind, hail, and lightning) might have limited geographic extent, it is possible for a summer storm to harm one area within the Reservation without harming another. Such storms occur on the Reservation each year, although hail and direct lightning strikes to Reservation lands are rarer. No tornadoes have occurred on the Reservation since the last HMP.

The following are excerpts from the NCDC database for recent summer storms that impacted the Reservation:

- ❑ An isolated severe thunderstorm caused flash flooding in July 2009, requiring basement pump outs throughout the Ledyard area adjacent to the Reservation.
- ❑ Multiple severe thunderstorms brought down numerous trees and wires in Ledyard in July 2010, adjacent to the Reservation.

### **6.2 Existing Programs, Policies, and Mitigation Measures**

Heeding warnings is the most viable and therefore the primary method of existing mitigation measures for tornadoes and thunderstorm-related hazards. The NOAA National Weather Service issues watches and warnings relative to severe weather. The Tribe can access National Weather Service forecasts via the internet as well as listen to local media outlets (television, radio) to receive information about the relative strength of the approaching storm. This information allows the Tribe to activate its EMP and encourage residents, employees, and patrons to take protective measures as appropriate. Dispatch services are responsible for monitoring weather reports and relaying information.

Aside from warnings, several other methods of mitigation for wind damage are employed by the Tribe as explained in Section 5.2 within the context of hurricanes and tropical storms. In addition, the Building Code includes guidelines for the proper grounding of buildings and electrical boxes to protect against lightning damage.

### **6.3 Vulnerabilities and Risk Assessment**

Summer storms are expected to occur each year and are expected to at times produce heavy winds, heavy rainfall, lightning, and hail. All areas of the Reservation are equally likely to experience the effects of summer storms.

Most thunderstorm damage is caused by straight-line winds exceeding 100 mph. Experience has generally shown that wind in excess of 50 miles per hour (mph) will cause significant tree damage during the summer season as the effects of wind on trees is exacerbated when the trees are in full leaf. The damage to buildings and cable utilities due to downed trees has historically been the biggest problem associated with wind storms. Heavy winds can take down trees near

power lines, leading to the start and spread of fires. Such fires can be extremely dangerous during the summer months during dry and drought conditions. Fortunately, the Reservation has nearly all of its utilities located underground such that downed trees are not a utility issue.

Lightning and hail are generally associated with severe thunderstorms and can produce damaging effects. All areas of the Reservation are equally susceptible to damage from lightning and hail, although lightning damage is typically mitigated by warnings and proper grounding of buildings and equipment. Hail is primarily mitigated by heeding warnings. These are considered likely events each year, but typically cause limited damage on the Reservation. The majority of buildings is well-constructed and meets or exceeds current building codes.

Although tornadoes pose a threat to all areas of Connecticut, their occurrence is least frequent in New London County as compared with the rest of the State. Thus, while the possibility of a tornado striking the Reservation exists, it is considered to be an event with a very low probability of occurrence.

As discussed in Section 5.3, the Mashantucket Pequot Tribal Nation has several sacred sites that are vulnerable to summer storm damage. Hail, lightning, and heavy wind could each potentially cause damage to these areas. However, these sites are historic and sacred and no mitigation activities are planned at this time. Future renovation activities may take into account the effects of summer storms, particularly lightning.

#### **6.4 Potential Mitigation Measures, Strategies, and Alternatives**

General potential mitigation measures that can be taken to reduce the effects of wind damage were discussed in Section 5.7 and in Section 11.2.3 of the Multi-Jurisdictional HMP. No additional recommendations are available specific to reducing damage from summer storms and tornadoes. Refer to Section 11 of this annex for recommendations related to wind damage and general recommendations related to emergency services.

## **7.0 WINTER STORMS AND NOR'EASTERS**

### **7.1 Setting / Historic Record**

Similar to hurricanes and summer storms, winter storms have the potential to affect any area of the Reservation. However, unlike summer storms, winter storms and the hazards that result (wind, snow, and ice) have more widespread geographic impact. In general, winter storms are considered highly likely to occur each year (major storms are less frequent), and the hazards that result (nor'easter winds, snow, and blizzard conditions) can potentially have a significant effect over a large area of the Reservation.

Winter storms and nor'easters have affected the Reservation since the last HMP, but only storms during the winter of 2010-2011 had a significant effect. Winter storm Alfred in October 2011 caused electrical outages for three days in parts of the Reservation, but this was more from wind damage than from snow load. Most trees that were damaged during Hurricane Irene were cleaned up prior to Alfred, mitigating the potential damage.

### **7.2 Existing Programs, Policies, and Mitigation Measures**

Existing programs applicable to winter storm winds are the same as those discussed in Sections 5.2 and 6.2. Programs that are specific to winter storms are generally those related to preparing plows and sand and salt trucks; tree trimming and maintenance to protect power lines, roads, and structures; and other associated snow removal and response preparations.

As it is almost guaranteed that winter storms will occur annually in Connecticut, it is important to locally budget fiscal resources toward snow management. Snow is the most common natural hazard requiring additional overtime effort from Tribal staff, as parking garages, parking lots, and roadways need constant maintenance during storms. The Public Works Department oversees snow removal on the Reservation. Employees understand that the livelihood of the Tribe depends on there being constant access to its facilities, so response to storms is quick and efficient. Salt and sand is stored at the Public Works facility.

The Building Code specifies that a pressure of 30 pounds per square foot be used as the base "ground snow load" for computing snow loading for roofs. The Tribe monitored the weight of snow on all its buildings during the winter of 2011-2012. They shoveled all of the roofs at the casino and as well as at many other Tribal structures. The Tribe is working on a plan to apply ice melt to roofs in the future.

### **7.3 Vulnerabilities and Risk Assessment**

Severe winter storms can produce an array of hazardous weather conditions, including heavy snow, blizzards, freezing rain and ice pellets, flooding, heavy winds, and extreme cold. Further "flood" damage could be caused by flooding from frozen water pipes. Often, tree limbs over roadways are not suited to withstand high wind and snow or ice loads.

This section focuses on those effects commonly associated with winter storms, including those from blizzards, ice storms, heavy snow, freezing rain, and extreme cold. Providing warnings and education can prevent most injuries from winter storms. Most deaths from winter storms are

indirectly related to the storm, such as from traffic accidents on icy roads and hypothermia from prolonged exposure to cold. Damage to trees and tree limbs and the resultant downing of utility cables are a common effect of these types of events. Secondary effects can include loss of power and heat.

The majority of Tribal buildings are recently constructed and therefore not susceptible to damage from heavy snow. The draft plan to apply ice melt to Tribal buildings will alleviate concerns with snow loading as well as eliminate the need for dangerous snow removal activities on roofs. Thus, while some tribal buildings could be susceptible to heavy snow loads, they will be cleared quickly if safety is a concern.

Icing is not typically an issue on the Reservation. Ephraim's Path is very steep and as such ambulances can have difficulty getting up this road in the winter during storms. Extra sanding and salting of the roadways in necessary locations alleviates trouble spots under most winter conditions.

#### **7.4 Potential Mitigation Measures, Strategies, and Alternatives**

Potential mitigation measures for flooding caused by nor'easters include those appropriate for flooding that were discussed in Section 3.7 of the Multi-Jurisdictional HMP and Section 3.4 of this annex. However, winter storm mitigation measures must also address blizzards, snow, and ice hazards. General potential mitigation measures that can be taken to reduce the effects of wind damage were discussed in Section 5.7 and in Section 11.2.3 of the Multi-Jurisdictional HMP. General recommendations pertinent to all natural hazards that could affect the Reservation are listed in Section 11 of this annex along with general and specific measures pertinent to reducing damage from winter storms on the Mashantucket Pequot Tribal Reservation under the categories of prevention, property protection, emergency services, public education and awareness, natural resource protection, and structural projects.

## **8.0 EARTHQUAKES**

### **8.1 Setting / Historic Record**

An earthquake is a sudden rapid shaking of the earth caused by the breaking and shifting of rock beneath the earth's surface. Earthquakes can cause buildings and bridges to collapse; disrupt gas, electric, and telephone lines; and often cause landslides, flash floods, fires, avalanches, and tsunamis. Earthquakes can occur at any time and often without warning. Detailed descriptions of earthquakes, scales, and effects can be found in Section 8 of the Multi-Jurisdictional HMP. Despite the low probability of an earthquake occurrence, earthquake damage presents a potentially catastrophic hazard to the Reservation. However, it is very unlikely that the Reservation would be at the epicenter of such a damaging earthquake. No major earthquakes have affected the Reservation since the last HMP.

### **8.2 Existing Programs, Policies, and Mitigation Measures**

The Building Codes include design criteria for buildings specific to each jurisdiction as adopted by Building Officials and Code Administrators (BOCA). These include the seismic coefficients for building design on the Reservation. The Tribe has adopted these codes for new construction, and they are enforced by the Building Code Enforcement office.

Due to the infrequent nature of damaging earthquakes, Tribal land use policies do not directly address earthquake hazards. However, the potential for an earthquake and emergency response procedures is addressed in the Tribal EMP.

### **8.3 Vulnerabilities and Risk Assessment**

Surficial earth materials behave differently in response to seismic activity. Unconsolidated materials such as sand and artificial fill can amplify the shaking associated with an earthquake. As noted in Section 2.1, buildings in the vicinity of the Foxwoods Resort Casino are built on stratified drift, making this area potentially more at risk of earthquake damage than the areas of Reservation underlain by glacial till. The best mitigation for future development in areas of sandy material is the application of the most stringent standards in the Building Code, exceeding the building code requirements, or, if the Tribe deems necessary, the possible prohibition of new construction. The areas that are not at increased risk during an earthquake due to unstable soils are the areas underlain by glacial till.

As noted in Section 2.1, several fault lines traverse the Reservation. These faults are not believed to be active. Unlike seismic activity in California, earthquakes in Connecticut are not associated with specific known active faults. However, bedrock in Connecticut and New England in general is typically formed from relatively hard metamorphic rock that is highly capable of transmitting seismic energy over great distances. For example, the relatively strong earthquake that occurred recently in Virginia was felt in Connecticut because the energy was transmitted over a great distance through such hard bedrock.

The built environment on the Reservation primarily includes relatively new construction that is seismically designed. Thus, it is believed that most tribal buildings would be able to withstand

the effects of a significant earthquake with moderate damage or less. Those Tribal residents who live or work in older, non-reinforced masonry buildings constructed prior to the 1980s are at the highest risk for experiencing earthquake damage. Sacred sites, with the exception of the Mashantucket Pequot Tribal Museum, may also be vulnerable to earthquake damage. No mitigation is currently proposed for sacred structures, although future renovation efforts may include seismically designed building construction or protections for sacred features.

Areas of steep slopes can collapse during an earthquake, creating landslides. Fortunately, the Reservation has relatively limited areas of steep slopes and the majority of developed areas have reinforced. Thus, landslides are not a concern on the Reservation.

Seismic activity can also break utility lines such as water mains, gas mains, electric and telephone lines, and stormwater management systems. Damage to utility lines can lead to fires, especially in electric and gas mains. Dam failure can also pose a significant threat to developed areas during an earthquake. For this HMP, dam failure has been addressed separately in Section 10.0. As noted previously, nearly all utility infrastructure on the Reservation is located underground. A rapid and coordinated response with external suppliers of electricity and gas will be necessary to inspect damaged utilities following an earthquake, to isolate damaged areas, and to bring backup systems online. This is covered in the Tribal EMP.

A *HAZUS-MH* analysis of the potential economic and societal impacts to the SCCOG region from earthquake damage is detailed in the Multi-Jurisdictional HMP. The analysis addresses a range of potential impacts from any earthquake scenario, estimated damage to buildings by building type, potential damage to utilities and infrastructure, predicted sheltering requirements, estimated casualties, and total estimated losses and direct economic impact that may result from various earthquake scenarios.

#### **8.4 Potential Mitigation Measures, Strategies, and Alternatives**

Due to the low probability of occurrence, potential mitigation measures related to earthquake damage primarily include adherence to building codes and emergency response services. Both of these are mitigation measures common to all hazards as noted in Section 11 of this annex. The Multi-Jurisdictional HMP also includes additional recommendations for mitigating the effects of earthquakes that are printed in Section 11.

## **9.0 WILDFIRES**

### **9.1 Setting / Historic Record**

Wildfires are considered to be highly destructive, uncontrollable fires. The most common causes of wildfires are arson, lightning strikes, and fires started from downed trees hitting electrical lines. Thus, wildfires have the potential to occur anywhere and at any time in both undeveloped and lightly developed areas of the Reservation. Structural fires in higher density areas of the Reservation, such as at Foxwoods Resort Casino, are not directly addressed herein.

The Fire & Emergency Services Department typically battles a few small brush fires per year. No major wildfires have occurred on the Reservation since the last HMP. It has been reported that a relatively large wildfire occurred in the 1970s or early 1980s that spread into North Stonington, but no details about the size or effects of the fire were made available.

### **9.2 Existing Programs, Policies, and Mitigation Measures**

Monitoring of potential fire conditions is an important part of mitigation. The Connecticut DEEP Forestry Division uses the rainfall data recorded by the Automated Flood Warning system to compile forest fire probability forecasts. This allows the DEEP to monitor drier areas to be prepared for forest fire conditions. The Mashantucket Pequot Tribal Nation can access this information over the internet. The Tribe also receives “Red Flag” warnings via local media outlets.

Existing mitigation for wildland fire control is typically focused on building codes, public education, Fire & Emergency Services Department training, and maintaining an adequate supply of equipment. The Fire & Emergency Services Department is well-equipped to deal with structure fires, but has limited off-road equipment to fight woodland fires. The Tribe relies on its inter-municipal agreements for support in fighting such fires.

The Fire & Emergency Services Department goes to fires as quickly as possible both on the Reservation and within surrounding communities. Developed areas of the Reservation have water service through the Utility Department that provides fire protection water. The coverage range of the hydrants is considered to be good and fire flow pressure is considered to be excellent. The Utility Department regularly tests hydrants and provides fire flow information to the Fire & Emergency Services Department.

The Tribe has a 100,000-gallon water storage tank located on the Reservation with additional storage in the clearwells at the Water Filtration Plant. In addition, two 2,000,000-gallon water storage tanks provide water and fire protection to the casino area. Additional storage tanks are located on fee lands in North Stonington to provide potable water, irrigation water, and fire protection in those areas. No dry hydrants are located on the Reservation, but two are located on fee lands in Ledyard and North Stonington.

### **9.3 Vulnerabilities and Risk Assessment**

The risk for wildlife on the Reservation is considered to be low to moderate for several reasons. First, all developed areas on the Reservation have public water service provided by the Utilities

Department. This public water service, combined with the 2.1 million gallons of water storage, provide sufficient water volume and pressure to fight nearly any fire that occurs near developed areas. Second, there are no notable dead ends or one-way roads that are difficult for firefighting equipment to access on the Reservation. Finally, the Tribe has agreements with its municipal neighbors to provide assistance in case of an emergency. Thus, if a wildfire did occur, it would likely be contained within a few acres.

The vicinity of Cedar Swamp, particularly the undeveloped forest to the west of Cedar Swamp, is the most vulnerable location for a wildfire to occur on the Reservation. This area has no developed roads or water sources and is difficult to access with firefighting equipment. The Tribe would need to rely on inter-municipal agreements to effectively fight a fire in this area. The delayed response time would allow the fire to grow larger. Fortunately, there are no buildings in this area, although sacred sites may be nearby.

Areas on fee lands were considered to be relatively well-protected against wildfires, either because of the presence of public water service, the availability of dry hydrants, the proximity to streams or other water bodies, or the ability to access those lands with pumper trucks.

#### **9.4 Potential Mitigation Measures, Strategies, and Alternatives**

Potential mitigation measures for wildfires include a combination of prevention, education, and emergency planning as provided in Section 11.

## **10.0 DAM FAILURE**

### **10.1 Setting / Historic Record**

Dam failures can be triggered suddenly with little or no warning and often in connection with natural disasters such as floods and earthquakes. Dam failures can occur during flooding when the dam breaks under the additional force of floodwaters. In addition, a dam failure can cause a chain reaction where the sudden release of floodwaters causes the next dam downstream to fail. While flooding from a dam failure generally has a limited geographic extent, the effects are potentially catastrophic depending on the downstream population.

The risk of a dam failure affecting the Reservation is considered to be minimal as no major dams exist on or upstream of the Reservation. No dam failures affected the Reservation since the time of the last HMP. However, the Tribe owns and maintains several low hazard dams located on fee lands off of the Reservation.

### **10.2 Existing Programs, Policies, and Mitigation Measures**

The Mashantucket Pequot Tribal Nation does not have any dams on the Reservation. The Tribe does own several low-hazard dams located on fee lands in Ledyard and North Stonington. One dam, the Lake of Isles Dam, is considered to be a moderate hazard dam. Each dam is believed to be in fair to excellent condition. These dams are under the jurisdiction of the Connecticut DEEP.

The dam safety statutes are codified in Section 22a-401 through 22a-411 inclusive of the Connecticut General Statutes. Sections 22a-409-1 and 22a-409-2 of the Regulations of Connecticut State Agencies have been enacted, which govern the registration, classification, and inspection of dams. Dams must be registered by the owner with the DEEP according to Connecticut Public Act 83-38. Owners of high and significant hazard dams are required to maintain Emergency Operations Plans (EOPs) for such dams; since the Tribe does not own such dams, they do not have separate EOPs for their dams.

### **10.3 Vulnerabilities and Risk Assessment**

The risk of dam failure impacting any areas of the Reservation is minimal. No dams are located on the Reservation, and dams located upstream of the Reservation have hazard rankings of low or moderate. If the Lake of Isles Dam failed, damage could potentially result to unoccupied structures and low volume roadways that would lead to a moderate economic loss. However, such losses would not be felt on the Reservation. In addition, if the Silica Mine Dam (a low hazard dam) failed, Lantern Hill Road could be washed out as occurred during the March 2010 rains.

### **10.4 Potential Mitigation Measures, Strategies, and Alternatives**

Given the fact that the Mashantucket Pequot Tribal Nation is unlikely to be affected by flooding from dam failure, only one recommendation related to mitigating damage from dam failure is believed appropriate at this time as presented in Section 11.

## 11.0 RECOMMENDATIONS

### 11.1 Summary of Specific Recommendations

All recommendations presented in this plan for each hazard are summarized below:

#### 11.1.1 Recommendations Applicable to All Hazards

##### Regional Coordination

- ❑ Continue to promote inter-jurisdictional coordination efforts for emergency response.
- ❑ Continue to promote local and regional planning exercises that increase readiness to respond to disasters.
- ❑ Continue to evaluate communication capabilities, pursue upgrades to communication, and ensure multiple internal and external communication vehicles are in place.
- ❑ Continue to promote regional transportation planning through SCCOG to balance general transportation, shipping, and potential evacuation needs.
- ❑ Work with SCCOG to perform a regional study to identify the vulnerability of critical facilities that may be unable to withstand natural hazard damage. Emphasis should be placed on critical infrastructure, shelters and other sites to ensure structural integrity against various hazards and adequacy of backup supplies.
- ❑ Work with SCCOG to develop regional evacuation scenarios that include and expand upon the Millstone evacuation plan.

##### Local Emergency Response

- ❑ Continue to review and update the Tribal EMP at least once annually.
- ❑ Add the HMP update as an annex to the Tribal EMP.
- ❑ Continue to maintain emergency response training and equipment and upgrade equipment when possible.
- ❑ Encourage tribal officials to attend FEMA-sponsored training seminars at the Emergency Management Institute (EMI) in Emmitsburg, Maryland.
- ❑ Continue to evaluate emergency shelters, update supplies, and check communication equipment.
- ❑ Continue to promote dissemination of public information regarding natural hazard effects and mitigation measures. Specifically,
  - ⇒ Make available copies of the disaster planning guides and manuals from the "Are You Ready?" series (<http://www.ready.gov/are-you-ready-guide>).

- ⇒ Encourage Tribal residents and other members to purchase NOAA weather radios with an alarm feature.
- ⇒ Post hazard preparedness information on internal websites, including links to established resources made available by the State of Connecticut and FEMA.

### Prevention

- ❑ Form a committee to review planning documents and regulations in the Planning and Community Development office and integrate appropriate elements of this HMP into those planning documents.
- ❑ Continue reviewing building plans to ensure proper access for emergency vehicles.
- ❑ Continue to require the burying of utility lines where appropriate.
- ❑ Continue to enforce the appropriate building code for new building projects and exceed code design when possible.
- ❑ Encourage Tribal residents and members to install and maintain lightning rods on their buildings.

#### 11.1.2 Recommendations Applicable to Inland Flooding

- ❑ Continue to prohibit new development activities within SFHAs to the greatest extent possible within the Tribal land use regulations.
- ❑ Make available FEMA-provided flood insurance brochures at public accessible places such as local government buildings and the Community Center. Encourage tribal members to purchase flood insurance if they are located within a FEMA SFHA.
- ❑ Continue to regulate development in protected and sensitive areas, including steep slopes, wetlands, and floodplains.
- ❑ Utilize recently available extreme rainfall data to assess existing culverts. Encourage bridge replacements and culvert replacements in areas found to be undersized.
- ❑ Continue to perform catch basin and culvert surveys to perform maintenance and cleaning and to identify and prioritize structures in need of replacement.
- ❑ Resize and upgrade the storm drainage in the vicinity of the intersection of Route 214 and Trolley Line Boulevard.

#### 11.1.3 Recommendations Applicable to Wind Damage from Hurricanes, Tropical Storms, Summer Storms, Tornados, and Winter Storms

- ❑ Engage in slightly more aggressive with tree-trimming activities along critical access roads on the Reservation such as Route 214, Pequot Trail, and the northern section of Trolley Line Boulevard.

- ❑ Promote the use of functional shutters for older buildings on the Reservation to guard against window breakage which can result in structural failure. Investigate funding sources to promote this relatively inexpensive type of retrofitting on a large scale.
- ❑ Identify a location or locations on the Reservation for a brush disposal operation for dealing with debris after wind storms. Determine how these trees can be reused within the Reservation (chips, firewood, composting) to reduce costs of exporting.
- ❑ Determine ability of Tribal buildings to withstand wind loading, particularly those designated as actual or potential shelters.
- ❑ Visit the Child Development Center (as is currently done under fire prevention) and educate children about the risks of wind events (and other natural hazards) and how to prepare for them.

#### 11.1.4 Recommendations Applicable to Other Damage from Winter Storms

- ❑ Finalize the draft plan for applying ice melt to Reservation roofs.
- ❑ Clear snow from roofs as well as from roads and parking lots.
- ❑ Provide to Tribal residents prior to and/or during the winter season general information on how to best protect themselves and their homes.
- ❑ Continue to identify areas that are difficult to access during winter storm events and develop contingency plans for emergency personnel.

#### 11.1.5 Recommendations Applicable to Earthquakes

- ❑ Ensure that Tribal departments have adequate backup supplies and facilities for continued functionality in case earthquake damage occurs to these buildings where these critical facilities are housed. This should be part of the regional critical facility study discussed in Section 2.8.
- ❑ Consider preventing residential development in areas prone to collapse such as below steep slopes or in areas prone to liquefaction.

### 11.1.6 Recommendations Applicable to Wildfires

- ❑ Continue to evaluate fire flows, available water supply, and areas at risk of wildfire on the Reservation.
- ❑ Extend public water supply and fire protection to future areas identified as being particularly at risk.
- ❑ Pursue other sources of fire-fighting water where adequate supplies do not exist, such as through the installation of dry hydrants.
- ❑ Continue to support public outreach programs to increase awareness of forest fire danger, equipment usage, and protecting homes from wildfires. Educational materials should be made available at the Tribal Community Center.
- ❑ Ensure that provisions of Tribal regulations regarding fire protection facilities and infrastructure are being enforced.
- ❑ Actively pursue grant funding to remove deadfall from Reservation forests.
- ❑ Purchase additional off-road firefighting equipment to provide additional response capability in the forest west of Cedar Swamp.

### 11.1.7 Recommendations Applicable to Dam Failure

- ❑ Continue to maintain Tribally-owned dams in excellent condition.

## 11.2 Prioritization of Specific Recommendations

As explained in Section 11.3 of the Multi-Jurisdictional HMP, the STAPLEE method was utilized in this annex to prioritize recommendations. Table 11-1 presents the STAPLEE matrix for the Mashantucket Pequot Tribal Nation. Each recommendation includes the Tribal department responsible for implementing the recommendation, a proposed schedule, and whether or not the recommendation is new or originally from the previous HMP. Refer to Section 2.7 for the list of previous plan recommendations and whether or not each recommendation was carried forward into this HMP.



TABLE 11-1: MASHANTUCKET PEQUOT TRIBAL NATION STAPLEE MATRIX FOR PRIORITIZING RECOMMENDATIONS

Implementation of Current Recommendations	Existing or New Recommendation?	Responsible Department <sup>1</sup>	Schedule	Cost <sup>2</sup>	Potential Funding Source	Weighted STAPLEE Criteria <sup>4</sup>														Total STAPLEE Score					
						Benefits							Costs												
						Social	Technical (x2)	Administrative	Political	Legal	Economic (x2)	Environmental	STAPLEE Subtotal	Social	Technical (x2)	Administrative	Political	Legal	Economic (x2)		Environmental	STAPLEE Subtotal			
<b>EARTHQUAKES</b>																									
Ensure that Tribal departments have adequate backup supplies and facilities for continued functionality following an earthquake	New	PS	2012-2017	Moderate	OB, CI		0.5	1	1	0.5	0.5					3.0	-0.5	-1					-2.0	1.0	
Consider preventing residential development in areas prone to collapse such as below steep slopes or areas prone to liquefaction	New	P&CD, NRP&RA	2012-2017	Minimal	OB	0.5	1	1	0.5	0.5	1	0.5				7.0		-0.5							6.5
<b>WILDFIRES</b>																									
Continue to evaluate fire flows, available water supply, and areas at risk of wildfire on the Reservation	Existing	UT, FD	2012-2017	Minimal	OB	1	1	1	1	1	1	0.5				8.5									8.5
Extend public water supply and fire protection to future areas identified as being particularly at-risk	New	PS	2012-2017	Moderate	CI	0.5	1	1	0.5	1		0.5				5.5		-0.5		-0.5					4.0
Pursue other sources of firefighting water where adequate supplies do not exist, such as through the installation of dry hydrants	New	PS	2012-2017	Low	CI	0.5	0.5	1		0.5			0.5			3.5		-0.5		-0.5					2.0
Continue to support public outreach programs to increase awareness of forest fire danger, equipment usage, and protecting homes	New	FD	2012-2017	Low	OB	1	1	1	1	1	0.5	1				8.0									8.0
Ensure that provisions of Tribal regulations regarding fire protection facilities and infrastructure are being enforced	New	PS	2012-2017	Low	OB	0.5	0.5	1	0.5	1	0.5					5.0									5.0
Continue to provide funding to the Natural Resources Protection office to remove deadfall from Reservation forests	New	TC	2012-2017	Low	OB	1	1	1	1	1	0.5	1				8.0									8.0
Consider the purchase of additional off-road firefighting equipment to provide additional response capability to the Reservation	New	TC, PS	2012-2017	Moderate	CI	0.5	0.5	1	0.5	1	0.5	0.5				5.5		-0.5		-0.5					4.0
<b>DAM FAILURE</b>																									
Continue to maintain Tribally-owned dams in excellent condition	New	NRP&RA, PW	2012-2017	Moderate	OB	0.5	1	1	1	1	0.5	1				7.5				-0.5					6.5

NOTES

- Departments:  
 FD = Fire Department  
 NRP&RA = Natural Resources Protection & Regulatory Affairs Department  
 P&CD = Planning & Community Development  
 PS = Public Safety  
 PW = Public Works  
 TC = Tribal Council  
 UT = Utilities
- Minimal = To be completed by staff or volunteers where costs are primarily printing, copying, or meetings; Low = Costs are less than \$10,000; Moderate = Costs are less than \$100,000; High = Costs are > than \$100,000.
- OB = Operating Budget, CI = Capital Improvement budget
- A beneficial or favorable rating = 1; an unfavorable rating = -1. Technical and Financial benefits and costs are double-weighted (i.e. their values are counted twice in each subtotal)

**APPENDIX A**

**MASHANTUCKET PEQUOT TRIBAL NATION  
FEE LANDS**

## Mashantucket Pequot Tribal Nation *Fee Lands*

The information contained herein was compiled from maps, financial and other records of the MPTN. To the knowledge and belief of the MPTN and its agents such information is complete and accurate but subject to the possibility that the data reviewed was incomplete or misinterpreted.

### Connecticut

#### *Ledyard*

- |                        |                          |                           |
|------------------------|--------------------------|---------------------------|
| • 51 Cedar Swamp       | • 153R Indiantown Road   | • 30 Route Two            |
| • 54 Cedar Swamp       | • 153 Indiantown Road    | • 58 Route Two            |
| • 55 Cedar Swamp       | • 159 Indiantown Road    | • 72 Route Two            |
| • 64 Cedar Swamp       | • 174 Indiantown Road    | • 75 Route Two            |
| • 72 Cedar Swamp       | • 240 Indiantown Road    | • 76 Route Two            |
| • 80 Cedar Swamp       | • 266 Indiantown Road    | • 82 Route Two            |
| • 16 Coachman Pike     | • 151 Iron Street        | • 85 Route Two            |
| • 28 Coachman Pike     | • 153 Iron Street        | • 100R Route Two          |
| • 35 Coachman Pike     | • 167 Iron Street        | • 110 Route Two           |
| • 1 Crocker Hill Road  | • 169A Iron Street       | • 159R Route Two          |
| • 2 Crocker Hill Road  | • 169 Iron Street        | • 170 Route Two           |
| • 3 Crocker Hill Road  | • 216 Iron Street        | • 450 Route Two           |
| • 4 Crocker Hill Road  | • 1 Jessica Lane         | • 723 Shewville Road      |
| • 7 Crocker Hill Road  | • 3 Jessica Lane         | • 779 Shewville Road      |
| • 8 Crocker Hill Road  | • 4 Jessica Lane         | • 833 Shewville Road      |
| • 9 Crocker Hill Road  | • 5 Jessica Lane         | • 837 Shewville Road      |
| • 12 Crocker Hill Road | • 6 Jessica Lane         | • 844R Shewville Road     |
| • 3 Eska Drive         | • 7 Jessica Lane         | • 850R Shewville Road     |
| • 12 Fanning Road      | • 8 Jessica Lane         | • 865 Shewville Road      |
| • 33 Fanning Road      | • 10 Jessica Lane        | • 936 Shewville Road      |
| • 41 Fanning Road      | • 11 Jessica Lane        | • 959 Shewville Road      |
| • 1 Heath Spur         | • 12 Jessica Lane        | • 962 Shewville Road      |
| • 3 Heath Spur         | • 14 Jessica Lane        | • 980 Shewville Road      |
| • 12 Heath Spur        | • 16 Jessica Lane        | • 1004 Shewville Road     |
| • 16 Heath Spur        | • 729 Lantern Hill Road  | • 81 Stoddards Wharf Road |
| • 37 Homestead Road    | • 732 Lantern Hill Road  | • 1 White Pine Road       |
| • 38A Indiantown Road  | • 760 Lantern Hill Road  | • 2 White Pine Road       |
| • 72R Indiantown Road  | • 769 Lantern Hill Road  | • 4 White Pine Road       |
| • 79 Indiantown Road   | • 784R Lantern Hill Road | • 5 White Pine Road       |
| • 83 Indiantown Road   | • 800R Lantern Hill Road | • 6 White Pine Road       |
| • 86 Indiantown Road   | • 802 Lantern Hill Road  | • 7 White Pine Road       |
| • 87B Indiantown Road  | • 804 Lantern Hill Road  | • 8 White Pine Road       |
| • 119 Indiantown Road  | • 805 Lantern Hill Road  | • 10 White Pine Road      |
| • 124 Indiantown Road  | • 808 Lantern Hill Road  | • 11 White Pine Road      |
| • 136 Indiantown Road  | • 809 Lantern Hill Road  | • 12 White Pine Road      |
| • 137 Indiantown Road  | • 1 North Wind Circle    | • 5 Wolf Ridge Gap        |
| • 151 Indiantown Road  | • 4 Red Brook Lane       |                           |

#### *North Stonington*

- |  |                                     |                            |
|--|-------------------------------------|----------------------------|
| • 306 Boombridge Road                      | • 27 Milltown Road                  | • 34 Ravenwood Road        |
| • Boombridge Road [ID 118-3242]            | • 29 Milltown Road                  | • 0 Swantown Hill Road     |
| • Boombridge Road [ID 118-3975]            | • 35 Milltown Road                  | • 4 Swantown Hill Road     |
| • Boombridge Road [ID 123-0140]            | • NW Corner Road [ID 55-2066]       | • 8 Swantown Hill Road     |
| • Boombridge Road [ID 123-7292]            | • 25 Norwich Westerly Road          | • 187 Swantown Hill Road   |
| • 1 Clubhouse Drive                        | • 41A Norwich Westerly Road         | • 91A Wintechog Hill Road  |
| • 3 Ella Wheeler Road                      | • 41B Norwich Westerly Road         | • 91B Wintechog Hill Road  |
| • 11 Ella Wheeler Road                     | • 663 Norwich Westerly Road         | • 114 Wintechog Hill Road  |
| • 12 Ella Wheeler Road                     | • 680 Norwich Westerly Road         | • 118A Wintechog Hill Road |
| • 36 Ella Wheeler Road                     | • 800 Norwich Westerly Road         | • 135 Wintechog Hill Road  |
| • 0 Ella Wheeler Road [Parcel ID 123-3694] | • 36 Pendleton Hill Road            | • 225 Wintechog Hill Road  |
| • 0 Lake of Isles Road                     | • 95A Pendleton Hill Road           | • 228 Wintechog Hill Road  |
| • 154 Lantern Hill Road                    | • 95 Pendleton Hill Road            | • 254 Wintechog Hill Road  |
| • 15 Milltown Road                         | • Pendleton Hill Road [ID 122-2358] | • 288 Wintechog Hill Road  |
| • 21 Milltown Road                         | • Pendleton Hill Road [ID 122-9288] | • 291 Wintechog Hill Road  |
|  | • Pendleton Hill Road [ID 126-6235] |                            |

## Connecticut [continued]

### *Norwich*

- 55 Main Street
- 221 Old Pond Lane
- 324 Old Pond Lane
- 723 Old Pond Lane
- 811 Old Pond Lane
- 813 Old Pond Lane
- 1212 Old Pond Lane
- 1213 Old Pond Lane
- 1214 Old Pond Lane
- 1411 Old Pond Lane
- 1414 Old Pond Lane
- 1512 Old Pond Lane
- 1513 Old Pond Lane
- 1514 Old Pond Lane
- 1611 Old Pond Lane
- 1612 Old Pond Lane
- 1613 Old Pond Lane
- 1711 Old Pond Lane
- 1723 Old Pond Lane
- 2011 Old Pond Lane
- 2013 Old Pond Lane
- 2114 Old Pond Lane
- 2122 Old Pond Lane
- 2124 Old Pond Lane
- 80 Stonington Road
- 589 West Thames Street
- 607 West Thames Street
- 645 West Thames Street

### *Pomfret*

- 965 Mashamoquet Road

### *Preston*

- 18 Lake of Isles Road
- 19 Lake of Isles Road
- 19 Lynn Drive
- 51 Lynn Drive
- 29 Ricky Lane
- 373 Route Two
- 412 Route Two
- 438 Route Two
- 450 Route Two
- 451 Route Two
- 455 Route Two
- 462 Route Two
- 495 Route Two
- 511 Route Two
- 34 Tanglewood Lane Ext
- 2 Watson Road
- 16 Watson Road
- 17 Watson Road
- 18 Watson Road
- 19 Watson Road
- 20 Watson Road
- 22 Watson Road
- 30 Watson Road
- 36 Watson Road
- 58 Watson Road

### *Quaker Hill [Waterford]*

- 585 Mohegan Avenue
- 591 Mohegan Avenue
- 607 Mohegan Avenue

### *Stonington*

- 25 Liberty Street
- 93 Old North Road

## Rhode Island

### *Hopkinton*

- 47A Palmer Circle

**APPENDIX B**

**ADOPTION RESOLUTION**



**RESOLUTION NUMBER TCR050913-02 of 07  
OF THE  
MASHANTUCKET PEQUOT TRIBAL COUNCIL,  
THE GOVERNING BODY  
OF THE  
MASHANTUCKET PEQUOT TRIBE**

**Adopts the Southeastern Connecticut Council of Governments Multi-Jurisdictional  
Hazard Mitigation Plan and Hazard Mitigation Plan Update Annex for the  
Mashantucket Pequot Tribal Nation**

**WHEREAS**, the Mashantucket Pequot Tribe (the "Tribe") is a federally-recognized, Indian Tribe; and

**WHEREAS**, the Mashantucket Pequot Tribal Council (the "Council") is the Duly Authorized Governing Body of the Tribe pursuant to the Constitution and By-Laws of the Tribe, and is a Federally-recognized, Indian Tribal Government; and

**WHEREAS**, the Mission Statement of the Mashantucket Pequot Tribal Nation pursuant to TCR022499-01 states, "*...the ultimate goal is to protect and advance the Sovereign Rights of the Tribal Nation in order to build and preserve a cultural, social and economic foundation that can never be undermined or destroyed.*"; and

**WHEREAS**, the Mission Statement of the Tribal Council, as amended pursuant to TCR011410-03, is to preserve, protect and advance the Mission Statement of the Tribe for the benefit of the Mashantucket Pequot Tribal Nation; and

**WHEREAS**, the purpose of mitigation planning is to identify the natural hazards, identify actions and activities to reduce any losses from those hazards, and establish a coordinated process to implement the (hazard mitigation) plan, taking advantage of a wide range of resources; and

**WHEREAS**, Indian Tribal Governments are required to develop a Hazard Mitigation Plan that meets the requirements of 44 CFR §201.7 as a condition of receiving from the Federal Emergency Management Agency (FEMA) certain types of non-emergency Stafford Act

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assistance and FEMA mitigation grants which will help to alleviate the impacts of future hazards on the Reservation; and

**WHEREAS**, pursuant to TCR110105-01 of 03, the Council adopted the Southeastern Connecticut Council of Governments (SCCOG) Multi-jurisdictional Hazard Mitigation Plan of 2005 and Community Annex for the Mashantucket Pequot Tribal Nation as its official Hazard Mitigation Plan; and

**WHEREAS**, FEMA requires that Hazard Mitigation Plans (HMPs) be reviewed and updated every five (5) years from the date of approval of the previous plan in order to continue program eligibility; and

**WHEREAS**, the Tribe, operating under an expired Plan, has been working with the Southeastern Connecticut Council of Governments (SCCOG) and/or its designees to review and update same; and

**WHEREAS**, the Assistant Chief of the Fire & Emergency Services Department, Director of Public Works, Community Planning, and Building Management, the Tribe's Building Official, and an Administrative Staff Member participated in the SCCOG Regional Hazard Mitigation Planning Process; and

**WHEREAS**, SCCOG Multi-Jurisdictional Hazard Mitigation Plan 2012 Update (*Exhibit A*) and Hazard Mitigation Plan Update Annex for the Mashantucket Pequot Tribal Nation (*Exhibit B*) drafts dated July 2012 were prepared by Milone & MacBroom, Inc., on behalf of SCCOG; and

**WHEREAS**, the SCCOG Multi-Jurisdictional HMP Update and HMP Update Annex for the Mashantucket Pequot Tribal Nation specifically address hazard mitigation strategies and plan maintenance procedures for the Tribe and recommend several hazard mitigation actions/projects that will provide mitigation for specific natural and human-caused hazards that impact the Tribe, with the effect of protecting people and property from loss associated with those hazards; and

**WHEREAS**, the SCCOG Multi-Jurisdictional HMP Update and HMP Update Annex for the Mashantucket Pequot Tribal Nation were made available for public review and comment, with comments received from the public incorporated into the final draft where applicable following State and Federal comments; and

**WHEREAS**, the SCCOG Multi-Jurisdictional HMP Update and associated HMP Update Annexes were subsequently endorsed by FEMA on October 19, 2012, pending formal adoption by each participating jurisdiction; and

**WHEREAS**, a comprehensive internal review of the HMP Update Annex for the Mashantucket Pequot Tribal Nation, as prepared by Milone & MacBroom, Inc., concluded that same did not fully reflect the concerns of the Tribe and, therefore, required significant modifications prior to Council approval; and

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**WHEREAS**, the HMP Update Annex for the Mashantucket Pequot Tribal Nation has since been revised to reflect the concerns of the Tribe and comply with suggested edits provided by the Tribe's FEMA Mitigation/Tribal Specialist; and

**WHEREAS**, the Assistant Fire Chief/Emergency Manager subsequently submitted the Hazard Mitigation Plan Update Annex for the Mashantucket Pequot Tribal Nation as amended January 30, 2013, to SCCOG, Milone & MacBroom, Inc., and the State of Connecticut DEEP for review and to FEMA for "approval pending adoption"; and

**WHEREAS**, the Council must adopt the SCCOG Multi-Jurisdictional Hazard Mitigation Plan Update dated July 2012 (*Exhibit A*) and the Hazard Mitigation Plan Update Annex for the Mashantucket Pequot Tribal Nation, as amended January 30, 2013 (*Exhibit B*) within one year of FEMA's "approval pending adoption" of its resubmitted Annex or, if it misses its deadline, develop and resubmit its own single-jurisdiction, Tribal-level Plan; and

**WHEREAS**, per TCR053112-01 of 09 amended by TCR060512-05 of 06, the Tribal Council mandated that the Tribal Council Sponsor of any proposed legislation or resolution submit the proposed resolution or legislation to the Office of Legal Counsel to obtain Legal Review and Analysis and completion of an LRA Certificate stating whether there are any legal impacts on the Mashantucket Pequot Tribal Nation, or its Entities, as a result of the proposed resolution or legislation.

**WHEREAS**, per TCR022602-03, amended by TCR031803-01, TCR071803-09, TCR070105-03, TCR122905-02, TCR110907-01 and TCR030211-01, the Tribal Council: mandated that the Tribal Council Sponsor of any proposed enactment work in conjunction with the Chief Financial Officer to ensure that drafts of proposed legislative actions and resolutions specify whether there is or is not a financial impact on the current fiscal year's budget or the 10-year financial forecast; mandated that the sponsor identify how a negative financial impact, if any, shall be funded; approved the form of a new FIP Certificate; required that all proposed resolutions that authorize spending outside of the approved budgets **must** be voted on in Tribal Council Chambers and cannot be submitted for e-mail vote; directed that borrowing, provided that borrowing is not restricted by any of the Tribe's then-current loan agreements, will only be allowed for opportunities with a rate of return on investment above the risk-adjusted weighted average cost of capital, to be documented by a financial pro forma (referenced by and attached to the draft resolution) and mandated that the funding source and financial impact language from the FIP Certificate must be repeated in the RESOLVED section of all applicable resolutions; and

**WHEREAS**, as requested by the Tribal Council Sponsor of the proposed resolution, the Chief Financial Officer and Tribal Council Treasurer have submitted the **attached Finance Impact Protocol – Certificate of Compliance**, pursuant to TCR031803-01 as amended by TCR070105-03 and TCR030211-01, which certifies compliance with the Procedures approved pursuant to TCR071803-09 and amended by TCR030211-01 (*Attachment 1*).

*Financial Impact: This resolution will have no financial impact. The Hazard Mitigation Plan (HMP) sets goals and includes recommendation which continue current protocols or are generally expected to be completed with internal resources. It is expected that any new goals*

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*that may involve spending would only be completed if Grant Funding is secured. This update HMP is expected to improve future MPTN Grant opportunities.*

Operating/Capital Budget Inclusion: N/A

Funding Source: N/A

Other Considerations: N/A

**WHEREAS**, per TCR053112-01 of 09 amended by TCR060512-05 of 06, the Office of Legal Counsel reviewed the proposed resolution and completed an LRA Certificate setting forth the legal impacts, if any, of the resolution (*Attachment 2*).

**THEREFORE BE IT RESOLVED**, the Mashantucket Pequot Tribal Council hereby adopts the SCCOG Multi-Jurisdictional Hazard Mitigation Plan Update dated July 2012 as prepared by Milone & MacBroom, Inc. (*Exhibit A*) and the Hazard Mitigation Plan Update Annex for the Mashantucket Pequot Tribal Nation as amended January 30, 2013 (*Exhibit B*), as its official Hazard Mitigation Plan.

**BE IT FURTHER RESOLVED**, the respective departments identified in the mitigation strategy of the HMP Update Annex for the Mashantucket Pequot Tribal Nation are hereby directed to pursue implementation of the recommended actions assigned to them.

**BE IT FURTHER RESOLVED**, future revisions and HMP maintenance required by 44 CFR 201.7 and FEMA are hereby adopted as part of this resolution for a period of five (5) years from the date of this resolution.

**BE IT FURTHER RESOLVED**, the Assistant Fire Chief/Emergency Manager will provide to the Council an annual report on the progress of the implementation elements of the HMP Update Annex for the Mashantucket Pequot Tribal Nation by November 15<sup>th</sup> of each calendar year.

**BE IT FURTHER RESOLVED**, the Tribe will comply with all applicable Federal statutes and regulations in effect with respect to the periods for which it receives grant funding, in compliance with 44 CFR 13.11 (c); and will amend its HMP whenever necessary to reflect applicable changes in Tribal and/or Federal laws and statutes as required in 44 CFR 13.11 (d).

**BE IT FINALLY RESOLVED**, per the FIP Certificate:

*Financial Impact: This resolution will have no financial impact. The Hazard Mitigation Plan (HMP) sets goals and includes recommendation which continue current protocols or are generally expected to be completed with internal resources. It is expected that any new goals that may involve spending would only be completed if Grant Funding is secured. This update HMP is expected to improve future MPTN Grant opportunities.*

Operating/Capital Budget Inclusion: N/A

Funding Source: N/A

Other Considerations: N/A

**RESOLUTION NUMBER TCR050913-02 OF 07**

Upon motion duly made and seconded, the foregoing Resolution was adopted by the following vote:

Number of "Yes" Votes	7
Number of "No" Votes	0
Number of Abstentions	0
Number of Absent Members	0

**CERTIFICATION**

I, the undersigned, Rodney A. Butler, Chairman of the Mashantucket Pequot Tribal Council, do hereby certify that the Mashantucket Pequot Tribal Council is composed of **SEVEN (7)** members of whom **SEVEN (7)** were present, thereby constituting a quorum, at a duly called Mashantucket Pequot Tribal Council Meeting held on the **9th day of May, 2013**; and that the foregoing Resolution was adopted by the affirmative vote of **SEVEN (7)** members.

  
\_\_\_\_\_  
Rodney A. Butler, Chairman  
Mashantucket Pequot Tribal Council

Date: 5/20/13

ATTEST:

  
\_\_\_\_\_  
Marjorie P. Colebut-Jackson, Secretary  
Mashantucket Pequot Tribal Council

Date: 5/16/13

APPROVED AS TO FORM:

  
\_\_\_\_\_  
Jackson T. King, Tribal General Counsel  
Office of Legal Counsel

Date: 5/15/13