

**APPENDIX B**  
**DATA COLLECTION AND MEETING MINUTES**

**Meeting Minutes**  
**Public Meeting for Multi-Jurisdictional Hazard Mitigation Plan Update**  
**Southeastern Connecticut Council of Governments**  
**December 13, 2011**

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The Southeastern Connecticut Council of Governments hosted a public meeting at 5 Connecticut Avenue, Norwich on December 13, 2011 at 7:00 PM. Approximately 15 people attended, with eleven signing the attendance sheet. Attendees included public officials from the Connecticut Department of Emergency Services and Public Protection (DESPP), the City of Norwich, the City of New London, and the Town of Waterford; members of the press (Norwich Bulletin, New London Day, and Patch.com); and an individual from historic Mystic Seaport.

Mr. David Murphy from Milone & MacBroom, Inc. presented a power point slide show to commence the data collection phase of the plan update. Comments were raised as follows:

- ❑ Mayor Peter Nystrom from Norwich led a discussion about the pending Hazard Mitigation Grant Program (HMGP) application for the floodprone business in Norwich. The application was submitted in 2010 and the City hasn't received any feedback or response from DESPP. The business wishes to be acquired but the lack of movement on the application has led to the business owners re-investing and repairing the flood-damaged property. Mr. Murphy explained that DESPP appears to be holding these applications as disasters are declared and additional funding is being added to the HMGP allocation for Connecticut, and while the SCCOG hazard mitigation plan is being updated.
- ❑ Mr. Jim Butler from SCCOG explained to the attendees that SCCOG had sent a letter to FEMA requesting an exception to the expiration of the previous plan, which may allow DESPP to process the HMGP applications received from the region in 2010.
- ❑ Mr. Thomas Wagner from the Town of Waterford inquired about the next steps to the planning process. Mr. Murphy explained that meetings with local planning teams will be scheduled soon. Each local planning team will consist of a planner, public works/highway supervisor, and emergency management director.
- ❑ Mr. Dana Hewson from Mystic Seaport inquired about mitigation options available for historic facilities. Mr. Murphy explained that FEMA views these differently than non-historic facilities. For example, FEMA is able to fund wet and dry floodproofing of historic buildings, whereas non-historic buildings can only be elevated or removed.
- ❑ Mr. Wagner inquired about whether the plan will address groundwater flooding or basement flooding. Mr. Murphy explained that it can be addressed in the context of flooding, but that basement flooding information is typically difficult to gather from communities. Mr. Wagner believed this is something that could be provided for Waterford.

- ❑ Dr. Victor Ferry, consultant to SCCOG, had a few comments regarding the regional emergency operations plan. His concern appeared to be that the updated hazard mitigation plan should mesh with the update to the emergency operations plan. Mr. Murphy explained that this is desired, as one of the six mitigation categories is “emergency services.” Dr. Ferry stated that Reverse 911 systems should enable text messages because people can more easily view texts prior to emergencies whereas they sometimes cannot answer phone calls. He also stated that notification systems along Interstate 95 need to be improved to prevent the traffic jams that occur in the shoreline towns when portions of I-95 are shut down. Dr. Ferry also noted that southeastern Connecticut communities are updating their radio systems at great expense.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Bozrah January 31, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Bill Ballinger, First Selectman and member of the Fire Department
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region.

#### **C. *Critical Facilities***

- The Emergency Operations Center (EOC) is the Bozrah Fire Department at 239 Fitchville Road. It has a standby power supply via a generator. The department is characterized as a well-organized group of volunteers.
- The Bozrah EMD is also the Backus Hospital Emergency Services Coordinator.
- The Town Hall<sup>1</sup> is not considered a critical facility. It is across the street from the EOC on Fitchville Road.
- The town is covered by Troop K for police.
- Fields Memorial School is the main shelter and is staffed by the American Red Cross as needed. It has a generator.
- Moose Hall at 115 Fitchville Road is the secondary shelter.
- The second floor of the Fire Department building was the shelter prior to the school and is considered another backup facility.
- The Highway garage is next to the Fire Department and is a critical facility, also served by standby power supply.
- Fitchville Rest Home is a state-supported assisted care facility.
- 36 Haughton Road (next to the temporary town hall) is a halfway house and should be considered a critical facility mainly because the home requires constant response from the EMT (Fire Department). This is a significant draw on town resources.
- A home for people with disabilities is located on Caroline Road. This is another critical facility.

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<sup>1</sup> The meeting was held at the temporary town hall on Haughton Road/Route 163. The temporary town hall is not considered a critical facility, and will be vacated prior to the adoption of the updated hazard mitigation plan.

- ❑ Water facilities are considered critical facilities. The Norwich Public Utilities transmission pipeline passes through Bozrah, and a water main was recently extended to the Congregational Church located off Route 163.
- ❑ Chicken farms are the biggest group of taxpayers in Bozrah. Land-of-Lakes/Moark/Kofkof is one large entity that has multiple locations in Bozrah, Franklin, Lebanon, and Colchester. Disruptions in the water of food supplies for these facilities could result in a large loss of birds and major financial implications. Therefore, Bozrah considers these farms to be critical facilities.

#### ***D. Development Trends***

- ❑ The Plan of Conservation and Development is due for renewal and a one-year extension to 2013 was approved.
- ❑ The Stockhouse Road/Rachel Drive commerce park is the most significant area of development in Bozrah. Commercial/industrial development is desired here. Rachel Drive has recently been completed and the lots are ready for development. The Town is attempting to extend sewers into this area, which would facilitate development.
- ❑ The Route 82 corridor is another area of potential commercial development.
- ❑ The Town is concerned about residential development, as several large farms are owned by senior citizens and these are likely to be subdivided in the coming years. Each parcel has significant roadway frontage and could be developed with eight or nine homes without needing new internal roads. However, nothing is pending or approved at the present time.

#### ***E. Flooding***

- ❑ The Yantic River is the main area of flood vulnerability in Bozrah.
- ❑ The March 2010 flooding was significant in the region and downstream areas in Norwich along the Yantic River suffered extensive flood damage. The Yantic River rose to the level of Stockhouse Road but did not submerge or cross the road.
- ❑ Some of the business along Stockhouse Road are located at high points on their properties or are elevated, and therefore did not flood from the Yantic River.
- ❑ Three Gilman family-owned manufacturing plants are located along the Yantic River in the Gilman section of town, but they appear to be high enough that they don't typically flood.
- ❑ Low-lying areas along Route 163 experience nuisance flooding (depths less than one foot) due to poor drainage. This is evident near the intersection of Caroline Road, further up the road from the Senior Center. This area is adjacent to Gardner Brook, which flows from Gardner Lake to the Yantic River. A rapid snowmelt can reportedly cause nuisance flooding of the road.
- ❑ Another vulnerable area is Old Salem Turnpike near the Norwich city line. Small streams from Wawecus Hill flow south to this area. In March 2010, a culvert backed up and a few houses with walk-out basements were flooded (three to four feet of water

in basements). The road essentially became a dam. A culvert upgrade is needed. This is a potential recommendation of the plan.

#### ***F. Wind***

- Bozrah Light & Power is the power utility. It is a fully-owned subsidiary of Groton Utilities. The Gilman family founded the company when the dam on the Yantic River was constructed in the Gilman section of town, upstream from the Fitchville dam. The dam in Gilman breached several years ago.
- BL&P trims trees along power lines.
- The Town reportedly worked well with BL&P during the two big storms in 2011 (Irene and the October snowstorm). Power was out for two days after T.S. Irene, and restored quickly because the utility worked with the Fire Department and Public Works to clean up. Shelters were not needed.
- The First Selectman is the tree warden. Although people are protective of their trees, they work well with the power company. The Town owns a bucket truck (not many towns own these) and works closely with property owners. The focus is generally on hazardous trees and limbs. The Town also utilizes a contractor for difficult trees.
- Utilities are not required to be installed underground. However, they are underground along Rachel Drive, which is a new road.

#### ***G. Winter Storms***

- Power was not lost after the October 2011 snow event. However, nine to ten inches of snow was recorded in town. The damage was very different than it was during T.S. Irene.
- Microclimates (three or four, according to the First Selectman) are a problem in Bozrah as they are in Montville. Snowfall is dependent on elevations.
- CT DOT plows State road. The Town has 36 miles of roads to plow with four trucks and five crews. The microclimates can be problematic, and the school bus routes have dangerous hills. Crews need to be out by 4 AM. The First Selectman is the director of public works and is responsible for conducting reconnaissance work prior to dispatching the plow crews, and for advising the superintendent of schools if a delay or closure is necessary.
- Department of Public Works capabilities are characterized as very good.
- Roof damage was not observed in early 2011. Some concern for the school resulted in an inspection by the town's engineer (Anchor). Anchor found that an additional 2 psi was available, but more snow was forecast so the roof was cleared.

#### ***H. Dams***

- As noted above, the dam in Gilman breached several years ago due to its poor condition.

- ❑ Failure of the Fitchville Pond Dam is a concern for the town. The dam belongs to “Bozrah Water Works” and the owners are not paying property taxes. The impoundment is believed to be largely filled with sediment and it is possible that not much water is behind the dam.
- ❑ Gardner Lake’s dam is state-owned. The lake is drawn down each winter.

***I. Wildfires***

- ❑ No specific areas of risk or vulnerability are known.
- ❑ Small fires have occurred in the past during dry spring weather.
- ❑ The Fire Department is considered very capable.
- ❑ The Norwich Public Utilities pipeline has hydrants, as do the sections of town served by NPU (Stockhouse Road, Houghton Road, Fitchville, Gilman, and the church), but most of the town does not have them. A series of water locations (ponds, etc.) are available throughout the town.
- ❑ The town has a tanker truck and maintains several mutual aid agreements. These are important because the amount of water needed for fighting a fire can be significant. During a fire, tanker trucks are continuously running to and from the nearest hydrant or other water source such as a fire pond.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Colchester January 31, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- N. Reed Gustafson, Emergency Management Director
- Adam Turner, Town Planner
- Tim York, Building Official
- James Paggioli, Director of Public Works
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Emergency Operations Center (EOC) is Jack Jackter Elementary School. This is also the backup shelter and it has a generator.
- Town Hall is not the EOC but is a critical facility too because it houses so many important functions and offices. The Police department is in the town hall. The town hall also has a generator.
- Bacon Academy is the main shelter. It has a 500 kV generator.
- The two fire stations are on Old Hartford Road and Route 149; both have generators. Colchester has a combination of paid and volunteer personnel. The fire department also houses the EMT/ambulance functions.
- The public works facility is a critical facility at 300 Old Hartford Road.
- Water and wastewater facilities are considered critical facilities. This includes the water treatment plant at the Cabin Road Wellfield and the tanks and booster stations (which have generators); and the Prospect Hill sewer pumping station (also with a generator). Private pumping stations are not considered critical facilities.
- There are two nursing homes: Genesis Elder Care and Apple Rehab.
- Mr. Paggioli provided a current list of critical facilities that does not include the senior housing. This critical facility list can be used for the plan.



- Colchester has multiple units of senior housing. Mr. Gustafson will send a list, as they are not on the list provided by Mr. Paggioli.
- The trailer park on Shailer Hill Road houses vulnerable populations and is therefore considered a critical facility too, although it is not on the above lists.
- Everbridge is used for notification.

#### ***D. Development Trends***

- Colchester attempts to keep most of the new development in or adjacent to the town center.
- The Route 11/Route 2 area is the most important and immediate area of planned development in the town. Water and sewer are being extended into this area to promote development. A 20,000 sf building and storage area for a tractor supply company is to be constructed here.
- A large area of retail development has been approved for several years just to the east of the Route 11/Route 2 area, on the south side of Route 2. This proposed retail area may finally be developed in the near future.
- A large karate studio is being constructed this year.
- The “Settlers Green” project is approved but not under development. This is mostly residential with some commercial uses. Settlers Green is adjacent to a SFHA.
- A large parcel next to Settlers Green is potentially developable.
- “White Oak Farm” is approved for 134 one-acre lots at 520 Lebanon Ave. Most of the construction has not begun, although 14 lots are built and occupied.
- “North Woods” is under construction – 134 units of active adult age-restricted (>55) housing at 351 Lebanon Avenue.
- A 30-unit development next to North Woods is approved.
- Several smaller subdivisions are under construction.

#### ***E. Flooding***

- The new DFIRMs revealed two relatively large changes in Colchester: the Boretz Road area and the Settlers Green project described above. A LOMR was reportedly completed for the Settlers Green project.
- The location called “Savin’s Pond” in the previous annex is not really Savin’s Pond. This is Caverly Mill Road. The road was cut off by Route 2 and is a dead-end road. The two houses at the end are accessed by traveling over a wood bridge. During floods, the houses cannot be accessed. The Town’s preferred position is to formally abandon the road and make it a driveway. The current practice is to notify the two families to evacuate before significant storms.
- Colchester Fish & Game owns a small private bridge across from River Road. The March 2010 flood undermined the bridge, but it doesn’t service any population of residents.

- The March 2010 flooding was severe in Colchester, but it mainly caused many basements to flood. The town submitted reimbursement requests to FEMA but they were not reimbursed.
- An older subdivision in the center of town experiences frequent basement flooding.
- Lakeview Drive at Pickerel Lake suffers from poor drainage and nuisance flooding.
- The Meadow Brook bridge at Route 16 was replaced a few years ago; this could be listed under existing mitigation.
- The previous annex listed a problem on the Lebanon town line that does not need to be listed in the updated plan.
- Potential recommendations were discussed. Those present do not believe that Colchester has any areas that are in need of mitigation. However, there are a few areas in the town that are suffering bridge scour. The town would like to place riprap in these areas and this could be a recommendations.

**F. Wind**

- CL&P trims trees along power lines.
- The outage after T.S. Irene was seven to nine days. Many roads were blocked and the town could not clear them because of wires down.
- The town had to clear many State roads after Irene.
- The tree warden has a modest budget to contract tree removal. The town tries to coordinate with CL&P, but CL&P isn't present most of the time.
- Utilities are placed underground in new developments. Some streetscaping of Lebanon Avenue utilized solar lighting.

**G. Winter Storms**

- The outage after the October 2011 snowstorm was five days.
- A private building housing construction equipment collapsed last winter.
- A total of 12 homes were in danger during the winter of 2010-2011 with severe deflection and cracked sheetrock.
- All town-owned buildings were evaluated and then critical roof areas were cleared.
- The town helped some residents clear roofs with the ladder trucks.
- CTDOT plows its roads and the town plows the rest. Routes are prioritized. There are 14 routes (10 town trucks and four contracted trucks).
- Clearing of State DOT secondary roads (snow and/or tree limbs) is critical in Colchester because these really are the important evacuation routes for many residents. This is related to both winter storm and wind event mitigation.

**H. Dams**

- The Paper Mill Dam is located at a deteriorated mill. The dam may be removed in connection with site remediation. DEEP reportedly favors the dam removal.

- ❑ The DEEP is reportedly involved with the condition of the Linwood Dam on Meadow Brook immediately north of Route 16. But the dam is only about four or five feet tall. This pond is drawn down twice each year.

***I. Wildfires***

- ❑ Colchester has experienced a few multi-acre burns.
- ❑ A fire occurred in the Babcock Wildlife Area about three years ago. This was 25 acres.
- ❑ The fire department has one gator and one brush truck.
- ❑ The Town often recommends a fire pond or dry hydrant but neither is required for new developments. The draft subdivision regulations amendments (pending/not yet approved) have some language about this.
- ❑ Those present do not believe that any wildfire mitigation recommendations are needed.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for East Lyme January 12, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Richard Morris, Public Safety Director
- Michael Giannattasio, P.E., Director of Public Works
- Joseph Smith, Chief Building Official
- Gary Goeschel II, Director of Planning
- Bill Scheer, P.E., L.S., Town Engineer
- Victor Benni, P.E., Civil Engineer II
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Emergency Operations Center (EOC) is a stand-alone building and has a generator.
- The middle school is the main shelter. It has a generator.
- Less than 50 people can be sheltered at the community center, so it's the secondary shelter. It has a generator.
- The high school is a third shelter.
- Three fire stations; all have generators
- Police department; it has a generator.
- Town Hall is not the EOC but it's the media center during emergencies and is therefore a critical facility too. It does not have a generator yet, but one is desired.
- The public works facility is going to have a generator in the near future.
- Assisted living – 417 Main Street, Crescent Point – has a generator
- Bride Brook Rehab Center – has a generator
- The town has three walk-in medical clinics (L&M, Charter Oak, and a third) but only Charter Oak is considered a critical facility.

- Water and wastewater facilities are considered critical facilities. This includes all the public water supply wells and all 22 sewer pumping stations.
- The town has three buildings (50 units each) of elderly housing but these are not considered critical facilities.
- Nine major marinas are in East Lyme. Three have forklifts and two have ramps, but all are trapped by the Route 156 bridge. The town has a boat ramp in the midst of the nine marinas. None of these are considered critical facilities.

#### ***D. Development Trends***

- All new developments are required to have underground utilities.
- Exit 74 Gateway is a mixed-use project near I-95 that will be developed in the future.
- Main Street will continue to be developed with a few mixed-use buildings.
- Village Crossing at Park Place will have 150 units.
- The Orchards is underway (partly constructed) but the economy has slowed the project.
- 38 Hope Street will have 100 or more units
- Sleepy Hollow has 10 lots remaining
- The group recommended calling the Zoning administrator for details or more information about all of the above.
- Residential subdivisions are not common at the present time.

#### ***E. Flooding***

- In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update. However, the March 2010 flood is the most recent extreme flood of record for southeastern Connecticut, and it caused much flooding in East Lyme.
- Bush Hill Drive has a single mode of egress for 80 homes, and the road floods at the Pattagansett River. The road was flooded for three days in the March 2010 flood, but it floods every year.
- North Bride Brook Road floods south of I-95.
- Walnut Hill Road at Route 161 floods and needed a boat to rescue people.
- A relatively recent nuisance flooding problem has developed on Flanders Road (Route 161) near Industrial Park Road. There has been a lot of development in the area and drainage is routinely overwhelmed. The road needs to be closed for a few hours during heavy rainfall. Manholes have been observed surcharging.
- Many improvements were made in the Latimer Brook watershed subsequent to the 1982 flood. All the bridges and culverts were upgraded and this reduced the many road closures that caused “single access” problems. However, Latimer Brook still floods.
- A storm event in 2009 caused high flows and overtopping of a dam upstream of the Silver Falls Road bridge at the Montville town line. The bridge foundation was undermined and it has been closed since 2009<sup>1</sup>.

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<sup>1</sup> Based on a review of the street map, this appears to be in Montville

- Atlantic Street is floodprone where waves overtop the seawall. This cuts off access and inundates the sanitary and storm sewer systems. This requires pumping the water from the systems into the sound.
- The seawall in front of the houses on Atlantic Street is partly washed away as a result of Irene, but the property owners are repairing it with their own money.
- Storm surge is a problem in East Lyme, especially when coupled with high tides. The sewer system is very vulnerable, as noted above. Many of the sewer pumping stations are in the coastal area.
- East Lyme is one of the towns working with The Nature Conservancy (TNC) on the Coastal Resilience project. They filled out the spreadsheet for Holly and Adam at TNC.
- The town is developing a risk and cost analysis to address sea level rise and demonstrate the costs to address the impacts.
- An intern is going to be working with Mr. Goeschel this spring to map coastal vulnerabilities. The hazard mitigation plan should interface with the intern's project if timing allows.
- The town has approximately eight repetitive loss properties<sup>2</sup> and is a Class 8 or 9 Community Rating System (CRS) town. The CRS plan has a list of inspected sites and documentation of letters mailed to owners of repetitive loss properties.
- The town has approached the owners of repetitive loss properties about being acquired per the FEMA mitigation programs, but none of the owners are willing to contribute the 25% match.

**F. Wind**

- CL&P trims trees along power lines.
- The tree warden is authorized to notify Public Works of trees that should be removed.
- Utilities are placed underground in new developments.
- If funds were available, the town would bury power lines along Main Street. Main Street was streetscaped recently and the estimate was \$2.5 million just to bury the utilities. This is too expensive for a town.

**G. Winter Storms**

- The town cleared many town-owned roofs last winter because of snow accumulations.
- The decision to clear roofs was generally made on the spot with visual assessments.
- The Board of Education was responsible for schools but reportedly did not do a great job clearing roofs.
- CTDOT plows its four roads and the town plows the rest. Routes are prioritized.

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<sup>2</sup> The spreadsheet from DEEP lists 14 repetitive loss properties

*H. Dams*

- ❑ The town is part-owner of one high hazard dam (Darrow Pond dam). This is an earthen embankment and the town became part owner when it acquired half the pond. A developer's engineer evaluated the dam a few years ago and this report might be in the town's files.
- ❑ The State owns three high hazard dams.

*I. Wildfires*

- ❑ Mr. Morris remembers many brush fires when he was a child, but they are not common anymore.
- ❑ Small (one to three acres) fires occur occasionally.
- ❑ The town has two brush trucks and a gator, so they can respond quickly.
- ❑ New developments must include cisterns for fire protection, but the town is interested in installing cisterns and dry hydrants where fire protection is lacking.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Franklin January 19, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Richard Matters, First Selectman
- Scott Bighinatti, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

Mr. Matters noted that the Town has no areas that are significantly or repeatedly damaged by natural hazards and as such, and given the Town's limited budget, the Town has no interest in applying for Hazard Mitigation Assistance grants at the present time.

#### **C. *Critical Facilities***

- The Town has an Emergency Operations Plan (EOP) that is updated annually. It has a flooding section.
- The Town has vans to transport seniors during weekdays (Tuesday and Thursday, by appointment). The vans are handicapped-accessible.
- The Town leases school buses through First Student.
- The Town Hall is the EOC. It is the most secure town-owned building. It has a generator.
- The Town recently upgraded its radio system. Portable, vehicular, and base radios (Town Hall, Fire Department, Public Works) are available. The Town can also communicate with several of its neighbors on the system. The radio base station is at the Town Hall.
- The Town Hall, Fire Department, and Franklin Elementary School are shelters. They are not ARC certified. The Firehouse can hold 214 seated and the Town Hall can hold 103 seated. The school does not have a generator – the Town is looking to acquire grant funding to purchase one.



- The Town has one Fire Department. It also has a generator. It also has showers and so was used as a washing / charging station following Irene and Alfred.
- The Town does not have a police department or a resident state trooper. When police services are needed, they contact Troop K in Colchester.
- The Town has one Public Works Facility. It is marked on the map.
- The Town has an elderly housing development on New Park Avenue. There are also three group homes, one of which caters to invalids (Holton Road). Two of the group homes are state-owned, and one is private. They were marked on the map.
- The Town has a list of people who may need additional assistance during an emergency. The list is updated monthly by the Visiting Nurses Association (VNA). People who do not use the VNA are not on this list. Essentially, if residents don't offer the information to the Town, then the Town doesn't know about additional needs ahead of time. The Senior Center director knows the seniors in the Town, but not necessarily if they need extra care.
- The Norwich Orthopedic Group is located on New Park Avenue.
- Two daycare facilities are in Town: They were marked on the map.
- The Town considers its Town Hall, Department of Public works Facility, Fire Department, and elementary school to be its critical facilities.
- During Hurricane Irene, power was out for almost a week. The large grain mill that feeds four million chickens did not have a generator, so the chickens could not be fed. It required too much power for a portable generator and so the Town had to prioritize its power restoration with Connecticut Light & Power (CL&P).

#### ***D. Development Trends***

- The Town is currently updating its Plan of Conservation and Development. Any open space plans are part of this document.
- The Town uses the State Building Code.
- The Town does not have any transportation plans.
- Development in the Town is essentially stagnant. A few new single family homes have been built in the last five years. A new gas station was constructed also.
- There is a plan in the works for a new factory.

#### ***E. Flooding***

- The Town's flood regulations are part of the zoning regulations.
- In general, the Town has very few flooding issues. The March 2010 flood is the most recent extreme flood of record for southeastern Connecticut.
- Holton Road has a new drainage system that fixed a nuisance flooding issue.
- Route 32 has two areas with a significant drainage problem. The problem is caused by heavy rainfall moving rocks and debris down the steep hillsides onto the roadway. This clogs the catch basins and leads to overflows, ponding, and erosion. They have had to close sections of Route 32 recently such as during the March 2010 storms. One of

these areas is near the Repetitive Loss Property (RLP) mapped on the 2005 Hazard Assessment Map.

- The RLP is not located near a stream. Mr. Matters believes that this could be damage to land or outlying buildings rather than the primary structure. The damage could also be caused by the hillside drainage issue.
- The Yantic River used to be a big problem area. FEMA bought out a lot of the homes before 2000 so now there are very few floodprone structures left in this area.
- The March 2010 storms caused a guardrail and part of the road to washout on Old Route 32 near the Yantic River. The Town got some funding to replace the guardrail and stabilize the bank with riprap.
- Drainage complaints go to the First Selectman.

#### ***F. Wind***

- The Town has a tree warden, and a small budget for trimming trees (\$3,000 per year). They try trim on a few roads each year. CL&P trims also trims trees along power lines, and are currently doing five days worth of work in the Town. The entire Town lost power and some areas were out of power for up to a week following Irene.
- The Algonquin gas company also performs trimming along their natural gas transmission line in the Town.
- Northeast Utilities also trims along its electrical transmission lines in the Town.
- Tree damage can occur anywhere in the Town.

#### ***G. Winter Storms***

- The Town has no significant problems with icing.
- Franklin Elementary School had an issue with the snowload in January and February 2011. The Town had to remove the snow before the structure was damaged. The Town now has a Snow Removal Plan for the school.
- No snowload issues with private buildings were known to the Town.
- No snow issues were reported for Winter Storm Alfred this past October. Additional tree damage and the subsequent power outage were the primary issue.

#### ***H. Dams***

- The Town does not own any dams and therefore does not have any Emergency Operations Plans.
- A dam on Carlson / Gager Pond is still there, but was not shown on the 2005 plan map. It may not be a high-hazard dam. The Town is unsure if there is an EOP.
- Mr. Matters could not recall any recent issues or historical failures that caused damage in the Town.

***I. Wildfires***

- ❑ Norwich Public Utilities provides water and sewer service to New Park Avenue on the southern end of Town.
- ❑ Wildfires are practically non-existent in Franklin, although the threat exists with areas of inaccessible forest and many open fields used for agriculture.
- ❑ The northeastern area of Town is particularly isolated with little to no access. If a fire were to occur in this area, they would need to rely on Sprague's equipment to access the area. The Town does not have an ATV or off-road vehicle for firefighting.
- ❑ A wildfire occurred off Holton Road in 2003 or 2004 that burned approximately three acres before it was contained. That is the last major wildfire in the Town.
- ❑ The Town relies on a number of dry hydrants to fight fires throughout the Town. They can also throw lines into streams or ponds if necessary. New Park Avenue has water service from Norwich. The Town has no plans at present to install additional dry hydrants.
- ❑ The Fire Department is 100% volunteer. They try to get to fires, even in outlying areas, as fast as possible. They do not let fires burn.

***J. Actions Taken by Franklin on 2005 Plan Recommendations***

- ❑ Property Acquisition of Floodprone Properties along the Yantic River – FEMA acquired the majority of the floodprone houses in this area before 2000. The Old Route 32 bridge over the Yantic River is long gone. There is one floodprone house on Yantic Road that straddles the Franklin / Norwich boundary that is only accessible from Norwich. The Town has no plans to buyout the property.
- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – The Town has completed a generator survey and identified necessary upgrades. The Town also has identified its critical facilities and is aware that none are floodprone. None are believed to have been constructed to have special resistance to natural hazards. The evaluation is ongoing as part of the annual EOP update.
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout Town – This is ongoing along with the annual EOP update. The Town recently upgraded its portable radios and now has interdepartmental and inter-municipal communication capability. The Town also plans to purchase new radios in 2013, as they are on a narrow band that will be phased out by the FCC.
- ❑ Develop a Flood Audit Program – The Town's Flood ordinance is in its zoning regulations. Areas with bad drainage have been identified and are being upgraded as the capital improvement budget allows. Few structures in Town actually experience overbank flooding damage, so this part of the audit program is informal.

- ❑ Floodproofing of Structures – A floodprone residence on Route 87 and near Susquetonscut Brook was recommended in the last plan for floodproofing. The owner has not approached the Town about grant funding, and the Town is unaware if the owner has performed improvements. The Town has no plans to pursue grant funding for flooding projects.
- ❑ Drainage Improvements on Birch Heights Road – The Town finished this drainage upgrade several years ago. Holton Road and Robinson Hill Road drainage upgrades were also recently finished. There are no additional drainage projects proposed at this time. The drainage issue on Route 32 is caused by private runoff, but the State would need to improve the street drainage.
- ❑ Flooding and Erosion on State Roads – The State is currently performing two projects to upgrade drainage culverts under Route 207. The locations are marked on the map.
- ❑ Review of Town Transportation Facilities to Identify Critical Risks – The Town does not have a formal transportation plan. This review is performed annually during the EOP update.
- ❑ Hazardous Materials Spills on Major Roadways / Railroads – There is a section in the EOP discussing the potential for this issue. It is not a directly a natural hazard issue. There are some railroad spurs but they go to private industries and commercial buildings and are therefore not a minor concern to the Town.
- ❑ Implement a Reverse 9-1-1 System to Relay Important Information During an Emergency – The Town is registered with the State’s CT Alerts “Everbridge” System, but for some reason the system is not recognizing Town residents. The Town is continuing to work with the state on this issue.
- ❑ Distribute or Post Public Information Regarding Hazards in the Town Hall – Public information is posted in the Town Hall prior to and during emergencies. The Town also sends out a quarterly newsletter that often contains seasonal information about how to protect yourself from natural hazards, such as lightning safety. During Irene and Alfred, Town staff delivered informational flyers to homes without power to keep them informed of shelters and major road issues.
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least annually or following any use of the facilities.
- ❑ Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – This is done regularly, with equipment upgrades occurring to the extent the budget will allow.

- Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – The Town has no plans for such a project, as it is simply too expensive given the Town’s limited budget. One commercial zone in the Town requires that new utilities be placed underground if possible.
- Complete an Earthquake Survey of all Critical Facilities and Infrastructures – A specific survey has not been performed.
- Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – This is done annually as part of regularly scheduled cleaning activities.
- Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – The Town has dry hydrants in outlying areas. The locations are believed to be sufficient for fire coverage, and the Town has no plans to install additional dry hydrants. The Town Fire Department has access agreements with property owners to get to the hydrants since they are almost all on private property. Norwich Public Utilities provides water service on New Park Avenue so hydrants are also available in this area.

***K. Acquisitions***

- None.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Griswold February 1, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Carl Fontneau, Town Planner
- Todd Babbitt, Fire Chief & Road Superintendent
- Scott Bighinatti, Milone & MacBroom, Inc.

The following individual should also be included on correspondence related to the plan:

- Fred Marzec, Emergency Management Director (firemarshal@griswold-ct.org)

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities and tribal governments within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

Mr. Fontneau and Mr. Babbitt explained that the Town is very interested in moving this plan forward as they have several project grant applications submitted under the HMGP from last year and are planning to submit additional applications before the March deadline. The list of potential projects include rerouting drainage on Sheldon Road, acquisition of floodprone property on Mill Street, a retaining wall for the Fire Department, and acquisition of floodprone property on Popple Bridge Road (or a drainage upgrade).

#### **C. *Critical Facilities***

- The Town has an Emergency Operations Plan (EOP). This document provides general procedures to be followed in case of an emergency. This document is reviewed annually and updated as needed.
- The Griswold Volunteer Fire Department is located at the intersection of Route 138 and Old Bethel Road. This building is also the Town's Emergency Operations Center. The plans for the building show that it should be at least one foot out of the floodplain, but the previous FIRM suggested that it was in the floodplain. The current DFIRM shows

that it is not in the 100-year floodplain (blue and green shaded areas at right). The Fire Department did not flood in March 2010.

- ❑ The A.A. Young Jr. Hose and Ladder Company #1 is located on Hill Street in Jewett City. It is not in the floodplain.
- ❑ The Griswold Visiting Nurses Association is located in the former Ashland Mill Building. The location is marked on the map. They are associated with Day Kimball Hospital in Putnam. They had eight feet of water in the basement in March 2010 and needed a pumpout.
- ❑ The two Fire Departments, Town Hall, Public Works Garage, Senior Center, its four schools, and Waste Water Treatment Plant (WWTP) are considered to be critical facilities.
- ❑ The Borough of Jewett City has two resident state troopers, but the remainder of Town relies on State Police Troop E out of Montville.
- ❑ The Griswold Volunteer Fire Department is the primary shelter. It has a generator that was just purchased in July 2011. It can hold approximately 50 people and is American Red Cross (ARC) certified.
- ❑ The A.A. Young Jr. Hose and Ladder Company #1 is the backup shelter. It has a generator. It can hold 75 people but is not ARC certified.
- ❑ The tertiary shelter is the Griswold Elementary School. It is currently undergoing construction, but it can hold about 400 people in the gymnasium. It has a generator but is not ARC certified. While it can hold this amount of people, the Town does not have bedding available for this location.
- ❑ The Griswold Middle School and Griswold High School do not have backup power.
- ❑ The Senior Center is an emergency shelter but does not have a generator. During Irene, this facility was used primarily for logistics (sorting food deliveries to seniors, etc.). The ARC is coming to evaluate this facility to determine shelter requirements in the near future.
- ❑ The Town relies on radios, email, telephone, and cellular phone service to communicate. The Town recently received a public works grant through the State to upgrade its radio systems. All fire trucks have both low band and high band. The Town can communicate with the State.
- ❑ Emergency personnel had difficulty communicating with important town staff during the long Irene power outage because cellular phone towers were without power and many trees had damaged telephone lines. The Town now has additional radios for the building inspector and sanitarian.
- ❑ Elderly housing developments include Ashland Manor (Griswold Housing Authority), McCluggage Manor (Griswold Housing Authority), and Ledgewood Apartments on Pleasant View Drive.
- ❑ There are no convalescent or nursing homes in Town.



- ❑ Ambulance services are provided by Griswold Community Ambulance, a private contractor founded by American Legion Post #15. They are currently located near the Town Hall but are moving to a new facility on Route 138.
- ❑ The United Community & Family Services is a walk-in clinic for low-income families. It is located at 76 Main Street.
- ❑ There are two small daycare facilities in Town. Little Log has approximately 20 children, and Headstart has 20-30 children.
- ❑ The Town has one public works garage. It stores sand and salt.

#### ***D. Development Trends***

- ❑ Mr. Fontneau is currently updating the Plan of Conservation and Development. He noted that information in the draft HMP update will be incorporated into the Plan of Conservation and Development update, a process that will likely be finished before the HMP update is approved.
- ❑ The Town has an active contract with SCCOG to develop mapping for the Town. SCCOG should be able to provide us with digital mapping if we need it for the plan. Mr. Fontneau would like to have maps of hazard areas for the Plan of Conservation and Development. Mr. Bighinatti suggested that it may be easier to provide general maps in the Plan of Conservation and Development that reference the Hazard Mitigation Plan maps.
- ❑ The Borough of Jewett City has a flood ordinance, while flooding regulations in the remainder of Town are in the Zoning Regulations. A comprehensive set of Flood Regulations for the entire Town were published last July and are available online.
- ❑ New subdivisions and roads are required to install utilities underground if possible.
- ❑ Residential development in Town has been stagnant the last five years. There are 150 approved residential homes that are un-built, and developers are withdrawing approved subdivision applications.
- ❑ Commercial development has been slow but steady with a series of small projects. A new commercial subdivision is proposed on Route 138.
- ❑ Industrial facilities have been closing. The Wire Wynd factory that produced specialty wire closed in 2011 and the building is now vacant and has been the target of vandals.
- ❑ The biggest development projects in Town have been municipal, such as the elementary school.
- ❑ A hotel project near I-395 was approved but never built.
- ❑ The Town uses the SCCOG Regional Transportation Plan for guidance. They also have a bypass plan with the State for rerouting traffic on I-395 during emergencies (such as the overturned propane truck within the last few years).
- ❑ The Town and the Borough have separate zoning regulations. The Town and the Borough use the same separate subdivision regulations.



*E. Flooding*

- ❑ The Town believes that there are errors in the FEMA floodplain defined for the Pachaug River, but commissioning a new FEMA study is difficult and conducting a replacement study is very expensive. MMI should check to see if FEMA did any corrections in the 2011 county FIS for this area.
- ❑ The Bitgood Road bridge over the Pachaug River was recently raised three feet providing additional conveyance.
- ❑ There are many Zone A floodplains in the Town. These floodplains are difficult to work with because it is hard to determine if a property is actually in the floodplain based on elevation. LOMA's are expensive because engineering studies are required.
- ❑ The Town has two-foot contour mapping that it would like to use to update the edges of the floodplain. Mr. Bighinatti mentioned that while the Town can define a regulatory floodplain that is wider than the FEMA defined floodplains, narrowing of the existing floodplain would require revisions through FEMA.
- ❑ Route 138 at the Pachaug River near the Fire Department had three to four feet of flooding during March 2010. The road was shutdown for three to five days.
- ❑ The WWTP is located at the end of Wedgewood Drive by the Quinebaug River. Part of the facility is located in the floodplain. The Town has tentative approval from the State and FEMA to receive grant funding under the HMGP to construct a floodwall around the facility pending completion of the SCCOG HMP update.
- ❑ There are no real commercial or industrial flooding issues.
- ❑ Many roads flooded during the March 2010 storm: Sheldon Road, Cross Road, Mill Road, Carol Road, Sibicky Road, Ashland Street, Lilly Pond Road, South Main Street, Anthony Street, K of C Drive, Wedgewood Drive, Hopeville Road between Monroe and Lake Roads, Burlenson Lane, Shetucket Turnpike (Route 165) near the bridge area between the ponds, Brewster Road at Route 164, and Terry Road.
- ❑ The Town has a list of scour critical bridges which are inspected during floods. These include Edmond Road over the Pachaug River, Bitgood Road over the Pachaug River, Bitgood Road over Hopeville Pond (Pachaug River), Sheldon Road over Doanville Brook, Norman Road over the Pachaug River, and Ashland Street over the Pachaug River.
- ❑ Approximately 35 condominium units were flooded on South Main Street during March 2010. There are two complexes near the Quinebaug River that lie within the 100-year floodplain and/or the 500-year floodplain.
- ❑ Three houses flooded on Burlson Lane during the March 2010 floods. Three homes in this area appear to be in the 100-year floodplain, with additional homes in the 500-year floodplain. The constriction under Ashland Street may have contributed to the flooding. The area below the canal downstream of the Ashland Dam flooded and inundated the VNA building and the homes below the bridge on Ashland Street.
- ❑ The Lakeview Mobile Home Park on Sheldon Road is located adjacent to Doanville Pond, an impoundment of the Pachaug River. Although the park is located outside of the Zone A 100-year floodplain, the park had three to four feet of water in March 2010.

Water was essentially up to the bottom of each unit, and access to the area was difficult. Residents needed to be relocated and sheltered.

- ❑ Camper's World, an RV camping park, is located in the floodplain of the Pachaug River adjacent to Hopeville Pond.
- ❑ Homes on Mallard Point are located in the 100-year floodplain of Hopeville Pond.
- ❑ A home on Rill Brook Road is located in the floodway of the Pachaug River.
- ❑ Water reached up to six feet deep in the basement of two houses on Mill Road (private road not shown on maps) during March 2010. The property owners may not have made insurance claims. One of the homes (#22) had a subsequent fire and the property is currently uninhabitable. The Town is considering this property to be a potential acquisition project. There is a Zone A floodplain in the area from Doanville Pond but it does not intersect any structures.
- ❑ The culvert at the intersection of Carol Road and Sheldon Road has difficulty conveying water. Backwater conditions in Mill Pond (a small impoundment of the Pachaug River upstream of Carol Road) causes water to flow down Sheldon Road. Structures aren't affected by this flooding, but the road does washout and is damaged. The Mill Pond is impounded by a private dam directly beneath the Carol Road bridge. The constriction between the dam and the low chord of the bridge is a contributing factor to the flooding, but the dam was installed by an "act of congress" and can't easily be removed. The Town wants to reroute the Sheldon Road culvert downstream below the private dam to alleviate the backwater flooding. The Carol Road bridge will be closed next fall, and removing this bridge may also alleviate the flooding issue.
- ❑ The house at 59 Popple Bridge Road was another acquisition project submitted under the HMGP. The home had 10 to 12 feet of water in the backyard during March 2010. The water infiltrated through the retaining wall and flooded the basement. The Fire Department had to pump out the basement for 28 consecutive hours until the floodwaters receded. Unfortunately, the homeowner did not submit a flood claim so there is no record of the damage, so the initial application was ranked low. The Town would like to purchase the property and turn it into a retention area. Failing that, they would like to determine some method of directing flow away from the structure, a process which may require drainage easements from neighboring property owners.
- ❑ Brown Road had a drainage-related HMGP application, but the Town has already fixed the drainage in this area. There are no longer any flooding issues.
- ❑ There were no flooding issues during Hurricane Irene.
- ❑ Drainage complaints typically go to Public Works.

#### ***F. Wind***

- ❑ The Town has a Tree Warden. The Public Works budget includes \$5,000 per year for tree maintenance. The Public Works staff trims smaller trees, while jobs involving larger trees and those near power lines are contracted out.
- ❑ CL&P also performs tree maintenance along their electrical lines. They just performed a week's worth of tree trimming in town. No other utilities are believed to trim in Town.

- ❑ Electricity was out for approximately two and a half weeks following Irene. Power was only out to 35 homes for three days following Alfred. Irene caused much more damage than Alfred. Tree damage was widespread during Irene, while branches weakened during Irene fell during Alfred.
- ❑ CL&P installed a peak demand generator in Jewett City prior to Hurricane Irene that is designed to minimize brownouts. While it was originally touted as also being a source of backup power, CL&P did not activate it during Irene. Mr. Fontneau believes this was because the system was too new to be properly understood, and the fact that it couldn't provide consistent power to the entire borough even if it was operated.
- ❑ No buildings in Town are believed to be designed to resist wind. The high school was designed with seismic effects in mind to be a shelter but it is no longer utilized in that capacity.
- ❑ The Town uses the Connecticut State Building Code.
- ❑ The Town has no plans to bury existing utilities underground – they don't own the power lines and the project would be very expensive. For example, it would cost upwards of six million dollars to bury the power lines on Main Street.
- ❑ There are very few areas where utilities are underground.
- ❑ There are four mobile home parks in Town – one on Hopeville Road, one on Norman Road, one on Glasgow Road, and one on Sheldon Road.

#### **G. *Winter Storms***

- ❑ The Public Works Department has set plowing routes. They also maintain a supply of sand and salt.
- ❑ The Town had minor snow load issues in the Winter of 2011. The Town assessed all flat-roofed buildings. The Pachaug Town Hall (a historic building now primarily used for meeting space) was temporarily closed due to snow load concerns. The Town did not perform any shoveling. Griswold High School has a structural monitoring system that monitors loading on the roof – this system came close to reaching critical status.
- ❑ The Fire Department assessed many private homes, but did not provide snow removal services. Many homeowners cleared their own roofs or hired contractors. There were a few residential building failures. The mobile home parks had some damaged roofs.
- ❑ There are a few steep roads in Town. Norman Road is a historic road where people can get stuck. Additional sand and salt typically suffices to improve access.
- ❑ There are no ice jam issues on the Pachaug or Quinebaug Rivers.

#### **H. *Dams***

- ❑ The Town has concerns about the four State-owned dams on the Pachaug River. The Town feels that the State should lower the water behind the dams each spring. The Town has contacted the state about release and storage information but the State has not been forthcoming with the information. They would like to have a comfort level if severe rainfall occurs similar to the March 2010 events. MMI will check to see if this information is available in the dam files available for review at the State.

- ❑ The Saw Mill Pond dam in Voluntown is privately owned. It is essentially a run-of-the-river dam on the Pachaug River with minimal storage. This dam had some erosion of the berm in March 2010 due to overtopping. This dam has an EOP on file with the State which says that if it failed there would be a four foot rise in downstream water levels for four hours.
- ❑ The Town does not own any dams.
- ❑ The Cross Road dam downstream from the Sawmill Pond dam in Voluntown had scour in March 2010.
- ❑ Coordination of releases upstream of Griswold on the Pachaug River are also a concern. The basin stretches into Rhode Island and many dams are present along this reach of the river. Flows can be extremely variable which can be dangerous during higher water periods.

### ***I. Wildfires***

- ❑ Public water service in the borough and parts of Griswold is provided by Jewett City Water Company, a subsidiary of the Hazardville Water Company. The water system has 23 hydrants outside of the borough. The Fire Department would like more detail on fire flow information at each hydrant, but the water company is not forthcoming with that information.
- ❑ The Fire Department has an additional 10 dry hydrants throughout the Town. They can also draft water from the various streams, ponds, and rivers. The Fire Department wants to install additional dry hydrants.
- ❑ There have been a couple of 100-acre fires over the past 30 years. The exact dates are unknown.
- ❑ The forest areas in Griswold are the highest risk areas for fires. Mr. Fontneau provided a copy of the zoning map showing the forest areas.
- ❑ The Fire Department has two brush trucks and a gator to access off-road fires.
- ❑ The Town has a handful of brush fires each spring and autumn. The largest fires burn one to two acres maximum.

### ***J. Actions Taken by Griswold on 2005 Plan Recommendations***

- ❑ Relocation of Griswold Volunteer Fire Department Containing Emergency Operation Center or Improve Hydraulics of Route 138 Bridge at Pachaug River – The Route 138 bridge is a State bridge and is not slated for repair or replacement. Mr. Babbitt has a proposal to move the Fire Department east on Route 138 to be near the Public Works facility, but the Town does not have the money to build a new facility. The facility did not flood during March 2010, and that flood is considered to be the flood of record for southeastern Connecticut. As the facility does not appear to be in the floodplain on the 2011 DFIRM, this recommendation may be moot.
- ❑ Enhance Emergency Power Generation Capability at Critical Facilities – The Griswold Volunteer Fire Department installed a new generator in July 2011 with a 1,000 gallon

propane tank capable of running for 800 consecutive hours without refueling. Other facilities will be upgraded as the budget allows.

- ❑ Evaluate Feasibility of Intercommunity Emergency Response and Sheltering at Griswold High School – Mr. Babbitt has evaluated this recommendation. The Town has mutual aid agreements with surrounding towns, and these towns will typically send additional shelterees to regionally-located mass shelter facilities run by the ARC when their shelters are full. If needed and if Griswold had the space, they could potentially take some shelterees from neighboring towns as well, although no formal agreement is in place. Sheltering at Griswold High School has been discussed with the school district and they are concerned about the inability to compartmentalize the school during an emergency. This leads to costly heating and sanitation concerns, and therefore sheltering at the high school is considered to be an emergency option after all other shelter scenarios are exhausted.
- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – This is ongoing as part of the Town’s annual EOP update. No critical facilities are believed to be more or less susceptible to natural hazards, except for the WWTP which is in the 100-year floodplain.
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout the Nation – This is ongoing along with the annual EOP update. The Town has improved its interdepartmental communication capability and also has communication capability with the State and surrounding communities.
- ❑ Evaluate Structural Projects and Property Acquisition for Floodprone Homes on Arbor Road – The original recommendation regarded being able to access elderly persons in the area. There is one home off Arbor Road that appears to be in the 100-year floodplain of the Quinebaug River, and another whose driveway crosses the 100-year floodplain. Both homes are accessed by long dirt driveways. This area was not an issue during March 2010, and the Town currently is not proposing mitigation projects in this area.
- ❑ Review of Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update. The Town had access issues during Hurricane Irene due to the many downed trees and power lines.
- ❑ Identify Appropriate Improvements to Traffic Infrastructure and Emergency Response Training and Equipment – This is ongoing as part of weekly Fire Department training and the annual EOP update. The Town has access to CERRIT, the regional hazardous materials response team.
- ❑ Implement a Reverse 9-1-1 System to Automatically Call Telephones Throughout Town, Relaying Important Information During an Emergency – The Town is not part of

the statewide CT Alerts “Everbridge” System because it is too expensive. The school system has a reverse call system that can be used to notify parents during an emergency.

- ❑ Distribute or Post Public Information Regarding Hazards in the Town – Notifications are posted on bulletin boards around town and at town buildings and on the Town website. Local media is utilized to pass information during storms, including newspaper, television, and radio. Prior to Irene, information was passed out at the Fire Departments, library, and businesses. Town staff also performed well-being checks on elderly and disabled residents who are known to have issues during the outages. An information kiosk is proposed for outside of the Town Hall.
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least quarterly or following any use of the facilities.
- ❑ Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – Training is performed regularly, with equipment upgrades occurring to the extent the budget will allow.
- ❑ Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – This is only considered for new projects. There are no plans to move existing utilities underground.
- ❑ Complete an Earthquake Survey of all Critical Facilities and Infrastructures –A formal survey is not proposed due to the infrequent nature of this hazard.
- ❑ Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – Inspections are performed annually each spring by Public Works during cleaning operations. The Town has excellent mapping of all its drainage systems through its MS4 requirements. Public Works also inspects catch basins in floodprone areas for blockages prior to major storms, including Geer Road, Lynn Drive, and Ashland Street.
- ❑ Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – Fire protection capabilities are reviewed at least annually with the EOP update. Fire flow pressures are believed poor in some sections of Jewett City but the water company will not release the fire flow data. The Town believes that its fire protection level is adequate. They are proposing to install additional dry hydrants as funding allows. In addition, all new town and state bridge projects will include dry hydrant installation. The dry hydrants in town have a yearly maintenance schedule and are all in good shape.

***K. Acquisitions***

- Aerial photo showing Slater Mill Dams
- Aerial photo showing Hopeville Dam
- Aerial photo showing Glasgow Dam
- Aerial photo showing Pachaug Dam
- Aerial photo showing Ashland Dam
- Town of Griswold Zoning Map (January 2012)
- Plans of Scour Critical Bridges (via email following meeting)

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for City of Groton January 12, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Barbara Goodrich, Director of Planning
- Carlton Smith, Zoning and Building Official
- Timothy Umrysz, Highway Department
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

The City planned to submit a PDM grant application in 2011 but DEEP reportedly did not believe that the project was consistent with the PDM criteria. The current HMGP availability was discussed in detail. Mr. Murphy suggested that the city submit a letter of interest to DESPP because the drainage project might be a better fit with HMGP because projects are ranked and compete locally rather than nationally. Ms. Goodrich stated that Groton Utilities might have some of its own projects to submit.

#### **C. *Critical Facilities***

- The Emergency Operations Center (EOC), police department, and highway facility are all located on the same campus as the municipal building (city hall) on Meridian Street, and the campus is served by a generator. The city's shelter is here as well.
- Fitch High School is the other shelter that city residents can use, but it's located in the Town of Groton.
- No major health care facilities or clinics are located in the city.
- Avery Heights elderly housing is at 300 Brandegee Road.
- The two fire stations are on Broad Street and Eastern Point Road.
- Pfizer and Electric Boat (EB) should be considered critical facilities. They each have their own fire station and response capabilities, and the city has mutual aid agreements with both.



- ❑ University of CT at Avery Point is another critical facility.
- ❑ Two marinas are in the city – Pine Island and Shennecossett. But they don't assist the city with watercraft removal and are not considered critical facilities.
- ❑ The WPCF is a critical facility, along with the sewer pumping stations (there are about ten of them, but this needs to be verified).
- ❑ Nick or Phil in Emergency Management can provide a copy of the EOP.
- ❑ Bruno Giuliani (Police Chief) has an evacuation plan on file.

#### ***D. Development Trends***

- ❑ The city is fully developed. Small infill projects (single and two-family homes) sometimes come up along the shoreline.
- ❑ Redevelopment is ongoing within the Pfizer and EB campuses.

#### ***E. Flooding***

- ❑ In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update.
- ❑ Most of the flooding in the city impacts roads rather than properties.
- ❑ Road closures from coastal flooding and poor drainage occur at Jupiter Point Road, Pine Island Road, Shore Avenue, South Prospect Street, Tyler Avenue, Beach Pond Road, and Thomas Road. Water is generally a foot deep and some vehicles can pass through.
- ❑ The city has conducted outreach to residents about flood mitigation but nobody ever steps forward for assistance. Acquisitions are not of interest to the city.
- ❑ Thames Street at Smith Street and John Street is the city's biggest flooding problem, and it's related to drainage:
  - Drainage from this area (the roads and the Eastern Point Road parking lots) reportedly enters a vault and then makes a 90-degree turn and is funneled through pipes under the EB campus. Heavy flows cannot be contained by the 90-degree turn in the system. Two outlets on the EB site have been lost in the last 20 years. The current outlet goes through the building where submarines are fabricated.
  - Damage is believed to have occurred at EB, but EB is a high-security facility and cannot tolerate public involvement (such as FEMA) for mitigation. As a result, EB customarily cleans up and repairs property on its own. The city knows that damage is occurring and would like to utilize FEMA mitigation funds to help solve the problem, but EB cannot participate. Without understanding the cost of damage at EB, the city has trouble tabulating costs and benefits for any FEMA mitigation grant applications. Damage is believed to occur at least twice per year. The depth of water on Thames Street is often 30 inches, and manhole covers are blown off.
  - A plan ("John Street drainage plan") has been developed. The intention is to divide the drainage. The project cost is \$110,000 but has not been funded.
  - Tony Ciriello from Milone & MacBroom, Inc. may have this information.

- The municipal building has water problems and the basement flooded once. It is often damp. After the flood, many documents had to be discarded.

**F. Wind**

- Groton Utilities<sup>1</sup> is the utility. GU has an active pruning program. Power was restored very quickly after Irene. Debris removal took three weeks.
- There are three tree wardens who can post notification and remove trees.

**G. Winter Storms**

- Although other communities (such as East Lyme and Waterford) had snow load problems last winter, the city of Groton did not.
- CTDOT plows its roads (including the Clarence B. Sharp highway) and the city plows the rest. Routes are prioritized.

**H. Dams**

- There are few dams in the city, if any.
- EB had a dam (Trails Pond) on the east side of the city, but it was removed and the pond was drained.

**I. Wildfires**

- Wildfires are not an issue, as the city is small and developed.
- Phragmites are known to burn, but this is not a problem for the city as they are typically sufficiently wet.

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<sup>1</sup> GU provides electric, cable, and water. Sanitary sewer is a separate city department.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Town of Groton January 18, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Joe Sastre, Emergency Management Director
- Gary Schneider, Public Works
- Michael Murphy, AICP, Director of Office of Planning and Development Services
- Kevin Quinn, Manager of Inspection Services, Office of Planning and Development Services
- Deborah Jones, Environmental Planner, Office of Planning and Development Services
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. David Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Police Department/Dispatch Center at 68 Groton Long Point Road is the Emergency Operations Center (EOC). It has a generator. This facility handles dispatch for North Stonington and parts of Stonington.
- The Town Hall houses land records and is the town's IT hub, and is therefore a critical facility. The Town Hall Annex on Groton Long Point Road is not.
- The Town Garage on Groton Long Point Road is a critical facility. It has a generator.
- Shelters:
  - o Fitch High School and the Senior Center are both shelters and are staffed by the American Red Cross.
  - o Either one can serve as the primary shelter, although the generator at the Senior Center can only power a portion of the building.
  - o During T.S. Irene, the high school was opened as a shelter for two nights and ran on a generator. Then it was closed, and the Senior Center was opened as a respite/meal center because it had power from the utility lines. This is an example of how both facilities can be used.

- During the school year, the Senior Center may be preferable as a shelter because the high school cannot serve as a shelter as easily.
- ❑ Fire/emergency responsibilities are complex:
  - Groton is served by nine fire districts including the City of Groton, which is contiguous with one of the districts. These are Poquonnock Bridge, Mystic, Old Mystic, Groton Long Point, Noank, Mumford Cove Association, West Pleasant Valley, Center Groton, and City of Groton.
  - Two of the fire districts extend into the Town of Stonington; these are the Mystic and Old Mystic fire districts.
  - In most cases, there is one fire station in each district. However, the Mystic and Old Mystic fire districts each have two fire stations, with one each in the Town of Stonington. The Poquonnock Bridge and City of Groton districts each have two stations, as well.
  - Although they are not fire districts, there are fire stations at Groton-New London Airport, Electric Boat, and Pfizer<sup>1</sup>.
- ❑ There are three Police stations:
  - Groton Long Point (in the same building as the Groton Long Point fire district)
  - City of Groton
  - The EOC at 68 Groton Long Point Road
- ❑ The submarine base is a critical facility. Although the Town is not responsible for responding to emergencies involving the base, the Town is responsible for handling the effect of 5,000 to 6,000 cars leaving the facility in the event of an emergency.
- ❑ Groton Ambulance and Mystic River Ambulance are critical facilities.
- ❑ The Groton Utilities Water Treatment Plant is a critical facility as the town of Groton must respond to emergencies there. Also, part of the town receives water from the system.
- ❑ One WPCF and 23 pumping stations are critical facilities.
- ❑ Groton-New London Airport is a critical facility. It offers daily flights to/from Electric Boat, Pfizer, the National Guard, and the Navy, among others.
- ❑ Pequot Health is a critical facility, as it receives overflow critical care and ER from Lawrence & Memorial Hospital. Pequot Health remained open and staffed during T.S. Irene.
- ❑ Ms. Jones provided a list of nursing homes:
  - Fairview, 235 Lestertown Road
  - Mystic River Healthcare, 475 High Street
  - Groton Regency, 1145 Poquonnock Road
- ❑ Ms. Jones provided a list of senior housing including active adult, assisted living, and Alzheimer's care:
  - Academy Point, 20 Academy Lane
  - Grasso Gardens, 217 Newtown Road
  - Pequot Village, 11 Village Lane
  - AHEPA, 251 Drozdyk Drive

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<sup>1</sup> Refer to the City of Groton meeting notes for more information about Electric Boat and Pfizer.

- Windham Falls, 425 Drozdyk Drive
- Haley Brook, 2590 Gold Star Highway
- Mystic River Homes, 201 Elm Street

#### ***D. Development Trends***

- ❑ All new subdivisions are required to have underground utilities. This has been in place for about 25 years. Great Brook subdivision has underground utilities, for example.
- ❑ A development called “Fairview” is in the master plan approval process. This will be on vacant land behind the existing Oddfellows facility. It will include 197 congregate units, 20 assisted living units, and 68 active senior units.
- ❑ Four Winds is 247 units on Noank-Ledyard Road.
- ❑ Mystic Woods (190 units for age 55+) at Route 1 and Flanders Road fell through, but another development could be proposed.
- ❑ Lighthouse Apartments (near the Navy Base) are approved for 96 units.
- ❑ Carriage Park Apartments are approved for 250 units.
- ❑ Minor commercial expansions (Wal-Mart, for example) are in various stages.

#### ***E. Flooding***

- ❑ In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update.
- ❑ The March 2010 floods are the most recent extreme floods for Groton. According to Michael Murphy, more homes were damaged in Groton than in any other town in Connecticut during that event.
- ❑ The March 2010 flood was notable for washing out the Route 184 bridge at Whitford Brook<sup>2</sup> and the River Road bridge at Haleys Brook. The River Road crossing was closed for a year. The entire neighborhood at the Whitford Brook/Haleys Brook confluence was submerged, and people along River Road had to be rescued by boat.
- ❑ The Town can provide copies of the FEMA reimbursement paperwork for information.
- ❑ Michael Murphy provided a map entitled “Town of Groton March 2010 Flood Damage Locations.” The map includes all types of flooding, from basements to inundation of buildings and roads. The map shows the following roadway damage:
  - Lambtown Road at tributary of Haleys Brook.
  - River Road, Cold Spring Road, and two locations on Packer Road at Haleys Brook.
  - Pumpkin Hill Road at West Branch Red Brook.
  - Welles Road at Red Brook.
  - Gunywamp Road at Great Brook.
  - Candlewood Road at Hatching House Brook.
  - Bindloss Road at Bindloss Brook.
  - Drozdyk Road at unnamed stream.
  - Poquonnock Road at unnamed stream.

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<sup>2</sup> Refer to the Town of Stonington meeting notes for similar information about this area.

- Brook Street at Eccleston Brook.
- Fishtown Road and Farmstead Avenue at Fishtown Brook.
- The map shows the following areas of residential flood damage:
  - River Road neighborhood in Old Mystic (Haleys Brook/Whitford Brook)
  - Deerfield Ridge/Heather Glen neighborhood
  - Midway Oval neighborhood
  - Parts of Noank
  - Parts of Mystic
  - Ocean View Avenue neighborhood
  - Farmstead Avenue/Judson Avenue neighborhood
  - Lamphere Road neighborhood
  - The Wayne Road/Woodland Drive neighborhood suffered basement damage from drainage –related flooding and high groundwater.
  - The Virgo Drive/Pegasus Drive neighborhood in Bailey Hill was flooded from runoff coming down the hill. Inches of water flowing over foundations and into basements.
  - On the north side of Route 1/Fort Hill Road, homes near Fort Hill Brook experienced at least a foot of inundation.
  - The High Road trailer park experienced flooding from a tributary of Baker Cove.
- Coastal flooding and sea level rise were discussed:
  - Coastal flooding is largely related to nor'easters.
  - Groton Long Point and Noank experience coastal flooding.
  - Coastal sewer pumping stations are designed to be floodproof to the 14-foot elevation.
  - Many coastal homes have been elevated at the owners' expense.
  - The Town's Capital Improvement Plan (CIP) will begin looking at bridge replacements and other projects with consideration for sea level rise.
  - The CIP requires new facilities to be outside flood hazard areas.
  - The Groton Long Point bridge needs to be replaced and the town will be looking at sea level rise, but a hazard mitigation grant may not be desired for this project.
  - The concept of freeboard was discussed as related to sea level rise. The Planning staff considered freeboard as a requirement for new development, but issues concerning whether it would be coastal and/or inland, and how it would be enforced, eventually lead to the Town not pursuing freeboard. David Murphy reminded those in attendance that FEMA and NFIP allow communities to adopt more stringent flood damage prevention criteria.
  - Michael Murphy described the Town's sea level rise planning efforts. The Plan of Conservation and Development update is coming up soon, as well as the update of the Municipal Coastal Program. These plans will be addressing sea level rise.
  - Michael Murphy indicated that some recommendations can be found in the coastal adaptation reports.

**F. Wind**

- CL&P trims trees along power lines.
- After Irene, the power outage was up to six days in CL&P territory.
- Groton Utilities was able to restore power to customers more quickly.
- The tree warden is under Public Works. He can post and remove trees in rights of way or town land.
- The Town has a proactive tree trimming program that has a sufficient budget for trimming one day per week. A contractor is utilized.
- The Mystic streetscape project will include underground utilities.
- The new military housing has underground utilities, as does the Great Brook subdivision.
- The Town participated in meetings with CL&P after T.S. Irene. CL&P stated that they needed to spend time opening roads. The Town believes that is not the job of CL&P. The Public Works personnel were out clearing trees and debris from roads. Within nine hours of the safe start time for clearing, every blockage was cleared that did not involve downed wires. The Town favors using local forces to clear roads.
- After Hurricane Gloria, the Town could open roads more quickly because there was better information about live wires.
- The "Two Storm" report about NU/CL&P was discussed. Michael Murphy inquired how the hazard mitigation plan would address the Town/CL&P gaps and relationships relative to tree trimming.
- All new buildings are compliant with the 120 mph criteria in the CT Building Code. None have been over-designed to withstand higher winds.

**G. Winter Storms**

- No roofs or buildings collapsed last winter.
- The town was concerned with the Public Works garage and had to check it.
- Wal-Mart removed snow from its roof.
- CTDOT plows its roads and the town plows the rest.
- Plowing routes are planned and assigned. The Town owns loaders and plows.
- Treated salt is used for de-icing.

**H. Dams**

- EOPs are not on file, according to Mr. Sastre.
- The dam on Haleys Brook that is shown on the SCCOG map near Cow Hill Road is reportedly removed.
- The dam owned by Electric Boat is going to be removed. A permit is pending.
- Other high hazard dams are owned by Groton Utilities.

*I. Wildfires*

- Four acres burned off Route 184 near Center Groton about three years ago.
- Four acres burned near Bluff Point and the airport a few years ago.
- The Center Groton fire district had a brush truck, but does not anymore.
- Regulations do not require cisterns or dry hydrants. Use of tanker trucks is preferred, along with the public water system.



## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Ledyard January 18, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Charles Karno, Planning Director
- Marcia Hancock, Finance Director
- Steve Masalin, Public Works Director
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The high school is the shelter and the Emergency Operations Center (EOC).
- Mr. Karno will send the Emergency Operations Plan.
- The Town Hall and annex (same property) are critical facilities but do not have a generator.
- The police department is a critical facility and has a generator.
- The town has two fire districts (Gales Ferry and Ledyard) and each has a fire station that is a critical facility.
- The highway garage on Colonel Ledyard highway is a critical facility.
- The senior center is not a shelter and not a critical facility.
- Nursing homes are not located in Ledyard. Mr. Karno will compile a list of senior and assisted living facilities.

#### **D. *Development Trends***

- Small subdivisions are always proposed or pending in Ledyard. About 20 to 40 lots per year are created, scattered throughout the town.
- The prior plans for the "Ledyard Center" intensified development are on hold. Although this corridor has public water, it does not have sewer service yet. Although

no specific plans are currently in place, or pending, the town will see increased infill over time. For example, there is available land behind the town hall.

- The Baldwin Hill Industrial Park is approved for six lots, but nothing has been constructed yet.
- Regulations do not require that utilities be placed underground in new developments.

#### ***E. Flooding***

- In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update.
- The March 2010 flood event demonstrated that there are many bottlenecks and under-capacity drainage networks in Ledyard.
- Lantern Hill Road washed out at Lantern Hill Brook (which is the Ledyard/North Stonington town line) in March 2010. The two towns are working together with Mashantucket Pequot Tribal Nation to address this crossing.
- There were not many complete road closures in March 2010.
- Other problem areas include:
  - o Flat Brook at Baldwin Hill Road flows under a non-residential building.
  - o Lambtown Road Extension goes through a wetland and the road forms a dam of Lamb Brook near Haleys Brook. Beavers are active in this area. The road has been overtopped and a 300-foot span of the road has been scoured.
  - o There are three repetitive loss properties in the town, but the town doesn't have any information about them.
- One possible recommendation for the plan is the replacement of a bridge on Shewville Road at Shewville Brook/Indiantown Brook.
- Another possible recommendation is the replacement of the Williams Brook bridge at Town Farm Road. Water crosses the road during significant storms.

#### ***F. Wind***

- CL&P trims trees along power lines.
- After Irene, the power outage lasted at least one week, but some areas lasted eight or nine days.
- Mr. Masalin is the tree warden. He does not have enough of a budget for proactive trimming. He maintains a list of priority trimming areas and recently caught up with the list after receiving three days of funding from the town and three days of funding from the State.
- As noted above, regulations do not require that utilities be placed underground in new developments.

#### ***G. Winter Storms***

- Last winter, Gales Ferry School was temporarily closed while the snow load and roof were evaluated. The roof was ultimately deemed safe.

- A residential roof in Ledyard collapsed last winter.
- CTDOT plows its roads and the town plows the rest.
- The Town has 12 plow trucks and 11 crew plus a dump truck. Routes are prioritized and there are 11 routes assigned, with about ten miles per route.
- Treated salt is used for de-icing.

**H. Dams**

- No EOPs are on file.
- Some scouring on Lantern Hill Road occurred below a private dam.

**I. Wildfires**

- Dry hydrants and cisterns are not required for new developments. Tanker trucks are the preferred means of fire fighting.
- Small brush fires may occur in the town, but nothing significant.
- The Fire Marshal is town staff, not with either of the fire districts.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Lisbon January 24, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Thomas Sparkman, First Selectman
- Scott Bighinatti, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities and tribal governments within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Town has an Emergency Operations Plan (EOP). This document provides general procedures to be followed in case of an emergency. This document is reviewed annually and updated as needed. It does not have a specific annex for severe weather or natural hazards.
- The Town does not have any convalescent or nursing homes, nor does it have any senior homes or complexes.
- The Fire House is the Town's Emergency Operations Center (EOC). It has a generator.
- Emergency communications are good. The Town relies on radios, email, telephone, and cellular phone service to communicate. Cellular service and telephone service was limited during Irene and Alfred due to downed trees and power outages at the cellular towers.
- Lisbon Central Elementary School is the Town's shelter. It can hold approximately 150 people. It has a generator and is American Red Cross certified.
- The Town does not have a secondary or backup shelter. If additional space was needed, the Town would send people to a regional American Red Cross Shelter.
- The Lisbon Fire Department is volunteer and also provides emergency medical services.

- The Town has one Resident State Trooper who operates out of the Public Works Garage.
- The Town has one public works garage. It stores sand and salt.
- The Town has one doctor's office and one physical therapy center, but no walk-in medical facilities.
- The Town has one in-home day care, but no commercial day-care centers.

**D. *Development Trends***

- The Town has a separate flood ordinance from the zoning regulations. It is available online.
- The Town has an open space ordinance for new development but it may not be available online.
- The Town uses the SCCOG Regional Transportation Plan for guidance.
- The Town has separate subdivision regulations.
- Lisbon has seen the development of five to eight new subdivisions over the past five years. Four additional subdivisions are in the works. Some single family homes have also been built.
- A new shopping center has been completed on Route 12.
- No new industry has been developed in the past five years.
- Two new commercial developments are in the conceptual stages.
- The Town uses the Connecticut State Building Code.
- Jaime Rabbit at the SCCOG is the Lisbon Town Planner. He can be contacted with any development questions.

**E. *Flooding***

- There are no real issues with flooding in the Town. Structures are generally unaffected by flooding.
- Drainage systems on Bundy Hill Road, Ames Road, Ice House Road, and Lower Blissville Road are considered to be undersized. These roads all overtopped during the March 2010 floods. No homes were affected by the flooding.
- Some homes along the Quinebaug River (Pleasant View Cove area) were close to flooding in March 2010 but did not flood. This is above the Aspinook Pond section of the river.
- Nuisance flooding is the most common type of flooding. The Town sporadically has to perform basement pumpouts following storms. Lots of homes needed pumpouts in March 2010, many that never needed pumpouts before.
- There were no flooding issues during Hurricane Irene.
- The October 2005 floods were not as bad as those during March 2010. Many of the same areas were affected, including Bundy Hill Road and Ames Road. Pleasant View Cove area on the Quinebaug River had water come up but no homes were flooded.
- Drainage complaints typically go to the First Selectman.
- Lisbon was largely unaffected by the 1955 floods.

#### ***F. Wind***

- The Town has a Tree Warden. The Public Works budget includes tree maintenance. They have a small budget for trimming trees. The Public Works staff trims smaller trees, while jobs involving larger trees and those near power lines are contracted out. Public Works also performs informal inspections of trees.
- Electricity was out for approximately seven days during Irene. Power was only out approximately three days during Alfred. Irene caused much more damage than Alfred.
- There are very few areas where utilities are underground. New commercial developments and subdivisions are required to place utilities underground.
- Connecticut Light & Power provides tree maintenance along electrical lines. Algonquin also performs trimming near their utilities. AT&T and Comcast may also perform some trimming.
- There are a couple mobile home parks in Town.

#### ***G. Winter Storms***

- The Public Works Department has set plowing routes. They also maintain a supply of sand and salt.
- The Town had minor snow load issues in the Winter of 2011. The Town checked all flat-roofed buildings. The School was a concern, but they didn't clear it and it was fine. There were no reported failures on private property – many residents shoveled parts or all of their roofs. The mobile home parks had some damaged roofs.
- A few roads in Town have icing problems in the winter, but nothing major. Additional sand and salt suffices to improve access.
- A few private roads in town are problematic during the winter. For example, Pleasantview Cove Road is a 1 ¾-mile long unimproved road that includes a private railroad crossing. The road is very hilly and relatively narrow.

#### ***H. Dams***

- The Town owns two dams which they inspect annually. These are the Blissville Pond Dam (low hazard) and the Lower Blissville Pond Dam (significant or high hazard). Both dams are earth and rock dams with no lower-level outlets.
- These dams typically have no issues other than the downstream culverts overtopping.

#### ***I. Wildfires***

- The Town has a handful of brush fires each spring and autumn. The largest fires burn two to five acres maximum.
- No major fires could be recalled in recent history.

- ❑ The Town has seven dry hydrants. The Fire Department would like to redo or improve several of them – vegetation is filling in on the bottom, impeding the intakes and reducing the volume available.
- ❑ Norwich Public Utilities provides water service along Route 169. The Jewett City Water Company, a subsidiary of the Hazardville Water Company, also provides water service in Jewett City and in Lisbon along Route 12.
- ❑ Pleasantview Cove Road is the highest risk area, since it is a long private road and no dry hydrants are nearby.
- ❑ The Town has one off-road brush truck and a gator with fire-fighting capabilities.
- ❑ The Fire Department goes to fires as quickly as possible.

***J. Actions Taken by the Town of Lisbon on 2005 Plan Recommendations***

- ❑ Develop a Flood Audit Program – No structures are directly impacted by flooding. Flooding is limited to poor drainage or nuisance flooding such as homes near hillsides that require basement pumpouts. The Town is aware of these areas and a formal program is not proposed.
- ❑ Evaluate the Risk Exposure of the Mobile Home Park near Blissville Pond – The Hazard Mitigation Plan Update will specifically discuss the vulnerability of the two mobile homes to natural hazards. These areas were a concern during the March 2010 storms but they did not flood. Mobile homes are at an elevated risk of wind damage due to their less-resilient construction as compared with single family homes.
- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – This is ongoing as part of the Town’s annual EOP update. No critical facilities are believed to be more or less susceptible to natural hazards.
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout the Nation – This is ongoing along with the annual EOP update. The Town has communication capability with surrounding communities.
- ❑ Review of Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update. The Town had access issues during Hurricane Irene due to the many downed trees and power lines.
- ❑ Identify Appropriate Improvements to Traffic Infrastructure and Emergency Response Training and Equipment – This is ongoing as part of Fire Department training and the annual EOP update.
- ❑ Implement a Reverse 9-1-1 System to Automatically Call Telephones Throughout Town, Relaying Important Information During an Emergency – The Town is part of the statewide CT Alerts “Everbridge” System.

- Distribute or Post Public Information Regarding Hazards in the Town – Notifications are posted on bulletin boards at town buildings and on the Town website. Local media is utilized to pass information during storms, including newspaper, television, and radio. Town employees made personal contact with residents during the recent power outages by going door-to-door.
- Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least quarterly or following any use of the facilities.
- Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – Training is performed regularly, with equipment upgrades occurring to the extent the budget will allow.
- Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – This is only considered for new projects. There are no plans to move existing utilities underground.
- Complete an Earthquake Survey of all Critical Facilities and Infrastructures –A formal survey is not proposed due to the infrequent nature of this hazard.
- Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – Inspections are performed annually each spring by Public Works. Public Works also inspects catch basins in floodprone areas for blockages prior to major storms.
- Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – Fire protection capabilities are reviewed at least annually. Fire flow pressures are very good where hydrants are provided by public water companies. The Town believes that its fire protection level is adequate.

***K. Acquisitions***

- None



## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Mohegan Tribal Nation January 24, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Joseph Lavin, Executive Director of Public Safety
- Francis Gavigan, Jr. – Chief of Police
- David Atkinson, Building Official
- Jody Grenier, Deputy Chief Marshal
- Scott Bighinatti, Milone & MacBroom, Inc.

The following individual provided information passed on at the data collection meeting and should be listed in the plan:

- Ronald Kanterman, Fire Chief

In addition, the following individual reviewed the meeting minutes and offered additional information following the data collection meeting:

- Steven R. Marien, CAD/GIS/Document Control Manager

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities and tribal governments within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

Mr. Lavin noted that the tribe wishes to regionally coordinate as much as possible. For example, when the Tribe receives a planning or infrastructure grant, they typically provide much of the funding to SCCOG to promote regional solutions.

### **C. Critical Facilities**

- ❑ The Tribe has an Emergency Operations Plan (EOP). This document provides general procedures to be followed in case of an emergency. The Tribe wishes to add the Hazard Mitigation Plan as an Annex to its EOP.
- ❑ Transportation corridors are well-developed. There are two major roads in and out of the nation (Route 2A and Route 32), three main interior roads, and few areas where it would be difficult to reroute traffic during an emergency.
- ❑ The tribe's Emergency Operations Center (EOC) is the Public Safety Building classroom adjacent to the Dispatch Center. This juxtaposition is very useful to command staff during emergencies.
- ❑ The Police Department radio system is industry standard. While there is always room for improvement, in general the Tribe feels that the system is robust. The portable radios and base stations can communicate with their neighbors and the State Police. The Fire Department also uses the County radio frequency.
- ❑ The Tribe has one shelter facility on Fort Hill Drive at the elderly housing complex. It has a capacity to shelter less than 50 people. The Tribe does not have a formal shelter plan.
- ❑ In the case of a regional or large-scale emergency, people could be sheltered at Mohegan Sun Arena or in the hotels. These facilities are constructed to or beyond industry standards. No formal regional agreements are in place to provide shelter at these facilities.
- ❑ The Public Safety Building houses both the Police Department and the Fire Department.
- ❑ The Tribe has two Public Works Facilities. The first is the Engineering Department located out of the Thames Garage. They care for Mohegan Sun facilities. The second operates out of the Public Works Barn on Fort Shantok Road, providing services to the remainder of tribal lands.
- ❑ The Senior Center and Daycare facilities are located on Crow Hill Road near Route 32. The Daycare is public, but the Senior Center is open to tribal residents only.
- ❑ The Tribe has large generators for emergency backup.
- ❑ Gas distribution lines run through the reservation, but no transmission lines.

### **D. Development Trends**

- ❑ The Tribe does not have 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 Office of Land Management to guide growth decisions.
- ❑ There have been no major changes in infrastructure since 2008. The majority of work completed since 2005 has been interior renovations. The only new building has been the 200,000 square foot government center (60,000 square foot footprint) that was just completed at 13 Crow Hill Road.

- No new major developments are proposed.
- There are approximately 105 residents living in the tribal nation.
- The tribe exceeds the Connecticut State Building Code, utilizing the 2009 updates to the 2005 amendments to the 2003 International Building Code. The Fire Code is the Life Safety Code similar to Connecticut's.
- The acreage of the reservation is approximately 384.98 acres, with an additional 158.99 acres at Fort Shantok. A recently approved 2008 Trust Application increased the size of the nation by approximately 30 acres.

**E. Flooding**

- The tribe utilizes 100-year floodplain lines as defined by FEMA. No development exists within the floodplains. The Tribal Council has adopted the latest revision of the FEMA Flood Maps (Effective July 18, 2011).
- There are no notable flooding issues or drainage issues. Drainage systems are recent and oversized. Nuisance flooding is not typically an issue.
- If flooding did occur, the engineering department or the facilities department would handle the complaints depending on the location.

**F. Wind**

- The public works staff monitors trees as part of their normal rounds. The general grounds budget includes tree maintenance. Mohegan hires outside contractors to trim along feeder lines.
- The Tribe had very limited outages during Irene and Alfred, as Norwich Public Utilities (NPU) continued to deliver power.

**G. Winter Storms**

- Snow is the most common natural hazard requiring additional effort from Mohegan staff, as parking garages need constant maintenance during storms.
- The tribe monitored the weight of snow on all its buildings last winter. They took depth measurements to estimate snow weight and compared the estimates to the bearing load of the structure. They hired crews to shovel several buildings as the weight approached safety limits, but they were still well below the bearing loads of the structures. Some of the buildings at Mohegan Sun had leaks in the spring, but this was from ice and not due to the weight of the snow.
- The Engineering Department now has a draft written plan to address snow load issues each winter.
- Alfred did not cause any winter storm damage.
- Icing is not an issue anywhere. Employees understand that the livelihood of the nation depends on there being constant access to its facilities, so response to storms is quick and efficient. Salt is stored at the public works facility.

## **H. Dams**

- ❑ The Fort Shantok Dam is a low-hazard earthen dam that is about 12 feet high. A railroad track lies between it and the Thames River. The Tribe does not have an Emergency Operations Plan for the Fort Shantok dam.
- ❑ The Fort Shantok Dam was formerly a State-owned dam and impoundment. It was recently rebuilt and a fish ladder was added. It is believed to be in excellent condition.

## **I. Wildfires**

- ❑ All developed areas on the Reservation have public water service provided by NPU. The Tribe does not have any dry hydrants.
- ❑ Fort Hill has some grassland areas, but they are easy to access.
- ❑ There are no notable dead ends or one-way roads that are difficult to access.
- ❑ The Fire Department goes to fires as quickly as possible.
- ❑ The Tribe may have had a forestry analysis done with the intention of looking at fire hazard risk a few years ago. Mr. Marien will check on the analysis.
- ❑ Mr. Grenier is also on the Fire Department in Voluntown and asked to be included in that meeting if possible.

## **J. Actions Taken by the Mohegan Tribal Nation on 2005 Plan Recommendations**

- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – This is ongoing as part of the Tribe’s annual EOP update. In general, tribal critical facilities are disaster-resilient.
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout the Nation – This is ongoing along with the annual EOP update. They have communication capability with surrounding communities.
- ❑ Develop a Flood Audit Program – The tribal nation has no issues with flooding.
- ❑ 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 and store much of that team’s equipment and supplies.
- ❑ Review of Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update.
- ❑ Implement a Reverse 9-1-1 System to Relay Important Information During an Emergency –The tribal government can receive CT Alerts “Everbridge” System notices although residents are not actually enrolled in that system. There are no plans to implement such a system, as the existing response procedures are acceptable for the relatively low number of residents.

- ❑ Distribute or Post Public Information Regarding Hazards on the Reservation – All employees are required to attend safety training and this training is reinforced with bulletin boards throughout employee areas. Notices for the tribe are posted at the Community Center. Quarterly safety meetings are held with residents. Housing and facilities staff went to residents and delivered food and water during Irene power outages.
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least annually or following any use of the facilities. Communication equipment is checked at least quarterly.
- ❑ Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – This is done regularly, with equipment upgrades occurring to the extent the budget will allow.
- ❑ Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – All power lines on the reservation are below ground, with the exception of infrastructure belonging to the Town of Montville on Route 32.
- ❑ Complete an Earthquake Survey of all Critical Facilities and Infrastructures – A specific survey has not been performed and there are no plans to perform such a survey.
- ❑ Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – Inspections are performed annually as part of regularly scheduled cleaning activities. Basins are cleaned by vacuum truck. If the inspections or resident complaints reveal vulnerabilities, then a more detailed inspection is performed.
- ❑ Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – The Tribe believes that its fire protection is adequate. NPU recently banded its hydrants such that fire fighters know how much flow is available from each hydrant. There are several fire pumps with outstanding pressure and these are tested weekly. They also have a 1,000,000 gallon tank that is only used to store fire protection water.

**K. Acquisitions**

None

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Montville January 31, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Ron McDaniel, Mayor
- Ray Occhialini, EMD/Fire Marshal
- Donald Bourdeau, Director of Public Works
- Vern Vesey, Building Official
- Marcia Vlaun, Town Planner
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Emergency Operations Center (EOC) is Town Hall. It has a generator.
- The high school is the main shelter and is staffed by the American Red Cross as needed. It has a generator.
- Tyrell Middle School is the secondary shelter. It has a generator.
- There are four fire stations with a combination of paid and volunteer personnel; all have generators
- A new 18,000 sf Public Safety Building is under construction with a December 2012 completion anticipated. Police and dispatch will be located there. Because the facility will be finished before the plan is implemented, it should be considered a current critical facility.
- The public works facility has a generator and also has the town's fuel supply for vehicles and equipment.
- Orchard Grove Nursing Home (130 beds) has a generator.
- Haughton Cove Manor (12 beds) has a generator.
- Water and wastewater facilities are considered critical facilities. The tanks are Cook Drive (Montville WPCA) and Richard Brown Drive (Norwich Public Utilities).

- ❑ The WPCF is known as Pink Row WPCF.
- ❑ The pumping stations can be excluded from the critical facilities list.
- ❑ The Killeen Road Substation is a critical facility.
- ❑ The additional potential critical facilities were discussed. These are Independence Village (40 units), Freedom Village (40 units), and Jensen's Hillcrest Mini Estates mobile home park (150 spaces/units). All three of these have many residents on oxygen. Power failure is an important issue for these facilities. The group decided to include these as critical facilities.
- ❑ The Montville Correctional Facility (state prison) is not a critical facility.
- ❑ The town is commencing a public safety study in the near future. The study will review how things are being done and evaluate if anything can be improved.

#### ***D. Development Trends***

- ❑ A project called "The Village" is partially approved with a letter of intent from HUD. It will be 160 units of townhouses near the center of Route 32 (near St. Bernard Drive). A site plan is expected soon.
- ❑ A fast food restaurant is approved.
- ❑ A 40-lot subdivision at Black Ash Road & Chesterfield Road is pending.
- ❑ Various commercial infill projects along Route 32 are anticipated.
- ❑ The largest piece of developable land (300 acres) is located between Route 32 and the Thames River south of Route 2A. Although nothing is pending for this site, the Town anticipates that something will be proposed someday.

#### ***E. Flooding***

- ❑ The March 2010 flooding was significant in Montville. Even the public works yard was flooded. However, areas of routine flooding are not prevalent in Montville.
- ❑ The Montville Road bridge at the Norwich city line (Trading Cove Brook) has been out since the March 2010 flood.
- ❑ Tech-Air, Inc. on Route 163 suffered damage during the March 2010 flood.
- ❑ Laurel Point Drive near Oxoboxo Lake floods every year due to poor drainage.
- ❑ Maple Avenue near the Town Hall floods with water on the road. Wetlands are located on both sides of the road. Route 163 road work is reportedly a potential cause.
- ❑ Fitch Hill Road at Old Fitch Hill Road appears to be drainage-related flooding.
- ❑ Faria Marine Instruments at 385 Norwich–New London Turnpike is located at the end of the Oxoboxo Brook system and the basement floods repeatedly.
- ❑ Countryside Condos often have water in basements when it rains. The problem is drainage-rated. It's very wet toward the adjacent school.
- ❑ The repetitive loss property at 146 Lake Drive East may experience basement flooding<sup>1</sup>.

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<sup>1</sup> A reconnaissance after the meeting revealed that the home has a walk-out basement in the rear with wetlands behind the yard.

- ❑ The eight rows on the matrix in the previous annex were reviewed. All were about flooding:
  - The bridge replacement on Pink Row was not completed.
  - The improvements on Meeting House Lane were not completed.
  - The culvert replacement on Old Colchester Road was not completed. The town may be applying through HMGP for this.
  - Drainage at Murphy School has been fixed.
  - Drainage improvements at Route 32 and Jerome Avenue were not completed. Businesses get flooded (Walex Copper, Claudio's Tuxedos) and a house.
  - A flood audit/inventory has not been done.
  - Projects in Horton Cove were not completed and are not relevant anymore.
  - A catch basin survey has not been done.

#### ***F. Wind***

- ❑ CL&P trims trees along power lines. Power was out for a week after T.S. Irene.
- ❑ Utilities are placed underground in new subdivisions. However, the Town may not require this for long dead-end roads.
- ❑ Mr. Bourdeau is the tree warden. He has a modest budget and a contractor on call. Some of the trimming under his direction has prevented road closures during storms.
- ❑ After storms, Mr. Bourdeau knows what needs to be cleared and opened, whereas CL&P may have different priorities.
- ❑ According to Ms. Vlaun, the towns and SCCOG have GIS capabilities that could be used after significant storms like T.S. Irene. A regional data collection and assessment tool could have facilitated clean-up and response. After Hurricane Bob in 1991, information about damage and clean-up was manually plotted to aid in response.

#### ***G. Winter Storms***

- ❑ Several problems were noted last winter with the heavy snow. The St. Thomas cafeteria roof was groaning and the facility was evacuated then the roof was cleared.
- ❑ The steel wall studs in the Stop & Shop lost flex and sheetrock cracked. The store was shut down and the roof was shoveled.
- ❑ A few businesses in Montville cleared their own roofs.
- ❑ The schools all cleared their own roofs as precautionary measures.
- ❑ A house on Laurel Point Road was evacuated but did not fail.
- ❑ A few mobile homes suffered damage to overhangs.
- ❑ CTDOT plows its roads and the town plows its (140 miles) using 21 trucks. Individuals are assigned to routes and routes are prioritized, but Mr. Bourdeau does not maintain a map or list due to potential liability issues. He experienced a deposition a few years ago after a vehicle accident.
- ❑ Microclimates are a problem in Montville. The snow line in October 2011 was in Montville. Part of the town received heavy snow and part did not.



## *H. Dams*

- Rand Whitney owns the Rockland Pond Dam. This dam almost overtopped in March 2010. A repair has been approved by DEEP and is planned for spring 2012.
- EOPs are on file for Oxoboxo/Stone Container dam, Rand Whitney, and Stony Brook (NPU's reservoir). In March 2010, DEEP told the town to "follow the EOPs" where necessary.
- The Stone Container dam has been grouted and repaired recently.

## *I. Wildfires*

- No specific areas of risk or vulnerability are known.
- A ten-acre fire occurred two years ago. It was accidentally set.
- If a development is greater than 1,500 feet from the public water system, the town requires a dry hydrant, 10,000 gallon tank, or fire pond.
- Mr. Occhialini would like to see water mains extended.
- The town has a tanker truck and maintains several mutual aid agreements. Each fire company has a brush truck.
- As noted above, the town is commencing a public safety study to review how things are being done and evaluate if anything can be improved.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Mashantucket Pequot Tribal Nation January 24, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Andrew Verraneault, Assistant Fire Chief
- Keith Gove, Public Works & Planning
- Michael Dobrowski, Building Official
- Sara Northup, Public Works & Planning
- Scott Bighinatti, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities and tribal governments within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

Mr. Verraneault noted that the Tribe had begun to update the annex to the 2005 SCCOG hazard mitigation plan. Representatives of the Tribe met with FEMA to discuss the update in 2011. The Tribe wishes to be part of the regional update instead now that funding is available to SCCOG. Mr. Verraneault provided a draft copy of the updates to the MPTN annex.

MPTN is concerned about the potential publication of sensitive information. Mr. Bighinatti explained that MPTN would have the opportunity to review the annex before it is sent to the State and FEMA for conditional approval and a second opportunity for review prior to adoption. The Tribe may wish to have another meeting to discuss the annex prior to its submission to the State and FEMA.

#### **C. *Critical Facilities***

- The Tribe has an Emergency Operations Plan (EOP). This document provides general procedures to be followed in case of an emergency. The Tribe wishes to add the Hazard Mitigation Plan as an Annex to its EOP.

- ❑ The EOP has an annex for Public Works, Community Planning, and Property Management that was provided by Mr. Verraneault.
- ❑ The Tribe does not have a formal transportation plan – they follow CT DOT guidelines regarding shutdowns. They issue bulletins to notify the State, Town, and Tribe when roads will be closed for repairs or emergencies, and broadcast again when work is completed.
- ❑ The Public Safety Building on Pequot Trail is the Emergency Operations Center (EOC). This building includes the Tribe’s police, fire, and animal control departments. It has a generator that can provide 100% power to the building. It is also constructed to resist 200 mile per hour (mph) winds. This building can shelter approximately 200 people.
- ❑ Eagle Park in North Stonington will be the backup EOC – it is currently under construction.
- ❑ The tribe contracts out emergency medical services. They operate out of the EOC.
- ❑ The Tribe utilizes radios, phones, and email to communicate during emergencies. Hurricane Irene revealed a potential vulnerability – Blackberries could not be charged during the power outage. The Tribe is now stocking batteries to ensure they will not have that issue in the future.
- ❑ The EOP has an annex outlining communications. The Tribe can communicate with surrounding Towns. The Tribe backed up Ledyard during Hurricane Irene when their EOC had issues.
- ❑ The Tribe has access to the CT Alerts “Everbridge” system through personnel who also work for Groton. The Tribe has its own Reverse 9-1-1 system to contact residents separate from the Connecticut system.
- ❑ The Tribe’s primary shelter is the Community Center. This building can shelter approximately 100 people. It has a generator and is also hooked up to the casino’s co-generation plant.
- ❑ The Tribe’s Child Development Center (CDC) is the secondary shelter. It can also shelter approximately 100 people, but it does not yet have a generator. There are typically 100 children at the CDC during the day; 20 of these children are infants.
- ❑ The Tribe has 18 large backup generators for the casino, and 13 portable generators for use during emergencies.
- ❑ The Tribe has mutual aid agreements through SCCOG. They can house shelterees in the casino or hotel and also have contacts with hotels throughout the northeast region if a hotel at the casino needed to be evacuated.
- ❑ The tribe has one public works facility that services all tribal lands. It stores salt for the winter.
- ❑ Seniors live in homes throughout the reservation. Senior activities take place at the community center.
- ❑ The casino has two doctors on staff for employees through the Backus Occupational Health Center. Tribal Health Services provides care to the rest of the nation. They have three facilities (one of which is for Backus Occupational Health Services). Tribal Health Services is contracted with Backus Hospital if advanced care is necessary.

- ❑ Transportation corridors are well-developed. There are two major roads in and out of the nation (Route 2 and Route 214) and many interior roads. There are few areas where it would be difficult to reroute traffic during an emergency.

#### ***D. Development Trends***

- ❑ The Tribal Government has a Planning & Community Development agency that oversees building management, construction, housing, and public works. They also have a Natural Resources Protection and Regulatory Affairs Department that oversees building code enforcement and natural resources protection and includes a land use commission and a tribal historic preservation officer. They have regulations that govern new development and conservation planning.
- ❑ Mr. Dobrowski noted that the Tribe enforces a building code that is similar to the current State of Connecticut building code. In some areas, the Tribe's building code exceeds the Connecticut Code.
- ❑ Open space is set aside for any development encroaching on wetlands.
- ❑ MGM Grand was the last major development (+/- 3,000,000 square feet). There have been no additional developments since that building was completed.
- ❑ A few homes have been added to the reservation since 2005.
- ❑ Some additional development is proposed for the future.

#### ***E. Flooding***

- ❑ The March 2010 rains caused flooding in and near the former silica mine on Lantern Hill Road. This area is outside of MPTN but is owned and operated by the Tribe. The pond in this area overflowed, causing a washout of Lantern Hill Road downstream; the Tribe received federal money to repair the road.
- ❑ The March 2010 rains caused three washouts on the Route 2 bypass.
- ❑ A small bridge on Shewville Road was almost overtopped during the March 2010 rains. The Tribe is working with the Town on repairs.
- ❑ The Tribe pumped 28 basements during the March 2011 flooding. Basement (nuisance) flooding often happens during heavy rains.
- ❑ The only known drainage issue was at the intersection of Route 214 and Trolley Line Boulevard. Extreme rainfall can backup the drainage system in this area. The system may be undersized.
- ❑ The tribe utilizes 100-year floodplain lines as defined by FEMA. Minimal to no development exists within the floodplains.
- ❑ Residents call the EOC when they have flooding issues.

#### ***F. Wind***

- The Tribe has an assigned staff member in the Natural Resources Department who is in charge of trees. They contract with Save-A-Tree to cut trees. They have a budget for tree maintenance and preventive services. They try to save trees as much as possible when they do not present safety concerns.
- Roads, the Lake of Isles area, and homes were the hardest hit areas for tree damage during Irene.
- Some residents were out of power for up to 10 days following Irene. The casino was back on in 12 hours thanks to the co-generation plant.
- Alfred presented no real issues for wind damage. Most trees that were damaged in Irene were cleaned up or removed by the time Alfred hit. Power was out for up to three days during Alfred.
- Utilities are underground except for on Coachman's Pike.
- Connecticut Light & Power provides tree maintenance along Route 2. Yankee gas is also in the area but their utilities are underground.
- The EOC is well-equipped to resist wind damage.

#### ***G. Winter Storms***

- Ephraims Path is very steep – ambulances have difficulty getting up this road in the winter.
- The Tribe shoveled a lot of roofs during the winter of 2011. They shoveled all of the roofs at the casino. They are working on a plan to ice melt the roofs in the future.
- Snow is the most common natural hazard requiring additional effort from MPTN staff, as parking garages and roads need constant maintenance during storms.

#### ***H. Dams***

- Three dams are located on MPTN property: The Mayor Dam, the Silica Mine Dam, and the Lake of Isles Dam. They are believed to be relatively low hazard dams.
- The Lake of Isle Dam is the only dam with houses downstream. Mr. Dobrowski provided information on the Lake of Isle Dam following the meeting.
- If the Silica Mine Dam failed, Lantern Hill Road could be washed out (as seen in March 2010).

#### ***I. Wildfires***

- The Tribe battles a couple of brush fires each year. The Natural Resources Department has funding to remove deadfall out of the woods.
- Staff recalled a large fire that spread into Stonington prior to the establishment of the reservation, but couldn't provide details.
- Developed areas have plenty of fire protection thanks to the water service provided by MPTN facilities.

- ❑ The Tribe has two off-property dry hydrants providing fire protection in those areas.
- ❑ The central part of the reservation is the hardest area to access for fires. It was marked on the map.
- ❑ The Tribe relies on inter-municipal agreements to fight deep woodland fires. They have limited off-road equipment.
- ❑ There are no notable dead ends or one-way roads that are difficult to access. Ephraims Path can be difficult during the winter.
- ❑ The Fire Department goes to fires as quickly as possible.

***J. Actions Taken by the Mashantucket Pequot Tribal Nation on 2005 Plan Recommendations***

- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – This is ongoing as part of the Tribe’s annual EOP update. In general, tribal critical facilities are relatively disaster-resilient.
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout the Nation – This is ongoing along with the annual EOP update. They have communication capability with surrounding communities.
- ❑ Develop a Flood Audit Program – The tribal nation has no real issues with flooding. Hillside drainage and basement flooding are the primary issues.
- ❑ 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.
- ❑ Review of Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update.
- ❑ Distribute or Post Public Information Regarding Hazards on the Reservation – All employees are required to attend safety training and this training is reinforced with bulletin boards throughout employee areas. Mr. Verraneault writes a monthly safety newsletter and Risk Management sends seasonal bulletins to all residents. Notices for the tribe are posted at the Community Center as well as emailed, mailed, or posted door-to-door before, during, and after storms. Housing and facilities staff went to residents daily and delivered food and water during Irene power outages. The Tribe has a Reverse 9-1-1 system also.
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least monthly or following any use of the facilities.

- ❑ Maintain Emergency Personnel Training as Well as Maintaining and Updating 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.
- ❑ Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – Nearly all powerlines are underground. There are no plans to move the remaining lines underground at this time.
- ❑ Complete an Earthquake Survey of all Critical Facilities and Infrastructures – MPTN is located in a very low risk category for earthquakes per the building code. They try to exceed seismic requirements when constructing new buildings. A formal earthquake survey has not been performed. The Tribe has a full-time environmental monitor in the Natural Resources Department.
- ❑ Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – Inspections are performed annually by Public Works. The Tribe cleans catch basins on State roads nearby. The Natural Resources department keeps tabs on ponds and their infrastructure for sediment removal purposes.
- ❑ Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – The Tribe believes that its fire protection is adequate. The existing hydrant systems provide excellent pressure and the coverage range is considered to be good. The most vulnerable area is believed to be limited access area in the central part of the reservation.

***K. Acquisitions***

- ❑ Draft Hazard Mitigation Plan Annex for the Mashantucket Pequot Tribal Nation dated January 2, 2012
- ❑ Annex I of Emergency Operations Plan – Public Works, Community Planning, & Property Management dated October 2011
- ❑ Summary sheet regarding Lake of Isles Dam (via email)

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for New London January 12, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Tim Hanser, Director of Public Works
- Tom Bombria, Community Development
- Jack Cipriano, Building Official
- Harry Smith, Planning and Development
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Emergency Operations Center (EOC) is the Fire Headquarters. It is in the SFHA. The City desires a new Fire Headquarters and would like to demolish the old one because it may not be in good condition. The group discussed the other FEMA grants such as the EOC grant. Mr. Murphy noted that these are typically insufficient to completely fund a new EOC.
- There are a total of three fire stations, and all are critical facilities.
- The police department is a separate building, and also one.
- The City Hall may not be a critical facility, as it has no generator.
- The City Hall Annex at 111 Union Street is partially powered by a generator during outages and houses the City's radio transmission capabilities. It is therefore a critical facility.
- MMI will need to follow up with Reid Burdick for EOC and EOP-related information. He should also have the list of shelters. Those in attendance thought that the Martin Center might be a shelter, but were not certain.
- The possibility of considering the Coast Guard Academy a critical facility was discussed. However, it was determined that the Coast Guard is very self-sufficient and likely is not a critical facility.



#### ***D. Development Trends***

- All new developments are required to have underground utilities.
- The high-rise public housing on Crystal Avenue could be renovated, and a third building may be added.
- 99 townhouses are planned and approved for Fort Trumbull. They will all be elevated above the 100-year flood elevation and dry land access will be required for safe evacuation. An evacuation plan is also required.
- 80 units at Shaw's Landing are approved in two new buildings. These are going to be Phases 2 and 3. Phase 1 is already complete.
- 33 units are approved but not yet constructed on Georgetown Street.
- 50 units of condos are possible across from the rear entrance to the New London Mall on Bayonet Street.
- More downtown redevelopment potential is believed to exist, but nothing specific.

#### ***E. Flooding***

- In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update.
- Stuart Avenue remains a flooding problem. The end of the street is very low, and drainage will not occur at high tide. Water can come up out of manholes. Because it's a dead end, road closures are not an issue. Structures are flooded.<sup>1</sup>
- Parkway South is another area of chronic flooding.<sup>2</sup>
- Pequot Avenue experiences flooding. The road is very low.
- Green Harbor Beach experiences flooding at Pequot Avenue. Water flows down the hill and cannot drain into the sound. Water flows over the road. Frequent removal of sand from the road is necessary.
- Bank Street flooding is believed to be a drainage problem.
- Levee paperwork was submitted to FEMA on 12/22/11. There were some minor recommendations about clearing sediment.
- The repetitive loss properties (RLPs) appear to suffer flooding from different causes.
- Irene didn't hit New London too hard. Waves on the storm surge came over the seawalls and some roads "got wet."
- Pumping station and home acquisition mitigation projects (HMGP or otherwise) will not be possible at the present time, as the City has not committed to funding its share or administering these projects.
- Three homes may be applying (through the City) for elevations under HMGP. These are the RLPs at 291 Lower Blvd, 839 Pequot Ave, and 7 Rockbourne Lane.

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<sup>1</sup> See the MMI report for Stuart Avenue drainage

<sup>2</sup> See the MMI report for Parkway South drainage

***F. Wind***

- CL&P trims trees along power lines.
- After Irene, the power outage lasted one to seven days in New London.
- The tree warden can remove dead and diseased trees in right of ways or city land.
- Utilities are placed underground in new developments.
- Utility placement is challenging with redevelopment. Some developers have been cooperative about burying utilities.
- State Street and Bank Street have underground utilities.

***G. Winter Storms***

- The roof at 575 Bank Street collapsed last winter. It was a mixed-use building with residential units over commercial space. The building was condemned and 17 people were relocated.
- Mr. Cipriano checked some roofs last winter because of snow accumulations, and the City Hall roof was cleared. Not many others needed to be cleared.
- CTDOT plows its roads and the city plows the rest. Routes are prioritized.

***H. Dams***

- College pond dam at Connecticut College was drained.
- The City is downstream of Waterford's high hazard dam on the city line.

***I. Wildfires***

- Bates Woods Park is really the only place for wildfires.
- Connecticut College has some forestland, and the city responds to fires at the college.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for North Stonington January 18, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Nick Mullane, First Selectman
- Juliet Leeming, Town Planner/ZEO
- Marc Tate, Emergency Management Director, GIS, and IT manager
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The New Town Hall is the Emergency Operations Center (EOC) and it has a generator.
- The Old Town Hall (on the same lot) is also a critical facility as it contains an important phone system. It has a generator with limited capability and cannot be fully powered. In the past, a cord has been run between the two buildings.
- North Stonington Elementary School is the shelter and it has a generator.
- The backup shelter is Stonington High School in the Town of Stonington.
- The Town operates under the State Trooper program but the resident State Trooper has an office in the Old Town Hall. Troop E is their main office.
- The volunteer fire company has one fire station and it is a critical facility.
- An ambulance company in the town is another critical facility.
- The fire company has submitted plans for a new 19,000 sf facility with combined fire and ambulance across the street from the current fire stations. The estimated cost is \$5 to \$6 million.
- If the new facility is built, the Town will receive the current fire station building to become a second or "mini" shelter. The Town would refurbish the building (new bathrooms and septic system, etc.) and move the recreation department and voting facilities to that building.
- The public works garage at 11 Wyassup Road is a critical facility.

- ❑ Mr. Tate provided a trifold map that depicts the locations of various facilities that were discussed.
- ❑ No elderly or assisted living facilities are in the town.
- ❑ North Stonington Medical Clinic is a new emergency services clinic on Route 2 near I-95. The facility provides urgent care and is a critical facility.
- ❑ Mashantucket Pequot Tribal Nation, Ashaway (RI), Preston, Old Mystic, and Ledyard all have mutual aid agreements with North Stonington for fire and emergency response, because the town is so large.
- ❑ The Everbridge system (similar to Reverse 911) is used for notification. This operates through the Town of Groton dispatch.

#### ***D. Development Trends***

- ❑ An affordable housing development (Meadow Court) of 84 units is proposed next to Holly Green off Route 2.
- ❑ Milltown Commons (<http://milltowncommons.com/>) is pending and would include 250,000 sf commercial and 275 units of housing at Route 2 and Route 184.
- ❑ The Economic Development Plan is going to be written soon.
- ❑ The truck stop and hotels are the most recent development in the town.

#### ***E. Flooding***

- ❑ Mr. Tate provided a large GIS map (parcel base) showing dams, possible flood areas, flood prone roads, FEMA zones, and other information such as soils and community water systems. All of the red circles represent crossings that flooded in March 2010. These include:
  - Route 201 at Ashwillet Brook (outlet of lake)
  - Milltown Road at Lantern Hill Brook
  - Route 2 at Shunock River (near Ryder Road intersection)
  - Wyassup Road at Wyassup Brook (outlet of Wyassup Lake)
  - Wyassup Road and Reuteman Road at tributary of Shunock River
  - Reuteman Road at tributary of Shunock River
  - Main Street at Shunock River
  - Route 2 at Assekonk Swamp outlet
  - Rocky Hollow Road at an unnamed pond
  - Babcock Road at tributary of Shunock River
  - Route 49/Pendleton Hill Road at Wyassup Brook
  - Route 49/Pendleton Hill Road at Pendleton Hill Brook
  - Grindstone Hill Road at Pendleton Hill Brook
  - Grindstone Hill Road at Wyassup Brook
  - East Clarks Falls Road at Glade Brook
  - East Clarks Falls Road at unnamed stream
- ❑ A car was pulled from the Shunock River during the March 2010 flood.
- ❑ The Pendleton Hill Road and Rocky Hollow Road crossings flood every year.

- ❑ The Grindstone Hill Road crossing was among the worst hit in March 2010, and washed out. New culverts are desired here.
- ❑ The Pine Woods Road<sup>1</sup> culverts washed out in March 2010. New culverts are designed to convey the 100-year storm and will be replaced soon.
- ❑ The Kingswood/Meadowood development was built in a swamp and basement flooding is common. Two repetitive loss properties are located there. Mr. Mullane reported that recent mitigation included installation of 950 feet of 15-inch pipe and catch basins on Old Colony Road, and 500 feet of 36-inch pipe from the Old Colony Road/Kingswood Drive intersection to Ravenwood Road. This work was completed subsequent to the March 2010 flooding and has not yet been observed during a storm of that magnitude.
- ❑ Many new drainage pipes were installed after March 2010 and have not been tested with a severe rain event.
- ❑ The Shunock River bridge in the village center (double arch) is closed and being replaced with a single arch bridge. The capacity will increase from an 80-year storm to a 200-year storm. This will help eliminate some flooding in the village center.
- ❑ Most of the flood mitigation categories are of interest to the town, but culvert replacements are most important to recommend.
- ❑ New box culverts are being installed in Northwest Corner Road. Design has been completed.
- ❑ A Milltown Road culvert is going to be designed soon.
- ❑ Catch basins in the town are cleaned regularly.
- ❑ The PZC requires extra catch basin cleaning at the new truck stop to help prevent flooding.
- ❑ Those present agreed that one recommendation of the plan should be outreach to residents about the mitigation grants.

#### ***F. Wind***

- ❑ CL&P trims trees along power lines.
- ❑ After Irene, the power outage lasted up to ten days. According to Mr. Tate, CL&P crews were focused on Stonington and did not dispatch any crews to North Stonington.
- ❑ The public works director is the tree warden. He can post and remove trees in rights of way or town land, but permission from the PZC is needed along scenic roads.
- ❑ Utilities are sometimes placed underground in new developments, but not always. The regulations should be checked for this.
- ❑ Although the town does not oppose a recommendation for burying utilities, those people present believe that implementing a tree trimming program is probably a better recommendation.
- ❑ The southeast corner of the town (south side of East Clarks Falls Road) reportedly experiences repetitive wind damage. The farmers characterize this as a “microburst.” The last one occurred in December 2011. A roof was ripped off a barn and lean-to structures are damaged. The flat topography is believed to be a possible cause.

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<sup>1</sup> Need to verify the road name and make sure this isn't the nearby East Clarks Road

### **G. Winter Storms**

- The town checked town-owned roofs last winter because of snow accumulations, and some roofs were cleared.
- No major collapses occurred last winter (early 2011), although some barns may have been damaged. A grange lost its cattle barn during the previous (2009-2010) winter.
- Public works has seven trucks for plowing and two bucket loaders. Routes are prioritized and there is a map. The two vehicles with buckets can work in intersections and move a lot of snow.
- Three businesses in the town can assist with snow management. They are Tim Sahaki, Richard White, and Cherenzia. The town has a mutual aid agreement with Richard White, since he is a plowing business.

### **H. Dams**

- The Hewitt dam on the Shunock River (the one near the village center at Hewitt Road, as opposed to the Hewitt dam in the headwaters on Phelps Brook or the one described below) is going to be repaired. DEEP permitting is underway. This is believed to be Lewis Pond Dam. The dam was washed out in the March 2010 flood. Repairs are scheduled for 2012.
- The Hewitt dam at Route 2 and Cossaduck Hill Road is going to be addressed by the fisherman's club.
- The DEEP-owned dam at Wyassup Lake is reportedly being repaired.
- The town doesn't have any information about the fourth high hazard dam on the SCCOG map.
- No EOPs are on file in the town.

### **I. Wildfires**

- The State forest experiences fires. The Town responds. At most, a couple acres might burn.
- No major fires have occurred.
- Only a few dry hydrants and cisterns are in North Stonington. Ms. Leeming recommended checking the regulations.
- The Town can require fire protection for single family homes, such as a nearby pond or stream.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Norwich January 19, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Alan Bergren, City Manager
- Gene Arters – Director, Office of Emergency Management
- Barry Ellison, Director, Department of Public Works
- Jim Troegen, Building Official
- Scott Bighinatti, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The City has an Emergency Operations Plan (EOP) with a Hazardous Weather Annex.
- The City utilizes the CT Alerts “Everbridge” system for emergency notification and response (Reverse 911).
- The City has seven elementary schools, two middle schools, and one high school. In addition, there are several private schools in the City. It was suggested to contact Athena Nagle at the Board of Education (860) 823-4242 for information related to the schools.
- The City’s Emergency Operations Center (EOC) is located at Norwich Public Utilities (NPU) on 16 South Golden Street. It has a generator. City Hall is the backup EOC. It does not have a generator, but should have one by the end of April 2012.
- The Town has one communications frequency for all personnel. All departments can talk to each other via portable radios.
- The City has a total of 15 designated shelters that can shelter up to 33,000 people. This capacity is necessary because Norwich will take evacuees from Groton if the shoreline evacuates. Each facility has a generator and each is American Red Cross certified. The Senior Center and the Kelly Middle School are the primary shelters.

- ❑ The City has seven fire departments and one police station. Five of the fire departments are volunteer, and two are career (full-time).
- ❑ The City has three Department of Public Works facilities. The Headquarters on Clinton Avenue is located in the floodplain of the Yantic River. Fleet Management is located on Asylum Street may also be in the floodplain. The Building and Maintenance Division is located in City Hall.
- ❑ Backus Hospital is the major hospital in Norwich. It is located in the floodplain of the Yantic River.
- ❑ Norwichtown Rehab & Care is located on West Town Street.
- ❑ Saint Christopher's is a small medical facility, but the name has changed recently.
- ❑ The Eliza Huntington Home retirement community is located on Washington Street.
- ❑ There are numerous senior and disabled homes and assistance centers throughout the City. These centers should each have an EOP. The Norwich Housing Authority should have more information.
- ❑ The City does not keep a list of elderly or disabled people who may need additional assistance in an emergency. The City simply has too many people to maintain an accurate list. NPU might have a list since they provide electricity.
- ❑ The City considers its schools, City Hall, Department of Public Works, Fire Department, Police, NPU facilities and infrastructure, electrical substations, and the Algonquin gas pipelines to be critical facilities. Contact NPU directly for information regarding their critical facilities.
- ❑ The City does not have a particular transportation plan over than the regional plan.

#### ***D. Development Trends***

- ❑ Many of the business names need to be updated from the previous plan. Mr. Bergren can provide a list. For example, Thames Printing is gone, and the Norwich Navigators have become the Connecticut Tigers.
- ❑ The land area in the previous plan appears to be incorrect. This value should be checked in GIS against published values in City documents.
- ❑ Norwich has a population of over 40,000 as of the 2010 census.
- ❑ The Panima Mill is undergoing renovations.
- ❑ Apartments and condominiums (Riverview?) are proposed in Taftville near the Shetucket River.
- ❑ A few subdivisions have been proposed including off Hanson Road.
- ❑ There have been three to four subdivisions proposed in the last five years, such as Farmview Estates.
- ❑ In general, development is still stagnant. The City does not have a lot of builder-friendly developable space remaining.
- ❑ The City uses the State Building Code.
- ❑ Contact Peter Davis of the planning department about whether the City has a defined open space plan. Those present believe that it may just be a part of the Plan of Conservation and Development.



*E. Flooding*

- ❑ In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update. However, the March 2010 flood is the most recent extreme flood of record for southeastern Connecticut, as it included repetitive rains on saturated ground. The City had more flooded basements than ever recorded previously, including in areas that never have an issue with flooding.
- ❑ Flooding on the Yantic River is still an issue. People upstream of Norwich appear to sometimes release water that causes flooding in Norwich – there are coordination issues.
- ❑ The City wants to acquire the Nutmeg Industries property on the Yantic River through funding provided by the HMGP. The owner has fixed damage from the March 2010 storms due to the HMGP grants being rolled over for subsequent disasters.
- ❑ The Yantic Fire Department is a historic structure. The City wants to perform a \$400,000 floodproofing project including new retaining walls, but they still need to calculate the necessary compensatory storage. They would like this project to be funded under the HMGP.
- ❑ The Public Works Facility is located in the Yantic River floodplain. FEMA helped the City acquire one commercial property and three residential properties across the street from the facility following the floods of 1982. These properties, and the former Pleasant Street mall property, are now all open space.
- ❑ Freeport McMoRan on Wawecus Street is flooded by the Yantic River.
- ❑ The Norwich Industrial Park not a flooding area (Wisconsin Avenue, Myrtle Drive, Oxford Drive, Winnenden Road).
- ❑ Plas-pack Industries, Inc. (Connecticut Avenue) on the Yantic River has issues with flooding.
- ❑ The Bean Hill electric substation is located in the floodplain.
- ❑ The Canada bridge off Asylum Street has an issue with silt buildup. The City wants to dredge the silt out of the Yantic River but it is difficult and expensive to get a permit from DEEP.
- ❑ Mohegan Park Road has issues with poor drainage in its low-lying areas. Other areas with poor drainage or direct flooding include the bottom of Case Street, Bozrah Avenue, Shays Lane, Leffingwell / Satchem Plains, Montville Road, Glenwood Avenue, Smith Avenue, Wilderness Road, Mediterranean Lane, Boswell Avenue, and Saint Regis Avenue.
- ❑ Route 97 by the Hess Stations has flooded three to four times in the last nine years.
- ❑ Route 82 had a large flood near the entrance to KFC and Staples in March 2010. Over 9,000 sandbags were needed to protect buildings.
- ❑ The Montville Road bridge is a CMP – it washed out during a 2008 storm.
- ❑ The City had no issues with flooding during Irene or Alfred.
- ❑ Crouch Avenue in the Laurel Hill Section had slumping hillsides during March 2010 floods.
- ❑ Hunter's Brook floods a nearby field.

- The City uses the QSend (QAlert) message system and fields phone calls related to drainage complaints. Drainage complaints are reviewed by the Public Works Director. No formal logs are kept unless a project results.
- The Town's flood regulations are part of the zoning regulations.

**F. Wind**

- The City has a tree warden, and public works staff is also always on the lookout for dangerous trees. They have a tree trimming budget. The Public Works staff can trim smaller trees, but they contract larger trees out to private trimmers. NPU and Algonquin also do trimming near their utilities. AT&T may also trim near their lines.
- The entire city was hit hard during Irene and Alfred. Rural areas had more trees and therefore more tree damage. Some areas were out of power for up to a week following Irene.
- Tree damage can occur anywhere in the City.
- The new Intermodal Transportation Center may exceed wind loading requirements.
- Newer buildings are expected to have a higher resistance to wind damage.

**G. Winter Storms**

- The Town has its own sand and salt storage at its public works garage.
- The City had to shovel several critical roofs during the Winter of 2011. City Hall had minor damage to its gutters. Buckingham and Greenville Schools were vacant (they are now torn down) and the structures sustained roof damage.
- Perry's Carpets had to replace its roof after it sustained damage. The City feels that the structure may still be unsafe.
- There were many instances of private roofs being damaged when people were using snowblowers to clear snow. Someone hit a gas line on one roof.
- The City has defined plowing routes for City roads.
- Two State Department of Transportation Facilities are in Norwich. A satellite facility is located in Occum, and the District 2 Headquarters including a Department of Motor Vehicle office is located off Route 82. Winter plowing of State roads is generally timely.
- The City doesn't have any areas it considers more susceptible to winter storms.

**H. Dams**

- The City owns many dams. Some are maintained by Norwich Public Utilities, while some are maintained by Public Works. Barry has EOPs for some of the dams. MMI has written the EOPs for many of the NPU-owned dams. Contact Mark Decker at NPU for more information.
- Spaulding Pond Dam should have an EOP.

- ❑ The Upper Falls Dam is a former hydro dam that is now in disrepair. The City has taken over the dam and wants to remove it and may do so as part of an upstream bridge project. They are afraid that someone may want to restore it for hydropower.
- ❑ The Natural Resource Conservation Service and the City inspect all city-owned dams annually. DEEP sometimes attends the inspections.
- ❑ The 1955 flood washed out the Shetucket River Dam in 1955, causing damage in Norwich.

***I. Wildfires***

- ❑ The City has a significant area with public water service. The city also has dry hydrants in outlying areas. Contact Chief Sandariato (860) 892-6080 for more information about the dry hydrants.
- ❑ Brush fires are only an issue in a few outlying areas that are difficult to access. The Fire Department attempts to get to and fight fires as fast as possible.
- ❑ There are some dead-end public and private roads in the City that can present difficult access for fire trucks. In most cases the trucks can turn around in private driveways.

***J. Actions Taken by Norwich on 2005 Plan Recommendations***

- ❑ Culvert Engineering Study to Identify Undersized Structures – This is an ongoing project. The City has identified and replaced some culverts.
- ❑ Flooding of Yantic Village Fire Station – This historic fire station was constructed in 1832 and is the oldest fire station in the State. The City has put \$300,000 into repairs in recent years and wants to do a \$400,000 floodproofing / retaining wall project. The City will be applying for grant funding for this work.
- ❑ Flooding of Department of Public Works Headquarters – This building is located on the periphery of the 100-year floodplain. The City stores sandbags at this facility to prevent flooding damage. No further improvements are planned.
- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – The City has identified its critical facilities and is aware of those that are floodprone, such as the sewer plant. None are believed to have been constructed to have special resistance to natural hazards. One area of concern is the sewer and gas infrastructure that is located beneath the Canada Bridge. The piping is exposed under the bridge and can be impacted by flooding. If the downstream dam is removed, the infrastructure should no longer be affected.
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout the City – This is ongoing along with the annual EOP update. The City recently upgraded its portable radios and has interdepartmental and inter-municipal communication

capability. They also utilize the CT Alerts “Everbridge” System for Reverse 9-1-1 capability.

- ❑ Flood Audit Program for Areas Other than the Yantic River – Mr. Arters maintains a list of areas that have been flooded to help identify long-term vulnerabilities.
- ❑ Property Acquisitions Along the Yantic River – FEMA assisted the City is purchasing many properties in the past. No residents have approached the City regarding potential buyouts lately, but the City would pursue such purchases if there was potential to be funded under a FEMA grant program. Commercial acquisitions are currently a high priority for the City: The City is actively pursuing grant funding for Nutmeg Industries under the HMGP, and would also like to acquire Domino’s Pizza nearby. The City recently purchased the former Yantic Laundromat.
- ❑ Review of City Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update. The Canada bridge over the Yantic River is a trouble area. Norwichtown is essentially an island during a major flood. The City currently relocates equipment out of the Yantic Fire Station when a flood is forecast.
- ❑ Hazardous Materials Spills on Major Roadways / Railroads – The City is pushing the State to rebuild Route 82. The City’s Public Safety Committee is also pushing the State to install more turnarounds on Interstate 395. A recent traffic accident was exacerbated by the fact that emergency personnel had to travel a long distance around to reach the scene which was on the opposite side of the highway.
- ❑ Implement a Reverse 9-1-1 System to Relay Important Information During an Emergency – The City is currently participating in the Statewide CT Alerts “Everbridge” system. The City also utilizes the Emergency Broadcast System on four radio stations to issue alerts.
- ❑ Distribute or Post Public Information Regarding Hazards in the City Hall – Seasonal hazard information is posted on the Emergency Management website. The Community Emergency Response Team placed information fliers in grocery stores prior to and after Irene and Alfred. The City also uses radio stations to transmit pertinent information.
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least annually or following any use of the facilities.
- ❑ Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – This is done regularly, with equipment upgrades occurring to the extent the budget will allow.

- ❑ Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – The City has no plans for such a project, as it is simply too expensive. The City would rather trim trees. New subdivisions are encouraged or required to place utilities underground if possible (need to read regulations to confirm).
- ❑ Complete an Earthquake Survey of all Critical Facilities and Infrastructures – A specific survey has not been performed and there are no plans to perform such a survey. There is a small fault line (Honey Hill Fault) that runs through Norwich to Moodus. It may not be inactive. New commercial and industrial buildings have to meet seismic requirements as per the State Building Code.
- ❑ Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – cursory inspections are performed annually as part of regularly scheduled cleaning activities. If the inspections or resident complaints reveal vulnerabilities, then a more detailed inspection is performed.
- ❑ Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – The City believes that its fire protection is adequate. NPU recently banded its hydrants such that fire fighters know how much flow is available from each hydrant. The City also has dry hydrants.

***K. Acquisitions***

- ❑ Hazardous Weather Annex of City's EOP
- ❑ Shelter capacity information (via email following meeting)

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Preston January 24, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Bob Congdon, First Selectman
- Thomas Casey, Fire Chief
- Kathy LaCombe, Building Inspector
- Scott Bighinatti, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities and tribal governments within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Town has an Emergency Operations Plan (EOP). This document provides general procedures to be followed in case of an emergency. This document is reviewed annually and updated as needed. It is currently being reviewed and updated.
- The Preston City Fire Station (412 Route 165) is the Town's Emergency Operations Center (EOC). It has a generator.
- Preston Plains Middle School (1 Connecticut 164) is the primary shelter and backup EOC. It has a generator and can shelter approximately 100 people. It is an American Red Cross shelter.
- The Town has two fire stations; neither are in the floodplain. Poquetanuck Fire House – 87 Route 2A
- The Town has two Resident State Troopers who operate out of the Town Hall.
- The Town has one public works garage at 423 Route 2. The Connecticut DOT also has a garage in Town.
- There are 40 units of elderly housing in Lincoln Park (Hallville) owned by the Preston Housing Authority.

- The Town has two day-care facilities – “Play & Learn” (10 Wininger Drive) and “Ok Kids”. “Ok Kids” operates out of Preston Veterans Elementary School (325 Shetucket Turnpike)
- There are no convalescent homes or medical facilities in Town.
- The Town does emergency services training with utilities each year.
- The Town considers its Fire Departments, Schools, Town Hall, Elderly Housing, the new hotel, commercial properties, and water and sewer infrastructure to be its critical facilities.

#### ***D. Development Trends***

- The Town uses the Connecticut State Building Code.
- The Town has an open space plan available online.
- The Town uses the SCCOG Regional Transportation Plan for guidance.
- A new hotel is under construction near Foxwoods on Route 2 at Watson Road. This four-story building will have 125 rooms.
- The Town has been trying to get the 390 acres associated with the former Norwich State Hospital to be developed. No other significant developments are proposed.
- There have been some new single-family homes constructed in Town over the past five years, but overall residential development has been very slow.

#### ***E. Flooding***

- There are homes in the floodplain near Poequetanuck Cove.
- The March 2010 rains caused flooding in several areas, including Lewis Road and Lake of Isles Road. Mitigation has been performed on Lake of Isles Road to prevent future flooding.
- Route 2A needs mitigation to alleviate drainage issues.
- Nuisance flooding issues exist related to basement flooding. Known areas include the vicinity of Schoolhouse Road and Cemetery Road (five to seven basements flood), River Road, Watson Road, and Hollowell Road.
- Matthewson Mill Road has a low-lying area on Shewville Brook. One house flooded and the area needs a major culvert upgrade.
- Swantown Road often overtops, resulting in road closures.
- No flooding issues were reported during Hurricane Irene.
- Drainage complaints typically go to the First Selectman

#### ***F. Wind***

- The Town’s Road Foreman is also the Town’s Tree Warden. They have a small budget for trimming trees. The Public Works staff trims smaller trees, while jobs involving larger trees and those near power lines are contracted out.
- Electricity was out for approximately seven days during Irene. Power was only out approximately two days during Alfred.

- ❑ There are very few areas where utilities are underground. The Town encourages new developments to place utilities underground.
- ❑ Connecticut Light & Power provides tree maintenance along electrical lines. Algonquin, Yankee Gas, and Norwich Public Utilities also perform trimming near their utilities.

#### **G. *Winter Storms***

- ❑ The Public Works Department has set plowing routes. They also maintain a supply of sand and salt.
- ❑ The Town did not have any snow load issues in the Winter of 2011. The Town checked all flat-roofed buildings and shoveled the schools and the fire departments as they have flat roofs. There were no reported failures on private property. The building department inspected a few homes per resident request but found no structures in danger.
- ❑ No areas of Town are difficult to access during the winter.

#### **H. *Dams***

- ❑ The Town acquired the Norwich State Hospital Dam about 2.5 years ago. The State inspected the dam in the past year. It is believed that there is an EOP for the dam on file at the DEEP. The dam is believed to be in good condition.
- ❑ The Norwich State Hospital Dam failed in 1986. It was rebuilt by the State. Route 2 overflowed but there was no significant damage.
- ❑ The Town noted that if Hallville Pond Dam failed some homes could be affected downstream.

#### **I. *Wildfires***

- ❑ The Town battles several brush fires each year. The Town has good access to most areas for fire-fighting.
- ❑ A few areas of Town have public water service provided by the Preston Plains Water Company (Route 164 near Avery Pond), MPTN (Route 2 to Route 164), or NPU (Route 12).
- ❑ Preston Plains Water Company is going to be extending a water main to the vicinity of the Town Hall soon.
- ❑ The Strawberry Park Campground off Pierce Road also has a water system.
- ❑ The Town has 19 dry hydrants and several draft sites. The Town believes that its fire protection is good. The Fire Department has two tanker trucks and inter-municipal aid agreements with its neighbors.
- ❑ Areas between the north-south roads and near the former Norwich State Hospital site are higher risk areas for wildfires. These areas are rural and often have limited access. The area west of Middle Road was pointed out as a particular area of concern.
- ❑ The Fire Department goes to fires as quickly as possible.



***J. Actions Taken by the Town of Preston on 2005 Plan Recommendations***

- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – This is ongoing as part of the Town’s annual EOP update.
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout the Nation – This is ongoing along with the annual EOP update. The Town has communication capability with surrounding communities.
- ❑ Develop a Flood Audit Program – The Town has identified watch areas during heavy rainfall. Updates to the watch areas are included in the EOP.
- ❑ Structural Assessment of Hallville Pond Dam and Plan for Maintenance and Repair – The State is repairing this privately owned dam and installing a fish ladder.
- ❑ Property Protection Study for Drainage Improvements / Culvert Replacement of Matthewson Mill Road near Shewville Brook – This study is ongoing. This low-lying area is a watch area during heavy rains. All culverts in Town are maintained annually.
- ❑ Drainage Improvements / Study to Determine Feasibility of Roadway Elevation on Poquetannuck Road – This State road (Route 2A) is outside of the Town’s jurisdiction. It is not known if the State has plans for such studies. The Town keeps an eye on this area during heavy rains.
- ❑ Drainage Improvements / Study to Determine Feasibility of Roadway Elevations on Stanton Lane near Choate Brook and Lynn Drive near Avery Pond – Both areas are floodprone. Elevation of the road is not believed to be the best option, since the homes will still flood.
- ❑ Drainage Improvements and Roadway Study of Route 2 and Route 2A – Both of these roads are State roads and outside of the Town’s jurisdiction.
- ❑ Review of Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update. The Town has lots of casino traffic.
- ❑ Hazardous Materials Spills on Major Roadways – The Town is part of CERRIT, the regional hazardous materials response team. The Town participates but doesn’t have supplies (these are stored nearby at Mohegan Sun). They have automatic notification to DEEP and participate in training exercises.

- Implement a Reverse 9-1-1 System to Automatically Call Telephones Throughout Town, Relaying Important Information During an Emergency – The Town is part of the statewide CT Alerts “Everbridge” System.
- Distribute or Post Public Information Regarding Hazards in the Town – Notifications are posted on bulletin boards at the transfer station, town buildings, and the Town website. Local media is utilized to pass information during storms, including newspaper, television, and radio. Town employees made personal contact with residents during power outages.
- Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least quarterly or following any use of the facilities.
- Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – Training is performed monthly, with equipment upgrades occurring to the extent the budget will allow.
- Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – This is only considered for new projects. There are no plans to move existing utilities underground.
- Complete an Earthquake Survey of all Critical Facilities and Infrastructures – The Town does not have any facilities that are greater than two stories. The hotel will be constructed to existing Connecticut State Building Code requirements. A formal survey is not proposed.
- Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – Inspections are performed annually by Public Works. Public Works also inspects catch basins in floodprone areas for blockages prior to major storms.
- Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – Fire protection capabilities are reviewed twice per year. The Town believes that its fire protection level is more than adequate.

**K. Acquisitions**

- None

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Salem January 31, 2012**

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#### **A. *Welcome & Introductions***

The following individuals<sup>1</sup> attended the data collection meeting:

- Kevin Lyden, First Selectman
- Mary Ann Chinatti, Town Planner/ZEO/WEO
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. Ms. Chinatti noted that she had been researching grants to develop a hazard mitigation plan, and Mr. Murphy confirmed that this was not necessary because the multi-jurisdictional plan would suffice as Salem's plan.

#### **C. *Critical Facilities***

- The Emergency Operations Center (EOC) is in the town hall and the building has a generator.
- The public works facility is next door and it has its own generator. Gasoline pumps for town equipment are located at public works.
- There are two fire stations in Salem.
- The shelters are the school and the Gardner Lake FD. Both have generators. The school is the designated primary shelter although the FD has better cooking facilities. Salem did not open a shelter during T.S. Irene, although the EOC was operational.
- Salem relies on the State Trooper system for police.
- Salem does not have any elderly or assisted living/nursing home facilities. However, before big storms, the Town contacts elderly residents and advises them to seek shelter or assistance.
- Reverse 911 is not used, nor does Salem have anything like it.
- The Town's dispatch services are through KX Dispatch (Troop K in Colchester) with Hebron, Colchester, East Haddam, and a few other towns.

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<sup>1</sup> Mr. Don Bourdeau (public works) did not attend this meeting but was present at the Montville meeting earlier on January 31, as he handles public works for both towns.

- ❑ A variety of useful information pamphlets are located in the town hall. These are focused on fire safety, fire prevention, evacuation procedures, evacuating people with special needs, and preparing disaster supply kits.

#### ***D. Development Trends***

- ❑ Nothing major is on the horizon.
- ❑ A large equestrian center was opened recently (“Treasure Hill Farm”) and the Town is going to have a new farmers’ market in the near future.
- ❑ One construction project near the Route 82/85 intersection is underway. This is a mixed-use building (1-bedroom apartments over commercial space) at 24 Hartford Road, immediately north of “Salem Marketplace.”
- ❑ A medical office building has been approved at 1517 Centre Street (a short dead-end road off Route 82) and will be constructed behind the new building at 24 Hartford Road.
- ❑ CT DOT will soon be converting the Route 82/85 intersection to a roundabout. The white house at the southwest corner of Routes 82 and 85 will be demolished to accommodate the roundabout.

#### ***E. Flooding***

- ❑ The March 2010 flood was significant in Salem as it was in other nearby communities. Many basements were flooded.
- ❑ The Harris Brook corridor is floodprone where it crosses Routes 82 and 85 in the center of town. The roads are very low and they can be flooded by one to 1.5 feet of water during significant storms.
- ❑ The rear of the “Salem Town Center” strip mall at the southwest corner of Routes 82 and 85 is in the SFHA of Harris Brook. Calf-level flooding has reportedly occurred in this plaza.
- ❑ The new roundabout is reportedly being constructed at an elevation two feet higher than the current intersection of Routes 82 and 85. This may be partly related to flood mitigation, although that has not been verified.
- ❑ During the March 2010 flood, there were three notable road closures: Routes 82 and 85 at Harris Brook, and Witch Meadow Road off Route 85 north of the town center. Because of these three closures, school children had to be bused north on Route 85 into Colchester then back down West Road to reach the northwest corner of Salem. Witch Meadow Road is an important connection and it floods easily. The Town would be interested in plan recommendations that address these three pinch points, such as elevating roads and upgrading bridges and culverts.
- ❑ Darling Road and White Birch Road are flooded relatively frequently at a tributary of the East Branch Eightmile River. However, only one house is located on White Birch Road.
- ❑ Route 82 is floodprone at the East Branch Eightmile River.
- ❑ Beavers contribute to flooding of Rattlesnake Ledge Road near Whittlesey Swamp.

- Flooding near the corner of Buckley Road and Way Road was reportedly being caused by a homeowner's driveway, and the problem has been fixed with a culvert installation.

***F. Wind***

- CL&P trims trees along power lines.
- T.S. Irene was very damaging for Salem, with many damaged trees. The outage was seven days.
- Mr. Don Bourdeau is the tree warden, working through his department (public works). His budget is part of the public works budget. Most services are contracted out.
- Selectman Lyden believes that the town, state, and CL&P all need to be more proactive when it comes to trimming.
- Utilities are placed underground in large subdivisions. For example, the 22-lot Forsyth Road subdivision was built with underground utilities.

***G. Winter Storms***

- A barn collapsed last winter.
- The town spent \$30,000 to clear 115,000 sf of the school roof last winter. Although an evaluation was not conducted beforehand, the work was done because the forecast was for additional snow.
- Many of the emergency calls in January 2011 were from people shoveling their roofs and falling.
- Winter Storm Alfred in October 2011 caused tree damage because Salem received seven inches of wet, heavy snow. However, the damage was believed not as bad as it could have been because T.S. Irene had taken down so many trees and branches.
- CTDOT plows its roads and the town plows the rest (44 miles). The town has about four or five crews and owns its trucks. Mr. Bourdeau has information about this.
- Sand and salt are used.

***H. Dams***

- The town owns an old gristmill dam at 89 Norwich Road, but there are no concerns.
- High hazard dams are not believed present in Salem.

***I. Wildfires***

- Salem has not had any major fires, nor are any specific areas of risk located in the town.
- Fire ponds and cisterns are not required, although a few dry hydrants are present.
- Tanker trucks are used for water. The town owns two, but Selectman Lyden wishes to rotate them and replace one. The estimated cost is \$490,000.

**J. Grants**

First Selectman Lyden and Ms. Chinatti are interested in a variety of Homeland Security grants. Mr. Murphy recommended that the CEDAP and EOC grants should be reviewed for some of the things that are of interest such as equipment and upgrades to the EOC. Specifically, the Town wishes to acquire a new tanker truck and is considering establishing a new EOC due to the age and construction of the town hall. Another consideration is the possibility of reinforcing the school as the shelter. Design wind speeds (the State code vs. the alternate design wind speeds for shelters) were discussed.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Sprague January 19, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Catherine Osten, First Selectman
- J. O'Donovan – Grant Writer
- Barbara Silvestri – Executive Assistant
- Scott Bighinatti, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Town has an Emergency Operations Plan (EOP) and an Emergency Response Plan (ERP) for Sayles School.
- The Town also has a Local Emergency Medical Services Plan outlining the capabilities of the Town during emergencies.
- The Town keeps a list of people who may need additional help during an emergency. The Senior Center Director maintains the list.
- The Town has buses and vans to transport seniors during weekdays (Monday through Thursday, by appointment). The vans are handicapped-accessible.
- The Town maintains list of property and road information, including the number of residential and commercial structures on each street.
- The Town sewer plant needs to be upgraded. It is over 40 years old and in the floodplain. The sewer pumping stations are also believed to each be in the floodplain.
- The Hanover sewer pumping station serves 60 homes and does not have a generator. During the power outages associated with Alfred and Irene, the Town had to pump the system out every two days.
- The Town has several public water supply wells that are located in the floodplain.
- The Town Fire Station is not in the floodplain.

- ❑ The Town recently upgraded its radio system. Portable, vehicular, and base radios (Town Hall, Fire Department, and Public Works) are available. The Town can also communicate with several of its neighbors (Griswold, Lisbon, Franklin, and Lebanon) on the system. The Town has one cell tower and one repeater.
- ❑ The Town has a Resident State Trooper that is on the same radio network. He is in the same building as the Town Hall. The State Trooper has an All-Terrain Vehicle (ATV) to patrol open space areas.
- ❑ The Fire Department is the primary Emergency Operations Center (EOC), but it is very small. The Town Hall is the secondary EOC, but the Town wants it to be the primary EOC. During Irene and Alfred, many EOC operations were directed from the Court Room in the Town Hall.
- ❑ The Town is having a meeting soon regarding general emergency response procedures. Part of this meeting will discuss ice jams, shelter management, and local ham radio capabilities. The Emergency Management Director (CERT) provides warning to the Town regarding natural hazards, such as fallen trees and ice jams along the Shetucket River and Beaver Brook.
- ❑ Sayles School is the primary shelter because it has showering capability and can hold more people than the Fire Department. This building may not be ARC certified, but it has a generator. The generator can run for 72 hours per tank. The shelter is designed to hold 600 people with a bedding-down capacity of 300.
- ❑ The Fire Department is the secondary shelter and has a generator (240 hours per tank), but can only house a small number of people. It was used as a warming / charging / showering station during Irene and Alfred.
- ❑ Shetucket Village is an elderly / disabled housing complex with 20 units. It does not have a generator. The town is seeking funds for a generator.
- ❑ Two daycare centers are located in town in private homes. They are located on Potash Hill Road and Parkwood Road.
- ❑ The Town considers its Town Hall, DPW garage, Fire Department, and Water and Sewer facilities infrastructure to be critical facilities.
- ❑ The sewer plant, water filtration plant, pump stations (1, 3 &4), wellhouses, and town hall/garage all have generators. The Fire Department also has seven portable limited use generators and four vehicle mounted generators.
- ❑ No convalescent/nursing homes or medical facilities are located in Town. Most residents utilize facilities in Norwich.

#### ***D. Development Trends***

- ❑ The Town has a wetlands officer / building inspector for enforcement. The Town uses the State Building Code.
- ❑ The Town has approximately 630 acres of open space and is looking to acquire additional 230 or so acres.
- ❑ While the town is described as “suburban” in the 2005 plan, the Town feels like that terminology may not apply. On the other hand, the town is not really rural with three villages (Baltic, Hanover, and Versailles) that have concentrated development.



- ❑ The Providence-Worcester Railroad has done a complete upgrade of its track through the Town. Many hazardous materials are shipped on the line, including Ethanol and a variety of chemicals to Dow Chemical. There are several private spurs leading to industrial properties in the town. The railroad through Sprague does not have to pass beneath any low underpasses, so the freight cars can be double stacked. As the rail line has become more heavily utilized in recent years, the Town hopes that this will help spur redevelopment of the mill properties in Town.
- ❑ A subdivision on Noah's Way is currently being built. 20 units are proposed with 17 currently completed.
- ❑ There are four other properties in Town that have been purchased and may soon have houses.
- ❑ Lombardi LLC is proposing an Active Adult development off Riverside Drive in Versailles.
- ❑ There are three village zones in Sprague that allow for business development development. Very little development has occurred in the villages in the past 50 years. The Zoning regulations have allowed population growth to be managed.
- ❑ The Town's population has been relatively stagnant at around 3,000 people for the past 50 years.
- ❑ The 16-acre Baltic Mills property requires a \$1 million cleanup. In addition the Town is marketing the property for redevelopment of which \$200,000 has been completed.
- ❑ The Amgraph and Fusion Paper Mills are currently operating.
- ❑ The former packaging mill is currently vacant, although a buyer is interested in redevelopment and creating up to 300 jobs.
- ❑ New subdivisions are required to have underground utilities when possible.

***E. Flooding***

- ❑ The Town's flood regulations are part of the zoning regulations.
- ❑ In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update. However, the March 2010 flood is the most recent flood of record for southeastern Connecticut, and it caused damage in Sprague as noted below.
- ❑ Many of the Town's parks are located in the floodplain. The Ice Skating Rink may also be located in the floodplain.
- ❑ The 2005 Annex refers to Lillibridge Road, but this road is in Occum (Norwich). This should be clarified.
- ❑ Beaver Brook is often high in the spring, but no problems were noted during Irene. Flooding problems have been reduced in recent years – the removal of a dam behind the old MS Chambers may be helping. Some damage to driveways which span Beaver Brook has occurred in the upstream reaches, but not to houses.
- ❑ There have been many drainage problems in Hanover. The Town has directed a significant amount of funding to drainage upgrades in this village. Adams Brook on Hanover-Versailles Road did flood regularly, but the recently installed drainage appears to have resolved this issue.

- ❑ A culvert on Inland Road in Versailles collapsed and was repaired following the March 2010 storms.
- ❑ Storm sewers and sanitary sewers are separate in the town, so overloading of the sanitary system is not a flooding issue.
- ❑ The Little River area was most affected in the 2010 storms.
- ❑ Nuisance flooding occurs along Pautipaug Hill Road and along private roads such as Alice Street, Thomas Street, and Amie Street. The private roads do not have any drainage and are in poor condition, while drainage systems on Pautipaug Hill Road are overwhelmed by installed drainage that appears to have been either poorly installed or inadequate to handle the flow. Homes are sometimes affected along a one mile stretch of Pautipaug Hill Rd.
- ❑ Sunrise Drive and Grandview Drive are also affected by poor drainage flooding.
- ❑ The Town had applied for an HMGP grant to upgrade drainage on High Street, Upper High Street, and Potash Hill Road following the March 2010 disaster declaration. The HMGP grant was delayed by subsequent disaster declarations, and the project was ranked relatively low by what was then Department of Emergency Management and Homeland Security (DEMHS). The town repaired High Street and Upper High Street itself utilizing pavers instead of asphalt. The new drainage structures and pavers have helped immensely and this area is no longer a flooding concern. Potash Hill Road drainage issues have also been handled in fiscal year 2011/2012. . The Town will be applying for a HMGP grant to upgrade and / or install drainage on Pautipaug Hill Rd, Sunrise Drive and Grandview Drive.
- ❑ The Town would also like to install pavers on River Street, Elm Street, and other highly developed riverfront areas to help mitigate drainage issues.
- ❑ The Town's capital improvement list has several drainage projects.
- ❑ The town does not participate in the Community Rating System (CRS). Since few structures are directly affected by river flooding, it would not be cost-effective for the Town to retain staff to maintain the CRS program.

#### ***F. Wind***

- ❑ The Town has a tree warden, who along with public works staff is also always on the lookout for dangerous trees. They have a tree trimming budget of approximately \$12,000 per year. They try to be proactive with aggressive monitoring and prioritize roads to trim each year. The Public Works staff can trim smaller trees, but they contract larger trees out to private trimmers.
- ❑ CL&P also trims trees along power lines. Some areas were without power for up to a week following Irene.
- ❑ Tree damage can occur anywhere in the Town.

### **G. Winter Storms**

- The Emergency Management Director and CERT perform regular inspections of the Shetucket River and Beaver Brook during the winter. Fallen trees into these streams can exacerbate ice jam build-up that can cause flooding of low-lying areas.
- The State has a Department of Transportation garage in Occum (Norwich), so winter plowing of State roads is generally timely.
- The Town has its own sand and salt storage at its public works garage.
- The Town did not have any issues with snow load during the repeated storms in January and February 2011. They monitored Town buildings and cleared roofs when necessary. The Town does not know of any private structures that collapsed.
- The Town has defined plowing routes for Town roads.

### **H. Dams**

- Southeast Dam on the Baltic Reservoir was just repaired.
- The East Dam on the Baltic Reservoir is in poor repair. DEEP is requiring that the Town keep the water levels in Baltic Reservoir low in order to not exacerbate further deterioration of the dam.
- The Town is currently having a consultant prepare an EOP for both dams.
- Beaver Brook Dam behind the MS Chambers Mill building was removed around 1996. It was shown as being present in the last plan. While remnants may still remain of the old mill race, the Town believes that the dam has been removed from the stream bed.
- There are two privately-owned dams associated with Paper Mill Pond and Versailles Pond on the Little River. These dams may have structural integrity issues which are being reviewed by DEEP. The town believes that the owners are investigating rehabilitating these dams as part of potential brownfields cleanup of the mills.
- The Town now owns Hanover Reservoir Dam. It is believed to be in good condition.
- The 1955 flood washed out the Shetucket River Dam in 1955, causing damage in Sprague.

### **I. Wildfires**

- The Town has fire hydrants associated with its water system in the village of Baltic. They are removing or relocating old hydrants that are in private backyards. Such hydrants were originally installed almost a century ago in association with mill housing. As the paper streets between the buildings were absorbed by nearby properties, the hydrants became fixtures of backyards. Relocation and removal is expected to reduce the potential for unnoticed leaks in the water system.
- The Town does not have any areas that they feel are particularly at high risk for wildfires. There are some areas that are harder to access than others. The Fire Department has an off-road truck and an ATV to get into inaccessible areas.
- The town also has dry hydrants in outlying areas (9).

- ❑ There are some dead-end public and private roads in Town that present difficult access for fire trucks. In most cases the trucks turn around in private driveways.
- ❑ Baltic has several areas, particularly on the lower end of High Street, where houses are very close together. In some cases homes may be only six inches apart.
- ❑ The Fire Department is 100% volunteer. They try to get to fires, even in outlying areas, as fast as possible. They do not let fires burn.

***J. Actions Taken by Sprague on 2005 Plan Recommendations***

- ❑ Flooding of Route 97 in Downtown Baltic – State did some road work in this area. Town does catch basin maintenance even on state roads since the catch basins are often at the end of Town drainage systems. Drainage upgrades are proposed on River Street and 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Street. The Town also installed collector catch basins in front of the Town Hall to mitigate ponding – these catch basins infiltrate to groundwater and do not have outfalls.
- ❑ Ice-Dam Induced Flooding Along Shetucket River and Beaver Brook – The problem was primarily related to falling trees leading to ice dam build-up and eventually flooding of low-lying areas. The Town’s Community Emergency Response Team (CERT) makes weekly windshield surveys of trees and ice along the river and reports to the Town if a tree needs to be removed. The removal of trees has greatly mitigated ice jam flooding.
- ❑ Private Dams in Baltic, Hanover, and Versailles – The Town took over Hanover Reservoir Dam. There are ongoing evaluations of the prior mill dams on the Little River for potential brownfields cleanup. The dam behind the old MS Chambers building in Baltic has been removed and no longer presents a danger
- ❑ Hazardous Materials Spills on Major Roadways / Railroads – The State widened Route 97 in 2007-2008, providing additional turning radius for trucks. Improvements to Route 207 are proposed in 2013. There are some railroad spurs but they go to private industries and commercial buildings and are therefore not a concern to the Town.
- ❑ Evaluate the Hazard Resistant Nature of Critical Facilities – The Town has completed a generator survey and identified necessary upgrades. The Town also has identified its critical facilities and is aware of those that are floodprone. None are believed to have been constructed to have special resistance to natural hazards. The replacement of Pump Station 1 & 2 will provide resistance
- ❑ Comprehensive Evaluation of Emergency Communication Capabilities Throughout Town – This is ongoing along with the annual EOP update. The Town recently upgraded its portable radios and now has interdepartmental and inter-municipal communication capability.

- ❑ Develop a Flood Audit Program – The Town’s Flood ordinance is in its zoning regulations. Areas with bad drainage have been identified and are being upgraded as the capital improvement budget allows. Few structures in Town actually experience overbank flooding damage.
- ❑ Review of Town Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update.
- ❑ Implement a Reverse 9-1-1 System to Relay Important Information During an Emergency – Not participating in the Statewide CT Alerts “Everbridge” system. Looking to SCCOG for regional guidance.
- ❑ Distribute or Post Public Information Regarding Hazards in the Town Hall – Public information is posted in the Town Hall prior to and during emergencies. The Town also utilizes social media (Facebook) and signs to notify the public about hazard areas. During Irene and Alfred, Town staff and volunteer firefighters delivered informational flyers to homes without power to keep them informed of shelters and major road issues.
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least annually or following any use of the facilities.
- ❑ Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – This is done regularly, with equipment upgrades occurring to the extent the budget will allow.
- ❑ Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – The Town has no plans for such a project, as it is simply too expensive given the Town’s limited budget. New subdivisions are required to place utilities underground if possible (there is a lot of ledge in the Town).
- ❑ Complete an Earthquake Survey of all Critical Facilities and Infrastructures – A specific survey has not been performed.
- ❑ Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – This is done annually as part of regularly scheduled cleaning activities.
- ❑ Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – The Town has nine dry hydrants in outlying areas. The locations are believed to be sufficient for fire coverage, but the Town has plans to install five more. Many fire hydrants associated with the water system in Baltic are located in private backyards where roads were nearly 100 years ago. – Town is removing or relocating these hydrants to current streets to prevent leaks in the water system.

***K. Acquisitions***

- Town of Sprague Emergency Operations Plan and Annexes (CD)
- Capital Request Sheet – Drainage Repair for Fullertown, Riverside, and Hanover-Versailles Road
- List and map of State-owned property
- List and map of Town-owned property
- Survey map of Beaver Brook Mill (2006) – no dam noted although remnants of spillway and headrace present
- List and general location of existing and proposed dry hydrants
- Map of Baltic showing location of water system and hydrants
- List of radio equipment and assigned locations
- Senior shuttle (by appointment) and bus schedule to Norwich
- List of existing generators and areas that need generators
- List of Town computers and software
- Public works wish list
- Budget for parks, recreation fields, open space, and cemeteries 2012-2016
- Capital project list for Baltic Fire Department (note new fire station)
- Capital project list for Water and Wastewater system
- Capital project list for Town Hall
- Current equipment list for Town
- Town road inventory with drainage projects noted
- Town road five-year plan
- Town road history
- Generalized property inventory by street
- Inland Wetland and Watercourses Regulations of the Town of Sprague (2009)
- Subdivision Regulations – Sprague, Connecticut (2011)
- An Ordinance Regulating the Addition of Any New Street to the Highway System of the Town of Sprague (1991)
- Zoning Regulations – Sprague, Connecticut (2011) and zoning map
- Town of Sprague Plan of Conservation and Development (2007)

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Borough of Stonington January 18, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Amy Nicholas, Burgess, Fire and Safety Commissioner
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. Ms. Nicholas appeared interested in the use of grants for residential flood mitigation. The role of the municipality in the grant application process was clarified.

The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities and Borough Capabilities***

- There are two borough buildings that are considered critical. These are the new fire station<sup>1</sup> on Main Street near the viaduct (where the road into the borough crosses the railroad tracks), and the Borough Hall which is the old fire station. The new fire station has a generator and serves the Town of Stonington via a contract<sup>2</sup>. The Borough is trying to get a generator for the Borough Hall.
- The viaduct itself can be considered a critical facility. It is the only mode of vehicle egress for people in the borough. There is a footbridge at Elm Street that can also be used for egress.
- The Borough is planning to develop a second mode of egress for borough residents. This may be an at-grade crossing of the tracks between East Main and West Main.
- The WPCF in the borough is a critical facility.
- No health care facilities, assisted living, or nursing homes are present. The borough has an aged population but they "have means."

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<sup>1</sup> According to the Town of Stonington, the new fire station is floodproofed with flood barriers at the building and doors.

<sup>2</sup> Refer to the Stonington meeting notes for more information about the relationship between town and borough fire districts.

- Borough residents use the Town of Stonington shelter at the high school.
- The Town of Stonington police have jurisdiction in the borough.
- The borough has its own zoning.
- There are many rights-of-way in the borough that are not maintained as a road would be maintained. This doesn't appear to be a problematic issue.

**D. *Development Trends***

- The borough is fully developed.

**E. *Flooding***

- Most of the flooding in the borough is residential.
- Basement flooding is a common problem.
- The borough was under voluntary evacuation for T.S. Irene, and many people heeded the evacuation.
- During Irene, a walkway was eroded. FEMA reimbursement has been sought.
- Also during Irene, waves were observed crashing into seawalls and close to homes, but none of the homes were damaged.
- The single repetitive loss property is at a very low spot in the road.
- Ms. Nicholas wasn't familiar with the borough's CRS participation but will check with Mr. Paul Burgess (Borough Warden) about it.
- Ms. Nichols believes that the borough has been working with DEEP regarding flood mitigation and drainage. Mr. Burgess may have more information.

**F. *Wind***

- CL&P is the utility. Power was out for approximately six days after T.S. Irene.
- The Tree Commissioner (burgess) can post and remove tress and this person also maintains the rights-of-way mentioned above. The borough conducts an inventory of public trees approximately every ten years. The last inventory was conducted in 2008.
- Burying utilities below ground would be very helpful in the borough given its dense development and many trees. The Town of Westerly reportedly buried many overhead power lines.

**G. *Winter Storms***

- The borough has its own highway department and they own a plow.
- There aren't any state roads in the borough.
- Water Street, Main Street, and Elm Street are designated "Snow Emergency" Routes.

**H. *Dams***

- No dams in the borough.



*I. Wildfires*

- Wildfires are not an issue, as the borough is small and developed.
- However, fires are a very significant concern for borough residents. A whole area west of Water Street burned a few years ago. The buildings formerly housed a factory but now contain condos.
- The fire department owns a ladder truck, two pumpers and a van. The narrow streets present a special challenge for navigation and access.

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Town of Stonington January 18, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Larry Sullivan, Town Engineer
- Wayne Greene, Building Official
- Joe Bragaw, Public Works
- George Brennan, Emergency Management Director
- Harold Storrs, WPCA Director
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Police Department is the Emergency Operations Center (EOC). It has a generator.
- The Town Hall is the backup EOC and has a generator and repeater antenna. The backup EOC is almost fully redundant with the main EOC (approximately 90% of function).
- Mr. Brennan provided a copy of the Emergency Operations Plan on CD.
- Stonington High School is the shelter and it has a generator.
- Mystic Middle School is the backup shelter but it has limited capacity. It also has a generator. The America Red Cross staffs both shelters.
- Fire/emergency responsibilities are complex:
  - o The town is served by six fire districts including the Borough of Stonington. These are Pawcatuck, Mystic, Old Mystic, Stonington Borough, Quiambaug, and Wequetequock.
  - o The districts have four fire marshals, and Mr. Brennan serves as the fire marshal for two districts.
  - o Two of the fire districts extend into the Town of Groton; these are the Mystic and Old Mystic fire districts.

- There are six fire stations in the town (one for each district, including the new fire station in the Borough). However, the Mystic and Old Mystic fire districts each have two fire stations, with one each in the Town of Groton.
- Stonington Ambulance is a critical facility.
- Masons Island Bridge is a critical facility as it is the only mode of egress for a large population. The bridge was submerged during T.S. Irene.
- The Aquarion/Mystic System Water Treatment Plant is a critical facility as the town of Stonington must respond to emergencies there. Also, part of the town receives water from the system.
- Two Aquarion water tanks are in Stonington.
- One Westerly Water Department tank is in Stonington, off Asher Avenue.
- Some of the Westerly Water Department wells are in Pawcatuck (Noyes Avenue and White Rock/Elmira) and they all get flooded by the Pawcatuck River.
- Three WPCFs are located in Stonington (one is in the Borough, one is in Mystic, and one is in Pawcatuck).
- The 17 sewer pumping stations are critical facilities. Mr. Storrs provided a map of the WPCFs and the pumping stations.
- The highway garage is on Alpha Avenue near the Borough.
- Elderly facilities are Stone Ridge, Brookside, Stonington Arms, and Edith K. Richmond (with the latter a town-owned complex). None have backup power supplies.
- The three nursing homes are Stone Ridge (Avalon), Pendleton, and Apple Rehabilitation. Avalon has a generator.
- Those in attendance would like to include mobile phone towers as critical facilities. The town's communications system is more than ten years old, and they use mobile phone to communicate during emergencies.
- Meeting attendees marked the locations of communications towers on the map.
- Everbridge is used instead of Reverse 911. Those in attendance did not favor the Reverse 911 service.

#### ***D. Development Trends***

- All new developments are required to have underground utilities.
- A new development known as Mystic Senior Living, located on Clara Drive, is approved and pending construction.
- 64 townhouse units off Mary Hall Road.
- 60 homes known as Old Mystic Estates off Pequot Trail.
- New VW dealership and a few small commercial developments are pending.
- 40 to 60 units of affordable housing at Route 1 near South Broad Street.
- Seven of 26 homes are built at Granview Farms.
- Target and Lowes were approved for the I-95 Exit 92 interchange on the south side of the highway, but this development is on hold.
- A tractor supply store was built at Routes 78 and 2 last year in Pawcatuck.
- There is a new La Quinta hotel on White Rock Road in Pawcatuck.

### *E. Flooding*

- ❑ In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update.
- ❑ The July 2009 and March 2010 floods are the most recent extreme floods for Stonington.
- ❑ The July 2009 storm was very localized, with seven inches of rain in three hours.
- ❑ The March 2010 flood was notable for washing out the Route 184 bridge and submerging downtown Old Mystic.
- ❑ The attendees provided a map entitled “Town of Stonington Emergency Management – Major Hurricane Inundation Map.” The map depicts areas of inland and coastal flooding along with areas of wave action. Points of bridge overtopping are indicated with black circles. Those in attendance marked up the map to show areas that flooded in 2009 and 2010 or during other storms:
  - Copsps Brook tributary at Al Harvey Road.
  - Copsps Brook at Pequot Trail (Route 234) at the head of Mystic Reservoir.
  - Whitford Brook at Wolf Neck Road.
  - Whitford Brook at Routes 184 and 234. The Route 184 bridge was washed out in March 2010.
  - White Hall Pond near the Mystic River will flood the walk-out basements of the White Hall Landing condos with up to two feet of water. The pond has no outlet. The fire district has had to pump out the pond in the past.
  - Mystic Aquarium parking lot gets flooded due to poor drainage. Three feet of water can accumulate in the parking lot. This water then drains to the west.
  - The business immediately north of I-95 from Mystic Aquarium.
  - Stony Brook at Pequot Trail.
  - Anguilla Brook at Pequot Trail, South Anguilla Road, Route 1, and Green Haven Road. In particular, Green Haven Road was inundated during the 2009 and 2010 storms, and Route 1 has repeated problems.
  - A tributary of Anguilla Brook at Route 1.
  - An unnamed stream in the densely developed neighborhood between West Arch Street and Garden Street in Pawcatuck. West Arch Street near the headwaters pond has flooded. Some of the problem could be related to poor drainage.
  - Pawcatuck River at Stillman/Vine Street bridge and Route 1 bridge. These bridges were closed but not washed out in March 2010.
  - Unnamed tributary of Copsps Brook at Mistuxet Avenue.
  - Pequotsepos Brook at Pequotsepos Road and Mistuxet Avenue.
  - Long Wharf Road has low spots that flood. Up to 300 residences in the Bishops Cove neighborhood (condos and single family homes) can become isolated due to the single mode of egress via Long Wharf Road.
  - Clipper Drive area can get isolated.
  - At the end of Timber Ridge Drive, homes are flooded due to poor drainage along a small stream, which then runs down to Route 2 where LaSalle’s Carpet is flooded.
- ❑ Coastal flooding can submerge the following crossings:

- Masons Island Road bridge
- Route 1 at Pequotsepos Brook estuary
- Latimer Point Road at a low spot.
- Route 1 at Quiambaug Cove.
- Route 1 at Lamberts Cove.
- North Water Street and Quana Duck Cove.
- Route 1 at Stony Brook/Quana Duck Cove.
- ❑ The Lords Point neighborhood experiences coastal flooding.
- ❑ A minor storm surge and high tide on January 12, 2012 (last week) caused flooding of areas in downtown Mystic. A system of dikes and pumping stations may be the only possible solution for flooding in very low areas such as this one.
- ❑ Stonington is a Class 9 CRS community with 5% discounts on flood insurance. Mr. Sullivan can provide the most recent correspondence. The town reports in October of each year.
- ❑ Homes in Stonington are flooded as follows:
  - 13 North Stonington Road is the “red house” near Whitford Brook. The owner has approached the town about acquisition. It’s a repetitive loss property (RLP).
  - The first house on Palmer Neck Road (at the corner of Green Haven Road) is flooded by Anguilla Brook/Wequetequock Cove every year but may not have flood insurance.
  - A home on Trolley Crossing next to Anguilla Brook is often flooded and might be in a floodway.
  - The home at 82 Dennison Road gets flooded in the walk-out basement due to poor drainage. It’s a RLP. The furnace is downstairs.
  - A home at the low part of Mistuxet Avenue was flooded but a culvert upgrade has helped.
  - The pending HMGP application is for flood mitigation of several homes. A large watershed drains to a six-inch pipe and basements are flooded.
  - Homes are flooded at the end of Timber Ridge Drive, as noted above.
- ❑ All categories of flood mitigation are of interest to the town.
- ❑ A drainage study is underway for the Meadow Avenue and Bayview Avenue area, immediately north of the Borough. The drainage outlet is submerged.

**F. Wind**

- ❑ CL&P trims trees along power lines.
- ❑ After Irene, the power outage averaged five days. Some town facilities lacked power for eight days, but were operational with generators.
- ❑ The tree warden is a volunteer position. He can post and remove trees in rights of way or town land.
- ❑ Utilities are placed underground in new developments. On the Groton side of Mystic, the streetscape project will include underground utilities.
- ❑ The Town has been proactive with tree trimming. They just removed 34 trees on North Main Street that could be hazardous.

- The Campbell Green building (commercial) was damaged by T.S. Irene winds. The town placed a lien on the building to remove debris. The property is now abandoned.

#### **G. *Winter Storms***

- The Connecticut Castings building in Stonington collapsed last winter.
- The school system was proactive and they followed a standard evaluation/inspection program that they have in place.
- The town evaluated its flat roofs.
- CTDOT plows its roads and the town plows the rest.
- Routes are prioritized
- There are 16 plow routes and 11 salt routes. A plow can be diverted to address emergency services if needed.

#### **H. *Dams***

- People were evacuated below Laneway Dam in 2010 and the dam is being removed.
- Subsequent to the 2010 flood, DEEP has ordered the owners of Sylvias Pond dam to make repairs and develop an EOP, but neither have been done.
- Aquarion reportedly does a good job drawing down its reservoir before storms. If the level is high, backwater conditions can flood Pequot Trail.
- A dam upstream of the Route 184 bridge is a concern<sup>1</sup>. It does not appear on the SCCOG map.
- A dam at the end of Alice Court on the Pawcatuck River may be a concern.
- EOPs are not on file, according to Mr. Brennan.
- The Pawcatuck Dike system is along the Pawcatuck River. The dikes were built in the 1960s to protect the Bostich factories, and then Bostich moved out. General Dynamics and other business are inside the dike system, along with a few houses. The Town cannot afford engineering studies of the system. Approximately \$100,000 was spent on a pumping system, and the town clears trees and brush. The Army Corps inspects the dikes each year.

#### **I. *Wildfires***

- The reserve north of Barn Island Wildlife Sanctuary burned about 15 years ago. The fire lasted four days and was up to 300 acres in size, from Palmer Neck Road to Stewart Road and up to the landfill. The fire crossed the railroad tracks. All fire districts plus the State were mobilized to fight the fire. A potential for burning is still there.
- The Town “has more fire equipment than New Haven” according to those present.
- Mr. Brennan opposes the use of dry hydrants and cisterns because of the maintenance required. The fire districts do not typically require cisterns or tanks. The rural departments have large trucks.

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<sup>1</sup> Check; this may be the Hyde Pond dam

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Voluntown February 1, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Ron Millovitsch, First Selectman
- Roxanne Gray, Administrative Assistant
- Scott Bighinatti, Milone & MacBroom, Inc.

The following individual should also be included on correspondence related to the plan:

- Jody Grenier, Fire Chief

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Bighinatti briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities and tribal governments within the region. Mr. Bighinatti noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These hazards were discussed along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Town has an Emergency Operations Plan (EOP). This document provides general procedures to be followed in case of an emergency. This document is reviewed annually and updated as needed.
- The Fire Department is the Emergency Operations Center. It is not used as a shelter, but it has a generator. The Fire Department also provides emergency medical services.
- Voluntown Elementary School is the primary shelter. It has a generator and could house 300 to 400 people, although the Town does not have the supplies to provide bedding to that number. It is not believed to be a American Red Cross certified shelter.
- The Voluntown Baptist Church is the backup shelter. It has a generator and could house approximately 75 people.
- Public Works, the Town Hall, the Fire Department, the school, and the Baptist Church are considered to be the Town's critical facilities.

- ❑ The Connecticut Water Company has a small satellite system on Tanglewood Lane and Valley Drive. It does not have any hydrants for fire protection, but the water system has a generator.
- ❑ Emergency communications are good except during long power outages. The Town relies on cellular phones and email for much of its communications. Communication was difficult during the power outage following Irene. The Fire Department has radios that it uses for emergency purposes. The Town could use additional radios for Town staff. The Town can communicate with all of its Connecticut neighbors and the State but not with Hope Valley, Rhode Island (its neighbor to the east).
- ❑ Public information was limited following Irene. Newspapers were not delivered and people did not have access to television or radio. As there is limited town staff, personnel were tied up clearing roads as opposed to broadcasting information. Signs were posted around town identifying shelter and distribution locations.
- ❑ Residents in Voluntown can sign up for the CT Alerts “Everbridge” System for Reverse 9-1-1, and they have access to it through members of the Fire Department.
- ❑ The Town does not have any Resident State Troopers or constables. Police services are provided by Troop E in Montville. The First Selectman is the de facto Chief of Police.
- ❑ The Town does not have a specific plan for identifying potential structures at risk for earthquake damage.
- ❑ The Town has some elderly/disabled/low-income housing (Greenwood Manor) through the Voluntown Housing Authority, but it is not located in the floodplain.
- ❑ The Town does not have any medical or daycare facilities.
- ❑ The Town has one public works garage. It stores sand and salt.

#### ***D. Development Trends***

- ❑ SCCOG updated the Plan of Conservation and Development for the town in 2010.
- ❑ There is a separate subdivision section in the Zoning Regulations.
- ❑ The Town does not have a separate flood ordinance. Flood Regulations are part of the Zoning Regulations.
- ❑ Development has been very slow the past five years. No subdivisions have been built, and only a few new residential homes have been built.
- ❑ Commercial development is practically non-existent. A new stump grinding business started a few years ago.
- ❑ As the town is approximately 70% state forest, there is not a lot of builder-friendly developable land left in the town.
- ❑ The Town has no industry. Large chicken raisers are the highest tax payers.
- ❑ The Town currently does not have any proposed development.
- ❑ The Town uses the SCCOG Regional Transportation Plan for guidance.



### *E. Flooding*

- ❑ No structures were flooded by streams during the March 2010 rains. In general, if Voluntown is having an issue with flooding, then other towns in the area are in deep trouble.
- ❑ The Town has done some work over the past five years to alleviate flooding areas caused by poor drainage. For example, drainage was recently installed on Bennett Road and Bennett Road Extension that alleviated a flooding issue.
- ❑ Homes in the vicinity of Bailey Pond don't flood, but this area is still an emergency access concern because the 100-year could overtop the road near Bailey Pond Dam. This area is entirely mapped as Zone A (100-year floodplain without elevations). However, residents could still exit the area into Rhode Island.
- ❑ The Pachaug River overtopped Forge Hill Road by 1.5 inches during March 2010. No damage was reported. Residential structures in the vicinity were not affected.
- ❑ A few structures appear to be in the 100-year floodplain of the Pachaug River near Shetucket Turnpike, but they were not flooded during March 2010 and are not considered to be floodprone.
- ❑ A few structures on the north side of Beach Pond are in the 100-year floodplain, but they did not flood in March 2010.
- ❑ Based on the 2011 DFIRM, no structures on Wylie School Road appear to be in the 100-year floodplain of Great Meadow Brook. The bridge on Wylie School Road over Great Meadow Brook is undergoing repairs – the Town is adding a wingwall to prevent scour and direct flow beneath the bridge and away from the banks.
- ❑ The erosion problem on Hodge Pond Road has been corrected. Drainage swales have been added and the road no longer washes out.
- ❑ The State added a catch basin on Route 49, fixing a chronic ponding issue.
- ❑ A catch basin was installed in front of the fire house to eliminate a significant ponding problem.
- ❑ The Town performed many basement pumpouts during the March 2010 flood. Approximately 40 to 50 homes needed to be pumped out, and many had more than five feet of water in the basement. Many residents have their own pumps.
- ❑ The Fire Department pump failed during the storm, causing some flooding damage. It was a couple thousand dollars to fix the pump and replace the damaged items. Insurance covered the loss and FEMA provided funding to replace equipment.
- ❑ Drainage complaints go to the First Selectman.

### *F. Wind*

- ❑ No one in town needed to be sheltered following Hurricane Irene. Residents used the charging and showering stations at the shelters, and picked up fresh water, but that was it.
- ❑ Power was out for seven to eight days following Irene. Only 19 homes were without power following Alfred for three to four days. Damage was town-wide during Irene,

and the Town had to clear State roads as well as Town roads. Tree damage was very limited during Alfred.

- ❑ The First Selectman is the Tree Warden. There is no specific budget for trees – when a tree needs to be trimmed or cut, the Town finds the funding. The State doesn't provide funding to trim trees adjacent to the State Forest. The Public Works staff trims smaller trees, while jobs involving larger trees and those near power lines are contracted out.
- ❑ CL&P also performs tree maintenance along their electrical lines. They just performed a week's worth of tree trimming in town. The Town would like them to do more cutting and not just trimming. No other utilities are believed to trim in Town.
- ❑ The State campgrounds and private campgrounds in Town sent people home prior to Irene.
- ❑ No buildings in Town are believed to be designed to resist wind.
- ❑ The Town uses the Connecticut State Building Code.
- ❑ The Town has no plans to bury existing utilities underground – they don't own the power lines and the project would be very expensive.
- ❑ There are very few areas where utilities are underground.

#### ***G. Winter Storms***

- ❑ The Public Works Department has set plowing routes. They also maintain a supply of sand and salt.
- ❑ The State plows State Roads, but the nearest DOT facility is in Occum (Norwich). There is sometimes a delay for plowing.
- ❑ Snow was not an issue during Alfred.
- ❑ The Town shoveled the elementary school and the Town Hall in the Winter of 2011 as they both have flat roofs. Many homeowners cleared their own roofs or hired contractors. One resident lost a portion of a barn when part of the roof collapsed.
- ❑ There are a few steep roads in Town. Hodge Pond Road and Forge Hill Road are steep but there are other ways into those areas. Additional sand and salt typically suffices to improve access following storms.
- ❑ There are no ice jam issues on the Pachaug River.
- ❑ The Route 49 icing issue has been fixed by the State installing a catch basin.

#### ***H. Dams***

- ❑ The Saw Mill Pond dam in Voluntown is privately owned. It is essentially a run-of-the-river dam on the Pachaug River with minimal storage. This dam had some erosion of the berm in March 2010 due to overtopping. This dam has an EOP on file with the State which says that if it failed there would be a four foot rise in downstream water levels for four hours. The dam owner is working on repairs.
- ❑ The DEEP rebuilt the Beach Pond Dam 20 years ago. It is believed to be in good condition.
- ❑ Grenier Dam is very small. It may not be high hazard anymore, although it is shown as such on the 2005 map.

- Beachdale Pond Dam is going to be rebuilt by DEEP in beginning in March 2012. This project may be FEMA funded.
- No other dams in Town are believed to have issues.
- The Town does not own any dams.

***I. Wildfires***

- The Voluntown Volunteer Fire Company teams up with the Connecticut DEEP to fight wildfires in Town. The Town has a good mutual aid agreement and relationship with the DEEP fire fighters and they assist with fires that are near state lands.
- There have been a couple of 100-acre fires over the past 30 years. The exact dates are unknown.
- A large fire stretched into Rhode Island in the 1950's. The exact acreage burned is unknown but it was likely several hundred to a thousand acres.
- The Town has a handful of brush fires each spring and autumn. The largest fires burn one to two acres maximum as the Fire Department is quick to respond.
- The Fire Department has seven dry hydrants throughout the Town. They can also draft water from the various streams, ponds, and rivers.
- The Town has a hummer to fight off-road fires, and the DEEP has tracked machines to fight such fires.
- State forest lands and inaccessible tracts of land are at the highest risk for wildfires.

***J. Actions Taken by Voluntown on 2005 Plan Recommendations***

- Coordinate Program with State for Accounting for Summer Transients in Pachaug State Forest – No formal plan has been written, but the State takes care of campers and hikers on its land. The Town has a good relationship with the State.
- Raise Section of Route 49 Roadway to Eliminate Flooding and Icing – A catch basin was installed by the State and this area no longer has these issues.
- Evaluate the Hazard Resistant Nature of Critical Facilities – This is ongoing as part of the Town's annual EOP update. No critical facilities are believed to be more or less susceptible to natural hazards.
- Comprehensive Evaluation of Emergency Communication Capabilities Throughout the Town – This is ongoing along with the annual EOP update. The Town is going to seek funding to purchase additional portable radios.
- Develop a Flood Audit Program – The Town does not have any real flooding issues, and has no interest in the Community Rating System. The Town is aware of potential problem areas.

- ❑ Review of Transportation Facilities to Identify Critical Risks – This is ongoing annually as part of the Emergency Operations Plan update. The Town had access issues during Hurricane Irene due to the many downed trees and power lines.
- ❑ Identify Appropriate Improvements to Traffic Infrastructure and Emergency Response Training and Equipment – This is ongoing as part of bi-weekly Fire Department training and the annual EOP update. The Town has access to CERRIT, the regional hazardous materials response team.
- ❑ Implement a Reverse 9-1-1 System to Automatically Call Telephones Throughout Town, Relaying Important Information During an Emergency – The Town is not part of the statewide CT Alerts “Everbridge” System because it is too expensive.
- ❑ Distribute or Post Public Information Regarding Hazards in the Town – Notifications are posted on bulletin boards around town and at town buildings and on the Town website. Local media is utilized to pass information prior to and during storms, including newspaper, television, and radio. Flyers were passed out by mail following Irene. Town staff also performed well-being checks on elderly and disabled residents who are known to have issues during the outages – Town churches have lists of people at risk. The Town recently did a town-wide mailing requesting that if people need additional assistance during an emergency to send that information to the Fire Department. The Fire Department now has that list, but the church lists are likely more up to date.
- ❑ Evaluate Emergency Shelters, Update Supplies, and Check Communication Equipment – This is done at least quarterly or following any use of the facilities. The Fire Department has acquired a lot of donations from other governments in the region.
- ❑ Maintain Emergency Personnel Training as Well as Maintaining and Updating Emergency Equipment and Response Protocols – Training is performed regularly, with equipment upgrades occurring to the extent the budget will allow.
- ❑ Evaluate and Consider Burying Power Lines Underground and Away from Possible Tree Damage – This is only considered for new projects. There are no areas with underground utilities except for Rachel Lane. There are no plans to move existing utilities underground.
- ❑ Complete an Earthquake Survey of all Critical Facilities and Infrastructures –A formal survey is not proposed due to the infrequent nature of this hazard. All Town buildings are relatively old (the most recent was built in the 1960’s) and likely do not have any seismic protection. The addition to the school that was completed in 2001 is likely the most structurally sound municipal building.

- ❑ Complete Catch Basin and Culvert Surveys to Identify Structures in Need of Maintenance or Replacement – Inspections are performed annually each spring by Public Works during cleaning operations. Public Works also inspects catch basins in floodprone areas for blockages prior to major storms.
- ❑ Complete a Survey of Fire Hydrants to Assess Vulnerabilities and Capabilities for Fire Protection – Fire protection capabilities are reviewed at least annually with the EOP update. The Town believes that its fire protection level is adequate. The dry hydrants in town are inspected annually and are all in good shape.

***K. Acquisitions***

- ❑ None

## *Meeting Minutes*

### **MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN Data Collection Meeting for Waterford January 12, 2012**

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#### **A. *Welcome & Introductions***

The following individuals attended the data collection meeting:

- Ronald Cusano, P.E., L.S., Director of Public Works
- Kristin Zawacki, P.E., Assistant Director of Public Works
- Neftali Soto, Director of Utility Commission
- James Bartelli, Assistant Director of Utility Commission
- Tom Wagner, Planning Director
- Mark Wujtewicz, Planning Department
- Murray Pendleton, Police Department/Emergency Management Director
- Frank Hoagland, Building Official
- David Murphy, PE, CFM, Milone & MacBroom, Inc.

#### **B. *Description and Need for Hazard Mitigation Plans / Disaster Mitigation Act of 2000***

Mr. Murphy briefly described the basis for the natural hazard planning process and possible outcomes, including the role of the updated plan in grant application support for the municipalities within the region. Mr. Murphy noted that with three declared disasters in the last 12 months, there are opportunities for grants from HMGP. The updated plan will address flooding, hurricanes and tropical storms, winter storms and nor'easters, summer storms and tornadoes, earthquakes, dam failure, and wildfires. These were discussed, along with critical facilities and development trends.

#### **C. *Critical Facilities***

- The Police and Public Safety Complex is two buildings – the PD and the Public Safety Building (911 Center, Fire Marshal, and Emergency Management)
- Mr. Pendleton will send the Emergency Operations Plan.
- The Town Hall is a critical facility because it houses many important functions as well as the network servers. It does not have a generator but one is desired.
- Four schools are shelters, and they all have generators: Clark Lane, Quaker Hill, High School, and Oswegatchie Elementary School. A new high school is under construction.
- The community center is an additional shelter with a generator.
- A regional distribution center (1000 Route 85) at the Public Works and Public Utilities facility is a critical facility. It serves the entire region.
- Five fire stations; all have generators
- Five communications towers are critical facilities.

- The Konomoc Water Treatment Plant for New London is in Waterford and is a critical facility as the town of Waterford must respond to emergencies there. Also, Waterford receives water from New London's system.
- Three water pumping stations, three tanks owned by Waterford, and three tanks owned by New London (but located in Waterford) are all critical facilities.
- The 27 sewer pumping stations are critical facilities, along with 240 private grinder pumps maintained by the town.
- Three rental senior housing complexes (Ahepa, Twin Havens, and Yorkshire).
- Camp Harkness should also be a critical facility because of its vulnerable population and limited egress.
- Seaside (a group home) should be considered a critical facility for the same reasons as Camp Harkness.
- Assisted living on Park Lane, "Bridges at Crossroads" has 150 beds in one building and 40 homes
- The three nursing homes are New London Convalescent on Clark Lane, Greentree, and Bayview.
- Waterford would like to consider sewer lines a critical facility due to the unique problem that was experienced during the March 2010 flooding. High groundwater flowing along the gravel around the sewer lines caused collapse of the roads. A few miles of roads and sewer lines were lost. Ms. Zawacki will provide a list of the affected roads.

#### ***D. Development Trends***

- All new developments are required to have underground utilities.
- A 40,000 sf cancer center is proposed on Parkway South. It is affiliated with Lawrence & Memorial.
- Student housing at O'Neill Theatre is being doubled.
- The old drive-in theatre on Route 1 may be developed with 88 rental units (approved).
- Charter Oak Bank is proposing a 60,000 sf corporate office and bank on Industrial Drive near I-395.
- Catherine Court is approved for 14 lots.
- "Waterford Station" south of Waterford Commons will be mixed-use retail.
- Possible development could occur at the airport.
- A gravel operation at the end of Industrial Drive could spur redevelopment.
- Millers Pond gravel operations could spur redevelopment.
- Thames Landing condos are underway, with half constructed. The development includes a marina and support facilities.
- Harrison's Landing has room for housing on a group of four lots.
- Seaside Sanatorium is a former State facility on Shore Road that is vacant and is linked with a preferred developer. The lot has been rezoned to allow housing near historic structures. Special provisions are in place for flood damage prevention.
- Miner Lane condos will have 45 units.

### *E. Flooding*

- ❑ In general, the flooding problems noted in the 2005 plan are still valid and appropriate to include in the update. However, the March 2010 flood is the most recent extreme flood of record for southeastern Connecticut, and it caused much flooding in Waterford as noted below, along with the sewer/roadway collapses described above.
  - Mr. Wagner circled many of the roadway stream crossings that flood.
  - Two key roads for evacuation are flooded. These are Route 213/Great Neck Road where two to three feet of water covers the road at Jordan Brook; and Gardiners Wood Road is low and floods along an unnamed brook. Gardiners Wood Road likely needs to be elevated with two culverts replaced.
  - Route 156 at Gardiners Wood Road floods from the same unnamed brook.
  - The southern part of Route 213 had many crossings closed during the March 2010 flooding. Several unnamed streams flow into Goshen Cove in this area.
  - Braman Road at the headwaters of one of the streams that flows into Goshen Cove.
  - An unnamed brook near Niantic River Road flooded. These are the numbered streets (First Avenue through Seventh Avenue).
  - Oil Mill Road at Oil Mill Brook (at least two locations flood).
  - Way Hill Road at Oil Mill Brook.
  - Niles Hill Road at Fenger Brook (head of Alewife Cove).
  - Boston Post Road at Jordan Brook.
  - Hunts Brook at Bloomingdale Road and Old Mill Road (see below for more about Hunts Brook).
  - Mr. Murphy will work with Mr. Cusano to check this list of the roadway/stream crossings that are floodprone, and add any that are missing.
- ❑ Many old culverts are corrugated pipes, and those that have been replaced now have box culverts. Way Hill Road does not flood anymore since the culvert was replaced.
- ❑ The Hunts Brook corridor is a problem because it floods and is zone A rather than AE. The town desires information about flood elevations along Hunts Brook and would like FEMA to study the corridor to prepare AE mapping and set the flood elevations in the SFHA. This would facilitate a benefit-cost analysis (BCA) using the flood module. Hunts Brook flooded wider than the A zone in March 2010.
- ❑ The two structures that were damaged in March 2010 are on Bloomingdale Road and Old Norwich Road, along Hunts Brook.
  - The house on Bloomingdale Road is the pending HMGP application. The application requests funding for acquisition and conversion to open space. The home was not believed to be in the SFHA (according to a realtor) and was uninsured, but suffered damage in March 2010 and is now insured. The home is located in the SFHA.
  - The other flooded structure is a store (the Greens) and they paid for the necessary repairs. The parking lot for the Greens ended up in the cove.
- ❑ Part of Jordan Cove Road was lost during Irene. Ms. Zawacki oversaw the replacement with a barrier curb that was reimbursed (75%) by FEMA. The total project cost was \$110,000.



- The town does not participate in the Community Rating System (CRS) but would like to consider it, and the plan should discuss this.
- The town doesn't have evacuation signs and would like them.
- Mr. Pendleton explained a scenario that needs some discussion in the plan. Without the ability to evacuate through Jordan Cove Road or Gardiners Wood Road during severe flooding, residents near Millstone may be able to evacuate through an old access road on Millstone land. The road is blocked with barriers that would need to be moved.

#### ***F. Wind***

- CL&P trims trees along power lines. Their last contractor (Asplund) did not do a great job according to the town. However, CL&P has been very aggressive along State roads in Waterford.
- After Irene, the power outage lasted two to eight days in Waterford.
- Mr. Cusano is the tree warden. He can post and remove trees in rights of way or town land, but hazards can be removed without notice.
- Utilities are placed underground in new developments.

#### ***G. Winter Storms***

- The town checked town-owned roofs last winter because of snow accumulations, and the PD roof was cleared.
- A Shell gasoline station canopy failed, and Aaron's (shopping center) experienced a collapse as well.
- The roof on the Butler Building on Route 85 almost failed. The town removed the snow and it did not.
- CTDOT plows its roads and the town plows the rest (120 miles of town roads). Routes are prioritized – main roads first, then secondary roads.

#### ***H. Dams***

- The high hazard dams include Millers Pond and Lake Konomoc. Konomoc never has any water flowing over the dam.
- The Town requests that the owners of Millers Pond lower the level before rain events, and they comply.
- Jordan Mill Pond might be a concern.
- A dam near Route 156 (Boy Scout camp) might be DOT-owned.

#### ***I. Wildfires***

- A fire off Douglas Lane near the power lines in 1985 was suspicious.
- Another fire in the 1980s occurred on town-owned land between Old Barry Road and Quinly Way. The fire lasted many days and was the largest fire in Waterford. It occurred during a drought.

- The town has many wooded areas with ATV trails.
- Some of the town parks have intentional fire breaks. An example is Stenger Farm Field, a town park off Clark Lane. This park had many fires when Mr. Hoagland was a kid.
- The town owns some ATV fire response vehicles.
- The State owns 150 acres north of Harkness Park and they conduct controlled burns.

**APPENDIX C**

**PROJECT WORKSHEET FOR EVALUATION OF RECOMMENDATIONS**



**Plan Goal(s)/Objective(s) Addressed:**

Goal: \_\_\_\_\_

Objective: \_\_\_\_\_

**Indicator of Success** (e.g., losses avoided as a result of the acquisition program):

*In most cases, you will list losses avoided as the indicator. In cases where it is difficult to quantify the benefits in dollar amounts, you will use other indicators, such as the number of people who now know about mitigation or who are taking mitigation actions to reduce their vulnerability to hazards.*

\_\_\_\_\_  
\_\_\_\_\_

**Status** (Please check pertinent information and provide explanations for items with an asterisk. For completed or canceled projects, see Worksheet #2 — to complete a project evaluation):

**Project Status**

Project on schedule

Project completed

Project delayed\*

\*explain: \_\_\_\_\_

\_\_\_\_\_

Project canceled

**Project Cost Status**

Cost unchanged

Cost overrun\*

\*explain: \_\_\_\_\_

\_\_\_\_\_

Cost underrun\*

\*explain: \_\_\_\_\_

\_\_\_\_\_

**Summary of progress on project for this report:**

A. What was accomplished during this reporting period?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

B. What obstacles, problems, or delays did you encounter, if any?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. How was each problem resolved?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

