

The Montague
Community Wildfire Protection Plan

AN ACTION PLAN FOR WILDFIRE MITIGATION IN
MONTAGUE, MA

{ December 2015 }

Prepared by:

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The following report is a collaborative effort between various entities. The representatives listed below comprise the core decision-making team responsible for this report and mutually agree on the plan's contents:

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I. OBJECTIVES

The objective of the following report is to set clear priorities for the implementation of wildfire mitigation in the town of Montague, MA. This includes prioritized recommendations as to the methods of fuel reduction, new and repairs to safety infrastructure, training and equipment, and structure ignitability reduction that will protect this community and its essential infrastructure.

II. COMMUNITY COLLABORATION

A task force convened in February of 2012 to begin to assess risks and develop the Community Wildfire Protection Plan. The task force is comprised of representatives from local government, local fire authorities, and the state agency responsible for forest management.

In addition, the task force consulted with a number of interested parties to acquire additional input as the plan was developed:

Mike Brown – Turners Falls Water District
Mickey Longo – Turners Falls Airport Commission
Tom Bergeron – Montague Department of Public Works
Brian Benito – Western Mass Electric Company
David James – Lake Pleasant Association

III. COMMUNITY BACKGROUND AND EXISTING SITUATION

The Town of Montague is located in western Massachusetts, in central Franklin County. Montague is bordered by the Millers River and the towns of Gill and Erving on the north and northeast; Wendell on the east and the towns of Leverett and Sunderland on the south. The Connecticut River and the towns of Deerfield and Greenfield form Montague's western boundary. The Deerfield River runs into the Connecticut River just south of Montague City.

Most of Montague's housing is located in the five villages. The main streets in downtown Turners Falls feature three-story brick buildings with housing above and ground-floor commercial uses, mostly constructed between 1870 and 1890. Housing on side streets in the downtown is a combination of duplexes and multi-family buildings, both masonry and wood, built during the same period on very small lots. The —hill section of Turners Falls is residential in character, with single-family homes on ¼- to ½-acre lots.

The village of Montague City runs along the Power Canal from Turners Falls to the Town's boundary with Greenfield, and is composed of a mix of single-family homes, duplexes, multi-family buildings and commercial and industrial uses, including Cabot Station, the former Farren Hospital (now an extended care facility) and medical offices.

Millers Falls is a small mill village, with a mix of densely-packed housing and commercial uses, as well as a freight rail yard. Lake Pleasant is a unique community on the edge of the Montague Plains. Wood residences were built on tent lots laid out in the 1870s, resulting in very tightly-clustered housing. The village is surrounded by Pitch Pine/Scrub Oak forest.

The village of Montague Center has a traditional village green, flanked by residences on ¼- to ¾-acre lots, with a few remaining commercial uses. Agricultural uses predominate to the west and south of Montague Center. The eastern section of town, bounded by the Central New England Railroad on the west, is heavily forested, with scattered residences on large lots.

The total land area of the Town of Montague is approximately 20,109 acres. Approximately 14,170 acres, or 70% of the total land area, are undeveloped forest. More than 5,900 acres of forest are permanently protected through public and private ownership, and are likely to remain undeveloped in perpetuity. There are approximately 2,736 acres in agricultural use (not including forestry), constituting 14% of the town's land base. More than 1,200 acres have been permanently protected for agriculture.

WILDFIRES AND BRUSHFIRES

General Description

According to FEMA, there are three different classes of wildland fires: *surface fires*, *ground fires* and *crown fires*. The most common type of wildland fire is a surface fire which burns slowly along the floor of a forest, killing or damaging trees. A ground fire burns on or below the forest floor and is usually started by lightning. Crown fires move quickly by jumping along the tops of trees. A crown fire may spread rapidly, especially under windy conditions, and is extremely difficult to extinguish. Montague's 2014 Multi-Hazard Mitigation Plan identifies Wildfires and Brushfires as a high priority hazard in the town.

Location and Extent

Fire is a significant natural hazard on the Montague Plains due to the extremely flammable nature of the Pitch Pine-Scrub Oak vegetation. Paleoecological evidence strongly suggests fire was a common occurrence on the Plains from 500 to at least 2,000 years before European settlement. It is believed that most of these fires were intentionally set for the purposes of land use management. Historical records indicate that extensive fires (some larger than 1,000 acres) burned through the Plains in the early and middle 20th century followed by numerous smaller fires (less than 5 acres) after about 1950. A 1907 fire destroyed most of the homes in Lake Pleasant. The last large fire (approximately 460 acres) occurred in 1957.

More than 110 fires have been documented to have occurred on the Plains in the past 80 years. There are a number of factors that contribute to the danger of fire on the Plains, including decades of suppressing natural occurrences of fire that have increased fuel loads, as well as land uses such as transmission lines, use of all-terrain vehicles and illegal campfires. Strategies to address the danger of fire on the Plains will be discussed later in this plan.

Montague has two independent fire districts: The Montague Center Fire District covers the southern section of town, encompassing the villages of Montague Center and Lake Pleasant, the southern 2/3 of the Montague Plains and most of the Town's rural areas. The Turners Falls Fire District is responsible for the northern section of town, including the villages of Turners Falls (including the Airport Industrial Park), Montague City and Millers Falls, as well as the northern 1/3 of the Plains and the forested areas in the northeast section of Town.

Between 2004 and 2009 (most recent data), the Montague Center Fire Department responded to a total of 38 brush fires. During the same period, the Turners Falls Fire Department reported 29 brush fires. The actual numbers of brushfires is likely larger, as the fire departments do not report fires that are less than a quarter acre in size. Many brushfires are started on residential lots to clear grass, leaves, brush and other woody debris and become a problem when the homeowner can no longer control them. Lightning strikes, while relatively uncommon, are also a concern—a fire started by lightning destroyed a barn in July 2004. In 2009, sparks from a passing train ignited dry brush in Montague Center; 8 acres burned before firefighters from 15 departments extinguished the blaze after 4 hours.

Table 1 : Massachusetts Fire Incident Reporting System – Brushfires 2004-2010 in Montague and Surrounding Towns

Department	Total # of Brush Fires	2004	2005	2006	2007	2008	2009	2010
Deerfield	26	6	5	0	1	4	7	3
Erving	10	4	2	1	0	3	0	0
Gill	17	0	1	7	4	1	1	3
Greenfield	51	0	1	4	11	13	6	16
Leverett	11	1	1	3	5	0	1	0
Montague Center	49	3	8	10	7	1	9	11
South Deerfield	21	4	2	3	5	2	2	3
Sunderland	22	4	6	6	0	1	0	5
Turners Falls	45	8	5	4	7	1	4	16
Wendell	10	0	0	6	2	0	1	1
Franklin County	498	63	67	77	84	48	59	100

The village of Lake Pleasant, on the eastern edge of the Plains, is an area of particular concern with respect to danger from wildfire. A crown fire west of the village could spread quickly, resulting in devastating loss of property and possibly life. Other residential and commercial buildings to the north, northwest, west and southwest of the Plains on Millers Falls Road, Hillside Road and Turners Falls Road are somewhat less susceptible to a catastrophic fire, but are still at risk. Smoke-sensitive areas close to the Plains include major roads, the Turners Falls Airport, Turners Falls High School/Great Falls Middle School, the Sheffield and Hillcrest Elementary Schools, and the Franklin County Technical School.

Hazard Summary

Wildfires can damage woodlands, homes, utilities and buildings, and could cause injuries or deaths. Existing and future mitigation efforts should continue to be developed and employed that will enable the Town to be prepared for these events. Burn piles that blaze out of control, lightning strikes in forested land, campfires improperly managed, and arson can cause wildfires. Montague is vulnerable to these conflagrations, especially in times of drought. The Montague Plains Wildlife Management Area and adjacent areas is particularly susceptible to wildfires, and is discussed in more detail below. Fire suppression can be expensive and dangerous for firefighters, and wildfires can threaten wildlife and human habitat and health.

Data Collected and Used

National weather databases and Town of Montague data were collected and analyzed. Data on historic property damage and loss, and injuries and deaths, was collected for Franklin County from the National Oceanic and Atmospheric Administration's National Climatic Data Center website. Data from this website shows no wildfires have occurred in or impacted Franklin County in the last 20 years. According to the Massachusetts Department of Fire Services Fire Incident Reporting System (MFIRS), 67 brushfires were reported in Montague between 2004 and 2009. The Commonwealth of Massachusetts State Hazard Mitigation Plan was also reviewed for information on wildland fires and brushfires hazard data and mitigation measures.

Impact on the Community

Exposure and Loss Estimation

A major out-of-control wildfire can damage property, utilities and forested land; create smoke that can cause breathing problems; and injure or kill people.

Property Damage

No property damage, injuries or deaths have been recorded for Montague's 67 fires between 2004 and 2009. Because Montague is heavily wooded, the entire built environment of the Town is vulnerable to a wildfire. Table 2 identifies the building type and valuation of this inventory as well as the losses that would result from 1%, 5%, and 10% damage to this inventory as a result of a wildfire.

Table 2: Potential Estimated Loss by Land Use Category

	Total Assessed Value	1% Damage Loss Estimate	5% Damage Loss Estimate	10% Damage Loss Estimate
Residential	\$568,550,480	\$5,685,505	\$28,427,524	\$56,855,048
Commercial	\$34,257,686	\$342,577	\$1,712,884	\$3,425,769
Industrial	\$110,060,690	\$1,100,607	\$5,503,035	\$11,006,069
Total	\$712,868,856	\$7,128,689	\$35,643,443	\$71,286,886

Source: Massachusetts Department of Revenue - Division of Local Services, Municipal Databank/Local Aid

The Fire Management Plan for the Montague Plains Wildlife Management Area (WMA) included a vulnerability assessment of structures particularly susceptible to fire. It identified two fire-sensitive areas on the WMA itself, including a clubhouse building along Plains Road on the eastern side of the WMA. This approximately 800 square foot structure has concrete block construction and an asphalt shingle roof. Defensible space is minimal behind the structure (west), but excellent on all other sides. There is an exterior above-ground propane tank adjacent to the west exterior wall. A dense stand of pitch pine to the west of this structure puts it at considerable risk from wildfire. Electrical transmission lines are the other fire sensitive areas of the WMA. Most of the lines that cross the WMA have wooden poles which could be damaged or consumed by a wildfire, causing power outages in the region and electrical and structural hazards at the site. Only the largest power line, running northwest-southeast across the property has metal towers.

The plan also identified numerous fire sensitive areas off-site (see Figure 5 from the plan, below). The village of Lake Pleasant lies adjacent to the MP WMA to the southeast just across Lake Pleasant Road. Current vegetation management practices have reduced the large, uninterrupted area of closed canopy pitch pine occurring west of the village of Lake Pleasant. Continued management will be necessary to keep the area from becoming hazardous in the future. The village of Lake Pleasant has been affected by wildfires on several occasions in the past, and during at least one incident houses were destroyed.

There are a number of houses and other buildings adjacent to or near the boundary of the WMA to the north, northwest, west and southwest along Millers Falls Road, Hillside Road, and Turners Falls Road. While still at some risk of being affected by fires from the Montague Plain, these areas are at substantially less risk than the village of Lake Pleasant, because they occur at the bottom of slopes and are adjacent to mixed or hardwood forests (which do not support crown fires). A single residence lies in an inholding north of Plains Road at the western edge of the site. This residence is at particular risk to fire because it is surrounded by scrub oak thicket and pitch pine fuel types. The Fire Management Plan includes a variety of strategies designed to protect vulnerable structures from the risk of wildfire on the Plains.

Overall Vulnerability Assessment

While wildfires have caused minimal damage, injury and loss of life to date in Montague, their potential to destroy property and cause injury or death exists. Existing and future mitigation efforts should continue to be developed and employed that will enable Montague to be prepared for these events when they occur. Wildfires can also cause utility disruption and air-quality problems. Particular areas of vulnerability include low-income and elderly populations.

Data Deficiencies

In assessing the risks to Montague from wildfire hazards, the following data deficiencies were identified: Records of damages to the built and natural environment due to wildfires and brushfires in Montague are not consistently maintained. A more formal system of data collection and maintenance could be established and would help improve the Town's hazard mitigation planning. Better data could also increase the Town's chance of qualifying for various grants. The towns of Franklin County rely on farming for one of its income sources. Little data exists on localized crop damage due to wildfires.

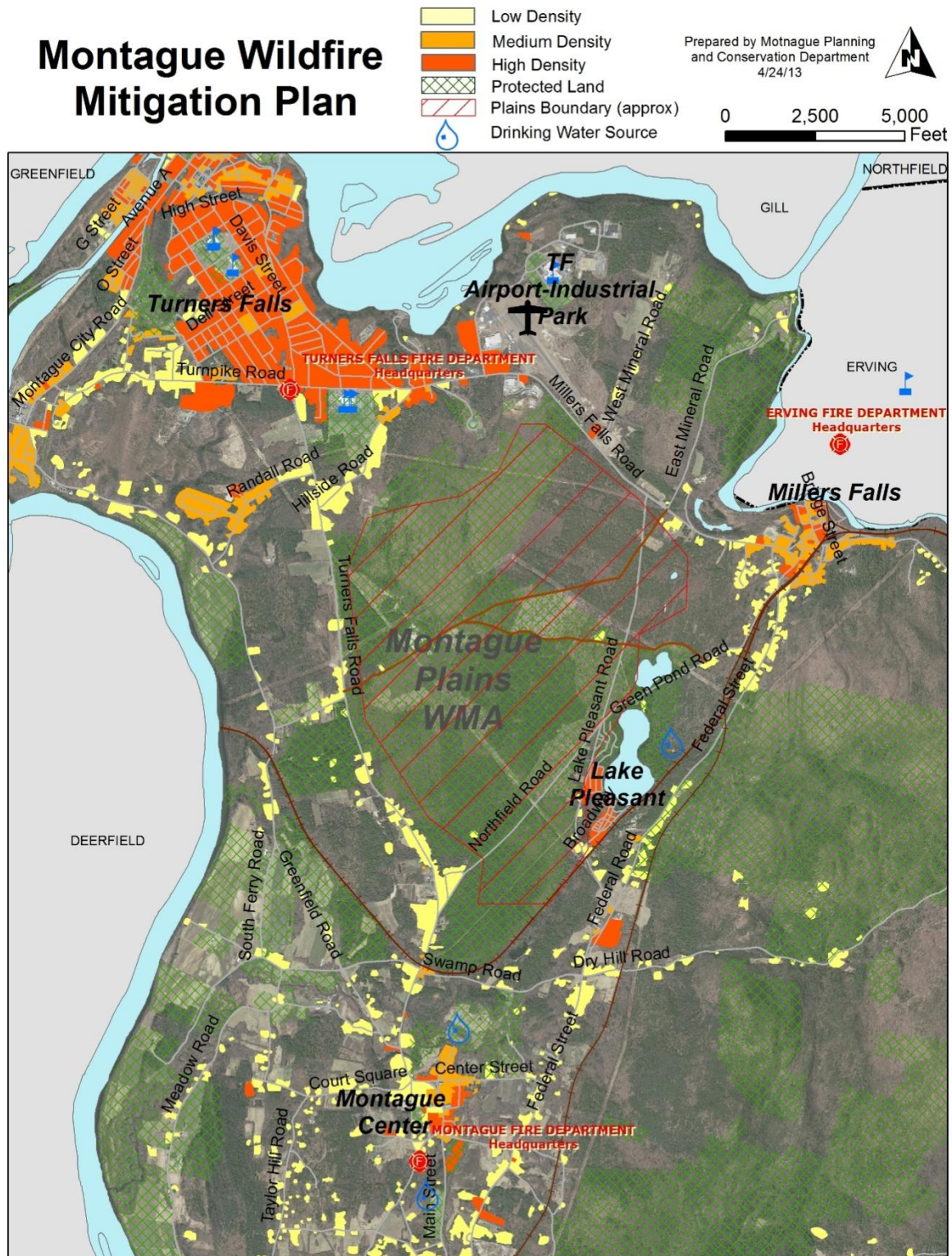
Outreach

A public Outreach Meeting for the Wildfire Protection Plan was held in conjunction with a public meeting of the Lake Pleasant Village Association. About 9 members of the Village Association were present. A presentation was made and feedback was incorporated into this report.

Plan Adoption

Copies of the Plan should be disseminated to Town Boards, prudential committees for their review and comment. A copy of the plan should be posted on the Town website for public review.

IV. COMMUNITY BASE MAP



V. COMMUNITY WILDFIRE RISK ASSESSMENT

The committee differentiated 21 separate areas to be assessed. These were determined by consensus and introduced to stakeholders and met with approval. Two criteria were then assessed for each area and given a number. The first criteria is labeled as “Risk” and refers to the relative amount of infrastructure and population that exists in a particular area that could be exposed to any particular hazard. The second criteria is “Threat” which refers to the relative probability of the hazard of wildfire impacting that area. These two criteria were rated at three levels, and then added to create a final score for each area. This score gives us a tool for ranking priority for mitigation measures.

The three levels of each criteria are from least to greatest, and are as follows:

Risk

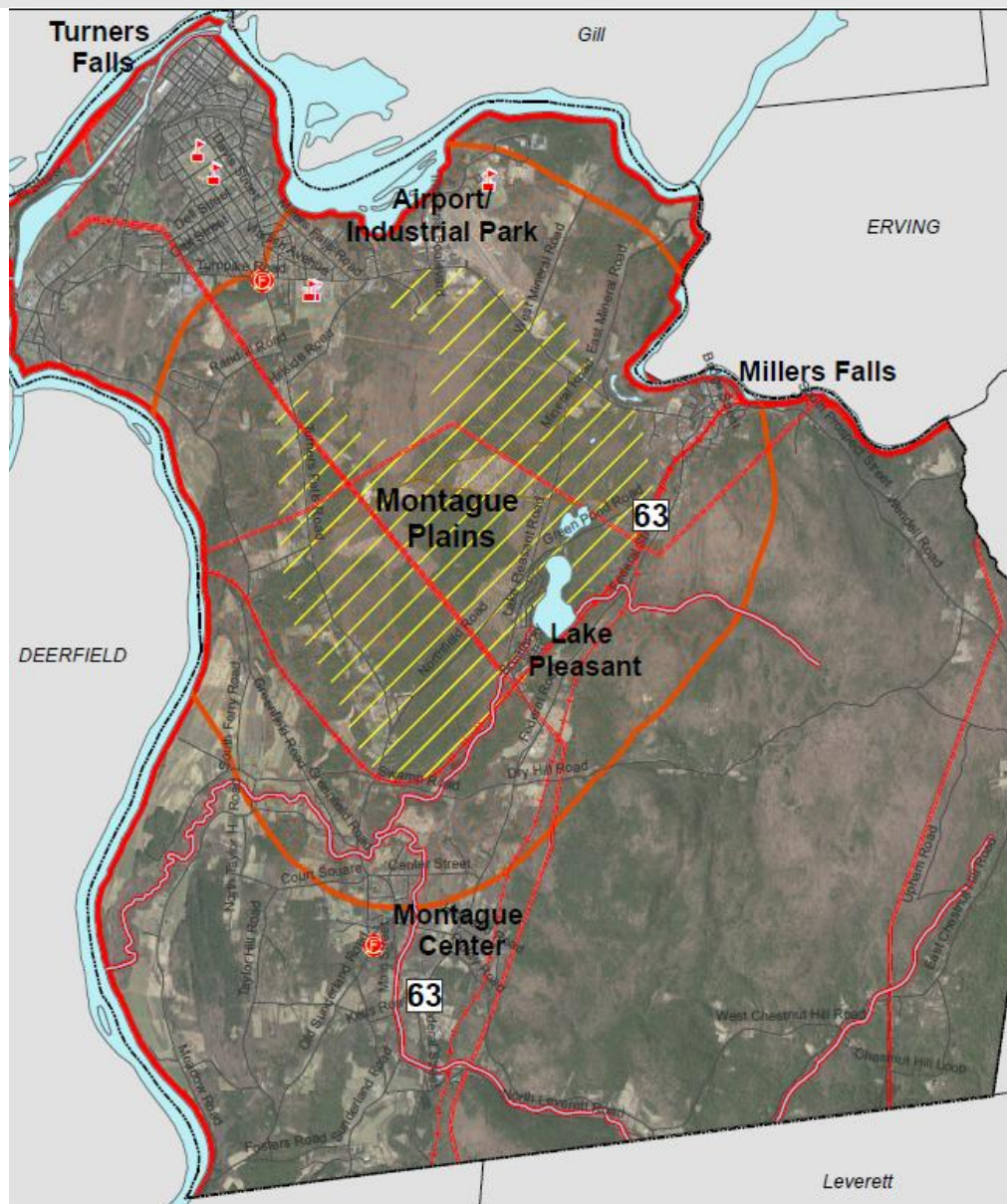
- 1) Sparsely Developed, extremely low population density
- 2) Single Family neighborhood, low population density
- 3) High population, employment, or student density: huge loss of life or critical infrastructure potential

Threat

- 1) Space is defensible, surrounded by hardwoods, outside of prevailing winds
- 2) On the edge of the pitch pine forest, within prevailing winds
- 3) In a pitch pine forest

Risk	Threat	Total	Site Location	Category
3	3	6	Lake Pleasant Village	High density Residential
2	3	5	TF Water District Montague Center Pump Station	Critical Infrastructure
2	3	5	Turners Falls Road	Low Density Residential
3	2	5	Highland School Apartments	High density Residential
2	3	5	Power Lines+ Other utilities	Critical Infrastructure
2	2	4	Turners Falls Municipal Airport	Critical Infrastructure
3	1	4	Turners Falls High School	School
3	1	4	Franklin County Technical School	School
1	3	4	Bitzer Fish Hatchery	Low Density Employment
3	1	4	Montague Center North	High density Residential
2	2	4	Rte 63 North of Center Street	Low Density Residential
3	1	4	Millers Falls Village Center	High density Residential
1	3	4	Millers Falls Road	Low Density Residential
3	1	4	Airport Industrial Park + Trailer Park Area	High Density Employment
2	1	3	TF Water District Office and Reservoir	Critical Infrastructure
2	1	3	TF Water District Lake Pleasant Pump Station	Critical Infrastructure
2	1	3	Hillside Road	Low Density Residential
2	1	3	Randall Road	Low Density Residential
2	1	3	Bookmill Area	Low Density Employment
1	1	2	Lower Greenfield Road	Low Density Residential
1	1	2	East and West Mineral Roads	Low Density Residential

VI. COMMUNITY HAZARDS MAP



Montague Wildfire Hazard Potential



Map prepared by the Montague Planning + Conservation Department 5/3/2012

VII. PRIORITIZED MITIGATION RECOMMENDATIONS

The following recommendations were developed as a result of the Community Wildfire Risk Assessment. The recommendations are prioritized based on how likely the improvement would reduce the threats to the highest risk areas.

Proposed Community Hazard Reduction Priorities

- 1. Fuels Mitigation and Management in Montague Plains** - Prescribed fire and mechanical treatments to reduce the wildfire potential along most critical areas. This is in coordination with the plan developed by Mass FW. (Ongoing)
Partners: MassFW, DCR, Local departments, Contractors.
- 2. Safety Infrastructure Improvements**
 - Addition of at least one hydrant on the edge of the Plains . (Water Dept.)
 - Inventory and assess critical access roads and fire breaks. (MassFW)
 - Create schedule and implementation plan for maintaining vegetation from edges of accesses. (DPW, MassFW)
 - Regrade primary access roads, and redirect natural water flow off of access roads. (DPW, MassFW)
- 3. Firewise Program** - In coordination with the DCR, implement a Firewise program targeting the residents and businesses who are within the UI zone, run 2-3 programs that demonstrate how to make your house safer in the event of a wildfire on the Montague Plains. (Fall 2016) Partners: DCR, MassFW
- 4. Tabletop Exercise** - Create and manage a half day exercise with all relevant agencies and entities with the intent of understanding and trying out the operational and communications procedures for a large wildfire on the Montague Plains. (2015). Partners: IMAT, FRCOG
- 5. Wildfire Specific Trainings** - 1-2 educational trainings involving live fire exercises to educate local first responders, and to create cross agency and mutual aid cohesion in the practical skill sets involved in a wildland fire. (Spring 2017)
Partners: IMAT, DCR, MassFW
- 6. Updated Equipment**
 - Inventory and assess the PPE needs of local departments and fill in where there are holes. (FD)
 - Replace both type 6 engines in the town. (FD, FRCOG)
 - Acquire a dedicated Fire UTV outfitted with tool carrying capacity, and removable small volume pump and tank. (FD, FRCOG)

VIII. ACTION PLAN

Roles and Responsibilities

Project	Partner(s)	Partner Roles & Responsibilities
1.Mechanical Fuels Mitigation	MassFW	Hire and oversee contractors
2.Fuels Management	Mass FW, FD	Mass FW plans and implements prescribed burning in coordination with local departments
3.Add One Hydrant on Plains	Water Dept.	Purchase and install hydrant
4.Inventory and Assess Access	Mass FW, FD	MFW provide mapping and assessment tools, FD consult and assist in data collection
5. Regrade Primary Access Roads	MassFW, DPW	MFW coordinate, DPW implement (or contractor)
6.Firewise Program	DCR	Oversee and Implement
7.Tabletop Exercise	FRCOG, FD, IMAT	FRCOG coordinate, FD host and participate, IMAT oversee
8.Wildfire Trainings	FD, DCR, MassFW	FD teach, host participate. DCR teach. MassFW teach, participate.
9. Update Equipment	FD, FRCOG	FD assess needs, FRCOG assist with grants

IX. EVALUATION AND SUSTAINABILITY

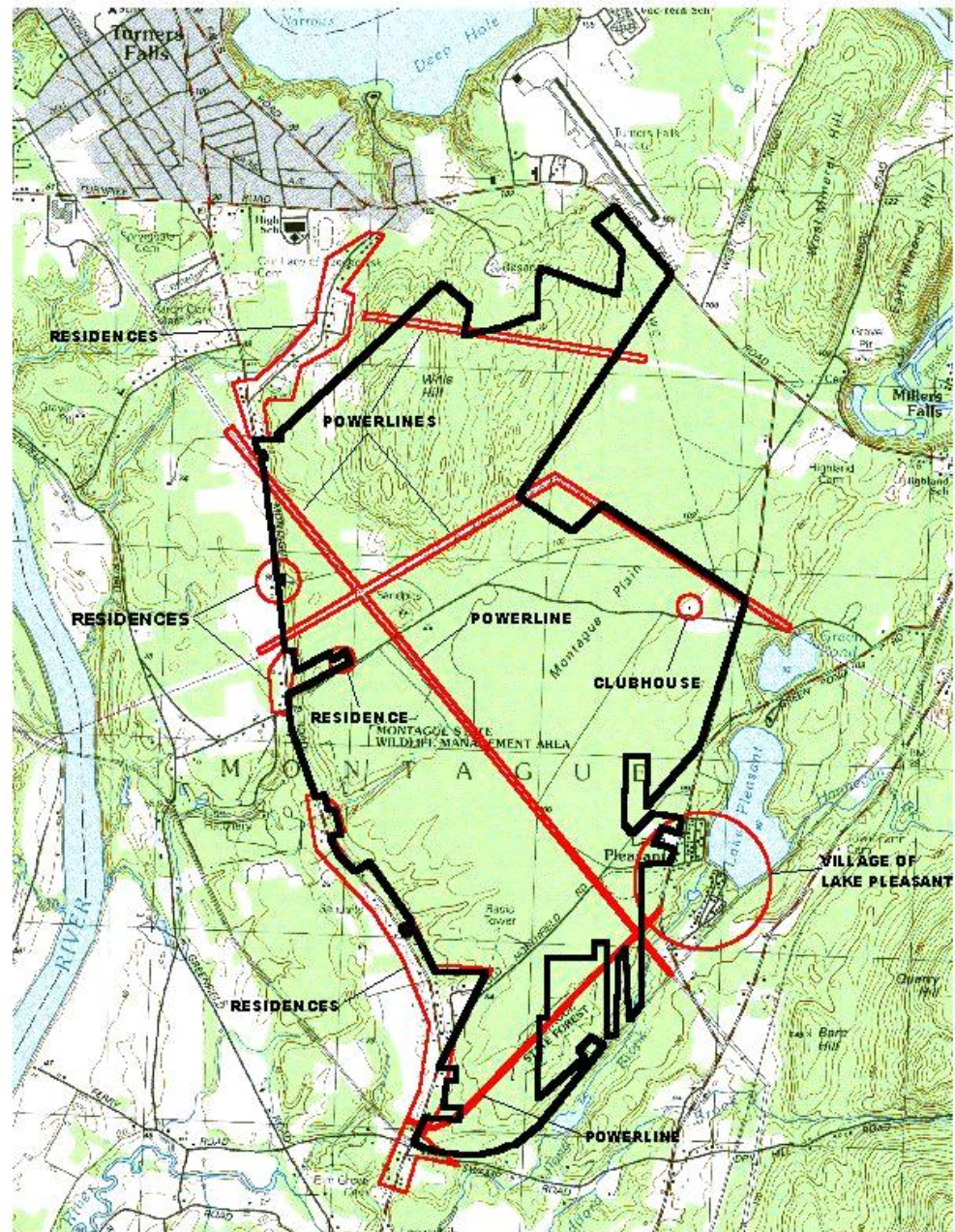
Evaluation Strategy



It is possible for all the strategies to be implemented in the next 3 years before 2019. The committee will be reconvened at least one (1) time at the beginning of each calendar year to assess the progress from the past year and plan ahead for the coming year. After 3 years we will assess which projects have been completed and which ones are yet to be and we will evaluate what is prohibiting completion of projects and create a strategy for completion. At this time we will also determine if there are other projects that should be added, or removed from the plan.

Sustainability Plan

After 5 years the committee will reconvene with the intention of renewing projects that might need to be ongoing. For example, personnel come and go, so training and education may need to be revisited.

**Figure 5: Fire Sensitive Areas on/near
Montague Plain Wildlife Management Area**



 **WMA boundary**
 **fire sensitive areas**

Appendix: Fire Sensitive Areas in the Montague Plains Wildlife Management Area