

*FIRE SAFETY INITIATIVE
STAFFORD AND BARNEGAT TOWNSHIP*



*ACTION STRATEGY
DRAFT*

A JOINT EFFORT BY STAFFORD TOWNSHIP, BARNEGAT TOWNSHIP,
THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION – FOREST FIRE SERVICE
AND THE NEW JERSEY PINELANDS COMMISSION

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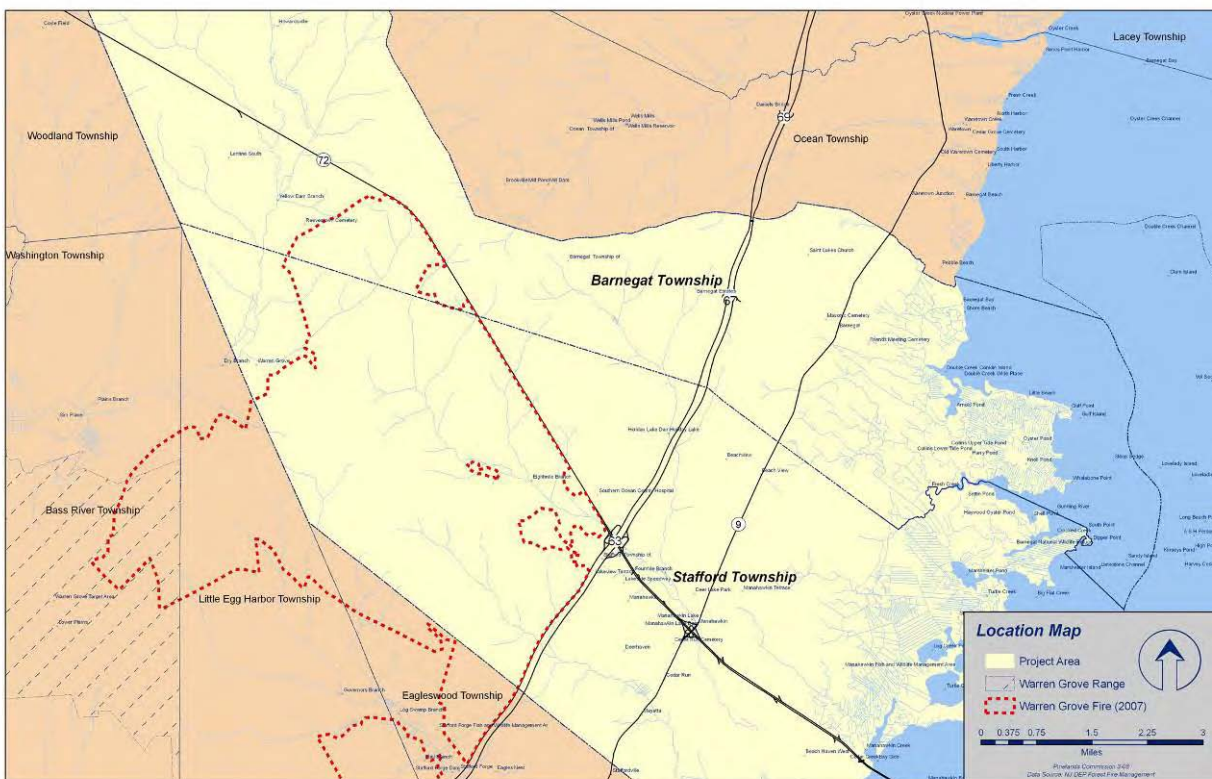
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1. BACKGROUND

The National Parks and Recreation Act of 1978 (PL 95-625) clearly acknowledges that the continued viability of the natural, ecological and cultural resources of the New Jersey Pinelands is in the interests of the State and the Nation. The Pinelands Protection Act of 1979 (N.J.S.A. 13:1 A-1), which was adopted as a companion to the federal legislation, required the creation of the Pinelands Comprehensive Management Plan (N.J.A.C. 7:50). The chief goal of this Plan is to protect, preserve and enhance the resources of the Pinelands. To that end, the Comprehensive Management Plan acknowledges that forest fires are crucial to the Pinelands ecosystem but that proper wildfire management techniques are essential in order to balance the natural cycles of the Pinelands with the need to protect areas where human settlement has and continues to occur.

On May 15, 2007 a wildfire that was ignited within the confines of the Warren Grove Gunnery Range in the East Pine Plains of the Pinelands burned over 15,550 acres in an area encompassing portions of Barnegat, Stafford, Bass River, Little Egg Harbor and Eagleswood Townships within the southerly portion of Ocean and easterly portion of Burlington Counties. The wildfire caused the destruction of 4 homes and the temporary evacuation of 1,000s of Pinelands residents. The wildfire alerted representatives from all levels of government, as well as the private sector, of the necessity to implement effective fire safety strategies to reduce the potential for and severity of repeat events. As a result, the Pinelands Commission, together with representatives from the New Jersey Forest Fire Service, launched a Fire Safety Initiative.



The Fire Safety Initiative is designed to encourage communities throughout the Pinelands, with extensive expanses of Wildland-Urban Interface (WUI)¹ areas, to develop appropriate strategies to actively address

¹ There are three major categories of wildland-urban interface, any of which may be at risk from wildfire. "Boundary" wildland-urban interface is characterized by areas of development where homes, especially new subdivisions, press against public and private wildlands, such as private or commercial forest land or public forests and parks. This is the classic type of wildland-urban interface, with a clearly defined boundary between the suburban fringe and the rural countryside. "Intermix" wildland-urban interface areas are places where improved property and/or structures

wildfire potential. The objective of this program is to develop a model for strategic cooperation among those agencies that administer fire management regulations, actively manage forest areas and regulate local land use and development so that their combined efforts result in improved forest fire management and fire safety. To create a prototype for this cooperative model, Stafford and Barnegat Townships were invited to participate in the initial fire safety outreach effort. As is evident from the location map on page 2, these two neighboring municipalities are located within close proximity of the Warren Grove Gunnery Range and the developed areas within these communities were at considerable risk during the Warren Grove wildfire. The Pinelands Commission and the New Jersey Forest Fire Service worked with these two municipalities to identify specific safety issues and develop an action plan of improved measures to mitigate fire hazards.

To undertake this Fire Safety Initiative, both Stafford and Barnegat appointed representatives from their code enforcement and zoning, police, fire, public works and emergency response departments to participate in a project working group. In addition, staff-level representatives from the New Jersey Forest Fire Service, the Warren Grover Gunnery Range and the New Jersey Pinelands Commission participated in the working group meetings.

are scattered and interspersed in wildland areas. These may be isolated rural homes or an area that is just beginning to go through the transition from rural to urban land uses. "Island wildland-urban interface, also called "occluded" interface, are areas of wildland within predominantly urban or suburban areas. As cities or subdivisions grow, islands of underdeveloped land may remain, creating remnant forests. Sometimes these remnants exist as parks, or as land that cannot be developed due to site limitations, such as wetlands. (Source: "Planning for Wildfires", Planning Advisory Service Report # 529/530, James Schwab, Stuart Meck, Jamie Simone, February, 2005).

2. PROJECT SCOPE

Scope

To develop the Fire Safety Initiative, staff of the New Jersey Pinelands Commission worked with the New Jersey Forest Fire Service to develop the project scope and establish the project schedule. The project aimed at identifying and then implementing specific measures to mitigate wildfire hazards in two Pinelands municipalities. In view of the risks experienced during the Warren Grove Fire, Barnegat and Stafford Townships were selected as the pilot communities.

The project encompassed two phases. The first was focused on identifying immediate fire safety issues. Once the issues were defined, the project working group was charged with selecting appropriate remediation strategies to address the risks. Both the Pinelands Commission and the Forest Fire Service will assist and provided technical assistance to Barnegat and Stafford Townships in order to undertake the selected strategies.

In the second phase of the Fire Safety initiative the Pinelands Commission and the Forest Fire Service will assist Barnegat and Stafford Townships to prepare and implement comprehensive Community Wildfire Preparedness (CWP) Plans. This phase is designed to culminate in Firewise Communities/USA designation for both communities.

Objectives

The Fire Safety Initiative was designed to accomplish the three specific objectives described below:

1. *Identify wildfire risks and implement specific measures to mitigate wildfire hazards:*
Representatives of the New Jersey Forest Fire Service worked with a group of representatives appointed by Stafford and Barnegat Townships. The intent was to identify a series of immediate wildfire risks and develop a plan of actions specifically designed to respond to these risks. Representatives of the Pinelands Commission provided technical assistance and managed the project.
2. *Set framework for comprehensive Community Wildfire Preparedness Plans – Firewise Certification:* This second project objective is intended to result in completing the basic analysis and forming the working relationships that set the stage for the eventual development of a Community Wildfire Preparedness Plan (CWPP). The CWPP is the principal operating document a municipality is required to develop in order to achieve Firewise Certification. Such certification enables the municipality to access technical assistance and financial resources at the state and federal level to help defray costs associated with implementing comprehensive wildfire protection, education and outreach and fuel reduction programs.
3. *Create a model for collaboration with other municipalities:* Finally, the Fire Safety Initiative was intended to bring together the parties who have principal responsibility for forest fire management and wildfire protection programs. The intent was to identify and develop cooperative relationships among the key parties that must work together to efficiently implement management practices in a timely and cost effective manner so that this model cooperation may be applied in other parts the Pinelands.

3. PROJECT PARTNERS – ROLES

As noted above, the objective of this project was to invite the primary parties responsible for permitting and implementation of fire management practices within the Pinelands to work together to develop an action plan to address immediate fire hazards on the local level. To undertake this project, each of the involved parties had a specific set of responsibilities that was intended to result in the identification and implementation of the action plan strategies. The roles of each of the project partners are outlined below:

3.1 *New Jersey Forest Fire Service*

The New Jersey Forest Fire Service is the state’s principal agency for wildfire management. The Service is responsible for wildfire suppression, prevention education and outreach, wildfire hazard mitigation, and promoting the community-based “Firewise” program. The Services’ expertise in all facets of forest fire management was essential to effectively undertaking the Fire Safety Initiative. Forest Fire Service staff was responsible to:

1. Assist Stafford and Barnegat to identify wildfire risks
2. Help both communities identify effective mitigation measures
3. Help the communities to develop this action plan
4. Work with both communities to identify, and obtain resources that might be available to help defray costs of undertaking the action plan strategies
5. Work with the Fire Safety Committees to help each community implement the action program

3.2 *Pinelands Commission*

The New Jersey Pinelands Commission has the primary responsibility for the administration of the Pinelands Comprehensive Management Plan. As such, the Commission is responsible to review and approve forest management proposals as well as any local-level regulatory standards that may be envisioned under the Action Plan. To undertake this project, Commission staff was responsible for:

1. Overall project management
2. Technical assistance/data analysis, and assisting in review of municipal ordinances
3. Helping Stafford and Barnegat develop the Action Plan
4. Working with both communities to identify available financial and technical resources to implement the Action Plan

3.3 *Stafford and Barnegat Townships*

Land use, zoning and development controls are primarily tools of local government, subject to the Municipal Land Use Law. Consequently, the municipalities participating in the Fire Safety initiative have the primary responsibility for implementing the proposed action plan to benefit their community, protect the developed areas within their borders and preserve the natural resources and forest lands that characterize the municipalities. As a result, Stafford and Barnegat Townships were responsible for:

1. Appointing the members of their respective project working committee
2. Developing a preliminary risk assessment that was used to identify the primary list of fire safety issues
3. Working with Forest Fire Service and the Commission to identify mitigation measures
4. Reviewing local codes and standards to identify any potential conflicts with or obstacles to the action plan strategies and their eventual implementation
5. Identification of and outreach to local homeowner associations to promote fire safety standards and fuel reduction measures
6. Implementation of the mitigation measures that comprise the Action Plan

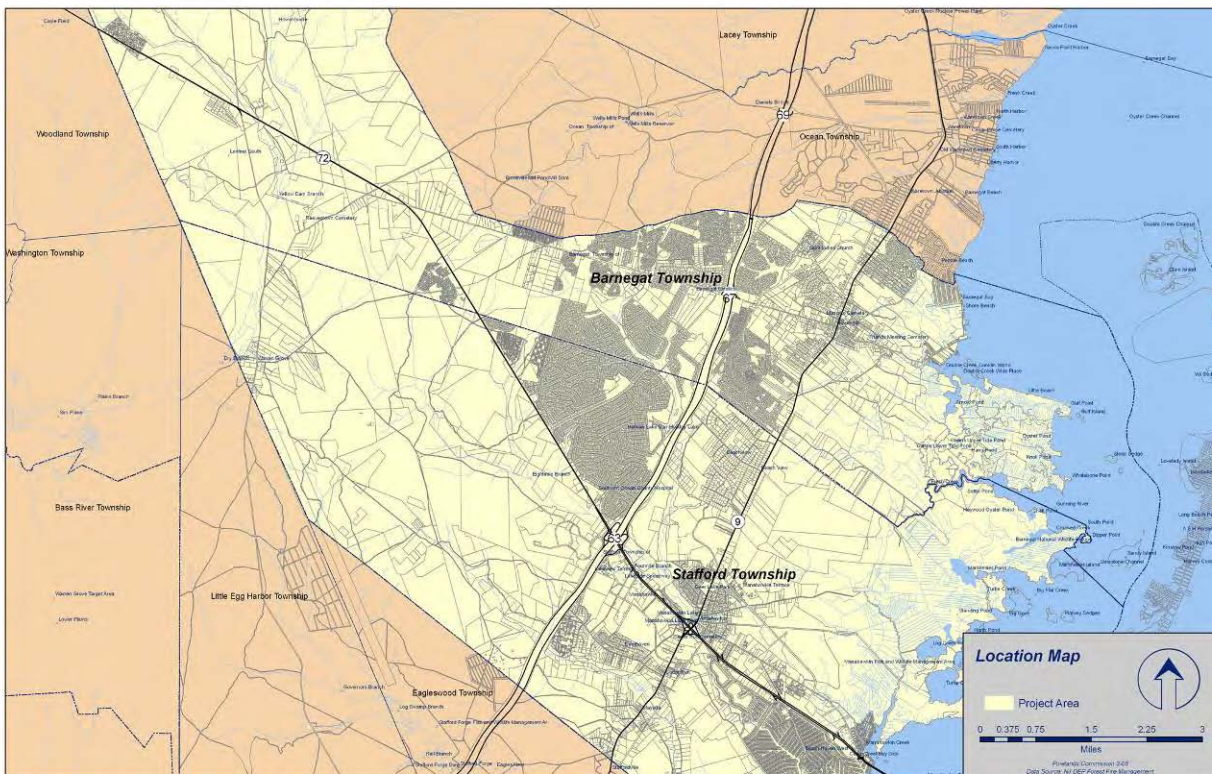
4. PROJECT AREA – MAP SERIES

4.1 Base Map

According to the Pinelands Commission's Geographic Information System data, Barnegat Township encompasses an area of 40.19 square miles, approximately 6.2 square miles of which is water. U.S. Census data reveals that the population of the Township in 1990 was 12,235. By 2000 the municipality's population had increased to 15,270, a 24.8% increase (compared to an average population increase for all of Southern Jersey of 5.7%²). Projections developed by the New Jersey Department of Labor indicate that the municipality's 2005 population was 20,314³. In 1990 there were 4,902 housing units in Barnegat and by 2000 this number had increased by almost 24%, to 6,066.

By comparison, Stafford Township encompasses 54.62 square miles, approximately 8.3 of which is water. Stafford's 1990 population was 13,325 which, by 2000, grew to 22,235 people – an increase of slightly more than 69%. New Jersey Department of Labor projections indicate that by 2005, Stafford's population increased to 25,249. In 1990 there were 8,298 housing units in Stafford and by 2000 this number had jumped by almost 40%, to 11,522 dwellings.

Between 1990 and 2000 the population of both Stafford and Barnegat has grown at rates that were far higher than the average rate of growth for Southern New Jersey as a whole. As the density of the roadway patterns illustrated on the map below suggest, the Townships' growth has occurred within the triangular area bounded by the Garden State Parkway, Route 72 and the Barnegat/Ocean Township boundary or the area between Route 9 and the Garden State Parkway.

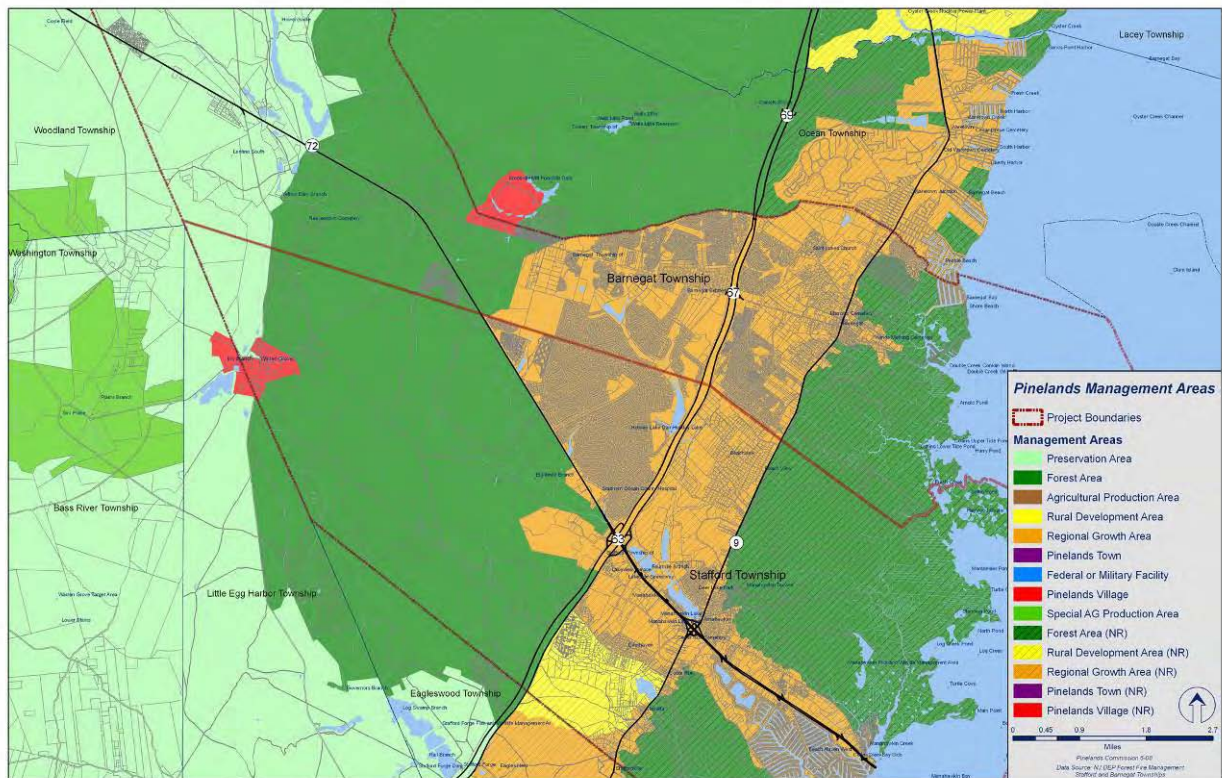


² Southern New Jersey is comprised of the 202 municipalities within Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Ocean and Salem Counties - New Jersey Pinelands Commission Long-Term Economic Monitoring Program, 2007 Annual Report. December 2007, p.14

³ Source: New Jersey Pinelands Commission Long-Term Economic Monitoring Program, 2007 Annual Report. December 2007, Appendix G. Municipal Fact Book.

4.2 Pinelands Management Areas

Slightly more than 46% of the project area, the portion of Stafford and Barnegat Townships that is west of the Garden State Parkway, is within the Pinelands Area and is governed by the Pinelands Comprehensive Management Plan, administered by the Pinelands Commission. The remaining 54% of the project area (the area that lies east of the Garden State Parkway) is subject to the Coastal Area Facilities Review Act (CAFRA) administered by the New Jersey Department of Environmental Protection. It should be noted that the areas of Stafford and Barnegat Townships within the Pinelands Area defined the project area and were the primary areas of focus for Action Strategies purposed under this Fire Safety Initiative.



Slightly more than 23% of the area within the Pinelands Area, 6,500 acres, is designated as either Regional Growth Area or Pinelands Village. The remaining 77% of the area west of the Garden State Parkway, 21,496 acres, is designated as Preservation or Forest Area where development is limited.

Almost 70% of that portion of Barnegat and Stafford within the CAFRA area, 23,851 acres, is designated as Forest Area. The remaining 30% of the portion of the Townships east of the Garden State Parkway, 8,766 acres, is designated Rural Development or Regional Growth Area.

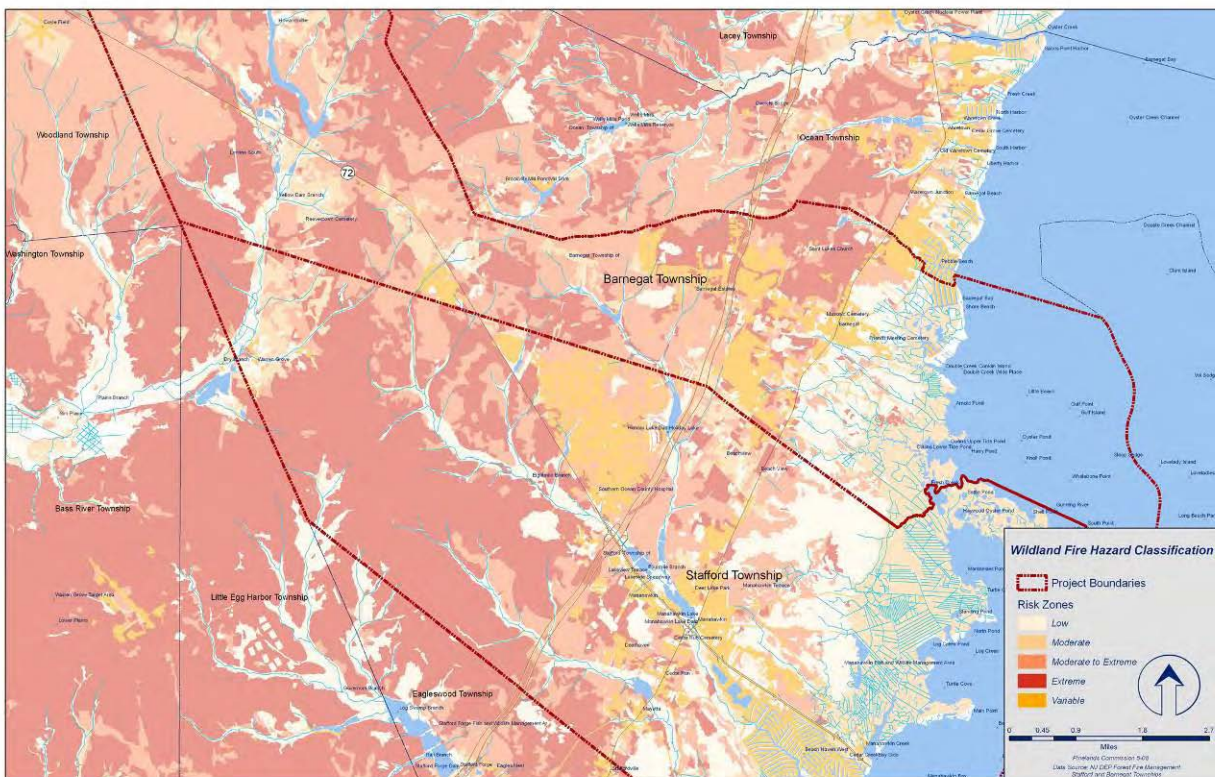
There are no intermediate zones between the areas in the Pinelands or the CAFRA areas that provide a transition between areas where growth is permitted and those where growth is restricted, a factor that permits development and open forests to directly abut one another. These areas, otherwise known as Wildland-Urban Interface areas (WUI) (see footnote 1 on page 2) are where fuel reduction and forest fire management needs are most pronounced.

4.3 Fire Hazard Zone Map

The delineation of fire hazard zones in the Pinelands is based upon a **Fire Management Plan** that was prepared by the Bureau of Forest Fire Management.⁴ According to this Plan, the Wildfire Hazard Classification System is based on vegetation types. As noted in the Plan, “The ratings are based on the rates of fire spread of the native vegetation and their resistance to fire suppression activities. There are four classes of rating corresponding to four levels of wildfire hazard severity. A rating of “1” represents a low-hazard classification. A rating of “4” represents an extreme-hazard classification. The following table provides a description of the range of hazard classifications and the associated vegetative types:

Rating	Hazard	Vegetative Types
1	Low	Cedar, Cedar-maple, Maple-cedar, Maple Gum-magnolia, Maple-pine, Pine-maple, Red gum
2	Moderate	Mixed hardwood, mature oak, mature oak-pine, mature pine-oak, mature upland pine (dense and large $\geq 20'$ tall and $\leq 20'$ spacing)
3	High	Open upland pine $\leq 20'$ tall and $\geq 20'$ spacing
4	Extreme	Upland pine small or variable (plains type) immature pine-oak, scrub oak-pine, pine-scrub oak, pitch pine lowland

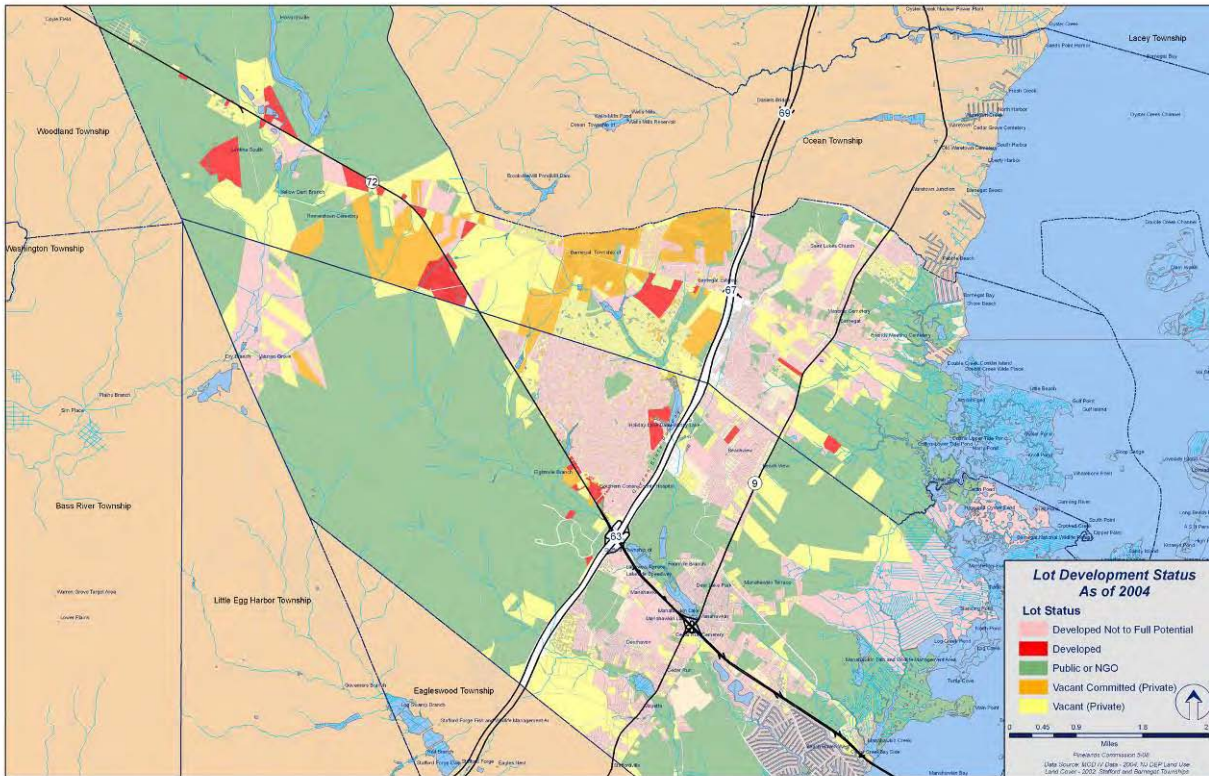
According to the Wildfire Hazard boundary data provided by the Bureau of Forest Fire Management, approximately 15.7% of the project area is designated as having a “Low” wildfire hazard rating, approximate 18.9% of the project area is within the “Moderate” hazard area, 24.2% of the project area is designated as “High” hazard, 30.2 % of the area is rated as “Extreme” hazard, and 9.8% of the project area is rated as “Variable” hazard. Although almost 55% of the project area has a High or Extreme Wildfire hazard rating, these zones are not distributed uniformly. They form a patch-quilt based on the widely varying forest micro-environments throughout the area, a pattern that is readily apparent from the map below.



⁴ “Fire Management Plan”, Prepared for the New Jersey Pinelands Commission by the Bureau of Forest Fire Management, Division of Parks and Forestry Department of Environmental Protection’s, January 10, 1979

4.4 Lot Development Status as of 2004

As noted, above, both Stafford and Barnegat Townships have grown rapidly since 1990. According to projections from the New Jersey Department of Labor, the 2005 population for the two municipalities has increased by over 78% (25,560 in 1990, 45,563 in 2005). However, as the map below illustrates, by 2004 most of the area development was concentrated between the Garden State Parkway and Route 9 or the triangle formed by the Garden State Parkway, Route 72 and the Barnegat/Ocean Township boundary.



As the following table reveals, in 2004 (*the most recent period for which land use and development data is presently available on a township-wide level*) the developed area of the Townships represented a relatively small portion of the combined land area of both municipalities. An analysis of the parcel level development data indicates that approximately 73% (35,467 acres) of the area of both municipalities was either vacant or owned by public entities (such as the State of New Jersey, the municipalities or Ocean County)⁵. Large expanses of publicly-owned lands represent an opportunity for the State Forest Fire Service to apply effective and comprehensive management to limit wildfire risks.

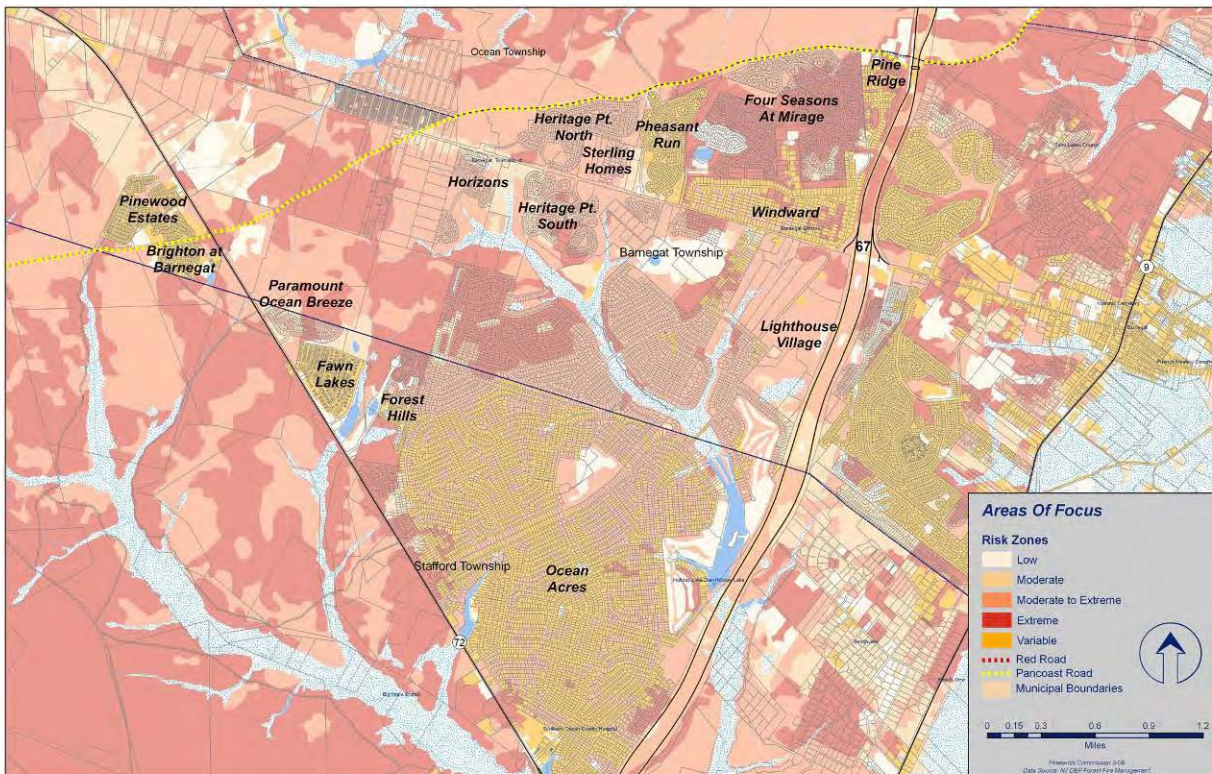
**Development Status as of 2004
Barnegat/Stafford Townships**

Status	# Parcels	Acres	Square Miles	% of Total
Developed	1,016	2,803	4.4	5.8%
Developed Not to Potential	17,312	9,325	14.6	19.2%
Public	1,831	28,571	44.6	58.8%
Quasi Public	12	80	0.1	0.2%
Other	522	993	1.6	2.0%
Vacant	5,055	6,816	10.6	14.0%
Total	25,748	48,587	75.9	100.0%

⁵ Note: The total area for which development status data is reported is 75.9 square miles. In addition, 5.223 square miles is designated as right-of-way and 13.872 square miles of the area of both Townships is designated as water

In comparison to the public lands, slightly more than 27% (20.5 square miles) of the combined area of Stafford and Barnegat Townships was designated as developed in 2004. As the map below helps to emphasize, much of the developed areas in both Townships are immediately adjacent to large expanses of forested area that are designated as “Moderate to Extreme” or “Extreme” wildfire hazard zones. In addition to the residential communities concentrated along and north of Route 72 and the areas adjacent to the Garden State Parkway, a limited number of single-family dwellings can be found dispersed within the forested areas in both municipalities⁶. Where this has occurred, it has fragment forest areas creating challenges for effective forest fire management, particularly since such management activity can only be undertaken by New Jersey’s Forest Fire Service on publicly-owned lands.

4.5 Residential Communities

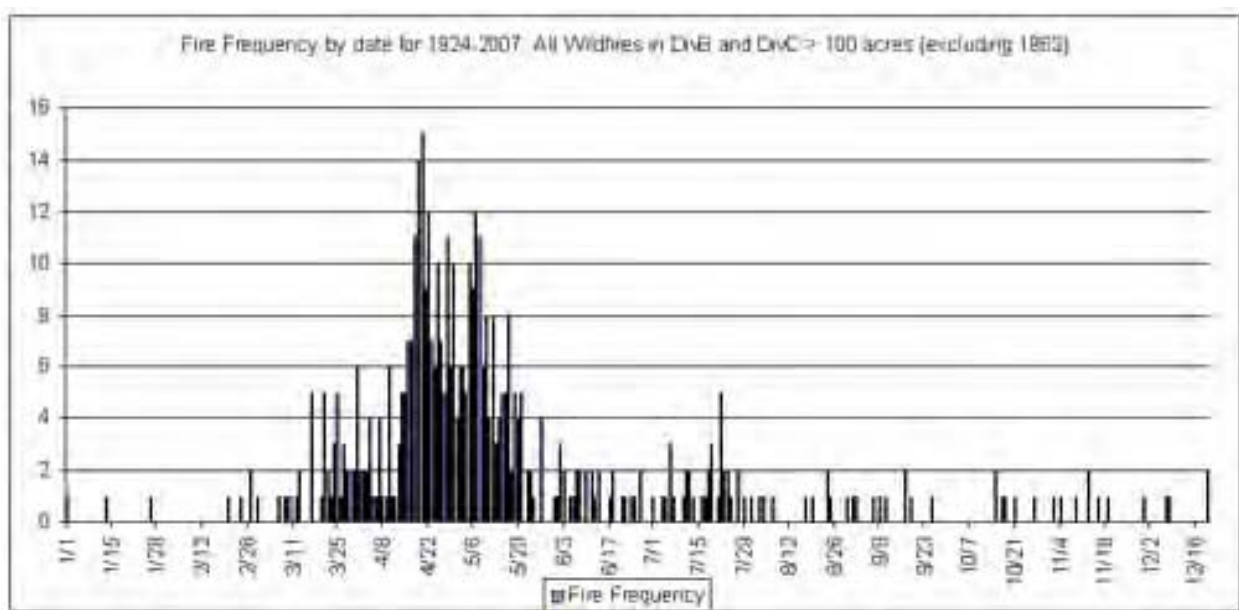


⁶ Low-density, large lot residential development is permitted within the Pinelands Forest Area Management Area. In Stafford and Barnegat Townships, the minimum size of a single family lot in the Forest Area is 17 acres.

5. FIRE HISTORY

In addition to the geographic analysis that was conducted to provide the Fire Safety Initiative working group with background data, information was provided on area fire frequency and history.⁷ A series of relevant conclusions can be drawn from the following three tables, “*Fire Frequency by Date for 1924-2007, All Wildfires in Div B and Div C >100 acre*”, “*Acres Burned and Fire Frequencies per year for Large Wildfires, (>100 acres) within Stafford and Barnegat Boundaries*”, and “*Ignition Frequencies in Stafford and Barnegat Townships, 1991-2006 (all fire sizes)*”:

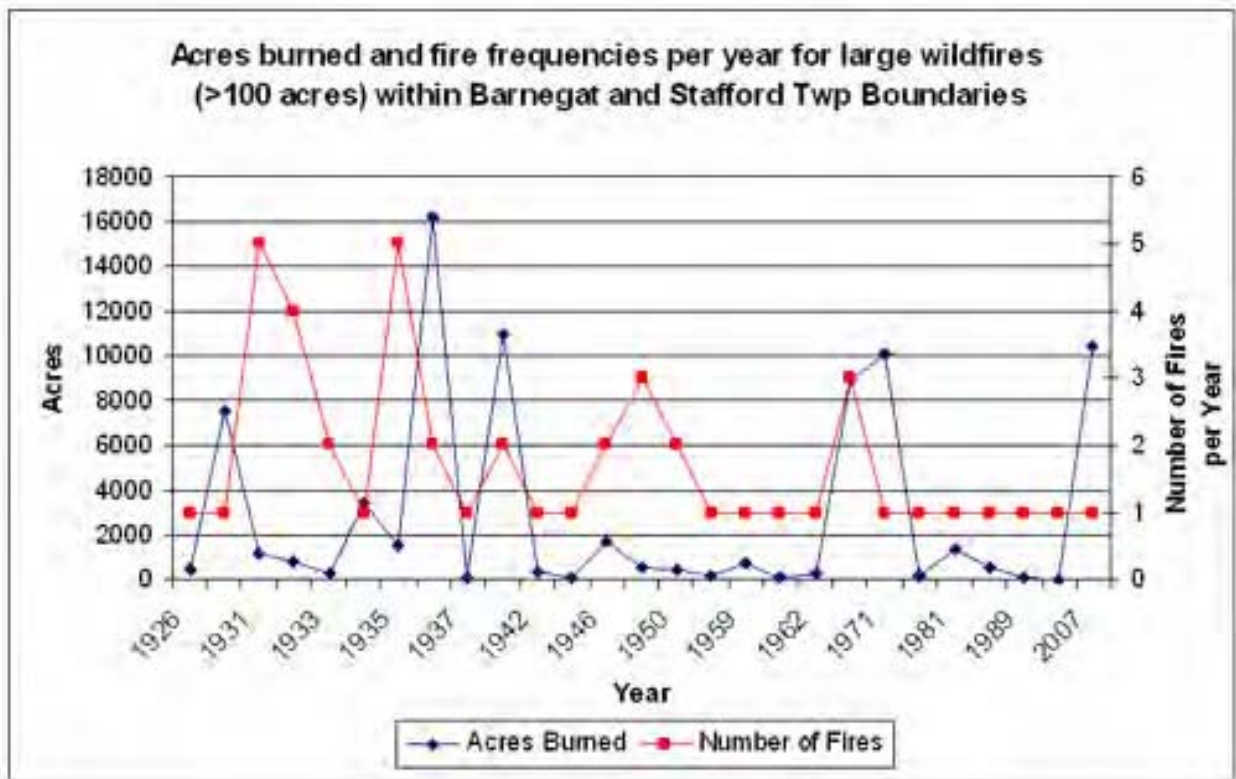
- *Fire Frequency 1924-2007*: Since 1924, larger fires (>100 acres in size) primarily tend to occur between the beginning of April and the beginning of June. These are the periods when the moisture levels of the forest canopy tend to be lowest⁸, the forest canopy is bare or just beginning to leaf out (so the forest floor dries out quickly), ambient temperatures are elevated, humidity levels tend to be low, and winds tend to be gusty with cold front passages - characteristics that would serve to rapidly spread any fires that are ignited.



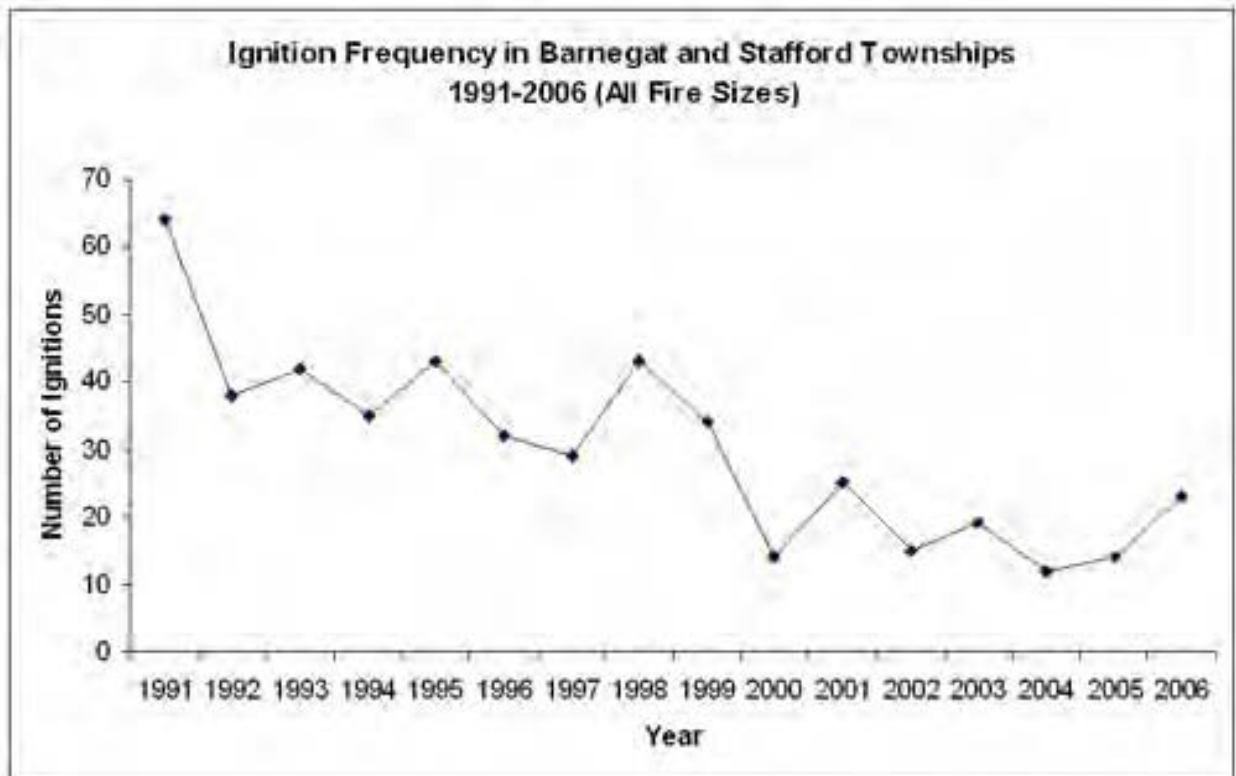
- *Acres Burned*: Between 1926 and the mid 1940s, large wildfires occurred in the project area on a frequent basis. Since the 1950's the number of large wildfires has tapered off markedly, probably because there has been greater emphasis on fire management due to the increasing presence of development within the area. However, this table also reveals that the wildfires that have occurred since the 1950s tend to be large events, probably because fuel that would otherwise have been consumed by frequently occurring fires, has been allowed to accumulate in forest areas.

⁷ Data was provided by Inga LaPuma, a PhD Candidate in Rutgers University's School of Environmental and Biological Science, Ecology and Evolution Graduate Program and generated with a grant from the Center for Remote Sensing and Spatial Analysis (CRSSA)

⁸ Source: U.S. Forest Fire Service



- Ignition Frequency:* The number of fires in Stafford and Barnegat of all sizes over the past 15 years has been steadily declining. This trend can generally be attributed to increased efforts to raise fire safety awareness. However, it should also be pointed out that almost all wildfires (estimates are as high as 99%) that occur within the project area, and elsewhere, are ignited as a result of human activity, underscoring the need for sustained education efforts.



6. PROJECT ISSUES

Based on the foregoing data analysis, Stafford and Barnegat Townships represent typical examples of Pinelands communities with classic fire management issues. Both communities have grown rapidly over the past several years, at a rate exceeding that of most other municipalities in southern New Jersey⁹. The areas where this growth has occurred are immediately adjacent to extensive forested areas. Some residential development is scattered within forest areas preventing the application of landscape-scale fire management measures. The surrounding pine-dominated forests tend to be highly flammable and, in fact are ecologically dependent upon frequent fire activity. However, to protect the inhabitants of the residential communities that extend to the borders of these forested areas and the residences that are scattered within them, fire incidence has been suppressed. This has contributed to the accumulation of greater standing fuel loads thereby increasing the probability and risk of catastrophic fire events as is evident from more recent fire-frequency trends. In view of these factors the project working group identified the following series of critical fire safety issues that need to be addressed.

1. **Lack of jurisdictional coordination:** Where multiple jurisdictions overlap (e.g. State, County, municipal governments) it is difficult to determine who has responsibility for forest fire management and wildfire mitigation. Within the project area, this issue is most evident in attempting to promote fuel reduction measures at the wildfire/urban interface where Pancoast Road separates Ocean, Barnegat and Stafford Townships.
2. **Ownership patterns:** Within the project area, pockets of privately owned parcels are interspersed among, and therefore fragment, lands held in public ownership. Some residential units have been constructed on these privately-owned parcels. This condition makes landscape-wide fuel reduction efforts difficult and less effective because the NJ Forest Fire Service is only empowered to undertake forest fire management activities on publicly-owned lands.
3. **Limited ability to address fire hazards on private property:** On private property the primary opportunity to impose fire hazard mitigation measures, such as fuel breaks, occurs during the review process when new development is proposed. Both the Pinelands Commission and local zoning and planning officials have the authority to ensure that such measures are incorporated into development design at this point. However, the Commission has no enforcement authority and municipal authority to enforce property maintenance standards is limited once construction activity is completed and a Certificate of Occupancy is issued. Consequently, municipalities have only minimal legislative authority that enables them to ensure that fuel breaks, when established, are maintained. Furthermore, since the New Jersey Forest Fire Service cannot undertake fire management activities on private property without explicit permission, its ability to promote risk mitigation on privately-owned land is limited primarily to education and/or voluntary participation.
4. **Lack of strict adherence to regulations:** public agencies responsible for development review and approval need to be aware of existing fire management regulations and ensure that strict adherence to these standards is achieved. Regulators need to ensure that these standards are incorporated and applied early in the design review stage for all proposed development.
5. **Regulatory review:** The fire break proposal review process tends to be lengthy and there is confusion, on the part of the regulated community, regarding the standards used to determine when, and under what conditions formal applications are required. This tends to delay the implementation of management strategies to reduce wildfire potential.
6. **Emergency response does not focus on fire risks:** The Office of Emergency Management typically focuses on flood-hazard mitigation and allocates only limited attention to fire hazard risk mitigation. Furthermore, although emergency response at the local-level attempts to address

⁹ Stafford Township was the 4th fastest growing municipality in South Jersey, Barnegat was the 10th fastest growing municipality. Source: New Jersey Pinelands Commission Long-Term Economic Monitoring Program, 2007 Annual Report. December 2007, Appendix G. Municipal Fact Book.

all potential public safety hazards, the limited amount of financial resources that is typically available presents practical limitations to fully funding all-hazard response capability.

7. **Forestry economics:** fuel reduction activities on relatively small, individual and/or scattered parcels are labor-intensive and therefore will not be sufficiently economically viable to attract the interest of commercial foresters. Consequently, it is necessary to develop cost-effective strategies that will ensure that forestry activities designed to reduce wildfire risk, such as selective thinning, are economically viable and thereby commercially attractive.

7. ACTION PROGRAM

The Fire Safety Initiative was designed to result in a series of action strategies to address specific and immediate wildfire risks that could be readily implemented by the project partners. The objective was to determine what actions can and should be undertaken in the short term and immediately begin implementing these actions with the goal of developing the collaboration among the responsible agencies to create a longer-term working relationship to comprehensively address wildfire risk into the future. Consequently, the Action Plan outlined on the following pages is comprised of the following five elements:

1. Create and maintain a linear fuel break along Pancoast Road¹⁰ and perimeter fuel breaks at Brighton at Barnegat, Pinewood Estates and Scrubby Pines Camp Ground where development and open forest land immediately abut
2. Education and outreach initiatives for local elected and appointed officials, homeowners groups and schools
3. Creation of a Community Firewise Committee
4. Regulatory amendments to assure that wildfire safety is an integral element of development design
5. Eventual development of a Community Wildfire Protection Plan (CWPP)

The Action Program identifies the key steps that should be followed to undertake each of the primary program elements. The Program specifies which individual or agency should have the *principal* responsibility to undertake each step, proposes a phasing plan for the sequence in which these steps should be taken and identifies likely funding sources to help defray costs associated with performing these tasks. Clearly, many different individuals and organizations will need to work together in order to successfully implement the Action Program. Consequently, it is important to stress that although the Action Program specifies one party who will be chiefly responsible to undertake each Program strategy, it is anticipated that, as appropriate, these individuals and/or organizations will seek collaboration with other affiliated agencies. It is also important to note that the Action Plan has been developed with the expectation that the recommended strategies can be implemented immediately following the adoption of the Plan by each of the participating municipalities.

The overarching challenge for the Fire Safety Initiative is to ensure that the Action Program strategies coalesce to balance the need to preserve and protect the ecological resources of the Pinelands, which necessarily require the perpetuation of the historical fire cycles upon which these resources depend, with the obligation to protect the welfare and safety of the residents that have settled in Pinelands municipalities.

¹⁰ Pancoast Road extends from Waretown (Route 9) to Warren Grove (Route 539). It is a pre-Colonial sand road that was used as an early commerce route. The historic and cultural significance of the roadway should be considered as plans for a fuel break are developed

TASK	RESPONSIBILITY	PHASING	FUNDING SOURCE	COMMENTS
1.1 ESTABLISH AND MAINTAIN FUEL BREAKS – PANCOAST ROAD LINEAR FUEL BREAK (see Appendix 1)				
a. Identify chief decision-makers for all parties of interest	Fire Safety Initiative working group	Month 1	In-house staff costs, General Funds	Likely interested parties include Stafford, Barnegat and Ocean (Waretown) Townships, Ocean County, Forest Service, Pinelands Commission, reps from abutting residential communities
b. Conduct site assessment and prepare a Pancoast Road fuel break design concept ¹¹	NJ Forest Fire Service	Month 2	In-house staff costs, General Funds	Fuel break design will be refined following meeting with interested parties. See Appendix 1 for list of affected parcels
c. Hold meeting with all parties to create Pan Coast Road Fire Break working committee to review fire break concept, identify specific tasks, outline permitting requirements, develop schedule and assign implementation responsibilities, prepare permit application.	At invitation of Stafford and Barnegat Township Mayors/Twp. Administrators	Month 3 through 4	In-house staff costs, General Funds	At a minimum it will be necessary to determine the presence of any rare plants or animals and cultural resources, assemble property-ownership data and secure access-permission for all parcels where work will be conducted in order to obtain permits. A 4-month permitting process is envisioned, however, delay in obtaining any of the required information will extend the implementation schedule. Stress need to maintain the fuel break once established.
d. Develop rfp for forestry services	NJ Forest Fire Service	Month 5	In-house staff costs, General Funds	Patterned on the Hay Road Fire Break proposal.
e. Secure Permits, Bid solicitation process	NJ Forest Fire Service	Month 6 through 7	Community Hazard Mitigation Grant – NJ Forest Fire Service	RFP could be a no-bid proposal – foresters harvest and keep all materials for resale. Should also contact co-generation plants to determine potential level of interest If rfp is a bid proposal, the per/acre cost will be based on tree density and management criteria.
f. Bid Award, begin fuel break development	Commercial foresters	Month 8	Community Hazard Mitigation Grant – NJ Forest Fire Service, participating agencies	Project management by NJ Forest Fire Service
1.2 ESTABLISH AND MAINTAIN FUEL BREAKS – BRIGHTON AT BARNEGAT, PINWOOD ESTATES, SCRUBBY PINES PERIMETER FUEL BREAKS (see Appendix 1)				
a. Meet with community owner's association and camp ground owner to confirm interest and commitment to establish and maintain fuel break	Barnegat Fire Safety Committee	Month 1	In-house staff costs, General Funds	The residential communities and the camp ground will have to assume responsibility for ongoing fuel-break maintenance.

¹¹ Roads, rights-of-way, wetlands and waste disposal sites shall be used as fire breaks to the maximum extent practicable (Comprehensive Management Plan, Part XII Fire Management, Section 7:50-6.124 (a) 5. iii)

TASK	RESPONSIBILITY	PHASING	FUNDING SOURCE	COMMENTS
b. Contact all affected parcel owners from whom property access permission will be required	Barnegat Fire Safety Committee	Month 2	In-house staff costs, General Funds	See Appendix 1 for list of affected parcels
c. Conduct site assessment and prepare fuel break design concept	NJ Forest Fire Service	Month 2	In-house staff costs, General Funds	The scope of work to establish the fuel break should be bundled into the Pancoast road project.
d. Prepare permit application	NJ Forest Fire Service	Month 3 through 4	In-house staff costs, General Funds	Determine the presence of any rare plants or animals or cultural resourced, assemble property-ownership data and secure access-permission for all parcels where work will be conducted in order to obtain permits.
e. Develop rfp for forestry services	NJ Forest Fire Service	Month 5	In-house staff costs, General Funds	Patterned on the Hay Road Fire Break proposal.
f. Secure Permits, Bid solicitation process	NJ Forest Fire Service	Month 6 through 7	In-house staff costs, General Funds	RFP could be a no-bid proposal – foresters harvest and keep all materials for resale. If rfp is a bid proposal, the per/acre cost will be based on tree density and management criteria.
g. Award bid, begin fuel break development	Commercial foresters	Month 8	Community Hazard Mitigation Grant – NJ Forest Fire Service, participating agencies	Project management by NJ Forest Fire Service

2. EDUCATION AND PUBLIC OUTREACH				
a. Assemble education materials, plan homeowner education program	NJ Forest Fire Service	Month 1	In-house staff costs, General Funds	Much of the materials that will be needed to conduct education workshops has already been developed by the Forest Fire Service
b. Identify and invite representatives from homeowner associations of all residential communities in Stafford and Barnegat Townships to participate in a “Firewise Association”	Fire Safety Initiative working group	Month 2	In-house staff costs, General Funds	Need to determine how to get home owners who do not live in communities with homeowner associations to participate
c. Hold a “Firewise” education event emphasizing wildfire home safety, defensible space, fire-resistant landscaping and fire-safe construction techniques as well as wildfire evacuation planning	Stafford and Barnegat Firewise Committees	Month 3	In-house staff costs, General Funds	Describe the benefit of private parties to working together to undertake comprehensive and ongoing forest fire management (thinning, debris removal, etc) to promote fire safety and how this can be accomplished cost-effectively

TASK	RESPONSIBILITY	PHASING	FUNDING SOURCE	COMMENTS
d. Work with residents' Firewise Association to develop an rfp for regular (annual) fuel reduction, grouping many residential communities together for cost efficiency, submit permit application	NJ Forest Fire Service ¹²	Month 4 through 5	In-house staff costs, General Funds	It is anticipated that the Pan Coast Road proposal could encompass this work thereby increasing cost-efficiency. See comments at 1.c. above relative to permit requirements. (Note: Depending upon the size of the area affected, an application to the Commission may not be needed.)
e. Secure Permits, Bid solicitation process	NJ Forest Fire Service	Month 6 through 7	Homeowner Association maintenance fees, In-house staff costs, General Funds	RFP could be a no-bid proposal – foresters harvest and keep all materials for resale. Should also contact co-generation plants to determine potential level of interest. If rfp is a bid proposal, the per acre cost will be based on tree density and management criteria.
f. Award bid, undertake first comprehensive fuel reduction/forest fire management activity on private lands	NJ Forest Fire Service	Month 8	Community Hazard Mitigation Grant – NJ Forest Fire Service, Homeowner Association maintenance fees	Joint management of this first private development fuel reduction project – NJ Forest Fire Service and Firewise Association
g. Conduct a regulatory training session for Stafford and Barnegat	NJ Forest Fire Service	Month 3	In-house staff costs, General Funds	Designed to renew familiarity with CMP and local controls and ensure local development review processes and fire safety standards are coordinated and rigorously applied. Session to include all individuals responsible for development review decision-making. <i>No new development should be permitted in high fire hazard areas without strict adherence to fire safety requirements.</i>
h. Conduct an annual training program for local officials to discuss forest fire safety practices and promote firewise certification	NJ Forest Fire Service	1 evening meeting annually	In-house staff costs, General Funds	To be sponsored by the Pinelands Municipal Council
i. Review and update curricula for elementary schools, work with Stafford and Barnegat schools to promote and present fire-safety program	Stafford and Barnegat Firewise Committees	Month 6 through 7	In-house staff costs, General Funds	The objective of this strategy is to develop model education programs and materials that can be used by schools throughout the Pinelands to introduce students to wildfire safety

¹² For steps 2d through 2f: NJFFS will provide technical assistance to the Firewise Association and have primary responsibility to develop the RFP, conduct the bidding process and prepare a model agreement for services. The Association will assume administration responsibilities after the first year of implementation.

TASK	RESPONSIBILITY	PHASING	FUNDING SOURCE	COMMENTS
j. Conduct Firewise event for elementary school students	Stafford and Barnegat Firewise Committees	1-day event to be held in May or June	Defensible Space Initiative	Based on event held in May 2008. Event to include age appropriate session on Pinelands fire ecology, defensible space, fuel triangle, fire safety response
k. Conduct a “Firesafety Cleanup Day” in Stafford and Barnegat	Stafford and Barnegat Firewise Committees	1-day event in each municipality	Community Hazard Mitigation Grant	To be held in a central location within the municipality. Commission a shredder/chipper and invite residents to clean fuel materials from gutters and yards so that they can be shredded and used as yard mulch or removed.

3. FIREWISE COMMITTEE

a. Appoint Firewise Committees in both Stafford and Barnegat Townships	Stafford and Barnegat Township Mayors	Month 1	NA	Potential members: Planners, DPW, Fire, Water, Police, EMS, Chamber of Commerce, Homeowner Assoc., Mayor, Board of Realtors, NJ Fire Service, Section Warden
b. Conduct Firewise Committee training sessions	NJ Forest Fire Service	Month 3	Defensible Space Initiative	One session with both municipalities present. Needs to be conducted on a periodic basis as Committee members change. Coordinate with “Firewise Association”

4. REGULATORY AMENDMENTS

a. Include fuel break/fire management compliance as a standard requirement for issuance of <i>all</i> Certificates of Occupancy (CO)	Municipal zoning official, planning board, governing body	Month 1	In-house staff costs, General Funds	Fuel breaks should be delineated on all approved site plans and plat plans provided to individual home owners. Whenever a CO is requested - at completion of new construction or when property ownership transfers – issuance should be predicated on site inspections that assure that fire hazard fuel breaks are properly maintained.
b. Consider measures to clarify, coordinate and streamline permitting requirements	NJ Forest Fire Service	Month 8-10	In-house staff costs, General Funds	Work with Pinelands Commission staff to determine which fire management practices require permits and those that may not e.g. fuel break/routine fire hazard maintenance. Example: Develop an area-wide fire management plan and request one permit for all activities envisioned in the plan.
c. Develop model zoning ordinance and subdivision regulations	Pinelands Commission	Month 8-10	In-house staff costs, General Funds	Model to be based on existing Fire Management provisions in the Pinelands CMP but should include standards for fire control plans (including fuel break maintenance) and site access.

TASK	RESPONSIBILITY	PHASING	FUNDING SOURCE	COMMENTS
d. Review and update Pinelands Comprehensive Management Plan to correspond to current fire management standards	Pinelands Commission,	Month 11-20	In-house staff costs, General Funds	Examples: in FA and PAD require 200' fire break regardless of # of residential units; set standards based on Hazard Zone designation; eliminate right to cultural housing in FA, in high-hazard areas require clustering and shift development as close to existing roads, or other structures, as possible
e. All Pinelands municipalities revise local regulations for consistency with CMP	Municipal zoning official, planning board, governing body	Month 20-32	In-house staff costs, General Funds	Municipalities have one year to bring local codes into conformance with CMP. Assistance from Commission Staff and NJ Forest Fire Service
f. Recommend modifications to the Uniform Construction Code and Residential Site Improvement Standards to promote fire safety	Stafford and Barnegat Firesafety Committees	Month 11-20	In-house staff costs, General Funds	Where development is permitted in areas with high wildfire hazard ratings or at the Wildland Urban Interface, construction standards should include requirements for roof, siding and window materials based on fire rating. Driveway standards should require access for safety vehicles. Landscape design standards for defensible space and use of fire resistant plants should be proposed. Seek support and cooperation from League of Municipalities

5. COMMUNITY WILDFIRE PROTECTION PLAN				
a. Develop Community Wildfire Protection Plan (CWPP) including field surveys, vulnerability assessment, structural assessment, implementation plan	Forest Fire Service	Month 7	Community Hazard Mitigation Grant – NJ Forest Fire Service	Use Fire Safety Initiative Action Plan, mapping and analysis already performed by the project working group as the basis for the Plan
b. Identify resources for implementation	Forest Fire Service	Month 9-10	Community Hazard Mitigation Grant – NJ Forest Fire Service	
c. Present CWPP to Stafford and Barnegat governing bodies for adoption	Stafford and Barnegat Firesafety Committees	Month 11	In-house staff costs, General Funds	
d. Submit CWPP for “Firewise” certification	Stafford and Barnegat Firesafety Committees	Month 12	In-house staff costs, General Funds	Submit proposal to Forest Fire Service for recommendation for certification from the National Firewise Communities USA
e. Encourage Ocean County to participate in FEMA’s Emergency Operations Plan Program	Stafford and Barnegat Firesafety Committees	Month 14	In-house staff costs, General Funds	Needed to develop a regional planning basis and promote cooperation between all parties with responsibility to undertake wildfire management. Certification would also help to attract federal funds for implementation

***FIRE SAFETY INITIATIVE
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Appendix 1

***Fuel Breaks Details
Pancoast Road
Brighton at Barnegat, Pinewood Estates, Scrubbie Pines Campground***

1.1 Establish and Maintain Pancoast Road Linear Fuel Break

The Fire Safety Working Group identified the area adjacent to Pancoast Road as the highest priority location to establish a continuous fuel break primarily because residential dwellings have been constructed immediately adjacent to the roadway and setback that would be adequate to create fuel break areas have been established in only a few instances along the roadway. In addition, a dense forest occupies those areas of Ocean Township immediately adjacent to the concentrated residential developments in northern portion of Barnegat Township, creating potential wildfire risk (see illustration below). The proposed 200' wide Pancoast Road Fuel Break extends approximately 2.3 miles along the roadway (from the westerly border of Heritage Point - North to the Garden State Parkway). This fuel break straddles Pancoast Road (75' on either side of the roadway – tax maps reveal that the existing Pancoast Road right-of-way is 50' wide.). In order to establish **and maintain** this fuel break it will be necessary to secure permission from the owners of 14 parcels in Ocean Township and the concurrence of the owners of 61 parcels located in 3 developments (Pine Ridge, Four Seasons At Mirage and Pheasant Run) in Barnegat Township. (A recorded 200' wide fuel easement has been established straddling Pancoast Road immediately north of Heritage Pt. North.)



1.2 Establish and Maintain Brighton at Barnegat/Pinewood Estates/Scrubbie Pines Campground Fuel Breaks

As noted in the introduction to this Action Plan, the Warren Grove wildfire that occurred in May 2007 burned over 15,550 acres. The illustration below reveals this wildfire encompassed the Brighton and Barnegat and Pinewood Estates residential communities and it extended to the southerly border of Scrubby Pines Camp Ground located on the northerly side of Route 72.

The aerial photograph below reveals that residential units within the Pinewood Estates and Brighton at Barnegat developments have been placed immediately adjacent to the parcel boundaries of the periphery of these developments, putting them at considerable risk in the event of a wildfire. Scrubby Pines Camp ground does appear to have adequate room between the parcel boundaries and camp sites however canopy cover and understory growth has been permitted to extend to the immediate edges of the camping areas. None of these three developments have fuel breaks that might otherwise provide some level of protection if a wildfire occurred.

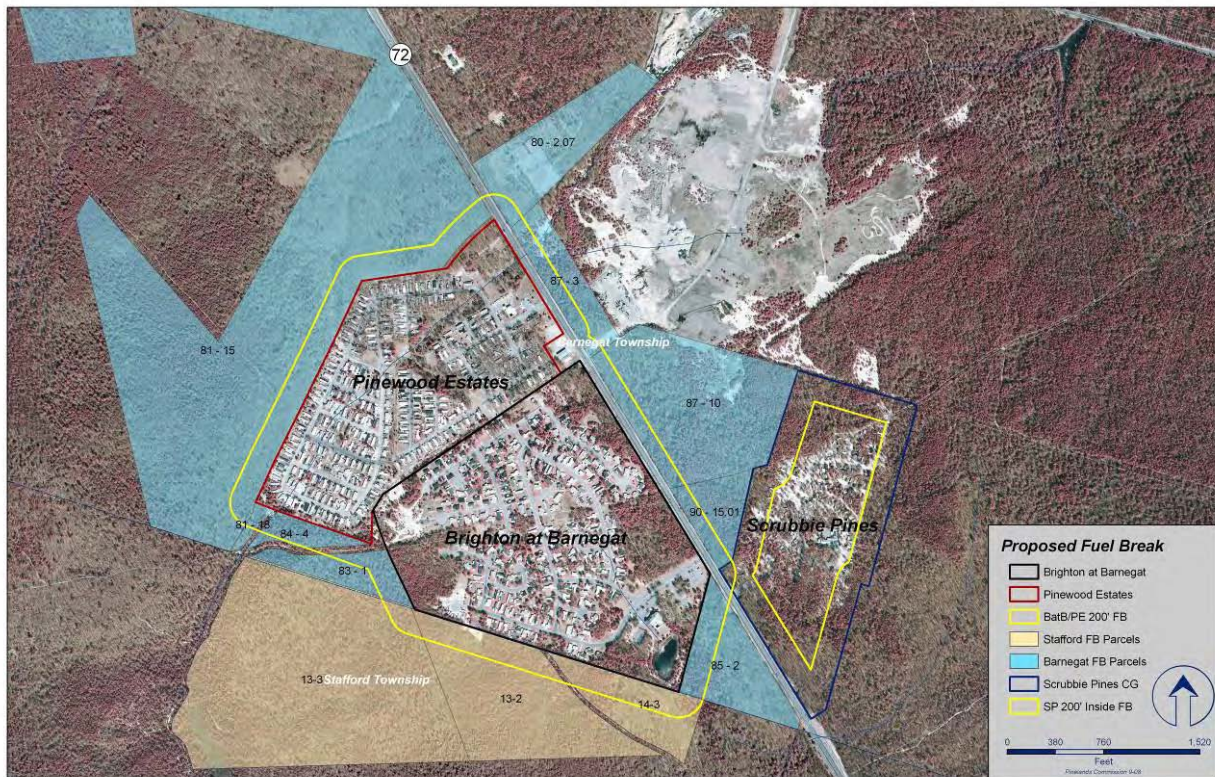


In order to establish perimeter fuel breaks for Pinewood Estates and Brighton at Barnegat it will be necessary to request that owners of adjacent parcels permit selective thinning and clearing of underbrush along the border with these residential development. In order to establish the proposed 200' wide fuel break, it will be necessary to secure the permission of the owners of 9 parcels in Barnegat Township and 3 parcels in Stafford Township, shown in the illustrations on the following page. The aerial photographs on the following page also reveal that to a large extent it will be possible to establish a 200' wide fuel break entirely within the parcel boundaries of the Scrubby Pines camp ground.

Proposed Fuel Breaks



Affected Parcels



Maintenance Program

It is important to stress that once the proposed linear and perimeter fuel breaks are established it will be necessary to conduct an ongoing management program to remove potentially combustible materials to maintain these breaks. A maintenance program would entail a periodic (3 to 5 year intervals) overall assessment of the condition of the ground vegetation, shrub growth and tree canopy coverage within the fuel break area. This assessment would be followed by mowing and pruning of undergrowth and removal of dead trees or vegetation burning, or a combination of these techniques, to reduce ground- and shrubby-fuels. It should be noted that depending upon the extent of work needed to maintain the fuel break, a permit from the Pinelands Commission may not be required.

List of Affected Parcels

In order to establish the proposed linear fuel break along Pancoast Road and the perimeter fuel break around Brighton and Barnegat and Pinewood Estates it will be necessary to obtain permission to access the following parcels (the recommended Scrubby Pines Camp Ground fuel break can be established within the camp ground parcel boundaries):

Brighton and Barnegat and Pinewood Estates

Location	Zoning	Block	Lot	Municipality
136 ROUTE 72	PF+	80	2.07	Barnegat
151 ROUTE 72	PF	81	15	Barnegat
PANCOAST RD	PF	81	18	Barnegat
PANCOAST RD	PF	83	1	Barnegat
PANCOAST RD	PF	84	4	Barnegat
19 ROUTE 72	PF	85	2	Barnegat
ROUTE 72	CN	87	3	Barnegat
80 ROUTE 72	RLAC	87	10	Barnegat
50 ROUTE 72	RLAC	90	15.01	Barnegat
UNION TWP LINE	S	13	3	Stafford
OLD MANAHAWKIN CBR W/S	FA	13	2	Stafford
OLD CEDAR BRIDGE ROAD	FA	14	3	Stafford

Pancoast Road

It is important to note that the optimal layout for a fuel break along Pancoast Road would be to divide it so that the break straddles the roadway an equal width (100') on either side of the center line of the right-of-way. However, residential units along the southerly portion of the roadway in Barnegat Township have been placed too close to Pancoast Road to enable this configuration. Consequently, in order to establish the full 200' width it will be necessary for a greater portion of the fuel break to be located on parcels within Ocean Township, to the north of Pancoast road. The layout of the fuel break will meander depending upon the actual distance each of the residential units are located from the southerly edge of the right-of-way. It will be necessary to establish this distance through field surveys.

Location	Zoning	Block	Lot	Municipality
SECT 6A	RLAC	93.20	111.03	Barnegat
PANCOAST RD	RLAC	95	3	Barnegat
PANCOAST RD SS	RLAC	95	2	Barnegat
PANCOAST RD	RLAC	95	1.01	Barnegat
PANCOAST ROAD	RLAC	95	2.02	Barnegat
19 HERKIMER CT	RH	111.05	9	Barnegat
17 HERKIMER CT	RH	111.05	8	Barnegat
15 HERKIMER CT	RH	111.05	7	Barnegat
11 HERKIMER CT	RH	111.05	6	Barnegat
9 HERKIMER CT	RH	111.05	5	Barnegat
7 HERKIMER CT	RH	111.05	4	Barnegat

Pancoast Road (con't.)

Location	Zoning	Block	Lot	Municipality
5 HERKIMER CT	RH	111.05	3	Barnegat
3 HERKIMER CT	RH	111.05	2	Barnegat
1 HERKIMER CT	RH	111.05	1	Barnegat
OPEN SPACE 116 FIRST ST	RH	111	31	Barnegat
PANCOAST ROAD & PARKWAY	RH	111.01	1	Barnegat
OPEN SPACE 115 FIRST ST	RH	111.02	7	Barnegat
OPEN SPACE RUNNING BROOK	RLAC	95.49	40	Barnegat
8 RUNNING BROOK TERR	RLAC	95.49	39	Barnegat
11 WAVECREST CT	RLAC	95.49	29	Barnegat
12 WAVECREST CT	RLAC	95.49	28	Barnegat
10 WAVECREST CT	RLAC	95.49	27	Barnegat
8 WAVECREST CT	RLAC	95.49	26	Barnegat
11 BRIDGEWATERS PASSAGE	RLAC	95.49	21	Barnegat
15 BRIDGEWATERS PASSAGE	RLAC	95.49	20	Barnegat
17 BRIDGEWATERS PASSAGE	RLAC	95.49	19	Barnegat
19 BRIDGEWATERS PASSAGE	RLAC	95.49	18	Barnegat
21 BRIDGEWATERS PASSAGE	RLAC	95.49	17	Barnegat
23 BRIDGEWATERS PASSAGE	RLAC	95.49	16	Barnegat
25 BRIDGEWATERS PASSAGE	RLAC	95.49	15	Barnegat
27 BRIDGEWATERS PASSAGE	RLAC	95.49	14	Barnegat
29 BRIDGEWATERS PASSAGE	RLAC	95.49	13	Barnegat
OPEN SPACE HIDDEN LAKE CI	RLAC	95.49	5	Barnegat
31 BRIDGEWATERS PASSAGE	RLAC	95.49	12	Barnegat
7 DUNES TERR	RLAC	95.49	2	Barnegat
11 DUNES TERR	RLAC	95.49	1	Barnegat
OPEN SPACE EBBTIDE CT	RLAC	95.51	30	Barnegat
10 EBBTIDE CT	RLAC	95.51	29	Barnegat
8 EBBTIDE CT	RLAC	95.51	28	Barnegat
10 CHANNEL CT	RLAC	95.51	19	Barnegat
8 CHANNEL CT	RLAC	95.51	18	Barnegat
6 CHANNEL CT	RLAC	95.51	17	Barnegat
4 CHANNEL CT	RLAC	95.51	16	Barnegat
18 BOILING SPRINGS DR	RLAC	95.51	14	Barnegat
16 BOILING SPRINGS DR	RLAC	95.51	13	Barnegat
14 BOILING SPRINGS DR	RLAC	95.51	12	Barnegat
12 BOILING SPRINGS DR	RLAC	95.51	11	Barnegat
10 BOILING SPRINGS DR	RLAC	95.51	10	Barnegat
8 BOILING SPRINGS DR	RLAC	95.51	9	Barnegat
7 RUNNING BROOK TERR	RLAC	95.51	2	Barnegat
OPEN SPACE RUNNING BROOK	RLAC	95.51	1	Barnegat
OPEN SPACE EBBTIDE CT	RLAC	95.53	16	Barnegat
7 EBBTIDE CT	RLAC	95.53	2	Barnegat
9 EBBTIDE CT	RLAC	95.53	1	Barnegat
OPEN SPACE HIDDEN LAKE CI	RLAC	95.40	85	Barnegat
10 DUNES TERR	RLAC	95.40	84	Barnegat
8 DUNES TERR	RLAC	95.40	83	Barnegat
25 SEQUOIA CT	RLAC	94.01	112	Barnegat
24 SEQUOIA CT	RLAC	94.01	111	Barnegat
OPEN SPACE PINE OAK BLVD	RLAC	94.01	157	Barnegat
SECT 7A	RLAC	93.20	111.05	Barnegat

Pancoast Road (con't.)

Location	Zoning	Block	Lot	Municipality
PARKWAY	RUR	38	20	Ocean
ROUTE 532	RU	36	6	Ocean
ROUTE 532	RU	37	1	Ocean
ROUTE 532	RU	36	4	Ocean
PARKWAY	RUR	38	14	Ocean
ROUTE 532	RU	36	7	Ocean
PARKWAY	RUR	38	17	Ocean
PARKWAY	RUR	38	16	Ocean
PARKWAY	RUR	38	18	Ocean
PANCOAST ROAD N S	RUR	28	2	Ocean
PARKWAY	RUR	38	13	Ocean
ROUTE 532	RU	36	5.01	Ocean
PARKWAY	RUR	38	15	Ocean
ROUTE 532	RU	37	2	Ocean

***FIRE SAFETY INITIATIVE
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Appendix 2

Current Fire Management Regulations

PINELANDS COMPREHENSIVE MANAGEMENT PLAN
PART XII-FIRE MANAGEMENT¹³

7:50-6.121 Purpose

Forest vegetation represents a significant wildfire threat to structures developed within the Pinelands. Therefore all development in the Pinelands shall conform to the requirements of this Part in order to protect life and property from catastrophic forest fires and to ensure the maintenance of the Pinelands forest ecosystems.

7:50-6.122 Fire management program

In order to be certified under the provisions of N.J.A.C. 7:50-3, a municipal master plan or land use ordinance must provide a fire management program. It is not necessary that the municipal program incorporate the literal terms of the program set out in this Part; rather, a municipality may adopt alternative and additional techniques which will achieve the equivalent management objectives as would be achieved under the provisions of this Part.

7:50-6.123 Fire hazard classification

The following vegetation classifications shall be used in determining the fire hazard of a parcel of land:

Fire Hazard Classification	
Hazard	Vegetation Type
Low	Atlantic white cedar. Hardwood swamps.
Moderate	Non-Pine Barrens forest and prescribed burned areas.
High	Pine Barrens forest including mature forms of pine, pine-oak, and oak-pine.
Extreme	Immature or dwarf forms of pine-oak or oak-pine, all classes of pine-scrub oak and pine-lowland.

7:50-6.124 Fire hazard mitigation standards

- (a) No application for development approval shall be granted in moderate, high and extreme hazard areas unless the applicant demonstrates that:
1. All proposed developments, or units or sections thereof, of 25 dwelling units or more will have two accessways of a width and surface composition sufficient to accommodate and support fire fighting equipment;
 2. All dead-end roads will terminate in a manner which provides safe and effective entry and exit for fire fighting equipment;
 3. The rights-of-way of all roads will be maintained so that they provide an effective fire break;
 4. Except as provided in (a)5 below, a fire hazard fuel break is provided around structures proposed for human use by the selective removal or thinning of trees, bushes, shrubs and ground cover as follows:
 - i. In moderate fire hazard areas a fuel break of 30 feet measured outward from the structure in which:
 - (1) Shrubs, understory trees and bushes and ground cover are to be selectively removed, mowed or pruned on an annual basis; and
 - (2) All dead plant material is removed.
 - ii. In high fire hazard areas a fuel break of 75 feet measured outward from the structure in which:
 - (1) Shrubs, understory trees and bushes and ground cover are to be selectively removed, mowed or pruned and maintained on an annual basis;
 - (2) All dead plant material is removed.
 - iii. In extreme high hazard areas a fuel break of 100 feet measured outward from the structure in which:
 - (1) Shrubs, understory trees and bushes and ground cover are to be selectively removed, mowed or pruned and maintained on an annual basis;

¹³ Zoning ordinance provisions for fire management adopted by both Barnegat and Stafford Townships are patterned after the Fire Management provisions of the Pinelands Comprehensive Management Plan set forth in Section 7:50-6.121 through 6.125

- (2) No pine tree (*Pinus* spp.) is closer than 25 feet to another pine tree; and
 - (3) All dead plant material is removed.
5. All residential development of 100 dwelling units or more in high or extreme high hazard areas will have a 200-foot perimeter fuel break between all structures and the forest in which:
- i. Shrubs, understory trees and bushes and ground cover are selectively removed, mowed or pruned and maintained on an annual basis;
 - ii. All dead plant material is removed;
 - iii. Roads, rights-of-way, wetlands and waste disposal sites shall be used as fire breaks to the maximum extent practical; and
 - iv. There is a specific program for maintenance.

7:50-6.125 Guidelines for construction

(a) Municipalities may use the following construction guidelines in formulating municipal ordinance standards:

- 1. Roofs and exteriors will be constructed of fire resistant materials such as asphalt rag felt roofing, tile, slate, asbestos cement shingles, sheet iron, aluminum or brick. Fire retardant-treated wood shingles or shake type roofs are prohibited in high or extreme fire hazard areas.
- 2. All projections such as balconies, decks and roof gables shall be constructed of fire resistant material or materials treated with fire retardant chemicals.
- 3. Any openings in the roof, attic and the floor shall be screened.
- 4. Chimneys and stovepipes which are designed to burn solid or liquid fuels shall be equipped with screens over the outlets.
- 5. Flat roofs are prohibited in areas where vegetation is higher than the roof.

***FIRE SAFETY INITIATIVE
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Appendix 3

Definition of Fire Safety Terms

NEW JERSEY FOREST FIRE SERVICE - WILDFIRE DEFINITIONS¹⁴
July 2007

Available Fuel: That portion of the total fuel that would actually burn under various environmental conditions.

Defensible Space: The area around the perimeter of wildland structures or developments which are key points of defense against encroaching wildland fires, or escaping structure fires. Defensible space provides the room for firefighters to safely conduct protection operations. Defensible space may include a firebreak as well as a fuelbreak within 3 Defensible Space Management Zones.

- Zone 1: An area of maximum modification in which all flammable vegetation is removed (i.e. a firebreak).
- Zone 2: A transitional area of fuel reduction between zones 1 & 3 where the continuity and arrangement of vegetation is modified (i.e. a fuel break).
- Zone 3: An area of management designed to increase forest health and productivity by reducing the amount of overcrowding and related weakened and diseased trees, and thereby reducing the fuel loading.

Firebreak: A natural or constructed barrier used to stop or check fires that occur, or to provide a control line from which to work. A firebreak shall consist of non-flammable type materials such as gravel, sand, or paved roads, irrigated lawns, gardens and orchards, or ponds, lakes, and other watercourses that meet a specified width. This width is to be measured outward 1-1/2 times the height of fuels available to burn directly adjacent to the object. When used in conjunction with a fuelbreak, the size of the firebreak may be reduced.

Firelane: An existing cleared path that needs continuous maintenance to a minimum of 10 feet in width, which is used to gain access for emergency traffic.

Fireline: The part of a containment or control line that is scraped or dug to mineral soil. This may be used for a wildfire or prescribed burn.

Fire Hazard: A fuel complex, defined by volume, type condition, arrangement, and location that determines the degree of ease of ignition and of resistance to control.

Fire Risk: The chance of a fire starting, as determined by the presence and activity of causative agents. In New Jersey, the primary causative agent is humans.

Fuelbreak: A natural or manmade change in fuel characteristics that affect fire behavior so that fires burning into them can be more readily controlled (or managed). When used in conjunction with a firebreak, the following fuelbreak standards will be used;

- In moderate fire hazard areas, a minimum fuelbreak of 30 feet is recommended as measured outward from the object.
- In high fire hazard areas, a minimum fuelbreak of 75 feet is recommended as measured outward from the object.
- In extreme fire hazard areas, a minimum fuelbreak of at least 100 feet (200 feet if it protects a community of 100+) is recommended as measured outward from the object.

The fire hazard classification is based on *NJDEP Land Cover/Land Type GIS* data. The recommended modification within the fuelbreak should consist of an average 50% reduction of canopy cover across the treatment and up to a 100% reduction in understory fuels. This fuel modification must be maintained over time.

Fuel Loading: The amount of fuel present expressed quantitatively in terms of weight per unit area. This may be available fuel (consumable fuel) or total fuel and is usually dry weight.

Fuel Modification: Manipulation or removal of fuels to reduce the likelihood of ignition and/or lessen potential damage and resistance to control (e.g., lopping, chipping, crushing, piling, and burning).

Fuelbreak System: A series of modified strips or blocks tied together to form continuous strategically located fuel breaks around land units.

Wildland/Urban Interface: The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels.

¹⁴ These definitions are compiled from recognized sources such as the "Glossary of Wildland Fire Terminology", "Firewise©" publications, Pinelands Commission regulations, and other Forest Fire Service publications.

***FIRE SAFETY INITIATIVE
STAFFORD AND BARNEGAT TOWNSHIP
ACTION STRATEGY***

Appendix 4

***Fire Safety Initiative Working Group
Meeting Summaries***

On February 28, 2008 the Townships of Stafford and Barnegat, the New Jersey Forest Fire Service and the Pinelands Commission conducted a formal press briefing at the Brighton at Barnegat residential community to kick-off the Fire Safety Initiative. Between February 28th and August 20th, 2008 a total of seven working meetings were convened to identify critical issues and develop an action plan designed to address them. The following pages provide a summary of the proceedings of the working group meetings.

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Appendix 5

***Firewise Communities/USA Certification
5 Steps***

Firewise Communities/USA Certification

The Firewise Communities/USA recognition program enables communities throughout the United States to protect against wildland/urban interface fire while sustaining ecosystem balance. The goal of Firewise Communities/USA is to encourage and acknowledge action that minimizes home loss to wildfire by teaching residents of the wildland/urban interface to prepare for a fire before it occurs. The Firewise Web site lists five steps for communities to achieve certification as a Firewise Community/USA:

1. Enlist a WUI (Wildland Urban Interface) specialist to complete a community assessment and create a plan that identifies agreed-upon achievable solutions to be implemented by the community
2. Sponsor a local Firewise Task Force Committee, Commission, or Department that maintains the Firewise Community/USA program and tracks its progress or status
3. Observe a Firewise Communities/USA Day each spring dedicated to a local Firewise project
4. Invest a minimum of \$2.00 per capita annually in local Firewise projects. (Work by municipal employees or volunteers using municipal or other equipment can be included, as can state/federal grants dedicated to that purpose.)
5. Submit an annual report to Firewise Communities/USA documenting continuing compliance with the program.

Firewise Communities/USA is a project of the National Wildfire Coordinating Group's Wildland/Urban Interface Working Team and is the newest element of the Firewise program. For further program information, check the Firewise Communities/USA Web site at www.firewise.org/usa/.