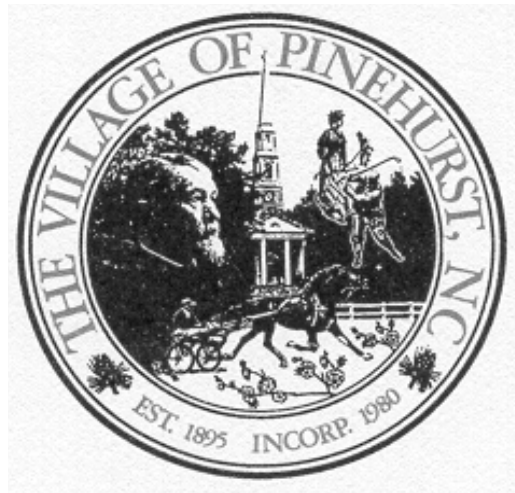
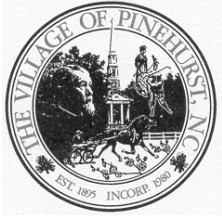


# Village of Pinehurst Hazard Mitigation Plan





# Village of Pinehurst Hazard Mitigation Plan Index

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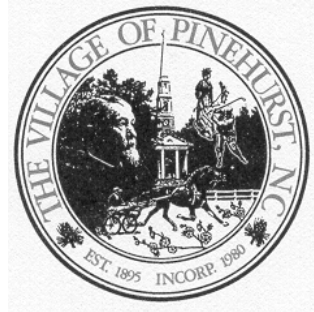
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# Village of Pinehurst Hazard Mitigation Plan



## *1. Introduction*

## I. Introduction

Section 1 of the Village of Pinehurst's Hazard Mitigation Plan will introduce the Village's plan by giving:

- A. Background information
- B. Purpose of the proposed plan
- C. Participants in the Village's Hazard Mitigation Plan
- D. Planning process of the plan
- E. Adoption of the plan

### *Background Information*

Natural disasters are an everyday occurrence in our world. Hurricanes, tornadoes, earthquakes, winter storms and wild fires are just a few of the natural disasters that we encounter. The natural environment is resilient in recovering from a natural disaster, but when man-made environments and natural environments are combined, this can cause disasters. Through Hazard Mitigation, communities can better prepare for natural disasters before and after they may occur. FEMA defines Hazard Mitigation as "any sustained action taken to reduce long-term risk to human life and property from natural hazards."

Having a Hazard Mitigation Plan will enable the Village of Pinehurst to better prepare before and after a natural disaster. Several benefits of being prepared are: saving lives, saving money, better enabling pre and post disaster funds through FEMA and reducing negative affects of future development.

### *History of Pinehurst*

Pinehurst is located in the "Sandhills" of North Carolina. It is believed that Native Americans migrated to this area but did not settle here because the land was mostly infertile and barren. In the early 1700's, Scottish settlers migrated to this area and made a meager living by farming the sandy soil of the "Pine Barrens". In the late 1700's, Moore County was formed from Cumberland County and Carthage, the county seat, was incorporated in 1796.

James Walker Tufts, founder of Pinehurst, made his fortune as head of American Soda Fountain Company and other enterprises. Because of health issues, Mr. Tufts became very interested in establishing a health-oriented resort for the well to do, especially people with lung and respiratory problems, such as tuberculosis. Once tuberculosis was found to be contagious, Mr. Tufts converted his resort from being a health-oriented resort to a recreational/relaxation resort.

Mr. Tufts purchased 598 acres from a local timber operator for about a \$1.25 an acre. He wanted a first class plan for his new resort so he hired Frederick Law Olmsted, who designed Central Park and the landscape design for the Biltmore House. Mr. Tufts envisioned his resort to resemble a New England style village. Construction began in the summer of 1895. By the fall the resort had been laid out, roads built, construction of the Holly Inn and cottages and this created the infrastructure of the resort. This infrastructure eventually included farms, barns, gardens, power plant, steam heat system, water system, sewage disposal, power and telephone lines and a trolley line that was built to connect to the train station in Southern Pines. The trolley traveled down what is now the median of Midland Road. This service ended in 1905 thus making Midland Road the oldest median highway in North Carolina. With construction on going, Mr. Tufts needed a name for his resort other than "Tufts Town". He recalled a contest (of picking the name of what is now known as Martha's Vineyard) that had been held in the new community of Martha's Vineyard. Among the names submitted was "Pinehurst" of which was not chosen. Mr. Tufts was allowed to review the non-winning names and was granted permission to use "Pinehurst".

The property Mr. Tufts purchased was soily and barren. He hired Mr. Warren Manning to implement a landscape master plan by planting thousands of trees and shrubs. There were more than 222,000 tree seedlings and other plants, which were planted on both sides of streets, around buildings and in open spaces. There were 47,250 of these plants imported from France.

In 1898 the first golf course was opened. In 1900, Mr. Tufts hired Donald Ross, an immigrant from Scotland, as the new golf professional and gave him sole authority of development of future golf courses. Their 50-year relationship was very beneficial for the resort and for the evolution of golf in the United States.

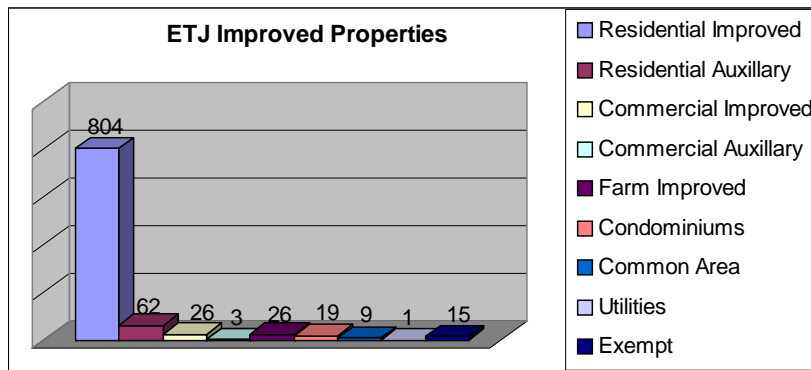
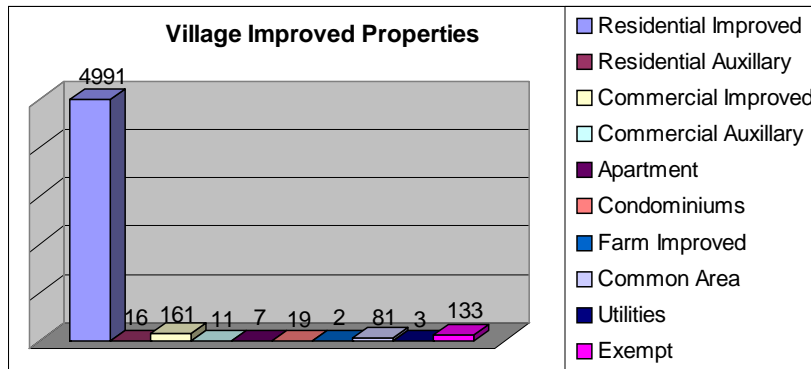
### *Geographic Information*

Pinehurst is located in the South Central region of North Carolina. The majority of Pinehurst is comprised of residential properties and golf courses. The topography of Pinehurst consists of sandy soil, rolling hills and many pine trees, holly trees and magnolia trees. Pinehurst falls between 300 and 500 feet above sea level. Pinehurst abuts Southern Pines, Aberdeen and Taylortown and is approximately 13 miles wide. There are 9,159 acres within the Village of Pinehurst's corporate limits and 7,808 acres within the extra-territorial jurisdiction (ETJ). Several highways that connect to Pinehurst are Highway 15-501, Highway 211, Highway 5 and the oldest median highway in the state, Highway 2 (aka Midland Road).

***Developed Properties***

Pinehurst has 75% or 6,865 acres that are developed or committed. Committed land is land that is used for a particular social or economic use. Residential and commercial areas in Pinehurst will be broken down in geographic planning areas throughout this plan. Residential areas include: Golf Course #6, East Highway #5, Village Acres, Clarendon Gardens, Old Town, CCNC, Lake Area and Midland Country Club/ Airport Road, East ETJ, West ETJ, Pinewild and Medical Park area. Our commercial areas are concentrated within three different areas in Pinehurst. In “Old Town” Pinehurst, there are a variety of restaurants and retail. First Health of the Carolinas/Moore Regional Hospital, Pinehurst Medical Clinic, Pinehurst Surgical Clinic and other independent medical offices are located between Highway 211 and Highway 15-501 and Pinehurst South and other independent offices are located along Highway #5.

Pinehurst ETJ has 29% or 2,292 acres that are developed or committed. Residential areas within the ETJ include: Pinewild, Cotswald, Hollycrest, Lindenhurst Farms and Linden Pines. There are 89 acres or 1% of the properties that are zoned commercial properties in the ETJ and 371 acres or 5% of the properties that are considered as Open Space and Recreation.

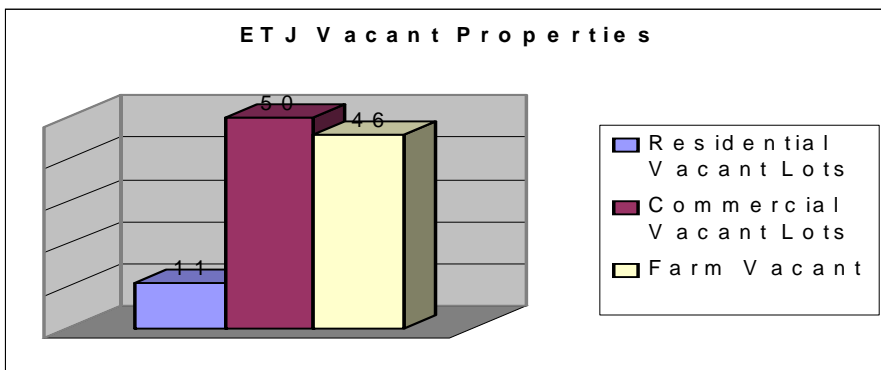
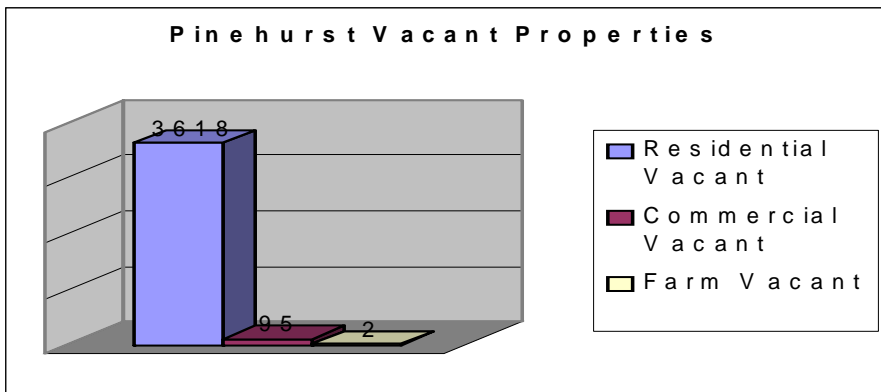


## Undeveloped Property

Pinehurst has 25% or 2,294 acres that are currently available for development. If Pinehurst continues to grow at its' current rate, it is estimated that by the year 2020, Pinehurst will have no buildable lots left for development and with an expected population growth to total 18,000 people residing in Pinehurst.

In the Pinehurst ETJ there are 71% or 5,516 acres that is still available for development. Several large parcels of land in the ETJ can be subdivided into individual building lots in the future as long as the developer meets all the conditions outlined in the Pinehurst Development Ordinance

The vacant residential properties in Pinehurst are spread sporadically throughout Pinehurst and Pinehurst ETJ. Private citizens or commercial companies own many of the vacant residential building lots in Pinehurst.





***Planning and Zoning***

Pinehurst was established in 1895 and was not incorporated until 1980. The Village’s first Zoning Ordinance was adopted to provide a basis for zoning regulations. Since the adoption of the first Zoning Ordinance, there have been 4 other plans adopted with the last adoption in 1995. There have been many amendments made to the PDO to support the growth and change that Pinehurst is experiencing.

In 2003, the Village of Pinehurst adopted a comprehensive long-range plan to assist the village with future growth. An essential goal of Pinehurst is to support growth but to keep Pinehurst a residential community. Another major goal is to rewrite the Pinehurst Development Ordinance to better suit the needs of growth in Pinehurst.

There are 14 different zoning classifications within the Village of Pinehurst.

R5 - 600 sq ft	R30 - 2000 sq ft	OP - Office/Professn’l	PC - Public Conservation
R8 - 1500 sq ft	R210 - 1500 sq ft	RMF - 1800 sq ft	VC - Village Commercial
R10 - 1800 sq ft	HD - Hospital District	RD - Recreation District.	
R15 - 1800 sq ft	NC - Neighb’d Comm	HC - Hotel District	

***Critical Facilities***

Pinehurst is the second largest municipality in Moore County and has approximately 10,218 year round residents. During the planning stages of the plan, Pinehurst was divided into 12 geographic planning areas. Each geographic planning area is unique in its’ own way but many have similar critical facilities such as roads, water lines, sewer lines and FEMA Flood Zones. Some geographic planning areas have critical facilities that may be more significant than others. Some of these critical facilities include government facilities, emergency services facilities and utilities.

The geographic areas that will be focused on are: Lake Area, Airport Road/Midland Road, Golf Course #6, East Highway #5, Old Town, Village Acres, CCNC (Country Club of North Carolina), Pinewild, Medical Area, Clarendon Gardens, Pinehurst ETJ East and Pinehurst ETJ West .

**Current Village of Pinehurst Community Vulnerability Summary**

Geographic Planning Area	Current Total Number of People	Current Total Number of Private Buildings	Current Total Value	Current Total Number of Public Buildings and Critical Facilities	Current Total Replacement Value
Lake Area	3104	1552	\$248,258,610	40	\$240,810,851.70
Airport/Midland Road	740	370	\$48,420,600	22	\$46,967,982.00
Golf Course #6	1620	810	\$125,767,050	27	\$121,944,038.50
East Highway #5	1562	781	\$141,743,395	67	\$137,491,093.10
Old Town	1332	666	\$139,578,279	131	\$135,390,930.60
Village Acres	1266	633	\$57,558,035	13	\$55,831,293.90
CCNC	758	379	\$140,016,340	5	\$135,815,849.8
Pinewild	1022	511	\$154,966,520	10	\$150,317,524.40
Medical Area			\$61,996,680	43	\$60,136,779.60
Clarendon Gardens	210	105	\$17,735,430	2	\$17,203,367.10
Pinehurst ETJ West	522	261	\$23,056,850	15	\$22,365,144.50
Pinehurst ETJ East	94	47	\$2,967,900	3	\$2,878,863.00
Totals	12,230	6,010	\$1,082,315,579.00	378	\$893,270,351.10

**Projected Village of Pinehurst Community Vulnerability Summary**

Geographic Planning Area	Total Projected Number of People	Total Projected Number of Private Buildings	Total Projected Value	Total Projected Number of Public Buildings and Critical Facilities	Total Projected Replacement Value
Lake Area	1991	866	\$152,392,000	5	\$147,820,240
Airport/Midland Road	423	184	\$20,240,000	3	\$19,632,800
Golf Course #6	1840	800	\$200,000,000	2	\$19,400,000
East Highway #5	1122	488	\$110,094,773	23	\$106,791,930
Old Town	375	163	\$36,600,000	7	\$31,622,000
Village Acres	1766	768	\$5,618,260	0	\$5,458,713
CCNC	306	133	\$49,925,407	0	\$48,427,645
Pinewild	1366	594	\$179,982,000	39	\$174,582,540
Medical Area				0	\$0
Clarendon Gardens	115	50	\$9,535,150	0	\$9,249,096
Pinehurst ETJ West	600	261	\$84,040,257	5	\$81,519,050
Pinehurst ETJ East	110	48	\$3,031,056	3	\$2,940,125
Totals	9,899	4,355	\$667,458,903	109	\$646,904,139

## *Critical Facilities*

### **1. Lake Area Critical Facilities**

- a. Water Lines
- b. Sewer lines
- c. Sewer Lift Stations
- d. MCPU Wells
- e. Dams
- f. Marina
- g. Streets
- h. Highways
- i. Railroad
- j. Lakes

### **Impact of Natural Hazard**

- a. & b. Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. The Village uses a combination of wells and water towers to serve the residents of Pinehurst. The shut down or damage of a well would not cause immediate disruption because of the combination of water towers and wells. If damage is sustained to several wells, the Village has the capability to receive water from other municipalities.
- e. Any destruction to the dams could cause flooding to residential properties
- f. Damage or destruction to the marina would impact the owner (Pinehurst, Inc.) and members of Pinehurst, Inc. more than the community at large. Any flooding of Lake Pinehurst may cause some erosion of the property.
- g. The lake area of Pinehurst has 29.15 miles of streets. Damage or destruction to the roads would cause transportation problems for the residents and also emergency personnel in the event they needed to access the area.
- h. Damage or destruction to Highway #5 would cause severe problems with transportation because Highway #5 is the main access to the Lake Area. This would cause numerous delays in emergency services.
- i. Damage of destruction to the railroad could cause financial loss for the companies that rely on the railroad for goods transportation. The railroad system that runs through Aberdeen and Pinehurst are used for goods transportation.
- j. Any destruction or damage to the lakes would cause hardship for the local golf courses owned by Pinehurst, Inc. They use the lake for irrigation purposed for their golf courses.

## **2. Airport Road/Midland Road**

- a. Water Lines
- b. Sewer Lines
- c. MCPU Wells
- d. Sewer Lift Stations
- e. Midland Country Club House
- f. Midland Country Club Golf Course
- g. Streets

### **Impact of Natural Hazard**

- a.& b. Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. The Village uses a combination of wells and water towers to serve the residents of Pinehurst. The shut down or damage of a well would not cause immediate disruption because of the combination of water towers and wells. If damage is sustained to several wells, the Village has the capability to receive water from other municipalities.
- e. Any damage to Midland Country Club would hurt the club itself but no significant community impact. There is a restaurant within the club that is used mostly by Midland Country Club members.
- f. Midland County Club has one golf course. This course is used more by club members than the general public. Any damage to this course would hurt the club more than the community.
- g. Midland Country Club/ Airport Road area has 10.19 miles of streets. Damage or destruction to the roads would cause transportation problems for the residents and also emergency personnel in the event they needed to access the area.

## **3. Golf Course #6**

- a. Water Lines
- b. Sewer Lines
- c. MCPU Wells
- d. Sewer Lift Stations
- e. Golf Course #6 Club House
- f. Golf Course #6
- g. Streets

## **Impact of Natural Hazard**

- a. & b. Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. The Village uses a combination of wells and water towers to serve the residents of Pinehurst. The shut down or damage of a well would not cause immediate disruption because of the combination of water towers and wells. If damage is sustained to several wells, the Village has the capability to receive water from other municipalities.
- e. Any damage to the Golf Course #6 Club House would impact the owner more than the community.
- f. There would be minor impact on the community if there were damage at Golf Course #6. This golf course is used more by the GC#6 residents than the general public.
- g. Golf Course #6 area has 17.17 miles of streets. Damage or destruction to the roads would cause transportation problems for the residents and also emergency personnel in the event they needed to access the area.

### **4. Highway 5 Critical Facilities**

- a. Water Lines
- b. Sewer Lines
- c. MCPU Wells
- d. Sewer Lift Stations
- e. Pinehurst Fire Department
- f. Funeral Home
- g. Golf Course #7 Club House
- h. Golf Course #7
- i. Pinehurst Post Office
- j. Streets
- k. Pinehurst Harness Track

## **Impact of Natural Hazard**

- a. & b. Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. The Village uses a combination of wells and water towers to serve the residents of Pinehurst. The shut down or damage of a well would not cause immediate

disruption because of the combination of water towers and wells. If damage is sustained to several wells, the Village has the capability to receive water from other municipalities.

- e. Any loss or destruction of the fire department located in Pinehurst South would affect the community in that area considerably. Without this location, residents and public facilities would be hurt by time delays in the event of the need of fire equipment.
- f. Boles Funeral Home is located off Highway 5. This facility could potentially be used as a storage area for massive loss of life if there were an overflow at the hospital. Boles Funeral Home is the only funeral home in Pinehurst. Any loss of this facility would impact the owner more than it would the general public, but in the event of an extreme emergency, this facility would be useful.
- g. Any damage to the Golf Course #7 Club House would impact the owner more than the community. CG #7 also has a restaurant and pro shop at the club house.
- h. There would be minor impact on the community if there were damage at Golf Course #7. This golf course is used more by the GC#7 residents than the general public.
- i. The post office is considered a government facility. This post office located in Pinehurst South is the main post office in Pinehurst. Any destruction of this facility would impact the community greatly. Since this is the main post office, the amount of mail that is dropped there and delivered from this location would cause many delays in the mail services.
- j. The area of Highway #5 has 23.88 miles of roads. Damage or destruction to the roads would cause transportation problems for the residents and emergency personnel in the event they needed to access the area.
- k. The Pinehurst Harness Track is owned by the Village of Pinehurst. Any loss or destruction to this facility would impact the Village of Pinehurst financially. The combination of barn rentals, restaurant rentals, Fair Barn rentals and other show rentals, the Village collects close to \$270,000 a year. The Harness Track is a winter training facility for Standardbred horses.

## **5. Old Town Critical Facilities**

- a. Water Lines
- b. Sewer Lines
- c. Sewer Lift Stations
- d. MCPU Wells
- e. Library
- f. Emergency Shelter
- g. School
- h. Emergency Services Facilities
- i. Historic Buildings
- j. Municipal Buildings
- k. Water Towers

- l. Nursing Home
- m. Parks
- n. Streets
- o. Post Office

### **Impact of Natural Hazard**

- a&b Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. The Village uses a combination of wells and water towers to serve the residents of Pinehurst. The shut down or damage of a well would not cause immediate disruption because of the combination of water towers and wells. If damage is sustained to several wells, the Village has the capability to receive water from other municipalities.
- e. The Given Memorial Library is not part of the Moore County Public Library system. The library is funded through private donations and fundraisers. Any loss of the library would not hurt the community financially. Any loss would be a direct impact on the foundation that owns the library.
- f. The Pinehurst Village Assembly Hall has served as an emergency shelter for Pinehurst residents. The building can house up to 300 people. This building also serves as a public meeting facility for the Village Council and other commissions of the Village of Pinehurst. This building is also rented by organizations. Any destruction to this building would be a hardship to the Village but would also affect the public as well. The assembly hall is used by Moore County Elections as a voting precinct.
- g. Pinehurst Elementary is the only school in Pinehurst. It serves students grades k-5. If the school were substantially damaged, this would create a large impact on the community. Many of the students that attend this school are children of hospital staff who do not live in Pinehurst but commute each day. Moore County school system would be responsible for placing the students and teachers in other schools.
- h. Pinehurst has 3 Emergency Services Facilities located in Old Town. The Pinehurst Police Department is located across the street from the Pinehurst Village Hall, Fire Station 91 is located on Community Road and the Pinehurst Rescue Squad is located on McCaskill Road. Any significant damage to the Police Department would greatly impact the Village financially. The old police station is now being rented but could easily be converted back to a police headquarters. This would cause the renters a possible hardship. Any significant damage to the fire station would be a financial hardship to the Village, but the Village has another fire station located in Pinehurst South that they could

transfer to. The Pinehurst Rescue Squad is not owned or operated by the Village of Pinehurst. Any loss of this facility could possibly be provided with temporary facilities by one of the other Emergency Facilities within the Village.

- i. Pinehurst has several buildings that are listed on the National Historic Registry. Some of these buildings include the Carolina Hotel, Holly Inn, Magnolia Inn. These properties are owned by Pinehurst, Inc., who also own most of the golf courses in Pinehurst. If these properties were damaged or destroyed, it would impact Pinehurst, Inc. and also the community financially. The people that stay at these hotels are normally financially secure and spend money on the room, golf, restaurants and shops.
- j. The Village of Pinehurst has 5 municipal buildings. These include the Village Hall, new Police Department, old Police Department, and 2 Fire Departments. Any serious or complete destruction of these properties would be catastrophic to the Village. The Village has already experienced the loss of a Village Hall by fire. The Village was able to offer partial services the next day and by the 3<sup>rd</sup> day, the Village was up and running all departments in another facility. The Pinehurst Village Hall (local government building) is located on 111 acres park named Rassie Wicker Park. Administration, Finance, Engineering, Planning, Inspections, and Parks and Recreation are located within this building. The Village Hall has a large assembly room that serves as a public meeting facility for the Village Council, Village Boards, public functions and serves as an emergency shelter facility for Pinehurst. Any loss or destruction to this facility would be an incredible loss for the Village government and the general public. It would cost the Village millions of dollars to replace the current facility.
- k. The Village has 3 water towers within Village limits. These water towers are owned and maintained by Moore County Public Utilities. These towers are not the main source of water for the Village. The water towers are used for a back up source of water. Any damage to these would not have a significant impact unless the water lines within the Village were significantly damaged.
- l. There is one nursing home located within old town. Manor Care is located on Rattlesnake Trail. Loss to this facility would not impact the community financially but would cause hardship in placing the residents in other facilities in this area, which are already limited.
- m. The Village has two parks located in old town. Rassie Wicker Park is a 103-acre development. Housed on Rassie Wicker Park is the Pinehurst Village Hall and the Pinehurst Police Department. Currently we have 1 walking trail that is approximately 1/2 mile long. There are plans to expand the recreational facilities for Rassie Wicker Park. The Parks and Recreation Department has a master plan that includes more walking/fitness trails, amphitheater, pool with children's interactive activities, hockey rink, rest rooms, soccer field, 2 tennis courts, concession stand, playground and a large picnic shelter. This project will be broken up into 7 phases and could take several years to complete. Depending on the area of damage would depend on the extent of impact it would have. If



the damage occurred where the Village Hall and Police Station are located, there could potentially be extensive damage. If the damage occurred on the back portion of the property, where it is undeveloped, the impact of damage would be minimal.

- n. Old Town Pinehurst has 25.33 miles of streets. Damage or destruction to the roads would cause transportation problems for the residents and emergency personnel in the event they needed to access the area.
- o. The post office located in Old Town is one of two post offices located in Pinehurst. The other post office is located in Pinehurst South off of Highway #5. The post office located in Pinehurst South is considered the main post office for Pinehurst. Any damage or destruction to the post office in Old Town would impact the post office financially. The only effect that it would have on the community is the inconvenience it would cause the residents of Old Town.

#### **6. Village Acres Critical Facilities**

- a. Water Lines
- b. Sewer Lines
- c. Sewer Lift Stations
- d. MCPU Wells
- e. Streets

#### **Impact of Natural Hazard**

- a. & b. Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. The Village uses a combination of wells and water towers to serve the residents of Pinehurst. The shut down or damage of a well would not cause immediate disruption because of the combination of water towers and wells. If damage is sustained to several wells, the Village has the capability to receive water from other municipalities.
- e. Village Acres has 13.82 miles of roads. Damage or destruction to the roads would cause transportation problems for the residents and also emergency personnel in the event they needed to access the area.

## 7. CCNC (Country Club of North Carolina) Critical Facilities

- a. Water Lines
- b. Sewer Lines
- c. Golf Course
- d. Club House
- e. Streets

### Impact of Natural Hazard

- a. & b. The Town of Southern Pines owns and maintains all water and sewer lines in CCNC.
- c. CCNC is a private, gated community within Pinehurst. Their golf course(s) are not open to the general public. Any damage or destruction to their golf course(s) would impact CCNC directly.
- d. CCNC has a private clubhouse for members only. Within the clubhouse is a restaurant. Any damage or destruction to this property would impact CCNC financially.
- e. CCNC has 14.66 miles of roads. Damage or destruction to the roads would cause transportation problems for the residents and emergency personnel in the event they needed to access the area.

## 8. Pinewild Critical Facilities

- a. Water Lines
- b. Sewer Lines
- c. Sewer Lift Stations
- d. MCPU Wells
- e. Golf Courses/Tennis Courts
- f. Country Club
- g. Streets

### Impact of Natural Hazard

- a.& b. Pinewild owns their water and sewer lines and also the wells within Pinewild. Moore County Public Utilities operates the system. Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. Pinewild uses wells to serve the residents of Pinewild. The shut down or damage of these wells would cause disruption to their water service. If their water system were to shut down, Pinewild would have access to the water tanks located within Pinehurst.
- e. Pinewild owns and operates the golf courses and tennis courts. Any destruction or loss to these facilities would impact Pinewild financially.

- f. Pinewild’s Country Club facility contains a snack bar, restaurant and pro-shop. Any significant damage to the Country Club would impact Pinewild directly in a financial manner.
- g. Pinewild has 12 miles of streets. Damage or destruction to the roads would cause transportation problems for the residents and also emergency personnel in the event they needed to access the area.

**9. ETJ West Critical Facilities**

- a. MCPU Wells
- b. Sewer Lift Stations
- c. Park
- d. Lakes/Ponds
- e. Streets

**Impact of Natural Hazard**

- a. & b. Any loss or damage to water and sewer lines would cause immediate disruption in service to the population. Any extended time without these services would potentially cause a health hazard.
- c. The park located at the corner of Chicken Plant Road and Bowmen Road is currently undeveloped. Any damage sustained to the property would not cause the Village a hardship at this time. The property is approximately 60 acres.
- d. There are several small lakes/ponds scattered throughout the Village’s ETJ. Because these ponds/lakes are so small, there would not be any significant flood damage if the ponds/lakes were to flood.
- e. ETJ West (Chicken Plant, Linden, Bowmen Roads) contains 20.24 miles of roads. Damage of destruction to the roads would cause transportation problems for the residents and emergency personnel in the event they needed to access the area.

**10. ETJ East Critical Facilities**

- a. Streets
- b. Lakes

**Impact of Natural Hazard**

- a. ETJ East contains 1.86 miles of roads.  
Damage or destruction to the roads would cause transportation problems for the residents and emergency personnel in the event they needed to access the area.
- b. There are several small lakes/ponds scattered throughout the Village’s ETJ. Because these ponds/lakes are so small, there would not be any significant flood damage if the ponds/lakes were to flooding.

## 11. Medical Facilities Critical Facilities

- a. Water Lines
- b. Sewer Lines
- c. Sewer Lift Stations
- d. MCPU Wells
- e. Streets
- f. Hospital
- g. Day Care

### Impact of Natural Hazard

- a.& b. Any loss or damage to water and sewer lines would cause immediate disruption of services to the population. Any extended time without these services could potentially cause a health hazard.
- c. Any damage or shut down of a sewer lift station could cause it to over flow. This could cause extensive environmental and personal damage.
- d. The Village uses a combination of wells and water towers to serve the residents of Pinehurst. The shut down of a well would not cause immediate disruption because of the combination of water towers and wells. If damage is sustained to several wells, the Village has the capacity to receive water from other municipalities.
- e. The Medical Facilities area has 2.1 miles of streets. Any damage or destruction to these roads would cause immediate danger to the general public. The main roads that run through this area are Page and Memorial Roads, which front/back Moore Regional Hospital, Pinehurst Surgical Clinic and Pinehurst Medical Clinic.
- f. First Health Moore Regional Hospital is the only hospital located in Moore County. They are well known for their cardiology and cancer facilities. Any destruction or damage to the hospital would impact the community greatly. The hospital is the largest employer in Moore County and any large, scale job loss would impact not only the hospital but also the economy. Being the only hospital in Moore County, patients would have to be transferred to other counties and in extreme measures, the Ambulatory Surgery Clinic and Pinehurst Surgical Clinic could possibly be used for medical emergencies.
- g. The hospital has on a site, a childcare facility. They have recently added an addition because of the growing number of working parents at the hospital. In the event of a natural emergency, the childcare center would need to be readily available. If the center is heavily damaged or destroyed, it would cause a great hardship for the employees of the hospital. Not only would it impact the hospital with the possibility of employees being absent but also to the community that could be without the medical personnel especially in an emergency situation.

**12. Clarendon Gardens Critical Facilities**

- a. Water Lines
- b. Sewer Lines
- c. Clarendon Gardens Wells
- d. Streets

**Impact of Natural Hazard**

- a.& b. Clarendon Gardens has water and septic service through a private utility company. Pinehurst nor MCPU maintains or runs this system.
- c. Clarendon Gardens has a private company that maintains and runs their wells.
- d. Clarendon has 15.22 miles of roads. Damage or destruction to the roads would cause transportation problems for the residents and also emergency personnel in the event they needed to access the area.

## *Purpose of the Plan*

Preparing and implementing a Hazard Mitigation Plan is essential to communities in the event of a natural disaster. Preparing the plan will enable the community to understand more thoroughly what their vulnerabilities are and to design measures to reduce the effects of a disaster. Once the plan is approved, it is imperative that the plan is followed through to help lessen the effects in the event that a natural disaster strikes. There are several benefits that are offered to communities with Hazard Mitigation Plans.

- *To protect the health, safety, and economics of a community.* When preparing a plan, communities interests must be considered. Different areas that should be focused on are: population, economics, critical facilities and planning/land uses.
- *Community Involvement.* By educating the general public, local officials and local government of the Hazard Mitigation Plan, they will be more aware of the hazards that the community face.
- *Saves Money.* Through proper planning and education, costs can be eliminated by not having to provide extra emergency services and costly repairs to the community.
- *Community Rating System.* Communities that participate in the NFIP and hazard mitigation planning will be eligible to receive flood insurance saving costs to residents.
- *Reduces Vulnerability to Future Hazards.* By having a Hazard Mitigation Plan in place, communities will be prepared to take steps to help reduce loses in the future.
- *Facilitates Post-Disaster Funding.* Communities that are able to identify their vulnerabilities will be able to rank projects by their importance before the next natural disaster hits and be more prepared to apply for post-disaster funding for hazard mitigation projects.
- *Speeds Recovery from a Natural Disaster.* Through a communities' mitigation plan, they can better identify post-disaster mitigation strategies for future disasters. By having these strategies in place, they can help expedite disaster recovery.

### *Participants in the Planning Process*

The following people participated in the development of the Pinehurst Hazard Mitigation Plan by contributing their valuable knowledge of Pinehurst.

#### **Research, documents and maps prepared by:**

Anna Hardy, Engineering Department

#### **Pinehurst Hazard Mitigation Representatives:**

Anna Hardy            *Engineering Department/GIS*

Jay Gibson            *Village Engineer*

#### **Contributors of Information:**

Andrew Wilkison    *Pinehurst Village Manager*

Jeff Batton            *Parks and Recreation Director*

Ernest Hooker        *Police Chief*

Jimmy McCaskill     *Fire Chief*

Floyd Fritz            *Fire Marshal/Deputy Chief*

Donna Page            *Fire Department*

Darrell McKenzie    *Assistant Public Works Director*

Bruce Gould           *Planner*

Angel Smith           *Zoning Code Officer*

Natalie Dean          *Finance Director*

Ashley Matthews     *Assistant Finance Officer*

### *Description of Planning Process*

The planning process of the hazard mitigation plan was followed in accordance with the “**Keeping Natural Hazards From Becoming Disasters**” handbook provided by the North Carolina Division of Emergency Management. The planning process has in place nine steps that were taken to organize the plan.

#### ***Step One:***

Identify Potential Natural Hazards.

This step consisted of many hours of research from many different resources. Information was obtained by newspaper clippings, internet information, local residents, long time employees of the Village of Pinehurst, FEMA records and other employees of the Village of Pinehurst.

***Step Two:***

Area Vulnerability Assessment

This step was conducted through interviews with Village department heads, other employees, questionnaires, zoning, land use and FEMA flood zone maps and GIS information.

***Step Three:***

Community Capability Assessment

The Community Capability Assessment was completed by researching each of the 12 geographic planning areas and what their vulnerabilities and their capabilities are. The Village of Pinehurst was studied to see what each department may be able to contribute to the plan. Other areas that were considered within Pinehurst's government were: political, legal and technical capabilities.

***Step Four:***

Form Interim Conclusions (Acceptability Assessment)

All information that was compiled was studied to determine whether investing the time and money would be beneficial in moving forward with the Hazard Mitigation Plan. After reviewing all information, it was decided that, for the benefit of the Village of Pinehurst and Pinehurst residents, a Hazard Mitigation Plan was needed to help ensure the safety of Pinehurst and the Pinehurst residents.

***Step Five:***

Establish Values and Goals

The Village of Pinehurst was studied as a whole and then each geographic planning area was studied individually. Information was compiled through local governmental documents, interviewing department heads and citizens and other means of research. This research gave an overall better picture of what goals were needed for Pinehurst and the residents.

***Step Six:***

Formulate Mitigation Policies

After compiling all information on past disasters in Pinehurst, possible future disasters, growth of Pinehurst and mitigation policies already in place, Pinehurst was able to decide what goals were attainable.

***Step Seven:***

Establish Procedures for Monitoring, Evaluating, and Reporting Progress of the Plan



Each Village governmental department was studied and conclusions were made as to what departments would be responsible for certain goals and for goals that may already be in existence. A report will be submitted annually to the Hazard Mitigation Representative to determine if the goals are being met and if additional mitigation goals are needed for the individual geographic planning areas. These reports will be kept in the Hazard Mitigation file and a final report will be submitted to the Village Manager for approval or denial. Once approved, the Village Manager and a Hazard Mitigation Representative, from the Engineering Department, will present to the Village Council the final, approved report.

***Step Eight:***

Establish Procedures for Revisions and Updates of the Plan

The Hazard Mitigation Representative will be responsible for the preparation of the annual report. Through annual reporting, Pinehurst will be able to determine if changes are warranted, especially following a natural disaster and these changes will be made annually. Every five years, these changes will be sent to FEMA for their records.

***Step Nine:***

Adoption

The Village of Pinehurst Hazard Mitigation Plan has not yet been adopted by the Pinehurst Village Council. Once the plan is approved by the North Carolina Division of Emergency Management, the plan will be presented to the Pinehurst Village Council for adoption.

Pinehurst Village Council:

Steven Smith, Mayor  
George Hillier, Mayor Pro-Tem  
Doug Lapins, Secretary-Treasurer  
Virginia Fallon, Council Member  
Lorraine Tweed, Council Member

The Hazard Mitigation Plan will be introduced to the Pinehurst Village Council during the first regular work session of the month. A public hearing will be conducted at the last meeting of the month, which will be advertised in the local paper for any interested citizens to attend. The Hazard Mitigation Plan will be presented for adoption during the Village Council Regular Meeting on the first public meeting of the following month. The meeting will be advertised and will serve as the second public meeting that is required by FEMA guidelines.

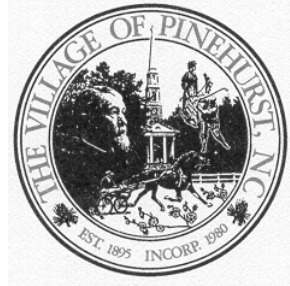
The first public meeting was held on May 27, 2003 in Carthage, North Carolina. At this time, all municipalities participated in sponsoring this public meeting that was open to all residents in Moore County. In this meeting, each municipality had the materials available for residents to observe what hazards were dominate in their area, what facilities were considered critical facilities and why they were considered critical facilities, how to prepare for a natural disaster and what to do during a natural disaster.

*This meeting notification was published in the Pilot Newspaper according to Public Meeting Notification Laws.*

During the initial meetings of the multi-jurisdictional plan, guests from neighboring agencies were invited to attend for public input. Joan Poole, American Red Cross, Steady Meares, Moore County Emergency Management, Walter Powers, Moore County School System, Tommy Lucas, Moore County Sheriff's Department, Brian Thayer, Moore County GIS Department and Dennis Brobst, Moore County Public Utilities attended the March 13, 2003 meeting to provide public input from their respective agencies.

Because the Village of Pinehurst has felt it is in the Village's best interest to develop their own Hazard Mitigation Plan, notices of such will be sent to the Pilot Newspaper, Moore County Board of Education, Pinehurst Business Guild and American Red Cross.

# Village of Pinehurst Hazard Mitigation Plan



## *II. Mitigation Goals and Values*

## ***II. Mitigation Goals and Values***

Section II will discuss what hazards are prevalent to Pinehurst, what existing mitigation measures are currently in use and what mitigation goals will be set to better prepare Pinehurst for any future natural disasters.

### ***Hazards***

\*Hazards that Pinehurst would be susceptible to or have experienced the following natural hazards: hurricanes, tornadoes, flooding, extreme heat/drought, dam failure, winter storms and thunderstorms. There is not any recorded information of Pinehurst having wildfires, landslides or earthquakes. Pinehurst is not susceptible to coastal erosion and tsunamis since Pinehurst is not geographically located near the coast of North Carolina.

#### **1. Lake Area Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Some properties in the Lake Area lay within the FEMA Flood Zone A. Any significant flooding to this area would be catastrophic considering this is a heavily populated residential area. Likelihood of occurrence: Highly Likely, Intensity rating: Moderate
- b. Dam/Levee Failure – Possible failure at Pond #1, #2 and Pinehurst Lake. Any failure to the dam/levees at the Ponds or Pinehurst Lake would result in flooding of properties. Likelihood of occurrence: Likely, Intensity Rating - Moderate
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- d. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- e. Thunder Storms – High occurrence in all of Pinehurst/ETJ. Likelihood of Occurrence: Highly Likely, Intensity Rating - Mild
- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating - Moderate
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating - Severe

#### **2. Airport/Midland Road Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Midland Road experiences nuisance flooding on roadways due

to heavy downpours. Likelihood of Occurrence: Highly Likely, Intensity Rating - Moderate

- b. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- c. Hurricanes - Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- d. Thunder Storms - High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating - Mild
- e. Tornadoes - Slight risk of tornadoes. Likelihood of Occurrence, Possible, Intensity Rating - Moderate
- f. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating - Severe

### **3. Golf Course #6 Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Golf Course #6 has several low lying, non-draining roads that hold water. Many homes are built on a downward slope that would create flooding of homes and yards. There are several small lakes/ponds located in #6 that could cause some flooding of streets and homes. There is a small percentage of homes that are locate in the FEMA Flood Zone A. Likelihood of Occurrence: Highly Likely, Intensity Rating - Moderate
- b. Dam/Levee Failure - There are 5 dams/levees that are located throughout Golf Course #6. Any failure or breakage of these could cause some damage to homes or property. Likelihood of Occurrence: Likely, Level of Impact: Limited. Dam broke that formed the lake between Rivieria and La Quinta Loop. No damage reported to the Village. Likelihood of occurrence: Likely, Intensity Rating - Moderate
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- d. Hurricanes - Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- e. Thunder Storms - High occurrence for all of Pinehurst/ETJ Likelihood of occurrence: Highly Likely, Intensity Rating - Mild
- f. Tornadoes - Slight risk of tornadoes in Pinehurst. Likelihood of Occurrence: Possible, Intensity Rating - Moderate
- g. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating - Severe.

#### **4. Highway #5 Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. The small pond located in Pinehurst South, in front of Vickie Auman Interiors consistently floods due to heavy rains. With very heavy rains, water will rise to the front steps. Likelihood of Occurrence: Highly Likely, Intensity Rating - Moderate
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- d. Hurricanes - Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating - Moderate
- e. Thunder Storms - High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating - Mild
- f. Tornadoes - Slight risk of tornadoes in Pinehurst. Likelihood of Occurrence: Possible, Intensity Rating - Moderate. A small tornado touched down and minor damage was reported at 208 Cantor Lane, 10 Bridle Path and 1 Maverick Place.
- g. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating - Severe

#### **5. Old Town Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several areas that lie within Old Town that have flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience nuisance flooding. Likelihood of Occurrence: Highly Likely, Intensity Rating - Moderate
- b. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- c. Hurricanes - Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- d. Thunderstorms - High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating - Mild
- e. Tornadoes - Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- f. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating - Severe

## 6. Village Acres Hazard Areas

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several roads that have nuisance flooding due to significant rains and flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience flooded yards. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Dam/Levee Failure - There is one dam that backs up to Village Acres located on Golf Course #8. Any failure to the dam could possibly cause problems to a limited amount of properties. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Level of Impact: Catastrophic
- d. Hurricanes - Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- e. Thunderstorms - High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating - Mild.
- f. Tornadoes - Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- g. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating - Severe

## 7. CCNC (Country Club of North Carolina) Natural Hazards Area

- a. Flooding - The Village is not aware of any recurring flooding problems within CCNC. There are homes/properties that are located in the east side of CCNC that fall within the FEMA Flood Zone AE. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- b. Dam/Levee Failure - There is one dam that is located in the main lake at CCNC. Any failure to the dam could possibly cause problems to a limited amount of properties and golf courses. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate L
- d. Hurricanes - Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- e. Thunderstorms - High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild
- f. Tornadoes - Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- g. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating: Severe.

## 8. Pinewild Natural Hazard Areas

- a. Flooding –Pinewild has one recreational lake that borders approximately 50 properties. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate
- b. Dam/Levee Failure – There is one dam that is located at the recreational lake in Pinewild. Any failure to the dam would cause problems to several residential properties. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- d. Hurricanes – Likely to have effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- e. Thunderstorms – High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild
- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate. A small tornado was reported on 8/5/03. Minor damage to edge of property, downed a tree across HWY 211.
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

## 9. ETJ Natural Hazard Areas

- a. Flooding – There are not any recurrent flooding problems in this area that the Village is aware of. There are several properties that fall within the FEMA Flood Zone A. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- b. Dam/Levee Failure – There are 5 dams/levees located in ponds/lakes that border several properties. If damaged or broken, minimal damage could occur. Likelihood of Occurrence: Possible, Level of Impact: Catastrophic.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- d. Hurricanes – Likely to have effects of hurricanes. . Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- e. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild
- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe



## **10. ETJ 2 Natural Hazard Area**

- a. Flooding – There are some roads and properties that have some nuisance flooding after heavy rainstorms. Some properties have flooded yards due to low lying areas. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- c. Hurricanes – Likely to have effects of hurricanes. . Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe

## **11. Medical Facilities Natural Hazard Area**

- a. Flooding – There is nuisance flooding on roadways and of parking lots due to heavy rains and also from stormwater runoff onto roads. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- c. Hurricanes – Likely to have effects of hurricanes. . Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe

## **12. Clarendon Gardens Natural Hazard Area**

- a. Flooding – There is some nuisance flooding of roadways and yards due to heavy rains. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- c. Hurricanes – Likely to have effects of hurricanes. . Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate

- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe

<b>Village of Pinehurst Natural Hazards</b>			
Type of Hazard	Likelihood of Occurrence	Intensity Ratings	Impact of Natural Hazard
(Nuisance) Flooding	Highly Likely	Moderate	Negligible
Dam/Levee Failure	Likely	Moderate	Negligible
Extreme Heat/Drought	Likely	Moderate	Negligible
Hurricanes	Likely	Moderate	Limited
Thunderstorms	Highly Likely	Moderate	Negligible
Tornadoes	Possible	Moderate	Negligible
Winter Storms	Highly Likely	Severe	Critical

The Village of Pinehurst does not have any repetitive flooding of properties that would require the Village to remove structures. The Village, however, does have properties that are affected by consistent *nuisance* flooding to roads and personal property. These areas include: Monticello, Lake Hills, Pine Vista and Gingham, St. Andrews and Linden, Wheeling, Berwyn and Danville, Gunclub, Lassiter, Gilmore and Garner, Pinyon, Live Oak, Pin Oak and Lake Forest S.W., Fox Run, St. Andrews and Pine Valley, Collet, Parsons and Vardon and Gallop.

## *Existing Mitigation Strategies*

### **Pinehurst Development Ordinance (PDO)**

The Pinehurst Development Ordinance contains three chapters that are important to mitigation strategies.

#### **1. Zoning**

There are flood prone areas in Pinehurst that are zoned for development. These areas include SFD, commercial and subdivisions but some exclusions exist. The PDO addresses structures that are damaged, repetitively damaged or destroyed by a natural hazard. In the event of such a disaster, the PDO would be strictly enforced in the event that a structure needs to be replaced.

#### **2. Subdivision Zoning**

Subdivisions are allowed to build in certain hazard areas however, developers are limited to the amount of impervious surface that they are allowed to disturb. This is a general rule, not just for hazard areas, but for any new construction. There are also requirements that limit the impact of increased stormwater flow due to their development. For any new subdivision applications, stormwater plans are submitted to the Village Engineer.

#### **3. Comprehensive Land Use Plan**

The Village adopted a Comprehensive Land Use Plan in April 2003. In this plan, there are no plans to designate certain hazard areas as inappropriate to build. Although the Village has areas that fall within the FEMA Flood Zones, Pinehurst does not have any areas that have repetitive loss structures. There are structures that are located within the FEMA Flood Zones that could be potentially damaged or destroyed. These homes were built before the Village participated in the NFIP program and flood plain regulations were not enforced.

### **Existing Mitigation Measures - NFIP**

Several developments in Pinehurst lie within FEMA Flood Zones. Because of this, Pinehurst participates in the NFIP program. In section 14.3.3 of the PDO, there are development standards and restrictions required by Pinehurst to build within flood zones. The Villages' standard for elevation exceeds what is required by FEMA. FEMA requires 1 foot above flood level and the Village requires 2 feet above flood level. The Village does not have any regulations for relocating or acquiring structures that are in the floodplains simply because there has never been a need for this. There are different requirements for new construction, mobile homes, recreational vehicles, commercial properties and new subdivisions.

### **Existing Mitigation Measures - Nuisance Ordinance/Village Code**

#### Village Code 3.2 - 3.2.5

There are certain conditions that are considered nuisances within the Village of Pinehurst. These nuisances, when corrected, could be considered mitigation measures.

1. The uncontrolled growth of weeds and grasses.
2. Combustible Items.
3. Burned or partially burned buildings or structures.
4. Damaged structures and debris.
5. Accumulations of rubbish, etc.

### **Existing Mitigation Measures - Erosion/Sedimentation Control Measures**

1. **Design Requirements** - Pinehurst has stringent measures in regards to erosion/sedimentation control. All persons conducting land-disturbing projects must be planned, designed and constructed to provide protection from the calculated maximum peak rate of run off for the ten year storm. Rates shall be calculated according to Village standards.
2. **Time of Compliance** - Once land-disturbing activities commence, contractors have 60 days to provide protective covering for the disturbed area. Extension time can be granted, but just cause must be provided in written form.
3. **Activity Near Watercourse** - All land-disturbing activities near a lake or natural watercourse must provide an undisturbed area along the watercourse. The undisturbed area has to be of sufficient width to confine any visible siltation within the twenty-five percent of the undisturbed zone nearest to the land-disturbing area.
4. **Stream Banks and Channels** - All stream banks and channels shall be protected from any land-disturbing activity that could potentially generate increased degradation of accelerated erosion caused by construction. Different measures may be used such as fine sand, different types of loams, gravel and silts.

### **Existing Mitigation Measures -Property Donations**

A new program that Village has initiated is called "Give a Lot to the Village". This program was established to encourage property owners to donate parcels of land to the Village that will help create open space, property for the Greenway program and stormwater control. The benefits to the donor are tax breaks, eliminate excess taxes and to contribute to the character and appearance of the Village.

## *Hazard Mitigation Goals*

Pinehurst is a unique community in that it is a nice mix of populations and also the unique character of the community. Because Pinehurst has a high number of elderly residents, it is important to keep them educated on different aspects of natural disasters. Education can range from having a survival kit to having information on emergency shelters.

One aspect of Pinehurst that makes it so charming is the “ambience” of the Village. There is strong community support in continuing the “ambience” of the Village through building design, landscaping and maintaining the original character. By developing a storm water management program, creating greenways and donating properties, this will help alleviate a large portion of the nuisance flooding problems we have, which in turn can help maintain the “original character”. Continued support from Progress Energy in trimming tree limbs and trees away from power lines will also help reduce negative affects during a natural disaster.

Pinehurst is also in need of updating the Pinehurst EOP plan. The plan is outdated considerably because of turn over rate, new positions created and being more knowledgeable on preparedness.

With the goals and strategies that the Village of Pinehurst has outlined, these goals will help the Village and their residents be more aware of the natural disasters that effect our community, what they can do during a natural disaster and also help during post disaster cleanup. Having these goals and following through with them will also enable the Village to have better capability in obtaining post disaster funds and clean up.

1. Create methods to educate the Pinehurst community about natural disasters and mitigation, what risks are present throughout Pinehurst and ways to reduce the effects of a natural disaster.
2. Implement hazard mitigation concepts into routine functions within the Village of Pinehurst.
3. Update the Pinehurst Emergency Operations Plan to better prepare the Village in the event of future natural disasters. ( EOP Plan, January 2001)
4. Continue enforcements and updating of the Pinehurst Development Ordinance (PDO, Adopted October 23, 1995) to better ensure the safety of Pinehurst and Pinehurst citizens.
5. Develop and implement a storm water management program that will minimize damage to public and private property.
6. Develop a plan to assist with preserving the natural environment in Pinehurst through Greenway Systems, donation of property and rebuilding of the natural environment.
7. Continue service with Progress Energy to trim trees and tree limbs.

# Village of Pinehurst Hazard Mitigation Plan



## *III. Mitigation Strategies and Policies*

### *III. Mitigation Strategies and Policies*

Most of the goals set below, for the Village of Pinehurst, are simple goals that can be reached with relatively low material cost and manpower. One of the greatest threats to the public before, during and after a natural disaster is lack of knowledge regarding natural hazards. Through different measures of public awareness, this will help enable the residents to become fully aware of the dangers of natural disasters. There are many ways for public outreach, which are listed below.

Educating the employees of Pinehurst on the dangers of natural hazards is also important to be better prepared in the event of a natural disaster. Basic post-disaster steps such as making sure excess vegetative growth is maintained, cleaning out storm drains and practicing natural disaster drills are simple pre-disaster steps.

One of the most important steps in the goals outlined for the Village of Pinehurst is updating the Emergency Operations Plan. The EOP Manual has not been updated since it was created. Because the EOP has not been updated accordingly, it puts the residents, Pinehurst and Pinehurst employees at a greater risk. By updating the EOP, it will delineate which departments and employees will be assigned to certain tasks during a natural disaster. This will enable better communication between employees and departments will be better prepared.

The Pinehurst Development Ordinance is currently being re-written to better meet the needs of Pinehurst. This will help accommodate the constant growth of Pinehurst, zoning processes, building processes, land uses, etc. Because Pinehurst is growing at a steady rate, there needs to be more stringent regulations not only for development and character of the community, but also for the safety of the residents and Pinehurst as a whole.

The Village of Pinehurst is in need of a Storm Water Master Plan to help develop and prioritize the needs of storm water needs. In 1971, Pinehurst Corp. sold Pinehurst to Diamondhead Corp. During this time, around 7,000 lots were developed and little attention was paid to the proper development standards. Since Pinehurst was still a private community, it was un-zoned property within Moore County. Because of this, Diamondhead Corp. was not obligated to follow Moore County development standards. Many Pinehurst property owners, including the Village of Pinehurst, have suffered because of the lack of knowledgeable planning when the properties were subdivided.

## 1. Goal- Public Awareness

The lack of information and education on natural hazards can be as dangerous as a natural disaster itself. There are many means of educating the public about natural disasters and hazard mitigation.

### **Designing a Public Awareness Brochure**

A brochure will be designed to educate the residents of Pinehurst on the natural disasters that are prevalent in Pinehurst. Information will be provided on all natural disasters that have impacted Pinehurst and other natural disasters that could possibly impact Pinehurst, how to protect your property and family and what to do in the event of a natural disaster. These brochures can be distributed throughout schools, new resident organizations, real estate offices and in municipal buildings.

### **Pinehurst Web Site**

The Village of Pinehurst has a web site with information on each department, scheduled meetings and various boards. The Village's web site has proved to be a powerful tool for advertisement of meetings, visitor information and recreational programs. Upon the completion of the new web site, each department will be responsible for updating their web page. This will be very beneficial to the Hazard Mitigation Representative in the event of a natural disaster and update seasonal natural disaster information..

### **Quarterly Newsletter**

The Village of Pinehurst has a quarterly newsletter that is mailed to every household and business in Pinehurst. This is another important resource of information and has proved to be a powerful tool for advertisement of meetings, programs and current events in Pinehurst. The newsletter will be one of the most powerful tools towards educating the Pinehurst residents because it is so widely distributed. Information will be provided on natural disasters depending on the season that the newsletter is distributed.

Goal	Mitigation Category	Policy Intention
Education	Property Protection	New Initiative
	Prevention	
	Public Information	
	Natural Resources	



**2. Goal – Educate and implement hazard mitigation concepts into routine functions within the Village of Pinehurst**

**Education**

Educate the elected officials, department heads and other employees on the importance of hazard mitigation and how specific mitigation goals can improve their departments.

**Specific Departmental Mitigation Goals**

Learn more about each department and what their daily functions are. Continue to integrate or introduce new mitigation strategies into daily functions of each department.

Goal	Mitigation Category	Policy Intention
Educate/Implement Hazard Mitigation Into Routine Functions of Village	Property Protection	Continuation/support existing policy
	Prevention	
	Natural Resources	

**3. Goal – Emergency Operations Plan**

Research should be conducted on past natural disasters, since the EOP was written, to see if any procedures should be changed, deleted or added. The Pinehurst Fire Department, with input from other department heads, wrote and implemented the *Pinehurst Emergency Operations Plan*. There have been several natural disasters, departmental turnover, new employees and promotions since the last EOP was written. Because of these changes, the plan needs to be updated immediately.

Pinehurst employees need to actively participate in mock drills coordinated by the Hazard Mitigation Representative and the Pinehurst Fire Department. All employees should be included in these drills to help be prepared in the event of a severe natural disaster.

Goal	Mitigation Category	Policy Intention
Update Emergency Operations Plan	Property Protection	Change to Current Policy
	Prevention	

**4. Goal – Pinehurst Development Ordinance**

**Update Pinehurst Development Ordinance**

The Pinehurst Development Ordinance is currently being re-written to better meet the needs of the Village of Pinehurst and the Pinehurst residents.

**Pinehurst Development Ordinance Amendments**

The Planning Department, Pinehurst Village Council, private citizens/companies and other departments within the Pinehurst government reserve the right to introduce amendments to change, delete or add to the Pinehurst Development Ordinance. Changes will be considered for adoption for the purpose of achieving amicable development, safe traffic movement, attractive design and safety and general welfare of the Village’s residents.

Goal	Mitigation Category	Policy Intention
PDO Amendments	Property Protection	Continuation/support of existing policy
	Prevention	
	Public Info	
	Natural Resources	
	Property Protection	

**5. Goal – Storm Water Master Plan**

The Village of Pinehurst currently does not have an adopted Stormwater Master Plan. One of the goals of the Comprehensive Land Use Plan that was adopted in 2003 is to develop a Storm Water Master Plan to help regulate drainage needs. Criteria that will be addressed in the Storm Water Master Plan include: Needs Assessment, Primary Stormwater Management System, Detailed Basin Plans and Implementation of the plan. **Timing and implementation of this goal will be determined pending the Village Council approval of funding to facilitate this project in the 2004-2005 Capital Outlay budget.**

**Needs Assessment**

- ❑ Data Inventory – Rainfall, land use, topography, water quality, ordinances and problem areas.
- ❑ Define Levels of Detail to Solve Problems and Guide Future Development – Identify/prioritize high growth areas.
- ❑ Data Assessment – Quality of data and adequacy, includes necessary field verifications; Plan or establish monitoring program: Coordinate with EPA NPDES Stormwater Permitting efforts.
- ❑ Financing Needs – Preliminary assessment of needs and sources.

- Early-Out-Projects – Establish basis for subsequent phases and EPA NPDES permit application requirements.

**Primary Stormwater Management System**

- Water Quantity Evaluations
- Water Quality Evaluations
- Aquifer Recharge, Water Supply and Wetlands Management
- Operation and Maintenance
- Evaluate Structural and Non-Structural Alternatives to Solve Problems
- Phasing and Prioritizing and
- Framework for Federal, State and Local Permits to Construct Facilities

**Detailed Basin Plans**

- Prioritize for Acute Problems and Development Pressures
- Detail to Solve Nuisance Flooding
- Storm Sewer Level of Detail and
- Provide Preliminary Design or Design Information

**Implementation**

- Public Presentations and
- Adopt CIP and Regulations Based on Priorities

**Comprehensive Stormwater Management Goals**

- Flood Control
- Water Quality Protection
- Wetlands Protection
- Wetlands Management
- Aquifer Recharge and Water Supply
- Conservation and Reuse
- Operation and Maintenance
- Long Term Financing and
- Community Acceptance

Goal	Mitigation Category	Policy Intention
Stormwater Management Plan	Property Protection	New Initiative
	Prevention	
	Natural Resources	
	Structural Protection	

**6. Goal - Preserving the Natural Environment**

Protecting and enhancing Pinehurst’s natural resources will assist in preserving and enhancing community character. Areas that will be focused on are dedicated, protected and managed open space.

The Parks and Recreation Department currently has 3 major projects that will start development in 2004. These projects include the first phase of the Pinehurst Greenway System, first phase of the master plan for Rassie Wicker Park which will include a soccer field, play ground, restrooms, parking, several walking trails and brick walk ways. A separate project, within Rassie Wicker Park, is an additional trail system that has been funded by a NC Trails Grant and Pinehurst.

<b>Goal - Preserve Natural Resources</b>	<b>Mitigation Category</b>	<b>Policy Intention</b>
Greenway System	Natural Resource Protection	New Initiative
Dedicated Property	Natural Resource Protection	New Initiative
Development of Additional Parks	Natural Resource Protection	New Initiative
Trail System	Natural Resource Protection	New Initiative

**7. Continue to work with Progress Energy to maintain tree limbs at a safe distance from power lines.**

Progress Energy trims trees and limbs back twice a year. Progress Energy also attends to “as needed” calls for overgrown trees and limbs. Because of Progress Energy’s continued work to help maintain the trees, it will help lessen the impact of a natural disaster.

<b>Goal - Trim Trees</b>	<b>Mitigation Category</b>	<b>Policy Intention</b>
Trim trees/branches	Property Protection	Continuation of policy
	Prevention	
	Structural Protection	

## *Strategies*

Many of the mitigation policies will be repetitive in the following section, but because there are 12 different geographic planning areas, there may be some variance in the strategies.

### **Lake Area**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding.
6. Enforce floodplain restrictions on any new structures built within the FEMA Flood Zones.
7. Develop a greenway system to help preserve Pinehurst's natural resources.

### **Old Town Policies**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding.
6. Continue the Safe Harbor program within Rassie Wicker Park. This program will include planting of long needle pine trees.
7. Construct a trail system/open space within Rassie Wicker Park and continue to maintain the property.
8. Restore wetlands and stream, located on Rassie Wicker Park property, to its' natural habitat.
9. Develop a greenway trail to help preserve Pinehurst's natural resources.

### **East Highway #5**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding.
6. Enforce floodplain restrictions on any new properties built within the FEMA flood zones.
7. Complete the Monticello Road Capital Improvement stormwater drainage job.
8. Secure funds for additional drainage work at the Pinehurst Harness Track and start the project by summer of 2004.
10. Develop a greenway trail to help preserve Pinehurst's natural resources.

### **Midland and Airport Road**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Enforce floodplain restrictions on any new structures built within the FEMA Flood zones.

### **CCNC**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding.
6. Enforce floodplain restrictions on any new properties built within the FEMA flood zones.

### **Medical Park**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding.
6. Develop a greenway trail to help preserve Pinehurst's natural resources.

### **Golf Course #6**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding. Enforce floodplain restrictions on any new properties built within the FEMA flood zones.
6. Develop a greenway trail to help preserve Pinehurst's natural resources.

### **Pinewild**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
3. Continue strict compliance regulations on impervious surface coverage.
4. Enforce floodplain restrictions on any new properties built within the FEMA flood zones.

### **Village Acres**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding.
6. Develop a greenway trail to help preserve Pinehurst's natural resources.

### **Clarendon Gardens**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create and implement a Storm Water Program throughout the Village of Pinehurst.
3. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
4. Continue strict compliance regulations on impervious surface coverage.
5. Implement a regular system of cleaning out storm water drains to help prevent nuisance flooding.

### **Pinehurst ETJ West**

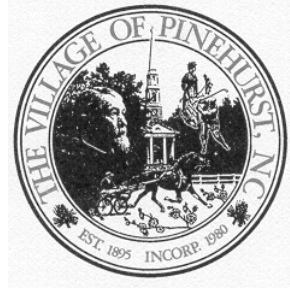
1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create ways to inform the Pinehurst community about hazard mitigation and risks that are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
3. Continue strict compliance regulations on impervious surface coverage.
4. Begin clearing property for the new park that was purchased this summer.
5. Develop a greenway trail to help preserve Pinehurst's natural resources.

### **Pinehurst ETJ East**

1. Set up a regular schedule with Progress Energy to have tree limbs cut back from power lines.
2. Create ways to inform the Pinehurst community about hazard mitigation and risks are associated with natural disasters. Some ways for publicity are through the Villages' web page, Village newsletter and design a brochure.
3. Continue strict compliance regulations on impervious surface coverage.



# Village of Pinehurst Hazard Mitigation Plan



## *IV. Implementation*

#### *IV. Implementation*

The Village of Pinehurst has outlined seven goals to help meet the Hazard Mitigation process. While considering the prioritization of the goals, there were several factors considered. These factors included cost, importance of the goal to the community, and the simplicity of the goal.

Cost effectiveness was the number one consideration of implementation of a goal. As in any municipality, the cost of projects will be highly scrutinized because of budget constraints. Not all of Pinehurst's goals will be considered Capital Improvement Projects, except goal five, because of the low cost of the goal. Goal five, Storm Water Management Plan, will be considered a Capital Project because of the large expense associated with it. *This goal is attainable only if it is approved in 2004-2005 budget.* Without appropriate funding this goal is not attainable.

The goals that the Village of Pinehurst have set forth to achieve will require the assistance of several different departments within the Pinehurst government. Each department contributing efforts will have a timetable to which they will have to complete their goals listed.

All of the goals listed will help mitigate a variety of natural hazards. Goal number 5, Stormwater Management Plan, is the only goal that is designated to help relieve a specific natural hazard. Pinehurst has a number of areas that are affected by nuisance flooding and also lies within the FEMA designated flood zones.

Pinehurst straddles the ridge line between two major river basins, the Cape Fear and the Lumber Rivers. Due to the Village's location, there is no recorded history of losses other than that discussed elsewhere in this plan. The Village currently employs a multifaceted approach to mitigating potential flood dangers that include culvert improvements, acquisition of low-lying lots to preclude building in flood prone areas and as stated in our goals, will be undertaking development of a comprehensive stormwater plan later this fiscal year. The Village also participates in the NFIP program and require at least 2 feet of elevation above the BFE. Pinehurst has also self-funded engineering studies to update FEMA A zones to FEMA AE detail study zones to provide a better tool for local flood plain managements.

**Goal #1 – Create methods to educate the Pinehurst community about natural disasters and mitigation, what risks are present throughout Pinehurst and ways to reduce the effects of natural disaster.**

Educating the residents of natural hazards is a high priority goal. There is a wide range of natural disasters that could affect the area because of our location. Pinehurst has a high population of retired adults and extra care needs to be considered with this age group, whether it is medically, emotionally or physically. They need to be fully aware of any shelters that may be available, medical facilities that may be available and transportation if needed. This goal will be highly attainable because of the low cost associated with it.

<b>Goal: Educate the general population of Pinehurst</b>	<b>Department</b>	<b>Begin Date</b>	<b>End Date</b>	<b>Funding</b>	<b>Natural Hazard</b>	<b>Priority</b>
Brochure	Engineering	August 2004	October 2004	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	High Priority
Newsletter	Engineering and Administration	Sept. 2004 The newsletter is sent out 4 times a year	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	High Priority
Web Page	Engineering	4 times a year - Seasonal	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	High Priority
Community Watch Program	Engineering and Community Watch.	4 times a year- Seasonal	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	High Priority

***Goal #2 – Implement hazard mitigation concepts into routine functions within the Village of Pinehurst.***

There are many ways in which to develop a strong mitigation program. Checking and maintaining proper equipment is one way that Police and Fire Departments can contribute. Making sure that builders continue to build by NC Building Codes and public works continues to mow in heavily weeded areas are other functions that can serve as mitigation strategies. Several of these functions, especially with the Police and Fire Departments, are required as part of their regular work schedules. Because some of these functions are incorporated into daily work schedules, this goal would be considered a medium priority.

<b>Goal: Implement hazard mitigation concepts into routine functions</b>	<b>Department</b>	<b>Begin Date</b>	<b>End Date</b>	<b>Funding</b>	<b>Natural Hazard</b>	<b>Priority</b>
Stormwater /Drainage Inspections	Engineering	Ongoing	Ongoing	Village Funded	Flooding, Hurricanes, Winter Storms	Medium Priority
Check equipment daily to ensure safety issues	Police Department	Ongoing	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms , Flooding and Winter Storms	Medium Priority
Check equipment daily to ensure safety issues	Pinehurst Fire Department	Ongoing	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms , Flooding and Winter Storms	Medium Priority
Some type of daily training for fire department	Pinehurst Fire Department	Ongoing	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	Medium Priority
Building Inspections Residential & Commercial	Inspections Department	Ongoing	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms,	Medium Priority

					Flooding and Winter Storms	
Zoning Code Inspections	Planning Department	Ongoing - As needed	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	Medium Priority
Clean up of debris in parks & repair broken equipment	Parks Department	Ongoing - As needed	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	Medium Priority
Daily maintenance at Harness Track	Harness Track (Parks and Rec)	Ongoing	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	Medium Priority
Garbage and debris pickup	Sanitation Department	Ongoing	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	Medium Priority
Yard debris pickup	Sanitation Department	Ongoing	Ongoing	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	Medium Priority
Arrange street patching	Street Department	As needed	As needed	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	Medium Priority
Clean out culverts	Street Department	*2 times a year conduct a major cleaning and also as needed basis	*New & As needed	Village Funded	Hurricanes, Tornadoes, Thunderstorms, Flooding and Winter Storms	Medium Priority

**Goal #3 – Update the Pinehurst Emergency Operations Plan.**

Updating the Village’s Emergency Operations Plan is imperative to the safety of the residents and employees of the Village. The EOP is severely outdated and would not be of considerable help in the event of a natural disaster. Since the development of the plan, there has been significant turn over in departments, reorganization within the Village and new department heads. Departmental assignments need to be rewritten, current home numbers, addresses, cell and pager numbers need to be updated immediately. Departmental equipment and supplies need to be re-inventoried as well as employee capabilities/licenses/certificates needed to be re-evaluated.

Walk through inspections conducted by the Pinehurst Fire Department should be conducted several times a year to make sure the facility is within compliance. The Pinehurst Village Hall is an extremely large building that could be used for several functions in the event of a severe natural disaster. The Assembly has served as an emergency shelter in the past and other areas of the building could be set up as emergency operation centers. The building is equipped with 3 public bathrooms and 1 private bathroom and 2 kitchens.

Mock emergency drills will help enable the Village employees to become more familiar with natural hazards and what situations may occur in the event of a disaster. Being trained and better prepared for such a scenario will better enable employees to respond to this type of situation.

Goal: Update the Pinehurst Emergency Operations Plan	Department	Begin Date	End Date	Funding	Natural Hazard	Priority
Update the EOP Plan to meet the needs of the Village	Fire Department & Hazard Mitigation Rep	July 2004	December 2004	Village Funded	Hurricanes, Tornadoes, Drought, Thunderstorms, Flooding and Winter Storms	High Priority
Conduct Walk Thru Inspections of Facilities	Fire Department & Hazard Mitigation Rep	July 2004	March 2005	Village Funded	Hurricanes, Tornadoes, Thunderstorms, Flooding and Winter Storms	Medium Priority
Conduct mock disaster drill	Fire Department & Hazard Mitigation Rep	July 2004	March 2005	Village Funded	Hurricanes, Tornadoes, Thunderstorms, Flooding and Winter Storms	High Priority

**Goal #4 – Update the Pinehurst Development Ordinance.**

Updating the Pinehurst Development Ordinance is certainly a priority of the Village of Pinehurst but because it is not viewed as a tool for emergency preparedness or educating the residents, it will be listed as a low priority. The PDO is currently being rewritten by a hired planning specialist. The PDO is continuously updated throughout the year when changes are adopted by the Pinehurst Village Council.

<b>Goal: Update the Pinehurst Development Ordinance</b>	<b>Department</b>	<b>Begin Date</b>	<b>End Date</b>	<b>Funding</b>	<b>Natural hazard</b>	<b>Priority</b>
Rewrite the Pinehurst Development Ordinance	Planning Department	July 2003	2004/2005	Village Funded	Hurricanes, Tornadoes, Thunderstorms, Flooding and Winter Storms	Low
Amendments to the PDO	Planning Department	As needed	As needed	Village Funded	Hurricanes, Tornadoes, Thunderstorms, Flooding and Winter Storms	Low

**Goal #5 – Develop a Stormwater Management Plan**

The development and implementation of a Stormwater Management Plan is a high priority in the hazard mitigation goals because of the consistent water problems the residents and Pinehurst face. This plan must be approved by the Pinehurst Village Council in the 2004-2005 budget before proceeding. If funding is not provided, the goal will be considered invalid until it is adopted by the Pinehurst Village Council. There are other measures that could be implemented if the plan is not approved. Repaving of roads, adding in culverts or other means of drainage in high priority/case by case situations are other means of easing stormwater run off.

Goal: Develop a Stormwater Management Plan	Department	Begin Date	End Date	Funding Source	Natural Hazard	Priority
*Develop Master Plan	Engineering	December 2004	June 2006	Capital Reserve Village Funded	Hurricanes, Tornadoes, Thunderstorms , Flooding and Winter Storms	High Priority

***\*Staff requesting funds in the 2004/2005 FY Budget. Master Plan will be contingent upon receiving the requested funds.***

**Goal #6 – Preserving the Natural Environment**

The Development of a Greenway System is a high priority for the Parks and Recreation Department though it ranks as a medium priority for a Hazard Mitigation Goal. Development of a Greenway System as well as a trail system, development of Rassie Wicker Park and the Dedicated Property Program will not help save lives in the event of a natural disaster. This type of development will help with erosion problems, creating green spaces and storm water control.

The development of an additional neighborhood park also falls as a low priority. There are no immediate plans to develop the property since Rassie Wicker Park Development is a higher priority goal for the Parks and Recreation Department. The development of the new park will enable the village to have more open green space and control of property maintenance. Construction of this community park will commence in 2008.



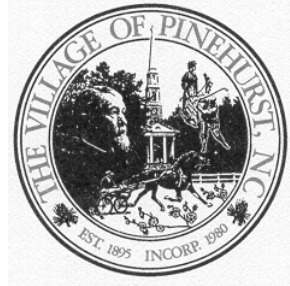
<b>Goal: Preserve Natural Resources</b>	<b>Department</b>	<b>Begin Date</b>	<b>End Date</b>	<b>Funding Source</b>	<b>Natural Hazard</b>	<b>Priority</b>
Greenway System Phase 1	Parks and Recreation	January 2004	May 2004	Capital Reserve Village Funded	Hurricanes, Tornadoes, Thunderstorms , Flooding and Winter Storms	Medium
Dedicated Property & Acquisition of Flood Prone Lots	Administration	July 2003	Ongoing	Village Funded	Hurricanes, Tornadoes, Thunderstorms , Flooding and Winter Storms	Medium
Development of Additional Park (Chicken Plant Road Park)	Parks and Recreation	2008	2010	Grant and Village Funded/ Financed	Hurricanes, Tornadoes, Thunderstorms , Flooding and Winter Storms	Low
Trail System	Parks and Recreation	February 2004	May 2004	NC Trails Grant & Village Funded	Hurricanes, Tornadoes, Thunderstorms , Flooding and Winter Storms	Medium
Rassie Wicker Park Development Phase 1	Parks and Recreation	February 2004	December 2004	PARTF Grant and Village Funded	Hurricanes, Tornadoes, Thunderstorms , Flooding and Winter Storms	Medium

***Goal #7 –Continue Schedule of Tree Trimming with Progress Energy***

Continuation of Progress Energy maintaining a consistent schedule of trimming the trees is imperative to Pinehurst. Pinehurst has a vast amount of pine trees, magnolia trees and holly trees. During winter storms, severe thunderstorms, hurricanes, high winds and tornadoes, these trees/limbs are susceptible to breaking and falling onto power lines, which in turn causes power outages.

<b>Goal: Tree Trimming</b>	<b>Department</b>	<b>Begin Date</b>	<b>End Date</b>	<b>Funding Source</b>	<b>Natural Disaster</b>	<b>Priority</b>
Continue service with Progress Energy to trim back trees in Pinehurst	Progress Energy	Ongoing	Ongoing	Funded by Progress Energy	Hurricanes, Tornadoes, Thunderstorms , Flooding and	High Priority

# Village of Pinehurst Hazard Mitigation Plan



## *V. Monitoring, Evaluating and Reporting Progress*

## *VI. Monitoring, Evaluating and Reporting Progress*

To ensure that goals are being met, it is important to set a monitoring and reporting process. There will be progress reports for each department that is involved in the Hazard Mitigation Plan.

### *Annual Reporting*

The Hazard Mitigation Plan will be reviewed annually or immediately after a natural disaster (which ever one occurs first) by the Hazard Mitigation Representative. The Hazard Mitigation Representative will be responsible for:

- ❑ Reviewing and preparing an annual report for the Village Manager
- ❑ Report will include how effective the mitigation strategies are
- ❑ Report will include any changes or additions

Upon approval of the Village Manager, the final report will then be presented to the Village Council for their review. If changes or additions are warranted, these will be presented to the Village Council for their consideration of adoption.

### *Updates*

Revisions and updates to the Pinehurst Hazard Mitigation Plan are essential as to keep the plan up to date and for the protection of Pinehurst and Pinehurst residents. The Hazard Mitigation Representative will be responsible for any updates that are needed, whether annually or five year updates.

### *Annual Updates*

The Hazard Mitigation Plan will be reviewed annually or immediately after a natural disaster (which ever one occurs first) by the Hazard Mitigation Representative. An annual report will be submitted to the Village Manager and the Village Council for review and adoption of any changes or additions. A copy of the Hazard Mitigation Plan will be available for the general public to view. Copies of the plan will also be available to purchase, priced according to the Pinehurst Fees and Charges Policy adopted April, 2004.

### *Five Year Updates*

The Hazard Mitigation Representative will be responsible for the preparation of the Five Year Update report. Several factors that will be considered in the updating of the plan are:

- ❑ Development of Pinehurst (residential and commercial)
- ❑ Annexations
- ❑ Increased Natural Disasters
- ❑ Changes to FEMA requirements or NCDEM requirements
- ❑ New Hazard Mitigation techniques

### *Five Year Reporting*

The results of the Five Year Report will be included, with any recommended changes or additions, that is prepared by the Hazard Mitigation Representative. A copy of the report will be submitted to the Village Manager and the Village Council for review and adoption of changes or additions if needed. Any changes, along with the five year report will be available to the general public to view.

### *Incorporation of Hazard Mitigation Plan into Other Local Plans*

The Village of Pinehurst will incorporate the Village of Pinehurst Hazard Mitigation Plan into other local plans. The Hazard Mitigation Representative will be responsible for providing copies of the plan to all department heads that may be impacted by the plan. Any updates to the plan will also be provided to the department heads once they are approved by the state and FEMA. It will be the Hazard Mitigation Representative and the department head's responsibility to insure that the Hazard Mitigation Plan and any other local documents (Pinehurst Long Range Plan, Pinehurst Development Ordinance and Pinehurst Emergency Operations Manual) do not conflict with each other.

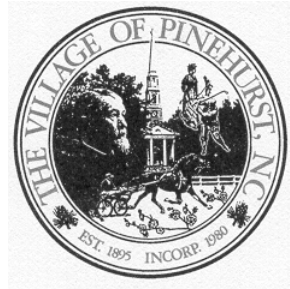
### *Continued Public Participation*

The public will have the opportunity to participate in several ways. When any changes are being considered, the changes will be posted on the web page and an article will be submitted to the newsletter. Once the changes have been submitted to the Pinehurst Village Council, the public will be invited to attend the public meeting. As was done during the preparation of the Hazard Mitigation Plan, the Hazard Mitigation Representative will encourage the Pinehurst residents to submit information on how a natural disaster may have affected them during a disaster. Any written recounts or photos will be once again encouraged to be sent in to the Pinehurst Village Hall. Because of the size of Pinehurst, it is important to have public input on areas that may

be more affected than others during storms. Having recounts of experiences and photos will better enable the Village of Pinehurst to focus on problem areas that we may not be aware that exist.

Once the Hazard Mitigation Plan is approved by the North Carolina Emergency Management, FEMA and the Pinehurst Village Council, a copy of the plan will be made available to the public to view in the administrative offices. Any approved changes will be submitted to the plan and will be available to the general public for viewing. Copies of the plan will also be available to purchase, priced according to the Pinehurst Fees and Charges Policy adopted April, 2004.

# Village of Pinehurst Hazard Mitigation Plan



## *VI. Revisions and Updates*

## *VI. Revisions and Updates*

The Hazard Mitigation Plan must be reviewed every five years or following a natural disaster. These reports will be submitted to the Village Manager for approval or denial. Upon approval of the plan, the Village Manager shall submit the plan and any amendments to the Village Council for adoption. All amendments must be approved by the Village Manager before submittal and consideration of the Village Council. Once the revisions and updates are adopted by the Pinehurst Village Council, the plan will once again be submitted to the North Carolina Emergency Management office and to FEMA for approval.

In the event that an amendment is made for adoption, it must meet certain criteria:

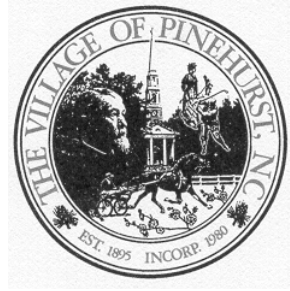
1. New FEMA regulations or changes in hazard mitigation.
2. Any pertinent information that was not addressed in the original plan.
3. Changes that need to be addressed to better suit the needs of Pinehurst and Pinehurst growth.
4. Any changes that will benefit the safety and well being of the Pinehurst residents.

Once the plan and amendment(s) are submitted to the Village Council, they have the option to:

1. Adopt the amendments as submitted.
2. Adopt the amendments with certain conditions
3. Seek more time to further consider the amendment(s) or seek more information.



# Village of Pinehurst Hazard Mitigation Plan



## *VII. Appendix A: Hazard Identification*

## *VII. Appendix A - Hazard Identification*

Because of Pinehurst's geographic location, Pinehurst is susceptible to a variety of natural hazards. These natural hazards include: winter storms, severe thunderstorms, droughts, nuisance flooding/flooding, tornadoes, hurricanes and extreme heat. Some of these natural disasters can cause a chain reaction of events. For example, hurricanes can spawn flooding, tornadoes and severe thunderstorms. Pinehurst has no recorded information on earthquakes, sink holes or wildfires. Pinehurst has also not experienced coastal erosion or tsunamis since Pinehurst is not geographically located in a coastal region.

## Characteristics

### *Winter Storms*

Sleet, freezing rain and snow can all be aspects of a winter storm. Freezing rain is rain that freezes when it hits the ground or surface creating a layer of ice. Sleet is rain that turns into ice pellets before making ground contact. These three aspects of winter weather can cause significant damage to property and human life.

#### **1996**

In January of 1996, Pinehurst received between 1 and 2 inches of snow and ice. Since this time, Pinehurst has experienced consistent development of winter storms every two years.

#### **1998**

January of 1998, Pinehurst received between 2 and 4 inches of snow. These snowfall amounts were not enough to create major problems. On December 23, 1998, an ice storm blanketed Moore County with reports of ½ to 1 inch of ice. On December 25, 1998, Moore County residents awoke to a “White Christmas”. Pinehurst received approximately 1 ½ inches of snow.

#### **2000**

Starting January 18, a small storm swept Moore County leaving Pinehurst with an accumulation of about 3 inches of snow. On the evening of the 22<sup>nd</sup>, a storm producing ice and snow gave Pinehurst accumulations of 1- 3 inches. In the early morning of the 24<sup>th</sup>, Pinehurst woke up with freezing rain. By late that evening, a record setting snowstorm was approaching Moore County. By the 25<sup>th</sup>, Pinehurst and the rest of Moore County was blanketed with the worst snowstorm on record. Pinehurst received 18 inches of snow during this storm. Roads were impassable, residents were without power for more than a week and water supply was lost. The Winter Storm of 2000 cost the Village of Pinehurst more than a million dollars. Pinehurst was reimbursed \$752,471.00 by FEMA.

#### **2002**

In January of 2002, Pinehurst experienced yet another snowstorm. This storm was not the magnitude of the 2000 storm but still the affects were felt. Pinehurst received about a foot of snow. There was some loss of power but not to the extent of the 2000 storm. Pinehurst retained water usage during this storm because of two generators that were added to two major wells in Pinehurst. The addition of the generators was the result of the 2000 winter storm.

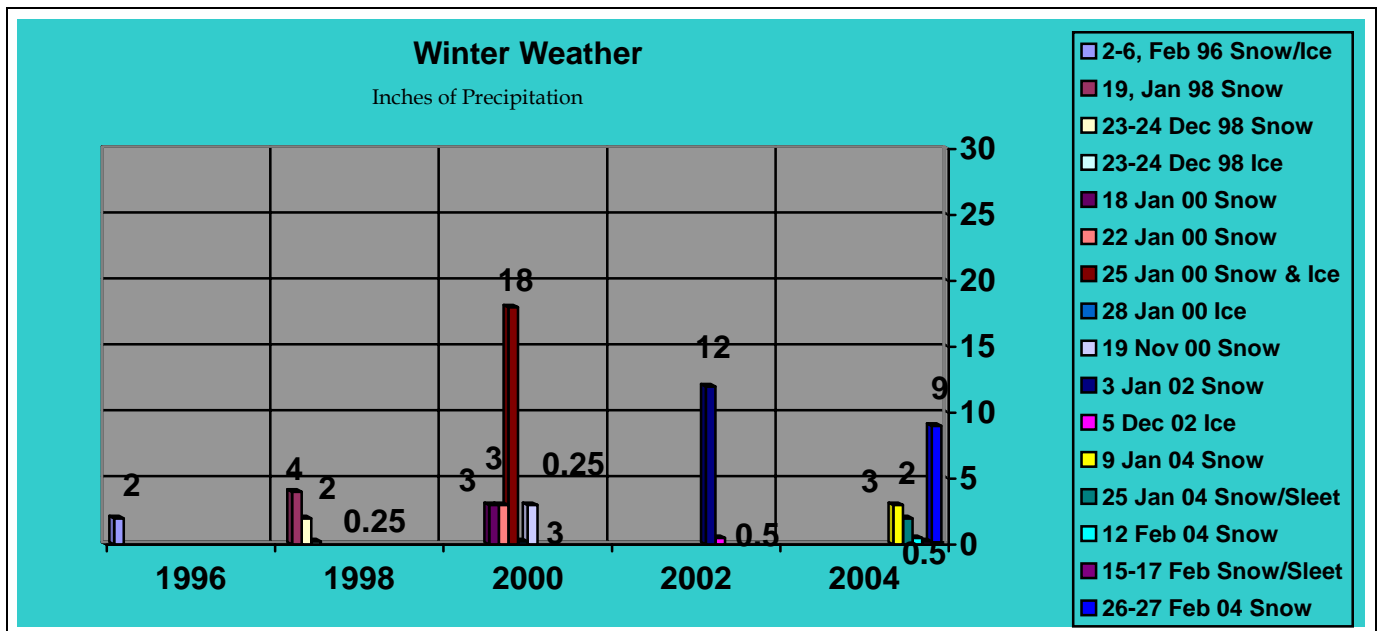
On December 4, 2002, one of the worst ice storms to hit the Sandhills began in the late afternoon and ended in the early morning of December 5. Precipitation began as sleet and snow but changed over to freezing rain. Pinehurst received approximately ½ of ice. This storm caused major power outages within the area and a record number of nearly 1,000,000 people lost power in Central North Carolina.

**2004**

January and February were busy winter months again for Pinehurst. January 9<sup>th</sup> brought 3 inches of snow to Pinehurst. January 25-27 brought another 2 inches of snow and 1/8 of an inch of ice. None of these storms caused any major damage and were not the magnitude of the 2000 winter storm. On February 12, Pinehurst had another blast of winter precipitation. Pinehurst received about ½ inch of snow and again on the 15-17<sup>th</sup>, Pinehurst received a trace of winter precipitation. This precipitation was part of a winter storm that was producing heavy snow in the northern part of the state.

On February 26-27<sup>th</sup>, the most significant winter storm of the season produced 8-10 inches of snow. This storm closed schools down in the area for about a week. There were only minor reports of power outages, which was quickly restored.

After reviewing the information provided, it is becoming apparent that Pinehurst and Central North Carolina is experiencing a significant increase in winter storms, which are occurring every two years. Because a winter storm can impact a population negatively, it is important that residents be informed on what hazards are involved with a winter storm, how to be prepared and what to do during a winter storm.





2000 Winter Storm Damage, Village of Pinehurst, North Carolina





Damage sustained to the Pinehurst Fire Department/2000 Winter Storm.



Damage sustained at the Pinehurst Fire Department/2000 Winter Storm



February, 2004 Winter Storm, Pinehurst Police Department



February, 2004, Winter Storm, Pinehurst Police Department, Pinehurst, NC





February, 2004 Winter Storm, Pinehurst Village Hall



February 2004, Winter Storm, Village of Pinehurst, NC





February, 2004, Winter Storm, Towering, Frozen Pine Trees, Pinehurst, NC



February 2004, Winter Storm, Pinehurst Village Hall Parking Lot

### *Flooding/Nuisance Flooding*

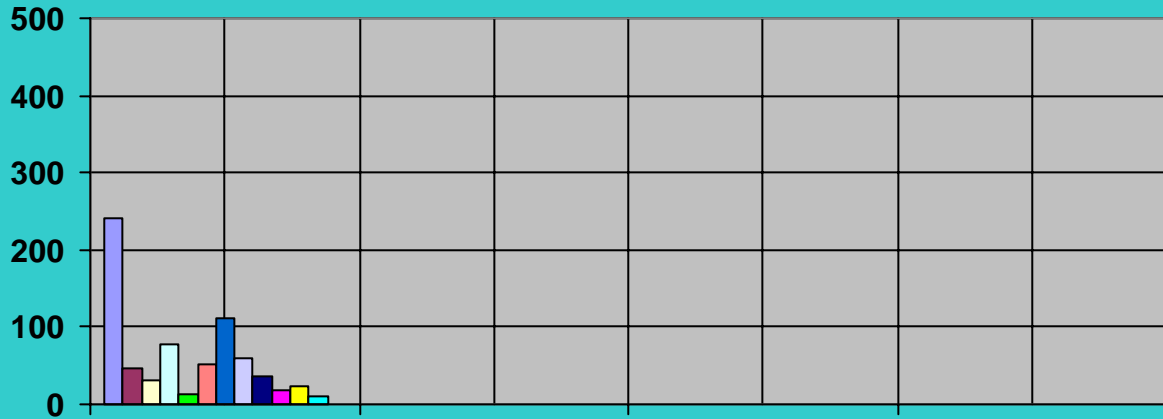
Flooding occurs when there are heavy rains and often is associated with hurricanes, severe thunderstorms, rising of streams and rivers, dams/levees break, ocean surge and even after melting of heavy amounts of snow. Flooding can range from a few inches, a few feet or covering cars and up to rooftops. Floods are the most common natural disaster.

In January 1971, Pinehurst, Incorporated sold Pinehurst to Diamondhead Corporation for \$9.2 million dollars. Included in the sale price was 7,500 acres and the resort facilities. Over the next decade, Diamondhead Corporation subdivided the land into about 7,000 lots or units to sell. While plans were being implemented for the subdivision of the 7,000 lots, storm water plans were not taken into consideration. The result of inadequate piping has caused widespread nuisance flooding for many properties in Pinehurst. There are also several areas that fall within the FEMA Flood Zones A and AE. These areas include: Pinehurst Lake area, CCNC, Pinehurst ETJ East, East of Highway #5, Golf Course #8 and Golf Course #6.

One area that is greatly affected is the Monticello Road area. In 2003, Pinehurst completed construction of the Monticello-Harness Track area drainage improvements project. Since its completion in December of 2003, this project has greatly mitigated the amount and duration of nuisance flooding within the project area. The chart created depicts just a few of the problem areas within Pinehurst. Other areas include Golf Course #6, Lake Area and Highway 5.

Though Pinehurst has not kept an ongoing record of specific instances of nuisance flooding, the Village is aware of areas that have problems with nuisance flooding. Many of the areas that have problems with nuisance flooding do not fall within the FEMA Flood Zone Areas. These problems are attributed to the lack of Diamondhead Corp. installing adequate storm water drainage systems.

# Nuisance Flooding



## Properties Affected

Monticello 242	Lake Hills 46	Pine Vista 31
Forest 77	St. Andrews 12	Wheeling 51
Gun Club 112	Pinyon 59	Fox Run 36
Pine Valley 17	Collett 24	Gallop 11
Rattlesnake 1		





Results of nuisance flooding, Firestone Lane, Pinehurst, NC



Results of nuisance flooding, Firestone Lane, Pinehurst, NC





Nuisance Flooding, Golf Course #6, Pinehurst, NC



Nuisance Flooding, Golf Course #6, Pinehurst, NC





Results of nuisance flooding, Golf Course #6, Pinehurst, NC



Highway #5 Drain, Pinehurst, NC

### *Thunderstorms (Severe)*

When moisture, unstable air and a lift (sea breezes, fronts or mountains) combine, this mixture of conditions creates a thunderstorm. Though thunderstorms are usually small in size, they can threaten environmental and human life. Thunderstorms can produce tornadoes, hail, flash/ nuisance flooding and lightening. Thunderstorms often occur in the afternoon and evening hours but they can strike at anytime and anywhere.

The spring and summer months are the predominate months for thunderstorms in the Sandhills. Most of these storms are classified as “thunderstorms” but on occasion several have been classified as “severe thunderstorms”. Severe thunderstorms are identified as having damaging hail, straight-line winds, lightning, flash flooding and potentially tornados.

Date	Event	Location	Property Damage
7-1-90	Severe Thunderstorm	Highway 5	Trees/Power Lines
1-7-95	Severe Thunderstorm	Pinehurst	26 structures
2-6-97	Severe Thunderstorm	Pinehurst	Trees/Power Lines
8-18-00	Severe Thunderstorm	Pinehurst	Trees Down
5-23-04	Severe Thunderstorm	Hialeah Place	Lightning Damage to Home





May 23, 2004, Lightning damage to home at 10 Hialeah Place, Pinehurst, NC



May 23, 2004, Lightning damage to home at 10 Hialeah Place, Pinehurst, NC





April, 2004, Severe Thunderstorm, Pinehurst Village Hall, Pinehurst, NC



April, 2004, Severe Thunderstorm, Pinehurst Village Hall, Pinehurst, NC

## *Tornados*

Tornadoes are the most violent of any natural disaster. Tornadoes are formed from very powerful thunderstorms and they appear as rotating funnels with winds reaching up to 300 miles per hour. Tornado season runs from March to August but they can develop at anytime if conditions are right.

The Village has only four documented cases of tornadoes. Each tornado caused only minor damage to properties. Moore County in general, has a low occurrence of tornadoes.

In 1932, a tornado ripped through the Pinehurst Fair Barn and produced major damage. The Fair Barn was used for the annual "Sandhills Fair". After the tornado, minor repairs were made and the "Fair Barn" was used as a regular barn to house horses. In 2002, the Fair Barn was fully restored to its' original form. The Village of Pinehurst Parks and Recreation Department runs and maintains the barn. The Fair Barn is rented for private parties, proms, weddings, fundraisers, educational events, and a variety of other events.

In July of 2003, a small tornado came through Southern Pines, Whispering Pines, Aberdeen, Vass and Pinehurst. This tornado caused some damage to a home and a business in Pinehurst. There was three inches of rain recorded with this storm, along with toppled trees and flooding of roads. Again on July 14<sup>th</sup>, a small tornado touched down on Highway 211 (adjacent from Pinewild Country Club). There was no damage to homes and only knocked some trees over.

Date	Event	Location	Property Damage
1932	Tornado	Pinehurst Harness Track	Heavily damaged the Pinehurst Fair Barn
1-6-95	Tornado	Pinehurst	Structural damage, downed trees
7-2-03	Tornado	Canter Lane, Pinehurst	Structural damage
7-2-03	Tornado	Bridle Path, Pinehurst	Structural damage
7-2-03	Tornado	Maverick Place, Pinehurst	Structural damage
7-2-03	Tornado	HWY 5, Pinehurst	Structural damage
7-14-03	Tornado	Hwy 211/Pinewild	Downed trees





February 14, 2004, Downed Tree, Highway 211 Tornado, Pinehurst, NC



February 14, 2004, Highway 211 Tornado, Downed Trees, Pinehurst, NC





February 14, 2004, Highway 211 Tornado, citizen breaking so not to hit downed trees caused by tornado, Pinehurst, NC



February 14, 2004, Damage from Highway 211 tornado, Pinehurst, NC

## *Hurricanes*

Hurricanes are severe tropical storms that are formed in warm ocean waters. They gather strength through warm waters and seawater evaporation increases the hurricane's power.

The center of the hurricane, or the eye of the hurricane, is relatively calm. The outer ridges of the eye are called the "eyewall" and this is the most violent part of a hurricane. Hurricanes can be very violent storms and when they make landfall they can create a variety of storm events such as torrential rain falls, which in turn can cause flooding, spawn tornadoes, high winds and create storm surges.

Pinehurst has had affects from several hurricanes. Hurricane Fran caused the greatest amount of damage to the area. There was significant nuisance flooding, downed power lines and trees and high winds.

Date	Event	Location	Property Damage
9-8-96	Hurricane Fran	Pinehurst	Flooding, damaging winds and power outages
9-15-99	Hurricane Floyd	Pinehurst	Nuisance flooding and high winds
9-18-03	Hurricane Isabel	Pinehurst	Nuisance flooding and high winds





*TO THE RESCUE - Among volunteers helping clean up after Hurricane Fran's devastation were fire department personnel. Clearing away a huge tree that fell on a roof and into the kitchen of a residence on Beaver Lane are Jimmy McCaskill (left, in cap), deputy chief and chief Glenn O'Ferrell of the Pinehurst Fire Department.*

### *Drought/Extreme Heat*

A drought is a weather condition of abnormally dry weather within a geographic area that usually has rain. A drought can cause severe environmental and economic damage by depleting reservoirs, wells and severely damaging crops.

Extreme heat can also be hazardous to humans and animals. During this type of weather, it is recommended that people and animals stay in some type of an air conditioned or cool shelter. If there is no shelter available then it is recommended that one stays in shade and consume liquids to stay hydrated.

The summer of 2002 left Pinehurst and Central Carolina in a state of drought. There were many crops damaged and low water sources. Many of the surrounding municipalities were shipping water to other municipalities to help meet the needs of humans.

The week of August 20<sup>th</sup>, Pinehurst residents and businesses cut their water usage more than in half after a plea of help from the Village government. A large percentage of the reduction was credited to the retired residents of Pinehurst being that they tend to be more conservative and conscientious. The restaurants served their food on paper plates, even though it was costing them more money, and used plastic utensils. Residents were also restricted to certain days of watering outdoors.

Date	Event	Location	Property Damage
1-86	Drought	Pinehurst/Central, NC	Crop damage, low water supply and human needs /severe heat.
7-98	Drought	Pinehurst/Central, NC	Crop damage, low water supply and human needs /severe heat.
7-02	Drought	Pinehurst/Central, NC	Crop damage, low water supply and human needs /severe heat.

## *Probability and Intensity*

The twelve geographic planning areas have been broken down and a brief summary of each hazard that could affect the areas have been included.

### **1. Lake Area Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Some properties in the Lake Area lay within the FEMA Flood Zone A. Any significant flooding to this area would be very critical considering this is a heavily populated residential area. Likelihood of occurrence: Likely, Intensity Rating: Critical
- b. Dam/Levee Failure – Possible failure at Pond #1, #2 and Pinehurst Lake. Any failure to the dam/levees at the Ponds or Pinehurst Lake would result in flooding of properties. Likelihood of occurrence: Likely, Intensity Rating: Moderate.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- e. Thunder Storms – High occurrence in all of Pinehurst/ETJ. Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

### **2. Airport/Midland Road Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Midland Road experiences nuisance flooding on roadways due to heavy downpours. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Limited, Intensity Rating: Moderate.



- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating: Severe.

### **3. Golf Course #6 Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Golf Course #6 has several low lying, non-draining roads that hold water. Many homes are built on a downward slope that would create flooding of homes and yards. There are several small lakes/ponds located in #6 that could cause some flooding of streets and homes. There is a small percentage of homes that are located in the FEMA Flood Zone A. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Dam/Levee Failure – There are 5 dams/levees that are located throughout Golf Course #6. Any failure or breakage of these could cause some damage to homes or property. Likelihood of Occurrence: Likely, Level of Impact: Limited. Dam broke that formed the lake between Riviera and La Quinta Loop. No damage reported to the Village. Likelihood of occurrence: Likely, Intensity Rating: Moderate.
- d. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Level of Impact: Catastrophic
- e. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- e. Thunder Storms – High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- f. Tornadoes – Slight risk of tornadoes in Pinehurst. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

### **4. Highway #5 Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Thunder Storms – High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- e. Tornadoes – Slight risk of tornadoes in Pinehurst. Likelihood of Occurrence:

Possible, Intensity Rating: Moderate. A small tornado touched down and minor damage was reported at 208 Cantor Lane, 10 Bridle Path and 1 Maverick Place.

- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating: Severe.

## **5. Old Town Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several areas that lie within Old Town that have flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience flooded yards. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Thunderstorms – High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

## **6. Village Acres Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several roads that have ponding of water due to significant rains and flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience flooded yards. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Dam/Levee Failure – There is one dam that backs up to Village Acres located on Golf Course #8. Any failure to the dam could possibly cause problems to a limited amount of properties. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- e. Thunderstorms – High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.

- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

**7. CCNC (Country Club of North Carolina) Natural Hazards Area**

- a. Flooding – The Village is not aware of any recurring flooding problems within CCNC. There are homes/properties that are located in the east side of CCNC that fall within the FEMA Flood Zone AE. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Dam/Levee Failure – There is one dam that is located in the main lake at CCNC. Any failure to the dam could possibly cause problems to a limited amount of properties and golf courses. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Hurricanes – Likely to have some effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- e. Thunderstorms – High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

**8. Pinewild Natural Hazard Areas**

- a. Flooding –Pinewild has one recreational lake that borders approximately 50 properties. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- b. Dam/Levee Failure – There is one dam that is located at the recreational lake in Pinewild. Any failure to the dam would cause problems to several residential properties. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Hurricanes – Likely to have effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- e. Thunderstorms – High occurrence for all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate. A small tornado was reported on 8/5/03. Minor damage to edge of property, downed a tree across HWY 211.

- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Level: Severe.

#### **9. ETJ Natural Hazard Areas**

- a. Flooding – There are not any recurrent flooding problems in this area that the Village is aware of. There are several properties that fall within the FEMA Flood Zone A. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Dam/Levee Failure – There are 5 dams/levees located in ponds/lakes that border several properties. If damaged or broken, minimal damage could occur. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Hurricanes – Likely to have effects of hurricanes. . Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- e. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- f. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

#### **10. ETJ 2 Natural Hazard Area**

- a. Flooding – There are some roads and properties that have some ponding after heavy rainstorms. Some properties have flooded yards due to low lying areas. Likelihood of Occurrence: Highly Likely, Intensity Rating: Moderate.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Hurricanes – Likely to have effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Highly Likely, Intensity Rating: Severe.

## **11. Medical Facilities Natural Hazard Area**

- a. Flooding – There is some nuisance flooding of roadways and of parking lots due to heavy rains and also from stormwater runoff onto roads. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Hurricanes – Likely to have effects of hurricanes. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating: Severe.

## **12. Clarendon Gardens Natural Hazard Area**

- a. Flooding – There is some nuisance flooding of roadways and yards due to heavy rains. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Hurricanes – Likely to have effects of hurricanes. . Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ Likelihood of Occurrence: Highly Likely, Intensity Rating: Mild.
- e. Tornadoes – Slight risk of tornadoes. Likelihood of Occurrence: Possible, Intensity Rating: Moderate.
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002. Likelihood of Occurrence: Likely, Intensity Rating: Severe.

## Possible Impacts

All twelve of the geographic planning areas in Pinehurst are susceptible to feeling effects of flooding, extreme heat/drought, hurricanes, thunderstorms, tornadoes and winter storms. All of these types of storms, except for tornadoes and thunderstorms, are generally large area storms.

### *Flooding*

CCNC, GC #6, Lake Area, Pinewild, Pinehurst ETJ East and West have the potential to experience flooding. Some of these areas lie within the FEMA Floodzones and some of the areas are notorious for nuisance flooding. (See graph on page 75). Regardless of where the properties are, they can all be victims of flooding. Because Pinehurst is largely residential, any serious amount of flooding would be *very critical* to the residents and to Pinehurst economically.

### *Winter*

Winters are generally mild in Pinehurst with the average temperatures being in the low to mid 40's. According to the graph on page 68, Pinehurst has been experiencing some type of winter weather every two years since 1996. Some of the storms have been mild, with little to no damage reported. There have been three significant storms since 2000 that have been costly to the Village. In 2000, Pinehurst was hit with a record breaking snow/ice storm. Damage assessments reached well over a million dollars. Because the Sandhills is inundated with pine trees, this causes many problems with breaking of limbs onto power lines and personal property. The Sandhills area does not have the equipment to handle large storms as does the northern states. In some cases, this can cause time delays in clean up or resort to spending additional money for contracted services.

### *Thunderstorms*

Thunderstorms are very common in this area during the spring and summer months. Generally the storms are not severe and pass over quickly. Every so often, there are some that are severe causing high winds, hail, lightning, and tornadoes. Once the Storm Water Master Plan is complete, approved and implemented, areas that are at greater risk of nuisance flooding will be focused on based on priority. This will help mitigate the nuisance flooding that can be caused by heavy down pours from thunderstorms.

### *Tornadoes*

Pinehurst has only four documented cases of tornadoes. (See graph on page 82). Each tornado (except for the 1932 tornado) caused only minor damage to property. Because tornadoes are so scarce in this area, it is important to educate the residents what to do in the event of a tornado. If a large tornado were to hit Pinehurst, it would be a *very critical* situation because Pinehurst is largely residential with over 5,000 homes. Any severe damage from a tornado would affect Pinehurst economically and environmentally.

### *Hurricanes*

The North Carolina coast is very familiar with the destructiveness of hurricanes. Pinehurst, however, has not sustained the wrath of many hurricanes. In 1996, Moore County and Pinehurst, felt the effects of Hurricane Fran. There was wide spread power outages due to trees/limbs falling on power lines and flooding. With the help of Progress Energy, we can minimize the affects of power loss by trimming of trees. Also by having a Storm Water Master Plan in place and implemented, this will help reduce the affects of flooding/nuisance flooding.

### *Droughts/Extreme Heat*

In 2002, the Village experienced a severe drought with excessive heat. Educating the public on the risks of excessive heat can help reduce human risks, especially since Pinehurst has a large elderly population. Pinehurst implemented mandatory water conservation and within a week, water usage was down by 60%. By conserving water in everyday usage will help lessen the impact of another drought in the future. Because the Village experienced a severe drought and the public response was positive to the mandatory water conservation, it is unlikely that the Village would have any long term side effects from another drought.

## Hazard Identification and Analysis

<i>Type of Hazard &amp; Associated Elements</i>	<i>Likelihood of Occurrence</i>	<i>Intensity Rating</i>	<i>Impact</i>	<i>Conclusions/ Seriousness of Hazard</i>
Flooding	Likely	Moderate	Critical	4
Hurricanes	Likely	Moderate	Critical	4
Winter Storms	Likely	Severe	Critical	4
Drought/Extreme Heat	Likely	Moderate	Critical	4
Tornadoes	Possible	Moderate	Critical	4
Dam/Levee Failure	Likely	Moderate	Critical	4
Wildfires	Likely	Mild	Critical	3
Thunderstorms	Highly Likely	Mild	Negligible	3
Earthquakes	Unlikely	Null	Critical	2
Coastal/Riverine Erosion	Possible	Mild	Negligible	2
Tsunamis	Highly Unlikely	Null	Critical	1
Landslides/Sink Holes	Highly Unlikely	Null	Critical	1

<b>Impact</b>	<b>Catastrophic</b>	<b>Critical</b>	<b>Limited</b>	<b>Negligible</b>
<b>Frequency of Occurrence</b>				
<b>Highly Likely</b>	5	4	4	3
<b>Likely</b>	5	4	3	2
<b>Possible</b>	4	3	2	2
<b>Unlikely</b>	3	2	1	1
<b>Highly Unlikely</b>	2	1	1	1



# Village of Pinehurst Hazard Mitigation Plan



## *VIII. Appendix B: Vulnerability Assessment*

## **Introduction of Appendix B**

The Village of Pinehurst is unique in that it is a mixture of new residential, commercial, historic residential and historic commercial. Many of the structures that were built in the late 1800's and early 1900's are still in existence today.

Pinehurst's vulnerability assessment was conducted through research of old files, newspaper articles, GIS information, interviews and other best available data.

Appendix B contains information on the critical facilities, geographical and economic information.

The following areas will be discussed in Appendix B.

1. Hazard Vulnerabilities
  - a. Geographic Information
  - b. Demographic Information
  - c. Economics
  - d. Specific Hazards
2. All Hazards
3. Critical Facilities
4. Geographic Planning Areas
5. Formation of Geographic Planning Areas
6. Present Vulnerabilities

## *Appendix B*

### *I. Hazard Vulnerabilities*

#### *Geographic Information*

Locally, Pinehurst is viewed as an outstanding residential community because of property values, way of life and the many recreational opportunities. Pinehurst is also recognized world wide as a major golf resort. The majority of Pinehurst is comprised of residential properties and golf courses. The topography of Pinehurst consists of sandy soil, rolling hills and many pine trees, holly trees and magnolia trees. Pinehurst falls between 300 and 500 feet above sea level. Pinehurst abuts Southern Pines, Aberdeen and Taylortown and is approximately 13 miles wide. There are 9,159 acres within the Village of Pinehurst's corporate limits and 7,808 acres within the extra-territorial jurisdiction (ETJ). Highway 15-501, Highway 211, Highway 5 and the oldest median highway in the state, Highway 2 (aka Midland Road) all connect to Pinehurst from other jurisdictions. Pinehurst is located approximately 40 miles from Fayetteville, 60 miles from Raleigh and 75 miles from Charlotte. Pinehurst has several lakes and ponds, but the more well known are the two ponds known as Pond #1 (aka Shirley Pond, 4.7 acres) and Pond #2 (aka Andy Pond, 3.8 acres) and Pinehurst Lake (188.11 acres).

#### *Demographic Information*

The population of Pinehurst is approximately 10,218. According to the US census reports of 2000, the population was 9,706. This is a 91% increase from the 1990 census with the population being 4,615. During this same period, North Carolina's population increased by 21% and Moore County's population grew by 27%. By the year 2020, Pinehurst could be fully built out with a population of 18,000 residents.

In 1990, the make up of residences in Pinehurst was mainly retirement-aged people. This make up was unique in that nowhere else in Moore County had this type of demographic make up. By 2000, the growth of non-retirement residences grew to closer to that of Moore County. Pinehurst still has a higher majority of retired citizens than anywhere else in Moore County. Pinehurst's strong retirement focus is now changing and is increasing as a family oriented community as well as a retirement community.

#### *Economics*

Pinehurst is home to the two largest employers of Moore County. First Health of the Carolinas, Moore Regional Hospital and the surrounding medical offices and clinics employ 42% of the Moore County work force. Pinehurst Resort and surrounding facilities employ 17% of Moore County's work force. Compared to the total work force of Moore County, Pinehurst has a 41% rate of residents in the work force. The other 59% is contributed to the high rate of retired citizens residing in Pinehurst.

## Specific Hazards

Pinehurst as a whole, has a low rate of specific hazard areas. The Lake Area, CCNC, Golf Course #8, small portion of East Highway #5 and a small portion of Golf Course #8 fall within the FEMA Flood Zones. Besides the specific FEMA Flood Zones, there are other areas that are affected by nuisance flooding. These areas include: Monticello, Lake Hills, Pine Vista, Forest, St. Andrews, Wheeling, Gun Club, Pinyon, Fox Run, Pine Valley, Collett, Gallop and Rattlesnake Trail. (See graph on page 55)

### **Lake Area Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Some properties in the Lake Area lay within the FEMA Flood Zone A. Any significant flooding to this area would be critical considering this is a heavily populated residential area.
- b. Dam/Levee Failure – Possible failure at Pond #1, #2 and Pinehurst Lake. Any failure to the dam/levees at the Ponds or Pinehurst Lake would result in flooding of properties.

### **2. Airport/Midland Road Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Midland Road experiences ponding on roadways due to heavy downpours.

### **3. Golf Course #6 Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Golf Course #6 has several low lying, non-draining roads that hold water. Many homes are built on a downward slope that would create flooding of homes and yards. There are several small lakes/ponds located in #6 that could cause some flooding of streets and homes. There is a small percentage of homes that are located in the FEMA Flood Zone A.
- b. Dam/Levee Failure – There are 5 dams/levees that are located throughout Golf Course #6. Any failure or breakage of these could cause some damage to homes or property. Likelihood of Occurrence: Likely, Level of Impact: Limited. Dam broke that formed the lake between Riviera and La Quinta Loop. No damage reported to the Village.

#### **4. Highway #5 Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. The small pond located in Pinehurst South, in front of Vickie Auman Interiors consistently floods due to heavy rains. With very heavy rains, water will rise to the front steps.

#### **5. Old Town Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several areas that lie within Old Town that have flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience flooded yards.

#### **6. Village Acres Hazard Areas**

- a. Flooding – Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several roads that have ponding of water due to significant rains and flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience flooded yards.
- b. Dam/Levee Failure – There is one dam that backs up to Village Acres located on Golf Course #8. Any failure to the dam could possibly cause problems to a limited amount of properties.

#### **7. CCNC (Country Club of North Carolina) Natural Hazards Area**

- a. Flooding – The Village is not aware of any recurring flooding problems within CCNC. There are homes/properties that are located in the east side of CCNC that fall within the FEMA Flood Zone AE.
- b. Dam/Levee Failure – There is one dam that is located in the main lake at CCNC. Any failure to the dam could possibly cause problems to a limited amount of properties and golf courses.

#### **8. Pinewild Natural Hazard Areas**

- a. Flooding – Pinewild has one recreational lake that borders approximately 50 properties.
- b. Dam/Levee Failure – There is one dam that is located at the recreational lake in Pinewild. Any failure to the dam would cause problems to several residential properties.

**9. ETJ Natural Hazard Areas**

- a. Flooding – There are not any recurrent flooding problems in this area that the Village is aware of. There are several properties that fall within the FEMA Flood Zone A. Likelihood of Occurrence: Likely, Intensity Rating: Moderate
- b. Dam/Levee Failure – There are 5 dams/levees located in ponds/lakes that border several properties. If damaged or broken, minimal damage could occur.

**10. ETJ 2 Natural Hazard Area**

- a. Flooding – There are some roads and properties that have some ponding after heavy rainstorms. Some properties have flooded yards due to low lying areas.

**11. Medical Facilities Natural Hazard Area**

- a. Flooding – There is some ponding of roadways and of parking lots due to heavy rains and also from stormwater runoff onto roads.

**12. Clarendon Gardens Natural Hazard Area**

- a. Flooding – There is some ponding of roadways and yards due to heavy rains.

## *Appendix B*

### *II. All Hazards*

\*Hazards that Pinehurst would be susceptible to or have experienced the following natural hazards: hurricanes, tornadoes, flooding, extreme heat/ drought, dam failure, winter storms and thunderstorms. There is not any recorded information of Pinehurst having wildfires, sink holes, landslides or earthquakes. Pinehurst is not susceptible to coastal erosion and tsunamis since Pinehurst is not geographically located near the North Carolina coast. The applicable “all hazards” have been broken down in each geographic planning area.

#### **1. Lake Area Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Some properties in the Lake Area lay within the FEMA Flood Zone A. Any significant flooding to this area would be catastrophic considering this is a heavily populated residential area.
- b. Dam/Levee Failure - Possible failure at Pond #1, #2 and Pinehurst Lake. Any failure to the dam/levees at the Ponds or Pinehurst Lake would result in flooding of properties.
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- d. Hurricanes - Likely to have some effects of hurricanes.
- e. Thunder Storms - High occurrence in all of Pinehurst/ETJ.
- f. Tornadoes - Slight risk of tornadoes.
- g. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

#### **2. Airport/Midland Road Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Midland Road experiences ponding on roadways due to heavy downpours.
- b. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- c. Hurricanes - Likely to have some effects of hurricanes.
- d. Thunder Storms - High occurrence all of Pinehurst/ETJ.
- e. Tornadoes - Slight risk of tornadoes.
- f. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.



### **3. Golf Course #6 Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. Golf Course #6 has several low lying, non-draining roads that hold water. Many homes are built on a downward slope that would create flooding of homes and yards. There are several small lakes/ponds located in #6 that could cause some flooding of streets and homes. There is a small percentage of homes that are located in the FEMA Flood Zone A.
- b. Dam/Levee Failure - There are 5 dams/levees that are located throughout Golf Course #6. Any failure or breakage of these could cause some damage to homes or property. Likelihood of Occurrence: Likely, Level of Impact: Limited. Dam broke that formed the lake between Riviera and La Quinta Loop. No damage reported to the Village.
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- d. Hurricanes - Likely to have some effects of hurricanes.
  - d. Thunder Storms - High occurrence for all of Pinehurst/ETJ
  - e. Tornadoes - Slight risk of tornadoes in Pinehurst.
  - f. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

### **4. Highway #5 Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains.
- b. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- c. Hurricanes - Likely to have some effects of hurricanes.
- d. Thunder Storms - High occurrence for all of Pinehurst/ETJ.
- e. Tornadoes - Slight risk of tornadoes in Pinehurst.

A small tornado touched down and minor damage was reported at 208 Cantor Lane, 10 Bridle Path and 1 Maverick Place.
- f. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

### **5. Old Town Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several areas that lie within Old Town that have flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience flooded yards.
- b. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought.

- c. Hurricanes - Likely to have some effects of hurricanes.
- d. Thunderstorms - High occurrence for all of Pinehurst/ETJ.
  - g. Tornadoes - Slight risk of tornadoes.
  - h. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

**6. Village Acres Hazard Areas**

- a. Flooding - Due to the lack of adequate piping in the Village (installed by Diamondhead Corp.), the Village has wide spread nuisance flooding contributed by heavy rains. There are several roads that have ponding of water due to significant rains and flooding due to low lying areas and poor storm water drainage system. Many homes in this area experience flooded yards.
- b. Dam/Levee Failure - There is one dam that backs up to Village Acres located on Golf Course #8. Any failure to the dam could possibly cause problems to a limited amount of properties.
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- d. Hurricanes - Likely to have some effects of hurricanes.
- e. Thunderstorms - High occurrence for all of Pinehurst/ETJ.
- f. Tornadoes - Slight risk of tornadoes.
- g. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

**7. CCNC (Country Club of North Carolina) Natural Hazards Area**

- a. Flooding - The Village is not aware of any recurring flooding problems within CCNC. There are homes/properties that are located in the east side of CCNC that fall within the FEMA Flood Zone AE.
- b. Dam/Levee Failure - There is one dam that is located in the main lake at CCNC. Any failure to the dam could possibly cause problems to a limited amount of properties and golf courses.
- c. Extreme Heat/Drought - All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- d. Hurricanes - Likely to have some effects of hurricanes.
- e. Thunderstorms - High occurrence for all of Pinehurst/ETJ.
- f. Tornadoes - Slight risk of tornadoes.
- g. Winter Storms/Freezes - Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

## **8. Pinewild Natural Hazard Areas**

- a. Flooding –Pinewild has one recreational lake that borders approximately 50 properties. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- b. Dam/Levee Failure – There is one dam that is located at the recreational lake in Pinewild. Any failure to the dam would cause problems to several residential properties. Likelihood of Occurrence: Likely, Intensity Rating: Moderate.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- d. Hurricanes – Likely to have effects of hurricanes.
- e. Thunderstorms – High occurrence for all of Pinehurst/ETJ.
- f. Tornadoes – Slight risk of tornadoes. A small tornado was reported on 8/5/03. Minor damage to edge of property, downed a tree across HWY 211.
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

## **9. ETJ Natural Hazard Areas**

- a. Flooding – There are not any recurrent flooding problems in this area that the Village is aware of. There are several properties that fall within the FEMA Flood Zone A.
- b. Dam/Levee Failure – There are 5 dams/levees located in ponds/lakes that border several properties. If damaged or broken, minimal damage could occur.
- c. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- d. Hurricanes – Likely to have effects of hurricanes.
- e. Thunder Storms – High occurrence all of Pinehurst/ETJ.
- f. Tornadoes – Slight risk of tornadoes.
- g. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

## **10. ETJ 2 Natural Hazard Area**

- a. Flooding – There are some roads and properties that have some ponding after heavy rainstorms. Some properties have flooded yards due to low lying areas.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- c. Hurricanes – Likely to have effects of hurricanes.
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ.
- e. Tornadoes – Slight risk of tornadoes.
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

### **11. Medical Facilities Natural Hazard Area**

- a. Flooding – There is some ponding of roadways and of parking lots due to heavy rains and also from stormwater runoff onto roads.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- c. Hurricanes – Likely to have effects of hurricanes.  
Thunder Storms – High occurrence all of Pinehurst/ETJ.
- e. Tornadoes – Slight risk of tornadoes.
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

### **12. Clarendon Gardens Natural Hazard Area**

- a. Flooding – There is some ponding of roadways and yards due to heavy rains.
- b. Extreme Heat/Drought – All of Pinehurst/ETJ is susceptible to extreme heat/drought.
- c. Hurricanes – Likely to have effects of hurricanes.
- d. Thunder Storms – High occurrence all of Pinehurst/ETJ.
- e. Tornadoes – Slight risk of tornadoes.
- f. Winter Storms/Freezes – Winter Storm of 2000 immobilized Pinehurst for several days as did the Winter Storm of 2002.

## *Appendix B*

### *III. Critical Facilities*

Pinehurst has an extensive list of critical facilities. It is important to maintain a list of all critical facilities in Pinehurst, especially the facilities that are vital in the recovery of a natural disaster. Not all the critical facilities are important to recovery operations, but instead, they may hold significant historic value to the community.

Pinehurst has been divided into twelve geographic planning areas for the Hazard Mitigation Plan. Each of the geographic planning areas has their own critical facilities. Depending on the location of the geographic planning area also contributes to the importance of the critical facility.

In 1971, Diamondhead, Corp. bought Pinehurst for 9.2 million dollars. Diamondhead, Corp. installed infrastructure (roads, water lines and sewer lines) throughout Pinehurst and subdivided 7,500 hundred acres of land. Many of these lots were sold and over the past several years, these lots are being developed at a rate of about 250 homes a year. Because of Diamondhead laid out all infrastructure, there is very little room for future infrastructure.

#### **Geographic Planning Areas**

1. Old Town
2. Golf Course #6
3. Lake Area
4. East Highway #5
5. Airport and Midland Roads
6. Village Acres
7. CCNC
8. Clarendon Gardens
9. Medical
10. Pinewild
11. ETJ West
12. ETJ East

## Old Town

Old Town Pinehurst was the first area developed within Pinehurst. Old Town Critical Facilities include water/sewer lines, MCPU wells, sewer lift stations, streets, highways, railroad, water towers, parks, library, nursing home, emergency shelter, Pinehurst Police Station, Pinehurst Fire Department Station 1, post office, school, government buildings and historic buildings. There are many historical homes and commercial buildings that date back to the early 1900's. Some of the more popular historic buildings are the Magnolia Inn, Manor Inn, Holly Inn and the Pinehurst Country Club. The Pinehurst Country Club construction began in 1895 and the Holly Inn was the first building to be opened within the resort.

There are many commercial and residential buildings that have been deemed historical and still in use. Located in the downtown area of Pinehurst is the Pinehurst Post Office, Pinehurst Fire Station and library. Located on Magnolia Road (which leads into Old Town) is the Pinehurst Police Department and the Pinehurst Village Hall. The Assembly Hall located within the Village Hall was once used as an emergency shelter in Pinehurst during the 2000 snowstorm that immobilized Pinehurst.

Critical Facility	Value	Location	Importance
Historic Homes Overlay District	\$49,091,785	Old Town	Historic Value
Cannon Park	\$1,643,490	Rattlesnake Trail	Village of Pinehurst Property
Rassie Wicker Park	\$958,100	Magnolia Road and Rassie Wicker Drive	Location of Pinehurst Village Hall and Police Department
Village Green Park	\$17,160	Village Green East & West	Village of Pinehurst Property
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	Old Town	Water & Sewer
Streets	\$14,745,443	Old Town	Transportation
Library	\$22,480	Village Green/Cherokee Roads	Historic Property
Nursing Home	\$2,050,090	Rattlesnake Trail	Adult Nursing Home
Water Towers	\$182,540	McLean and McIntyre Roads	Water Supply
Village Hall	\$3,7000,000	Magnolia and Rassie	Pinehurst Municipal

		Wicker Drive	Building
Police Department	\$1,895,844	Magnolia Road	Emergency Services
Fire Department	\$219,530	Community Road	Emergency Services
Emergency Shelter	\$1,06,720	Magnolia Road	Located in assembly hall in Pinehurst Village Hall
Historic Commercial Buildings: Carolina Hotel Pinehurst Country Club Holly Inn Magnolia Inn	\$30,544,480	Carolina Vista, Community, and Orange Roads	Historic Value
Public Utility Wells	\$750,000	Beulah Hill, HWY #5, Power Plant and McKenzie Roads	Water Supply
Pinehurst Elementary School	\$43,050	Dundee Road	Only public school located within Pinehurst limits
Pinehurst Post Office	\$299,970	Cherokee Road	United States Government Building

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.



## Golf Course #6

In the late 1970's, Diamondhead Corporation, former owner of Pinehurst, developed Golf Course #6. Golf Course #6 is a relatively large residential development with a golf course, club house and tennis amenities. Golf Course #6 Critical Facilities include water/sewer lines, sewer lift stations, MCPU wells, streets, GC #6 Country Club and GC #6 Golf Course, streets and dams. Golf Course #6 is part of the conglomeration of golf courses owned by Pinehurst, Inc. There is a mixture of houses, townhomes and a new multi-family development, which is currently under construction, within GC #6, named Lamplighter Village.

Critical Facility	Value	Location	Importance
Public Utility Wells	\$250,000	Kahkwa Trail	Water Supply
Sewer Lift Stations	\$5,000,000	Sakonnet, Aronimink, Scioto, HWY #15-501, Carson, Kingswood, Lenoir and Prestwick	Sewer System
Streets	\$9,992,430	Golf Course #6	Transportation
Golf Course #6	\$1,641,370	Golf Course #6	Economics
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	Golf Course #6	Water & Sewer
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

## Lake Area

The Lake Area Critical Facilities include water/sewer lines, sewer lift stations, MCPU wells, dams, marina and streets. The Lake Area is a highly populated, residential area that has two ponds (Pond #1 and Pond #2), Pinehurst Lake, a marina and two golf courses. The marina and Pinehurst Lake are owned and operated by Pinehurst, Inc. Some of the properties surrounding Pinehurst Lake fall within the FEMA Flood Zone A. There are 3 dams located at Pinehurst Lake, Pond #1 and Pond #2.

Critical Facility	Value	Location	Importance
Public Utility Wells	\$1,500,000	Idlewild, Forest, two on Diamondhead, Ridgewood and Trotter	Water Supply
Sewer Lift Stations	\$1,500,000	Burning Tree, Lake Forest and Lake Point	Sewer System
Streets	\$16,969,100	Lake Area	Transportation
Dams	\$50,000	Pond #, Pond #2 and Lake Pinehurst	Lake Pinehurst, Ponds 1 & 2
Ponds #1 & #2	\$36,230	Queens Court & Gingham	Watering Source
Lake Pinehurst	\$97,460	West of HWY #5, Lake Area	Recreation and watering source
Pinehurst Marina		Diamondhead Drive	Recreation
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	Lake Area	Water & Sewer
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

## *East Highway #5*

East Highway #5 Critical Facilities include water/sewer lines, MCPU wells, sewer lift stations, Golf Course #7 Golf Club, 4 Golf Courses, Pinehurst Post Office, Pinehurst Fire Department, Pinehurst Harness Track, railroad, Highway 5 and streets. East Highway #5 is a combination of residential and commercial properties. There is a small business park, Pinehurst South, where the Pinehurst Post Office #2 and Pinehurst Fire Department Station 2 are located along with a variety of other businesses. Also located behind Pinehurst South is Quail Haven, which is a retirement/nursing home. Another golf community that has been developed is Golf Course #7 aka Fairways on #7 and is a private, gated community. Backing up to GC#7 properties is GC# 4 and the internationally famed GC#2, where the 1999 US Open was held and will be held again in June 2005. The Village owned Pinehurst Harness Track is also located on HWY #5. This is a winter training facility for standardbred horses. Many of the trainers migrate from Ohio, New York, Maine, Maryland and Canada and train at the Harness Track from October until the end of April. When training season is not in session the harness track is busy with a variety of shows. There are Hunter/Jumper Shows, AKC dog show, antique car show, polo matches and many other events. Also housed at the Pinehurst Harness Track is the newly renovated Fair Barn. The Fair Barn was built in 1917 to house the annual Sandhills Fair. In 1932, a tornado badly damaged the Fair Barn and was never restored to the natural state as a Fair Barn and served as a horse stable instead. In 1996 residents of Pinehurst formed a committee and raised over a million dollars to refurbish the Fair Barn to its natural state. It is now being used for rental purposes such as wedding receptions, private parties, concerts and other events.

Critical Facility	Value	Location	Importance
Public Utility Wells	\$35,000,000	Golf Course #7, two at the Pinehurst Harness Track and two located off of Hwy #5	Water Supply
Sewer Lift Stations	\$750,000	Granger, Filly and North Hills (GC #7)	Sewer System
Streets	\$2,388,000	East Highway #5	Transportation
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	East HWY #5	Water & Sewer
Pinehurst Post Office	\$118,689.	Blake Blvd. (Pinehurst South)	United States Government Building

Pinehurst Harness Track	\$616,000	Highway #5	Local Government Facility
Golf Courses	\$1,200,000	Between Highway #5 and Highway #15-501	Economics and Recreation
Pinehurst Fair Barn	\$2,000,000	Pinehurst Harness Track	Local Government Facility Economics Entertainment Purposes
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

### *Airport and Midland Roads*

Airport and Midland Roads are both major roads that lead into Pinehurst. Airport Road connects by Pinehurst, Southern Pines and Whispering Pines. Sandhills Community College (first comprehensive community college in North Carolina) and the O’Neal School are located on Airport Road.

Midland Road connects Pinehurst to Southern Pines. Midland Road is a combination of commercial and residential properties. Carolina Eye, a nationally recognized eye clinic, Broadhurst Veterinary Clinic and a few upper scale restaurants are some of the commercial properties aligning Midland Road. Midland Country Club, annexed in 1999, is a small, residential, golf neighborhood. MCC has a golf course, clubhouse, townhomes, restaurant, pro shop and swimming pool.

A traffic circle, which is deemed historical, connects to Midland Road (aka Highway #2), Highway 15-501 North and South, and Highway 211.

Critical Facility	Value	Location	Importance
Public Utility Wells	\$250,000	Midland Road	Water Supply
Sewer Lift Stations	\$1,000,000		Sewer service
Streets	\$5,932,000	Midland/ Airport Road Area	Transportation
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	Airport/Midland Road Area	Water & Sewer
Midland Country Club	\$1,026,090	Midland/ Airport Roads	Economics and Residential Neighborhood
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

## Village Acres

Village Acres is a residential community that attracts primarily younger families. Pinehurst Golf Course #8 backs up to some properties of Village Acres. Village Acres Critical Facilities include water/sewer lines, sewer lift stations, MCPU wells and streets. Village Acres is located on Highway 15-501 North and is across the highway of Golf Course #6.

Critical Facility	Value	Location	Importance
Sewer Lift Stations	\$5,000,000	Longleaf, Juniper, GC #8, Garner, Bradley, Lakeview and Sandhills	Water Supply
Streets	\$8,046,814	Village Acres	Transportation
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	Airport/Midland Road Area	Water & Sewer
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

## CCNC (Country Club of North Carolina)

CCNC is a private, gated community that was annexed by the Village of Pinehurst in the late 1980's. The Town of Southern Pines owns and maintains the water system within CCNC even though CCNC was annexed by Pinehurst. CCNC owns and maintains their own streets. Critical Facilities include water/sewer lines, club house, golf course and streets. Located within CCNC is a golf course, club house and tennis courts.

Critical Facility	Value	Location	Importance
Golf Course /Facilities	\$8,382,530	CCNC	Economics and Residential Neighborhood
Streets	\$8,533,218	CCNC	Transportation
Water & Sewer	Southern Pines owns and operates CCNC w&s.	CCNC	Water Supply
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

### *Clarendon Gardens*

Clarendon Gardens is a small residential neighborhood. There are approximately 200 parcels of land with 150 homes already in existence. Clarendon Gardens Critical Facilities include: water/sewer lines, streets and Clarendon Gardens Wells. Clarendon Gardens is located off Linden Road. Clarendon Gardens contracts with a private company to run and maintain their water and sewer lines.

Critical Facility	Value	Location	Importance
Public Utility Well	\$15,000	Clarendon Gardens	Water Supply
Streets	\$1,475,073	Clarendon Gardens	Transportation
Water and Sewer	Clarendon Gardens contracts with a private company to run and maintain their water/sewer services	Clarendon Gardens	Water Supply

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

### *Medical Park*

The Medical Facilities Critical Facilities include: water/sewer lines, sewer lift stations, MCPU wells, streets, day care and medical facilities such as Moore Regional Hospital and Pinehurst Surgical Center. These facilities are located in a complex of buildings located on Page and Memorial Drive. The MRH Child Development center is part of the hospital complex. The day care is open only to hospital employees and have recently expanded their facility to meet the demand for care by hospital employees. The Pinehurst Surgical Clinic is located next to the hospital but is not part of the hospital network. Other medical facilities within the complex include a gynecologist, neurologist, dentist, health club facilities, Hospice and others medical facilities.

Critical Facility	Value	Location	Importance
Public Utility Well	\$15,000	Medical Facilities	Water Supply
Streets	\$2,100,000	Medical Facilities	Transportation
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	Medical Facilities	Water Supply
Hospital, fitness center, day care center and other medical facilities	\$87,078,160	Page and Memorial Drive	Medical Facilities Commercial Properties
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			



## *Pinewild*

Pinewild Critical Facilities include water/sewer lines, sewer lift stations, water tower, MCPU wells, golf courses, Pinewild Country Club, tennis courts, streets and lake. Pinewild is a private, gated community but their golf courses are open to the public. Within the country club is a pro shop, snack bar and restaurant.

Critical Facility	Value	Location	Importance
Public Utility Wells	\$250,000	Lasswade	Water Supply
Streets	\$12,070,000	Pinewild	Transportation
Water & Sewer Lines (Study has been conducted by KBMG, Consulting for possible purchase of water system from Moore County)	Total Pinehurst System valued at \$9M	Pinewild	Water Supply
Golf Course, Club House and other recreational facilities	\$4,254,340	Pinewild	Residential Neighborhood and Economics
Sewer Lift Stations	\$4,500,000	Linden, Abington, Stoneykirk and Glasgow	Sewer Service
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

***Pinehurst ETJ West***

The ETJ area west of HWY 5 is in the general location of Chicken Plant, Bowman and Linden Road. The Critical Facilities in this area include: MCPU Wells, Sewer Lift Stations, municipal park, lakes/ponds and streets. This area is primarily large parcels of land that are undeveloped. There are several sections of townhomes located off Linden Road on the outskirts of Pinehurst.

Critical Facility	Value	Location	Importance
Public Utility Well	\$250,000	Lindenhurst Farm	Water Supply
Park (Pinehurst Owned)	\$110,010	Chicken Plant and Bowen Roads	Recreational
Roads State Owned and maintained	\$1,550,000	Monroe Town, Campground, Jones, Brookside Roads and Gaeta Drive	Transportation
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

***Pinehurst ETJ East***

Pinehurst ETJ East is located east of HWY 5 and encompasses property located off HWY 15-501, Midland and Airport Roads. The Critical Facilities for East of HWY 5 are streets, lakes, wells and septic. The property off HWY 15-501 is a large, undeveloped, parcel of land zoned for commercial use. Several properties located off Airport Road have existing subdivisions. The properties located on Midland Road already have existing homes or zoned for residential property.

Critical Facility	Value	Location	Importance
Public Utility Well	\$250,000	Lindenhurst Farm	Water Supply
Park (Pinehurst Owned)	\$110,010	Chicken Plant and Bowen Roads	Recreational
Roads State Owned and maintained	\$19,200,000	ETJ West Roads Chicken Plant, Bowmen, etc.	Transportation
Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.			

## *Appendix B*

### *IV. Geographic Planning Areas*

Pinehurst has been divided into twelve geographic planning areas for the Hazard Mitigation Plan. Pinehurst has a number of critical facilities ranging from roads, historic buildings, government buildings to parks. Each of the geographic planning areas have their own critical facilities. Depending on the location of the geographic planning area also contributes to the importance of the critical facility.

In the updating of the plan, information will be provided on any new critical facilities, private buildings, commercial properties, new residents and new roads in Pinehurst. Projections for long term growth will also be provided. Because Pinehurst is becoming known for more than just a “retirement mecca”, there is a significant increase in the “family age” group. With this type of growth, Pinehurst will have to accommodate this age group in growth and facilities. At the current rate of development in Pinehurst, it is expected that Pinehurst will be completely developed by the year 2020.

In 1971, Pinehurst Corp. sold Pinehurst to Diamondhead, Corp. for \$9.2 million dollars. Included in this sale price was 7,500 acres of land and the resort. Infrastructure was put in place in the “new” Pinehurst to help promote the sales of parcels. Roads were built and sewer and water lines were also installed. Because Pinehurst has no room for expanded infrastructure, Pinehurst ETJ areas are the only areas that have the room to expand the infrastructure. This would only be done by the property owner or if Pinehurst were to annex the properties.

**Geographic Planning Area Vulnerability Assessment: *Old Town***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	666	\$138,776,569	1592	163	\$32,600,000	375
Multi-Family Residential	7	\$1,801,710	17	0	0	0
Commercial	50	\$49,884,190	150	7	\$1,750,000	16
Industrial	0	0	0	0	0	0
Schools	1	\$43,050	600	0	0	0
Police Station	1	\$1,895,443	28	0	0	0
Fire Station	1	\$219,530	6	0	0	0
Government Offices	1	\$3,700,000	30	0	0	0
Emergency Shelter	1	\$1,062,720	300	0	0	0
Other	4	\$13,174,230	10	0	0	0
<b>Subtotal</b>	<b>732</b>	<b>\$210,557,442</b>	<b>2,733</b>	<b>170</b>	<b>\$34,350,000</b>	<b>391</b>
Infrastructure (Streets, water/sewer lines)	28.02 Miles	0	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *Village Acres***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	633	\$57,558,035	1513	768	\$69,833,472	1765
Multi-Family Residential	0	0	0	0	0	0
Commercial	0	0	0	1	100	0
Industrial	0	0	0	0	0	0
Other/Exempt	11	\$29,910	0	0	0	0
<b>Subtotal</b>	<b>644</b>	<b>\$57,587,945</b>	<b>1513</b>	<b>769</b>	<b>\$69,833,572</b>	<b>1765</b>
Infrastructure	34.22 Miles	\$57,587,945.	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and

Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *Midland/Airport Road***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	359	\$46,732,090	858	184	\$20,240,000	454
Multi-Family Residential	11	\$1,670,510	25	8	\$1,216,000	16
Commercial	8	\$6,866,640	35	3	\$450,000	7
Industrial	0	0	0	0	0	0
Other/Exempt	3	\$80,980	7	2	\$90,000	5
<b>Subtotal</b>	<b>381</b>	<b>\$48,483,580</b>	<b>925</b>	<b>197</b>	<b>\$21,546,000</b>	<b>482</b>
Infrastructure	13.02 Miles	\$5,932,000	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *Golf Course #6***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	805	\$125,204,400	1924	765	\$114,750,000	1760
Multi-Family Residential	5	\$562,650	12	35	\$5,250,000	78
Commercial	2	\$2,687,900	20	2	\$200,000	5
Industrial	0	0	0	0	0	0
Other/Exempt	14	\$155,180	10	0	0	0
<b>Subtotal</b>	<b>826</b>	<b>\$128,613,130</b>	<b>1966</b>	<b>802</b>	<b>\$120,200,000</b>	<b>1843</b>
Infrastructure	33.90 Miles	\$9,992,430	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *East Highway #5***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	780	\$141,633,095	1864	488	\$92,650,216	1123
Multi-Family Residential	1	\$110,300	2	0	0	0
Commercial	33	\$25,029,160	76	23	\$17,444,557	53
Industrial	0	0	0	0	0	0
Other/Exempt	21	\$3,790,360	48	0	0	0
Fire Station	1	\$364,490	6	0	0	0
Government Office	1	\$118,689	20	0	0	0
<b>Subtotal</b>	<b>837</b>	<b>\$171,046,094</b>	<b>2016</b>	<b>511</b>	<b>\$110,094,773</b>	<b>1176</b>
Infrastructure	68.28 Miles	\$2,388,000	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *Lake Area***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	1540	\$248,258,610	3681	866	\$152,392,000	2069
Multi-Family Residential	12	\$1,309,000	528	0	0	0
Commercial	5	\$3,446,520	25	5	\$3,654,340	5
Industrial	0	0	0	0	0	0
Other/Exempt	23	\$207,820	51	0	0	0
<b>Subtotal</b>	<b>1580</b>	<b>\$253,221,950</b>	<b>4285</b>	<b>871</b>	<b>4152,516,630</b>	<b>2074</b>
Infrastructure	101.30 Miles	\$16,969,100	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *MedicalPark***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	0	0	0	0	0	0
Multi-Family Residential	0	0	0	0	0	0
Commercial	32	\$31,378,190	600	22	\$8,800,000	440
Industrial	0	0	0	0	0	0
Other/Exempt	9	\$63,465,680	3200	0	0	0
<b>Subtotal</b>	<b>41</b>	<b>\$94,844,590</b>	<b>3800</b>	<b>22</b>	<b>\$8,800,000</b>	<b>440</b>
Infrastructure	7.25 Miles	\$1,453,925	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *Clarendon Gardens***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	105	\$17,735,430	242	50	\$9,535,150	115
Multi-Family Residential	0	0	0	0	0	0
Commercial	0	0	0	0	0	0
Industrial	0	0	0	0	0	0
<b>Subtotal</b>	<b>105</b>	<b>\$19,210,503.</b>	<b>242</b>	<b>50</b>	<b>\$9,535,150</b>	<b>115</b>
Infrastructure	2.79 Miles	\$1,475,073	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.



**Geographic Planning Area Vulnerability Assessment: CCNC**

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	379	\$140,016,340	906	133	\$49,925,407	306
Multi-Family Residential	0	0	0	0	0	0
Commercial	1	\$10,712,680	30	0	0	0
Industrial	0	0	0	0	0	0
<b>Subtotal</b>	<b>380</b>	<b>\$150,729,020</b>	<b>936</b>	<b>133</b>	<b>\$49,925,407</b>	<b>306</b>
Infrastructure	19.14 Miles	\$8,533,218	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: Pinewild**

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	511	\$154,966,520	1022	594	\$180,137,034	1366
Multi-Family Residential	0	0	0	0	0	0
Commercial	3	\$154,827,049	30	39	\$179,982,000	89
Industrial	0	0	0	0	0	0
<b>Subtotal</b>	<b>511</b>	<b>\$309,793,569</b>	<b>1052</b>	<b>633</b>	<b>\$360,119,034</b>	<b>1455</b>
Infrastructure	32.05 Miles	\$2,015,000	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *Pinehurst ETJ West***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	261	\$23,056,850	1196	424	\$84,040,257	2675
Multi-Family Residential	21	\$5,382,740	50	0	0	0
Commercial	13	\$4,489,048	50	5	\$10,474,436	0
Industrial	0	0	0	0	0	0
<b>Subtotal</b>	<b>295</b>	<b>\$32,928,638</b>	<b>1296</b>	<b>429</b>	<b>\$94,514,693</b>	<b>2675</b>
Infrastructure	19.20 Miles	\$1,920,000	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

**Geographic Planning Area Vulnerability Assessment: *Pinehurst ETJ East***

Type of Development	Number of Existing Private Buildings	Current Value	Current Number of People	Projected Number of Private Buildings	Projected Value	Projected Number of People
Single-Family Residential	47	\$2,967,900	108	48	\$3,031,056	110
Multi-Family Residential	0	0	0	0	0	0
Commercial	6	\$727,280	30	3	\$363,639	15
Industrial	0	0	0	0	0	0
Other	3	\$104,090	7	0	0	0
<b>Subtotal</b>	<b>56</b>	<b>\$3,799,270</b>	<b>145</b>	<b>51</b>	<b>\$3,393,695</b>	<b>125</b>
Infrastructure	1.55 Miles	\$155,000	0	0	0	0

Information listed in the above table was obtained by researching GIS, tax records, Moore County Public Utilities and Engineering calculations.

## *Appendix B*

### *V. Formation of Geographic Planning Areas*

Many of the twelve geographic planning areas were named while in the process of being developed and some areas are known in the community by a “nickname” such as “the Lake Area”. (See Geographic Planning Areas Map)

#### **Geographic Planning Areas**

##### **“Subdivision Names”**

Golf Course #6

Village Acres

Clarendon Gardens

Pinewild (ETJ)

CCNC

##### **“Nicknamed Areas”**

Old Town/Village Center

East Highway #5

Medical/Hospital Area

East Pinehurst ETJ

West Pinehurst ETJ

Airport/Midland Road Area

Lake Area

## *Appendix B*

### *VI. Overview of Vulnerabilities (Present and Future)*

#### **Present Vulnerabilities**

##### **1. Lake Area**

The Lake Area of Pinehurst consists of a vast residential population. Burning Tree Road, St. Andrews Drive and Diamondhead Drive encompass the lake and ponds with a many side roads and cul-de-sacs that lead off from the main roads. There are approximately 1,540 single family dwellings (sfd) and 5 commercial properties. There is a mixture of retired adults and families. The commercial properties consist of 2 golf courses, 2 swimming pools and the Pinehurst Marina. There are approximately 886 vacant residential properties and 3 vacant, commercial properties. The vacant, commercial properties are Pinehurst Lake and Pinehurst Marina and these properties are not buildable. Many of the homes that front or back Pinehurst Lake and Pond #1 and Pond #2 fall within the FEMA Flood Zone A. Some of the homes built on the lake or ponds were built before the Village of Pinehurst joined the National Flood Insurance Program. These homes that were built before 1990 were built below the national guidelines for the 100 year flood standards. Golf Courses #3 and #5 draw crowds of people each spring and summer. These golf courses abut many homes and condominiums. The golf courses are owned and operated by Pinehurst, Inc. which also owns Pinehurst Marina, Pinehurst Lake, condos and the swimming pools. Improved property values for the Lake Area total to about \$258,221,950.

##### **2. Airport/Midland Road**

Midland and Airport Roads are both major roads that connect Pinehurst to Southern Pines and Whispering Pines. Midland Road (aka HWY #2) is the oldest median highway in the state of North Carolina. Midland Road extends from Pinehurst to downtown Southern Pines. Many of these homes that align Pinehurst #2 (1999/2005 US Open location.) are large homes built in the 40's and 50's. Midland Road's largest threat from a natural disaster would be falling pine tree limbs due to high winds or winter storms. On the other side of Midland Road, going towards Southern Pines, their greatest threat for damage would be damage from pine trees and nuisance flooding on the Midland Road. After heavy down pours for long periods of time, Midland Road experiences significant ponding of water. There is a mix of residential and commercial properties along this portion of Midland Road. Midland Country Club, a residential golf community, and Dunvegan subdivision are the two largest developments along this portion of Midland Road.

Airport Road connects Pinehurst to Whispering Pines. There is a mix of residential and commercial properties. Pinedale subdivision and Midland Country Club are within the Pinehurst jurisdiction and further down Airport Road is Sandhills Community College, O'Neil School and Pine Grove Village, which fall within Southern Pines jurisdiction, but hold Pinehurst addresses. The largest threat to this area is localized flooding on roads and yards and also the threat of falling pine tree limbs or pine trees due to winter storms and high winds. There are approximately 359 sfd properties, 11 multi-family properties and 184 residential building sites available. There are 8 commercial properties with 3 buildable lots available. The population combined with residential and commercial is approximately 893 people. Improved property values total to about \$55,350,220 in the Midland and Airport Road areas.

### **3. Golf Course #6**

Golf Course #6 is a residential community that is a combination of sfd and multi-family residences. There are approximately 805 sfd homes and 5 multi family residences. The new multi family community, Lamplighter, is currently being built in GC#6. Lamplighter will produce around 30 townhomes. The population in GC#6 is around 1,936 and employees around 20 people. It is a golf community with a combination of retired adults and families. Located within GC#6 is an 18 hole golf course, club house and tennis courts. The largest threat that CG#6 has is localized flooding/ponding of water and damage from pine trees. There are several areas within GC#6 that have significant drainage problems. Because of this, there has been long periods of flooded roadways. Improve property values total to about \$128,610,130 in the Golf Course #6 area.

### **4. Highway #5**

Highway #5 is a large area with a mixture of commercial businesses and residential properties. One of the major roads off of HWY #5 is Morganton Road. Morganton Road connects Pinehurst to Southern Pines. Besides the residential and commercial properties located on HWY #5, there are also several critical facilities. The Village owned Pinehurst Harness Track is also located on #5. The Harness Track is a winter training facility for standard bred horses. Housed at the Harness Track is a mile track and  $\frac{3}{4}$  mile track, 18 barns, 2 blacksmith shops, tack shop and a restaurant. The Harness Track has several predominate trainers train their horses at the Harness Track during the winter months. During non-training months, the Harness Track has a wide variety of shows. There are hunter/jumper shows, car shows, AKC dog show, polo matches/tournaments, carriage classic shows and the famed Spring Matinee Races. Also housed at the Harness Track is the newly renovated Fair Barn. The Fair Barn is a rental facility for large gatherings and parties. The Fair Barn was heavily damaged by a tornado in 1932. It was renovated into a horse barn after the tornado and 70 years later was restored back to a functioning facility. The Harness Track has experienced localized flooding of the property at the Harness Track after

heavy rainfalls. There was also a problem with water runoff from the 1 mile track onto properties around the Monticello area. The Village has since added in additional piping in this area to better handle the stormwater runoff problem. Pinehurst South, a small business park, there is a fire station, post office, funeral home, nursing home and other businesses. Some of the hazards that could occur in this area is damage from pine trees and localized flooding especially around Vickie Auman Interiors. This business is located in a small log cabin in front of a pond. This pond consistently floods during extended periods of rain or heavy down pours. Golf Course #7 (Fair Woods on 7) is a gated, residential community that was designed for the "white collar" families. Located within #7 is an 18 hole golf course, club house and restaurant. Backing up to some of the GC#7 homes are GC# 4 and the famed #2. During the spring and summer, these golf courses accommodate several hundred people a day which in turn is a financial boost for Pinehurst, Inc. and the Village of Pinehurst. The population within HWY #5 and surrounding areas is approximately 1,867. There are 780 sfd, 21 multifamily units and 33 commercial properties. The greatest threat is localized flooding/ponding water and pine trees. Improved property values total to about \$170,562,915 in the area of Highway #5.

## **5. Old Town**

The name "Old Town" speaks for itself. This is the first developed area in the Village of Pinehurst. Pinehurst started development in 1895 with the vision of it replicating a New England style village. Because of the historic significance of Old Town and the make up historic commercial and residential buildings, it is listed on the National Registry of Landmarks. There are 666 residential properties, 50 commercial properties, 7 multi family properties, 1 school, 3 emergency services facilities, post office, 1 government building, and public parks. There are approximately 1,609 residents within Old Town and there are approximately 1,294 employed individuals within Old Town. The largest employers in this area are Moore Regional Hospital and Pinehurst, Inc. There are several hazards that could potentially cause a wide range of damage in Old Town. Old Town is filled with many old magnolia and pine trees that could cause damage because of high winds and winter storms. The water and sewer lines (some date back to the beginnings of Pinehurst) could easily break or be damaged due to winter storms, hurricanes or flooding. Flooding is also a concern for low lying areas because many of these homes were built without today's knowledge of drainage systems and storm water prevention. Improved property values total to about \$203,636,699 in Old Town.

## **6. Village Acres**

Village Acres is the least susceptible area for damage. Village Acres is 100% residential. The extent of critical facilities is water/sewer lines, roads and sewer lift stations. There are approximately 1,513 residents of Village Acres. This area is developed for the medium income families of Pinehurst. These homes are some of the smaller homes within Pinehurst because of zoning minimum requirements. Village Acres had a swimming pool at one time, owned by Pinehurst, Inc., but was closed 2 years ago. There are 633 sfd and no commercial properties. The largest threat from a natural disaster would be damage from pine trees due to winter storms or high winds. Improved property values in Village Acres total to about \$57,587,945.

## **7. CCNC**

CCNC is a private, gated, golf community that is known for its' prestige. There are many wealthy, retired adults that live in CCNC along with a variety of doctors, lawyers and other well to do residents. CCNC has a golf course, tennis courts, clubhouse with a restaurant. There are 379 residential homes and 1 commercial property, which is a combination of a golf course, tennis courts and club. Since CCNC is private, they maintain their roads and garbage pickup. The Town of Southern Pines still owns and operates the water system within CCNC. CCNC was annexed by Pinehurst in the late 80's and had an agreement with the Town of Southern Pines allowing them to own and maintain the water system. If the Village of Pinehurst is able to purchase the water system from Moore County, then Pinehurst would seek an agreement with Southern Pines to buy the water system in CCNC. The population within CCNC is around 379. Some of the threats to CCNC would be damage from pine trees due to winter storms or high winds, flooding due to the dam breaking and CCNC is also located in the FEMA Flood Zone AE. Improved property values in CCNC total to about \$140,016,340.

## **8. Pinewild**

Pinewild is a private, gated golf community. They have a golf course, tennis courts, clubhouse, lake and restaurant located in the club house. In the past few months, Pinewild has experienced a building boom with 32 new homes being built. Pinewild has 522 sfd, 636 vacant residential lots, 3 commercial properties and 39 commercial vacant lots. There are approximately 1,221 residents of Pinewild and employees around 25. Pinewild has an entrance on HWY 211 and an entrance on Linden Road. Some of the hazards they may encounter are damage from pine trees during winter storms or high winds, flooding of properties bordering the lake and possible flooding due to a dam breaking. Pinewild is located within Pinehurst's ETJ limits. Improved property values total to about \$165,715,310 in Pinewild.

## **9. ETJ West of HWY #5**

The area of ETJ West of HWY #5 consists of the area of Linden Road, Fox Fire Road, Chicken Plant Road and extends towards Aberdeen. Most of this area is made up of large parcels of property owned by private citizens. There are some subdivisions located in this area with homes with acre + lots. Located off Linden Road are several developments of townhomes such as Cotswald, Linden Villas and Holly Crest. In the event of a natural disaster most damage would be sustained from pine trees due to winter storms or high winds.

## **10. ETJ East of Highway #5**

The ETJ area east of HWY #5 is on HWY #15-501 North going towards Carthage. A large portion of land located above Golf Course #6, Pinehurst Camp Ground and a small community called "Monroe Town", which is located in the middle of GC#6, are also in this vicinity. There is also property located in the ETJ off Airport Road going towards Sandhills Community College. This area is a small subdivision located on Gaeta Drive and also on the left before Gaeta Drive, there is a generous portion of land that, if re-zoned, could easily accommodate multi family units. Also located on Midland Road are a few miscellaneous properties that are built on or are suitable to be built on for residential purposes. Currently there are about 47 SFD and 6 commercial properties with a population of about 987. There are 48 residential properties and 3 commercial properties that are buildable. Property values for residential and commercial total \$3,591,090. Some of the threats to the ETJ area would be damage from pine trees due to winter storms or high winds, localized flooding and portions of the property on 15-501 is also located in the FEMA Flood Zone A.

## **11. Medical Facilities**

The Medical Facilities are located between Page Road and Memorial Drive. The Hospital, Pinehurst Surgical and Pinehurst Medical Clinics, hospital day care and fitness center and Sandhills Mental Health are a few of the medical facilities located in this area. The Medical Facilities area is strictly commercial properties currently with 32 commercial properties and 22 more commercial properties available for construction. Moore Regional Hospital is the only hospital located in Moore County. The greatest threats to the Medical Facilities area would be damage from pine trees due to winter storms or high winds and nuisance flooding of low lying areas and roads. Property values for this area are \$94,843,870. Number of employees for the medical facilities is approximately 3,800 employees.



## **12. Clarendon Gardens**

Clarendon Gardens is a quiet subdivision on the outskirts of Pinehurst jurisdiction. Most of the people that live here are working families with a few retired individuals. Clarendon Gardens is strictly SFD with no commercial properties. Currently there are 105 SFD with 50 available lots for building. There are approximately 242 residents of Clarendon Garden with property values totaling \$17,740,360.

Clarendon Gardens has a private company run their water system and have one main well site. Some of the threats to the Clarendon Gardens area would be damage from pine trees due to winter storms or high winds, localized flooding of roads and property.

## Future Vulnerabilities

### R=Residential)

R5 - 600 sq ft	R30 - 2000 sq ft	OP - Office/Professn'l	PC - Public Conservation
R8 - 1500 sq ft	R210 - 1500 sq ft	RMF - 1800 sq ft	VC - Village Commercial
R10 - 1800 sq ft	HD - Hospital District	RD - Recreation District.	
R15 - 1800 sq ft	NC - Neighb'd Comm	HC - Hotel District	

### 1. Lake Area

The Lake Area of Pinehurst is comprised of several different zoning districts. The zoning districts include R10, R15, R20, R30, RD and PC. Most of the properties fall under the R10 and with the lake, golf courses and ponds, RD. Currently there are 866 SFD properties available and 3 commercial properties. Some of the properties that surround the lake, would fall under the FEMA Flood Zone A. If applicable, these properties must conform with the Pinehurst Development Code (PDO) Chapter 14.3.1 - 14.3.3. Because of the zoning in the Lake Area, there are several different types of commercial properties that could be developed such as: recreation centers, churches and public safety facilities. The greatest threat to this area is flooding and damage from pine trees in the event of a winter or tropical type storm. Regulations are already set up for properties that fall within the flood zones. Keeping trees trimmed back or removed if a significant danger is posed, will help mitigate future losses.

### 2. Airport/Midland Road

The Midland/ Airport Road area has a wide range of zonings. This area has a combination of SFD, multi-family units and commercial properties. The zoning that applies to this area is R8, RD, R20, R10, RMF, R30, NC, OP and R210. There are two existing developments in this area, Midland Country Club and Carolina Eye. Midland Country Club is a retired, adult, golf community. MCC is currently in the process of adding 12 units. Carolina Eye is an eye clinic on the opposite side of Midland Road. Next to Carolina Eye is a large parcel of land with possible plans to be developed. The greatest threat to this area is flooding and damage from pine trees in the event of a winter or tropical type storm. Keeping trees trimmed back or removed if a significant danger is posed, will help mitigate against any future losses. Any flooding that occurs is minimal and is mostly significant ponding of water on Midland Road.

Airport Road is also a mix of zonings. Zoning consists of R8, RD, R10 and R20 and consists of residential properties. Many of the homes built in the subdivision, Pinedale, are older homes. Construction allowed in this area is SFD, churches, recreation centers and public safety facilities. No other developments, outside of

SFD, is planned for this area at this time. The greatest threat to this area is flooding and damage from pine trees in the event of a winter or tropical type storm. Keeping trees trimmed back or removed if a significant danger is posed, will help mitigate any future losses. Midland/ Airport Roads do not fall into the FEMA Flood Zone.

### **3. Golf Course #6**

Golf Course #6 is a residential, golf development. There is a mixture of middle class retired and middle class working families. Currently, GC#6 is the fastest growing area in Pinehurst. Spec homes and also owner built homes are at a significant number. This area is situated in a beautiful setting with many homes being located on or near the golf course and on the lakes. Golf Course #6, tennis courts and clubhouse are owned and operated by Pinehurst, Inc. This area has several different zoning areas that include RMF, RD, R10 and R15. These zonings would allow for community centers, public safety facilities, schools, SFD and recreation facilities. GC#6 is a mixture of SFD and RMF (Residential Multi Family). There is a RMF development, Lamplighter Village, that is currently under construction and will contain 30 units. Approximately 736 properties have been built on and there are another 765 buildable lots available. There are about 40 properties that fall within the FEMA Flood Zone A and these homes would have to of been built according to FEMA and Pinehurst standards. The greatest threat to this area is flooding and damage from pine trees in the event of a winter or tropical type storm.

### **4. Highway #5**

Highway #5 is a mixture of residential and commercial properties. The Pinehurst Country Club, Golf Courses #'s 3 & 5 are located directly off HWY #5. as is the Village owned Pinehurst Harness Track. The Harness Track is a winter training facility for standard bred horses. Adjacent to the Village owned property are the greenhouses and barns owned by Pinehurst, Inc. Other commercial properties on the east side of HWY #5 include Pinehurst South, Golf Course #7 and Trotter Hills. Pinehurst South is a small business park that houses one of the Pinehurst Fire Departments and one of the Pinehurst Post Offices. Both of these are critical facilities. Other properties include a funeral home, real estate office, banks and hardware store. Across HWY #5 is a business park, Trotter Hills, which has 17 commercial lots. Currently there are no improved properties here. Golf Course #7/Fairwoods on 7 is also located on the east side of HWY #5. This golf course is owned and operated by Pinehurst, Inc and is another private, gated area. There are 130 residential improved properties and 87 residential vacant properties. There are also 3 commercial improved properties, which are the golf course, clubhouse and maintenance facilities and 4 commercial vacant properties. Also located off HWY #5 are several RMF areas and a few small subdivisions such as Doral Woods. The total residential improved properties for the general area is 746 properties and there are 468 residential unimproved properties. There are 23 commercial vacant properties and 23 commercial improved properties. The greatest threat to this area is flooding

and damage from pine trees in the event of a winter or tropical type storm. Keeping trees trimmed back or removed if a significant danger is posed, will help mitigate any future losses. There is a FEMA Flood Zone A and AE covering a small portion of Golf Course #7. These homes would have to be built according to FEMA and Pinehurst standards of construction.

In the Village Greenway plan that has been approved, it is recommended that the Department of Transportation install a stretch of concrete sidewalks along Morganton Road. If DOT installs this sidewalk, it will begin at the intersection of HWY #5 and run to the stoplight at Morganton Road (Pinehurst) and Hwy 15-501 (across from Pincrest Plaza). The Village has also approved a plan for a Greenway Trail Phase 3 to run from the corner of Beulah Hill Road (aka Hwy #5) and Ritter Road to the Pinehurst limits on HWY #5 at Jackson Hamlet.

## **5. Old Town**

Old Town was the first developed area of Pinehurst. There is a mix of commercial and residential properties. Old Town is deemed Historic and has been placed on the National Registry of Historic Places. Old Town has been broken down in several different zoning districts: NC, OP, PC, RMF, R10, R20, RD and VC. Because of the many types of zonings in this area, there are is an assortment of structures that could be built. There are 666 residential improved properties, 163 residential vacant properties, 50 commercial improved and 7 commercial vacant properties.

The Pinehurst Village Council has approved a plan for a greenway system to be implemented in the future. One such phase of the plan will start at the end of Ritter Road and travel down HWY 5. Another phase, which will impact Old Town, starting at the corner of HWY 211 & HWY 5 and will connect to the previous phase, Ritter Road. The Village is also implementing a new sidewalk system within Old Town. A large portion of sidewalks have been replaced with some extensions added.

The Village Hall and the Pinehurst Police Department are located on 110 acres of land called "Rassie Wicker Park". Rassie Wicker Park is accessible from Magnolia Road (leads into Old Town), Rassie Wicker Drive and Woods Road. There is further development plans for this site in the future. In the Village's Long Range Comprehensive Plan, it calls for a new fire department to be built across the road from the Village Hall and Police Department. This new fire department will take the place of the old fire department located on Community Road, Old Town Pinehurst. This construction should take place in the fall of 2005. Also in the works for Rassie Wicker Park is a recreation master plan. Some of the facilities on the plan include: tennis courts, soccer field, amphitheater, bocce ball, playground, picnic shelter and swimming facilities. (See Rassie Wicker Park Current and Future Development Plan Map).

The greatest threat to property owners in Old Town is localized flooding of roads or front yards. Many of the older homes that were built in the early 1900's were not built with nuisance flooding solutions or stormwater plans. The Village has done some work with drainage to help prevent future problems.

#### **6. Village Acres**

Village Acres is located between HWY 211 and HWY 15-501. Village Acres has two types of zoning, R10 and R15. Many of the homes are 1100 to 1500 sq feet. Because of the smaller size of the homes being built, the Village changed the sq footage requirements for homes to be at least 1500 sq ft. There are approximately 633 residential improved properties and 768 residential vacant properties. Outside of a few properties being affected by FEMA Flood Zone A, this area has very few critical facilities and very few instances of natural disaster problems. When many of these homes were built, the contractors removed trees so that they could position the houses on the smaller lots. Village Acres' largest threat to this area is localized flooding of some roads and some yards after heavy rains. There is a small threat of damage because of trees during tropical/winter storms.

#### **7. CCNC**

CCNC is a private, upper class, gated community. Many of the homes here are built on an acre + and homes are \$300,000 +. There are currently 373 residential improved properties, 133 residential vacant properties, 1 commercial improved and 1 commercial vacant property. The greatest threat to existing properties and future properties is damage from trees during storms and also any flood damage to homes that fall within the FEMA Flood Zone AE. CCNC is responsible for their own clean up after a storm unless it is a presidential declared disaster requiring FEMA participation. At that point, the Village would assist with clean up. Since the Town of Southern Pines owns and maintains the water system in CCNC, they would be responsible for any repairs that may be incurred during a natural disaster.

#### **8. Pinewild**

Pinewild is another private, gated community but Pinewild falls within the ETJ area. According to records, Pinewild has experienced a building increase over the past six months. Currently the planning department has 32 active projects in Pinewild with many more plans coming in every week. There are 525 residential improved properties, 636 residential vacant properties, 4 commercial improved properties and 40 commercial vacant properties. It has been recommended that the commercial vacant properties along HWY 211 be rezoned to OP Zoning. Outside of residential building, there is not any plans in the near future to build commercially. The greatest threat to existing properties and future properties is damage from trees during storms and localized flooding in low lying areas.

## **9. ETJ West of HWY #5**

Chicken Plant Road, Linden Road and Fox Fire Road are all in the ETJ area west of HWY #5. This general area has a variety of zonings which include R20, R210, R30, RMF and PC. Many of the properties in this area are very large parcels of land. The Village of Pinehurst purchased 67 acres on the corner of Chicken Plant Road and Bowman Road. This property will be turned into a neighborhood park for this side of town. A master plan will be required to be implemented by December 2007. (Long Range Comprehensive Plan 2003. There are 261 residential improved properties, 424 residential vacant properties, 21 multi family residences, 13 commercial properties and 5 commercial vacant properties. The greatest threat to existing properties and future properties is damage from trees during storms and also any flood damage to homes that fall within the FEMA Flood Zone A.

## **10. ETJ East of HWY #5**

The ETJ area east of HWY #5 is on HWY #15-501 North going towards Carthage. This property could easily accommodate commercial properties and is zoned OP. A large portion of land located above Golf Course #6, Pinehurst Camp Ground and a small community called "Monroe Town", which is located in the middle of GC#6, are also in this vicinity. There is also property located in the ETJ off Airport Road going towards Sandhills Community College. This area is a small subdivision located on Gaeta Drive and also on the left before Gaeta Drive, there is a generous portion of land that, if re-zoned, could easily accommodate multi family units. Also located on Midland Road are a few miscellaneous properties that are built on or are suitable to be built on for residential purposes. Currently there are about 47 SFD and 6 commercial properties with a population of about 47. There are 48 residential properties and 3 commercial properties that are buildable. Property values for residential and commercial total \$3,591,090. Some of the threats to the ETJ area would be damage from pine trees due to winter storms or high winds, localized flooding and portions of the property on 15-501 is also located in the FEMA Flood Zone A.

## **11. Medical Facilities**

The Medical Facilities is located on Page Road and Memorial Drive. The hospital, Pinehurst Surgical and Pinehurst Medical Clinics, hospital day care and fitness center and Sandhills Mental Health are a few of the medical facilities located in this area. The Medical Facilities area is strictly commercial properties, not zoned for residential structures. Currently, there are 32 commercial properties in this area with 22 more commercial properties available for construction. Moore Regional Hospital is the only hospital in Moore County. The greatest threats to the Medical Facilities area would be damage from trees due to winter storms or high winds and localized flooding of lower lying areas and roads. The Pinehurst Medical Clinic is currently building a new parking lot that covers about an acre of land. Outside of some major interior renovation jobs at the Hospital and other medical facilities, there

is not any commercial building being done except for the parking lot for Pinehurst Medical Clinic.

## **12. Clarendon Gardens**

Clarendon Gardens is located off Linden Road. It is a quiet subdivision on the outskirts of Pinehurst jurisdiction, but is not located in the ETJ. Most of the people that live here are working families with a few retired individuals. Clarendon Gardens is strictly SFD with no commercial properties. Currently there are 105 SFD with 50 available lots for building. There are approximately 242 residents of Clarendon Gardens. Clarendon Gardens has a private company run their water system and they have one main well site. Some of the threats to the Clarendon Gardens area for developed and non developed properties would be damage from pine trees due to winter storms or high winds, localized flooding of roads and property. There is a very small portion of land that falls within the FEMA Flood Zone A. Improved property values total to about \$17,735,130.

## *Appendix B*

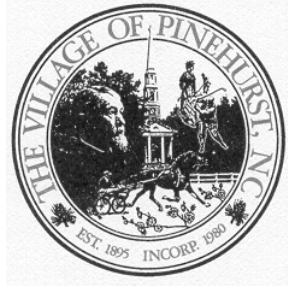
### **VII. Overview and Conclusion of Community Vulnerabilities**

There are several areas in Pinehurst and Pinehurst ETJ that are more vulnerable to natural disasters than other areas. Village Acres, Pinehurst ETJ East of HWY #5, Golf Course #6, Golf Course #7, CCNC, Lake Area, Clarendon Gardens and ETJ West of HWY #5 have areas that fall within the FEMA Flood Zones A & AE. There are other areas in Pinehurst that have nuisance flooding problems due to poor drainage or poor road construction. Some of these places include Monticello Drive, Midland Road and Golf Course #6. Pinehurst is also susceptible to property damage from the many pine trees during a severe snow and/or ice storm and/or tropical storms. Fallen limbs from these trees can cause extensive structural damage to facilities, personal property and knock out power lines. The snowstorm of 2000 cost the Village close to a million dollars and the ice storm of 2002 cost the Village close to a quarter of a million dollars.

Through proper pre and post-disaster planning, Pinehurst should be more prepared in the event of another winter storm such as the 2000 and 2002 storms or other natural disasters. It is the desire of Pinehurst to be properly prepared throughout the municipality and also help educate the residents to be more prepared for a natural disaster. Educating the residents on basic information as having a disaster kit available, where to go in the event of a storm or emergency numbers is crucial to their safety and that of the Pinehurst employees.



# Village of Pinehurst Hazard Mitigation Plan



## *IX. Appendix B: Vulnerability Assessment Section 2: Maps*

## *Appendix B*

### *Section II: Maps*

Listed are an index of maps that will reflect and reference back to certain areas within the Pinehurst Hazard Mitigation Plan. Along with the listing will be an explanation as what each map is referencing.

#### **1. Regional Base Map**

The Base Map will show the relationship of Pinehurst to the other immediate surrounding municipalities.

#### **2. Pinehurst Base Map**

The Pinehurst Base Map will show features such as roads, lakes, railroads, water and sewer lines.

#### **3. Zoning Map**

The Pinehurst Zoning Map will show all zoning areas within the Village of Pinehurst and Pinehurst ETJ.

#### **4. Pinehurst Land Use Map**

The Pinehurst Land Use Map will show the allowed land uses in Pinehurst.

#### **5. Individual Land Use Map (Geographic Planning Areas)**

The individual maps will show the land uses for each geographic planning area.

#### **6. All Hazards Map**

The All Hazards Map will show all of the hazards that Pinehurst is susceptible to.

#### **7. Individual Hazard Areas**

This map will show all the individual hazards that have been recorded in the Hazard Mitigation Plan.

#### **8. Critical Facilities Hazards Map**

This map will combine the natural hazards, critical facilities and geographic planning areas to help visualize areas that are particularly vulnerable.

#### **9. Land Use Hazards Map**

This map will combine the natural hazards map, nuisance flooding areas and land use map to help visualize areas that are particularly vulnerable.

**10. Parks and Recreation Greenway Map**

This map will show the proposed Greenway System in Pinehurst.

**11. FEMA Flood Zone Map**

This map will show the areas in Pinehurst that are deemed flood zones according to FEMA.

**12. Reoccurring Nuisance Flooding Areas**

This map will show where the areas are that experience reoccurring nuisance flooding due to heavy rains.

**13. Parks and Recreation, Rassie Wicker Park Improvements**

This map will show where the proposed trail system will be. This is a new project that the Parks and Recreation Department is initiating.

**14. Geographic Planning Areas**

This map will show the different Geographic Planning Areas that are outlined in the Hazard Mitigation Plan.

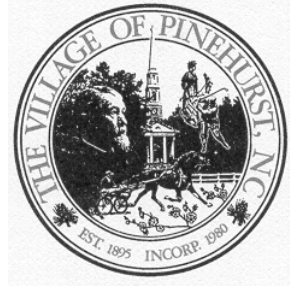
**15. Historic Overlay Map**

This map will show the Historic Overlay Properties that are located in Old Town Pinehurst.

**16. Critical Facilities Maps**

These maps show each individual geographic planning area and their critical facilities.

# Village of Pinehurst Hazard Mitigation Plan



## *X. Appendix C: Capability Assessment*

## *Appendix C*

### *Capability Assessment*

In this section of the Pinehurst Hazard Mitigation Plan, the focus will be on capabilities the Village has to help mitigate against future natural hazards. Several different aspects of the Village's government will be discussed.

1. Governmental Body
2. Technical Abilities
3. Policies
4. Governmental Powers
5. Fiscal Capabilities
6. Political Influences

### *Governmental Body*

The Village of Pinehurst is governed by a five person council. The council is responsible for adopting ordinances, resolutions, amendments to the Pinehurst Development Ordinance, approval of major special uses/site plans, budget approval and the general welfare of Pinehurst and the residents.

A village manager oversees the daily functions of Pinehurst and reports directly to the Pinehurst Village Council. There are two Assistant Village Managers, one that oversees operations and the other oversees finances.

The Village of Pinehurst has ten different departments, each run by an individual department head that reports directly to the village manager or Assistant Village Managers. The Village Manger oversees the Planning Department, Engineering Department, Human Resources, Police and Fire Departments.

The Assistant Village Manger of Operations will oversee the Parks and Recreation Department (which has four separate departments within itself), Central Maintenance and Public Works.

The other Assistant Village Manager of Finances will be responsible for all financial aspects of the Village as will overseeing the Finance Department and Administration.

## *Pinehurst Governmental Departments*

1. Administration
2. Finance
3. Engineering
4. Parks and Recreation
  - a. Recreation
  - b. Harness Track
  - c. Parks
  - d. Fair Barn
5. Planning
  - a. Inspections
6. Fire Department
7. Police Department
8. Public Works
  - a. Streets and Grounds
  - b. Sanitation
9. Central Maintenance
10. Human Resources

## *Technical Abilities*

### **Engineering Department**

1. The Village Engineer is responsible for reviewing and commenting on all developmental plans that are submitted to the engineer's office.
2. To prepare and maintain standard engineering design specifications for streets, soil erosion and sedimentation control, storm drainage and other improvements.
3. To review and approve design specifications for subdivision and site plan improvements.
4. To serve as an advisor to other departments, agencies and governing body regarding existing or proposed development in transportation and utility systems.
5. Update and maintain the Hazard Mitigation Plan for the Village of Pinehurst.
6. The Village Engineer or appointee serves as Flood Plain Officer.
7. The Engineering Department has full capabilities in GIS. The Engineering Department supports itself, Administration, Finance, Parks and Recreation, Fire Department, Police Department, Public Works as well as several different boards and the general public.

### **Planning and Inspections Department**

1. The Planning Department is responsible for reviewing and commenting on all plans submitted for development.
2. To issue and revoke building permits.
3. To conduct all building, structure and land inspections.
4. To review, inspect and approve site plan development plans.
5. Review applications for erosion control and grading permits.
6. Review applications for development in the Watershed Protection District.
7. The Planning Department has GIS capabilities and is self supportive.

### **Fire Department**

1. Review and comment on all applications that are submitted to the fire department.
2. Inspect structures for fire code violations.
3. Inspect sprinklers installed in residential and commercial structures.

## *Existing Mitigation Policies*

### **Pinehurst Development Code (PDO)**

The Pinehurst Development Ordinance references mitigation, which includes zoning in hazardous areas, flood plains and erosion control.

#### **1. Zoning**

There are hazardous areas in Pinehurst that are zoned for development in SFD, commercial and subdivisions but there are some exclusions in the PDO. The PDO addresses structures that are damaged, repetitive damage or destroyed by a natural hazard. In the event of such a disaster, the PDO would be strictly enforced.

#### **2. Subdivision Zoning**

Subdivisions are allowed to build in certain hazard areas, however, developers are limited to the amount of impervious surface that they are allowed to disturb. This is a general rule not just for hazard areas, but for any new construction. There are also requirements that limit the impact of increased stormwater flow due to their development. For any new subdivision applications, stormwater plans are submitted to the Village Engineer.

#### **3. Comprehensive Land Use Plan**

The Village recently completed a Comprehensive Land Use Plan in 2003. There are no plans to designate certain hazard areas as inappropriate to build. Although the Village has areas that fall within the FEMA Flood Zones, Pinehurst does not have any areas that have repetitive structure losses. There are homes that potentially could be damaged by a flood because the homes were built before the Village joined the NFIP and flood plain management was not enforced before joining the NFIP.

### **National Flood Insurance Plan (NFIP)**

One program that the Village participates in directly that would be considered a “mitigation process” is the NFIP program. In the PDO, section 14.3.3, are the standards and restrictions required by the Village of Pinehurst. According to the PDO, the Village’s standard for elevation exceeds what is required by FEMA. The Village exceeds FEMA’s requirement for building in a BFE, requiring 2 feet above flood level. We do not have any regulations for relocating or acquiring structures that are in the floodplains. There are different requirements for new construction, mobile homes, recreational vehicles, commercial properties and new subdivisions that are built in a flood zone.



## **Nuisance Ordinance/Village Code**

### **Village Code 3.2 – 3.2.5**

There are certain conditions that are considered nuisances within the Village of Pinehurst. These nuisances, when corrected, could be considered mitigation measures.

1. Uncontrolled growth of weeds and grasses.
2. Combustible Items.
3. Burned or partially burned buildings or structures.
4. Damaged structures and debris.
5. Accumulations of rubbish, etc.
6. Combustible Items.

### **Erosion/Sedimentation Control Measures**

1. Design Requirements - Pinehurst has stringent measures in regards to erosion/sedimentation control. All persons conducting land-disturbing projects must be planned, designed and constructed to provide protection from the calculated maximum peak rate of run off for the ten year storm. Rates shall be calculated according to Village standards.
2. Time of Compliance - Once land-disturbing activities commence, contractors have 60 days to provide protective covering for the disturbed area. Extension time can be granted, but just cause must be provided in written form.
3. Activity Near Watercourse - All land-disturbing activities near a lake or natural watercourse will provide a undisturbed area along the watercourse. The undisturbed area has to be of sufficient width to confine any visible siltation within the twenty-five percent of the undisturbed zone nearest to the land-disturbing area.
4. Stream Banks and Channels - All stream banks and channels shall be protected from any land-disturbing activity that could potentially generate increased degradation of accelerated erosion caused by construction. Different measures may be used such as fine sand, different types of loams, gravel and silts.

Before the Village was incorporated in 1980, Pinehurst was a “company owned” town. Diamondhead, Corp. owned and operated many aspects of the town including governing body, water department, sanitation and the police department. While Pinehurst was being further developed by Diamondhead, Corp., they did not focus on matters such as stormwater management, curbing and other drainage issues. Because of this, Pinehurst has many problems with the lack of appropriate drainage systems. As of now, Pinehurst does not have an approved Stormwater Management Plan. The Village Engineering Department uses standard Engineering , NCDOT and Federal

guidelines on individual projects. Village staff has sought funding for a Stormwater Study from the Village Council for Pinehurst and this goal is listed in the Comprehensive Long-Range Plan for the Village.

The Village has a Greenway Committee that has designed a Greenway program which has been approved by the Village Council. Within the Greenway plan, there are several properties that fall within the FEMA Flood Zones. The Greenway plan has 8 phases and could take up to 16 years to complete. The total mileage for this plan is 24 miles of Greenway.

Another program the Village has initiated is called "Give a Lot to the Village". This program was established to encourage property owners to donate parcels of land or lots to the Village. The goal of this program is to help create open space, property for the Greenway program and Stormwater control. The benefits to the donor are tax breaks, eliminate excess taxes and to contribute to the character and appearance of the Village.

### **Emergency Operations Plan**

The Village of Pinehurst has an adopted Emergency Operations Plan that was developed by the Fire Department in 2001. This plan outlines each departments' roll in the event of a natural disaster. One of the mitigation goals for Pinehurst is to revise the Emergency Operations Plan. Since the original plan was adopted, there has been significant turn over in employees, department head changes and operational changes.

The plan identifies the roles of specific departments, employee information, departmental information and equipment information. The plan also identifies the location of the Emergency Operations Center (EOC) and also the possible need of another location in the event the hazard is widespread.

## *Governmental Powers*

As a local government, Pinehurst has the vested right to govern Pinehurst as seen fit for the protection and welfare of the residents. In doing so, there are several departments that hold bearing on these type of decisions.

### **1. Pinehurst Village Council**

The Village of Pinehurst is governed by a five person council. The council is responsible for adopting ordinances, resolutions, amendments to the Pinehurst Development Ordinance, approval of major special uses/site plans, budget approval and the general welfare of Pinehurst and the residents.

### **2. Planning Department**

The Planning Department is charged with overseeing the development of Pinehurst. The one attractor of Pinehurst is the positive way of life. When Mr. Tufts bought the property to establish Pinehurst, he had a "New England" village design in mind. Since becoming a municipality, Pinehurst has strived to keep Mr. Tuft's vision alive. The planning department has managed to keep this image with their stringent regulations on size of homes, the look of the home, landscape management and exterior appearance.

The Planning Department also regulates land use. The Pinehurst Development Ordinance is considered the Village's "Land Use" plan. The PDO regulates the type of development in certain areas of Pinehurst, the square footage, set backs, impervious surface regulations, subdivision regulations, zoning and numerous other land use requirements.

### **3. Inspections Department**

The Inspections Department regulates the building codes that are mandatory codes set by the State of North Carolina. Pinehurst has three, full time building inspectors that conduct daily inspections in Pinehurst. Besides daily inspections, the building inspectors must check all building plans that are submitted to make sure they meet NC Building Code. The inspectors are also responsible for inspecting adequate building code if the structure falls within a FEMA Flood Zone, water shed or any other special land use areas.

#### **4. Police Department**

The Pinehurst Police Department is charged with keeping the general welfare, safety and health of residents in Pinehurst. The Police Department enforces certain regulatory ordinances located in the Pinehurst Municipal Code. These include noise ordinances, abandoned, nuisance or junk vehicles, vegetation growth, accumulations of rubbish, vegetation or animal matter, material storage/open storage, Health Department violations, combustible items and damaged structures and debris caused by natural hazards.

#### **5. Administration**

The Village Manager and Village Clerk are housed in the Administrative Department. The Village Manager is responsible for daily operations of Pinehurst, responsible for five department heads, two Assistant Village Managers and making daily decisions that could impact the residents of Pinehurst. The Village Manger also has the power to implement new approaches to the running of the departments and operations of the Village. Depending on what the changes entail, is whether council approval is needed. With this type of power, the Village Manager is a crucial player in the implementation of hazard mitigation.

The role of the Village Clerk is an important one. The Village Clerk is responsible for the writing of many of the ordinances and resolutions that are presented to the Village Council for approval. They are then recorded in the Minute, Resolution and Ordinance Books. The Village Clerk is also responsible for many of the contracts of the Village, codification of minutes, resolutions, ordinances and recording and writing of the Village Council work sessions and regular meetings. The Village Clerk also supports the Village Manager and Village Council.

#### **6. Financial Resources**

The Village has a extremely large tax base that amounts to close to two billion dollars a year. This excessive amount is contributed to the property values in Pinehurst. With this type of tax base and the availability of grants, meeting Hazard Mitigation goals should be accessible. Some of the available grants are the Hazard Mitigation Grant Program (HMGP), Disaster Preparedness Improvement Grant (DPIG), Flood Mitigation Assistance Program (FMAP), Public Assistance Program (PA) and Small Business Administration Disaster Assistance Program.

The Parks and Recreation Department has secured funding for three separate projects. On the Rassie Wicker Park property (Village Hall and Police Department locations), there are two different walking trails. The first trail is approximately ½ mile. The second trail is currently being installed. Funding for this project came from a NC Trails

Grant with the state contributing 80% funding and the Village contributing 20%. The Parks and Recreation Department is also in the bidding stages for further development of Rassie Wicker Park. The Parks and Recreation Department applied for a Parks and Recreation Trust Fund (PARTF) grant to help finance this project and received a matching grant of 50/50.

## **7. Political Climate**

Over the past several years, the residents of Pinehurst have been faced with several severe storms. Many residents went without electricity and water for several days. Other concerns the residents have are the amount of water run off/nuisance flooding that continues to affect the residents. Many of these concerns have been addressed to the employees of Pinehurst as well as the Village Council. Developing and implementing a Stormwater Master Plan will significantly improve the issue of nuisance flooding and the many drainage problems that plague Pinehurst.

One of the objectives in the Pinehurst Long Range Plan is to implement greenway systems, trails, accumulate donated property from residents and design and implement a stormwater master plan. The Village Council may not realize these particular projects are Hazard Mitigation strategies, but a with combination of already approved projects and the minimal cost of the other goals, it is expected that the Village Council will be very supportive of any actions that can be taken to ensure the safety of the residents of Pinehurst and also Pinehurst itself.