

## **ORDINANCE # 05-138**

### **AN ORDINANCE TO REVISE ORDINANCE # 03-109 AND TO ADOPT THE FINAL DRAFT OF THE 2003-2005 HAZARD MITIGATION PLAN FOR THE TOWN OF UNICOI**

**WHEREAS** The Town of Unicoi is required to have a mitigation plan in effect to protect the citizens of the Town, the Board of Mayor and Aldermen hereby adopts the revised 2003-2005 Unicoi County Multi-Jurisdictional Hazard Mitigation Plan that is compliant with Federal (TEMA and FEMA) regulatory standards prepared by the Unicoi County 911 Board, as follows:

#### **I. INTRODUCTION**

This plan provides direction to the process of elimination of losses of life and property in this county as the results of anticipated hazards. The members of the governments of Unicoi County, the Town of Erwin and the Town of Unicoi and key affected groups participated in the developmental/drafting stages of this plan. Input from the citizenry was invited through the Public meeting of the planning groups, Boards of Mayor and Aldermen, and the County Commission. All these bodies either endorsed or approved this plan.

#### **II. PLANNING PROCESS**

##### **A. BACKGROUND**

Unicoi County is a dog bone shaped jurisdiction straddling the junction of two valleys, North Indian Creek and South Indian Creek with their junction with the Nolichucky River. The headwaters of the north flowing Buffalo Creek is included in the North Indian Creek sector. The county is immediately south of the Johnson City, TN municipal limit. To the northeast, the county borders Carter County, TN. To the east and south the county borders Mitchell, Yancey and Madison Counties of North Carolina. To the west, this county borders Greene and Washington Counties of Tennessee. The County is located totally within the Blue Ridge Mountains and the Cherokee National Forest. In fact, the US Forest Service owns about fifty-two percent of the county, for which they pay less than ten percent of the equivalent property taxes. The county encompasses a highway and railroad transportation corridor that connects the coalfields of Virginia and Kentucky and the chemical plants of Kingsport with the industries and the seaports of the southeast coast. NFS, Inc, a privately owned sole source processor of Navy reactor fuel, is located in Erwin. The 2000 US Census indicates the population of the County as 17,667, the Town of Erwin as 5,610, and the Town of Unicoi, as 3,519.

##### **B. JURISDICTIONAL DATA**

SIZE: 186 square miles

LAND USE:	Timberland	80%
	Tax free Infrastructure	10% (Schools, highways, churches, Federal and State Fish Hatcheries, local government)
	Residential	8% (Minus .02%-Agriculture)
	Industrial & Railroad	2%

POPULATION: 17,667 (2000 Census)

PROPERTY TAX RATE: \$2.49 per \$100 assessed value

TOTAL ASSESSED VALUE: \$20,385,421

TOTAL APPRAISED VALUE: \$74,279,595

RAILROADS: Served by CSXT railroad.

HIGHWAYS: I-26, US 19W, US 23, Tennessee 81, 107, 173,  
352, and 395.

NEAREST AIRPORT: Tri-Cities Regional Airport, 55 miles north in  
Sullivan County

COMMUNICATIONS:

Newspapers: Erwin Record (local); The Johnson City Press  
(Johnson City, TN).

Radio Station: WEMB-AM 1420 and WHIS-FM 92.3 & 101.9 MHZ

Cable TV: Charter Communications and Comcast

Telephone service: Sprint, and several cellular telephones providers

BANKS: Erwin National Bank (plus 1 branch)  
Bank of Tennessee  
First Tennessee

GOVERNMENT: County Mayor and 9 County Commissioners

NATURAL RESOURCES: White pine, hickory, oak, and poplar timber  
Lead, granite, limestone minerals

AGRICULTURAL

PRODUCTS: Apples, tomatoes, tobacco, hay, strawberries

FARM STATISTICS 2002

278r acres in farms	
Average farm size	56 acres
Average value of farms and buildings	\$344,722.00
Market value of all farm products, 1997-	\$5,864,000.00
Tobacco production 2002	84,502 pounds
Potato production 2002	2000 pounds
Forage production 2002	4334 tons
Vegetable acreage harvested	2315 acres
Pastureland	72 acres
Forage acreage	2051 acres
Orchards	77 acres

TIMBERLAND: Total	95,300 acres
National	51,600 acres
State	2,600 acres
Private	1,100 acres

EDUCATION: Unicoi County Public School System:

Elementary Schools-----4

Middle School-----1  
 Vocational School-----1  
 High School-----1

Total enrollment, Unicoi County Public School:

System, K-12-----2600  
 Total employment-----385  
 Unicoi County Library-----1

HEALTH CARE:

Primary Health Providers: Erwin Family Practice  
 Dry Creek Medical Center  
 Unicoi County Family Practice  
 Surgical Group of Northeast Tennessee  
 University Physicians Practice Group  
 ETSU Physicians and Associates Family Health  
 Center

Hospitals: Unicoi County Memorial Hospital in Erwin-48 beds  
 Nearest Trauma Center-Johnson City Medical Center-18 miles  
 northwest

Doctors: 9      Dentists: 5 (local)

Nursing Home      Center for Health and Aging  
 Erwin Health Care  
 Unicoi County Memorial Hospital Long Term Care

Assisted living:      Sunnycrest Apartments

CHURCHES: Protestant-----78  
 Catholic-----in Johnson City, 16 miles north  
 Catholic (Hispanic)—1--Unicoi  
 Jewish-----in Johnson City, 16 miles north

RECREATION: Parks-----6  
 Golf Courses-----1  
 Swimming Pools-----1  
 Theaters-----1  
 Hotels and Motels-----4  
 Restaurants-----16

CLIMATE: Annual average temp. -----56 deg.  
 Monthly average High Temp. ---Jan. ---46----July ----87  
 Monthly average Low Temp. ---Jan. ---25 ----July----63  
 Annual average precipitation-----54 inches  
 Annual average snowfall-----15 inches  
 Prevailing winds-----west  
 Mean length of freeze-free period (days) -----1805

## SELECTED ECONOMIC INDICATORS (Unicoi County)

Labor Force Estimation  
Average Annual Employment, 2004  
Civilian labor force-----8400  
Unemployed-----530  
% Unemployed-----6.3%  
Total employment-----7870  
Per Capita Income-----2002-----\$22,671

## UTILITIES

Treated Water Suppliers:  
Sources, springs & 3 wells  
Capacity: 4,000,000GPD/2400 GPM  
Current consumption: 2,000,000 GPD  
Storage capacity: 2,000,000 Gallons  
Erwin Utilities  
Johnson City Water Department  
Unicoi Water Utility District

## ENERGY

Electrical Power Systems:  
Erwin Utilities  
Elizabethton Electric System  
French Broad Electric Cooperative  
Mountain Electric Cooperative  
  
Power Source Company-----Tennessee Valley Authority (TVA)  
  
Gas Suppliers:  
Unicoi County Gas Utility District  
  
Gas Source Company-----Atmos Energy  
  
Fuel Oil Suppliers-----2  
Suppliers of LP gas-----2

Plan development was coordinated through the County Mitigation Team, composed of the following:

E. A. Herndon	Emergency Management Director
Larry Rose	Unicoi County Mayor
William D. Lewis	Mayor, Town of Erwin
Johnny Lynch	Mayor, Town of Unicoi
Terry Haynes	Unicoi County Road Superintendent
William Gaines	Unicoi County Assessor of Property
Marsha Johnson	Unicoi Town Recorder
Doris Hensley	Erwin Town Recorder (before retirement)
Randy Trivette	Erwin Town Recorder and Building Inspector
Carroll Mumpower	Erwin Street Supervisor
Robert Adams	President, Unicoi County Fire Association
Sarah Barron	Emergency Coordinator, NFS, Inc.
Patsy Bennett	Deputy Assessor, Unicoi County

## C. PREPARATION

This plan is a revision of the plan of April 1998. It now incorporates the changes in local conditions and requirements of the Tennessee Emergency Management Agency (TEMA) and the Federal Emergency Management Agency as published in TEMA's Local Hazard Mitigation Planning Guidance, 44 Code of Federal Section 206, and the Robert T. Stafford Disaster Relief and Emergency Assistance Act, Sections 322 and 409. The team met individually with the Emergency Management Director as needed for input in their areas of expertise/jurisdiction. For the Town of Erwin concerns, the Director met with the Erwin Town Mayor, Town Recorder, Street Department Supervisor and Town Building Inspector. For the Town of Unicoi input, the Director met with the Unicoi Town Mayor, Town Recorder, and the County Road Superintendent. For countywide concerns and/or unincorporated area concerns, the Director conferred with the County Mayor, County Assessor, and the County Road Superintendent. The Town Recorders and the County Mayor provided results of private and public development surveys, and US Army Corps of Engineer surveys. The County Road Superintendent provided the results of Tennessee Department of Transportation studies and his agency's experience. The Civil Defense/Emergency Management Director combined this data with that received from TEMA, FEMA, the Tennessee Department of Commerce and Development, local industries, non-profit organizations and adjacent jurisdictions. The first formal meeting coincided with the Erwin-Unicoi County Emergency Management Council (LEPC) meeting. Plan was presented to the planning commissions of the towns of Erwin and Unicoi and the County of Unicoi. The boards of Mayor and Aldermen and the Unicoi County Commission approved the plan. All these meetings included public input. The plan was then submitted to TEMA for their approval and to FEMA for its approval.

Plan development from draft to final document was coordinated by the emergency management director and accomplished through the concerted efforts of the planning committee. The methodology used in developing the plan followed the FEMA How-to Guides, 386-1 through 386-4. This includes, but is not limited to, forming the planning committee, developing the risk assessment, formulating mitigation goals, objectives, and strategies, preparing implementation and monitoring schedule. This process was interspersed with public input from both participating and non-participating jurisdictions (neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties involved in the planning process). This was accomplished through placement of the plan in the Unicoi County Public Library for public review with notice published in the Erwin Record to that effect, where the plan was continually made available to the public through the drafting stage and final plan and will continue to be available following approval. (See Section VI and Exhibits 10-18).

Primary source of data supporting the plan came from local preliminary damage assessments, local records, Tennessee Department of Economic and Community Development Website, US Weather Service Climate Data Storm Events Results, and HAZUS-HM derived earthquake Data. Only three flooding events (1994, 2001 and 2004) resulted in Presidential Declarations for which figures were provided to county (\$551,629). Snow and ice caused two more Presidential Declarations with figures (1993 and 1998, totaling \$471,457.50). The remaining damage estimates came from ineligible expenditures and the undeclared events of 1978, 1983, and 1999.

In addition to the above, the following documents were reviewed for relevancy with pertinent data and information incorporated into the plan:

1. Unicoi County Emergency Management Plan
2. Unicoi County Resolution – Flood Damage Resolution - 30 September 1982
3. Unicoi County Disaster Housing Plan of 1978, as amended
4. Tennessee Emergency Management Plan - 2004
5. Hazard Mitigation Plan for the State of Tennessee – November 2004
6. Federal Response Plan, Interim, 2003
7. Tennessee Code Annotated

### **III. RISK ASSESSMENT**

Numerous hazards threaten Unicoi County and its two municipalities. With exception of tsunamis, and volcanoes, all other recognized threats are possible. Flooding has been the most frequent and most damaging with flash flooding occurrences throughout the county and the towns. The second most frequent and impacting threat is severe winter weather with the mountain area only slightly more affected than the valleys. Both the CSX Railroad and I-26 traverse both the valleys and the mountains. With the highway and railroad transporting hazardous materials traversing the inhabited length of this county, the risk is county wide. The towns of Erwin and Unicoi straddle these corridors. In addition, the Town of Erwin contains a major yard of the railroad and three nuclear facilities, one of which is the town and county's largest employer. Wind and tornado damage is ranked next as there has been one tornado that affected both the county and the Town of Erwin and several wind events that less severe win events throughout the county. Although no damage has been attributed to the earthquakes that have occurred, the earthquake risk is considered because of the tremendous damage that will be done to the unreinforced masonry structures of the business districts of both towns. Evaluating weapons of mass destruction and terrorism threats are a continuous process that cannot be covered in a public forum or document.

Note: With the exception of flooding, the aforementioned natural hazards equally affect all jurisdictions.

#### **A. FLOODING BACKGROUND**

1. In the urban center, Rock, McInturff and Martins creeks join with North Indian Creek and the Nolichucky River within two miles. The lower three miles of these streams are encroached by development along or over channels. In the undeclared floods of 1978, 1983, and 1999 and the declared disasters of 1993, 1994, 2001 and 2004, about one and one quarter million dollars damage was done to homes, businesses, industries and transportation routes throughout the county. The problem is aggravated if North Indian Creek and/or the Nolichucky River are at or near flood stage from heavy rains in upstream watersheds, causing backflow in the local stream channels. The flow of these channels is obstructed by years of debris and silt buildup. During period of extremely high water the Nolichucky River has eroded its banks outside the south end of Erwin, endangering two homes, outbuildings, a county road (Red Bank Road), a county bridge (Jackson Love Highway), and a set of interstate highway bridges (I-26).
2. Data from the US Weather Service Climate Data Center (NCDC) indicates a total of eleven flooding events since 1967 costing an additional estimated \$66,000 damage in Unicoi County. Sixty-one thousand dollars damage was identified by NCDC for the Town of Erwin. Additional five thousand dollars damage was identified by NCDC as countywide. Exhibit 1 reflects this research.

#### **B. SEVERE WINTER BACKGROUND**

1. The winter storms of 1993 and 1998, many Unicoi County citizens had to be relocated from their homes throughout the county because they had no power to control their heating systems, to cook, and to operate their oxygen concentrators and medication infusion systems. In the 1998 storm, no designated shelters had electric power to provide such life support. These victims had to be sent to the local hospital, overtaxing that facility.
2. The public safety communication system depends on the repeater station on Pinnacle Mountain for twenty-four hour countywide coverage. The location is powered by a conventional landline over impassable terrain. All transmitters are

equipped with twenty-four hour back-up batteries. The storm of 1998 proved this inadequate. Until regular power was restored, on 27 March 1998, the temporary generator had to be refueled daily by a thirty mile round trip, sometimes, in snow or freezing rain.

3. Data from the US Weather Service Climate Data Center indicates a total of twelve winter events since 1967 costing an estimated \$1,015,500 damage in Unicoi County. The NCDC reported these events as region wide, affecting the county and both towns Exhibit 1 reflects this research.

#### C. HAZARDOUS MATERIAL RELEASE BACKGROUND

1. As referred to previously, this county straddles two transportation corridors crucial to the chemical industry. Interstate 26 traverses the length of the county connecting the chemical plants of the Ohio River Valley, Kentucky and Kingsport with the industries of the southeast and the ports of Charleston, SC and Wilmington, NC. The largest single shipper on this route is the Eastman Chemical Corporation plant in Kingsport, TN, twenty-five miles to the north. This firm produces a variety of chemicals for industries. Many of these pass through this county to other Eastman plants and other industries and ports. In addition most of the rail cargo movements for Eastman are marshaled in the CSX Transportation rail yard in Erwin in this county. This railroad comprises the other transportation corridor in this county. This coal hauler serves also as a bridge link from western Virginia, eastern Kentucky, and the Ohio River to the industries and ports of the southeast. Both Interstate 26 and the CSXT railroad pass through the county and the Towns of Erwin and Unicoi.
2. Because of limited developable land, the industrial base of the county is small. However, what is present must be constantly considered. The largest employer in the county, Nuclear Fuel Services, Inc. (NFS) is a chemical processor that that converts certain uranium based materials for use as fuel in US Navy nuclear powered submarines and aircraft carriers. This plant also conducts other nuclear industry related functions. This includes converting down blended weapons material to power reactor fuel. As this facility is privately owned and has no reactor, no special public warning system is required. As such no funding is available. The procedures required under the Superfund Amendments and Reauthorization Acts, Title III are considered adequate by regulators. Planners and officials have to contend with the misconceptions that it must have the same dangers and the corresponding protection as nuclear reactor facilities. No releases that endangered citizens have occurred. Next door to NFS, is the Studsvik Processing Facility, Inc., an independent private corporation, that reduces contaminated filter material from nuclear power reactors to a more easily disposed of material.
3. There are 15 industries that have submitted Tier Two Reports:

AT &T	City of Johnson City
CSXT Erwin TN Shops	Erwin National Fish Hatchery
Erwin Utilities	Georgia Pacific
Morrill Motors #2	Morrill Motors #3
NN Ball & Roller, Inc	Nuclear Fuel Services, Inc
Progress Rail Service, Inc.	Sprint Communications Company, L.P.
Studsvik Processing Facility, Inc	Summers-Taylor Materials, Inc.
Verizon Wireless	

4. The only facility hazardous material spills reported to date were limited to the premises. All other spills have been transportation related. The worst was the derailment in the CSXT Erwin yard July 17, 1987. Forty-one cars on all tracks were derailed. One methanol tank car was punctured and ignited. The surrounding neighborhood was evacuated for four and a half hours. Two elderly persons suffered heart attacks during the evacuation. No other injuries were reported. The most recent and second worst is a tanker rollover August 12, 2002 at Exit 5, US 23 (I-26). Ninety-two tons of ethylhexonic acid contaminated right of way materials were removed. The driver received a head contusion. No streams or residents were affected. The four lane had to be closed several times during clean up. Two motor vehicle crashes with injuries occurred on the detour route during the closures. The other spills were vehicle fuel leaks or container fitting failures with no effect on the population.
5. Exhibit 2 depicts hazardous material locations and their proximity to key populations. With the impact on the transportation corridors and industry, all inhabited areas are affected.

#### D. WIND/TORNADO BACKGROUND

1. Unicoi County is not subject to the direct effects of hurricanes. Thunderstorms caused by hurricanes have reached this county, creating the potential for flash flood, wind or lightning damage. However, other forms of wind events have occurred. On July 10, 1980 an F3 tornado struck this county and the community of Unicoi and the town of Erwin causing twelve injuries and about \$250,000 in damage. As this tornado formed below the mountain peaks under radar beams, there was no warning. Other wind events have occurred: mostly in thunderstorms throughout the county.
2. Data from the US Weather Service Climate Data Center indicates a total of thirty-six wind events since 1967 costing an estimated \$975,000 in damage. Exhibit 1 reflects this research.

#### E. EARTHQUAKE

1. As depicted in the graphic below (Figure 1), this portion of Tennessee is in the Southeastern Earthquake Zone. No damaging earthquakes have occurred in Unicoi County. Information from the US Geological Service indicates that this area could suffer a five on the Richter Scale. Analysis with HAZUS-MH indicates that a basic substratum under this county is uniform limestone and sandstone bedrock layers. This would mean that earthquake forces are transmitted uniformly throughout the county. As such, damage would be greatest at the largest concentration of vulnerable buildings in downtown Erwin. Analysis based Unicoi County Tax Assessor records, experience and accept damage assessment practices indicates that earthquake damage in the Town of Erwin area could reach seven million three hundred thousand dollars. Similar methods of assessment indicate possible structural losses of eight hundred thousand dollars for downtown Unicoi. Earthquake losses for the remaining portions of the county would likely occur on a countywide random pattern, as the geologic structure is uniform throughout the county.



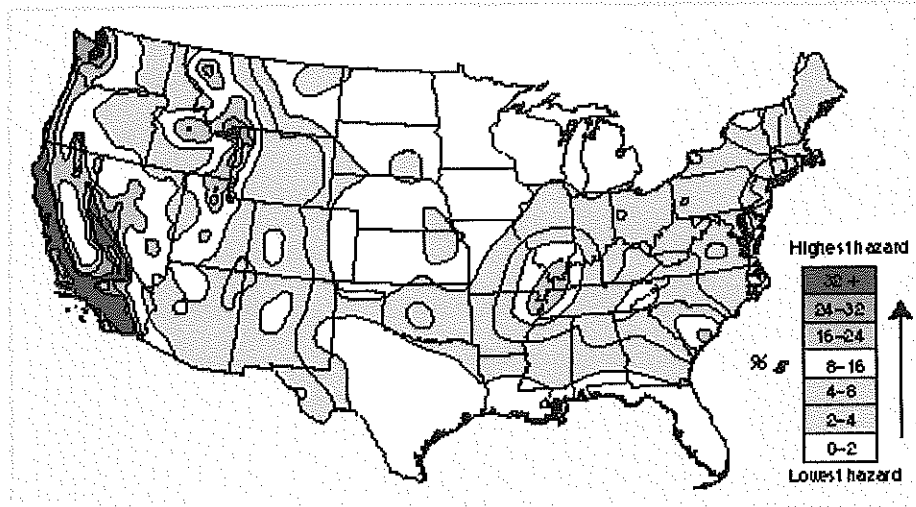


Figure 1

## F. HAZARD PRIORITY RANKING

Priority / Hazard		Warn Time	Risk/ Probability	Damage to Property/ Function	Vulnerability/ Impact	Threat to Life Safety	Magnitude/ Severity	Size of Area Affected
		Short Med Long	High Med Low	High Mod Low	High Mod Low	High Med Low	High Medium Low	Large Med Small
Natural Hazard								
1	Flood-Unicoi County	Med	High/High	High/High	High/High	High	High	Med
1	Flood-Erwin	Med	High/High	High/High	High/High	High	High	Med
1	Flood- Unicoi	Med	High/High	High/High	High/High	High	High	Med
2	Snow/Ice	Med	Med/Med	Mod/High	High/Med	Low	Med/Med	Large
3	Tornado	Short	Med/Med	Mod/High	Med/Med	High	Low/Low	Med
4	Earthquake	None	Low/Low	High/High	Low/Med	High	Low/Med	Large
Other Hazards								
1	Hazard Materials	None	Med/Med	Mod/Low	Low/Med	Med	Med/Med	Med
2	WMD/ Terrorism	None	Low/Low	High/High	Low/Med	High	Low/Med	Med

Figure 2

## G. RISKS

### 1 TOWN OF ERWIN

The Town of Erwin faces the greatest flooding risk. The major flood prone watercourses combine within or near the town limits Rock Creek, McInturff Creek, and Martins Creek enter North Indian Creek within the town limits. Rock Creek travels about one and one half miles through the Town of Erwin to its mouth. The entire route has been restricted and obstructed by development, resulting in flooding after several violent storms on the US Forest Service mountain land upstream. McInturff Creek arises entirely within the town limits. However, the watercourse has been obstructed, restricted and overbuilt by about one hundred years of development. Residences are built adjacent and over the creek through its one and one tenth mile length. Downtown is built over the creek. A heavy downpour within its watershed will result in business flooding downtown. Martins Creek travels about one and one half mile within the town limits through housing

and industrial areas. Flooding from downpours on upstream Forest Service property does endanger the town's largest employer, NFS, Inc, a crucial defense contractor. All three creeks cross under the CSX Railroad, causing another flood producing obstruction. North Indian Creek and South Indian Creek enter the Nolichucky River within sight of the city limits but about three miles part. If the Nolichucky is high from rains in North Carolina, backflow can come up North Indian Creek into the lower reaches of the McInturff and Martins Creeks multiplying flooding effects frequent flood areas for Erwin are depicted in Exhibit 4 Total damages could attain four million nine hundred thousand dollars based Unicoi Assessors records, experience and accepted damage assessment practices.

With the largest concentration of population, the Town of Erwin has the greatest need of adequate sheltering. The largest number of potential special needs evacuees' lives within the town limits. This will exceed the capacity of the only hospital in the town and county.

With the entire town limits within range of the public safety radio base station, failure of the repeater has minimal direct impact upon town operations.

## 2. TOWN OF UNICOI

The Town of Unicoi is susceptible to flooding at various points along the two and three quarter mile length of North Indian Creek within the town limits. This stream has suffered from restrictions, debris obstructions and bank mutilation caused by negligent agriculture and development practices. Similar problems exist along several drainage channels in older residential areas. In the five-mile length of Buffalo Creek within the town limits, debris obstructions, channel reductions and undersized culverts cause flash flooding after heavy storms on Buffalo Mountain. Most frequent flooded areas of the Town of Unicoi are depicted with Exhibit 5. Damages could attain three hundred fifty five thousand dollars, based on Unicoi County Assessors records, experience and acceptable damage assessment practices. With no medical facilities, the Town of Unicoi needs a structure that can be converted quickly in to a special needs shelter. Although small in population, the town is large in area with special needs citizens spread throughout.

During a repeater outage, only the southern part of the town is in range of the public safety radio base station.

## 3. UNICOI COUNTY

The mile between the town limits of Erwin and Unicoi and the seven miles upstream of the Town of Unicoi on North Indian Creek fall within the county and are subject to the same flooding problems as the portion within the Town of Unicoi. The three-mile portion of Rock Creek between the Town of Erwin limit and the US forest Service property line is subject to restrictions, debris obstruction and channel reductions that facilitate flooding after extremely heavy rains on Forest Service property. The eight tenth mile portion of Martin Creek upstream of the Town of Erwin limit is subject to the same problems as Rock Creek. The entire watershed of South Indian Creek, including Spivey, Mill, Sams, Rice and Devils Fork Creeks are within the county. This creek system suffers from channel encroachment from debris and undersized culverts that cause occasional flooding. Most frequently flooded areas of the county are depicted in Exhibit 6. Flooding could cause as much as one million nine hundred fifty thousand dollars in a countywide event. (Exclusive of the towns.) The erosion problem of the

Nolichucky River is like to destroy two homes, outbuildings, \$85000), a county road (Red Bank Road at \$60,000), and damage to a county bridge (Jackson Love Highway at \$2,525,000), and a set of Interstate bridges (I-26 at \$6,000,000)

Many citizens live in the rural portions of the county who are dependent upon electrically operated medical equipment or heating systems for survival. With no medical facilities in any rural parts, the county needs a facility that can be activated quickly into special needs shelters.

Repeater failure of the public safety radio system gravely affects the county as most of the rural portions fall outside the base transmitter range. In addition, the mountains obstruct much of the signal from that transmitter.

## H. VULNERABILITIES

### 1. TOWN OF ERWIN

Although the Town of Erwin is equally susceptible to those hazards listed in Figure 2, Hazard Priority Ranking, it is particularly vulnerable to flooding because of its location in the lowest suitable portion of the county and its concentration of business, industry, and population. The leadership of Erwin has recognized these factors and in continually upgrading town-controlled structures to reduce vulnerabilities. However, the known risks are so immense that they exceed the resources of the town and the available grant programs. With some risks currently beyond mitigation, other measures must be explored. As such, a state of the art warning system will be necessary. Shelter upgrades are still warranted. Public safety response capabilities must be maintained and upgraded. Public awareness programs must be continued and expanded as necessary.

### 2. TOWN OF UNICOI

Since its inception in 1994, the leadership of the Town of Unicoi has learned about its risks through experience and analysis of past events. The town is utilizing private contractors and the Unicoi County Road Department to improve vulnerable town controlled structures during maintenance and restoration projects. However, the town faces the same dilemma as the Town of Erwin in that the known risks exceed the town's resources and available grant programs. The need for an improved warning system, shelter, public safety communication upgrades are more even more crucial because of the community's remote locations. Improvement of public safety response capabilities must continue. Public awareness programs must be maintained.

### 3. COUNTY OF UNICOI

County government leadership has benefited from past experience and uses maintenance and restoration projects to reduce vulnerabilities of county controlled structures. The county shares the same situation with both towns that the known risks exceed the counties resources and available grant programs. The many remote locations of the county underscore the necessity for the best possible warning, sheltering, public safety communications systems and protective actions. The countywide public safety response must be coordinated and enhanced. Countywide public awareness programs must be coordinated with the towns and continued.

#### 4. VULNERABLE CRITICAL FACILITIES

With no zoning and code enforcement regulations in affect for the unincorporated areas of the county and the two towns limited by resources to only regulate and inspect new construction and major repairs to existing structures, no comprehensive structural surveys can be conducted on existing facilities. For the same reason, no predictions can be made for future construction. The few locations available for development have received preliminary surveys and modifications have been implemented or planned.

The facilities listed below have been determined by the committee to the most crucial in the county and the towns, based on their training and experience.

##### Town of Erwin

- a. Interstate 26
- b. CSX Transportation Erwin Railroad Terminal and Mainline
- c. NFS, Inc.
- d. Unicoi County Courthouse and Annex
- e. Erwin Town Hall and Police Headquarters
- f. TVA Erwin Electric Substation
- g. Southside Fire Department
- h. Erwin Utilities Wastewater Treatment Plant
- i. Unicoi County Road Department
- j. Erwin Street Department
- k. Tennessee Department of Transportation Facility
- l. Tennessee Army National Guard Armory
- m. Elks Club Well
- n. Birchfield Well
- o. O'Brien Spring Well
- p. Railroad Well

##### Town of Unicoi

- a. Unicoi Town Hall and Sheriff's Substation
- b. Unicoi Fire Department
- c. TVA Unicoi Substation
- d. United States Forest Service Zone Headquarters

##### Unicoi County (Unincorporated areas)

- a. Interstate 26
- b. WEMB/WXIS Radio Station
- c. CSX Transportation Railroad Mainline
- d. Johnson City Water Department Facilities

#### H. MULTIJURISDICTIONAL PLANNING

The Towns of Erwin and Unicoi have decided to use the Erwin-Unicoi County Emergency Management Agency for emergency planning and direction. Both towns are included the Unicoi County Emergency Operation Plan.

#### IV. MITIGATION STRATEGY

##### A. CAPABILITY ASSESSMENT

Unicoi County, the Town of Erwin and the Town of Unicoi participate in the National Flood Insurance Program. No new construction is authorized in flood prone areas. Both the US Army Corps of Engineers and the Tennessee Valley Authority are undertaking flood management surveys to update outdated data and determine needed improvements. Both the Town of Erwin and the Town of Unicoi have zoning programs and building codes to insure new construction and major renovations meet universally accepted safety standards. Although the County does not have a zoning and building code program, the Unicoi County Planning Board requires developers to include flood control measures in the plans submitted before approval. The County and the Towns do not issue flood variances. All jurisdictions forbid construction in floodways. The county and the towns participate in state bridge and highway programs that have replaced flood prone drainage structures, routed highways to lessen damage and to improve water flow. The County and the towns have received approximate \$500,000 Emergency Watershed Restoration Grants through the Natural Resource Conservation Agency, US Department of Agriculture for Fiscal Years 2003 and 2005. This grant has financed debris removal, bank restoration and stabilization for streams that continue to threaten residences, businesses and highways.

#### B. STATEMENT OF GOALS

1. To provide the residents of Unicoi County and its towns a safe environment through minimum exposure to risks or natural hazards.
2. To protect and properly manage the county's and town's floodplain and floodways.
3. To promote a public awareness of natural hazards and activities that can lessen exposure to natural hazards.

#### C. STATEMENT OF OBJECTIVES

1. Identify, annually evaluate and implement a hazard mitigation planning process for the purpose of eliminating risks associated with natural hazards.
2. Continue participation in the National Flood Insurance Program in enforcing construction restrictions in flood prone areas.
3. Create an ongoing county wide public information program targeting earthquakes, flood and severe winter weather preparedness.

#### D. MITIGATION MEASURES

Measures were received from most of the committee members based on information they received from public input, their own observations and the studies of the US Army Corps of Engineers, National Resource Conservation Service, and engineering studies done by various contractors. Cost benefit review was the final determinate in the decisions. Most alternatives were rejected because the jurisdictions would not be able to procure sufficient financing to cover their twenty-five percent of the suggested project. This factor precluded the need to determine if the cost of the future savings would exceed the cost of the project. Some alternatives were also ruled out due their impracticality and are not included. The only remedy is to continue apprising the affected citizens of the dangers. The following mitigation measures are listed in county priority order:

NOTE: Although fiscal constraints played and all important role in determining mitigation action feasibility/prioritizations the final determination of the actions was

accomplished by the Mitigation Planning Committee through a combined input from both governmental and private sectors.

1. Flood erosion measures

- a. Although the homes and outbuildings on the Red Bluff on the north bank of the Nolichucky River, east southeast of Exit 15, I-26 are outside of Special Flood Hazard Area, the river is threatening to destroy these residences. During periods of extremely high water coming downriver from North Carolina the undercuts the bluff. One landowner has lost one of his three and one half acres. One corner of his remaining barn is overhanging the river. The bank is about twenty-five feet from his home. On his eastern property line is a power pole that is less than six feet from the edge. This pole feeds electricity to a farm upstream of his property. The riverbank edge is now two feet from Red Bank Road's pavement. The river's edge is now twenty feet from the second house. The loss of the county road will isolate a third dwelling that is not in foreseeable danger. Several hundred feet downstream of these properties is the Jackson Love Highway bridge, with its northern pier and abutment in line with the future current flow. Down river of the county bridge is the Interstate I-26 similar vulnerability. The preferred mitigation is to purchase and demolish the two homes and out buildings as the only affordable and attainable option. Exhibit 8 depicts this area. (High ranking)
- b. Alternative Plans
  - 1). Place water flow control structure at the base of the bluff to direct eroding current away from the bluff. The Nolichucky River ranges one to four feet in depth in this area. As such no floating equipment can be used. The main river channel is at the base of the bluff. Because of the length of the channel most of the work would have to be done in the channel or with cofferdams. This work does not meet current environmental laws. The county could not afford its share of the cost estimated to be several million dollars by the US Army Corps of Engineers.
  - 2). Place riprap or similar protection on the bank. This would require similar construction measures as Alternative One. The county cost would still be unaffordable. In addition, the force of the flood current will probably wash away the work,
  - 3). Do nothing and allow the flood current to wash away the homes, the power lines, and damage the roads, and the bridges.
- c. Implementing Agencies  
Unicoi County Mayor, Erwin Unicoi County Civil Defense/Emergency Management
- d. Implementing Schedule  
6-12 months after approval
- e. Funding Source  
FEMA Mitigation Fund, Unicoi County General Fund
- f. Estimated Cost for Preferred Option.  
\$95000

## 2. Flood and other hazard warning upgrade

- a. The urban center of Unicoi County, comprising the Town of Erwin and adjacent developed areas is subject to flash flooding from Rock, O'Brien, and Martins creeks: The preferred mitigation action is to install stream gauges on the affected streams to provide warning to citizens, facilities, and agencies to implement established flood plans. The gauges will be part of the National Weather Service Integrated Flood Observing and Warning System (IFLOWS) and will transmit their data through the Weather Services network to a radio receiver and warning computer in the Emergency Communication Center (E-911). The Center will broadcast the warning through the media, public safety agencies and automatic dialing system that will transmit recorded warnings to all phone numbers in the E-911 data bank in the affected areas. This system will also provide warning for other hazards such as tornadoes, severe winter weather, hazardous materials releases and terrorism. See Exhibit 9
- b. Alternative plans
  - 1). The first alternative, to relocate all vulnerable facilities and home (160) is not cost effective. The tax base of the jurisdictions will not provide the local grant share of at least \$400,000.
  - 2). The second, to elevate all vulnerable structures, is not cost effective. The tax base and assets of the affected property owners will not provide the local grant share of at least \$300,000. Many of the structures cannot be raised, but must be replaced.
  - 3). The third, to provide flood control structures, would require implementing alternative one to provide space. The available watershed protection programs are not large enough to fund all three-watershed areas.
  - 4). The fourth, to install warning sirens in all populated areas to provide warning to citizens will cost approximately \$1,350,000 to install and \$130,000 a year to maintain. The sirens will be heard only in older structures and outdoors. As such the program would not be affordable or practical.
  - 5). The last, to do nothing, risks the loss of life and property.
- c. Implementing Agencies  
Erwin/Unicoi Civil Defense-Emergency Management  
Towns of Erwin and Unicoi  
Unicoi County Emergency Communications District (E-911)  
NFS Inc.
- d. Implementing Schedule  
12-18 months after funding
- e. Funding Sources  
FEMA Mitigation Funds, US Homeland Security Grants, Community Development Block Grants, Town of Erwin General Funds, Town of Unicoi General Funds, Unicoi County General Funds, Unicoi County Emergency Communication District (E-911) Funds, NFS Inc. Funds
- f. Estimated Costs for the preferred mitigation action:  
\$83,000

### 3. Sheltering Upgrades

- a. The preferred mitigation action for making shelters survivable for multiple hazards; i.e., severe winter weather, wind, and tornado. This action will provide special needs evacuees with equipment and special furnishings to those existing structures. The subject structures (four schools and the Unicoi County Memorial Hospital) have fossil fuel heating systems that only require electricity for controls. All buildings will require supplemental gas fired food storage and preparation appliances, generators, and related equipment. See Exhibit 8
- b. Alternative Plan
  - 1} The first alternative, to construct a special shelter, is not cost effective. The tax base of the jurisdictions cannot fund the local cost share.
  - 2} The second is to do nothing risking loss of life.
- c. Implementing Agencies  
Erwin/Unicoi County Civil Defense/Emergency Management, Unicoi County Board of Education, Unicoi County Memorial Hospital
- d. Implementation Schedule  
6-8 months
- e. Funding Sources  
FEMA Hazard Mitigation Funds, TEMA Funds, Community Development Block Grants, Town of Erwin General Funds, Town Of Unicoi General Funds, Unicoi County General Funds, Unicoi County Board of Education Funds, Unicoi County Memorial Hospital Funds.
- f., Estimated Cost for the preferred mitigation action:  
\$41,000

### 4. Communication Upgrades (All Hazards)

- a. The preferred mitigation to provide for survivable countywide communications is to equip the repeater site with an automatic propane generator with large propane tank. This allows time to open road with bulldozer and for Erwin Utilities to restore normal power.
- b. Alternative Plans
  - 1}. The first alternative is for the system to be down while a bulldozer opens the road and a portable generator made operational.
  - 2}. The other is to do nothing and risk loss of life to responders and citizens in remote portions of county.
- c. Implementation Agencies  
Erwin Utilities, Unicoi County Sheriff
- d. Implementation Schedule  
4-8 months
- e. Funding Sources



FEMA Hazard Mitigation Funds, TEMA Funds, Community Development Block Grants, Town of Erwin General Funds, Town of Unicoi General Funds, Unicoi County General Funds, Erwin Utilities Funds.

- f. Estimated Cost for the preferred mitigation action:  
\$11,000

5. Public/Responder Education and Hazards Awareness (All Hazards)

- a. Develop a comprehensive program of workshops, local training classes, and ensure public awareness to computer links to Washington County maintained web site for Citizen Corps information. The costs will be minimal, primarily related to training material and preparation.
- b. Alternative Plan/s  
None
- c. Implementing Agencies  
Erwin/Unicoi County Civil Defense/Emergency Management, Unicoi County Board of Education, Unicoi County Memorial Hospital
- d. Implementation Schedule  
6-8 months
- e. Funding Sources  
Town of Erwin General Funds, Town Of Unicoi General Funds, Unicoi County General Funds, Unicoi County Board of Education Funds, Unicoi County Memorial Hospital Funds.
- f. Estimated Cost for the preferred mitigation action:  
Minimum – County Resources

6. Warning Signs (Flooding, Hazardous Materials)

Research the feasibility of installing warning signs to alert tourists and residents to areas subject to actual/potential flooding and possible hazardous materials incidence locations.

- b. Alternative Plans  
None
- c. Implementing Agencies  
Erwin/Unicoi County Civil Defense/Emergency Management, Local Public Safety Agencies
- d. Implementation Schedule  
TBD
- e. Funding Sources  
TEMA Funds, Tennessee Department of Transportation, Town of Erwin General Funds, Town Of Unicoi General Funds, Unicoi County General Funds.
- f. Estimated Cost for the preferred mitigation action:  
Minimal

7. Ensure survivability of existing and future buildings/infrastructure (All Natural Hazards)
- a. The county will work with the State's local planning office to enhance/develop construction guidance for existing and future development of industrial and residential areas.
  - b. Alternative Plans  
None
  - c. Implementing Agencies  
Erwin/Unicoi County Civil Defense/Emergency Management, Local Planning Commissions
  - d. Implementation Schedule  
Ongoing
  - e. Funding Sources  
Community Development Block Grants, Town of Erwin General Funds, Town Of Unicoi General Funds, Unicoi County General Funds,
  - f., Estimated Cost for the preferred mitigation action:  
Minimal - Existing Resources

## **V. PLAN MAINTENANCE**

The Erwin/Unicoi County Mitigation Committee of the Erwin/Unicoi County Emergency Management Council will meet after every disaster and on an annual Basis to monitor, evaluate and amend this plan. All areas of the plan will be reviewed to determine if any possible changes, additions, or updates need to be added to the plan. Specifically, the risk assessment will be formally reviewed annually (at a minimum) to address the continued viability of previous assessments and any new hazard risk and vulnerability information. Associated goals, objectives and strategies will also be reviewed for progress and viability with modifications and additions to the existing listing made as necessary; i.e., new actions based on any new data incorporated into the plan's risk assessment. The Director will meet with committee members and other stakeholders to develop and finalize amendments. Notice will be published for inviting public review. Each jurisdiction will consider and approve the amended plan. Public attendance will be encouraged. The plan will be submitted to TEMA. The plan will be revised every five years unless conditions warrant sooner revision. Committee members will receive and evaluate proposed revisions. The Emergency Management director will finalize the revisions, make public notice, and present the revised plan to the three jurisdictions for adoption at their public meetings.

Unicoi County currently utilizes land use planning, capital improvements planning, and appropriate jurisdictional requirements to guide and control development in the County and Municipalities. After the official adoption of the Hazard Mitigation Plan, these existing mechanisms will have hazard mitigation strategies integrated into them.

After the plan has been approved by FEMA and the governing body of Unicoi County. We will request a vote on helping to accomplish mitigation goals and to help with funding for the most critical projects.

The County and each municipality are responsible for administering construction requirements for their respective jurisdictions. After the County and each municipality adopts the Hazard Mitigation Plan, they will work with the State to ensure that life/safety issues are addressed for new construction within their areas.

Unicoi County, through the local emergency management office, will encourage the use of and make available this hazard mitigation plan/data to both governmental and private sectors for inclusion in their planning efforts/documents. Similarly, the local hazard mitigation plan will also incorporate all pertinent data from the aforementioned planning efforts in future renditions of the plan.

## **VI. PUBLIC PARTICIPATION AND ADOPTION**

This plan is prepared by members of the Mitigation Team singularly and collectively. It is reviewed and endorsed by the Erwin/Unicoi County Emergency Management Council (LEPC) at open advertised meeting on August 12, 2003. See Exhibits 10-13 and 19. The draft plan was reviewed and approved by the Unicoi County Planning Commission at an open advertised meeting on August 19, 2003.

The Boards of Mayor and Alderman of the Towns of Erwin and Unicoi and the Unicoi endorsed by the County Commission approved the draft plan in open regularly scheduled, announced sessions with members of the public present. No public sign-in roster is kept for these meetings, as by tradition they do not sign in.

Town of Erwin: August 11, 2003.  
Town of Unicoi: August 18, 2003.  
County of Unicoi: August 24, 2003.

The final draft of the revised plan was placed at the Unicoi County Public Library for public review and comment. Notice was published in the Erwin Record, the general circulation newspaper for Unicoi County and the Town of Erwin and Unicoi. As of submission date no one had signed the sign in roster.

Instruments of Approval are attached as Exhibits 10 through 13 and

Unicoi County is well aware that a continued involvement of the general public in the hazard mitigation planning process is essential in maintaining a viable and credible plan. Consequently, meetings of the LEPC as well as those of the respective jurisdictional councils will be advertised to the public via the local newspapers/other media outlets. During those sessions, public comment and concerns regarding the mitigation plan will be encouraged. All pertinent suggestions and/or recommendations submitted will be forwarded to the LEPC Chair for evaluation and possible incorporation into future revisions of the plan.

## **EXHIBIT 1 NOAA NATIONAL CLIMATIC DATA CENTER RESULTS FOR UNICOI COUNTY**

NCDC: Query Output NCDC / Climate Resources / Climate Data / Events /  
Storm Events / Results / Search / Help

### **Query Results**

108 event(s) were reported in Unicoi County, Tennessee between  
01/01/1950 and 04/30/2005 (High Wind limited to speed greater than 0 knots).  
Click on Location or County to display Details. Mag:

Dth:

Inj:

PrD:

CrD:

Magnitude

Deaths

Injuries

Property Damage

Crop Damage

Tennessee	Location or County	Date	Time	Type	Mag	Dth	Inj	PrD	CrD					
1	UNICOI	04/22/1967	0715	Tstm Wind	0 kts.	000	0							
2	UNICOI	05/14/1967	1325	Hail	1.75 in.	000	0							
3	UNICOI	04/04/1974	0330	Tstm Wind	0 kts.	000	0							
4	UNICOI	07/10/1980	1230	Tornado	F3012250	K0								
5	UNICOI	04/02/1983	0054	Tstm Wind	0 kts.	000	0							
6	UNICOI	06/03/1985	0215	Tstm Wind	0 kts.	000	0							
7	UNICOI	07/16/1988	1610	Tstm Wind	0 kts.	000	0							
8	UNICOI	05/06/1989	1030	Tstm Wind	0 kts.	000	0							
9	UNICOI	05/01/1990	1452	Hail	2.75 in.	000	0							
10	UNICOI	04/09/1991	1625	Tstm Wind	0 kts.	000	0							
11	TNZ012	>018 - 035	>047 - 066	>074 - 081	>087 - 098	>102								
12	20/1993	2200	Snow	N/A001	K0									
12	TNZ14	>18;38	>47;70	01/04/1994	1200	Snow	N/A001	K0						
13	TNZ13	>18;36	>47;69	>74 01/14/1994	1800	Snow	N/A000	K0						
14	TNZ68	>74;85	>87;100	>102 01/28/1994	0130	High Winds	0 kts.	00500	K0					
15	TNZ03	>13;20	>35;42	>66;75	>82;84;85;88	>97;100;101	02/09/1994	2000	Ice Storm N/A00500K0					
16	Erwin	03/27/1994	1800	Flash Flooding	N/A0050	K0								
17	Erwin	06/26/1994	2100	Flash Flooding	N/A005	K0								
18	Erwin	06/28/1994	1535	Hail	1.00 in.	000	K0							
19	Erwin	06/28/1994	1544	Flash Flooding	N/A001	K0								
20	UNICOI	01/14/1995	0830	Flood	N/A005	K0								
21	TNZ006	>018 - 025	>047 - 059	- 075	>087 - 097	>102								
01/17/1995	0400	Heavy Snow	N/A000	0										
22	Southwest And	01/17/1995	1700	Ice	N/A00500	K0								
23	TNZ004	>010 - 021	>033 - 040	>047 - 052	>065 - 071	- 075	>078 - 089	>097	04/11/1995	0630	High Winds	0 kts.	041.0	M0
24	Erwin	05/10/1995	1420	Hail	0.75 in.	000	K0							
25	Erwin	05/14/1995	0914	Thunderstorm Winds	N/A005	K0								
26	Erwin	05/18/1995	2310	Thunderstorm Winds	N/A005	K0								
27	Unicoi	06/16/1995	1315	Hail	0.75 in.	000	K0							
28	Limestone Cove	07/15/1995	1415	Thunderstorm Winds	N/A005	0								
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01/06/1996	09:00 PM	Winter Storm	N/A000	0										
30	TNZ012	>018 - 034	>047 - 066	>074 - 083	>087 - 099	>102								

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 31 Countywide 01/19/199608:00 PMFlash Flood N/A000 0  
 32 TNZ012>018 - 034>047 - 066>074 - 083>087 - 099>102  
 02/02/199602:00 AMWinter Storm N/A000 0  
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 35 Erwin 05/11/199612:20 PMTstm Wind 0 kts.000 15K  
 36 Erwin 06/24/199612:10 PMTstm Wind 0 kts.004K0  
 37 Countywide 07/02/199602:00 PMTstm Wind 0 kts.005K1K  
 38 South Part 07/15/199602:10 PMTstm Wind 0 kts.000 2K  
 39 TNZ015>018 - 036>047 - 067>074 12/18/199604:00 PMWinter Storm  
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 40 Erwin 01/05/199704:30 AMTstm Wind 0 kts.000 7K  
 41 TNZ012>018 - 034>047 - 066>074 - 083>087 - 099>102  
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 43 Countywide 06/13/199707:30 PMTstm Wind 0 kts.0020K15K  
 44 Rocky Fork 06/20/199703:32 PMTstm Wind 0 kts.000 5K  
 45 TNZ012>018 - 034>047 - 066>074 - 083>087 - 099>102  
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 46 Countywide 01/07/199809:35 PMFlood N/A000 0  
 47 TNZ016>018 - 040>047 - 071>074 01/27/199807:30 PMWinter Storm  
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 48 Chestoa 02/03/199807:00 PMFlash Flood N/A000 0  
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 50 Erwin 04/03/199807:30 PMHail 0.88 in.000 0  
 51 Erwin 05/07/199802:35 PMTstm Wind 0 kts.000 2K  
 52 Erwin 06/22/199808:30 PMTstm Wind 0 kts.000 10K  
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 73 Erwin 07/08/200104:25 PMTstm Wind 52 kts.000 0  
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 76 Erwin 04/28/200204:00 PMHail 1.00 in.005K0  
 77 Marbleton 04/28/200205:25 PMHail 1.75 in.005K0  
 78 Unicoi 07/03/200202:35 PMHail 1.00 in.000 0  
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TOTALS:1 16 27.083M 158K

Top of Page

NCDC / Climate Resources / Climate Data / Events / Storm Events / Results  
/ Search / Help

This page dynamically generated 11 Jul 2005 from:

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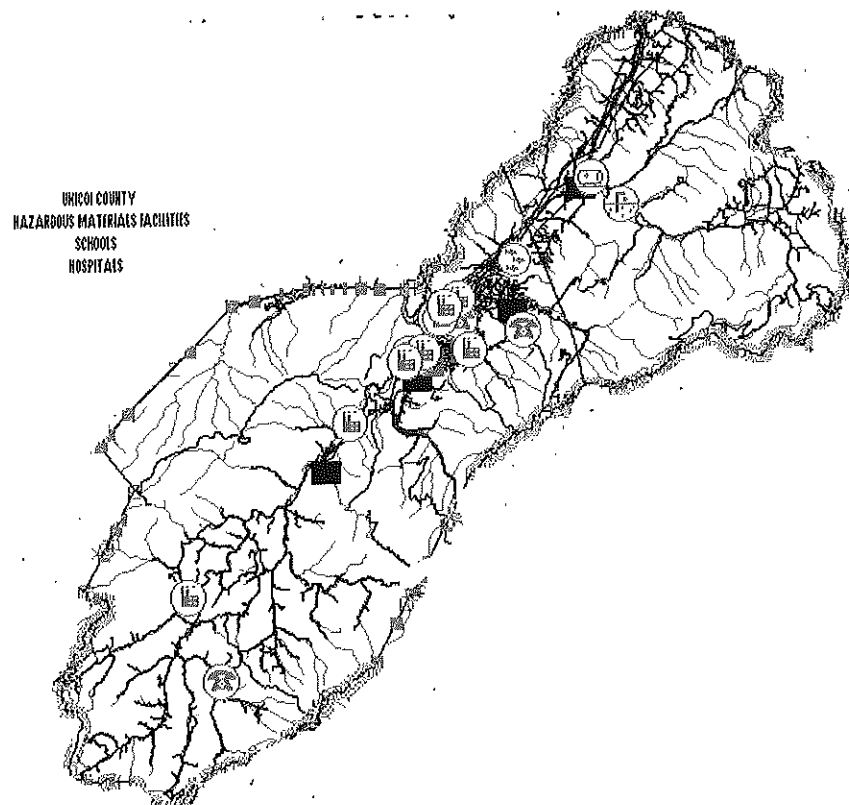
Please send questions or comments about this system to

[Stuart.Hinson@noaa.gov](mailto:Stuart.Hinson@noaa.gov)

Please see the NCDC Contact Page if you have questions or comments.

EXHIBIT 1

EXHIBIT 2



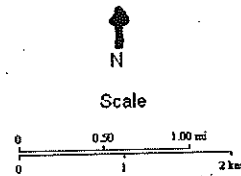
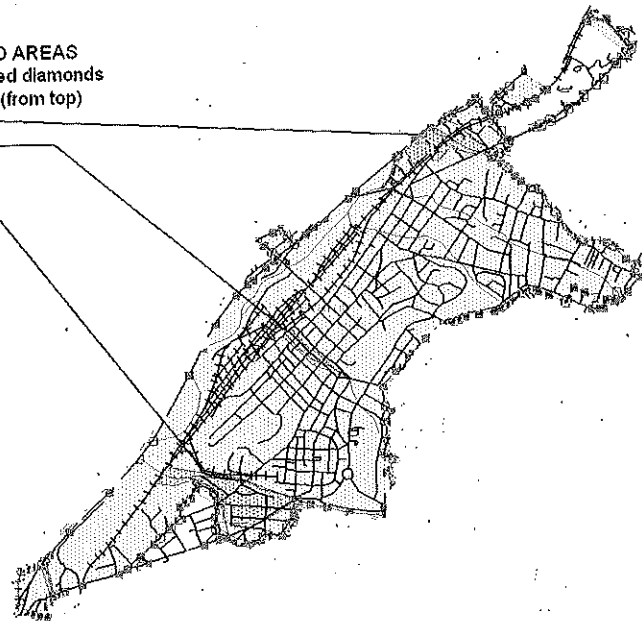
DERIVED FROM MARPLOT/CAMEO TIER 2 FILES

EXHIBIT 2



### EXHIBIT 3

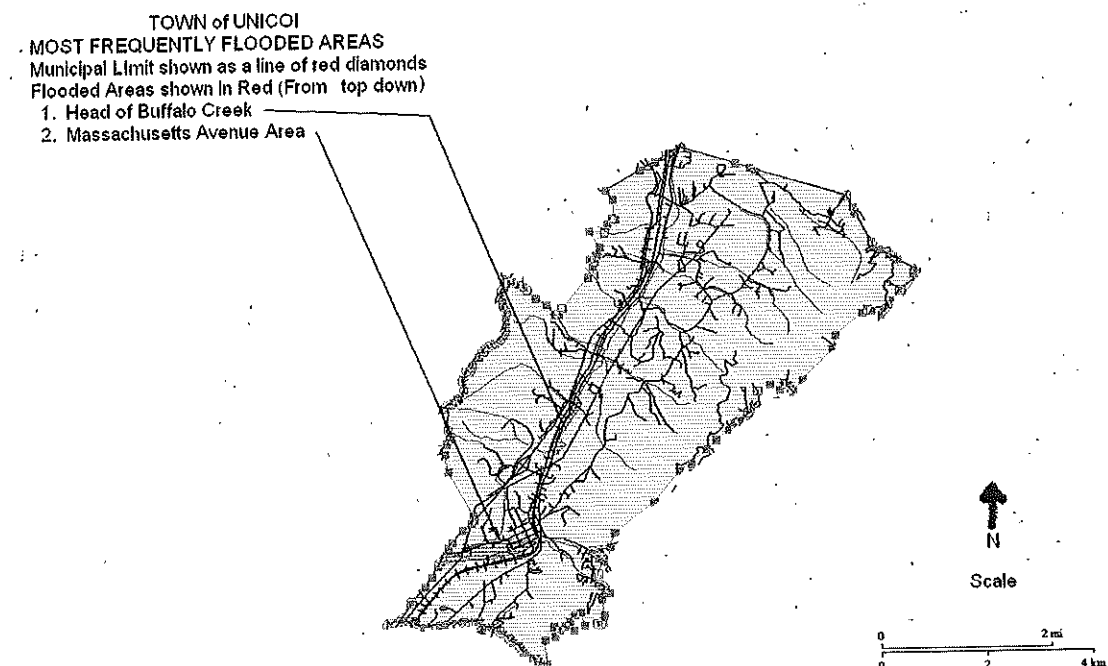
TOWN of ERWIN  
MOST FREQUENTLY FLOODED AREAS  
Municipal Limit shown as line of red diamonds  
Flood areas shown as red zones (from top)  
1. Mouth of Rock Creek  
2. McInturff Creek  
3. Lower Martins Creek



Map derived from MARPLOT/US Census TigerLine Files

EXHIBIT3

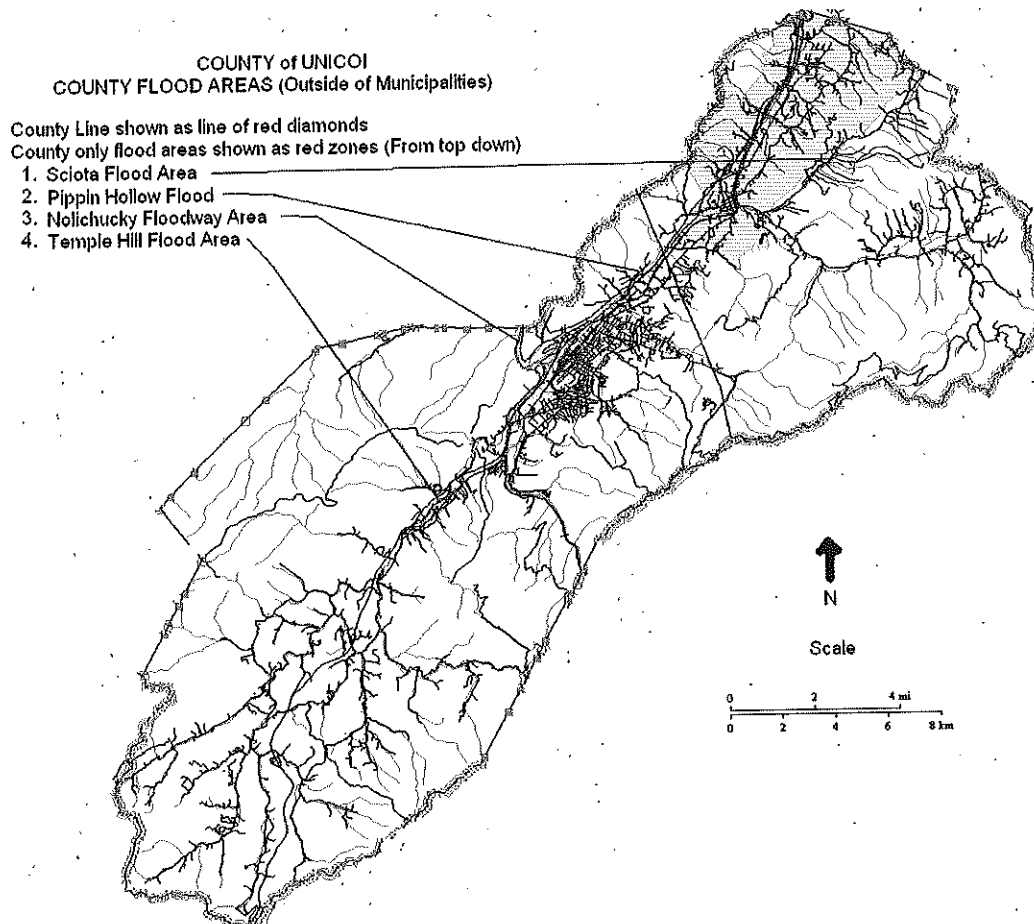
## EXHIBIT 4



Map derived from MARPLOT/US Census TigerLine Files

## EXHIBIT 4

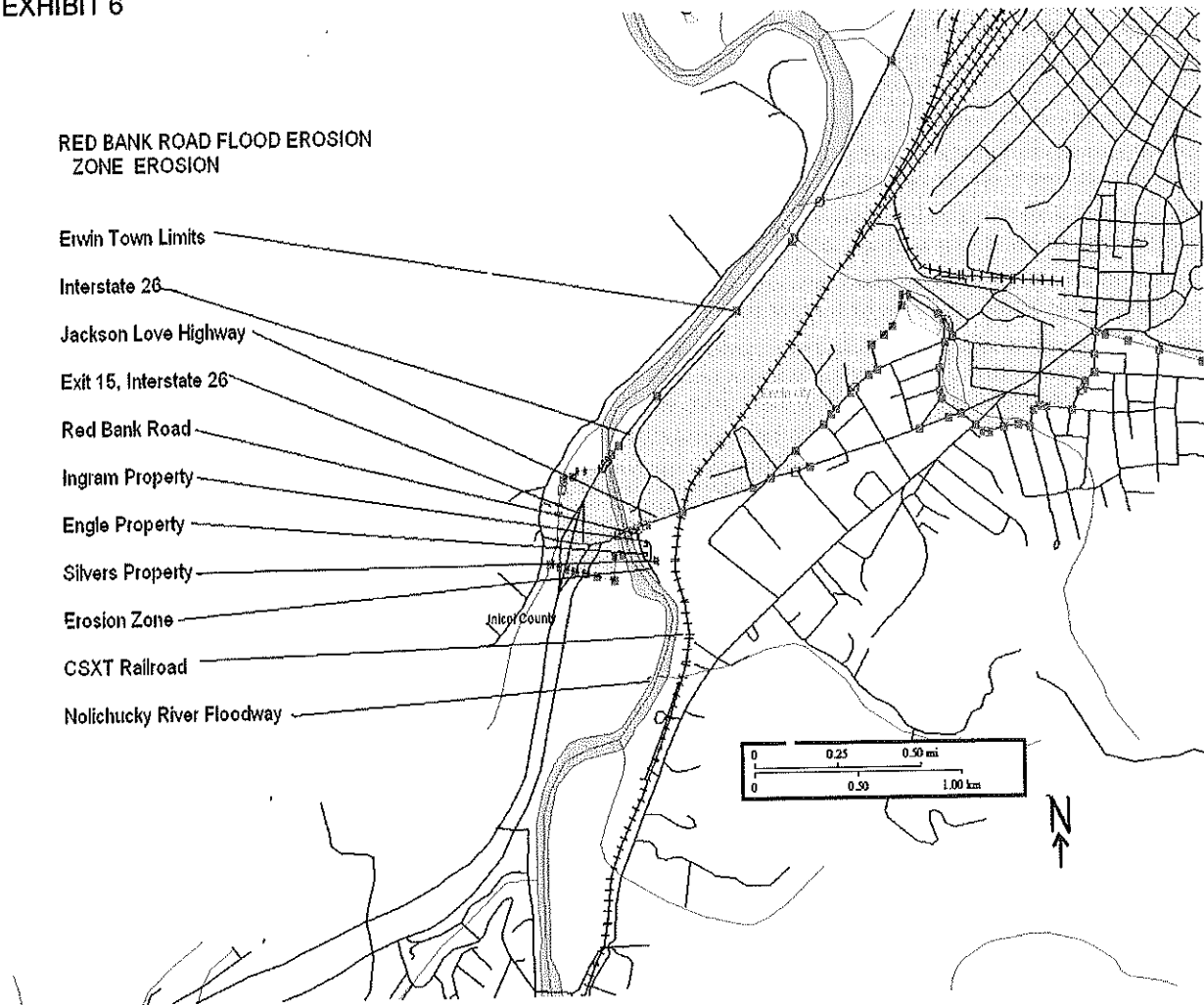
EXHIBIT 5



Map derived from MARPLOT/US Census TigerLine Files

EXHIBIT 5

## EXHIBIT 6



Derived from MARPLOT/US Census TigerLine files

## EXHIBIT 6

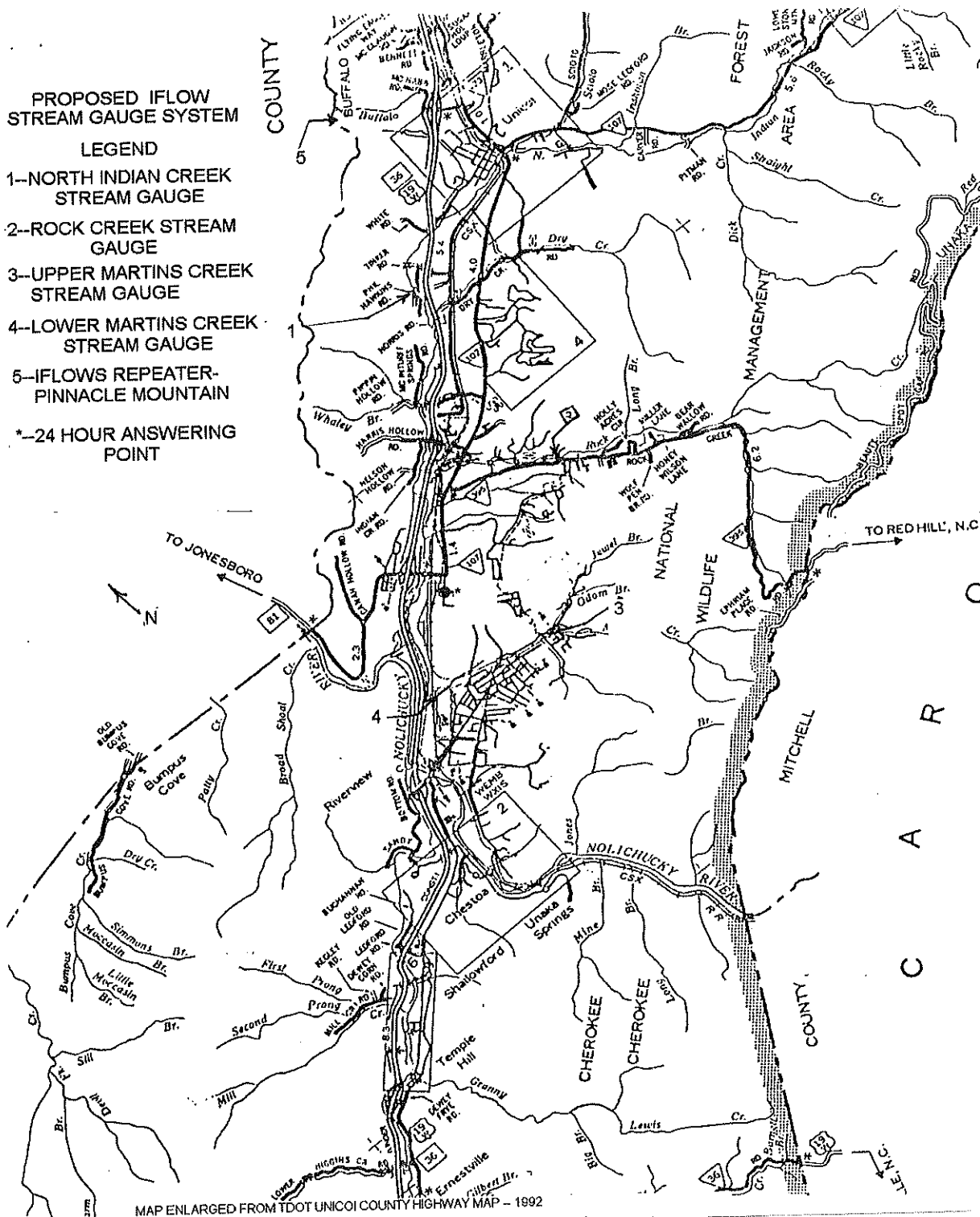
# EXHIBIT 7

## PROPOSED IFLOW STREAM GAUGE SYSTEM

### LEGEND

- 1--NORTH INDIAN CREEK  
STREAM GAUGE
- 2--ROCK CREEK STREAM  
GAUGE
- 3--UPPER MARTINS CREEK  
STREAM GAUGE
- 4--LOWER MARTINS CREEK  
STREAM GAUGE
- 5--IFLOWS REPEATER-  
PINNACLE MOUNTAIN

\*--24 HOUR ANSWERING  
POINT



# EXHIBIT 7

# EXHIBIT 8

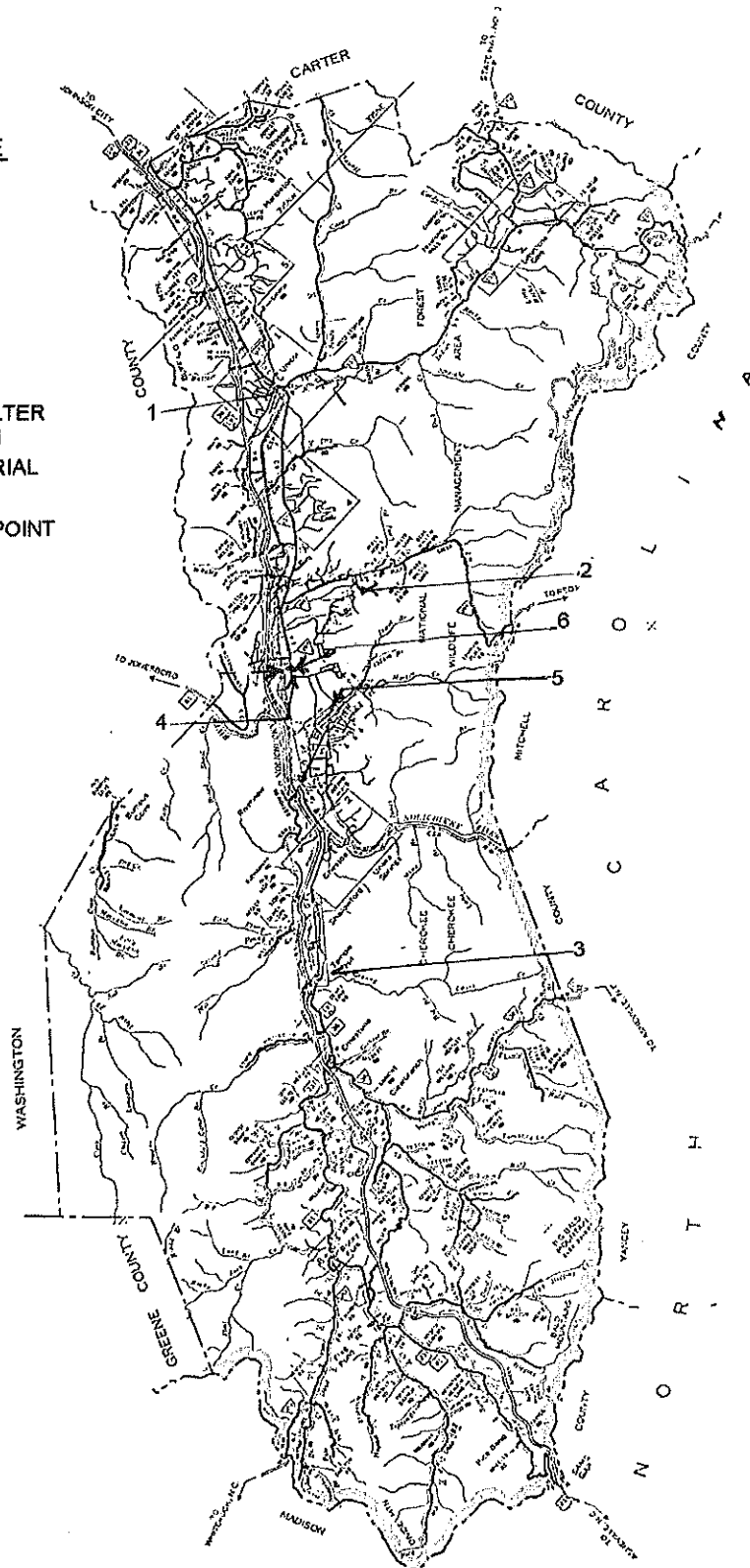
L I

## SHELTER UPGRADE LOCATIONS

### LEGEND

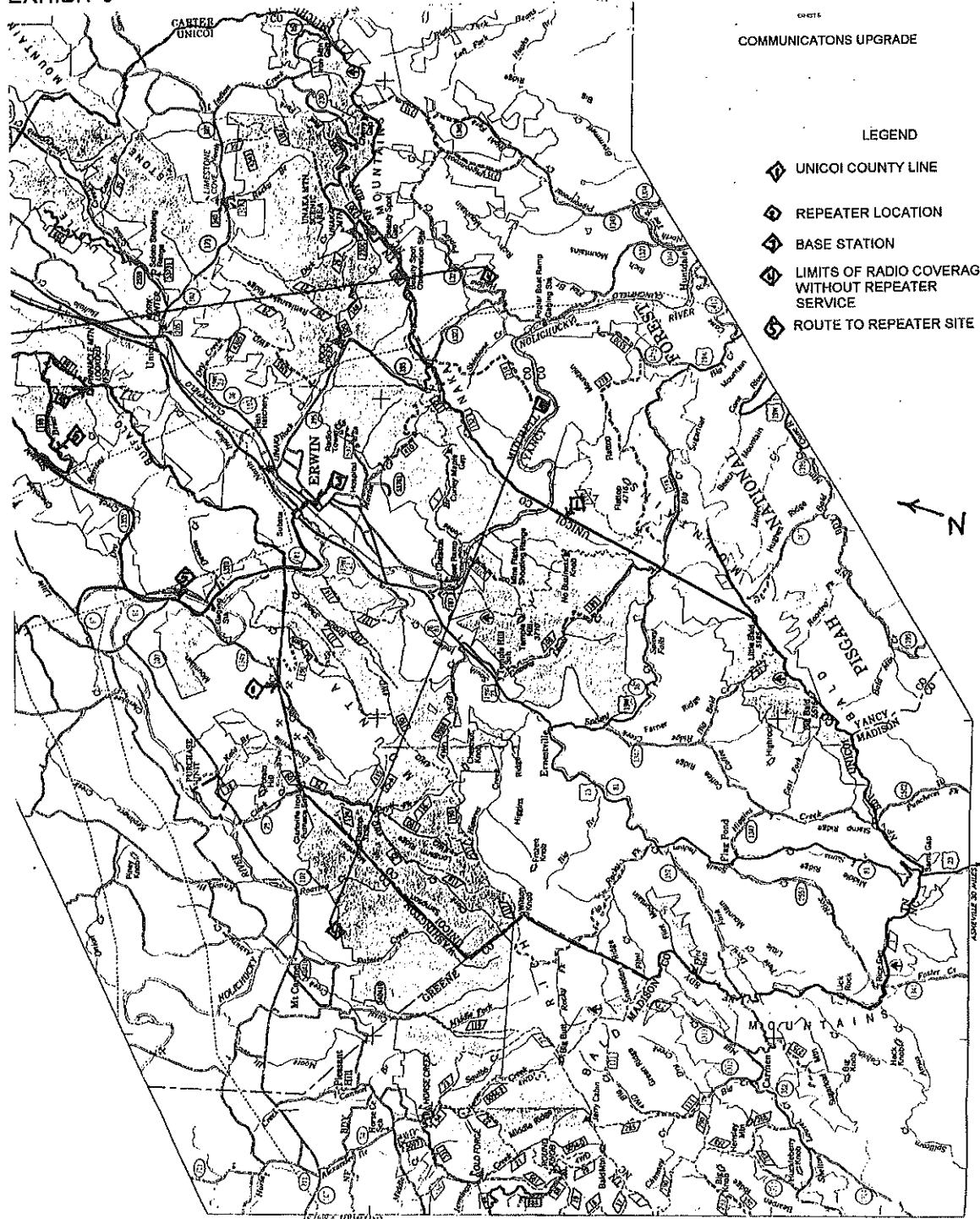
#### SHELTER LOCATIONS

- 1--UNICOI SCHOOL
- 2--ROCK CREEK SCHOOL
- 3--TEMPLE HILL SCHOOL
- 4--RED CROSS LEAD SHELTER  
FIRST BAPTIST CHURCH
- 5--UNICOI COUNTY MEMORIAL  
HOSPITAL
- 6--24 HOUR ANSWERING POINT



MAP REDUCED FROM TDOT  
UNICOI COUNTY HIGHWAY  
MAP-1992

# EXHIBIT 9



14. G.A. in 1983 from USGS  
1:50,000 USGS Forest Service  
Photo dated in 1984

# EXHIBIT 9

EXHIBIT 10

Erwin, Tennessee

REGULAR MEETING

August 11, 2003

The Board of Mayor and Aldermen of the Town of Erwin, Tennessee met in regular session Monday, August 11, 2003, at 6:30 p.m. in the City Hall meeting room.

Present and Presiding: Vice-Mayor Connie Denney

Aldermen Present: Joe Frazier  
Gary Edwards  
William Don "Brushy" Lewis  
Glenn Tilson

Absent: Mayor Russell D. Brackins

Vice-Mayor Connie Denney gave the invocation.

A motion was made by Alderman Tilson, seconded by Alderman Lewis to approve the minutes of the previous meeting as presented. The motion passed with five ayes, one absent.

A motion was made by Alderman Frazier, seconded by Alderman Tilson to approve the invoices as listed for payment. The motion passed with five ayes, one absent.

Alderman Lewis updated the Board on the Veterans Memorial Park.

Alderman Frazier reported on the Utility Board meeting that met on Thursday, July 24, 2003.

Alderman Edwards reported on the Erwin Planning Commission meeting that met on Wednesday, July 25, 2003.

Alderman Denney reported on the Hospital Board meeting that met on Monday, July 21,



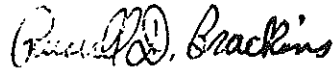
2003.

Larry Calhoun, Chief Executive Officer of the Unicoi County Memorial Hospital, was present to answer questions and update the Board on the hospital's strategic plan.

Ed Herndon, Unicoi County Emergency Management Director, addressed the Board to present the draft of the 2003 Unicoi County Hazard Mitigation Plan. Following a brief question and answer period, a motion was made by Alderman Tilson, seconded by Alderman Lewis to approve the Unicoi County Hazard Mitigation Plan. The motion passed with five ayes, one absent.

Recorder Hensley announced that there would be a Governor's Conference in Nashville, Tennessee on September 2-4, 2003 for any board member who wishes to attend.

There being no further business to come before the Board, the meeting was adjourned at 7:17 p.m.



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Russell D. Brackins, Mayor

ATTEST

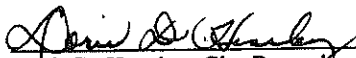
  
Doris D. Hensley, City Recorder

EXHIBIT 11

REGULAR SESSION OF THE BOARD OF COMMISSIONERS  
OF UNICOI COUNTY, TENNESSEE  
AUGUST 25, 2003

BE IT REMEMBERED that the Unicoi County Board of Commission met in the Unicoi County Courthouse in Erwin, Tennessee, in Quarterly Session on Monday August 25, 2003 at 5:00 p.m. Present and presiding the Honorable Lee Brown, Chairman, Ruby H. McLaughlin, County Clerk, Larry Rose, County Executive, Doug Shults, County Attorney, and the following Commissioners:

ROLL CALL: Esq. Lee Brown, "yes", Esq. Jimmy Erwin, "yes", Esq. Kenneth Garland, "yes", Esq. Kim Gouge, "yes", Esq. Mickey Hatcher, "yes", Esq. Ken Lewis, "yes", Esq. Cathy Pate, "yes", Esq. Edgar Rice, "yes", Esq. Glenn Runnion, "yes".  
9-Members Present

\*\*\*\*\*

Esq. Mickey Hatcher opened the meeting with prayer.  
Esq. Lee Brown led the pledge to the flag.

\*\*\*\*\*

Motion made by Esq. Glenn Runnion said motion seconded by Esq. Jimmy Erwin that the minutes of July 28, and the Special Call Session on August 11 2003 be approve as presented.  
Motion unanimously approved.

\*\*\*\*\*

Chairman Lee Brown, recognized visitors and citizens.

\*\*\*\*\*

Motion made by Esq. Kenneth Garland, said motion seconded by Esq. Cathy Pate that a refund of overpayment of business tax for Wiseman's Clothing in the amount of \$429.00 be approved.  
Motion unanimously approved.

\*\*\*\*\*

Motion made by Esq. Glenn Runnion, said motion seconded by Esq. Mickey Hatcher to approve the request by the City of Johnson City to quitclaim Unicoi County's reverter interest in 1,076 square feet of Limestone Cove Community Center property.  
Motion unanimously approved.

\*\*\*\*\*

Motion made by Esq. Ken Lewis, said motion seconded by Esq. Glenn Runnion that the Estimated Budget Resolution for Fiscal Year 2003/2004 be approved as presented.

Conflicts of interest were recited by Esq. Jimmy Erwin, Esq. Mickey Hatcher, and Esq. Cathy Pate.  
ROLL CALL: Esq. Lee Brown, "yes", Esq. Jimmy Erwin, "yes", Esq. Kenneth Garland, "no", Esq. Kim Gouge, "yes", Esq. Mickey Hatcher, "no", Esq. Ken Lewis, "yes", Esq. Cathy Pate, "yes", Esq. Edgar Rice,

money will be amended and dispensed between the school and the general fund.

ROLL CALL: Esq. Lee Brown, "yes", Esq. Jimmy Erwin, "no", Esq. Kenneth Garland, "no", Esq. Kim Gouge, "yes", Esq. Mickey Hatcher, "no", Esq. Ken Lewis, "yes", Esq. Cathy Pate, "yes", Esq. Edgar Rice, "no", Esq. Glenn Runnion, "yes".

5-yes

4-no

\*\*\*\*\*

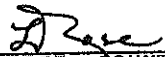
Motion made by Esq. Jimmy Erwin, said motion seconded by Esq. Ken Lewis to approve the Unicoi County Hazard Mitigation Plan Draft, as presented by Ed Herndon. Mr. Herndon explained at this time no money is involved.  
Motion unanimously approved.

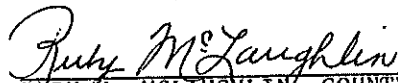
\*\*\*\*\*

Motion made by Esq. Kenneth Garland, said motion seconded by Esq. Glenn Runnion that the following people be elected as Notary Publics: Kent Roller, and Doug Shults  
Motion unanimously approved.

\*\*\*\*\*

Motion made by Esq. Glenn Runnion, said motion seconded by Esq. Kenneth Garland that the Commission meeting on August 25, 2003 be adjourned.  
Motion unanimously approved.

  
LARRY ROSE, COUNTY EXECUTIVE

  
RUBY H. MCLAUGHLIN, COUNTY CLERK

LEE BROWN, CHAIRMAN

**MINUTES OF THE REGULAR BMA MEETING  
AND PUBLIC HEARING  
TOWN OF UNICOI, TENNESSEE  
5:30 p.m., September 15, 2003  
UNICOI TOWN HALL**

**Call to Order** at 5:30 p.m.

**Prayer** by Pastor Todd McLaughlin

**Pledge of Allegiance**

**Roll Call:** Present: Mayor Lewis, Vice Mayor Hopson, Aldermen Lynch, & McLaughlin  
Absent: Alderman Mark Ramsey  
Staff Present: Shults-Davis & Johnson

**Approval of Prior Meeting Minutes:**

August 18, 2003 Regular BMA Meeting. Mr. Hopson made a motion to accept the minutes, seconded by Ms. McLaughlin. Voting in favor was unanimous.

**Recognition of Visitors & Citizens & Opportunity for Public to Address Board**

**Resolutions**

**Ordinances**

Second Reading, **Mitigation Plan**, Ordinance # 03-109

An ordinance to adopt the Unicoi County Mitigation Plan to encourage the elimination of loss of life or property during anticipated hazards. Mr. Lynch made a motion to adopt the plan, seconded by Mr. Hopson. Voting in favor was unanimous.

Second Reading, **2<sup>nd</sup> & Final 2002-2003 Budget Amendment**, Ordinance # 03-100

An ordinance to bring the 2002-2003 Town of Unicoi budget into alignment with actual revenue and expenditures for the fiscal year. Mr. Lynch made a motion to approve the ordinance, seconded by Ms. McLaughlin. Voting in favor was unanimous.

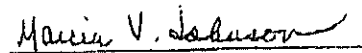
**Proclamations**

**New Business**

The Town Recorder announced cost overruns on the repairs and redecorating project currently in process, namely front door panel replacement due to termite damage;

BY:   
Kenneth L. Lewis, Mayor

Attest:

  
Marcia Johnson, Town Recorder

Approved as to form:

  
Lois Shults-Davis, Attorney

Exhibit 13

TO: Robert Swabe, Director  
Eastern Region  
Tennessee Emergency Management Agency

FROM: E. A. Herndon, Chair

SUBJECT: Minutes of the Local Emergency Management Council

DATE: 8 September 2003

The Erwin-Unicoi County Emergency Management Council met at 5:30 P. M., 12 August 2003 in the Conference Room of the Unicoi County Courthouse. The following citizens were present

Chuck Ray	ARIES, WEMB/WXIS	Rebekah Harris	Erwin Record
Sid McLaughlin	American Red Cross	Sarah Barron	NFS
Howard Townsend	Southside VFD	Brad Hughes	Southside VFD
Bill Worth	TEMA		

The Council discussed the draft countywide mitigation plan that is now required by federal law for eligibility to receive federal disaster assistance effective 30 June 2004. The background and appropriate portions of the Disaster Mitigation Act of 2000 were explained. All provisions of the draft plan were discussed. The Council membership was in agreement with the plan as presented.

The discussion of the draft plan led into the discussion of grants applied for, approved and anticipated. These included Hazard Mitigation Planning Grant, Domestic Preparedness Grants, Homeland Security Grants, Emergency Planning Grant, and Emergency Management Performance Grant.

The Chair described the CSX Erwin Terminal Hazardous Materials Exercise that was held on 10 June 2003 at the Holiday Inn in Johnson City, TN. The exercise was a computer directed tabletop exercise designed to train and test CSX management at the Erwin yard. The exercise simulated a major derailment that involved a toxic plume and water spill that required evacuation of urban, residential, hospital, college, and public education areas. Protective measures for a wildlife area were required. The exercise was successful.

Bill Worth, Sarah Barron and Chair described the Northeast Regional Hospital Bioterrorism Exercise held on 18 July 2003 at the Holiday Inn in Johnson City, TN. This was a tabletop exercise designed to train and test the medical facilities, health departments, emergency management agencies, law enforcement, and EMS providers in managing a region wide bioterrorism incident. A deliberately initiated pneumonic plague epidemic was tracked from the initial infections to the final recovery measures. The exercise was considered successful with the agencies becoming familiar with communicating with each other, refining the duties of the newly created regional health coordinator and sharing resources.

Basic plan, emergency support function annexes and SOP revisions status were explained.

Chair adjourned the meeting at 6:50 PM.

# Erwin board approves disaster assistance plan

By CHRIS GARLAND

Erwin Bureau  
cgarland@johnsoncitypress.com

**ERWIN** — The Erwin Board of Mayor and Aldermen approved a draft of the Unicoi County Hazard Mitigation Plan Monday that will be submitted to the Federal Emergency Management Agency.

Unicoi County Civil Defense and Emergency Management Director Ed Herndon told the board the draft will be essential to the town in the future by way of continued disaster assistance.

Herndon said the draft is a revised edition of a plan he submitted in 1998-99 and once approved by the BMA, it must then be approved by the June 2004 FEMA deadline to continue receiving the assistance the town has received in the past.

"If we do not get a new plan approved it will mean there will be no disaster funds except for roadway, bridges, town hall and governmental structures," Herndon said, "and not for families, individuals or business assistance."

According to the outline of the plan, flash flooding is a major concern for this area. Bad winter storms and flood plains along with risks are all outlined with specific areas named.

The plan incorporates the town of Unicoi and Unicoi County as part of the areawide emergency operation plan. Goals include promoting public awareness to lessen exposure and providing safe environments through disasters.

Unicoi County Memorial Hospital Chief Executive Officer Larry Calhoun spoke to the board on continuing efforts and goals with the hospital. A new internal medicine physician is expected to join the hospital's practice this month while others are being recruited, he said.

Other projects at UCMH include continuing study of the Facility Master Plan to decide if a new hospital is needed for growth or renovations.

Calhoun will leave his position in October to take a position with Wal-Mart Pharmacy in Johnson City. An interim CEO is expected to be announced by the hospital board in the near future.

The BMA said it is currently investigating a town of Erwin beer permit holder for a possible violation. Records for the Rendezvous beer license holder are being sought by the town's attorney. Recorder Doris Hensley said a meeting of the Beverage Board may be called in the near future to discuss the possible violation.

PAGE 6A

Erwin Record, 8/19/03

## Board approves disaster plan draft

By REBEKAH HARRIS  
STAFF WRITER

The Unicoi Board of Mayor and Aldermen approved a draft of the town mitigation plan presented by Emergency Management Director Ed Herndon at the Aug. 18 meeting.

"Congress has decided they have been writing too many checks," Herndon said, "and they have begrudgingly discovered they can't prevent disasters."

Unicoi County is required to take the proper measures to help prevent damage from natural disasters in order to receive federal disaster relief for families, individuals and businesses, he said.

The plan has already been reviewed and approved by the Erwin BMA and must be approved by the Unicoi BMA and the Unicoi County Commission, Herndon said.

"There is no absolute requirement for (the plan) to be 100 percent approved," Herndon said. "(County governments) just need to know it exists."

Herndon must submit the draft to the Tennessee Emergency Management Association by Sept. 30, where it will be graded and approved. Then, the plan must be sent to the Federal Emergency Management Agency by June of next year. FEMA officials will review the draft and make decisions regarding grant qualifications.

"The federal government ultimately decides how much money is appropriate for the area," Herndon said. "They decide what to give in 75-25 grants."

Herndon said flooding is the main concern for Unicoi County, but he has proposed mitigation plans adaptable to multiple disasters.

"The flooding mitigation is adaptable to tornadoes, winter storms and terrorism - anything except volcanoes and tidal waves," Herndon said. "The government has decided we are not subject to those disasters."

Since sirens are no long

practical or affordable. Herndon said he hopes to install an extra computer system connected to 911 which features a voice automated warning to all area residents.

"Seventy-five percent of the grants will be funded by Homeland Securities," Herndon said. "(Town governments) will have to pay the 25 percent."

In a unanimous vote, the BMA approved the mitigation plan.

Herndon will present the draft to the Unicoi County Commission before sending it to TEMA by Sept. 30.

Though the sink hole on Springbrook Road in Unicoi is not included in the mitigation plan, it nonetheless has disaster potential, Unicoi Mayor Kenneth Lewis addressed the issue at Monday's meeting and said it was a problem that could not be ignored.

Lewis said it will cost the town \$3,500 just to have someone recommend a plan of action to fix the sink hole.

"There's no telling how much it will cost to actually fix it," Lewis said, "but it could be very dangerous. We need to address it."

According to Lewis, the sink hole is at the edge of the road, and pavement is already starting to crumble. Though a reported 60 tons of rock have been poured into the hole in efforts to fix it, the sink hole is still a danger.

Town attorney Lois Shults-Davis said Unicoi has an obligation to fix the hole.

"We have a specific statutory duty," Shults-Davis said, "not to improve the roads but to maintain what we already have. I think (the sink hole) falls on us."

Alderman Mark Ramsey made the motion, which was seconded by Alderman Johnny Lynch, to have the sink hole evaluated.

The motion passed unanimously, and Lewis said there will be someone to survey the sink hole and provide cost estimates in the near future.

Town Recorder Marcia Johnson requested the decision to purchase surveillance equipment be put on hold until she gathers more equipment options.

The idea to purchase surveillance equipment was discussed after receiving numerous complaints from Unicoi residents regarding the problem with littering.

According to Johnson, she and other town hall employees have heard complaints about people dumping beer bottles, diapers, couches and barbed wire on their property. Former state Rep. Zane Whitson is among those residents who have been complaining, Johnson added.

Johnson said she believes the best type of surveillance system to purchase is one that

runs for 24 hours and records.

"Those run about \$400," she said.

In addition, the Unicoi BMA approved the second and final amendment to the proposed budget.



Erwin Record 8/13/03 2:44

## Erwin BMA gets first look at county's emergency plan

By Doug Janz  
Staff Writer

During its Monday night meeting the Erwin Board of Mayor and Aldermen approved the initial draft for a Unicoi County Mitigation Plan dealing with disasters and emergencies, and heard an update from Unicoi County Memorial Hospital's chief executive officer, Larry Calhoun.

The county disaster plan is a revision of a 1998 plan using input from the towns of Unicoi and Erwin as well as Unicoi County. It addresses how to react to various potential disasters but focuses on flooding, the most common

one for this area.

Lt. Ed Herndon of the Unicoi County Sheriff's Department presented it to the board and it was approved unanimously. There are still various steps for the plan to take before it reaches the funding stage. It must go through several other approvals before being submitted to the Tennessee Emergency Management Association by Oct. 1.

Calhoun told the BMA that the hospital's Board of Control has eliminated one of the four options from the facility's master plan — to maintain the status quo.

"That is not an option," he said, citing financial reasons.

Calhoun said the hospital board will continue to aggressively but patiently study the other three options, of renovating the current facility or of building a new facility in either Erwin or in the county.

"I'm very proud of the (hospital) board," Calhoun said. "They haven't jumped ahead. They've had an open mind and taken a data-based approach. I think we're moving in the right direction."

The BMA had one item on the agenda that was put off until the next meeting because it is still in progress — dealing with recommendations for local hotel safety procedures.

EXHIBIT 17

26 September 2003

Judy Huff, State Hazard Mitigation Officer  
Tennessee Emergency Management Agency  
3041 Sidco Drive  
Nashville, TN 37204

Subject: Submission of draft Unicoi County Mitigation Plan of 2003-2004

Attached is the draft of the Unicoi County Mitigation Plan. The plan had already been scheduled for review and approval by the governing bodies when the clarification of approval policy was received. As such, the plan was approved as a draft with the understanding that the final plan is to be resubmitted to the governing bodies after TEMA-FEMA approval. These meetings served as valuable public hearings.

The three appendices are revisions of those from the preceding mitigation plan. This county has not received its version of the Tennessee Base Mapping System maps. When those maps are operational with HAZUS, appropriate appendices will be generated and included.

Your questions and comments are welcome at 423-743-1850 or [unicoiso@cji.net](mailto:unicoiso@cji.net).

E. A. HERNDON  
Director

EXHIBIT 17

## **PUBLIC NOTICE**

The final draft revision of the Unicoi County Hazard Mitigation Plan is ready for review at the Unicoi County Public Library. The plan is required by Federal Law for the county and the towns to be eligible to receive federal disaster assistance and mitigation grants in the future. The plan analyzed past and possible hazards to the people and property of Unicoi County. The US government recognizes that the causes of most disasters cannot be eliminated, but preventative measures can be taken to reduce loss of life and property when they occur. The plan analyzes the assets, topography, and capabilities of the county and determined what measures have been and can be taken to lessen the severity of future disasters. The plan concept has been approved by the County Commission and the Boards of Mayor and Aldermen of both Towns. Final approval will be sought after this final draft is approved by the Tennessee Emergency Management Agency and the Federal Emergency Management Agency of the US Department of Homeland Security.

A copy of this draft is available at the Library for anyone's review and comment. Reviewers are requested to sign the provided log sheet and make comments. Any questions can be asked of E.A. Herndon, Unicoi County Emergency Management at 743-1850.

1x3-8c

**Page 2-B, THE ERWIN RECORD, Tuesday, March 8, 2005**

NOTE: The above public notice refers to the plan, as a final draft revision due to the fact the plan had not been federally approved at this stage.

EXHIBIT 19

REVIEWERS LOG  
UNICOI COUNTY MITIGATION PLAN

NAME	SIGNATURE	DATE	COMMENTS

Exhibit 19

EXHIBIT 20

11 March 2005

Judy Huff, State Hazard Mitigation Officer  
Tennessee Emergency Management Agency  
3041 Sidco Drive  
Nashville, TN 37204

Subject: Submission of the final draft of the Unicoi County Mitigation Plan of 2003-2005

Attached is the draft of the Unicoi County Mitigation Plan. As previously reported in the first submission letter, the plan had already been scheduled for review and approval by the governing bodies when the clarification of approval policy was received. As such, the plan was approved as a draft with the understanding that the final plan is to be resubmitted to the governing bodies after TEMA-FEMA approval. These meetings served as valuable public hearings.

As a result of the non-approval of the first draft, additions were made to the plan. More Data from the Tennessee Department of Economic and Community Development Website and local sources were added. As HAZUS-MH software could only provide some text information due to procurement errors, information had to be developed from local sources, mainly Property Assessor's, emergency management and weather service records. Maps were generated from MARPLOT/TigerLine Files. This did not change the county's basic mitigation strategy.

For further public review, a copy of the final draft was placed in the Unicoi County Public Library for citizen's access and comment. A Public Notice was published in the local paper to announce this action. As of the date of submission, no one had signed the sign in roster at the library.

Your questions and comments are welcome at 423-743-1850 or [unicoiso@cji.net](mailto:unicoiso@cji.net).

E. A. HERNDON  
Director

EXHIBIT 20

**NOW, THEREFORE, BE IT RESOLVED**, as follows:

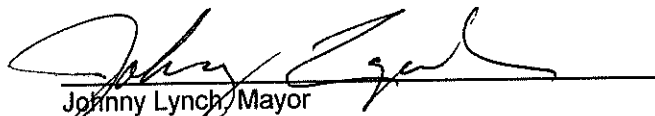
The Board of Mayor and Aldermen adopts the aforementioned Mitigation Plan for the benefit and welfare of the citizens of the Town of Unicoi.

This ordinance was presented for first reading on November 21, 2005 and voted on as follows:

	<u>AYE</u>	<u>NAY</u>
Dwight Bennett	<u>✓</u>	<u>    </u>
Doug Hopson	<u>✓</u>	<u>    </u>
Ruby McLaughlin	<u>    </u> Absent	<u>    </u>
Mark Ramsey	<u>✓</u>	<u>    </u>
Mayor Johnny Lynch	<u>✓</u>	<u>    </u>

This ordinance was presented for second and final reading on December 19, 2005 and voted on as follows:

	<u>AYE</u>	<u>NAY</u>
Dwight Bennett	<u>✓</u>	<u>    </u>
Doug Hopson	<u>✓</u>	<u>    </u>
Ruby McLaughlin	<u>✓</u>	<u>    </u>
Mark Ramsey	<u>    </u> absent	<u>    </u>
Mayor Johnny Lynch	<u>✓</u>	<u>    </u>

  
Johnny Lynch, Mayor

ATTEST:

  
Connie R. Mullins, Town Recorder

