



The Harmony Wildfire Protection Plan

AN ACTION PLAN FOR WILDFIRE MITIGATION
July 2011

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

Firewise Board Members:

Name Cecil Mackey
Address 480 S half Bank RD, Atoka, OK 74525
Phone Number 580-889-3795
Other Contact Information _____

Name Phil Powell
Address 648 S Bentley Rd Atoka, OK 74525
Phone Number 580-239-0459
Other Contact Information _____

Name Dale Nanney
Address 60 S Bentley Rd, Atoka OK 74525
Phone Number 580-239-4881
Other Contact Information _____

Local Fire Department Representative(s):

Name Cody Eastep
Address 602 W Elm, Atoka, OK 74525
Phone Number 580-239-2276
Other Contact Information _____

Local Oklahoma Division of Forestry Representative(s):

Name Jim Pitts-Area Forester
Address 830 NE 12th, Goldsby, OK 73093
Phone Number 405-288-2385
Other Contact Information Jim.pitts@oda.state.ok.us

Name Chris Joslin-District Forester
Address PO Box 339, Antlers, OK 74523-0339
Phone Number 580-298-5122
Other Contact Information Chris.joslin@oda.state.ok.us

The following federal and other interested parties were consulted and involved in the preparation of this report.

Name	Organization
Tommy Sheppard	SODA
Dottie DeMeullenaere	SODA
Bo McIlvoy	SODA
Eddy Cooke	Atoka County Emergency Service Coordinator
	Atoka County Commissioners



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1. Community Background and Existing Situation
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1) COMMUNITY BACKGROUND AND EXISTING SITUATION (see appendix A)**Community Description:**

Atoka is a community surrounded by hundreds of acres of Wildland interface. The vegetation throughout Atoka provides enough fuel to make fire behavior erratic and extreme during dry conditions. The interface type is considered intermix, where structures are sporadically located throughout the vegetation.

County: Atoka Latitude/Longitude: 34.319, -96.076
 Frontage Road: Bentley Road Nearest Intersection: Boggy Depot & Bentley Rd.
 Nearest Fire Department (name/location): Harmony Volunteer Fire Department
 Interface Areas: 2100 acres (+/-) Year Established: 1984
 Map #: See appendix

Community Size:

Number of Lots: 300 (+/-) Number of Structures: 900 (+/-) homes
 Estimated Acres: 21000(+/-) Development Status: Active

Community Infrastructure:

Home Owners Association/Organization: Yes No *If yes, attach a copy of ordinances.*

Contacts:

Name Cecil Mackey
 Address 480 S half Bank RD, Atoka, OK 74525
 Phone Number 580-889-3795
 Other Contact Information _____
 Name _____
 Address _____
 Phone Number _____
 Other Contact Information _____

Resident Population:

Full Time 1200
 Part-Time: 100-75% 75-50% 50-25% less than 25%

Wildfire Hazard Rating: (check one)

Low Moderate High Extreme

Date Evaluated: 3/9/11 *Attach Community Assessment Form.*

Community Assessment Highlights

Southern Oklahoma Development Association (SODA) along with the Harmony Fire Department conducted the Community Wildfire Risk and Hazard Assessment in March 2011. The Harmony VFD received a score of 149, placing it in the "Moderate Risk" hazard range.

Roads:

There are approximately 43 miles of roads in this community. The road system is primarily paved but narrow and overgrown in many places. The creation of new roads is needed in a few areas in order to be able to access the high danger areas with emergency equipment.

Topography:

The topography is basically flat to rolling hills with rocky protrusions. The NE part of the fire district slopes to the north while the rest of the district slopes to the SE.

Primary Fuel Types:

Vegetation is predominantly hardwood with a few unattended areas of Eastern Red Cedar growth. The heaviest concentrations of fuel can be found on the undeveloped lots near the railroads and along low lying drainage areas. The "Fuel Clearance Zone" around most homes measures less than 30 feet. These homeowners need education about likelihood of ignition of these fuels by blowing embers from a wildfire.

Water Sources:

There are only 6 hydrants located within the fire districts. Due to recent growth and the addition of several multi-leveled structures more hydrants are needed for proper protection of critical infrastructure, commercial structures, and residential dwellings.

Community Wildfire History:

Over the past 10 years the community of Harmony has been threatened several times by a number of large wildfires. Major fires such as the ones in the winter of 2005 posed major threats to critical infrastructures and to human life. Due to the actions of brave local firefighters, Harmony has escaped several potentially catastrophic occurrences with only minor property damage.

Relative Frequency: There are approximately 30 wildland fires annually.

Common Causes: Common causes include HWY 3 traffic/cigarettes; electrical; burning of brush, and human error.

Areas of Future Concern: Control burns; clearing brush from side of roadways and improving accessibility to pastures and structures.

Additional Comments: Increased traffic on Bentley Road, Boggy Depot Road and HWY 3 has caused an increase in vehicle accidents.



2) COMMUNITY BASE MAP AND OTHER VISUALS (see appendix B)

Community base maps with and without aerial photography are instrumental in preparing a Wildfire Protection Plan.

3) OBJECTIVES / GOALS

Objectives:

The objectives of this plan are to reduce the wildfire risk to the homes and residents of Harmony VFD through mitigation, prevention, and education.

Goals:

1. Establish safety zones around all homes.
2. Reduce vegetative fuel loads along roadways, electric transmission line, and other ignitable areas.
3. Upgrade existing water system to provide for high flow to existing fire hydrants.
4. Additional fire hydrants to unprotected areas.
5. Increase accessibility for emergency vehicles.
6. Public Education.



4) PRIORTIZED MITIGATION RECOMMENDATIONS

The following recommendations were developed by the Harmony Firewise Board Members and as a result of the community wildfire risk assessment and follow-up meetings with local, state, federal and community stakeholders, a priority order was determined based on which mitigation projects would best reduce the hazard of wildfire in the assessment area.

Proposed Community Hazard Reduction Priorities:

1. Create alternate routes for areas with only one way in and out.
2. Build an emergency vehicle accessible road along the electrical transmission line.
3. Apply for Wildfire Mitigation money to reduce the Eastern Red cedar fence rows.
4. Large scale fuel reduction with disposal of removed fuels.

Proposed Structural Ignitability Reduction Priorities:

1. Community wide tree trimming and brush removal project.
2. Community education concerning increasing defensible space around residential structures.
3. All structures have a minimum of 30-foot defensible zone.

Proposed Education and Outreach Priorities: (see appendix C)

A critical component of any successful wildfire plan is to have a comprehensive and consistent education and outreach program. The main focus of these programs will be to instill the importance to homeowners to maintain a defensible space around their homes.

1. Distribution of FireWise Informational packets.
2. Encourage and assist other communities in the county with the creation of a Wildfire Protection Plan.
3. Firefighters to present FireWise information during the Fall to the elementary school and citizens of the community.





5) ACTION PLAN

Funding Needs:

Outline each project (list highest priority projects first) including estimated cost and potential funding sources.

1. Currently the Harmony Fire District does not have enough fire hydrants for proper protection of certain areas. Funds for these will be sought from REAP, OWRB, Forestry and any other available infrastructure grants. To add additional fire hydrants new and larger water lines will be necessary in some areas. Although this will be extremely costly the added fire protection will be invaluable. The cost for this project which could be done in phases is approximately \$450,000.
2. A major electrical transmission line passes through the deepest woods in this fire district. This transmission line has major overgrowth just past the normal maintenance area of the electric company and has no access to the overgrowth to the West, South, and East. We would like to find a funding source to build a gravel road along the edge of the easement. This growth provides a major fuel for wildfires that could wipe out a major portion of the county. Heavy equipment will be needed to clear some of the transmission line. The cost of this project could easily be over \$250,000. At this time there are no grants for this type of project so the cost would fall upon on the county and fire department. The fire department plans on possibly working in conjunction with the electric company to help fund the costs.
3. Work with NRCS to get dry hydrants put in any new ponds that are built in the fire district.
4. Foam inductor systems on all brush trucks.

Timetables:

For each project (list highest priority projects first), provide an estimated duration, start date and targeted completion date.

1. Water improvements would depend upon the time frame of the grant awarded for the project. A project this large could take up to 2 years to complete after grant money is awarded.
2. Funds will be sought for the transmission line project but the fire department will move ahead with the project as the electric company allows. If funding was not an issue this project could be completed in 12-15 months but will require yearly maintenance.
3. This project would be never ending. This will depend on funding for the gas and the equipment usage, as well as citizen cooperation throughout the community.
4. When funding is secured, this project would take only a year to complete.

Assessment:

Describe the strategy used to assess the plans progress and effectiveness.

1. Before and after water flow reports.
2. Before and after pictures of the transmission line area, including roads being cut into the overgrowth.
3. Evaluate the average number of dry hydrants within the fire district.
4. Before and after pictures of the brush trucks with the foam inductors.



6) WILDFIRE PRE-SUPPRESSION PLAN

A. Wildfire Protection Responsibility

Structural Protection: Harmony Volunteer Fire Department

Wildland Protection: Harmony Volunteer Fire Department, 13 other Atoka County fire departments, several fire departments from east Coal County and northern Bryan County.

B. Alarm Response

First Alarm

Fire Department/Rescue Squad	Travel Distance	Response Time
Harmony Volunteer Fire Department	Within 50 square miles	5-15minutes
Bentley Volunteer Fire Department	6 miles	5 minutes
Lane Volunteer Fire Department	7 miles	10 minutes

Second Alarm

Fire Department/Rescue Squad	Travel Distance	Response Time
Tushka Volunteer Fire Department	5 miles	15 minutes
Atoka Volunteer Fire Department	13 miles	10 minutes
Crystal Volunteer Fire Department	20 miles	25 minutes

C. Water Availability (see appendix D)

Harmony only has 6 fire hydrants locations that are accessible to emergency crews.

D. Communications

Name	Phone Number	Radio Frequencies
Dispatch/Fire Departments		
Atoka VFD	580-889-3341	154.4450
Stringtown VFD	580-239-2382	154.4450
Tushka VFD	580-889-6157	154.4450
Local Department of Forestry Office		
Kevin Keys	580-223-3973	
Other		
Tommy Sheppard (Rural Fire Dir.)	580-920-1388	N/A

E. Evacuation (See appendix E)

Evacuation map was determined by focusing on bringing the outermost residents living on gravel roads to paved roads and on to State Highways and then to destinations out of harm's way. Residents living within the community will be directed to State Highways and then to pre-determined safe destinations according to type of emergency incident. Evacuation map is attached.



F. Resource List

Name	Contact Information	Payment Information
Support Agencies		
SODA	580-920-1388	
OSU Extension Agency	580-889-7337	
Atoka County Sheriff	580-889-2221	
Tractor Operators		
Atoka County Commissioners	580-889-2643	
Marvin Dale – District # 1	580-346-7333	
Gilbert Wilson – District #2	580-889-2638	
Phillip Culbreath – District # 3	580-889-5933	

City of Atoka Shop	580-889-3341	
Crews		
District #1 Road Crew	580-346-7333	
District # 2 Road Crew	580-889-2638	
District # 3 Road Crew	580-889-5933	
Rural Water #4	580-889-5715	
Utilities		
City of Atoka Wastewater	580-889-6241	
City of Atoka Public Works	580-889-2675	
City of Atoka Water Plant	580-889-2362	
Trident Power	580-889-6605	
Fuel		
Shell	1207 S Mississippi Ave	
Love's Travel Stop	1811 S Mississippi Ave	
Choctaw Nation Travel Mart	1302 S Mississippi Ave	
Harmony Store	Harmony Rd	
Food and Supplies		
Walmart	1901 S Mississippi Ave	
Center Point Grocery	2002 E Hwy 3	
Sonny's Country Mart	500 S Mississippi Ave	
Dollar General	1305 S Mississippi Ave	
Harmony Store	Harmony Rd.	
Lodging		
Best Western	2101 S Mississippi Ave - 889-7381	
Brandenburg Motel	323 W 6 th Ave - 889-6767	
Comfort Inn	1502 S Mississippi - 889-8999	
Hi Way Inn	1010 S Mississippi - 889-5500	



7) ADDITIONAL COMMENTS - Critical Facilities (see appendix F)

Legend

Critical Facilities



Fire Station



School

9) ATTACHMENTS



Appendix A

*Community Wildfire Hazard
&
Risk Assessment Worksheet*

SUBDIVISION DESIGN HAZARD RATING	+ SITE HAZARD RATING	+ BUILDING CONSTRUCTION HAZARD RATING	+ ADDITIONAL FACTOR HAZARD RATING	= OVERALL WILDFIRE HAZARD RATING
31	58	35	25	149

SUBDIVISION DESIGN RATING		Rating	
ACCESS			
Two or more roads	0		
One road, plus alternative	3		
One road in/out	7		3
SUBDIVISION BRIDGES			
No bridges or bridges with no weight and or width restrictions	0		
Low weight or narrow bridges restricting emergency access	5		5
PRIMARY ROAD WIDTHS			
>24 ft	0		
>20 ft and <24 ft	2		
<20 ft	4		4
ACCESSIBILITY			
Surfaced road, grade < 5%	0		
Surfaced road, grade > 5%	2		
Non-surface road, grade < 5%	2		
Non-surface road, grade > 5%	5		
Other than all-season road	7		5
SECONDARY ROAD TERMINUS			
< 300 ft with turnaround	0		
> 300 ft with turnaround	2		
< 300 ft without turnaround	4		
> 300 ft without turnaround	5		4
UNSAFE ROADWAY			
No flammable vegetation threat	0		
Highly flammable vegetation along road	5		5
STREET SIGNS			
Present 4 inches in size and reflective	0		
Not present	5		5
TOTAL SUBDIVISION DESIGN			31

OKLAHOMA FORESTRY DIVISION
COMMUNITY WILDFIRE RISK AND HAZARD ASSESSMENT

What does the Wildfire Hazard Rating mean?

Using the Wildfire Hazard Assessment, the highest possible rating is 247 points.

Communities can be divided into the following four risk categories:

- Low Risk:** **Total Wildfire Hazard Rating is 0 – 90 points**
The chances of a majority of homes in the community surviving a wildfire are **GOOD**. Little is needed to improve the community. Keep up the good work.
- Moderate Risk:** **Total Wildfire Hazard Rating is 91 – 155 points**
The chances of a majority of homes in the community surviving a wildfire are **FAIR**. Some minor improvements will make the community more fire resistant. Check the areas on the form in which you scored poorly.
- High Risk:** **Total Wildfire Hazard Rating is Over 155 points**
The chances of a majority of homes in the community surviving a wildfire are **NOT GOOD**. Some improvements in structure and site are necessary.
- Extreme Risk:** **Total Wildfire Hazard Rating is Over 170 points**
The community **MAY NOT SURVIVE** if a wildfire passes through the area. Take a serious look at your community and make improvements. If you don't, you may be facing disaster. You will find that even small changes could make the difference.

HAZARD is defined as the potential fire behavior based on physical fuel characteristics.

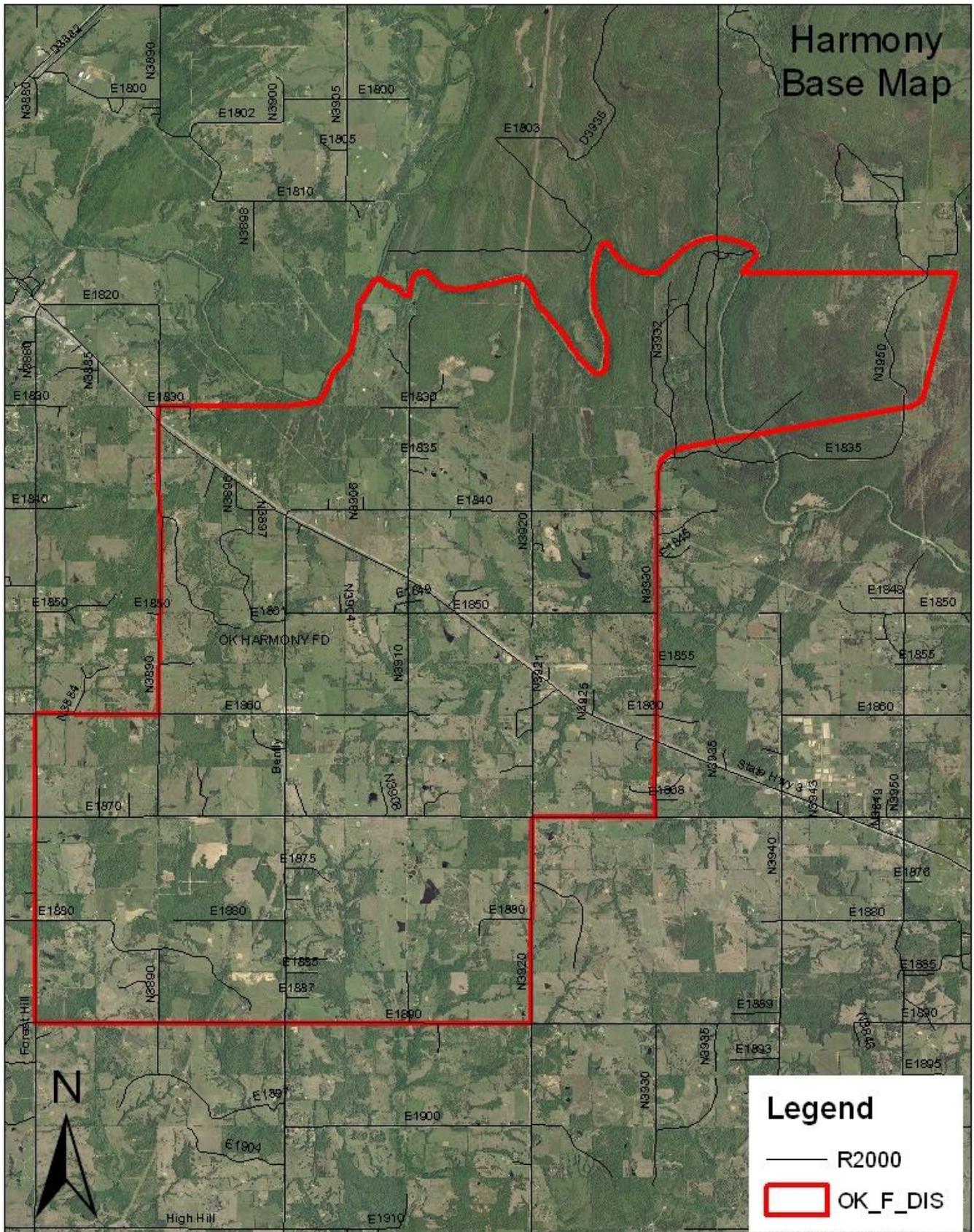
Risk is defined as the probability of fire occurrence determined by the number, presence and activity of potential ignition sources.

This form may be used to evaluate your community to determine the level of wildfire risk. It covers roughly one-half of the hazards normally taken into account in calculating fire risk, but does provide an approximate indication of true risk. For more information on your home's fire risk, or for more complete evaluation of your property, contact your local Oklahoma Department of Agriculture, Food and Forestry, Forestry Services office.

A photograph of a green fire hydrant standing in a grassy field. The hydrant is the central focus, with a chain attached to its side. The background is a soft-focus green field.

Appendix B

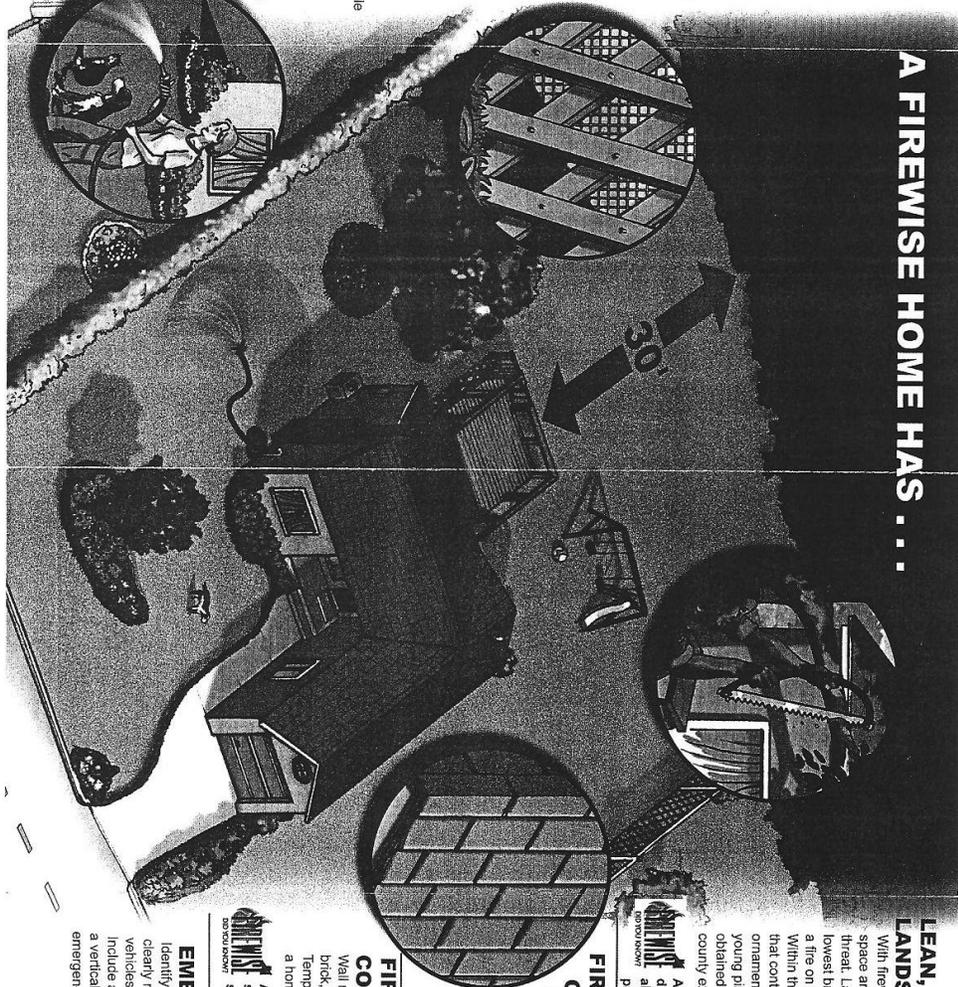
Community Base Maps





Appendix C

Educational Handouts



SURVIVABLE SPACE

Do you have at least 30 ft of space surrounding your home that is Lean, Clean and Green?

The objective of Survivable Space is to reduce the wildfire threat to your home by changing the characteristics of the flammable vegetation.

Lean – Prune shrubs and cut back tree branches, especially within 15 feet of your chimney.

Clean – Remove all dead plant material from around your home; this includes dead leaves, dry vegetation and even stacked firewood.

Green – Plant fire-resistant vegetation that is healthy and green throughout the year.

SPRINKLE IT Survivable space provides a safety zone around your home.
DO YOU KNOW?

FIRE-RESISTANT ATTACHMENTS

Attachments include any structure connected to your home, such as decks, porches or fences. If an attachment to a home is not fire-resistant, then the home as a whole is not firewise.

A DISASTER PLAN

The time to plan for any emergency is prior to the event. Take a few minutes to discuss with your family what actions you will take.

- Post local emergency telephone numbers in a visible place.
 - Leave before it's too late. Decide where you will go and how you will get there. With fire, you may only have a moments' notice. Two escape routes out of your home and out of your neighborhood are preferable.
 - Have tools available, such as a shovel, rake, axe, hand saw or chainsaw.
 - Maintain an emergency water source.
 - Have a plan for your pets.
 - Practice family fire drills.
- SPRINKLE IT** Evacuations for a wildfire can occur without notice. When wildfire conditions exist, be ready to take action.
DO YOU KNOW?

A FIREWISE HOME HAS . . .

LEAN, CLEAN AND GREEN LANDSCAPING

With firewise landscaping, you can create survivable space around your home that reduces your wildfire threat. Large trees should be pruned so that the lowest branches are at least 6 to 10 ft high to prevent a fire on the ground from spreading to the tree tops. Within the survivable space, remove flammable plants that contain resins, oils and waxes that burn readily: ornamental jumpers, yucca, juniper, red cedar, and young pine. A list of less-flammable plants can be obtained from your local state forester, forestry office, county extension office or landscape specialist.

SPRINKLE IT Although mulch helps retain soil moisture, when dry, it can become flammable. Mulch as well as all landscaping should be kept well watered to prevent it from becoming the fuel!
DO YOU KNOW?

FIRE-RESISTANT ROOF CONSTRUCTION

Firewise construction materials include Class A asphalt shingles, metal, tile and concrete products. Additionally, the inclusion of a fire-resistant sub-roof adds protection.

SPRINKLE IT Something as simple as making sure that your gutters, eaves and roof are clear of debris will reduce your fire threat.
DO YOU KNOW?

FIRE-RESISTANT EXTERIOR CONSTRUCTION

Wall materials that resist heat and flames include brick, cement, plaster, stucco and concrete masonry. Tempered and double pane glass windows can make a home more resistant to wildfire heat and flames.

SPRINKLE IT Although some vinyl will not burn, some vinyl soffits can melt, allowing embers into the attic space.
DO YOU KNOW?

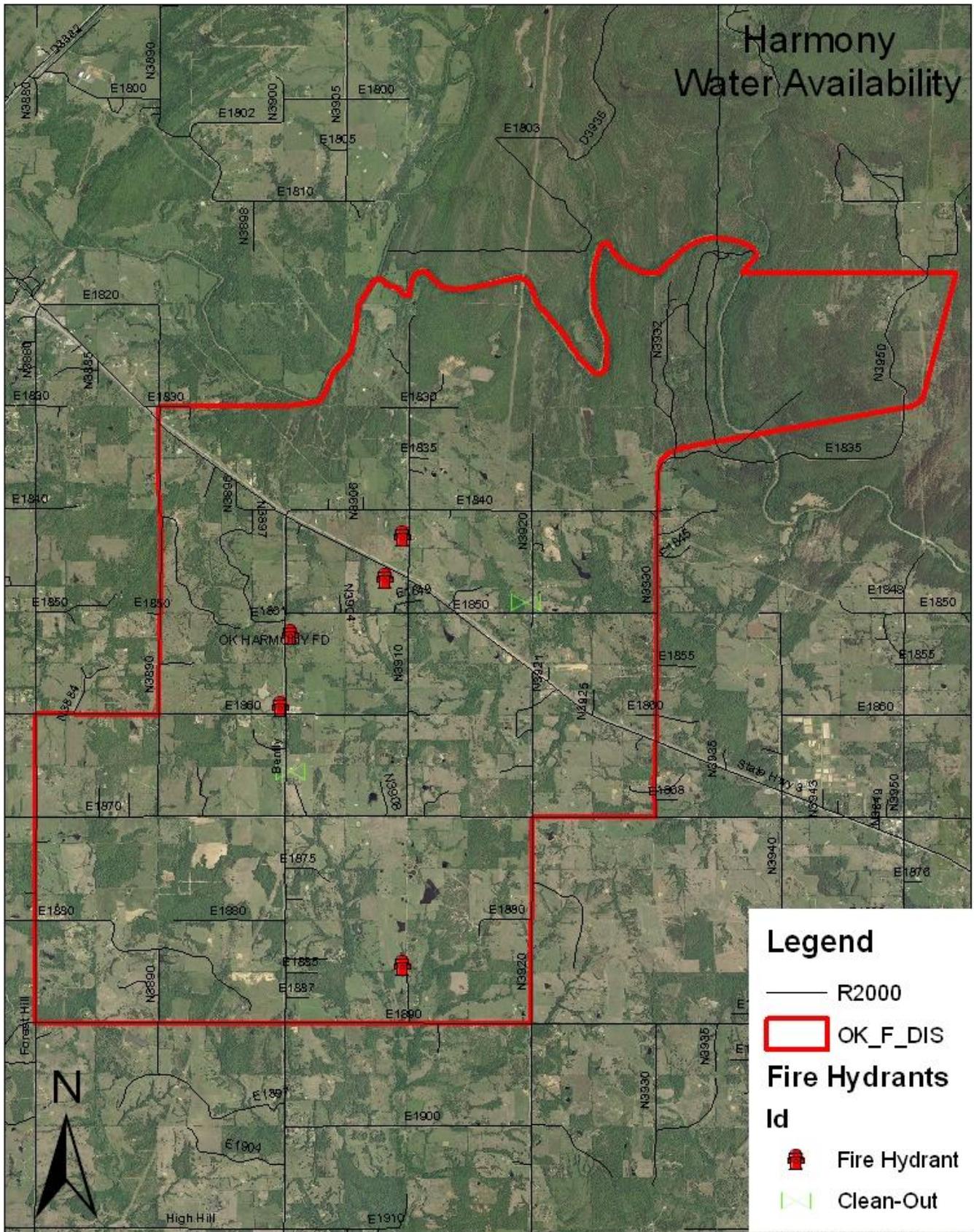
EMERGENCY ACCESS

Identify your home and neighborhood with legible and clearly marked street names and numbers so response vehicles can rapidly find the location of the emergency. Include a driveway that is at least 12 feet wide with a vertical clearance of 15 feet – to provide access to emergency apparatus.



Appendix D

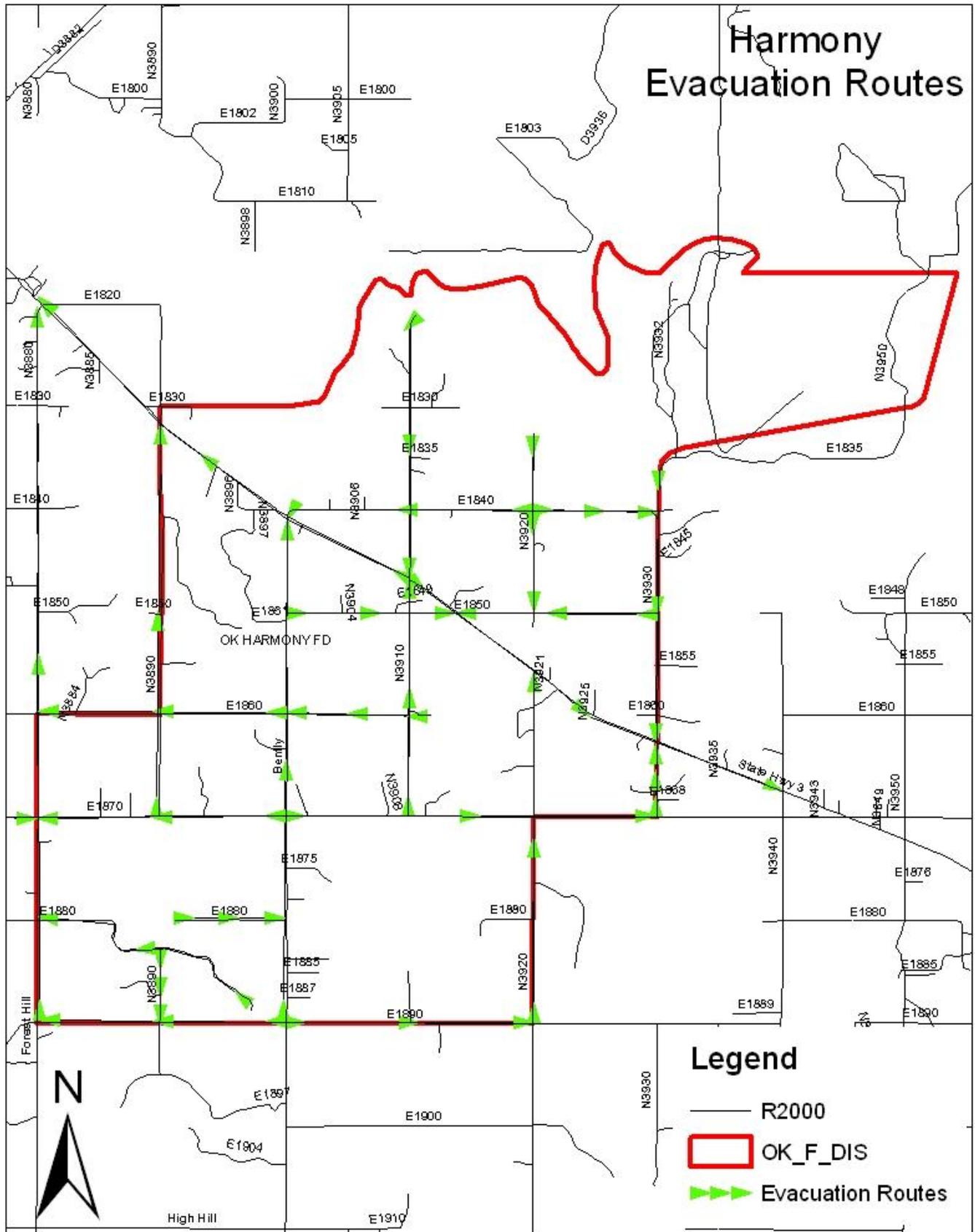
Water Availability

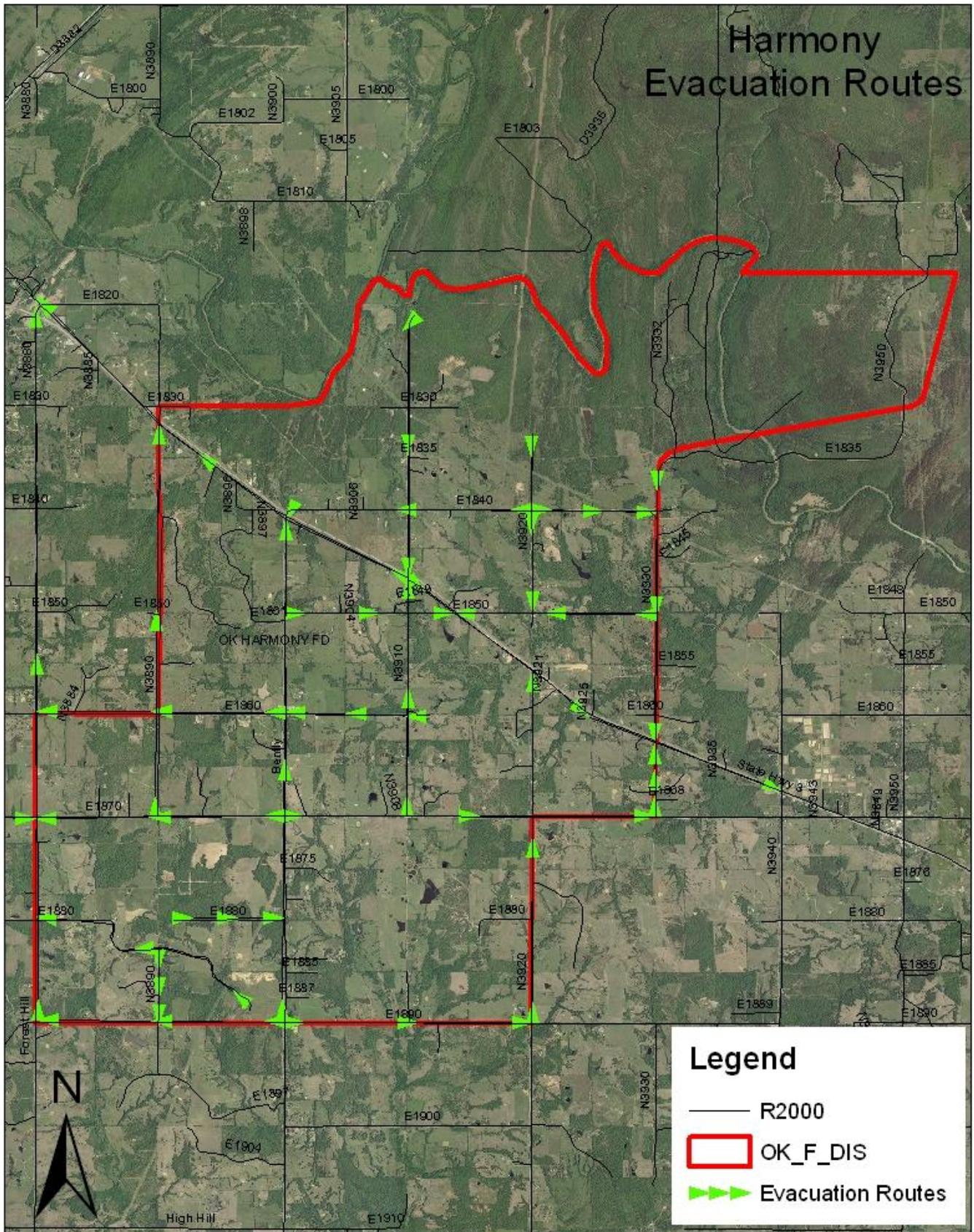


A photograph of a green fire hydrant standing in a grassy field. The hydrant is the central focus, with its various valves and chains visible. The background is a soft-focus field of tall grass.

Appendix E

Evacuation

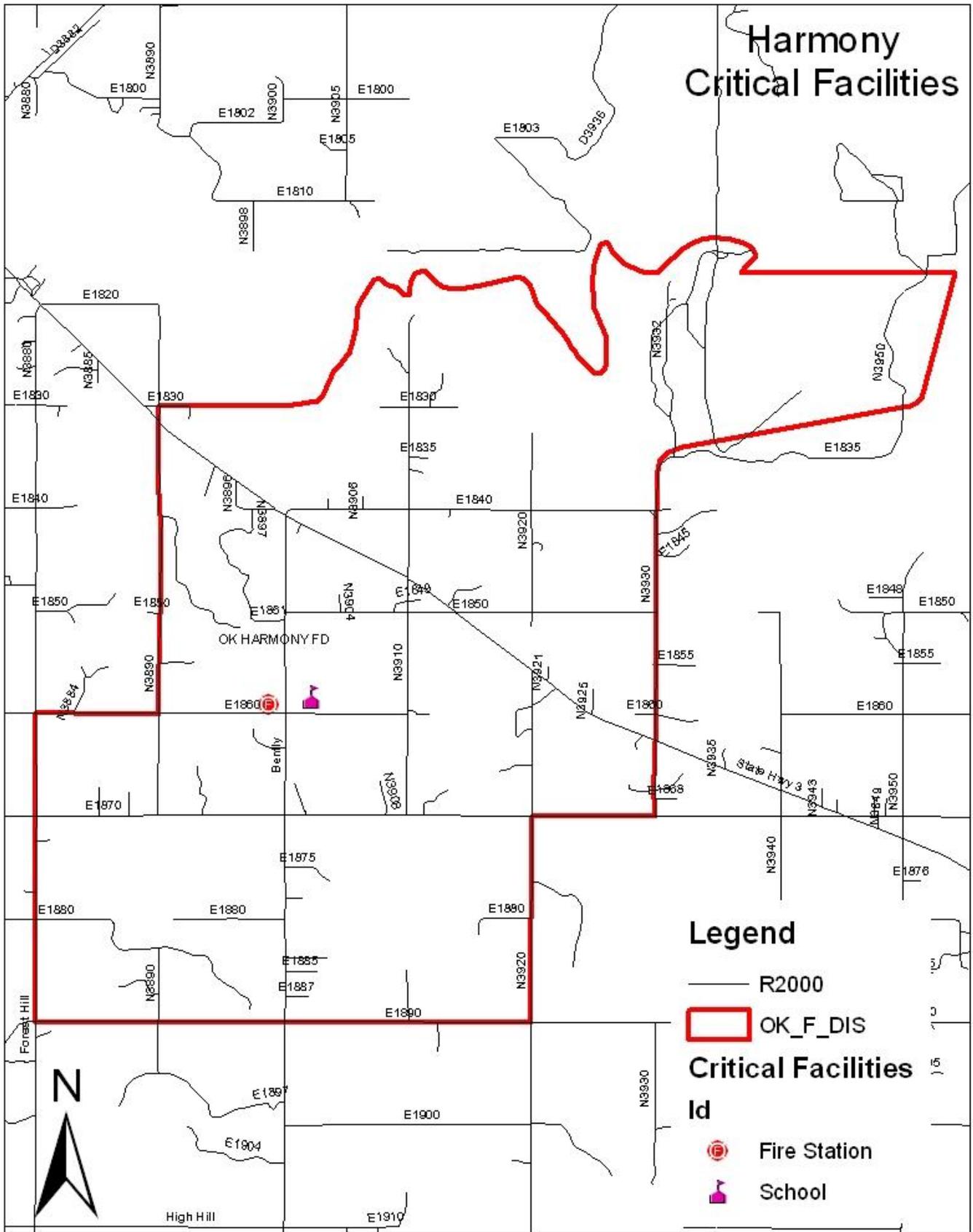


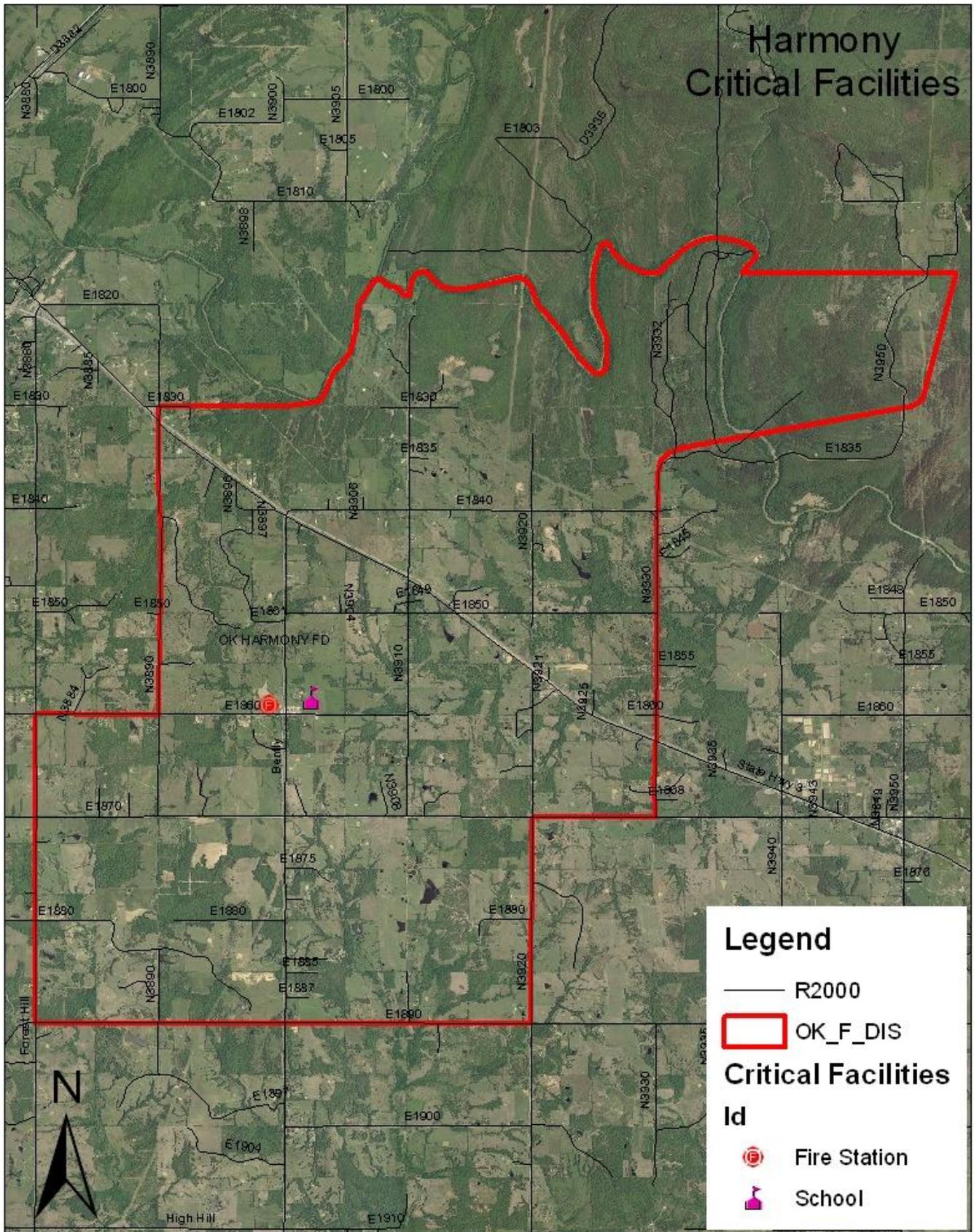




Appendix F

Critical Facilities

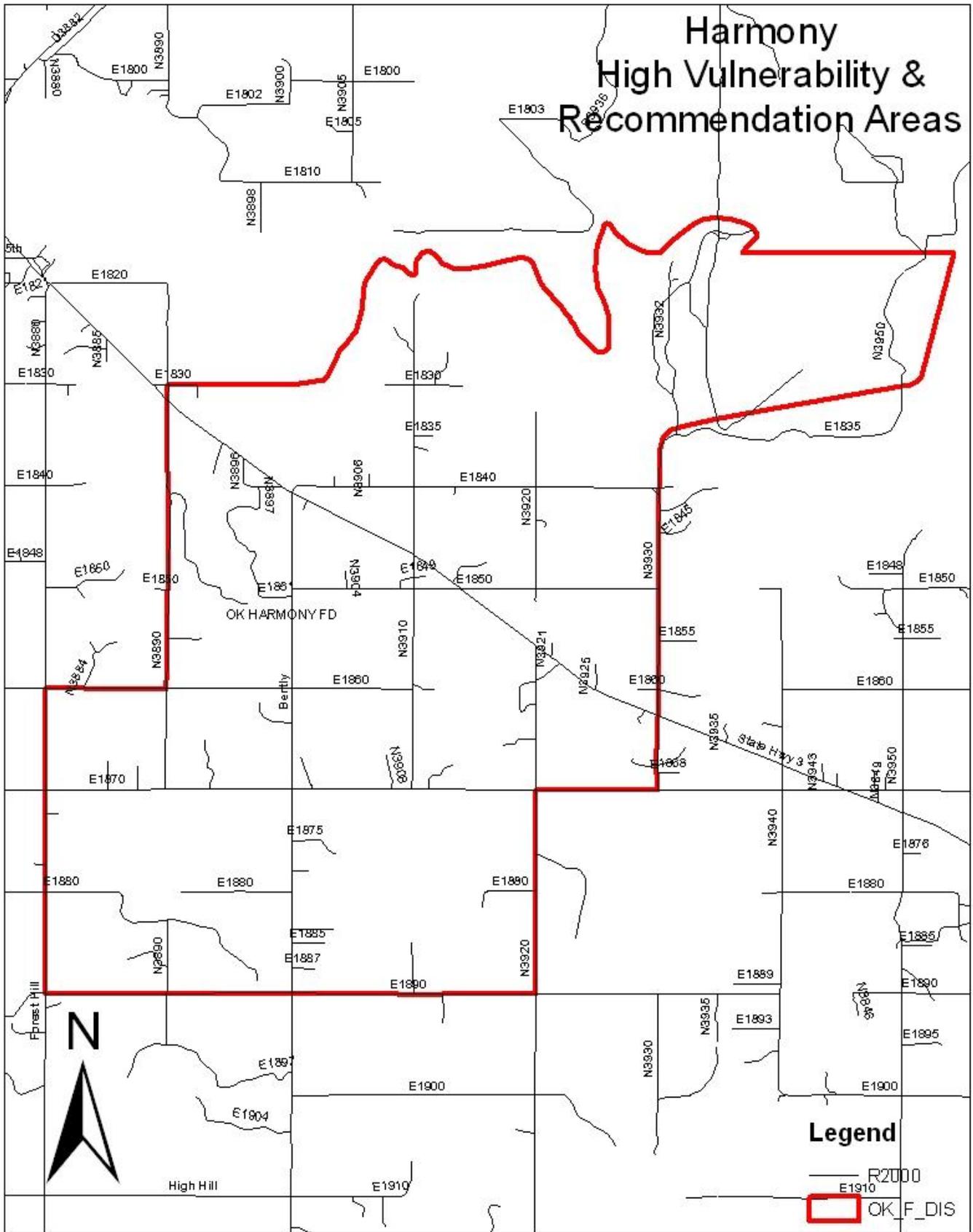


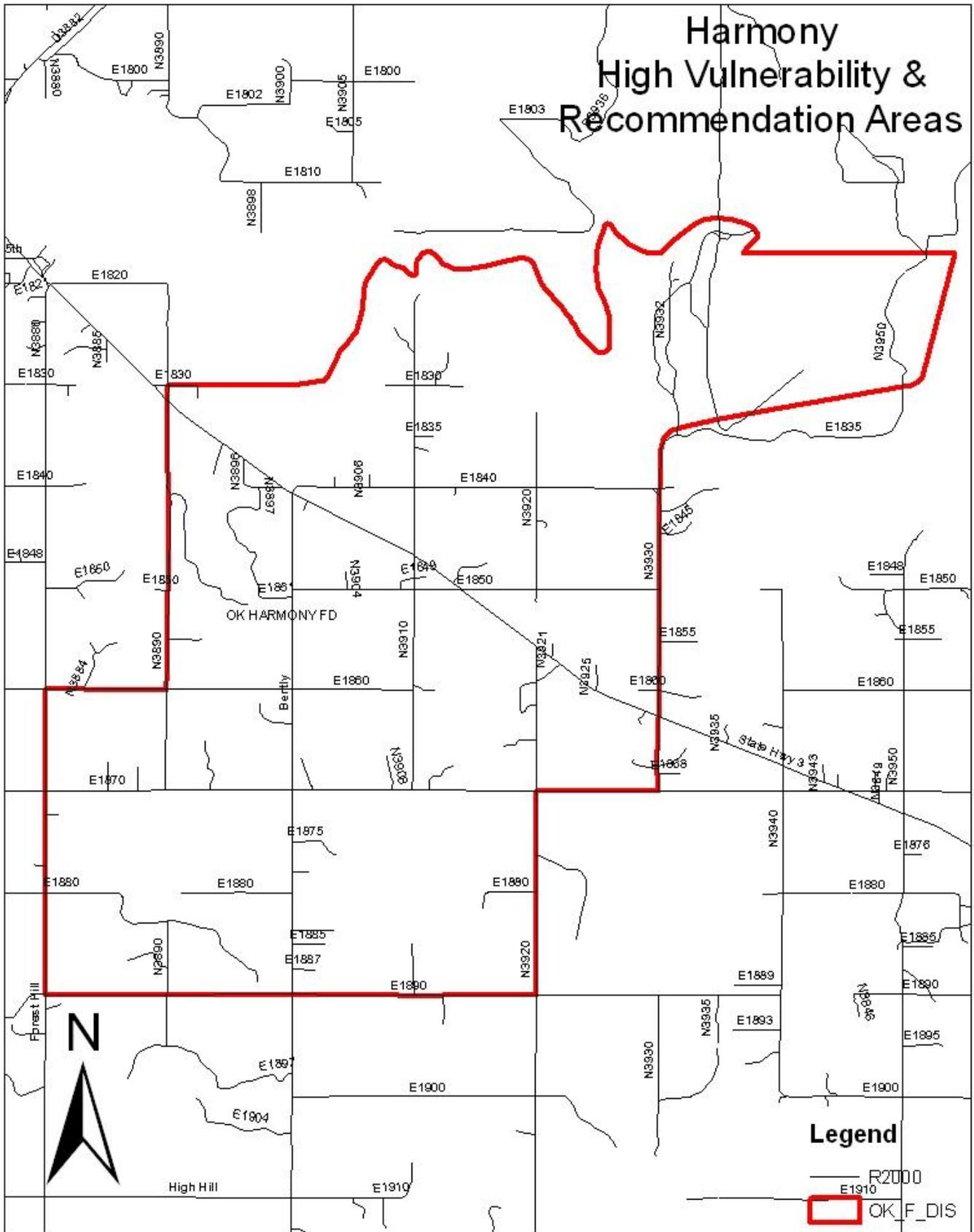




Appendix G

*High Vulnerability Areas
&
Recommendations*







Appendix H

Misc.

4013078
VC 74912
OK #39

OKLAHOMA STATE DEPARTMENT OF AGRICULTURE, FOOD, AND FORESTRY

GRANT AWARD

COMMUNITY WILDFIRE PROTECTION PLAN GRANT

This grant award by and between Bentley Volunteer Fire Department referred to as the "Grantee", and the Oklahoma Department of Agriculture, Food, and Forestry, hereinafter referred to as the "Grantor".

PROJECT: Community Wildfire Protection Plan CWPP - 0013- 09

PROJECT PERIOD: Date Purchase Order issued through February 28, 2010.

GRANT AMOUNT: Not to exceed \$7,000

GRANTEE AGREES TO:

1. Complete Community Wildfire Protection Plan in accordance with the established guidelines listed in attached addendum.
2. Submit Expense Summary Form and Request for Reimbursement
 - a) Include copies of itemized invoices for services or materials purchased and proof of purchase documentation (e.g. paid receipts, copies of front and back of canceled checks, etc).
 - b) All federal share expenses must be completed by one year following the purchase order being set up.
 - c) No money shall be spent or occur prior to the purchase order being issued.
3. Submit performance reports detailing progress and maintenance of project, during the entire project period. Grantor will mail these forms when required.
4. Make any books, records, documents, accounting procedures, audits, practices or any other items relevant to this agreement, regardless of type, whether in written form, computer data, or in any other form, available for examination by the Grantor, the State Auditor and Inspector, a federal auditor, or any auditor designated by Grantor. Records will be maintained for a minimum of three (3) years following the end of the project period. If an audit, litigation or other action involving records is commenced before the end of the three (3) year retention period, the records shall be maintained for three (3) years from the date that all issues arising out of the action are resolved.
5. Comply with cost principles and Code of Federal Regulations, incorporated by reference, pertaining to federal grants.

<u>Organization</u>	<u>Code of Fed. Reg.</u>	<u>OMB Circular</u>
State or Local Gov't.	Sec. 3015,3016,3017	A-87
Educational Institute	Sec. 3015, 3017	A-21
Non-profit Org.	Sec. 3015, 3017	A-122

6. Certify that they are not debarred from receiving federal funds by submitting a completed form ODA/FS-10, and may not conduct business with individuals or organizations debarred from federal grant projects.
7. Acknowledge receipt of and agree to comply with general requirements for all recipients of federal funds. Overview attached is incorporated by reference.
8. The Grantee will release the Department of Agriculture, Food, and Forestry from any and all liability associated with contractors, volunteers, local government employees or other persons working on the National Fire Plan Grant Program. Furthermore, nothing in this Grant Award shall be construed to change or alter the status of the employees of either the Grantor or the Grantee. At no time shall any employee, volunteer, contractor, or other designated person of the Grantee be considered an employee of the Grantor.

National Historic Preservation Act. The recipient organization shall assist the Grantor in its compliance with section 106 of the National Historic Preservation Act of 1966, 16 U.S.C. 470, Executive Order 11593, and the Archeologist and Historic Preservation Act of 1974, 16 U.S.C. 469a-1, et. seq., by (i) consulting with the State Historic Preservation Officer on the conduct of investigations, as necessary, to identify properties listed in or eligible for inclusion in the National Register of Historic Places that are subject to adverse effects (see 36 CFR, Part 800.8) by the activity, and notifying the Grantor of the existence of any such properties, and by (ii) complying with all requirements established by the awarding agency to avoid or mitigate adverse effects upon such properties.

GRANTOR AGREES TO:

1. Upon receipt of proper documentation, reimburse the Grantee 100% of eligible expenses, up to the approved grant amount and not to exceed \$10,000.
2. Periodically review progress to assure the project meets federal and state guidelines, and is technically sound.

EMERGENCY AND TERMINATION CLAUSE:

If unforeseen circumstances necessitate a revision of any provision of this Agreement, the clause may be revised or appended upon agreement of both parties thereto. During the effective term of this Agreement, should the funding be reduced or limited the Department may limit, reduce or cease the monies available pursuant to this Agreement via issuance of a change order.

This contract will be considered to be in force until the expiration date. This grant may be renewed up to an additional 12 months at the same terms and conditions upon approval of the grantor. Either party may terminate this contract with a thirty (30) day written notice.

GRANTEE ACCEPTANCE:

State of Oklahoma, County of FTOKA.

Troy Gammon chief
Signature and Title

Subscribed and sworn to before me this 26 day of May, 2009.

Wanda Keeton
Notary Public, City Clerk or Judge
378

Commission Expiration
Date: Jan. 6, 2011

GRANTOR ACCEPTANCE:

Date 7/27/09

John Burwell
John Burwell, Director
Oklahoma Forestry Services

Terry Peach
Commissioner
Oklahoma Department of Agriculture, Food, and Forestry