



Oconee County Emergency Services Emergency Management



Western Piedmont Regional Emergency Management Task Force (WPREMTF) Natural Hazards Mitigation Plan





Agenda



- **Hazard Mitigation and Planning**
- **Planning Process**
- **Plan Approval Process**
- **Oconee County Natural Hazards**
- **Maps**
- **Oconee County Loss Statistics**
- **Objectives and Strategies**
- **Questions**



Hazard Mitigation and Planning



What is Mitigation?

The act of mitigating, or lessening the force or intensity of something unpleasant or the act of making a condition or consequence less severe.

Why the need for a Natural Hazards Mitigation Plan?

The Federal Government requires local governments to develop and submit mitigation plans as a condition of receiving Hazard Mitigation Grant Program Project Grants and Federal Disaster Assistance.



Planning Process



The Planning Process

1. Organized Resources

Created a Mitigation Core Team (MCT) and Stakeholder Group that was responsible for most aspects of Plan development.

2. Assessed Risks

The Risk Assessment was completed by the MCT utilizing resources from the University of South Carolina Hazards & Vulnerability Research Institute.

3. Developed a Mitigation Plan

The plan was developed in accordance with FEMA 386-series of mitigation planning guides.

4. Implement the Plan and Monitor Progress

Explained further on the next slide





Plan Approval Process



Why Now?

Natural Hazards Mitigation Plans must be updated every 5 years. Oconee County's previous plan was adopted by the Oconee County Council and Oconee County Municipalities in 2006.

For the current plan, Oconee County teamed with the Western Piedmont Regional Emergency Management Task Force to create a regional plan as a cost saving effort.

The plan was created and then sent to the South Carolina Emergency Management Division (SCEMD) and the Federal Emergency Management Agency (FEMA) for a letter of approvability which was received.

The plan must now be adopted by Oconee County Council and all municipalities in order to receive full approval from SCEMD and FEMA to ensure Oconee County will be eligible for Federal Aid for grants and emergencies (Example: 2005 Winter Storm).



Oconee County Natural Hazards



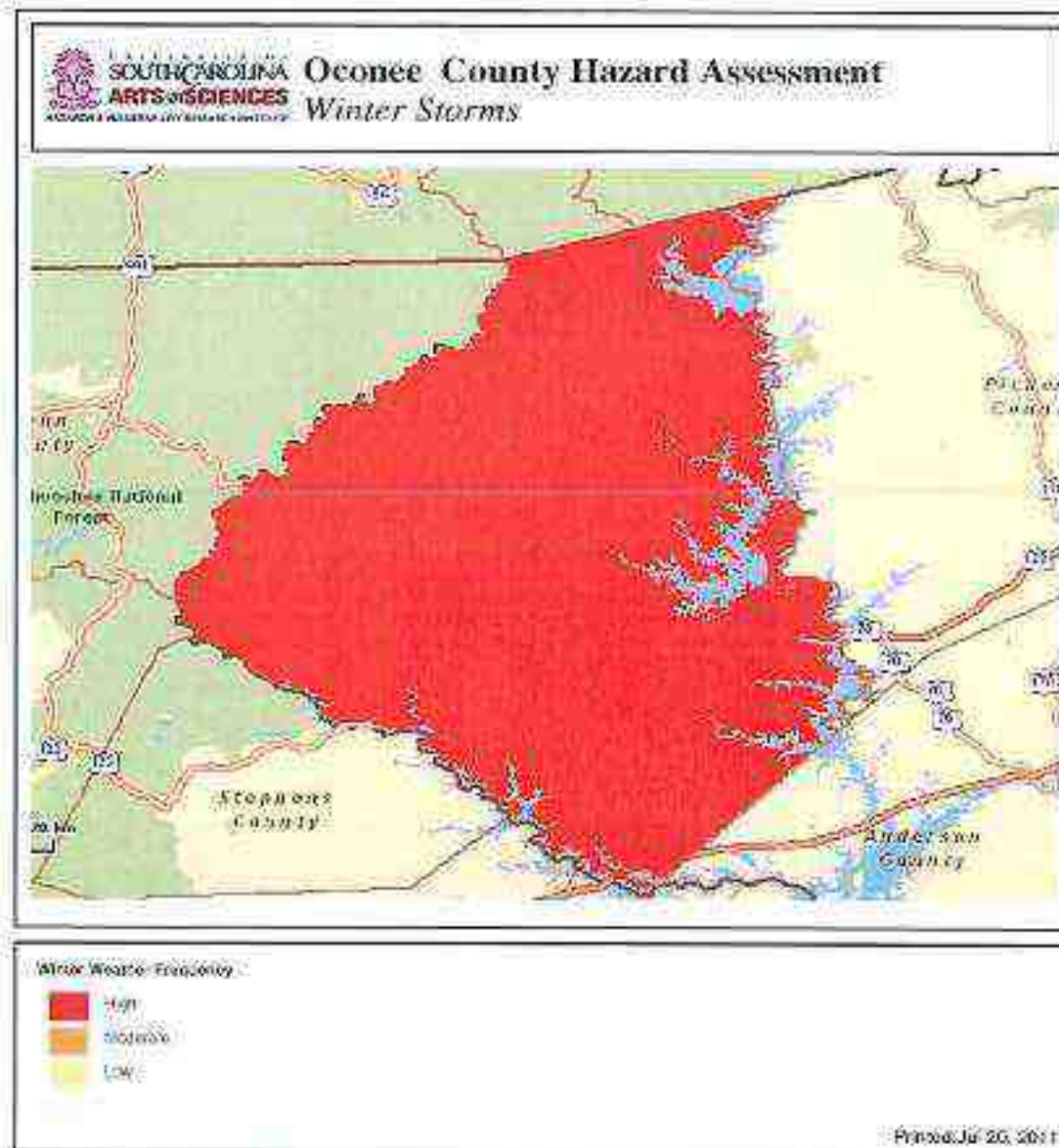
- 1. Winter Storms**
 - 2. Hail Storms / Thunderstorms**
 - 3. Lightning Severe Storms /
Thunderstorms**
 - 4. Tornadoes / High Winds**
 - 5. Drought / Heat Wave**
 - 6. Floods**
 - 7. Wildfires**
 - 8. Hurricanes**
 - 9. Earthquakes**
-



Oconee County Natural Hazards Winter Storms



1

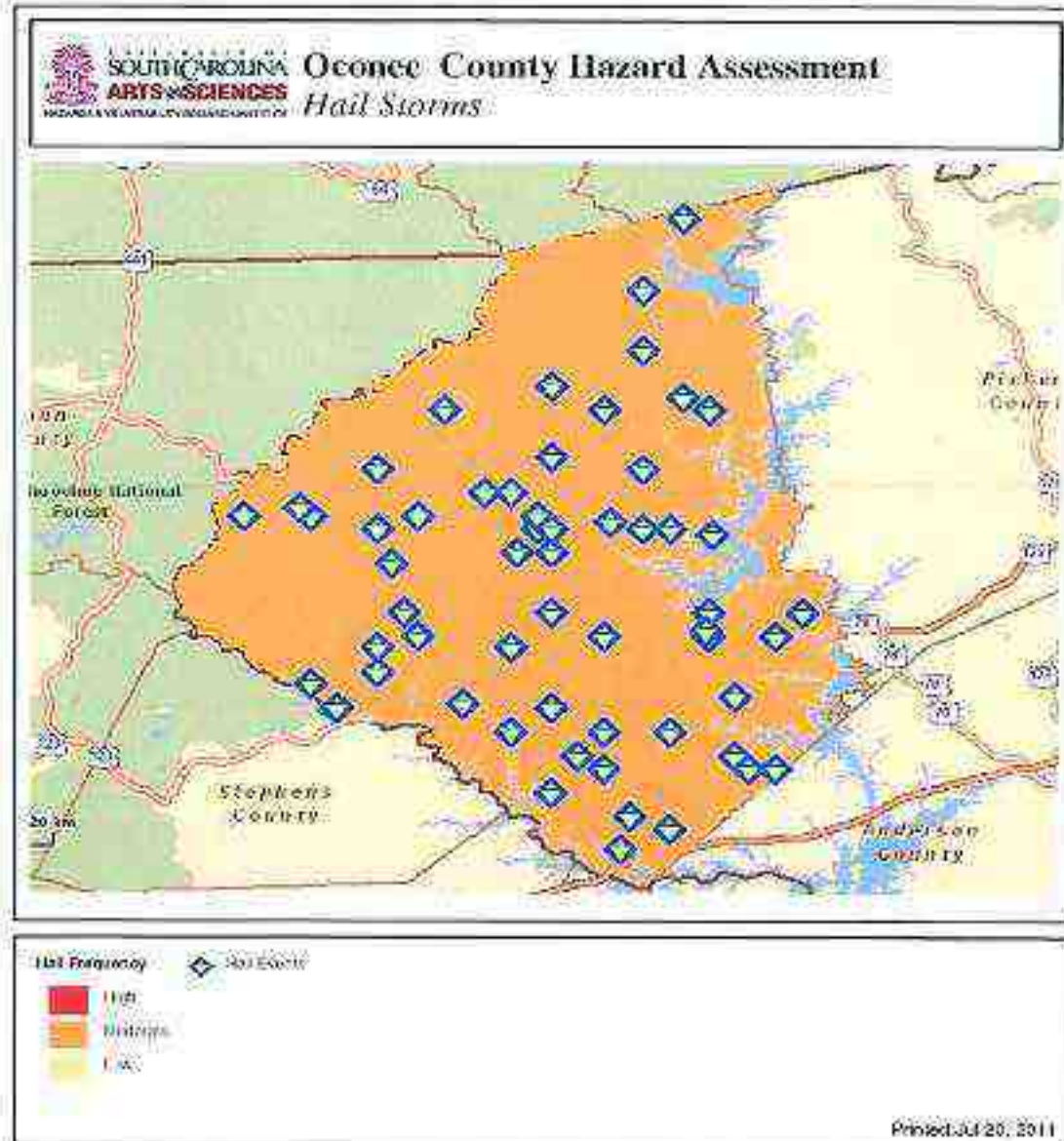




Oconee County Natural Hazards Hail Storms



2

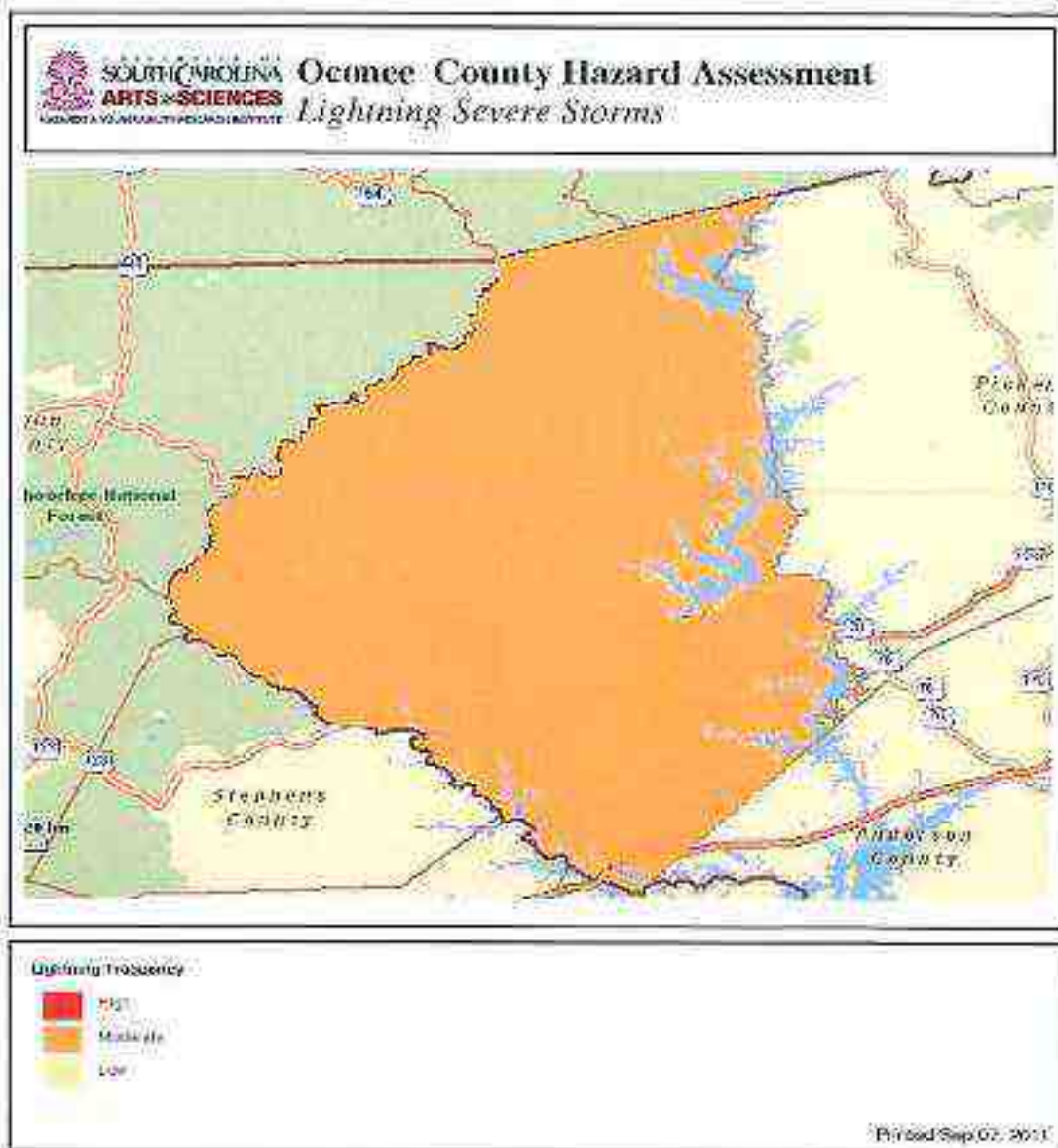




Oconee County Natural Hazards Lightning Severe Storms



3

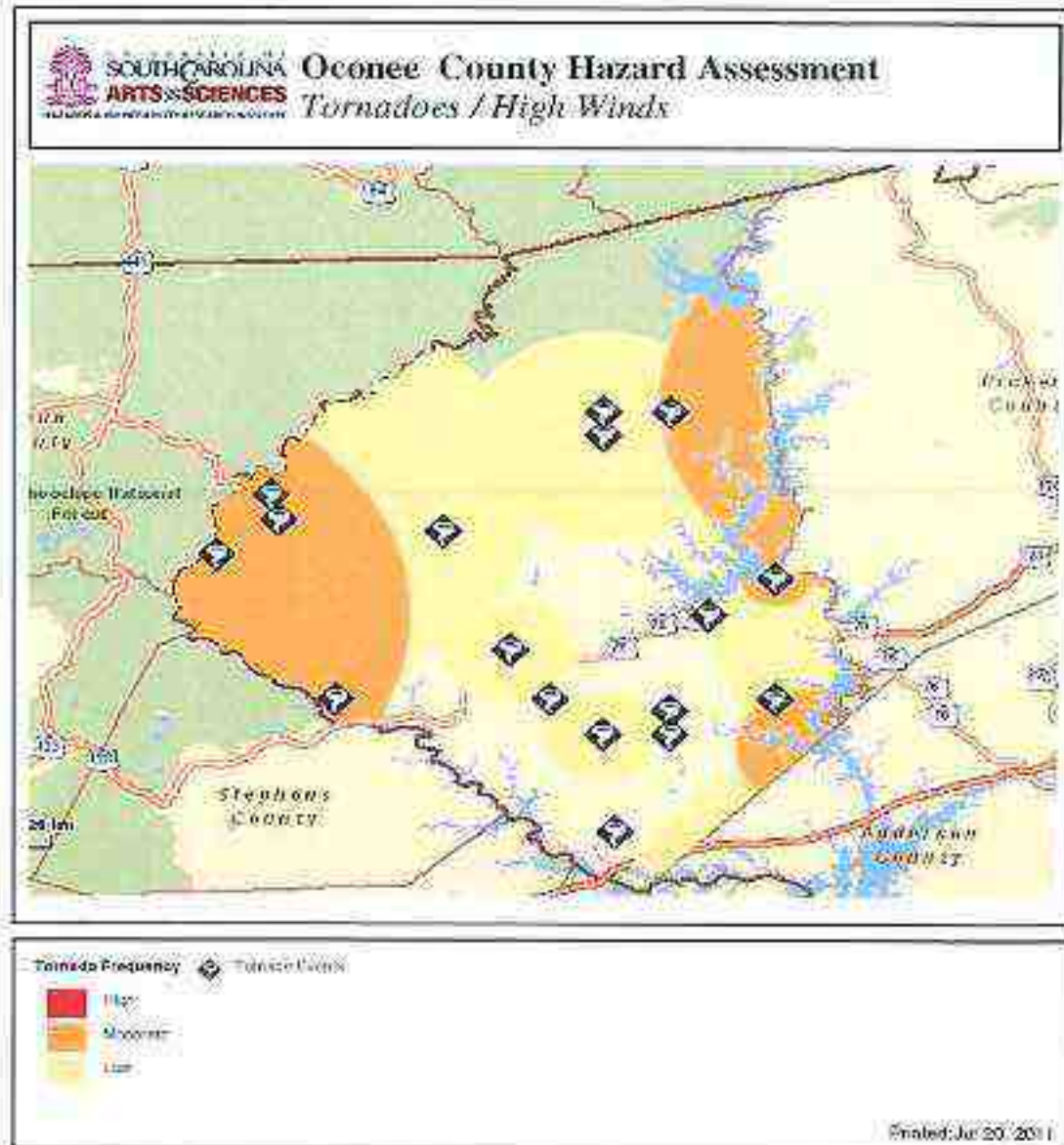




Oconee County Natural Hazards Tornadoes / High Winds



4

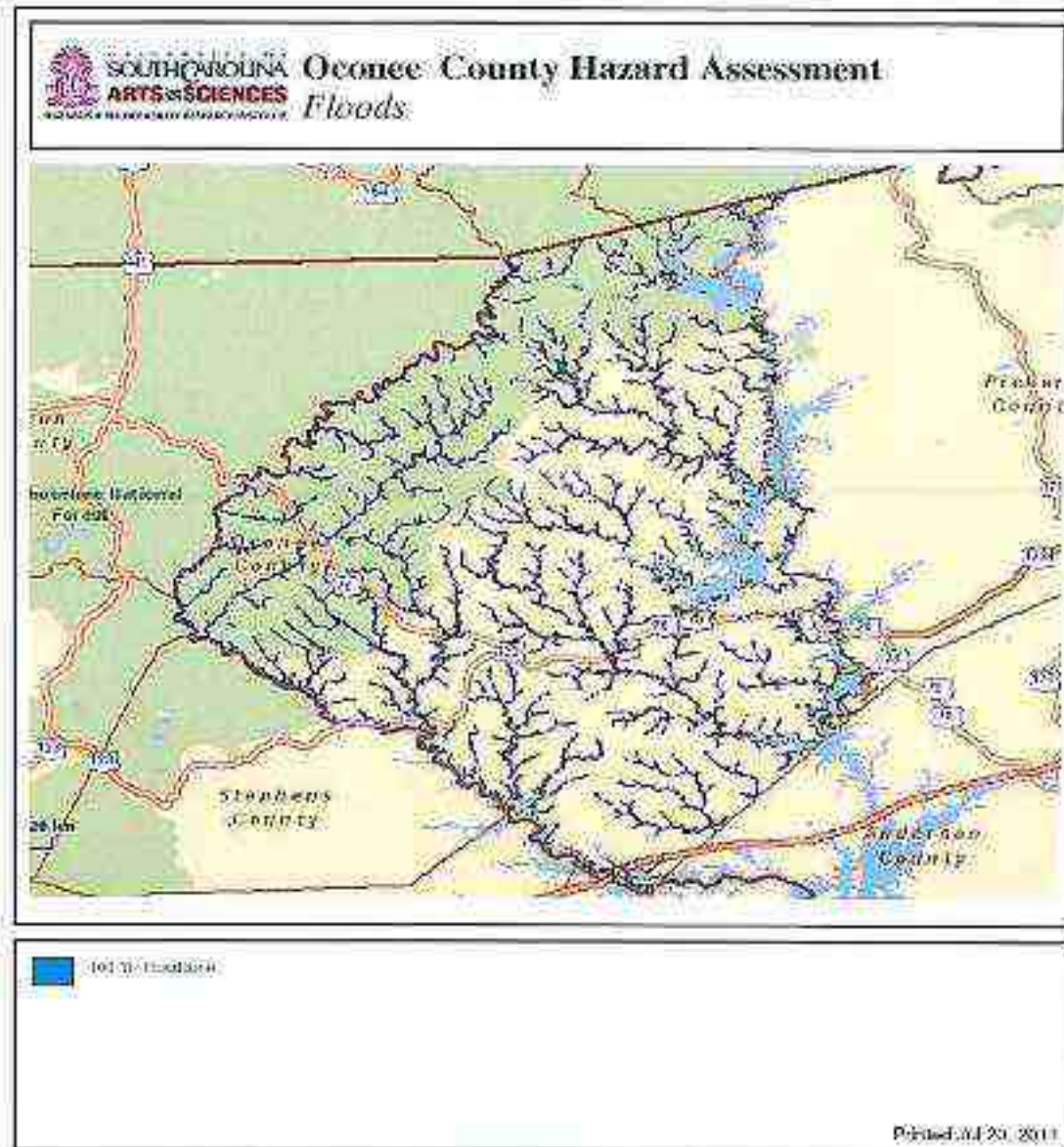




Oconee County Natural Hazards Floods



6

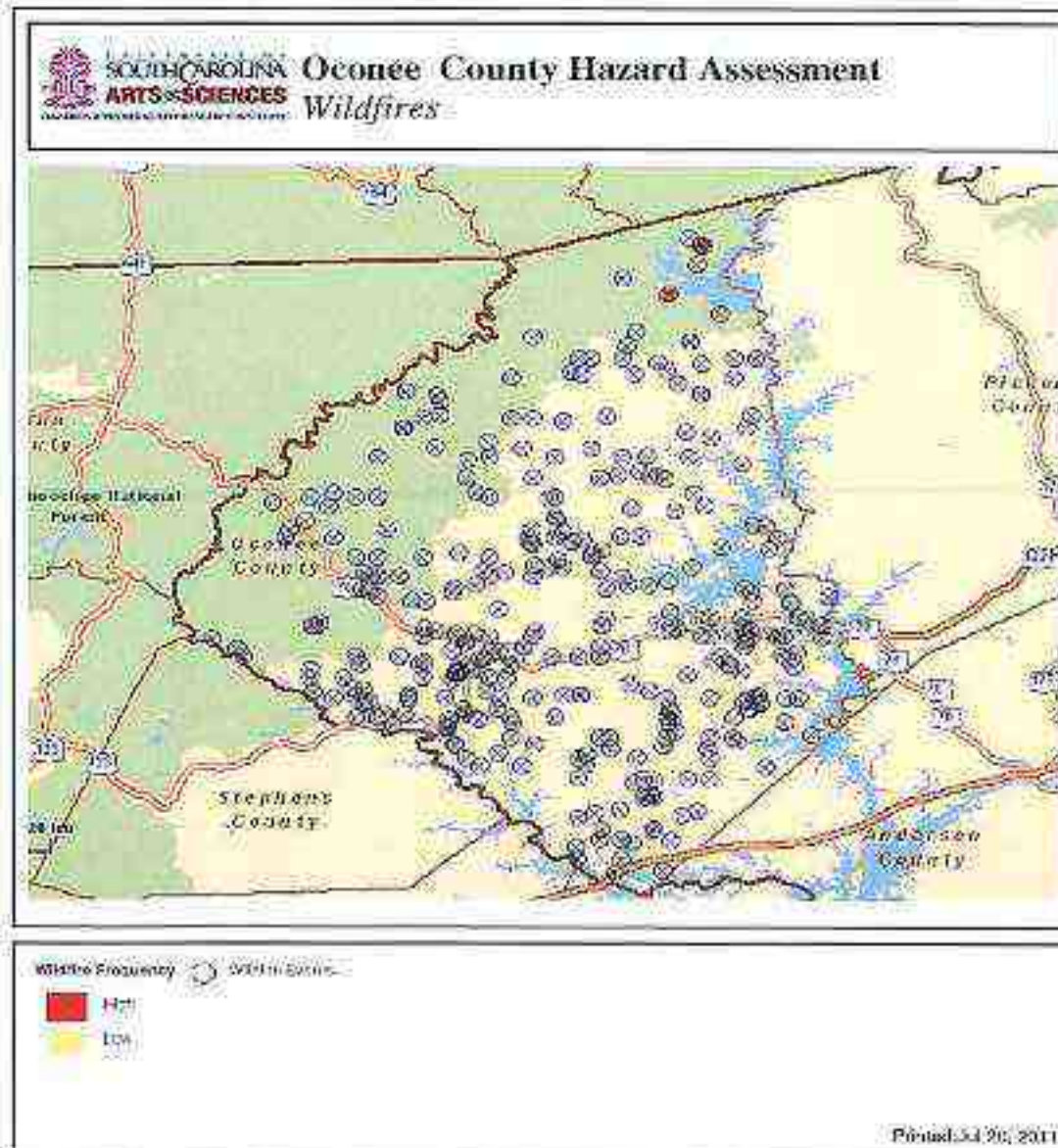




Oconee County Natural Hazards Wildfires



7

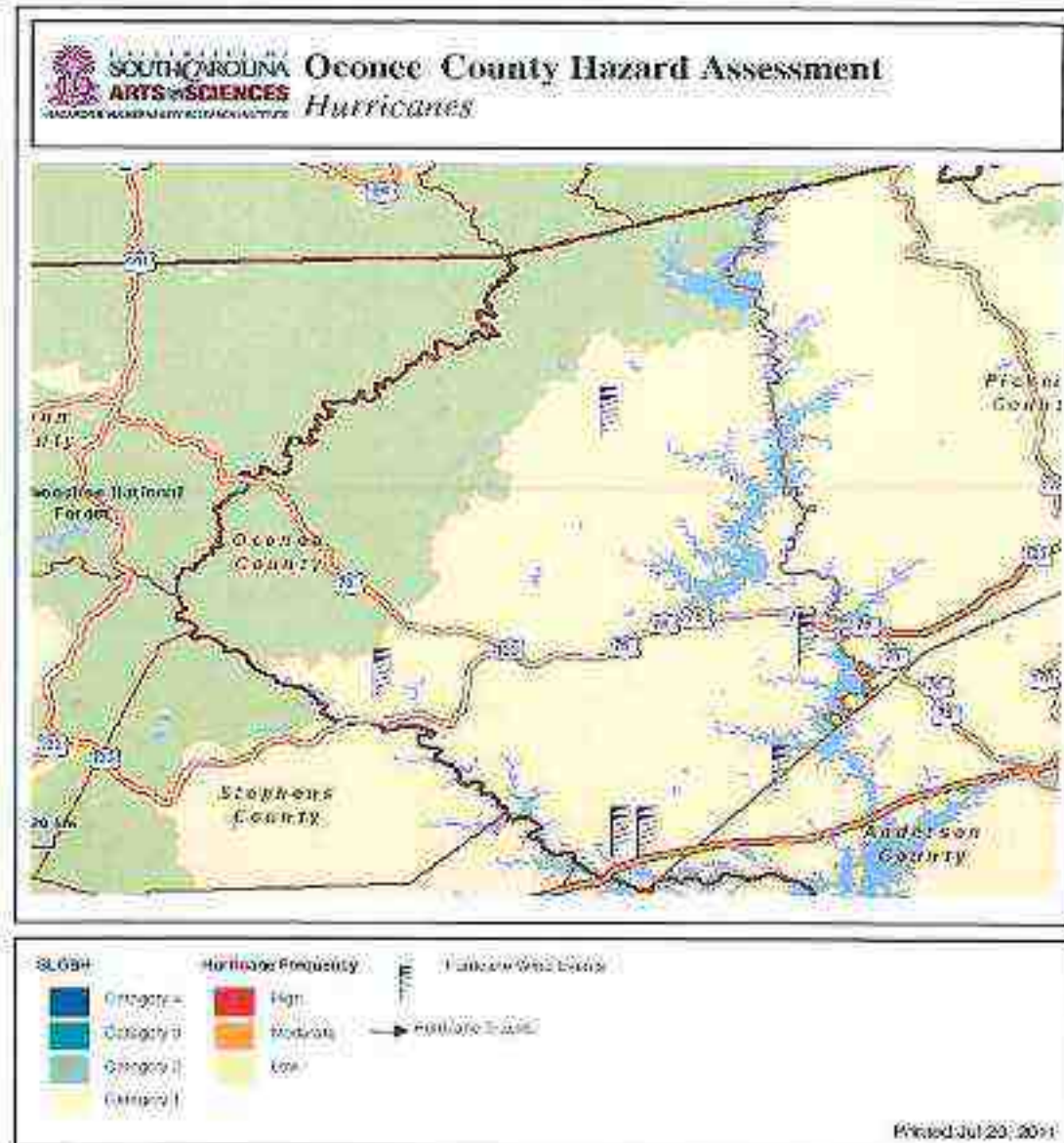




Oconee County Natural Hazards Hurricanes



8





Oconee County Natural Hazards



HAZARD #	HAZARD	RATIONAL
1	Winter Storms	High annual probability, widespread impacts, but losses generally limited except in most extreme events.
2	Hail Storms/ Thunderstorms	High annual probability, widespread impacts, but losses generally limited except in most extreme events.
3	Lightning Severe Storms/ Thunderstorms	High annual probability, widespread impacts, but losses generally limited except in most extreme events.
4	Tornadoes/High Winds	High annual probability, widespread impacts, but losses generally limited except in most extreme events.

HAZARD #	HAZARD	RATIONAL
5	Drought/Heat Wave	High annual probability, widespread impacts, but losses generally limited, except in most extreme events.
6	Floods	Widespread impacts, history of occurrences in the county, potentially significant annual damages.
7	Wildfires	High annual probability of site-specific events, but impacts generally limited.
8	Hurricanes	Hurricanes: Relatively low historic probability; potential for widespread impacts. Tropical Storms: Low to moderate probability; potential for widespread impacts. Nor'easters: Moderate probability of more extreme events, potential for moderately widespread impacts.
9	Earthquakes	Low annual probability.

-Derived from utilizing calculations from the University of South Carolina Hazards & Vulnerability Research Institute Department of Geography Spatial Hazard Event Loss Dataset for the US (SHELDIUS) information; NOAA, National Climatic Data Center Records, National Weather Service, FEMA Flood Insurance Studies, FEMA Flood Insurance Rate Maps, FEMA Public Assistance records, FEMA National Flood Insurance Program claims data, US Army Corps of Engineers (USACE), Forest Service, and the United States Geologic Survey (USGS).



Oconee County Loss Statistics



Summary of Loss Statistics for Oconee County (based off of historical data from last 20 years)

<u>HAZARD</u>	<u>FREQUENCY</u>	<u>INJURIES</u>	<u>FATALITIES</u>	<u>PROPERTY DAMAGE</u>	<u>CROP DAMAGE</u>
Winter Storms	10	0.16	3.28	\$11,455,402.57	\$1,891,799.65
Hail Storms / Thunderstorms	2	0.00	0.00	\$550,000.00	\$500.00
Lightning Severe Storms / Thunderstorms	7	0.00	0.00	\$757,666.67	\$0.00
Tornadoes / High Winds	10	9.33	0.00	\$463,666.70	\$50,666.67
Drought/ Heat Wave	7	0.00	0.00	\$10,870,773.14	\$1,536,171.51
Floods	8	0.00	0.00	\$1,528,869.57	\$117,695.65

-Derived from utilizing calculations from the University of South Carolina Hazards & Vulnerability Research Institute Department of Geography Spatial Hazard Event Loss Dataset for the US (SHELDUS) information



Objectives & Strategies



- **Priorities are categorized**
 - **High**
 - **Medium**
 - **Low**
 - **High priorities are being addressed first**
-



Oconee County Emergency Services Emergency Management



Questions?



Water/Boating Safety





Life Jacket Loaner Boards





Life Jacket Loaner Boards



Life Jacket Loaner Boards



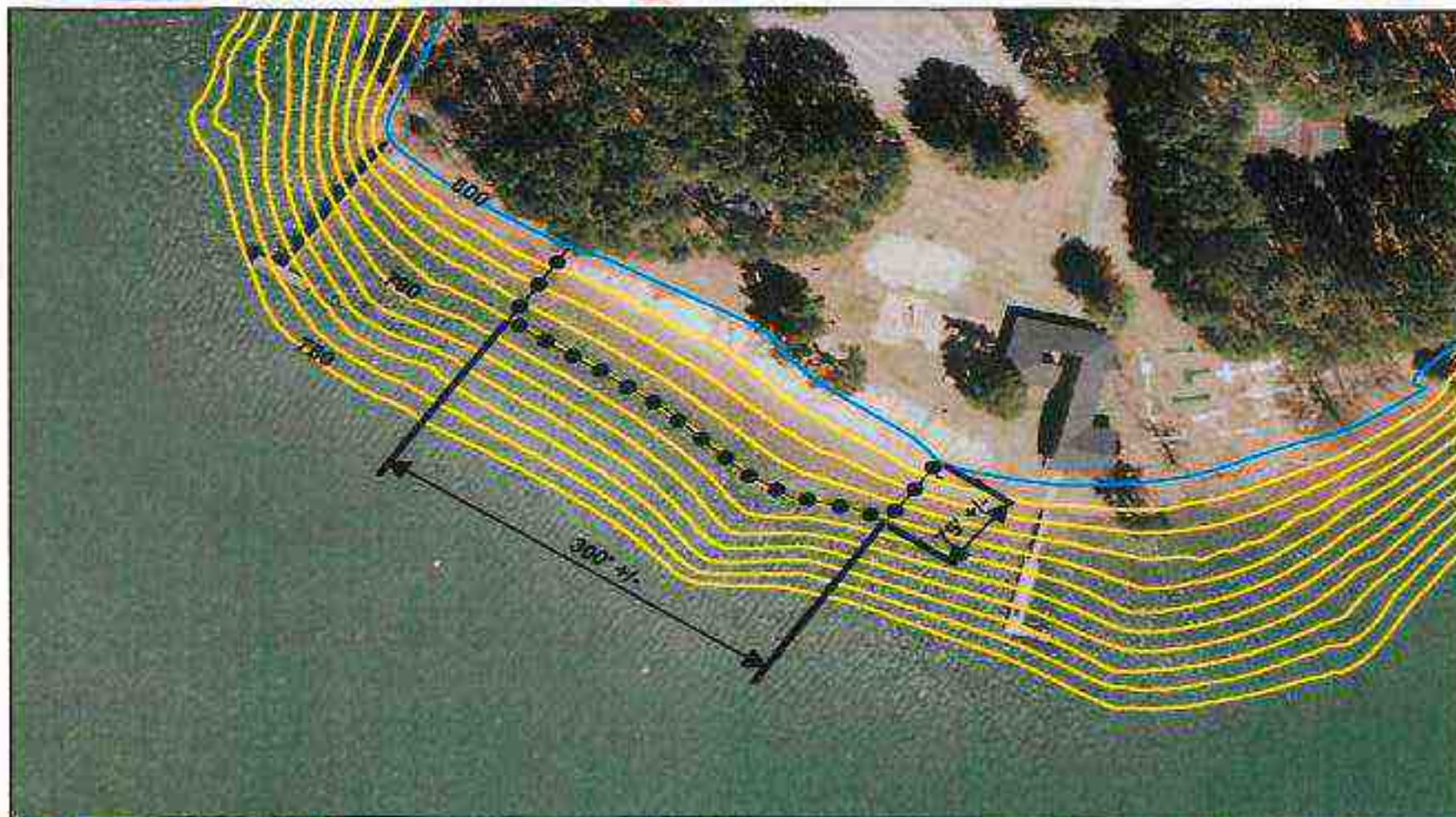
Life Jacket Loaner Boards

- Currently 5 Loaner Boards, will add 1 more at Chau Ram
- 45 Lifejackets in use
- Duke Energy-Kiosk
- DNR-LifeJackets
- Keese Foundation/ Safe Kids Upstate/
FOLKS





Designated Swim Area



4-2

- Legend**
- Blue line: Full Pond Contour MSL 800.0
 - Yellow lines: 25' contours from 700 to 800

Note: Contours are developed from bathymetric data collected in 2010 using acoustic depth measurements and global positioning system instruments. Data is not survey grade information.

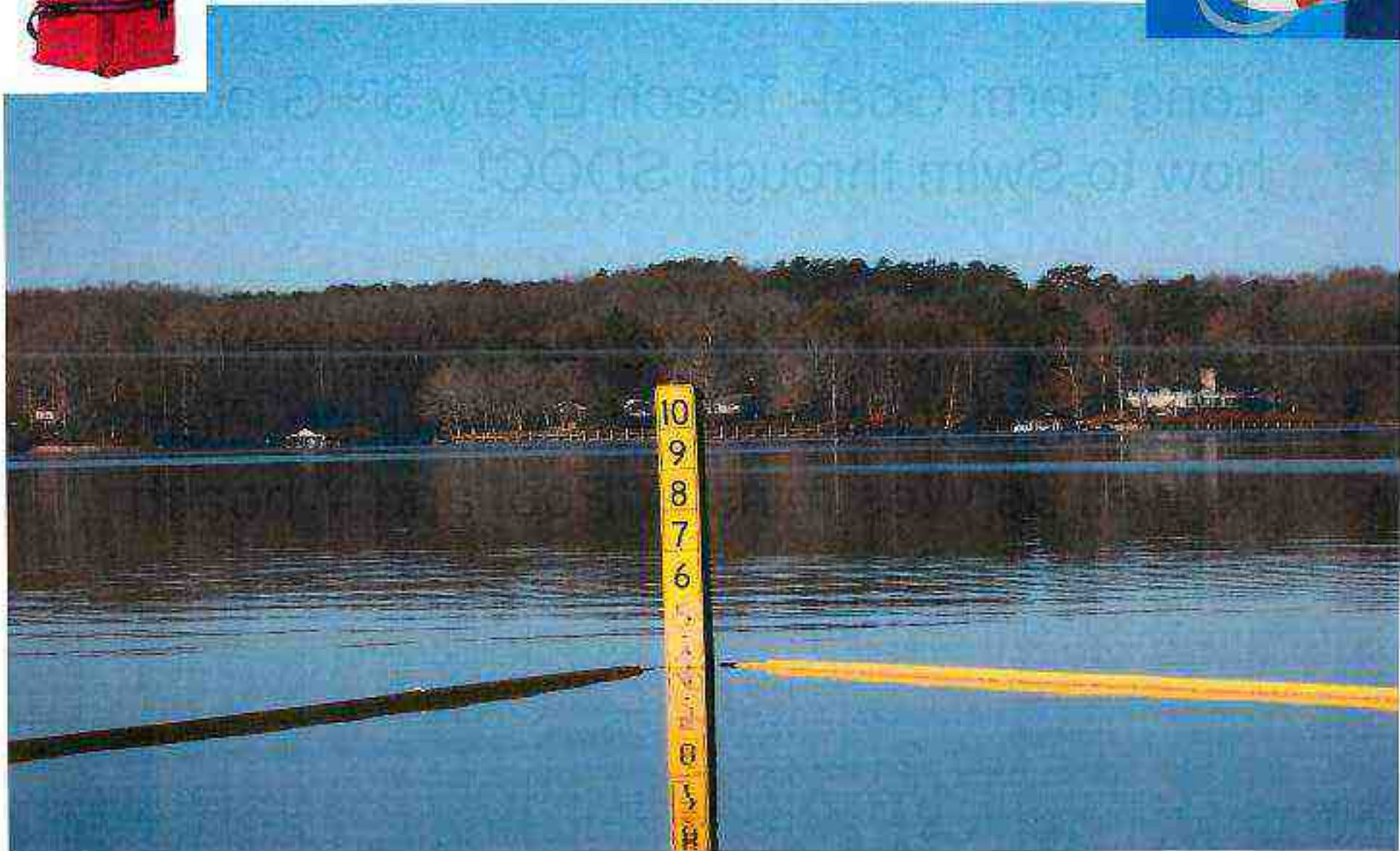
High Falls County Park
Oconee County, South Carolina
Swimming Area Detail



July 3, 2012



Designated Swim Area



YMCA Swim Programs

- Long Term Goal- Teach Every 3rd Grader how to Swim through SDOC!
- Currently 123 kids have gone through the program at Keowee and Blue Ridge Elem as well as Westminster Pool and Y beach

Boating Safety

- DNR
- Golden Corner Power Squadron
- US Coast Guard Auxiliary
- FOLKS
 - Free Boat Safety Inspections and Programs





BOAT SAFELY & RESPECTFULLY ON LAKE KEOWEE



Map Date: 02/20/2010



ACCESS AREA AMENITIES

PO	Pump Out
PA	Picnic Areas
CD	Courtesy Dock
RR	Rest Rooms
G	Gasoline
BR	Boat Ramps
BRS	Boat Rentals
BS	Boat Store

Jocassee Dam and Hydro Station

canoe/kayak launch
PA
RR

PA
CD
RR
BR

Fall Creek Access Area

Keowee-Toxaway State Park

PA
CD
RR
BR

Crow Creek Access Area

PA
CD
RR
BR

Wine Creek County Park Access Area

PO
PA
CD
RR
G
BR

Gap Hill Landing

BR

Keweenaw Town Access Area

BR

Slump Creek Access Area

PA
CD
RR
BR

High Falls County Park Access Area

PO
PA
CD
RR
G

Crooked Creek RV Park

Wapahatch Access Area
BR

Keowee Dam and Hydro Station

PA
CD
RR

Cane Creek Access Area

PO
PA
CD
RR
G
BRS
BS



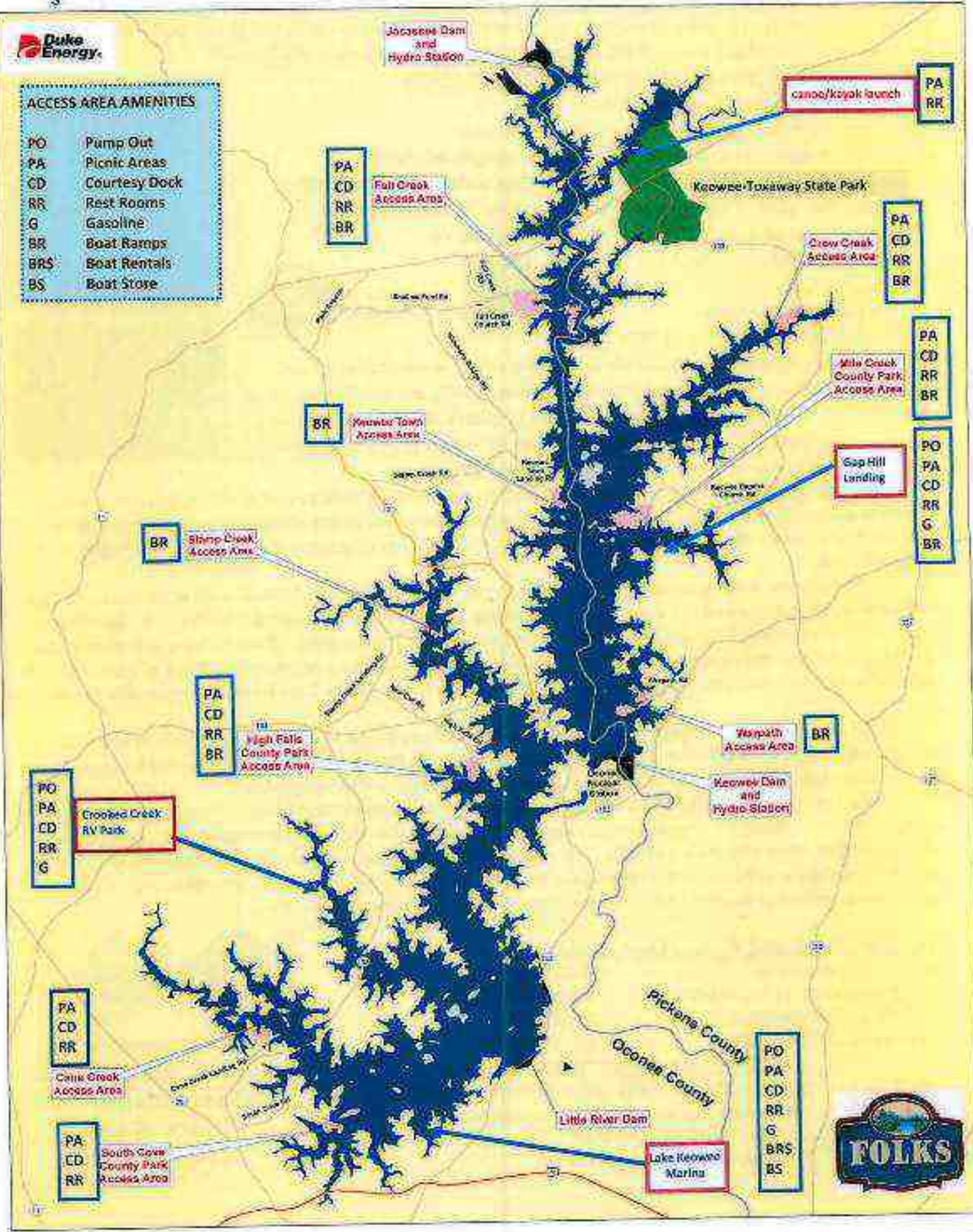
PA
CD
RR

South Cove County Park Access Area

Little River Dam

Lake Keowee Marina

Pickens County
Oconee County



The information in this publication is being provided by the Friends of Lake Keowee Society- FOLKS - to assist you to boat safely and responsibly on Lake Keowee. The South Carolina Boating Laws and Responsibilities Handbook (cover shown) may be downloaded at: www.boat-ed/sc.handbook.pdf_index.htm. We have included below, some of the regulations that are most frequently ignored.

NEGLIGENT, WRECKLESS & OTHER ILLEGAL OPERATIONS

Please have a designated boat captain

Please operate PWC's only between sunrise and sunset

Please do not weave your boat or PWC through congested traffic

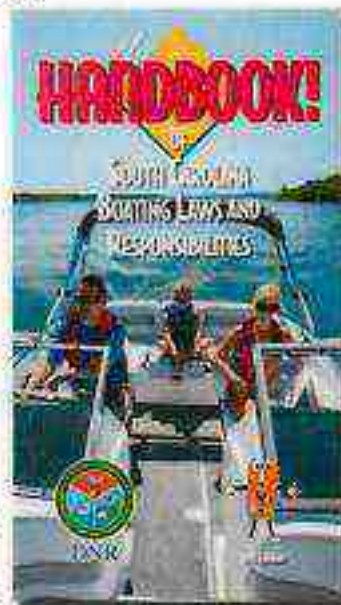
Please do not cause your boat or PWC to leave the water completely while crossing the wake of another boat within 200 feet of the other boat

Please operate your boat at "idle speed" within 50 feet of:

a moored or anchored boat

a wharf, pier or dock

a person in the water



Please pass under all bridges at "idle speed"

All islands have reflective number signs on them which were produced and erected by FOLKS through a grant from Duke Energy. They are relatively new so some Lake Keowee Maps do not yet depict the numbers. All of the emergency agencies have copies of maps showing all islands as well as the GPS coordinates of the signs. This may be of assistance in emergency situations.

The Lake Keowee Islands are important for resident and visiting birds as well as otters, beavers, muskrats and many and many small water and land species. The recreational use of the islands is restricted to the period from sunrise to sunset. No overnight camping, erection of permanent structures, cutting of trees and lighting of fires is allowed.

Unfortunately, there is significant litter along the shoreline and on the islands as well as on and under the water. Please bring along and use a net to "catch" floating cans and plastic packaging materials. Two hundred FOLKS volunteers "sweep" the shoreline twice a year and the islands more often. We even have volunteer scuba divers taking bottles and cans off the lake bottom every year. They wish to work themselves out of a job and you can help make that wish come true by taking away from Lake Keowee all the trash from your enjoyable day on the lake.

Lake Keowee is exceptionally beautiful against the backdrop of the Blue Ridge Escarpment. It is also one of the cleanest lakes in the southeast. Part of the FOLKS Mission is to keep it that way for all to enjoy for generations to come. Your help in keeping the lake clean and safe for all to enjoy will be appreciated.

Duke Energy has embarked on a five year, multi million dollar Recreation Management Plan (RMP) that includes such amenities as: restrooms, courtesy docks and picnic areas at the public access areas to make your day on the lake both more enjoyable and safer. The amenities currently available on the public access areas as well as the public marinas are shown on the reverse side of this page. As the RMP progresses, amenities such as restrooms, picnic areas and courtesy docks will be added to all of the public access areas.

IMPORTANT TELEPHONE NUMBERS AND WEBSITES:

DNR CLEMSON OFFICE:	864-654-8266
DNR EMERGENCY 24 HOUR HOT LINE	1-800-922-5431
OCONEE COUNTY SHERIFF	864-638-4111
PICKENS COUNTY SHERIFF	864-868-2603

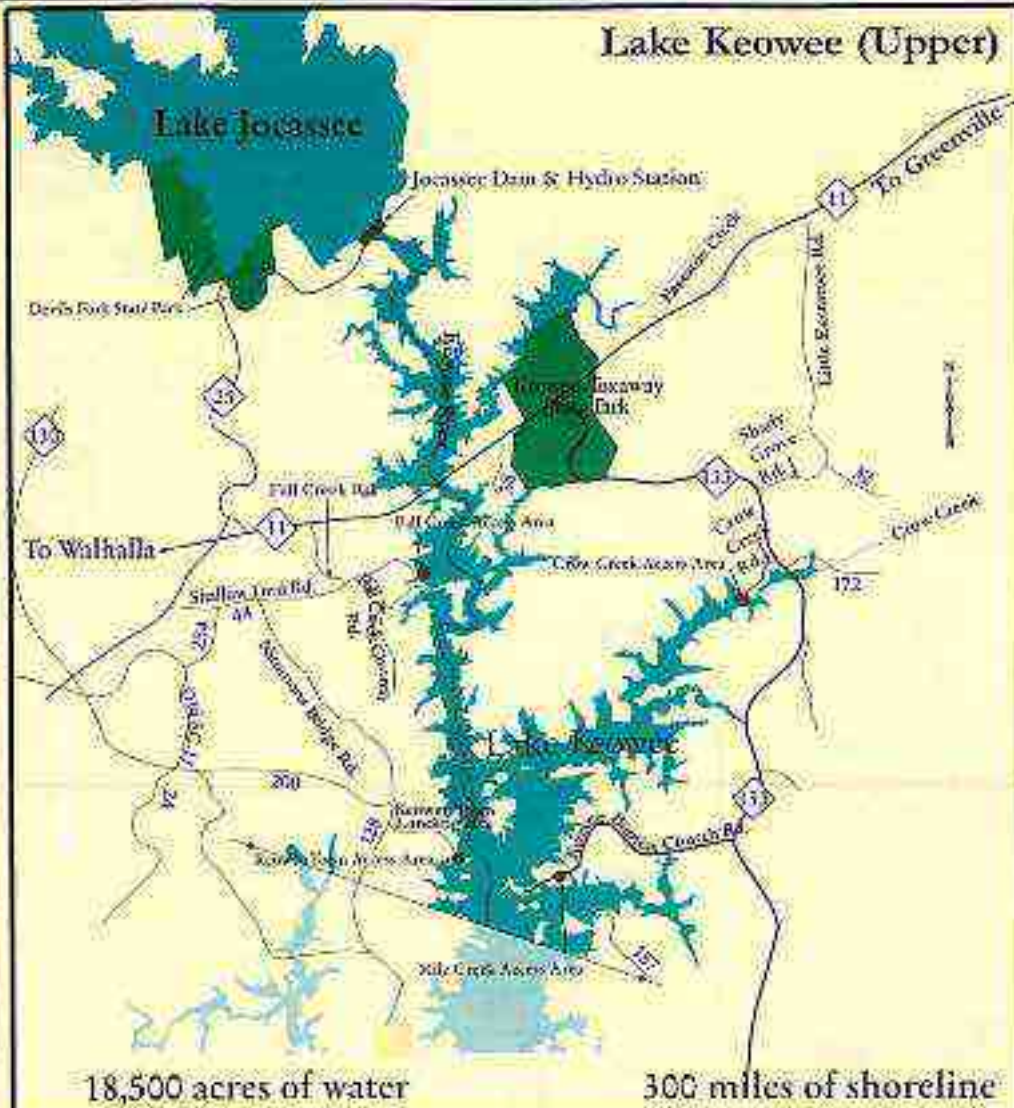
FREE BOAT SAFETY INSPECTIONS

GOLDEN CORNER LAKES SAIL & POWER SQUADRON
http://gclsaps.com/Power_Squadron/Welcome.html
US COAST GUARD AUXILIARY
<http://a0700205.uscgaux.info/>



www.keoweefolks.org
keoweefolks@charter.net
4065 Keowee School Road
Seneca, SC 29672
864-882-3655

Lake Keowee (Upper)



18,500 acres of water

300 miles of shoreline

Lake Keowee (Lower)



Keep clear of power lines. Contact with or arcing from these lines can be very dangerous. Stay 300 feet away from the upstream and downstream sides of the dam and powerhouse. Do not enter the tailrace section directly below hydro stations. A flashing red beacon and/or sounding of a horn means sudden rising swift and turbulent waters below the dam.

- *Chau Ram Park - Hwy. 76 - 3 miles north of Westminster
- *High Falls Park - Hwy. 183 - 2 miles north of Duke Energy
- *South Cove Park - Hwy. 28 - right at Hwy. 188 - right on South Cove Rd.

Please contact us at 864-888-1488 for hooking shelter reservations or additional information.

Oconee County Parks, Recreation, & Tourism
www.experienceoconee.com



Golden Corner Lakes
Sail and Power
Squadron



FOR FREE BOAT SAFETY INSPECTION
 Boat Rec. 706-376-5445 or
www.safetysail.net

For the next safe boating class, please
 call Marilyn Straven 864-985-3788.

South Cove County Park

- Camping - Picnicking - Rental Shelters
- Boat Ramps
- Call 864-882-5250 for more information.



Safety Tips



This is weather-proof paper. If it gets wet - just wipe it off.

Control your WAKE!

- * When you overtake and pass another boat, it has the right of way. Pass at a safe speed and distance.
- * A boat approaching from your right front quarter has the right of way. It is your responsibility to avoid a collision.
- * You are responsible for your wake. You can be held liable for any damages or injuries.
- * Stay clear of fishermen at anchor or using trolling motors. If you want to fish an area being fished by others, approach the last 100 yards using a trolling motor.
- * Stay clear of swimmers and skiers as well as anchored boats and docks.

To learn more, take a Power Squadron Boat Safety Course. Just log on to:

www.usps.org/localusps/

PWC



- PWC must be equipped with a fully operational self-circling device or a lanyard type ignition safety switch that is attached to the person or PFD of the operator. It is illegal to:
- * Operate a PWC between sunset and sunrise.
 - * Operate a PWC at greater than idle speed if within 50 ft. of a non-moving boat, a dock or pier, bridge or a person in the water.
 - * Jump the wake of another boat when too close or when visibility is restricted.
 - * Operate a PWC so that it leaves the water within 200 ft. of a boat whose wake it is crossing.
 - * Chase, harass or disturb wildlife.

* **Boat Safety.** It's hard to beat the warm weather and the fun of an afternoon or all-day outing on the water. Part of the good times on the water means remembering to boat safely. Take a boating safety class offered by the local Coast Guard Auxiliary, Power Squadron, or the state Department of Natural Resources. Include enough approved Personal Flotation Devices (PFD) for everyone on board and encourage friends and family to wear them. When boating at night, reduce boat speed and always use running lights.

* **Safe Water Skiing.** Always have an observer in the boat to alert the driver when a skier is down, and mount a red ski flag to alert others that you are towing a skier. Stay clear of shallow water or congested areas. Maintain a reasonable, safe speed at all times and keep an alert eye for other water craft and skiers. Know the water skier hand signals. Always wear an approved PFD designed for water skiing. Turn off the boat's motor when it is near skiers or when they are climbing on board.

* **Proper Boating Safety Equipment.** Always be equipped with approved PFDs, fire extinguishers, anchors with line, paddle or oar, manual pump or bailer, a sound-producing device and navigation lights.



Zippit
It's the law!

Personal Flotation Devices (PFDs)

- * All boats must have at least Type I, II, III, or V personal flotation device that is U.S. Coast Guard-approved, wearable and of the proper size for each person on board. Sizing for PFDs is based on body weight and chest size.
- * South Carolina law requires all children under 12 years of age to wear a U.S. Coast Guard-approved Type I, II, III, or V PFD while aboard a Class A (less than 16 ft. long) boat or PWC. The PFD must be fastened and of the proper size for a child.



- * One Type IV U.S. Coast Guard-approved PFD must be onboard boats 16 feet or longer and readily accessible in addition to the above requirements.
- * One Type V PFD may be substituted for any other type if it is specifically approved by the U.S. Coast Guard for the activity at hand. Type V PFDs may not be substituted on children weighing less than 90 lbs.
- * Each person riding on a PWC must wear a U.S. Coast Guard-approved Type I, II, III, or V PFD.
- * All PFDs must be in good and serviceable condition and must be readily accessible.

Go to www.dnr.state.sc.us for additional information.

* **Use Boating Distress Signals.** When an emergency arises, use floating orange distress signals, an orange distress signal flag, hand-held flares, parachute red flare distress signals, hand-held rocket-propelled parachute red flares and, at night, electric distress signals.

* **Safe Swimming.** Use the buddy system. Never swim alone. Only swim in designated swimming areas. If you don't know how to swim, use a PFD. Avoid boating channels, marinas or docks where you may be difficult to spot in the water.

* **Responsible Drinking.** Beer and other alcohol beverages are to be consumed as intended; responsibly and by adults. If adults choose to drink, they should remember how alcohol affects them and the vital skills needed to enjoy water sports. The sun, wind, vibration, and water motion can increase the effects of alcohol. Many responsible boaters now *designate a skipper* for the day when boating with family and friends. Just as designated drivers help save lives on our highways, they also can help keep our waterways safe.

BUD LIGHT
RESPONSIBILITY MATTERS™

Choose A
Designated Skipper



Towing Skiers

- * It is illegal for boats or PWC to tow skiers, surfboards, or any device of this type between sunset and sunrise.
- * Boats and PWC towing waterskiers or participating in a similar activity must operate in a careful and prudent manner.
- * A reasonable distance from other boats, people and property must be maintained so as not to endanger life or property. Buzzing or spraying another boat or swimmer is illegal.
- * Those being towed must wear a U.S. Coast Guard approved Type I, II, III, or Type V PFD.
- * Every boat or PWC towing a person(s) on water skis, a surfboard or a similar device must have:



- A person, in addition to the boat operator, observing the towed person(s) or...
- A wide-angle rearview mirror mounted such that the operator can observe the towed person(s) at all times.

* If an observer is used when towing a person behind a PWC, the PWC must be rated for three people - the driver, the observer and the retrieved skier.

Signs to remember





Oconee County Emergency Services

2012 Program Progress Report

Organization

- 17 Fire Stations
- HazMat Response Team
- 2 Staffed Squads
- 8 Medical First Response Rescue Squads
- Dive Rescue Team
- Special Rescue Team
- CERT Team
- SAFE Team
- FIT Team



Core Improvement Areas

- Organizational
- Volunteer Station Assistance
- Training
- Equipment & Vehicles

Organization Management

- Department specific command structures created
- Commissions are being established
 - Will serve as advisory to command staff and provide long range planning

Fire Marshal has been absorbed into OCES

will manage fire code enforcement, public education, and fire cause investigations

Volunteer Station Assistance

- ISO Preparation Assistance
- Ladder Testing
- Pump Testing
- Hydrant Testing
- Pre-Fire Plan Assistance
- Inspection Assistance
- Hose Testing
- Fire Reports & Run Reports
- IT Support for Firehouse Software & Station Networks
- Critical Incident Stress Debriefing (CISD)
- Paid Staff in Stations Everyday

Training

- Established Training Officers Working Group
- Working with SCFA to bring more programs to blended learning environment
- Library of training materials is being posted on central system
- Working to ensure staff are available for in station trainings.
- Water Shuttle / Flammable Liquids Pit

Equipment & Vehicles



Standardized Equipment Specifications

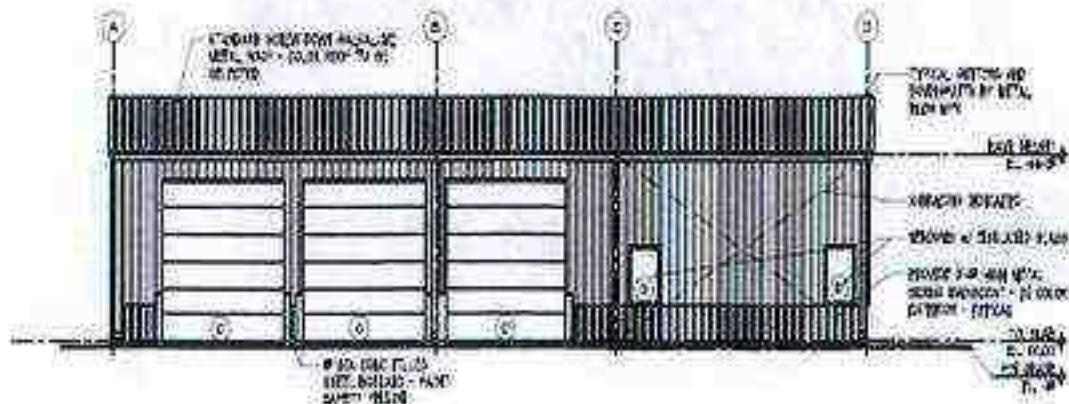
Regular schedule of service/maintenance

Turn-out/PPE replacement

Building of asset inventory

Substations

- Sta. 22 Foxwood Hills – In progress
- Sta. 23 Holly Springs- In progress
- Sta. 24 N. Hwy 11- property aquisition
- Sta. 25 Choehee Valley- property aquisition
- Sta. 26 Bountyland- 2013-2014
- Sta. 27 Hwy 107- 2013-2014
- Sta. 28 Whetstone- 2014-2015
- Sta. 29 Shiloh Rd.- 2014-2015



Rescue

- 8 Squads providing medical first response
- 2 Technical rescue teams - Dive & Special Rescue
- incident scene response
- special event coverage
- conduct CPR/first Aid programs in the community
- management of special needs database

Fire Prevention

- Public Education – SAFE Team

- 21 Events

- 1518 child contacts – 577 adult contacts

- Goal set for 8000 contacts in 2012

Will be coordinating with area public safety and health agency to provide a biweekly editorial in local paper

Forestry Strike Team

Joint management by
OCES & SCFC

-15 members

-45 hours of training

First call out to Jocassee
Gorges

Concept being used by 3
counties along the coast



Path Forward

- Develop a 5/10 year Strategic Plan
- Improvements to local ISO ratings - "5 in 5"
- Recruitment/Retention
 - Explorer Program
 - Incentive Program
 - Use of County Nurse
 - Use of Fire Corp style programs
- Training
 - Fully capable medical training
 - Expansion of props at Camp Rd training center
 - Increased utilization of field instructors
- Inspection/Code enforcement
- Build/Sustain relationships



Path Forward - Vehicles

- Capital Replacement Plan
 - 34 Engines on a 25 replacement cycle
 - 70 support apparatus
 - 12 Tankers, 2 Aerials, 14 brush trucks, medical response, service trucks, support
 - Maintained/supported
 - Unable to plan for regular replacement





One County.....

.....One Mission