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6A

6A.1 INTRODUCTION

Impounded in 1925 as the centerpiece of a real estate development, Lake Lure has had four different owners over its history. The Town of Lake Lure, its present owner, purchased the dam and the 720-acre reservoir in 1966. The challenges of owning and managing a complex facility that includes a hydroelectric plant, sewer system and 22 miles of shoreline are staggering enough for professionals. To do it with a manager/council form of government assisted by volunteers from the community posed some very interesting questions when developing a comprehensive Lake Management Plan in 1999.

The slow evolution of management practices has been less than scientific, yet relatively effective. The necessity for a Lake Management Plan surfaced in 1994 after the first of several catastrophic floods. Following this event and subsequent communication with the North American Lake Management Society (NALMS) and the North Carolina Lake Management Society (NCLMS), the learning curve was shortened dramatically and partnerships have been building in all directions. The NCLMS sponsored a lake management workshop at Lake Lure in the fall of 1996. Since then, goals have come into sharper focus, the network of resources has grown dramatically, and our town's residents have a heightened interest in being better stewards of their "centerpiece."

As the recreational use demands have increased with the exponential growth of the community, the town council pro-actively explored its latitude to regulate the boating activities on the lake in 2001. In 2003 the North Carolina General Assembly conveyed regulatory authority to an entity that it created at the town's request: the Lake Lure Marine Commission. During 2004, Dr. G.W. Sherk, an internationally-renowned waterway rights attorney, was retained by the town to research and define the town's ownership of the lake. The result of his work is the publication *The Law of Lake Lure*, which not only establishes the town's rights of ownership of the artificial water body, but also emphasizes the town's tremendous task to responsibly manage every facet of operation associated with the impoundment, the resource that with ownership carries the burden of accountability to all of Lake Lure's citizens.

Since its construction, the impoundment known as Lake Lure has been utilized as a multi-purpose facility. Beyond the primary purpose of drawing potential real estate investors to the Hickory Nut Gorge region, the lake has an ingenious design that continues to serve the residents in these numerous ways (listed in order of historic priority):

Recreation for Residents and Visitors

Swimming: Due to its location near the eastern continental divide and the incorporation of a sewer system in the original design, swimmers enjoy a class B trout water quality - better than most of the drinking water in the world.

Boating: Because the town owns the lake, the town has been able to adopt local regulations affecting access through boat permit fees and establishing safety standards not found on other lakes. As a result, Lake Lure has one of the safest boating records in the state.

Fishing: Once heralded as one of the top fishing lakes in the country, Lake Lure’s fishery suffered from neglect for many years. Current and proposed programs are starting to bring it back to its potential.

Water Sports: Water-skiing and other forms of water sports activities have been enjoyed on the lake since it was completed in 1925. Boating and water safety classes have helped educate participants in past years along with ski clubs that incorporated safety education into their programs of show and tournament skiing.

Hydroelectric Plant

The purchase of the lake and the hydroelectric plant has been one of the most important chapters in the town’s history. The generation of electricity supplements the tax base and helps the town provide services and maintain the infrastructure. Even before the town’s purchase, it has historically been operated as a “run of the river” operation with no more water released than flows from its tributaries unless droughts or floods necessitate otherwise. The lake is maintained at full pond, and lake levels are not to fluctuate (be lowered) more than six inches below full pond under normal circumstances.

Flood Control

While this was not the main purpose of the construction of the dam as may be the case with other impoundments, the Lake Lure dam does serve this purpose for the residents around the lake and downstream.

6A.2 Inventory and Existing Conditions

To manage the lake in a fashion that is consistent with the purposes summarized above, a number of conditions and associated issues must be considered. The following is a detailed inventory of facilities, operations, and procedures having to do with the proper maintenance of the lake. Each are monitored by the Lake Advisory Committee; at least one committee member is assigned to each element to ensure adequate attention is given on a regular basis.

Dam Operation and Sewer System

Both the dam and the sewer system, with its network of pipes under the lake and treatment plant below the dam, create challenging operational and maintenance hurdles for the town due to their age and unique design. The dam operator(s), town council, town manager, and the Lake Advisory Committee have developed open channels of communication to facilitate meeting these challenges. Periodic inspections of the dam and the sewer system are conducted to detect existing or potential problems. The most recent dam inspection was conducted in November 2006 and found the Lake Lure Dam to be generally good condition. The report noted that the town’s staff does a good job maintaining the dam and that no immediate actions are required at this time. The entire Lake Lure Dam report may be found as Appendix H at the end of the 2026 Lake Lure Comprehensive Plan.

A Standard Operations Procedure Manual for the dam/sewer plant operator was created in 2001 to safeguard the knowledge that has been accumulated over the years by the operators of these facilities. This manual includes regulatory guidelines established by federal, state and local agencies, plus policies established by the Town of Lake Lure.

It has become more critical over the years that the town establish and maintain a good communication link with the North Carolina Dam Safety engineer who monitors the integrity of the dam structure, gates and hydroelectric plant. The dam's Emergency Action Plan must be updated in accordance with the state's requirements. In addition, the town would be prudent to annually review all of the Federal Energy Regulatory Commission (FERC), Environmental Protection Agency (EPA) and other federal and state agency requirements with regard to dam and sewer plant operation.

The dam/sewer system operators monitor the structural integrity of the manhole system around the perimeter of the lake on a regular basis.

A lack of guidelines for property owners who wish to attach sewer lines to the manholes has been a source of controversy over the years. Creating standards is important for these individual "private" lines that pass above and below the "shoreline" between lakefront homes and the manholes. Plus, clarification on "right-of-way" issues remains an open action item for lake/sewer system management.

Dredging and Watershed Stabilization

Since Lake Lure's creation in 1925, the continuous flow of silt, sand and other debris has filled the lake at the mouths of its major tributaries. The recent increase in land disturbance within the lake's 95-square-mile watershed has amplified the sedimentation problem.

Hydraulic and Mechanical Sediment Removal

Attempts to reverse or slow down this condition have been very expensive. The town has purchased and sold several dredges over the years after inefficient attempts of the town's work force to perform maintenance dredging in the Rocky Broad River west of the main channel. As a result, outside dredging contractors have been employed to perform both the maintenance dredging as well as the periodic "big dig" that becomes necessary if the maintenance dredging is not performed regularly or a major storm brings massive amounts of material from upstream landslides.

Monitoring and Stabilization

On a more preventative approach, the town entered into a grant contract with the Environmental Quality Institute at the University of North Carolina at Asheville (UNCA) in 1996 to utilize its laboratories in a volunteer-performed water monitoring program known as the Volunteer Water Information Network (VWIN). Samples are taken monthly at nearly a

dozen sites on all of the tributaries feeding the lake and within the lake, as well. Tests for clarity, dissolved oxygen and temperatures at predetermined depths are also part of the lake sampling in the warmer seasons. With the help of local, state and federal agencies, the Upper Broad River Watershed Protection Program (UBRWPP) was established in 1998 with funding from the state's Clean Water Management Trust Fund. Both the VWIN and UBRWPP are aimed at addressing the stabilization of the watershed. In 2006, the town adopted the Soil Erosion and Sedimentation Control Regulations and created a staff position for an Erosion Control Officer.

Emergency Preparedness

Because of the recent explosive development, population influx in the summer and holidays, changing weather systems that bring heat and dry-spells, storms and heavy rainfall, natural disasters such as floods, human-caused disasters such as chemical spills, and the inherent risks of a dam, the town has put in place people and processes to handle a diverse and unpredictable set of emergency situations.

Emergency Management Office

The Town of Lake Lure's Fire and Emergency Management Office is staffed with three full-time personnel: a coordinator, assistant coordinator and a secretary. This office is charged with preparing for and responding to natural hazards as well as fires and other emergencies.

This office is responsible for maintaining and overseeing the town's Emergency Operations Plan and the Emergency Action Plan for the Lake Lure Dam as well as managing the Town Emergency Operations Center and response efforts in the event of a disaster.

The town council has adopted an all-hazard Emergency Operations Plan to identify response roles to hazards in the town. The plan includes response to flooding, winter storms, fires, earthquakes, hazardous materials incidents, evacuation and other emergencies. The plan was developed by input from all local emergency response agencies.

Emergency Action Plan for the Lake Lure Dam

The town hired an engineering firm to produce inundation maps and emergency operation procedures for the Lake Lure Dam. These maps and procedures were developed with input from Lake Lure Emergency Management and the hydroelectric plant operator. The plan is updated annually or more, if needed, by the Emergency Management Office.

Integrated Flood, Observation & Warning System (IFLOWS)

The system of automated flood warning devices located in parts of western North Carolina can now be monitored on an Internet Web site. Lake Lure Emergency Management monitors applicable rain and stream gauges in times of heavy precipitation to aid in response and evacuation efforts. Lake Lure Emergency Management has received funding this year to augment this system. The improvements will include a lake level gauge in Lake Lure and

additional stream gauges up the river. The installation of radio equipment and software in the Emergency Management Office will improve early warning.

Emergency Facilities

There are three identified emergency shelters in the Lake Lure, Chimney Rock and Bill's Creek communities. They are the Bill's Creek Fire Department, Chimney Rock Fire Department and Fairfield Mountains Fire Department-Station #1.

The town now has a designated Emergency Operations Center located at the Lake Lure Fire and Emergency Management Office in the Fairfield Mountains Fire Department-Station #2.

Warning Systems for the Public

Lake Lure and Chimney Rock Village have installed outdoor warning sirens to warn of flooding along the Broad River and the lake. There are a total of nine outdoor sirens from the county line near Bat Cave to the River Creek Campground in Bill's Creek. Three of these sirens are located adjacent to the lake. These sirens provide warning for most of the lake.

The town also has a contract with "Code Red," an emergency notification provider for the area. The company has the ability to notify every landline in town with an emergency message within minutes of activation.

Lake Lure Fire Boat

The Town of Lake Lure purchased a new fireboat in 2005 for the fire departments. This boat has dramatically improved response capabilities on and near the lake for fire and rescue emergencies. The operation of this boat has improved fire insurance ratings for everyone living within 1,000 feet of the shore. This results in about 25% savings in homeowners insurance annually for these homeowners. The fire departments are currently working to raise funds for a future fireboat house.

Water Quality

Lake water and all feeding streams are sampled monthly for the presence of certain metals, oxygen levels and temperature (see VWIN section for details). In addition, the lake is monitored for bacteria in the summer months every two weeks when the population, lake use and temperature levels are at their highest.

In the event of hazardous chemicals or unknown substance entering the lake, the fire departments and Emergency Management will respond to determine the source and magnitude of the problem, as well as the required response. After evaluating the situation, the Rutherford County Hazmat Team and the North Carolina Hazmat Team will be requested if necessary. "Code Red," the phone notification system, can be used to contact and warn residents in the proximity of the problem.

Surface Debris Removal

When storms and flooding occur, the incoming streams bring not only sediment but also tons of debris. The town has acquired large nets similar to those used on commercial trawlers to use to trap and remove logs and other floating debris from making its way to the dam or and number of coves. Not only is the debris unsightly and the source of an organic overload on the ecosystem, the floating or semi-submerged material also represents a real safety hazard to powerboat operators and their equipment. Use of the lake may be temporarily suspended. Town maintenance personnel and volunteers are called upon to clean up the lake in a timely fashion.

Fishery and Ecosystem

The Town of Lake Lure assumed the responsibility of fishery management from the North Carolina Wildlife Resources Commission (WRC) in the early 1990s. Since that time, the town has funded stocking the lake with several thousand trout, bass and bream. Creel limits and a catch and release season have also been implemented.

Since the WRC biologists can no longer be relied upon to serve as consultants on maintaining the fishery and ecosystem, the town must contract with independent biologists to perform periodic fishery analysis.

The VWIN program, regular testing for bacteria, dredging and surface debris removal efforts are all contributing elements in safeguarding the ecosystem of the lake. Maintaining marshes, wetlands and tree-lap (the fallen trees around the shoreline) creates habitat and spawning beds for all of the aquatic life forms.

Lake Structures

In 1992, the Lake Advisory Committee, at the request of town council, created the Ordinance Regulating the Construction and Use of Lake Structures, now renamed, Lake Structures Regulations. The zoning administrator, now known as the zoning enforcement officer, was placed in charge of issuing permits and inspecting the structures. The Zoning Board of Adjustments was asked to also serve as the Lake Structures Appeals Board, to review applications for variances and grant or deny any variances to the regulations.

The Lake Advisory Committee has worked with the town's administration to review and update these regulations and fostered a good working relationship with the government agencies that have proven to be valuable partners with its ongoing development and enforcement. They include the Army Corps of Engineers, NC WRC, NC Department of Water Quality, Rutherford County building inspectors, NCLMS, Isothermal Planning and Development, USDA/NRCS and the Mountain Valleys Resource Conservation and Development.

Recreation and Special Events

The portion of the plan devoted to boat use (Section 8B) was created after a year of evaluating survey data, hearing public comments at open forums, and on-site monitoring of boating activities by independent consultants. Dr. Ken Wagner and Barbara Wiggins, authorities on lake management, have provided a thorough evaluation and list of policies for the recreational and commercial boating use in the Lake Lure Boating Management Plan Review and Recommendations found as Appendix G in this plan. Section 6B summarizes that report. The following is a summary of other recreational activities and related facilities not addressed in the boat use section.

In brief, boating, swimming, fishing and water sports (water-skiing, tubing, knee boarding, wake boarding, etc.) are addressed in the Lake Lure Marine Commission's Lake Use Regulations, which are reviewed regularly by the LAC and LLMC.

The sales figures for boat permit fees, marina slip rental, and other lake-related income are reviewed annually to evaluate trends in lake use and to determine possible adjustments to fees or regulations.

Fishing tournaments, boat parades, rowing teams' spring training and antique boat rallies are examples of special events that are evaluated for the marine commission by the LAC.

The marina and beach are currently leased to a private venture which has proven to be a successful partnership. They have improved both the vitality and quality of the operation of these important assets of Town of Lake Lure.

The town authorized the Lake Advisory Committee to determine the placement of "Slow-No Wake" buoys. Current and potential placement sites are examined on a boat tour in the early spring of each year. Buoys are placed by the committee based on subjective observations and in response to written requests from lakefront property owners.

Law Enforcement

The town has maintained a police presence on the lake since the late 1950s. The NC WRC has also scheduled seasonal patrols on the lake by its enforcement personnel since the early 1960s. Jurisdiction over the boating and recreational regulations was conveyed to the Lake Lure Marine Commission by the North Carolina General Assembly in 2003. With this conveyance, the WRC enforcement officers along with the town's police can now enforce both the state's boating laws and local regulations that are unique to Lake Lure.

The safety and well-being of all who use and enjoy Lake Lure should be the top priority of all discussions and lake-related recommendations. Future town councils and committees should be vigilant, not only with maintaining safety, but also be careful not to over-restrict the activities and watercraft that can be used on Lake Lure. Any new ordinances should be carefully developed through

proper study and be designed to fulfill specific safety criteria to ensure the ongoing exceptional record of the lake and still allow some freedoms.

The patrolling of the lake has been a continuing concern of the LAC. Recommendations over the past few years have centered on frequency of patrols, time of patrols and enforcement of the ordinances. For the safety of all who enjoy the lake, the LAC has always considered the patrolling and enforcement of the state and local ordinances to be a high priority.

The following **Lake Enforcement & Patrol** mechanisms are currently in place:

- Police patrol (one principal patrol boat + one backup)
- NC WRC boat (minimal patrol during the past few years)
- Zoning administration, lake structures and erosion control inspections (by boat)
- Lake Lure Lakefront Owner's Association (LLLOA) Cove Watch Program
- Citizens on Patrol program coordinated by the police department
- Lake Use Regulations
- Lake Structures Regulations
- NC state boating regulations
- Lake commercial licensing program and commercial capacity modeling
- Boat permit program

6A.3 Summary of Issues and Opportunities

Dam Operation and Sewer System

- Dam inspection and safety issues are addressed by NCDENR Dam Safety Engineer and it is the responsibility of the town to preserve the integrity of the structure and update the required documents and action plans.
- Annually reviewing FERC, EPA and other federal and state requirements is a function of the responsibility associated with lake management.
- An SOP was developed to safeguard the knowledge of the operation of these facilities. As equipment is upgraded or changed, the SOP manual must also be updated.
- The water quality of the lake is dependant on the functionality of the sewer system. Expansion of the sewer plant's capacity and establishing guidelines for hook-ups is critical for the long term health of the lake.
- Establishing "run of the river" operation of the hydroelectric plant and water retention rights are important components in future negotiations with the sale of electricity and the demand for water from downstream communities.
- Request that Lake Lure place a representative on / becomes a member of the Broad River Water Authority.

Dredging and Watershed Stabilization

- Sedimentation at the mouths of the major tributaries has been a historical threat to the health of the lake and will become an even greater threat to operational capabilities – both for navigation

and hydroelectric impoundment capacity – with the increase in development and land disturbance.

- Soundings of depth measurements are performed annually and the latest technology is being explored to enhance the mapping of the lake bed.
- A maintenance dredging program and contribution to a dedicated reserve fund for emergency excavation after major storm events have become essential annual town budget items.
- The town has provided support for the VWIN and Upper Broad River Protection Program in their efforts to prevent erosion upstream and has adopted land disturbance regulations enforced by the town's erosion control officer within the town planning jurisdiction.
- Partnerships have been established with soil and water conservation agencies, dredging companies and material classifying/hauling contractors.

Emergency Preparedness

- The Emergency Management Office, fire and police departments and town personnel are dedicated and vigilant in monitoring, managing and responding to the ever-changing conditions of Lake Lure.
- The town has learned many lessons from the flood events of the 1990s and has become better equipped to respond to similar events in the future.
- With the ever-growing development on the shoreline, the addition of a fireboat to the local fire departments' fleet of vehicles increases their ability to respond in a shorter time-frame to both lakeshore and boat fires.
- Regular testing for bacteria at key points on the lake ensures that the water quality remains pure.
- Volunteers and town maintenance personnel have reduced the surface debris clean-up time after major storm events from weeks to days with the use of large trawler-style nets.

Fishery and Ecosystem

- The town assumed the responsibility of fishery management of Lake Lure in the early 1990s when the state's WRC decided to curtail its regional biologist's activities on the lake. With the 2006 fish kills drawing public attention to water quality issues, the town's responsibility as fishery managers is amplified.
- Since the early 1990s, the town has stocked the lake with thousands of fish – all of the same types as what would be considered indigenous: trout, bass, crappie, etc. Creel limits and catch and release seasons have also been established. Recently, there have been concerns voiced by fishing guides that the fish population has diminished. Independent biologists have been enlisted to reevaluate the stocking program and perform a fishery analysis that will establish the most effective stocking and regulatory options.
- Ecosystem issues are being addressed by VWIN, bacteria testing is being performed by the town and DWQ enforces the trout waters buffer. Attention to wetlands, marshes and tree-lap as habitat for aquatic life are important considerations for future restrictions and regulations. Concern about dissolved oxygen deficiencies and nutrient loading that leads to algae blooms are equally important and deserve monitoring.

Lake Structures

- The town owns the lake and regulates to the boundary elevation of 995' MSL.
- Structures are allowed to be constructed by upland property owners as long as they are permitted and are within the standards established by the town's Lake Structures Regulations.
- The Lake Advisory Committee periodically reviews the effectiveness of the regulations and recommends amendments to the town council. The zoning officer approves / disapproves permits and enforces the regulations. The Lake Structures Appeals Board examines requests for variances and approves / denies variances. Appeals from these decisions go to the town council.
- Open lines of communication have been established to enhance the continuity of the town's regulations with those established by federal, state and local agencies that have jurisdiction over structures that may be built at or below the lake boundary.

Recreation and Special Events

- The Boat Management section 6B addresses the majority of the recreation and commercial boating activities.
- The Lake Lure Marine Commission was created by the North Carolina General Assembly to regulate activities on the waters of Lake Lure. The Lake Use Regulations were adopted by the marine commission and are enforced by both local and state enforcement personnel.
- The Lake Advisory Committee is responsible for making recommendations to the marine commission on possible amendments to regulations, applications for special events such as boat parades, ski shows, rowing events and fishing tournaments. The Lake Advisory Committee is also responsible for the placement of uniform waterway markers, such as "Slow-No-Wake" buoys.
- The beach and marina operations which were once managed in-house by town staff are now leased to a private operator.

Law Enforcement

- At times in the past, citizens have been critical of lake enforcement activities for being too invasive. Chief among the complaints were random safety inspections and multiple inspections on the same boat over a short period of time.
- There are certain lake-specific regulations that are most often violated. Education and enforcement activities should focus on these.
- Many of lake management programs in place are supported by extensive volunteer efforts. Examples include database maintenance, application review and capacity modeling, vacation rental research, lake depth soundings and emergency debris net deployment. Ideally, most of these activities should be performed by town staff.
- Eventually, there needs to be a lake enforcement officer / manager who is a point of contact for citizens.

6A.4 Goals, Objectives and Policies

LMDS Goal 1: A constant lake level is maintained for recreation while maximizing hydroelectric output.

Objective:

LMDS-1-1: Ensure the continued integrity of the dam structure and provide a stable full pond environment for recreation while utilizing the “run of the river” flow to generate electricity.

Policy LMDS -1-1.1:

Utilize a “run of the river” operation of the hydroelectric facility at the dam to maintain a constant lake level (within six (6) inches of the full pond level of 990 feet above MSL) unless droughts, floods, utility purposes, or required maintenance necessitate retention or release.

- (1) Install gauges on tributaries for the purposes of monitoring flows into the lake.

Policy LMDS -1-1.2:

Manage operations in accordance with all applicable regulations and standards.

- (1) Adhere to DENR dam safety requirements.
- (2) Annually review FERC, EPA and other pertinent regulatory agency requirements.
- (3) Update the SOP Manual when any changes are made to the dam/sewer plant operation.
- (4) Lower the lake level approximately five (5) feet during the winter months for maintenance every third year.

Policy LMDS -1-1.3:

Clearly establish the town’s right to retain water within the impoundment at the discretion of the dam’s management.

Town should establish representation/membership on BRWA Board of Directors.

LMDS Goal 2: Expand sewer system capacity for future demand and define connection standards.

Objective:

LMDS-2-1:

Preserve the water quality of the lake with the expanding population of the community.

Policy LMDS -2-1.1:

Utilize the latest technology to monitor, maintain and improve the efficiency of the sewer system and protect the water quality of the lake.

Policy LMDS -2-2.1:

Establish standards for the “private” lines which connect to the manholes and define right-of-way easements to facilitate connections for lakefront properties.

LMDW Goal 1: Establish a maintenance dredging program and capital reserve for emergency excavation.

Objective:

LMDW-1-1: Ensure the ongoing removal of sediment from the mouth of the Rocky Broad River at the west end of the Main Channel and any other major tributary to the lake in the battle against the unending inundation of silt, sand and other materials.

Policy LMDW -1-1.1:

The town will establish a maintenance dredging program.

- (1) Update all lake bed profiles and depth soundings on an annual basis.
- (2) Based on the readings, prioritize the schedule for maintenance dredging.
- (3) Utilize hydraulic and mechanical dredging equipment to keep these key areas at historic depths.
- (4) Create settling basins to trap the sediment in accordance with the rules set forth in the Clean Water Act with appropriate permits from DWQ and USACE.
- (5) The town will contribute a minimum of \$100,000 per year from lake receipts (including boat permits) to a capital reserve fund for maintenance dredging activities.

Policy LMDW -1-2.1:

The town will contribute a minimum of \$100,000 per year from lake and hydro fund receipts to a capital reserve fund for emergency excavation after a major storm event or accumulation that was not captured by the maintenance dredging.

LMDW Goal 2: Stem the flow of sediment by stabilizing the source.

Objective:

LMDW-2-1: Promote watershed stabilization efforts.

Policy LMDW -2-1.1:

To mitigate the effects of land disturbance:

- (1) The town will support the work of local watershed stabilization organizations.
- (2) The town will enact and enforce local land disturbance regulations to prevent damage to all of the waterways within the planning and zoning jurisdiction of the town.
- (3) Reclamation to pre-construction depths will be the financial responsibility of any party found in violation of land disturbance regulations that results in sedimentation altering lake depths (shallower than pre-construction depths).

LMEP Goal 1: Establish adequate and effective response to all emergencies.

Objective:

LMEP-1-1: Be prepared for all anticipated emergencies by monitoring, equipping, staffing, educating and communicating appropriately.

Policy LMEP -1-1.1:

Reduce the impact of emergencies.

- (1) The town's emergency coordinator will annually update and regularly publicize the town's emergency action plans and warning protocol.
- (2) Equipment and shelters used for such emergencies will be maintained in good condition.
- (3) Monitoring of water quality will be done on a monthly basis unless *E. coli* colonies exceed 250 parts per million (PPM) – in which case the testing will be performed weekly until the source of the contamination is discovered and stopped.
- (4) The town's fireboat will be maintained and manned for rapid response to shoreline and boat fires.
- (5) Nets for containing spills and collecting floating debris from storms will be maintained in good condition. The town will equip the appropriate departments with adequately powered watercraft to tow the nets when filled with debris.

Policy LMEP -1-1.2:

Establish a communication program for notifying citizens of emergency situations and activities (Web site, phone calls, color flags on the lake, etc.).

LMFE Goal 1: Maintain trout water status and a stable environment for aquatic habitats.

Objective:

LMFE-1-1: The town, as owner and caretaker of Lake Lure, accepts the responsibility of preserving the aquatic habitat within the boundaries of the town and supporting all efforts to do the same within the watershed.

Policy LMFE -1-1.1:

Regulate land disturbance activities and protect delicate wetlands and marshes as a means to preserve the exceptional water quality and the habitat for aquatic life in Lake Lure and its tributaries.

LMFE Goal 2: Enhance Lake Lure's fishery .

Objective:

LMFE-2-1: Balance the fish population of various game and forage species that are considered indigenous to the lake to enhance the fishery.

Policy LMFE -2-1.1:

The town will contract with independent biologist(s) on a periodic basis to analyze the lake's fishery resource to report on its health and make recommendations for stocking program.

Policy LMFE -2-2.1:

The town will stock the lake annually based on the biologist's recommendations.

Policy LMFE -2-3.1:

Fishing activities will be regulated through regulations established by the Lake Lure Marine Commission and the NC WRC. These regulations will be actively enforced by the town's lake patrol.

LMLS Goal 1: All lake structures are erected and maintained according to the lake structures regulations.

Objective:

LMLS-1-1:

Policy LMLS-1-1.1

Improve the safety and appearance of the structures permitted within the boundaries of Lake Lure.

- (1) Develop minimum appearance and material standards for all lake structures developed in the future.
- (2) Identify all shoreline areas subject to substantial erosion and establish an erosion control plan to mitigate it.
- (3) Update and enforce construction standards for the various types of lake structures for safety and appearance.
- (4) Communicate and coordinate between the town council, marine commission, Lake Structures Appeals Board, Community Development Department, and all outside governmental agencies that oversee such lake structures to ensure compliance with current laws and regulations.
- (5) Conduct a review of all existing lake structures to ensure proper maintenance. *All maintenance issues uncovered must be reported to the town and notice sent to the property owner with a deadline for compliance.*

LMLS Goal 2: Balance between lake use with upland property needs.

Objective:

LMLS-2-1: Limit shoreline structure density.

Policy LMLS-2-1.1:

Develop a long-range plan for shoreline structures for environmental and boat user needs.

- (1) Determine the number of marinas and locations.
- (2) Determine the number and locations of cluster moorings.
- (3) Review the number of slips allotted to marinas, cluster moorings, and individual lot owners according to their shoreline measurements.

LMR Goal 1: Permit lake recreation that the size and shape of Lake Lure will safely accommodate.

Objective:

LMR-1-1: Continue to maintain and improve and enhance safe water activities.

Policy LMR-1-1.1:

Review all of the town's lake ordinances on an annual basis to ensure the health, safety and welfare of the users of the lake are considered and followed.

- (1) Commercial boating operations shall be regulated separately by the marine commission after review by the Lake Advisory Committee (LAC) for the varied forms of business activities. Currently there are eight (8) categories with specific permit levels for each, different permit costs, and various operating restrictions.
- (2) Non-commercial boating operations shall also be regulated by the marine commission after review by the LAC with different permit costs for non-residents and residents. Permit limits exist for both non-residents and residents. Also established are horsepower limits and specified hours of operation.
- (3) Safe swimming practices are limited to specific beach areas or when accompanied by a boat unless within 50 feet of shore.
- (4) Placement of slow-no-wake buoys 75 feet from the shoreline in selected locations are to protect boaters and swimmers.
- (5) Special events such as those of the Lake Lure Ski Club, visiting rowing teams and other users need to be approved by the marine commission after review by the LAC.
- (6) Evaluation of the operational cost of the lake should be completed annually to inform the LAC concerning the future cost of permits to use the lake.
- (7) The Hickory Nut Gorge Chamber of Commerce, the town and other organizations should promote lake recreational activities during the non-peak season as this time is currently underutilized. The Olympiad has also recently had several lake activities during the peak season.
- (8) The town shall perform water quality checks in selected locations monthly during the peak season and as needed in the non-peak season to ensure the safe use of the lake. Corrective actions are mandatory when unsafe conditions occur.

LMLE Goal 1: Adequately and effectively enforce lake use regulations.

Objective:

LMLE-1-1: Ensure there is an adequate and effective on-lake patrol presence to achieve compliance with regulations and ensure safe boating.

Policy LMLE -1-1.1:

Utilize a schedule of minimum on-water patrol requirements.

The following is a recommended on-water patrol schedule for the town’s police officers or lake operations staff. This schedule should be assessed and revised annually. In the event of mechanical problems with the primary boat, the backup boat or another town boat is to be used. Monthly patrol logs are to be kept and a patrol schedule report issued.

	Peak Season Holiday Weekends	Peak Season Weekends	Peak Season Weekdays	Shoulder Season Weekends	Off Season
Period	Memorial Day Fourth of July Labor Day	June July August	June July August	May September	October November December January February March April
Hours Covered	F: 3pm – 9pm Sa: 9am – 9pm Su: 9am – 9pm M: 9am – 9pm	F: 3pm – 9pm Sa: 9am – 9pm Su: 9am – 9pm	Mon - Fri: 9am – 9pm	Fri, Sat, Sun: 9am to 5pm	
On-Water Patrol	Minimum of one patrol boat at all times, two boats from 12:00 to 4:00	Minimum 6 hours of patrol each day	Minimum 2 hours of patrol each day	Minimum 2 hours of patrol each day	Minimum 2 hours of patrol each week
Total On- Lake Hours	54 hrs x 3 weekends	18 hrs x 13 weekends	2 hrs x 65 days	6 hrs x 8 weekends	2 hrs x 30 weeks
634 hours	162 hours	234 hours	130 hours	48 hours	60 hours

Policy LMLE-1-1.2:

Define the expectations for lake enforcement patrol activities

- (1) Establish and maintain positive relationships with boaters.

The principle objective of lake patrol should be to maintain safe boating conditions and activities. To this end, officers should strive to make themselves visible and interact frequently with boaters. This does not simply mean enforcement stops and safety checks, but welcome greetings, orientations, offers of assistance, etc. Officers or staff need to establish a positive relationship with the boating community and reinforce their mission of ensuring safety for all. They should become well acquainted with regular boaters and aim to have some contact with all boaters, particularly infrequent boaters, visitors or guests.

(2) Increase boater education.

The lake patrol officers or staff should strive to educate any boaters who are engaged in activities that are prohibited, reckless or discourteous. Most violations of lake regulations occur due to an unawareness of the law. Not all boat operators are residents who are familiar with the local and state regulations. There are visitors operating residents' boats, visitors who are operating rental livery boats and out-of-town visitors who bring their own boats. Additionally, there will always be residents who may not be aware of all the regulations.

(3) Retain the option to issue warnings instead of citations.

In accordance with the practices above, it is appropriate at times for the officer to simply issue warnings rather than a citation, according to the officer's judgment. In all cases the warning or citation is then reported on the officer's Daily Activity Report. This report form is turned in to the police department on a daily basis.

(4) Conduct regular shoreline inspections.

There is no need to perform a defined circuit of cove inspections during each lake patrol. The full lake shoreline, including all coves, should be inspected on a regular, random basis, much as a neighborhood would be occasionally patrolled by a land-based officer. During inspections, officers should be alert to:

- *Evidence of problems with lake structures or violations of the Lake Structures Regulations.*
- *Evidence of problems with homes (e.g, open doors while unoccupied, smoke).*
- *Improper moorings (blocking traffic, ordinance violations).*
- *Wake (speed) violations.*

(5) Perform periodic boat permit checks.

The boat permit is the most fundamental boating management tool for the town and needs to be verified on every boat. All discussions with boat operators should include a check of the permit sticker and/or certificate.

(6) Perform fishing license checks.

Fishing licenses should be inspected from all fishermen observed on land or in a vessel on the lake.

Policy LMLE-1-1.3:

Focus lake patrol on the following critical areas:

- (1) Wake speed in no-wake zones
- (2) Wake speed before or after hours

This is commonly violated and difficult to enforce. It is most frequently seen as fishing boats speeding across the lake before 7 a.m. or boats returning home at high speed after 9 p.m.

(3) Towing more than two (2) individuals

This is an expressly prohibited activity that is too commonly seen. In most cases, it is due to a lack of awareness of the regulation. This could include three (3) or more skiers or tubes behind a single boat or three (3) or more people sharing a tube.

Note: Boats engaged in practices or shows of the Lake Lure Ski Club are exempt from this restriction. These boats will display a club sticker.

(4) Rental boat operators

In comparison to boat owners, this group of operators generally has less experience piloting a boat. Renters have a responsibility to understand and follow all lake regulations. Rental operation managers have a responsibility to communicate the lake regulations to each renter. During lake patrols, particular attention needs to be paid to rental boats in operation on the lake. These boats will display a commercial boat permit sticker, although not all commercial boats are rentals.

(5) Boats without permits

The regulations clearly prohibit the operation of any vessel on the lake without a valid permit.

(6) Unsafe boating

Boating in an unsafe manner is a violation of state law. Common examples include:

- *Not keeping a safe distance from other boats and skiers.*
- *Passengers hanging their feet over front of boat.*
- *Overloaded or unbalanced boat.*

Large groups on pontoon boats are sometimes unaware of how their weight distribution is affecting the boat. This is often more easily seen from shore or other boats. Unbalanced or overloaded boats can flip or be driven underwater if uncorrected.

- *Reckless boating.*

When on patrol, officers need to observe all boating behaviors and alertly intervene with any activities that pose a risk to life or property.

LMLE Goal 2: Respond to citizens' reports or complaints of lake-related issues adequately.

Objective:

LMLE – 2-1: Ensure there is adequate response and follow up to citizens' reports or complaints

Policy LMLE-2-1.1:

Establish procedures for handling all lake-related citizen calls.

- (1) Emergency calls should be made to 911.
- (2) Other calls for lake enforcement should be made to the police non-emergency line: 625-4685.
- (3) During regular hours, calls are answered by police department and dispatched at the police station. When the police department is not manned, calls are answered by Rutherford County Central Communications.
- (4) 100% of all lake/boating calls to these numbers must be documented with the following information:
 - date and time
 - caller name
 - caller phone number
 - activity or issue reported
 - area of lake
- (5) In cases where a citizen call requests an investigation or enforcement action, a follow-up call should be made to provide the citizen with details of the response (e.g., was an officer dispatched, was there intervention?)

LMLE Goal 3: Enhance recordkeeping and lake enforcement data.

Objective:

LMLE-3-1: Provide additional information on patrols, observations and enforcement actions that will be used to guide future policies and regulations.

Policy LMLE-3-1.1:

Provide additional information on patrols, observations and enforcement actions that will be used to guide future policies and regulations.

- (1) Patrol log

All patrol activities and observations must be recorded using an enhanced activity logging system. It is particularly important to record any observed

activities that resulted in written or verbal warnings. This helps to build an accurate record of boating behavior.

(2) Recorded activities

Current Activity Name	Proposed Activity Name (for ease of reporting)
Lake Patrol	Lake – Patrol
Cove Check	Lake – Cove Check
Lake Permit Check	Lake – Boat Permit Check
Safety Check (lake)	Lake – Safety Check
Life Jacket Check	Remove – duplicate of above?
Fishing License Check	Lake – Fishing License Check
Boater Assist	Lake – Boater Assist
Stranded Boat	Lake – Stranded Boat
Towed Stranded Boat	Lake – Towed Stranded Boat
Overtured Boat	Lake – Overtured Boat
Citation (lake)	Lake – Citation
Lake Ordinance Violation	Lake – Ordinance Violation
Alcohol Citation (lake)	Lake – Alcohol Violation
Boating While Impaired	Lake – Boating While Impaired
Unauthorized Swimmer	Lake – Unauthorized Swimmer
Verbal Warning (lake)	Lake – Verbal Warning
Warning Citation (lake)	Lake – Warning Citation

This list of recorded activities contains both the generic (ordinance violation) and the specific (unauthorized swimmer). In its current state, a summary report wouldn't provide enough detail on the specific types of infractions or activities logged— you'd need to get more detail from the citation or warning records.

(3) Recording Warning and Citations

All citations and warnings should be recorded with the following minimum information:

- a. operator information (name and address)
- b. owner information (if different from operator)
- c. observed activity or ordinance infraction.

Policy LMLE-3-1.2:

Produce regular reports that are to be used by the police department, marine commission and Lake Advisory Committee.

(1) Monthly reporting

There are four reports that are to be prepared and distributed monthly to the marine commission and Lake Advisory Committee:

- Patrol times – listing the date, start and stop times of all lake patrols and responses.
- Activity report – summary of lake-related activities logged during patrols and responses.
- Citations and warnings detail – detailed information from each citation or warning.
- Citizen calls (lake related) – record of citizen calls and on-lake response (activity reported, date/time, and caller information unless the call was taken from an anonymous caller or from a caller who requested that law enforcement not reveal their identity).

LMLE Goal 4: Control launch points on the lake.

Objective:

LMLE-4-1: Implement a program of launch ramp management.

Policy LMLE-4-1.1:

Regulate launch ramp operations.

(1) Launch Ramp Operation Permit

There are two categories of launch ramps on Lake Lure: private use and general use. Private use ramps are typically located on residential lots and are for use only by the owner. General use ramps are typically associated with public or private marinas that are accessible by multiple boat owners.

All operators of general use ramps must possess a valid launch ramp operation permit issued by the marine commission (applications available in the town offices). Ramp operators are responsible for enforcing regulations that require all boats placed on Lake Lure to possess a valid permit. Police and town staff should periodically inspect launch ramps and ramp management procedures.

(2) Securing Launch Ramps

Launch ramps that do not possess an operation permit or are not open to general use must be secured against use (by other than the owners or designees) with a chain and padlock.

(3) Launch Ramp Signs

Each general launch ramp shall be posted with a sign that informs the user of critical lake regulations.

LMLE Goal 5: Effective administration of all lake-related programs, policies, issues and activities.

Objective:

LMLE-5-1: Shift lake-related administrative activities to dedicated town staff.

Policy LMLE-5-1.1:

Staff a permanent position of Lake Operations Director to coordinate and execute the myriad lake-related activities, recordkeeping and reporting. This position should be the primary on-water education and enforcement presence.

Policy LMLE-5-1.2:

Prepare a standard operations manual for all lake-related activities. This manual will detail staff policies, procedures and expectations.