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***RMP Program: Lake Management Area***  
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<p><b>Issue Overview</b></p>	<p>The RMP provides for the protection and enhancement of Highlands Lakes and their environs, including Highlands lake communities. Overbuilt, damaged and poorly managed shoreland areas can result in the degradation of water quality, harm to the lake ecosystem, the decrease of natural aesthetic values, and the overall loss of property values for lake communities. Lakes can be harmed by pollutant sources in the watershed area draining to them. Most existing lake communities were built out prior to modern environmental requirements. Some have sewer systems, but many rely on septic systems (or even cesspools) on inadequately sized lots. Studies indicate that nearly every public lake (privately-owned lakes were not evaluated) in the Highlands is experiencing contamination, often including excessive bacteria and nutrients. Many lake communities have been experiencing intensifying land uses as the original buildings are torn down and replaced by larger structures. The Council seeks to identify redevelopment opportunities to improve community character and value, to both protect natural resources and to enhance and restore the quality of lake environments in the Region.</p>
<p><b>RMP Policies and Objectives Addressed</b></p>	<p><b>Policy 1.7.1.1</b> To establish tiers of lake management appropriate to management strategies that help protect lake water quality and community value from the impacts of present and future development.</p> <p><b>Objective 1.7.1.1.1</b> <i>Lake management programs shall use the following management tiers around Highlands Region lakes of greater than 10 acres in size:</i></p> <ul style="list-style-type: none"> <li>• <i>A <u>shoreland protection tier</u> consisting of an area measured 300-foot perpendicular from the shoreline of the lake;</i></li> <li>• <i>A <u>water quality management tier</u> consisting of an area measured 1,000-foot perpendicular from the shoreline of the lake, but outside of the shoreland protection tier;</i></li> <li>• <i>A <u>scenic resources tier</u> consisting of an area measured 300 to 1000-foot perpendicular from the shoreline of the lake, scaled based upon the view distance from the opposite shoreline, and determined through the size and layout of the lake, with wider portions of lakes having longer view distances;</i></li> <li>• <i>A <u>lake watershed tier</u>, consisting of the entire land area draining to the lake, through the evaluation of drainage areas using LiDAR topographic analyses or other topographic data where LiDAR data are not available.</i></li> </ul> <p><b>Policy 1.7.1.2.</b> To establish management strategies to help protect lake water quality and ecosystem values from the impacts of present and future development.</p>

**Objective 1.7.1.2.1.** *Implementation of standards regarding lake ecosystem and water quality in the shoreland protection tier to address direct and proximate impacts upon the lake, including but not limited to shoreline modification and development (including limits to the hardscaping of shorelines using bulkheads, rip-rap and walls), docks, piers, boathouses, dredging, vegetation removal, and increased impervious cover. Pollutant discharges shall also be addressed, including the potential for contamination from septic systems, cesspools and other wastewater management systems within the tier that are failing or are inadequately designed and constructed. As such systems fail, landowners should be required to provide upgraded treatment to minimize pollutant movement to the lake.*

**Objective 1.7.1.2.2.** *Implementation of standards regarding land use compatibility and water quality in the water quality management tier, to prevent or reduce continuous pollutant sources that can contribute pollutants overland or through ground water to the lake from greater distances than the shoreland protection tier.*

**Objective 1.7.1.2.3** *Implementation of standards regarding the protection of visual and scenic resources in the scenic resources tier, including but limited to requirements for vegetative screening of buildings, building height limitations, and limits on tree and understory removal for reasons other than public health and safety or as the minimum necessary to make reasonable use of the designated building envelope for the parcel proposed for development.*

**Objective 1.7.1.2.4** *Implementation of lake restoration plans to restore, protect and, where possible, enhance lake water quality through management of pollutant sources in the lake watershed tier, including but not limited to the development, adoption and implementation of TMDLs by NJDEP pursuant to the Water Quality Management Planning Rules, N.J.A.C. 7:15.*

**Policy 1.7.1.3.** To require that conforming municipalities adopt and implement the standards applicable to the shoreland protection, water quality management and scenic resources tiers for application to lakes with public recreational access or ownership (i.e., with shorelines that are not entirely privately-held and managed through a lake association).

**Policy 1.7.1.4** To require that conforming municipalities develop and adopt lake restoration plans, with sufficient input from lake community residents and landowners, for each of the municipality's developed lakes with public recreational access or ownership, to include watershed delineation, description of point and nonpoint sources of pollution in the watershed, lake monitoring schedules, existing and proposed in-lake management techniques, and recommended watershed best management practices. TMDLs adopted by the NJDEP to address known pollution problems may be used as lake restoration plans.

**Objective 1.7.1.4.1** *Provide Lake Management Plan guidance to municipalities that includes watershed delineation mapping methodology, point and nonpoint source pollution references, example lake monitoring schedule with monitoring goals and methods, existing successful in-lake management techniques, and best management practices. Provide conformance grant funding as necessary to develop plans.*

**Objective 1.7.1.4.2** *Replace septic systems and cesspools on small lots in close proximity to lakes with upgraded individual treatment systems, communal septic systems or community-based wastewater systems wherever feasible and cost-effective. Community-based systems should not provide for additional land development capacity except for exempt lots within that existing lake community that are not environmentally constrained, or for lots in a Planned Community Zone that are not environmentally constrained and are contiguous to the existing lake community.*

**Policy 1.7.2.1** To provide guidance regarding evaluation of and standards for lake character and aesthetics that shall be adopted by municipal ordinance for application to publicly-owned lake communities, or that may be voluntarily adopted by privately-owned lake communities within their by-laws and regulations.

**Policy 1.7.2.2** To encourage increased public access to publicly-owned lakes, within the lake's carrying capacity and while maintaining the lake character.

**Policy 1.7.2.3** To discourage or control teardowns that result in altered lake community character, and to encourage community-supported limitations in lot coverage and building height for new construction.

	<p><b>Policy 1.7.2.4</b> To establish and implement performance and development standards for shoreline uses which achieve compatibility among shoreline activities and nearby neighborhoods.</p> <p><b>Policy 1.7.2.5</b> To encourage municipalities to utilize recreational sites as opportunities to educate the public to the ecological value of lake environs.</p> <p><b>Policy 1.7.2.6</b> To encourage municipalities to explore appropriate means to provide public recreation at the shoreline and on the water while ensuring retention of opportunities for passive recreation (e.g., natural areas, open space).</p> <p><b>Policy 1.7.3.1</b> To develop innovative financing and administrative mechanisms for the maintenance and operation of public and private dams and lakes, where those dams and lakes provide a continuing public or private purpose.</p> <p><b>Policy 1.7.3.2</b> To restore appropriate habitats in the lake beds and to prevent, mitigate or restore downstream habitats from damages due to lake drainage, when dams are allowed to fail or are deliberately breached or removed.</p>
<p><b>Program Summary</b></p>	<p>This program seeks to protect, restore and enhance the water quality of Highlands lakes and to protect the unique character of Highlands lake communities. It facilitates land use and water resource planning on the basis of lake management tiers:</p> <ul style="list-style-type: none"> <li>• A <u>Shoreline Protection Tier</u> comprised of all land within 300 feet of the shoreline of a Highlands Lake</li> <li>• A <u>Water Quality Management Tier</u> comprised of land within 1,000 feet of the shoreline of a Highlands Lake</li> <li>• A <u>Scenic Resources Tier</u> consisting of an area measured 300 to 1,000 feet from the shoreline, scaled based upon the view distance from the opposite shoreline, and determined through the size and layout of the lake, with wider portions of lakes having longer view distances</li> <li>• A <u>Lake Watershed Tier</u> consisting of the drainage area of a Highlands Lake as determined through the use of LiDAR topographic or other topographic data where LiDAR is not available, within which actions will be focused on the restoration of lake water quality, including activities under the <i>Water Quality Restoration Program</i>.</li> </ul> <p>The program also includes a lake and dam protection and enhancement component and a homeowner’s educational brochure and awards program component.</p>
<p><b>Shoreland Protection Tier</b></p>	<p><b>Program Description</b></p> <p>The Highlands Council will establish standards regarding lake ecosystem and water quality in the shoreland protection tier to address direct and proximate impacts upon the lake. Such standards include, but are not limited to, the following:</p> <ol style="list-style-type: none"> <li>1. Alteration of the shorelines shall be limited to the minimum disturbance necessary to provide for water dependent recreational uses such as beaches, docks and boat houses, generally limited to 10% or 25 feet of the shoreline of any parcel proposed for development, but subject to modification to limitations more appropriate to specific lakes</li> <li>2. Where there is little or no wave action, reeds and other wetland species that are below the high water mark shall be preserved or restored</li> <li>3. Existing shoreland vegetation within 50 feet of the shoreline shall be protected and preserved except for a minimum area permitted, established through municipal development regulations, for water dependent recreational facilities. Limitations should be more stringent for the first 25 feet. Restoration of native vegetation shall be required where development is proposed on property with existing disturbed areas within 25 feet of the shoreline.</li> <li>4. No new structure other than water dependent recreational facilities shall be constructed within fifty (50) feet of the shoreline;</li> <li>5. The width and length of piers and docks shall be controlled in municipal</li> </ol>

	<p>development regulations to achieve the minimum disturbance of shoreline, shoreline vegetation and wetlands vegetation possible with due consideration to safety, including provisions for piers and docks held in common to reduce the total number of new docks and piers.</p> <ol style="list-style-type: none"> <li>6. Boat lifts, where used, shall be encouraged as a means of providing more light to the waters below and shall elevate boats a minimum of one foot above high water.</li> <li>7. Development adjacent to Highlands lakes, which are Highlands Open Waters, shall include a protection buffer of 300 feet from the edge of the Highlands Open Water feature, or a lesser buffer if allowed based on RMP policies, and all development shall comply with buffer standards which provide for the protection of Highlands Open Waters</li> </ol>
<p><b>Water Quality Management Tier.</b></p>	<p><b>Program Description</b></p> <p>The Highlands Council will establish standards regarding land use compatibility and water quality in the water quality management tier to prevent or reduce continuous pollutant sources that can contribute pollutants overland or through ground water to the lake from greater distances than the shoreland protection tier. Such standards include, but are not limited to, the following:</p> <ol style="list-style-type: none"> <li>1. All parcels of land proposed for development shall be improved with landscape or garden elements which retain storm water</li> <li>2. Runoff from roofs, driveways and patios shall be directed into landscape or garden elements which retain and filter storm water, or to infiltration practices</li> <li>3. Green roofs are strongly encouraged to clean and slow the release of storm water</li> <li>4. To the extent possible, impervious surfaces should drain away from the shoreline</li> <li>5. Storm water should be directed to a stormwater management train that cleans and reduces the rate of runoff.</li> <li>6. The stormwater management train should maximize the use of swales with natural vegetation or constructed wetlands and discharge through a constructed wetland or other channel that maximizes aeration and cleaning of the water</li> <li>7. The stormwater improvements shall be designed in accordance with NJDEP regulations at N.J.A.C. 7:8 or the municipal stormwater management ordinance where more stringent</li> <li>8. Where sufficient land is available, natural swales, constructed wetlands, and other stormwater facilities shall be used</li> <li>9. To the extent possible, landscape or garden elements which retain storm water shall be designed so that during larger storms, the water is released primarily through overland sheet flow across a vegetated, naturally landscaped area</li> <li>10. The discharge of stormwater shall, wherever feasible, be through sheet flow which may require the construction of an outlet that disperses the water over a substantial distance at a constant elevation so that water sheet flows over the top</li> <li>11. Septic systems within the Lake Management Zone must comply with the Zone septic system density requirements with septic systems no closer to the lake than the Highlands Open Water Buffer or 100 feet, whichever is greater; clustering shall be permitted where it results in a greater buffer between the lake and the septic systems than would be feasible without clustering</li> <li>12. Community wastewater treatments will service parcels of lands within the Lake Management Zone wherever feasible in order to eliminate pollution of Highlands Lakes by discharges from septic systems</li> </ol> <p>The Highlands Council will work with other State agencies and counties to create a Highlands Storm Water Management Improvement Program comprised of:</p> <ol style="list-style-type: none"> <li>1. A grant program in support of studies of existing stormwater systems by Highlands communities with regard to existing capacity</li> </ol>

	<ol style="list-style-type: none"> <li>2. A Bibliography of Stormwater Management Literature related to retrofitting stormwater management systems to reduce runoff and improve the quality of runoff. The Bibliography shall include information with regard to the use of landscape installation and maintenance to reduce pollutants.</li> <li>3. A Highlands Council awards program in conjunction with Highlands municipalities to encourage land owners to participate in stormwater system remediation.</li> </ol>
<b>Implementation of Lake Restoration Plans</b>	<p><b>Program Description</b></p> <p>The Highlands Council will encourage municipalities to implement lake restoration plans to restore, protect and, where possible, enhance lake water quality through management of pollutant sources in the lake watershed (see also the <i>Water Quality Restoration Program</i>). The restoration plan will include, but not be limited to the following elements:</p> <ol style="list-style-type: none"> <li>1. Delineation of the lake’s watershed</li> <li>2. Description of point and nonpoint pollution sources in the watershed</li> <li>3. Lake monitoring schedules</li> <li>4. In-lake management techniques</li> <li>5. TMDLs adopted by the NJDEP to address known pollution problems</li> </ol>
<b>Scenic Resources Tier</b>	<p><b>Program Description</b></p> <p>The Highlands Council will establish standards regarding the protection of visual and scenic resources in the Scenic Resources Tier from development or redevelopment that include, but are not limited to, the following:</p> <ol style="list-style-type: none"> <li>1. Building heights should be limited so that the top of a building does not exceed thirty (35) feet except in Designated Centers where a greater height is in keeping with existing community design</li> <li>2. All buildings shall be screened from view from lake by trees and other natural plant material</li> <li>3. The exteriors of all new or redeveloped buildings shall be finished with materials which are compatible with a natural or historical character of the Highlands Region</li> <li>4. New buildings shall be prohibited within areas which are Severely Constrained Slopes and Moderately Constrained Slopes</li> <li>5. Clearing of trees should be limited to the minimum area needed for the footprint of a building</li> <li>6. Outdoor lighting should be provided by cut-off fixtures and be directed away from the shoreline</li> </ol>
<b>Lake and Dam Management</b>	<p><b>Program Description</b></p> <p>The Highlands Council will implement measures to encourage the maintenance of public and private lakes and the restoration of lake beds and downstream areas when lakes are drained. Such measures may include, but are not limited, to the following:</p> <ol style="list-style-type: none"> <li>1. Creation of Highlands Financing and Administrative Handbook for dam and lake maintenance and operation addressing creative public and private financing programs as appropriate for the lake or dam ownership.</li> <li>2. Preparation of a Best Practices Manual for dam and lake maintenance</li> <li>3. Preparation of a Best Practices Manual for dam removal, including the protection of downstream resources from the migration of sediments and other pollutants, and the establishment of stable terrestrial or wetland ecosystems in former lake beds</li> <li>4. Provision of grants in aid to establish demonstration model dam and lake programs for publicly owned dams</li> </ol>
<b>Education and Awards Program</b>	<p>The Highlands Council will develop a Lakes Landscape Handbook and awards program for waterfront restoration and environmentally friendly landscaping.</p> <p>In both the 300-foot and 1,000-foot tiers, landscaping and yard maintenance can make a contribution to improving lake quality. The handbook will focus on how-to material for the landowners to illustrate how they can replace lawns and restore beach areas to a</p>

	<p>natural condition that is attractive and enhances the property value. Having an awards program that recognizes environmentally sensitive restoration will be an incentive for people to undertake these projects and advertise for the program.</p> <p>The Highlands Council will coordinate with NJDEP, the landscape professional and hardware and garden centers to promote the use of fertilizers for lawn usage that do not contain phosphorous. Ideally, the sellers will not carry the lawn products that contain phosphorous, thus making unwitting usage very difficult. These sellers can also promote wise waterfront landscaping and maintenance.</p>
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