High Rock Lake Septic System Load Management

Division of Water Resources Policy Recommendation

Background

Older on-site wastewater systems constructed before the implementation of modern performance standards are more likely to experience malfunctions and require pump-outs or repairs than newer systems constructed with new development. Steering Committee members expressed concern that certain residential areas in the High Rock Lake Watershed were constructed up to and over a century ago, long before modern system design standards and technologies, which makes ongoing failure more and more likely as these areas age. This is especially true in rural areas located along the Yadkin River or the Lake itself.

Despite the ongoing potential for failure, these types systems have been documented as contributing approximately 1% of the overall nutrient load to High Rock Lake (Tetra Tech 2012). At their meeting on July 28, 2023, the High Rock Lake Steering Committee opted not to redistribute baseline on-site wastewater loads as "unmanaged" for the purpose of finalizing watershed nutrient load reduction goals. Members expressed concern regarding the degree to which redistribution would send a message that load reductions are either unachievable or unimportant. By a simple majority Steering Committee members voted to request draft regulatory options from DWR. DWR Planning staff engaged with staff from the DHHS Division of Public Health, Environmental Health Section to clarify current regulatory requirements for County health departments and private septic system owners.

Current Status

County health departments are required to perform on-site wastewater system maintenance for all systems installed after July 1, 1992 according to the schedule specified in 15A NCAC 18A .1961. Maintenance inspections are required on a rotating basis as systems are installed, and repairs are completed in the order in which needs are identified. Older developments with older on-site wastewater systems are not prioritized by County health departments, and so the obligation to inspect, maintain, and repair older systems falls primarily to private homeowners. Many counties in the state do not have sufficient local capacity to comply with required inspection schedules in 15A NCAC 18A .1961, and each department maintains their own processes and procedures for mapping and performing inspections. Some have digitized their inventories using GIS technology, and others have not.

EPA NPDES MS4 permit obligations include a requirement for illicit discharge detection and elimination (IDDE), and 14 MS4 Phase I/II jurisdictions in the High Rock Lake Watershed are currently implementing their MS4 programs, each of which are audited by DEQ on a rolling basis. MS4 IDDE programs require local jurisdictions to maintain and implement a written IDDE plan to detect and address illicit discharges, illegal dumping, and any non-stormwater discharges identified as significant contributors of pollutants to the MS4. These plans require area prioritization based on likelihood of failure and illegal discharge, as well as identification and repair of failing sewer and on-site wastewater systems. Non-MS4 communities must comply only with 15A NCAC 18A .1961.

Regulatory Options

With respect to the High Rock Lake Watershed, Steering Committee members expressed interest in encouraging and requiring some kind of failure tracking procedure in non-MS4 jurisdictions. DWR Planning staff considered the following options which could be incorporated via a wastewater rule within the nutrient management strategy:

1. Requirement that County health departments inspect privately-owned septic systems and either:
    a. Perform needed repairs, or
    b. Inform owner of repair obligations
2. Requirement that County health departments map existing residential and commercial areas not connected to centralized sewer services and track septic system inspections
3. Require that private owners of Type I-III systems specified in Table V(b) of 15A NCAC 18A .1961 perform inspections on a specified schedule
4. Requirement that County health departments educate private owners of their obligations to repair malfunctioning systems
5. Submit annual reports to DHHS DPH documenting education, inspection, and malfunction repair of on-site wastewater systems

DWR Planning Staff Recommendation

It is DWR Planning staff's understanding that the single most important factor that limits implementation of existing requirements, and would similarly limit implementation of new requirements, is staff capacity within each County. DWR Planning staff are concerned that without new resources, simply adding additional requirements is unlikely to meaningfully decrease system failure prevalence over time. Additionally, several regulatory options specified above either duplicate existing requirements (5) or conflict with statute (3). Planning staff believe an approach with the greatest potential for making progress is likely to be prioritizing increased education and outreach to private owners of older homes which were constructed during decades before current performance requirements took effect. These older systems are both more likely to experience failures, and also more likely to be owned by someone who purchased the home long after construction and who is unfamiliar with system maintenance requirements.

DWR Planning staff believe that without the development of new funding streams, a new mandate to educate and inform private homeowners on their system's requirements is probably beyond the current capacity of County health departments, many of which struggle even to perform required inspections on newer systems. It may also result in a disproportionate logistical burden relative to nutrient benefit for County governments to shift resources to comply with the above kinds of actions on such a small proportion of overall nutrient loading to High Rock Lake. Staff believe that a more desirable and potentially effective path forward would be allowing individual county choice while incentivizing such an education program via crediting mechanisms like those developed in other nutrient strategy watersheds, namely through existing development. On-site wastewater systems are a component of the ongoing nutrient load from existing development, and reductions of loads from failing septic systems would meaningfully improve nutrient loading from older residential areas. Considering the difficulty of identifying and implementing nutrient load reduction retrofits in the existing development landscape, it is critical to allow local governments the flexibility to identify cost-effective solutions that align with existing resources and capacity and with potential new funding sources suited to a given county. As

such, a voluntary prioritization of septic system repair will be a valuable tool for County governments to consider individually toward compliance with their existing development obligations. Such a program would be creditable to the extent it is increased after the baseline period, but under this recommended approach, it would not be required for all Counties. Precedent exists in other nutrient sensitive watersheds to credit "onsite wastewater treatment system inspection programs, maintenance tracking, repair, replacement, and pump-out programs, education of owners regarding proper maintenance, and training of professionals who inspect and repair onsite systems" (IAIA 2022), and DWR Planning staff recommend a similar crediting program in the High Rock Lake Existing Development Rule.

Such an approach, in addition to providing counties autonomy in choosing the most workable options for achieving load reductions from ED, would avoid regulatory mandates that may well yield administrative and reporting burdens that don't lead to meaningful load reductions. It would also avoid challenges associated with determining whether, and through what statutory mechanisms, further onsite regulatory mandates would be feasible and practically workable on a watershed basis and would avoid prompting objections to such mandates where progress may be achieved as well or better through the recommended alternative. DWR Planning staff also encourages local government representatives to take advantage of training materials recently published by the National Onsite Wastewater Recycling Association (NOWRA) to educate property owners with an onsite wastewater treatment system. Concepts covered include the importance of wastewater treatment, an overview of treatment in an onsite system, typical onsite system features, final treatment and dispersal, management, maintenance, safety, and system troubleshooting.