

Staff Report
Board Meeting Date: March 5, 2026

TO: Sewage, Wastewater, and Sanitation Hearing Advisory Board

FROM: David Kelly, Environmental Health Specialist Supervisor
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SUBJECT: Variance Case H26-0001VARI; Variance to Section 040.030, allowing for a reduced lot size for a second parcel map on a lot created after October 23, 2001, Parcel 038-280-67, 430 River Pines, Washoe County, NV.

SUMMARY

This staff report summarizes the Environmental Health Services Division's (EHS) review of the submitted variance application for your decision to recommend or deny approval to the District Board of Health (DBOH) a variance for APN 038-280-67, owned by the Cook 2011 Family Trust. The variance requests a reduction in the minimum lot size for second parcel maps on lots created after October 23, 2001, from 5 acres to 1 acre and 1.71 acres. A groundwater study was conducted and advanced treatment septic systems are proposed for the new lots to demonstrate that the two smaller lots will not have a greater impact on water quality than the original parcel size.

Previous Action

There has been no previous action with this variance request. The applicant currently has applied for a parcel map with the City of Reno Development Services Department (Planning), PAR24-00023. That parcel map application was put on hold pending the resolution of the septic variance process that is the subject of the request. If the variance application is approved, the parcel map will continue through the process and eventual creation of the new parcels. Documents regarding the status of that process are included in the variance packet.

Background

The Northern Nevada Public Health (NNPH) Regulations Governing Sewage, Wastewater, and Sanitation (regulations) requires a minimum acreage of 5 acres for any second or subsequent parcel map from an original parcel created after October 23, 2001. The subject parcel was created in May of 2019, with 2.71 acres, and therefore would not have sufficient acreage for a second parcel map. The regulations allow the Health Authority to allow a smaller lot size, provided that an applicant can demonstrate that adequate measures have been taken to ensure the smaller lot size will not have a greater impact to groundwater quality than the 5-acre lot size. All such decisions require approval by the Sewage, Wastewater, and Sanitation Hearing Board and District Board of Health through the variance procedure.

The applicant consulted with NNPH staff prior to applying for the variance and the general approach was agreed to. NNPH required that they look at overall impact to groundwater quality and how to address the simple fact that having two septic systems will impact groundwater quality less than one; some sort of mitigation would be needed regardless of any groundwater study findings.

A study was performed by Confluence Water Resources (CWR), utilizing guidance from the State of Nevada Bureau of Water Pollution Control (BWPC) that was developed to determine appropriate septic density for an area without degradation to groundwater. Total nitrogen contamination is the primary

contaminant of concern in regard to septic system discharges. The study uses several conservative parameters for sewage discharge from septic systems and drinking water standards for acceptable contamination allowance. The model essentially looks at what will reach the aquifer based on discharge volume and the dilution factor of precipitation. CWR utilized a Truckee Meadow Water Authority Verdi Groundwater Model Report to provide data on recharge from precipitation. The CWR study adjusted the model to account for reduced precipitation volume due to developed, impervious surfaces and the clay layers that reduced the ability for recharge from precipitation. Based on their findings, the proposed acreage can meet the requirement to not have a greater impact on groundwater provided that a denitrification system is utilized.

The study utilized assumptions on existing groundwater quality from the BWPC methodology. No actual sampling was conducted. However, staff did review water quality from nearby public water systems which are required to do annual testing of groundwater for nitrates. All systems in proximity to the site showed either no detected nitrate levels or levels well below the BWPC assumption level of 5 mg/L, indicating that the assumption is a fair model. Staff also looked at soil profiles in the area, and while surface level percolation tests are very fast, requiring a greater separation to groundwater, the soil profiles presented in well logs indicate slower soils below the saturated soil profile, indicating that additional and better soil treatment will occur before groundwater is encountered. This validates the BWPC model assumption of reduction of contaminants from soil capture. In summary, NNPH staff determined that the assumptions in the model seemed appropriate and felt that the study provided was a fair representation of the potential impacts to groundwater.

New technology within the septic industry has advanced a lot over the years. NNPH regulations, recently adopted, allow for use of NSF certified septic systems. Denitrification systems, certified to NSF 245, require a minimum of 50% reduction in total nitrogen from residential septic systems of 1,500 gallons or less. Many newer systems achieve a higher level of reduction. Though nitrogen is the primary contaminant of concern, any system certified to an NSF 245 standard must also meet the NSF 40, which ensures reductions in other contaminants like biochemical oxygen demand, total suspended solids, and pH. The study provided by CWR indicates that utilizing an NSF 245 system, along with naturally occurring precipitation, will yield an equal or lesser degree of contamination from two septic systems serving the two proposed parcel, than from a single standard system on the original parcel.

These types of advanced treatment systems do require routine maintenance, and staff recognize that NNPH will not have direct oversight to ensure that maintenance occurs as needed; in order to have confidence that the system will be maintained as needed, staff has drafted a few recommended conditions if the Board decides to approve the variance. The conditions are provided for the Board below, and as always, the Board may request additional conditions as they see fit. These types of systems are effective and becoming increasingly common and there are a few already in service within Washoe County. While the applicant has specified two specific models that meet the NSF 245 certification, there may be others that have met that certification and the variance request is not specific to single technology or brand, unless the Board wishes to make it a condition of approval.

Findings of Fact

The Board must consider the following when making a recommendation on this variance to the DBOH:

1. Will the proposed variance result in contamination of water to the extent it cannot be used for its existing or expected use?

Reply: The variance is proposing to require NSF 245 certified septic treatment systems for each parcel. These types of systems will provide comparable treatment to a sand filter system – better treatment when it comes to nitrate reduction. Provided that the conditions of approval are met and routine maintenance is performed, the system should function as

intended and the effluent discharge to groundwater should be clean or cleaner than a sand filter. Therefore, it should not pose an increased threat to groundwater contamination.

2. Will the proposed variance pose a threat to public health?

Reply: There are two primary ways that sewage can pose a threat to public health, direct exposure and groundwater contamination in areas with domestic wells. Sewage discharged underground should not allow for direct exposure as long as the field functions, the same as any onsite sewage disposal system. As indicated in question #1, the system should also not cause a groundwater contamination issue as long as the system is maintained and functions properly. All other setbacks and design to regulatory requirements designed to be protective of public health will be met.

3. Are there other reasonable alternatives?

Reply: No. NNPH regulations require that any second or subsequent parcel map from an original parcel created after October 23, 2001, have a minimum parcel size of 5 acres. The only exception to this is demonstration that the smaller lots will not have a greater impact on groundwater quality than the single larger lot, that the proposed measures meet the satisfaction of Health Authority staff, and go through the variance process as we are today. NNPH staff are comfortable with the provided groundwater impact study and a requirement of NSF 245 treatment systems as a way to ensure no greater impact to groundwater quality.

Conditions of Approval

EHS staff are recommending the following conditions of approval:

1. The variance, with all conditions of approval, must be recorded to each new parcel, with language that does not allow for the removal without NNPH approval or connection to municipal sewer.
2. A maintenance contract is required with periodic monitoring for the NSF 245 approved wastewater treatment system. After the initial system check and maintenance, a minimum of annual maintenance and certification is required with all maintenance records kept for a minimum of 5 years. Records must be made available to NNPH upon request.
3. All instances of system non-function must be reported to NNPH for review and repaired immediately. In the event of failure to maintain or lack of system function, NNPH may require sampling and/or impose restrictions on the property based on the functionality of the treatment system, up to and including additional repair.

Recommendation

Staff recommends the Sewage, Wastewater and Sanitation (SWS) Hearing Board support the presented Variance Case # H26-0001VARI(Cook) to allow the proposed parceling of 430 Rive Pines, APN 038-280-67, with parcels smaller than 5 acres but no smaller than 1 acre, provided an certified NSF 245 advanced treatment system is utilized for the septic system for each parcel.

Possible Motion

Should the SWS Hearing Board wish to approve the variance application, the three possible motions would be:

1. "Move to present to the District Board of Health a recommendation for approval of Variance Case # H26-0001VARI(Cook) to allow the proposed parceling of 430 Rive Pines, APN 038-

280-67, with parcels smaller than 5 acres but no smaller than 1 acre, provided an certified NSF 245 advanced treatment system is utilized for the septic system for each parcel, including all recommended conditions.”; OR

2. “Move to present to the District Board of Health a recommendation for approval of Variance Case # H26-0001VARI(Cook) to allow the proposed parceling of 430 Rive Pines, APN 038-280-67, with parcels smaller than 5 acres but no smaller than 1 acre, provided an certified NSF 245 advanced treatment system is utilized for the septic system for each parcel, without conditions.”; OR
3. “Move to present to the District Board of Health a recommendation for approval of Variance Case # H26-0001VARI (Cook) to allow the proposed parceling of 430 Rive Pines, APN 038-280-67, with parcels smaller than 5 acres but no smaller than 1 acre, provided an certified NSF 245 advanced treatment system is utilized for the septic system for each parcel, with the following conditions (if the Board wishes to impose conditions, they would list them here).”

The SWS Board may also formulate their own motion or request additional information from the applicant if desired.