County of Sierra

Onsite Wastewater Treatment Systems (OWTS)

Local Agency Management Program (LAMP)

05/08/2018

SIERRA COUNTY LOCAL AGENCY MANAGEMENT PROGRAM

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SECTION 1. INTRODUCTION

1. A. BACKGROUND

The California Water Code authorizes the State Water Resources Control Board (SWRCB) to regulate all discharges, including those from Onsite Wastewater Treatment Systems, which could adversely impact water quality. The policies of the SWRCB are implemented locally through nine Regional Water Quality Control Boards. Historically, each regional board developed basin plans that outlined water quality objectives in their respective jurisdictions as well as policies and programs to achieve those objectives.

Discharges are regulated through the use of Waste Discharge Requirements (WDRs). The SWRCB regulatory authority extends to individual **Onsite Wastewater Treatment Systems (OWTS)**. General guidelines for the Siting, Design, and Construction of OWTS were part of each regional board's basin plans. The SWRCB and the regional boards recognize the advantages and efficiencies of OWTS regulation by local agencies. Consequently, while the regional boards retained primacy over large and specialized systems, direct regulatory authority for individual OWTS has been delegated to individual counties.

LOCAL AUTHORITY

State Delegation for Implementation of Regional Board Septic System Criteria

Through a Memorandum of Understanding (MOU) with both the Central Valley and the Lahontan Regional Water Quality Control Boards, Sierra County Health Department was delegated responsibility for the approval of individual domestic waste disposal systems in Sierra County.

The current regulation of onsite wastewater treatment systems (septic systems) in Sierra County has been based on both County regulations and siting and density criteria contained the Regional Water Quality Control Plans (Basin Plan) for the Central Valley and Lahontan Regional Water Quality Control Boards.

The MOU's with the Regional Water Quality Control Boards will be superseded upon approval of the Local Agency Management Program (LAMP).

In areas where the Water Quality Control Board has established Waste Discharge Requirements, such as WDR Order No 85-039 (Sierra Brooks Subdivision), the Sierra County Health Department may only issue approval for parcels meeting specific minimum criteria as outlined in the WDR's. For the Sierra Brooks Subdivision, an

exemption may be approved by the Regional Board if a report is prepared by a civil engineer registered in the State of California, supporting the engineering conclusion that a septic tank/leaching system on the parcel(s) in question will provide adequate treatment and disposal. The report must be approved by the Sierra County Health Department and the Regional Board before an exemption may be issued. The LAMP does not apply if there are WDR's issued by the Regional Water Quality Control Board.

STATE OWTS POLICY

On 19 June 2012, the State Water Resources Control Board (State Board) adopted **Policy for the Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (Policy)**. The Policy required jurisdictions to determine if they will comply with the prescriptive Tier 1 requirements of the Policy, or elect to implement Tier 2 requirements by submitting a **Local Agency Management Program (LAMP).**

LOCAL AGENCY MANAGEMENT PROGRAM (LAMP)

Due to the limitations facing many Sierra County parcels for siting and installation of **Onsite Wastewater Treatment Systems (OWTS)** and to be consistent with the Sierra County General Plan and zoning requirements, the Sierra County Board of Supervisors sent a letter to the Central Valley Regional Water Quality Control Board (CVRWCB) on January 19, 2016 with their intention to develop a LAMP.

Under an approved LAMP, the requirement to obtain WDRs for an OWTS is conditionally waived for OWTS that are in conformance with the Policy. Failure of counties to submit and obtain approval of a LAMP would mean that septic system permits for only those few sites meeting the more restrictive Tier 1 soil requirements could be issued by local agencies. All other existing sites would potentially be subject to the WDR process.

This LAMP has been prepared by Sierra County to obtain approval for OWTS management under Tier 2 of the OWTS policy. As noted in the Policy, responsible local agencies are recognized as the most effective means to manage OWTS on a routine basis. The LAMP is intended to allow Sierra County to continue providing local oversight to OWTS through a local program that is an alternative to the Tier 1 standards but still meets the Policy purpose which is to protect water quality and public health.

Sierra County is located in the northern section of the Sierra Nevada. The county encompasses 953 square miles. Political boundaries include Washoe County, Nevada to the east, and California counties of Nevada to the south, Yuba to the west, Plumas to

the north, and Lassen to the northeast. According to the U.S. census, the county's estimated 2015 was population was 2,967, a reduction of 8.5% compared to the 2000 census. Population density is 3.4 per square mile. The City of Loyalton has the only municipal wastewater treatment facility and the remainder of the county is served by individual Onsite Wastewater Treatment Systems (OWTS). The LAMP **only** applies in areas of the county **not** served by wastewater treatment systems and/or operating under waste discharge requirements (WDR's) issued by the Regional Water Quality Control Board.

LAMP ADOPTION PROCESS

Except for Tier 3, local agencies may continue to implement their existing OWTS permitting programs in compliance with the Basin Plan in place at the effective date of the Policy until 60 months after the effective date of the Policy (May 13, 2018), or approval of a LAMP, whichever comes first, and may make minor adjustments as necessary that are in compliance with the applicable Basin Plan and the OWTS Policy. Tier 3 requirements take effect on the effective date of the Policy (5-13-2013). Sierra County does not have any Tier 3 Impaired water bodies at this time subject to these requirements.

The OWTS Policy states that the local agency may provide written notice of its intent to regulate OWTS using a Local Agency Management Program with alternative standards as authorized in Tier 2 of the OWTS Policy. The OWTS Policy requires all initial program submittals desiring approval prior to the 60-month limit to be received no later than 36 months from the effective date of the Policy (by May 13, 2016). In accordance with this requirement, Sierra County is submitting a "Draft" LAMP to the Central Valley Regional Water Quality Control Board.

The Regional Board designated for Sierra County to review and approve a LAMP submitted pursuant to Tier 2 in the OWTS Policy is Region 5.

The OWTS Policy requires citations for specific legal authority for local jurisdictions to carry out the roles and responsibilities outlined in the LAMP. **In order to satisfy these requirements, this LAMP will need to be adopted by reference into Sierra County Code.** Since changes to County Code will be made to ensure consistency with state law, these changes are not growth inducing, and the State Water Resources Control Board prepared an Onsite Wastewater Treatment System Policy Final Substitute Environmental Document dated June 19, 2012, statewide compliance with the California Environmental Quality Act (CEQA) has been ensured.

The LAMP primarily describes the existing local wastewater management program, but also identifies areas of Sierra County Code that will need to be amended and new reporting requirements to satisfy the minimum requirements of the OWTS Policy. These proposed changes will not substantially alter the existing wastewater treatment program or the way septic systems are installed. Rather, they include items like: increased setbacks to drinking water wells; further notification standards for drinking water intake sources of nearby failing systems; and further defined license and registration requirements of qualified professionals authorized to perform a range of OWTS services. The LAMP also identifies new responsibilities for local jurisdictions to submit reports to the Regional Water Quality Control Board, both annual reports that summarize permit and inspection activities, and 5-year water quality assessments. Where needed to comply with the OWTS Policy, these changes are identified throughout this LAMP.

A local agency, at its discretion, may include Tier 1 standards within its Tier 2 LAMP. The Sierra County LAMP proposes to incorporate much of the Tier 1 standards into the LAMP. However, once a LAMP is approved, it shall supersede Tier 1.

CODE CHANGES (BOARD OF SUPERVISORS RESOLUTION):

The Central Valley Regional Water Quality Control Board is requesting a Resolution from the Sierra County Board of Supervisors confirming their intent to make the specified Code changes, including adopting this LAMP by reference to County Code. The local code change process can begin after LAMP review and concurrence by CVRWQCB staff.

Upon approval by the Sierra County Board of Supervisors, Sierra County will submit the Resolution, the LAMP, and an interested parties list to CVRWQCB staff. Assuming no outstanding issues, CVRWQCB staff will then separately prepare and publicly notice another tentative Resolution for its Regional Board to consider approving the Sierra County LAMP as an uncontested item at a regularly scheduled meeting.

If the LAMP is not approved by the Regional Board by May 13, 2018, Sierra County will be required to only issue permits in accordance with Tier 1 of the State OWTS Policy until the Tier 2 LAMP is approved by the Regional Board.

Code Revisions:

The LAMP will prescribe the system design, location, construction and maintenance standards of OWTS to ensure all wastewater generated is adequately and safely

disposed to protect public health and the environment. Sierra County Code will need to adopt this LAMP by reference.

Though not currently specified in County Code, this LAMP will apply only to projected wastewater flows up to 10,000 gallons per day. Similarly, this LAMP will not apply to systems which produce high-strength wastewater (as defined in the OWTS Policy), or OWTS dedicated to receiving significant amounts of waste from recreational vehicle holding tanks (per Policy Section 9.4.7). After concurrence from the CVRWQCB, Sierra County Code will need to be amended to state these limitations and ensure the local code is consistent with the SWRCB OWTS Policy.

Further recommendations to amend County Code for consistency with the OWTS Policy are highlighted throughout this LAMP.

COMPLETENESS CHECKLIST FOR LAMP - See Appendix C

Completeness Checklists for Local Agency Management Program (LAMP)
Since many of the agencies within the Central Valley Regional Water Quality Control Board (WQCB) expressed their desire to pursue the Tier 2 option, WQCB staff developed a Completeness Checklist to serve as a guide for agencies as they develop a LAMP, and assist WQCB staff to expedite their review of the proposed LAMPs.

The checklist summarizes OWTS Policy requirements for LAMPs and was developed to ensure that a LAMP will comply with Section 9 of the OWTS Policy. The Checklist includes the Onsite Wastewater Treatment Policy (OWTS) section number, a description of how the LAMP addresses this section, the relevant LAMP section and the Legal Authority/Code Section.

1. B. POLICY TIERS

The Adopted State Policy places OWTS in California into one of the following Tiers:

TIER 0 – Existing OWTS. These are defined as existing OWTS that are properly functioning, and do not meet the conditions of failing. These do not require corrective action as specifically described in Tier 4, and are not contributing to an impairment of surface water as specifically described in Tier 3.

TIER 1 - Low-risk new or replacement OWTS. These are new or replacement OWTS that meet low risk siting and design requirements as specified in Tier 1. Minimum soil

depths to groundwater and minimum soil depth from the bottom of a dispersal system range from 5 to 20 feet, based on soil percolation rates.

TIER 2 - Local Agency Management Program for new and replacement OWTS. California is known for its extreme range of geological and climatic conditions. As such, the establishment of a single set of criteria for OWTS would either be too restrictive so as to protect the most sensitive case, or would have broad allowances that would not be protective enough under some circumstances. To accommodate this extreme variance, local agencies may submit management programs known as Local Agency Management Programs (LAMP) for approval by the CVRWQCB, then upon approval, manage the installation of new and replacement OWTS under that Program. An approved LAMP allows local agencies to develop customized management programs that address the soil and groundwater depths specific to that jurisdiction. The LAMP must be approved by the appropriate CVRWQCB. Under an approved LAMP, separation of the bottom of a dispersal system to groundwater of as little as two feet may be allowed with an approved alternate OWTS. Once approved, the standards contained in an approved LAMP supersede the Tier 1 standards. However, systems meeting Tier 1 soil and siting criteria would be considered a conventional OWTS within Sierra County.

TIER 3 - Impaired Areas. Systems that are within 600 feet of impaired water bodies. There are **no** such water bodies identified within Sierra County.

TIER 4 - OWTS Requiring Corrective Action. OWTS that require corrective action or fail at any time while this Policy is in effect are automatically in Tier 4 and must follow Tier 2 requirements pending completion of corrective action.

(1) Scope of Coverage: (OWTS Policy 9.2) (OWTS Policy 9.4.3)

It is Sierra County's intent to regulate projected wastewater flows up to 10,000 gallons per day under TIER 2 for dispersal underground only. In addition to projects that may have waste strength greater than normally found in domestic flows evaluated by SCEHD staff, Sierra County may consult with the Regional Water Quality Control Board on a case-by-case basis for OWTS with projected flows greater than 2,500 gallons per day (g.p.d.).

Additionally, through the use of a variety of engineered or supplemental treatment systems, which are described in the Technical Guidance Manual, this LAMP includes a number of differing system designs and monitoring requirements to meet the full intent of the State OWTS Policy. SCEHD is

committed to protecting public health and water quality while allowing continued development in Sierra County.

1. C. PROHIBITIONS (OWTS Policy 9.4)

Pursuant to the State OWTS Policy, the following will not be authorized in the LAMP:

(1) Cesspools of any kind or size. (OWTS Policy 9.4.1)

(2) OWTS receiving a projected flow over 10,000 gallons per day. (OWTS Policy 9.4.2)

a. Note: Dependent on threat to water quality, Sierra County may consult with the Regional Water Quality Control Board on a case-by-case basis for OWTS with projected flows greater than 2,500 gpd.

(3) OWTS that utilize any form of effluent dispersal that discharges on or above the post installation ground surface such as sprinklers, exposed drip lines, free-surface wetlands, a pond, or any other similar surface discharge. (OWTS Policy 9.4.3)

(4) Slopes greater than 30 percent without a slope stability report approved by a registered professional. (OWTS Policy 9.4.4)

(5) Decreased leaching area for IAPMO certified dispersal systems using a multiplier less than 0.70. (OWTS Policy 9.4.5)

(6) OWTS utilizing supplemental treatment without requirements for periodic monitoring or inspections. (OWTS Policy 9.4.6)

(7) OWTS dedicated to receiving significant amounts of wastes dumped from RV holding tanks. (OWTS Policy 9.4.7)

(8) Separation of the bottom of dispersal system to groundwater less than two feet. (OWTS Policy 9.4.8)

(9) Installation of new or replacement OWTS where public sewer is available. The public sewer may be considered unavailable when such public sewer or any building or exterior drainage facility connected thereto is located more than 200 feet from any proposed building or exterior drainage facility on any lot or premises that abuts and is served by such public sewer. This provision does not apply to replacement OWTS where the connection fees and construction costs are greater than twice the total cost of the replacement OWTS and the local agency determines that the discharge

from the OWTS will not affect groundwater or surface water to a degree that makes it unfit for drinking or other uses. (OWTS Policy 9.4.9)

(10) **Horizontal Setback Requirements:** Except as provided in the noted exceptions below, SCEHD may not approve new or replacement OWTS with the minimum horizontal setbacks less than any of the following: (OWTS Policy 9.4.10)

a. 150 feet from a public water well where the depth of the effluent dispersal system does not exceed 10 feet in depth. (OWTS Policy 9.4.10.1)

b. 200 feet from a public water well where the depth of the effluent dispersal system exceeds 10 feet in depth. (OWTS Policy 9.4.10.2)

c. Where the effluent dispersal system is within 600 feet of a public water well and exceeds 20 feet in depth, the horizontal setback required to achieve a two-year travel time for microbiological contaminants shall be evaluated. A qualified professional shall conduct this evaluation. However, in no case shall the setback be less than 200 feet. (OWTS Policy 9.4.10.3)

d. Where the effluent dispersal system is within 1,200 feet from a public water system's surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high water mark of the reservoir, lake, or flowing water body. (OWTS Policy 9.4.10.4)

e. Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water system's surface water intake point, within the catchment area of drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high water mark of the reservoir, lake, or flowing water body. (OWTS Policy 9.4.10.5)

Exceptions (OWTS Policy 9.2.11) (OWTS Policy 9.4.11) (OWTS Policy 9.4.12)

1. For replacement OWTS that do not meet these horizontal separation requirements, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such cases, the replacement OWTS shall utilize supplemental treatment and other mitigation measures, unless the permitting authority finds that there is no indication that the previous system is adversely affecting the public water source, and there is limited potential that the replacement system could impact the water source based on topography, soil

depth, soil texture, and groundwater separation. Additionally, SCEHD will notify the public water system prior to the issuance of a new installation or repair permit for an OWTS if a surface water intake is within 1200 feet of a proposed OWTS in accordance with Section 1.F (5) - (Reporting to Owners of Public Water Systems and Division of Drinking Water at the SWRCB) of this Tier 2 LAMP.

Minimum horizontal setbacks are included in **Appendix B**

2. For new OWTS, installed on parcels of record at the time of effective date of this Policy, that cannot meet the above horizontal separation requirements, the OWTS shall meet the horizontal separation to the greatest extent practicable and shall utilize supplemental treatment for pathogens and any other mitigation measures prescribed by the permitting authority (SCEHD). (OWTS Policy 9.4.12)

1. D. EXISTING PARCELS (OWTS Policy 9.1.11) (OWTS Policy 9.1.12) (OWTS Policy 9.2.3)

There are hundreds of existing parcels within Sierra County that have been developed using OWTS for sewage disposal/treatment purposes. SCEHD is aware that many existing OWTS may now be considered substandard as a result of their development prior to the adoption and implementation of current or historical Sierra County Sewage Disposal Standards (under standards less stringent than those required by the State OWTS Policy). Those systems may be on small lots, may not meet the new groundwater separation requirements of the State OWTS Policy, or may not meet all required setbacks. The OWTS serving these parcels will be carefully evaluated either under our complaint report program, when the system is evaluated after receipt of a repair/replacement permit application, or as part of a request to further develop the parcel(s). The intent of SCEHD would be to allow the continued use or uses on the parcel while bringing the OWTS serving the parcel into compliance with the State OWTS Policy to the greatest extent practicable.

The many existing undeveloped parcels in the County will be evaluated under this LAMP for compliance with the horizontal setback requirements to the greatest extent practicable. The minimum two-foot vertical separation between the bottom of the trench and groundwater, required by the State OWTS Policy, cannot be waived through the County's LAMP.

1. E. OWTS CLEANING/ SEPTAGE CAPACITY AND SEPTIC PUMPER TRUCK APPLICATIONS AND REGISTRATIONS (OWTS Policy 3.3.2) (OWTS Policy 9.1) (OWTS Policy 9.2.6)

Septage is the term used for the partially treated solid and liquid material removed from septic tanks, and some treatment systems, by septic tank pumper trucks. This material includes settled solids, fats, oils, grease, other floating materials, and some amount of liquid. This solid material must be removed from septic tanks to prevent the tank from filling up and potentially damaging the dispersal system or any treatment system that may be in use. Removal frequency is different for each system, based on tank capacity and use but generally is not less than every three years.

Septage: Counties must ensure that a disposal site for septage is available.
There are no septage receiving facilities located in Sierra County. All waste is hauled to facilities outside Sierra County. Based on quarterly pumping records documented into an Excel spreadsheet for 2017, 255,740 gallons were pumped. Approximately 64% are from septic tanks and 36% from chemical toilets and holding tanks (including USFS campgrounds).

There are currently 5 Liquid Waste haulers registered (permitted) to operate in Sierra County. These liquid waste haulers dispose of the septage at the following facilities:

1. Grizzly Lake Community Services District (GLCSD) treatment ponds. This facility is located in Plumas County and is reported to have a capacity of 4 million gallons of effluent per year. This facility has been accepting approximately 1.4 million gallons of effluent disposal to GLCSD (including septage from Sierra County), so there is sufficient capacity for potential increase in septage disposal at this facility. Most of the septage collected in Sierra County is disposed of at this facility.

2. Minimal septage volumes can also go to disposal facilities in the Reno/Sparks area of northern Nevada.

3. Another disposal location is Inviro-Tec, located in Placer County.

Septic Pumper Truck Applications and Registrations: Environmental Health registers businesses and individuals who perform septic tank and chemical toilet cleaning in Sierra County in accordance with California Health & Safety Code Section 117400, et seq. Their trucks and equipment are subject to annual inspection by Environmental Health with a focus on health, sanitation, and safety issues relating to the trucks, equipment, and employees. Also, per California Health & Safety Code, each operation is required to submit quarterly septage reports showing the locations from where septage is pumped and where it is disposed.

Reporting of Failures: (OWTS Policy 9.1)
Under Tier 2 LAMP, pumper/haulers will be requested to notify SCEHD within 24 hours of the discovery of a failing OWTS with surfacing sewage.

1. F. DATA COLLECTION/ REPORTING/ NOTIFICATIONS/ RESPONSIBILITIES

(OWTS Policy 3.3.1) (OWTS Policy 9.1) (OWTS Policy 9.3) (OWTS Policy 9.3.1)
As a condition of SCEHD oversight of OWTS within Sierra County, SCEHD has certain responsibilities related to data collection and reporting to the CVRWQCB as well as, in some cases, the owners/operators of public water systems and the State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW). This Section details the data that must be collected by SCEHD and the procedures for reporting to the CVRWQCB and notifications to owners of public water systems and the SWRCB-DDW.

(1) Complaints (OWTS Policy 3.3.1)

In accordance with OWTS Policy (Section 3.3.1) – Sierra County will track the number and location of complaints pertaining to OWTS operation and maintenance, and identification of those which were investigated and how they were resolved. This data will be organized in a tabular spreadsheet format. Inspection data will document reasons for failures and complaints sufficiently to distinguish between routine issues effectively managed under Local Agency.

Data will include a listing of number and locations of complaints pertaining to operation and maintenance, complaint investigations, and resolutions (i.e., inspection report summaries).

Notes: Inspection data should document reasons for failures and complaints sufficiently to distinguish between routine issues effectively manageable under Local Agency oversight, and potential chronic water quality concerns.

- Routine issues might include, but are not limited to, root intrusions, crushed pipes, and insufficient pumping service.

- Potential water quality concerns might generally include, but are not limited to, groundwater encroachment, poor soils, shallow fractured bedrock, vulnerable surface water, high-density domestic wells and OWTS, small parcels, and multiple OWTS that either predate standards or are within pertinent setbacks; see OWTS Policy 9.1 for details**.**

(2) Water Quality Assessment Program (OWTS Policy 9.2.9) (OWTS Policy 9.3.2) (OWTS Policy 9.3.2.1) (OWTS Policy 9.3.2.2) (OWTS Policy 9.3.2.3) (OWTS Policy 9.3.2.4) (OWTS Policy 9.3.2.5) (OWTS Policy 9.3.2.6) (OWTS Policy 9.3.2.7) (OWTS Policy 9.3.2.8) (OWTS Policy 9.3.2.9)

SCEHD will maintain a water quality assessment program to determine the general operational status of existing OWTS and OWTS permitted under this LAMP. SCEHD will evaluate the impact of discharges from OWTSs, and assess the extent to which groundwater and local surface water may be impacted. This program will primarily focus on areas where shallow soils, fractured bedrock, shallow depth to a water table, a high concentration of OWTS exist, and a high concentration of domestic water wells and OWTS exist. Data collected for this program will include the results of investigations into complaints of failing OWTS, inspections of operating OWTS (by SCEHD staff and service providers), sample results from our Public Water System regulatory program, sample results submitted from local watershed management groups, and any other water samples of surface or ground water reported to or obtained by SCEHD staff (to include, but not be limited to loan well inspections, data from Geotracker GAMA, beaches, and monitoring wells from SCEHD or state agency permitted facilities). This monitoring program may identify areas requiring additional scrutiny of soil test results and designs for proposed OWTS (new, repaired, replacement, and increased capacity of OWTS) and possibly the need for more frequent inspections or maintenance of OWTS.

(3) Records Retention (OWTS Policy 3.4)

At a minimum, SCEHD will retain permanent records of permitting actions and will make them available to CVRWQCB staff within ten working days upon written request for review. The records for each permit shall reference under which Tier (1, 2, 3 or 4) the permit was issued. SCEHD uses an Excel spreadsheet to track sewage disposal system applications and installations including current Sewage Disposal Systems Permits issued and future OWTS permits. In Sierra County, SCEHD issues approval for sewage disposal systems and conducts final inspections. The Construction Permit is actually issued by the Sierra County Building Department upon approval by SCEHD. SCEHD tracts the status of the systems on an Excel spreadsheet. Paper copies of completed system applications, soil test data, final drawings, and other related documents are kept in the SCEHD office.

(4) Reporting to the RWQCB (OWTS Policy 3.3) (OWTS Policy 9.3.1 – 9.3.3)

A. On an ongoing basis, SCEHD will collect data and report by February 1st annually, in a format prescribed by the State OWTS Policy and must include the following information:

1. The number and location of complaints pertaining to OWTS operation and maintenance, and identification of those which were investigated and how they were resolved. Note: The inspection data will document reasons for failures and complaints sufficiently to distinguish between routine issues effectively manageable under Local Agency oversight, and potential chronic water quality concerns. (OWTS Policy 3.3.1)
    a. Routine issues might include, but are not limited to, root intrusions, crushed pipes, and insufficient pumping service.
    b. Potential water quality concerns might generally include, but are not limited to, groundwater encroachment, poor soils, shallow fractured bedrock, vulnerable surface water, high-density domestic wells, and OWTS, small parcels, and multiple OWTS that either predate standards or are within pertinent setbacks.
2. The number, location, and description of permits issued for new and replacement OWTS and under which Tier the permit was issued, noting any variance allowed for systems otherwise in substantial conformance with the standards. (OWTS Policy 3.3.3) (OWTS Policy 9.3.1)
3. The applications and registrations issued for sewage haulers as part of the septic tank cleaning registration program. (OWTS Policy 3.3.2) (OWTS Policy 9.3.2)
4. Results of the Water Quality Assessment Program intended to evaluate the impact of OWTS on local surface water and groundwater. Any groundwater monitoring data collected shall be submitted in Electronic Deliverable Format (EDF) format for inclusion into GeoTracker, the SWRCBs database of which this data will have exclusive view by CVRWQCB staff. Surface water monitoring shall be submitted to the California Environmental Data Exchange Network (CEDEN) in a Surface Water Ambient Monitoring Program (SWAMP) comparable format. At this time, at a minimum, it is expected that groundwater monitoring will include, but not be limited to, any samples collected from small public water systems regulated by SCEHD and any other samples collected in response to home loan inspection requests, complaints, and samples that may be required from OWTS monitoring wells. (OWTS Policy 9.3.2)

B. Every five years, an evaluation of the monitoring program and an assessment of whether water quality is being impacted by OWTS in use within Sierra County must be completed. The evaluation, prepared by SCEHD for the CVRWQCB, would need to identify any changes in the Sierra County LAMP required to address any impacts from OWTS.

(5) Reporting to Owners of Public Water Systems and Division of Drinking Water at the SWRCB (OWTS Policy 3.5) (OWTS Policy 9.2.11) (OWTS Policy 9.2.12)

SCEHD shall notify the owner of a public well or water intake and the Division of Drinking Water at the SWRCB as soon as is practicable, but not later than 72 hours, upon verification of a major failure, as defined in OWTS Policy 11.1 and 11.2. Under these OWTS Policy sections, OWTS would no longer meet the primary purpose of protecting public health and require major repair of OWTS components within:

- 150 feet of a public water well; and
- Within 2,500 feet from a public water system surface water intake.

Additionally, SCEHD will notify the public water system prior to the issuance of a new installation or repair permit for an OWTS if a surface water intake is within 1,200 feet of a proposed OWTS, is within the drainage catchment of the intake point and is located such that it may impact water quality at the intake point, or if the proposed OWTS is within the horizontal sanitary setback from a public well. Notification is to be made by SCEHD upon receipt of an application for a new or repair permit and prior to issuance of the permit. All notifications will be in letter format and mailed to the water system.

For OWTS permit applications for dispersal systems within the horizontal sanitary setback of a public well or a surface water intake point, SCEHD shall first work with the owner of the proposed OWTS to see if relocation of the dispersal system is possible. Per the State OWTS Policy, an OWTS with supplemental treatment for nitrogen reduction and supplemental treatment for pathogen reduction may be required if the dispersal system could not be relocated to meet the required setback (see the Technical Guidance Manual for discussion of treatment systems).

(6) Reporting to SCEHD by OWTS Owners and/or Service Providers (OWTS Policy 9.4.6)

As a condition of permits to install Supplemental Treatment OWTS within Sierra County, property owners and/or service providers are required to perform routine inspections, maintenance, and monitoring of those OWTS. These results will be reported to SCEHD on a frequency specified in their OWTS Permit, every two years for most systems, or immediately (within 48 hours) if a failure or upset condition occurs.

(7) Outreach Program (OWTS Policy 9.2.5)

SCEHD has copies of sewage disposal standards, percolation test instructions and data sheets, and other related documents available to the public in our office and/or on the County website. All newly developed materials will be available when developed.

In accordance with OWTS Policy (9.2.5), Sierra County will provide information on the Sierra County Website including informational materials to inform OWTS owners about how to locate, operate, and maintain their OWTS as well as any Water Board order (e.g., Basin Plan prohibitions) regarding OWTS restrictions within its jurisdiction. Contact information on the website will include emergency (after-hours) telephone numbers of service providers. The education and/or outreach program will also include procedures to ensure that alternative onsite system owners are provided an informational maintenance or replacement document by the system designer or installer. This document shall cite homeowner procedures to ensure maintenance, repair, or replacement of critical items within 48 hours following failure.

A variety of educational handouts and brochures will be available in the Environmental Health Office in Loyalton as well as the Building & Planning Department office in Downieville.

With few exceptions, documents in SCEHD files are public records. These include copies of OWTS documents such as permitting/installation records, site location drawings, and soil test data, copies of applications for permits to drill wells, copies of public water system sample results, or real estate loan water sample results, soil test results conducted as part of a proposed land division, and other records that may relate to OWTS.

Upon request, SCEHD staff can provide presentations to local homeowner or industry groups or organizations regarding OWTS standards, use, operation, design, construction, and maintenance.

(8) Operating Permits (OWTS Policy 9.4.6)

In addition to OWTS construction permits, SCEHD will be issuing Operating Permits for all Engineered and Supplemental Treatment OWTS. These permits will require notification, within time frames specified, of any failure or upset conditions with the permitted system. Additionally, SCEHD will require that an operations and maintenance plan be prepared for each system by the Qualified Professional designing the system. This document shall be provided to the property owner and will include (as will the SCEHD issued Operating Permit) procedures to ensure

maintenance, repair, or replacement of failing critical items within 48 hours following discovery. To assist system owners in providing proper maintenance and repairs to their system and in reporting upset conditions, we will have available on our website a list of service providers, in addition to the list of Qualified Professionals currently on our website. This will include 24-hour contact numbers when available.

Should SCEHD implement a voluntary well monitoring program at some future date, the outreach program will include information on how well owners may participate.

(9) SCEHD Responsibility

Permits issued for the construction of a new or replacement OWTS requiring an Operation and Maintenance (O&M) Plan shall be prepared for the OWTS owner by a qualified professional. This Plan will detail operating procedures and maintenance requirements and frequencies.

SCEHD will establish and maintain a record keeping and reporting system to ensure that current records are kept detailing the location, ownership, site evaluation, design, and O&M reports so that the performance of the systems approved under Tier 2 can be monitored.

SCEHD will monitor and analyze the performance of OWTS within the County by reviewing O&M data.

SCEHD will assure timely follow-up and correction, including enforcement action when necessary, when problems are encountered with treatment or dispersal technologies which are being monitored through the O&M program.

SCEHD may perform O&M inspections, as needed, for quality assurance/quality control, surveys, and investigations.

(10) Property Owner, Qualified Professional, and Service Provider Responsibility

Property owners, qualified professionals (consultants/designers), and service providers (system operators and maintenance technicians) all have responsibilities with respect to the use, operation, maintenance, inspection, and reporting related to all OWTS permitted in Sierra County. The failure of one of these team members to abide by their respective responsibilities may result in premature upset or failure of the OWTS. Failure of an OWTS can lead to surface water or groundwater contamination with untreated or partially treated wastewater and potential public health hazards. Another result of a failing OWTS is the expense to repair or replace

the system. This can be equal to, or more than, the construction cost of the original system.

(a) Property Owner

Every onsite wastewater treatment system requires care with use and timely maintenance to continue to function as they are designed to function. An OWTS is sized for an expected use. A number of OWTS have failed due to misuse or use beyond that expected when the system was designed and constructed. Using the system beyond its design flows will lead to premature failure. Using the system to dispose of large quantities of household cleansers or disposal of a wastewater stream different from that which the system was designed for can significantly reduce the life span and effectiveness of the OWTS. A property owner must be accurate with the proposed use, quantity and wastewater stream, when discussing the proposed OWTS with their consultant and with SCEHD.

All OWTS require maintenance. This can be as simple as having the septic tank inspected and pumped on a regular basis to the necessarily more thorough inspection and maintenance of supplemental treatment systems. Generally, most permits issued under this LAMP include at least some inspection, maintenance, monitoring, and reporting requirements depending on the complexity of the system installed. Additionally, timeframes are specified for these activities. An owner of an OWTS must adhere to these tasks at their specified timeframes to assist in keeping these OWTSs operating as designed. Owners must contract with a Service provider, familiar with the type of OWTS in use, to conduct the inspections, maintenance, monitoring, and reporting tasks, as required at specified timeframes, by a valid installation/operating permit. An owner must correct deficiencies in the OWTS that have been identified by SCEHD and/or a service provider.

When graywater systems are proposed, Sierra County Building Department (SCBD) will consult with SCEHD as necessary. An OWTS is designed for a specified wastewater strength and quantity. Property owners should be aware that, in the extreme, the use of a graywater system may have an impact on an OWTS in use at a site. Be sure that the Qualified Professional and SCEHD staff are aware that a graywater system may be constructed or consider an alternative OWTS, such as a drip dispersal system, allowing OWTS liquid waste to assist in watering vegetation at the site. SCEHD does not allow a reduction in the size of an OWTS when a graywater system is proposed at a site.

(b) Qualified Professional (OWTS Policy 9.1.4) (OWTS Policy 9.1.7) (OWTS Policy 9.1.9) (OWTS Policy 9.1.10) (OWTS Policy 9.2.4)

Every new/proposed OWTS, and most onsite system repairs, must be designed by a Qualified Professional (see definitions in **Appendix A**). Qualified Professionals will test each site, recommend a system for the site based on test results and site soil and groundwater depths, and design and provide specifications for that system. The Qualified Professional must be certain that the system is being designed for the proper wastewater strength and flow.

The Qualified Professional will consider potential pathways of wastewater-sourced phosphate and other nutrients toward potentially threatened nearby surface water bodies, when present. They will also consider hydraulic mounding, nitrate and pathogen loading, and sufficiency of potential OWTS replacement areas. The OWTS, potential replacement areas, and all proposed site improvements and structures must fit onto existing and proposed parcels while meeting or exceeding all appropriate setbacks and would be verified by the Qualified Professional on the site plan.

The Qualified Professional must work with the installer to ensure that the system, as constructed, meets the specifications of their design and the permit issued by SCEHD. An accurate site plan, showing the system location must be prepared and provided to the property owner.

An operation and maintenance plan prepared by the system designer, and made available to the system owner is required of every engineered or supplemental treatment system installed on parcels in Sierra County. Proper use and routine maintenance at specified intervals, as specified by SCEHD in a valid OWTS operating permit, is necessary in order for an OWTS to function as designed for as long as possible. The OWTS designer (Qualified Professional) shall prepare the following operations and maintenance plan:

- An accurate scale drawing showing the actual location of the OWTS installed on a parcel for ease in locating the system for inspections, maintenance, and monitoring. The drawing is to include the location of all system components;
- An Operations and Maintenance Manual specific to the type of system installed. It shall contain a narrative describing how the system achieves its treatment standards/goals. The manual shall note homeowner or service provider procedures to ensure maintenance for continued operation, repair, or replacement within 48 hours of identifying a failing

system. The manual is to detail the type of maintenance or monitoring required and when these tasks should be done;

- Identify if the tasks can be performed by an owner or if a Service provider is the more appropriate choice to perform them;
- The plan shall include the names and telephone numbers of the Qualified Professional, licensed system installer, and OWTS Service provider, and;
- Identify the reporting required to SCEHD as a result of these inspections, monitoring, and maintenance or actual failure conditions.
- The plan is to be amended if the system is upgraded or requires repair.

(c) Service Provider (OWTS Policy 9.2.4)

The property owner must contract with a Service provider (see definitions) to provide necessary inspection, maintenance, monitoring, and reporting services as specified in a valid OWTS permit as issued by SCEHD. Most OWTS owners may not understand how a system functions and recognize signs that the system needs maintenance or is failing. It is extremely important that the Service provider completes the required tasks to keep the system operating as planned.

When required by providers of proprietary equipment, the Service provider must meet and maintain the requirements for qualification for the specific proprietary equipment.

The Service provider shall provide all maintenance records to the property owner and report any system malfunction that results in surfacing sewage to the owner and SCEHD within 48 hours.

1. G. OWTS NEAR IMPAIRED WATER BODIES (OWTS Policy 9.1.8) (OWTS Policy 9.2.2)

Currently, there are no impaired water bodies in Sierra County listed in Attachment 2 of the State OWTS Policy. At such time as an impaired water body is listed, SCEHD will follow the applicable specific requirements of the State OWTS Policy.

(1) Onsite Maintenance Districts (OWTS Policy 9.2.7)

Currently, there are no onsite maintenance districts or zones within Sierra County nor are any anticipated in the foreseeable future.

(2) Regional Salt and Nutrient Management Plans (OWTS Policy 9.2.8)

There are no existing regional salt or nutrient management plans within Sierra County nor are any anticipated in the foreseeable future.

(3) Watershed Management Groups (OWTS Policy 9.2.9)

Currently, SCEHD has no formal agreements with any watershed management groups within Sierra County.

1. H. PARCEL/ LOT SIZE REQUIREMENTS (OWTS Policy 9.1.2) (OWTS Policy 9.1.9) (OWTS Policy 9.1.10)

There are no areas in Sierra County where nitrate has been identified as a chronic issue. The core community areas with smaller parcel sizes served by individual onsite wastewater treatment systems in Sierra County have populations of only 100-300 people, so these would not be identified as high density OWTS areas.

New lots:

The Sierra County General Plan allows the creation of new parcels as small as ½ acre in the Rural Residential land use designation within existing, designated "community core areas" in locations that have suitable soils, access to public water systems, and are sufficiently setback from water resources and lack other environmental constraints. However, most Rural-designated lands that permit further subdivisions, but without feasible access to a community water system, require a minimum density of one (1) dwelling unit per two (2) acres—with 5 to 10-acre minimum parcel size being more common. Any proposal for a large development with smaller acreage parcels served by OWTS would receive greater scrutiny by SCEHD of pathogen transport and cumulative nitrogen and hydraulic mounding impacts.

Existing parcels:

In most zoning districts, Sierra county permits new and replacement onsite wastewater treatment systems on existing, legally-created parcels with no established minimum parcel size; provided, however, that the proposed system is designed and certified by a qualified professional to meet all required minimum health and safety standards for treatment of wastewater and protection of both groundwater and surface water resources, and a suitable 100% leach field repair area is also designated on the same parcel in the event the primary leach field fails. In addition, the county has adopted stringent zoning setback requirements for onsite wastewater treatment systems from all lakes, reservoirs, streams, wetlands, swales, meadows, springs and potential sources of potable water supply (ref. SCC 15.12.060).

1. I. HIGH DOMESTIC WELL USAGE AREAS (OWTS Policy 9.1.4) (OWTS Policy 9.1.9) (OWTS Policy 9.1.11) (OWTS Policy 9.1.12)

A majority of Sierra County residents are served by public or privately operated water systems. These water systems are located within the core communities of Alleghany,

Downieville, Sierra City, Calpine, Sierraville, Loyalton and the Sierra Brooks subdivision near Loyalton.

Sierra County does not have any high domestic well usage areas. Individual domestic wells are typically located outside of the Community core areas where parcel sizes are larger, at least one acre in size and generally larger than 1 acre.

SCEHD staff are not aware of any nitrogen impacts to groundwater as a result of OWTS density. There are vast areas of Sierra County developed on wells and OWTS but the density is not high enough to be defined as high domestic well usage areas.

SECTION 2. ONSITE WASTEWATER TREATMENT SYSTEMS PERMITTING PROCESS (OWTS Policy 9.2.1) (OWTS Policy 9.3.1)

2. A. STATE, COUNTY, AND CITY ROLES

State / County Coordination

OWTS discharge pollutants to groundwater and, therefore, are regulated by the State Water Code. Water Code Section 13282 allows the CVRWQCBs to authorize a local public agency to issue permits for and to regulate OWTS "to ensure that systems are adequately designed, located, sized, spaced, constructed, and maintained".

Through the State OWTS Policy, the CVRWQCB has imposed conditions and restrictions on the County's permit program. SCEHD is authorized to issue permits for conventional OWTS and alternative OWTS with or without supplemental treatment within the County. The Adopted State OWTS Policy requires a minimum of five feet and up to twenty feet of separation maintained between the bottom of a dispersal system point and the highest anticipated groundwater level for conventional OWTS, and at least two feet of separation be maintained for some alternative dispersal systems.

The goal of SCEHD's LAMP is to ensure that installed OWTS will last the life of any structure they serve and not cause any public exposure to surfacing sewage or potential contamination of groundwater or surface waters. The separation requirements are a condition of the State's authorization for Sierra County to issue OWTS permits locally. Section 5 of the LAMP provides details on requirements for Site Evaluation and Design to ensure that these State-imposed separation requirements are determined and met.

SCEHD / Land Use Agency Coordination

Persons seeking OWTS permits must remember that the County OWTS permit process and local agency land use approval and permitting are essentially separate processes. While they are coordinated to a great extent, persons seeking OWTS permit approval from SCEHD should also review and ensure compliance with applicable site grading, land use, and building requirements.

Similarly, no local land use approval or permit, including, but not limited to, approved land divisions, property line adjustments, use permits, is not a substitute for a County OWTS approval, or a guarantee that such a permit will be issued.

2.B. SYSTEM DESIGN CONSIDERATIONS

The most common type of conventional OWTS found in Sierra County consists of a septic tank connected to leach lines. In all cases, the majority of solids, fats, oil, and grease are removed in the septic tank and effluent from the septic tank is discharged below the ground surface, and organic material present in this effluent is digested by bacteria in unsaturated soil zones for treatment of the effluent underground. These systems are designed to operate in all weather conditions with minimal maintenance, other than periodic septic tank pumping to remove accumulated sludge and floating scum that form in the septic tank.

Minimum Site Evaluation and Siting Standards for Onsite Wastewater Treatment Systems (OWTS) are included in Section 5 of the LAMP.

For the creation of new lots or parcels, rates faster than five (5) minutes per inch or slower than one hundred twenty (120) minutes per inch are unacceptable. Existing parcels where percolation test results exceed one hundred twenty (120) minutes per inch are unacceptable for an OWTS and will not be issued a permit to construct. These requirements are more restrictive than the OWTS Tier I Policy Section 7.4.

In addition to conventional OWTS, Sierra County allows the use of alternative or non-conventional systems. These systems are generally used for those sites that cannot support the use of a conventional OWTS due to shallow ground water, horizontal separation to rivers/streams, soil permeability problems, or soil depth problems. A variety of OWTS mitigations were accepted in the past to deal with these specific site conditions. The Approved OWTS State Policy now sets a minimum soil depth and separation from groundwater at two feet with the use of a supplemental treatment and/or dispersal system to treat septic tank effluent prior to discharge into the soil. The SCEHD Director may allow the use of other systems not otherwise prohibited by the State OWTS Policy.

The size and type of OWTS necessary for a residence or other use will nearly always be a function of the following factors:

1. Soil Permeability. Permeability determines the degree to which soil can accept septic tank or supplemental treatment system effluent over a period of time. Permeability is determined by a percolation test and is reported as a percolation rate, in minutes per inch.

2. Unsaturated Soil Interval. The distance between the bottom of the OWTS dispersal field and the highest anticipated groundwater level or the impervious subsurface layer at the site.

3. Peak Daily Flow. The anticipated peak sewage flow in gallons per day. In many cases the number of bedrooms for a proposed home is used as an indicator of peak daily flow. Daily flow in non-residential uses is calculated from expected flows from charts in the California Plumbing Code, adopted by Sierra County, and other similar charts or actual flows of similar projects acceptable to the Director.

4. Net Useable Land Area. The area available that meets all setback requirements from structures, easements, watercourses, or other geologic limiting factors for the design/placement of an OWTS. A site may not be developed beyond its capacity to properly treat and disperse the amount of liquid waste expected/generated.

5. Wastewater Strength. Wastewater strength can have some importance with non-residential systems such as restaurants or other commercial or industrial systems. This is because there may be less water in the waste stream or more solid material, oils, fats, grease, or cleansing or sanitizing materials may be present when compared to those things expected in residential wastewater. Wastewater strength with residential systems may be more important in the future as graywater systems divert a large part of the liquid component of residential wastewater flow from the septic tank.

Some sites may not be acceptable for conventional or alternative OWTS (engineered or supplemental) based on high or low soil permeability and net useable area, regardless of the unsaturated soil interval available at the site.

All Conventional OWTS in Sierra County will require a minimum vertical separation between the bottom of the dispersal system to groundwater or to an impermeable layer/bedrock of at least four (4) feet of native soil. A conventional OWTS must be installed in native soil, where the site has not been filled nor the soil

modified. Additional vertical separation may be required based on site characteristics (including but not limited to soil texture, structure, percolation rate, slope, etc.). Minimum Site Evaluation and Siting Standards for OWTS are included in Section 5 of the LAMP.

When a site does not meet the minimum criteria for a Conventional OWTS, an Engineered or Supplemental treatment system may be considered for approval. The design shall be based on the site characteristics (including but not limited to soil texture, structure, percolation rate, slope, etc.) and the required level of treatment to ensure water quality and public health. For engineered or supplemental treatment systems, the minimum vertical separation between the bottom of the dispersal system to groundwater or to an impermeable layer/bedrock shall be no less than two (2) feet.

Depth to groundwater varies tremendously with the amount of precipitation and soil types for specific sites and areas within Sierra County, therefore, the highest anticipated groundwater level must be established for any OWTS design in order to meet this separation requirement. Details in determining depth to groundwater and overall soil depth are provided in Section 5 of this LAMP.

The net useable land area required for an OWTS will usually depend on soil permeability, soil depth, expected peak daily flows and the required 100 percent dispersal system replacement area.

2.C. PERMITS ISSUED (OWTS Policy 3.3.3) (OWTS Policy 9.4.6)

Historically (during the last 20 years), SCEHD issues an average of approximately 27 approvals for Sewage Disposal System Permits annually, depending on development. Of these, approximately 25% are replacement/repair septic systems.

Under the County's approved LAMP, we would expect to continue to issue a similar number of total permits, but due to the limited amount of exiting vacant parcels that meet minimum criteria for standard OWTS and increased demand for development, we anticipate a larger number of engineered or supplemental OWTS applications.

Under our previous Sewage Disposal permitting procedures, new systems were either standard or engineered systems. Engineered systems are systems that require some mitigation as the sites did not meet the minimum soil standards (inadequate soil depth, too fast or too slow soil percolation rates, steep slopes, and/or insufficient horizontal separation to streams/rivers) required to construct a standard system in Sierra County.

Our intent is to use a variety of mitigations under the Tier 2 LAMP to protect public health and water quality within Sierra County. These mitigations and system requirements include a variety of engineered or supplemental treatment systems. Additionally, for any OWTS with engineered or a supplemental treatment, an operating permit will be issued that will require the completion of inspections, maintenance, water monitoring/sampling (if applicable), and reporting as detailed in the permit issued for these systems.

2.D. CESSPOOLS (OWTS Policy 9.2.13) (OWTS Policy 9.4.1)

A cesspool is a hole excavated into the ground to receive domestic wastewater from a structure. A cesspool does not have a tank or other water tight settling chamber nor does it have a proper pipe inlet/outlet, or a dispersal system to assist in effluent treatment and safe disposal. Cesspools have not been approved for use in Sierra County for at least 40 years (mid 1970's). Cesspools are not authorized by this LAMP.

Any existing cesspool discovered by SCEHD through our repair or complaint process or through an application to increase the capacity of any existing OWTS shall be properly destroyed and replaced with an OWTS acceptable under this LAMP using the same process noted in Section 3, Failing OWTS and Corrective Action. Permits will not be issued for the construction of any cesspool.

2.E. RV HOLDING TANK WASTE (OWTS Policy 9.4.7)

Under the State OWTS Policy, SCEHD is prohibited from issuing permits for systems that receive a significant amount of wastes from RV holding tanks. Such systems are regulated by the RWQCB. SCEHD may issue permits for OWTS that receive RV holding tank wastes as long as those wastes are incidental to a more "normal" waste stream, such as a home with an RV waste dump station for use by the homeowner.

2.F. STEPS IN THE PERMIT APPLICATION PROCESS (OWTS Policy 9.2.1)

All OWTS permit applications for new construction, repairs, or additions within Sierra County require a permit.

> **Sierra County Code Part 12 - Chapter 12 –Section 4** (Building Code) includes the Uniform Building and Construction Codes that are adopted along with requirements for permit application, issuance, and variance from sanitation requirements.
>
> **SCC 12.04.050 (**Permit required) specifies that a permit issued by the County Building Official, shall be required for the construction, erection, enlarging, alteration, repair, demolition, conversion, moving, improvement and use of any building or structure. Building or structure includes septic systems (OWTS)

Steps in the Permitting Process

SUBMITTAL REQUIREMENTS FOR NEW or REPLACEMENT ON-SITE WASTEWATER TREATMENT SYSTEMS (SEPTIC SYSTEMS AND LEACH FIELDS)

Prior to issuing a permit to install an OWTS (new or replacement), the following items must be submitted to Sierra County Building Department. (See checklist provided on the Sierra County website - form number BD-11).

COMPLETED AND SIGNED BUILDING PERMIT APPLICATION FORM. Clearly describe complete scope of work, valuation, and specify Permit Holder (Sierra County website form BD-01).

ENCROACHMENT PERMIT APPLICATION. Permit required if driveway encroaches onto County Right-of-Way. Alternatively, approved CALTRANS Encroachment Permit, USFS Special Use Permit, or copy of Private Easement Deed demonstrating legal access to/from a public right-of way.

SEWAGE DISPOSAL (OWTS) APPLICATION FORM. Both new and existing systems (repairs & replacements) require review and approval by the Environmental Health Department. Application Form is available on the Sierra County website (BD-20). The application form under Tier 2 will also identify the OWTS project as a new installation, a replacement, or a repair.

SOIL REPORT. In order to determine the suitability of the parcel for sewage disposal, soil testing is required. All testing shall be done by a qualified professional, who is knowledgeable and experienced in the field of onsite sewage disposal, such as: a California Professional Engineer, a California Professional Geologist, a Certified Soil Scientist, or a Registered Environmental Health Specialist.

SEPTIC SYSTEM DESIGN PLANS. Two (2) identical copies, prepared by a qualified professional engineer. Both sets must bear original “wet stamp” showing current registration in the state of California.

SITE/PLOT PLAN. Two (2) identical copies (Sierra County website form BD-05) clearly showing proposed septic system location and proximity (including measurements) from property lines, easements, structures, wells, surface water, drainages, and potential wetlands.

Construction Plans and supporting documentation shall be sufficient detail and clarity to indicate the location, nature and extent of the work proposed.

Soil Test Data

Soil test data may include a soil profile, percolation tests, groundwater monitoring results, and/or soil boring logs. The specific test data required is determined by the type of system proposed and may be modified as the results of those tests are being conducted. Soil tests are typically required when:

- An existing parcel, created prior to soil test requirements for land divisions, is proposed for development;
- Grading or other soil disturbance has occurred in the previously tested/approved area;
- The system is being shifted out of the previously tested/approved area;
- An OWTS other than the type of system previously approved is being considered;
- An existing septic system fails or is proposed for expansion and no previous soil test data is available for the specific parcel.

SCEHD staff will review soil percolation and other test data submitted with the application and determine if the tests are adequate or if additional tests are needed.

Percolation testing must be performed at the depth of the proposed drainage system. Percolation testing must be conducted by a qualified professional such as a California Professional Engineer, California Professional Geologist, Certified Soil Scientist or Registered Environmental Health Specialist and in accordance with standard percolation test procedures to determine the stabilized percolation rate.

Sizing requirements based on percolation test results are included in Section 5C (**Table 1**). In lieu of conducting percolation testing, soil texture analysis can be utilized to determine the maximum soil application rate in gallons per day per square foot. Section 5C (**Table 2**) includes the Design for Soil Application Rates.

Once the sizing of the OWTS has been determined, the applicant must develop and submit an accurate site plan for the proposed building project and the proposed OWTS.

2.G. PERMIT APPLICATION REVIEW AND PERMIT ISSUANCE (OWTS Policy 9.2.3) (OWTS Policy 9.3.1) (OWTS Policy 9.4.11) (OWTS Policy 9.4.12)

SCEHD staff would review all available soil test data, the site plan, and application to determine if adequate information exists to issue an OWTS permit. Typically, SCEHD staff would make a site visit of the property to perform a site evaluation to verify that the soils data and site plan accurately reflect conditions at the site. After review, if it appears likely that the proposed OWTS (including 100% replacement area) will fit into the site

and will function properly, SCEHD will issue approval to the Building Department for an OWTS Permit and stamp the site/plot plan with Environmental Health approval. In addition to approval by Sierra County Environmental Health, the application and site/plot plan must be approved by Sierra County Planning Department to verify that the OWTS meets zoning requirement and minimum setback requirements including but not limited to water resources, property lines and structures. Once the OWTS application and site/plot plan has been approved by both Environmental Health and Planning, the permit is issued by Sierra County Building Department.

SCEHD may allow variances from the State OWTS Policy with regards to horizontal separation. New installations and repairs shall conform to the Policy to the greatest extent practicable. SCEHD staff will work with applicants to determine if relocation of the proposed OWTS is possible to potentially avoid the requirement to add a supplemental treatment system. Variances will not be allowed for the creation of new parcels after the effective date of this LAMP. Records of the number, location, and description of permits issued for OWTS where a variance is granted shall be maintained for the annual report to the RWQCB. (OWTS Policy 9.2.3) (OWTS Policy 9.3.1) (9.4.11)

Grading or clearing of brush for the purpose of conducting a site evaluation and soil tests may require a grading permit issued by the Sierra County Department of Public Works. Any grading which damages or alters an approved or proposed sewage treatment dispersal area may be costly to correct, may delay the approval of a project, or may preclude the issuance of an OWTS permit.

2.H. FINAL INSPECTION (OWTS Policy 9.2.1)

Once an OWTS permit has been issued, the OWTS can be installed. Such installation must meet all applicable requirements for OWTS construction in Sierra County and any special conditions specified for that site or permit. SCEHD staff may require a meeting with the system designer and installer at a pre-construction conference, as specified in the permit. The system installation must be inspected and approved by SCEHD before the system can be backfilled. If this (or subsequent inspections if necessary) is satisfactory, SCEHD will provide a final approval for the OWTS permit. Occasionally, SCEHD will hold final approval on the OWTS permit pending the completion of specific conditions such as placement of backfill materials or final site grading. In addition, an accurate “as-built” plot plan including location and measurements of the OWTS shall be provided to SCEHD prior to receiving a “final” sign off of the installation.

OWTS permits, once issued, will be valid for a period of 180 days. Extensions and renewals of these permits will follow appropriate policy.

2. I. PRIMARY AND REPLACEMENT/ RESERVE AREA REQUIREMENTS

In addition to primary system design criteria, all OWTS design proposals, for both new construction and additions to an existing structure or approved use, must show 100 percent reserve area for eventual replacement of the active OWTS when it reaches the end of its use/fails. The Director may require that the 100 percent replacement leach field be installed at the time the primary system is installed in the following situations:

1. The lot is less than one acre or is otherwise a difficult site to conduct a leach field repair, sites where adequate replacement space is limited, and sites with slopes greater than 30 percent.
2. The percolation rates are greater than 60 minutes per inch.
3. The use is a commercial project, including food facilities.
4. Otherwise required by the Director for specified reasons.

A switching or alternating valve, to allow easy switching between fields, shall be installed at the time of construction where dual leach fields have been constructed to allow alternating use of fields at specified intervals.

2. J. SEPTIC TANKS

All conventional OWTS require the use of a water-tight septic tank to allow for the removal of solids and fats, oils, and grease from the wastewater prior to being discharged to a dispersal field. Most engineered and supplemental treatment OWTS will also require the use of a septic tank unless a settling chamber is a component of the treatment unit or treatment process.

2. K. ALTERNATIVE OWTS TREATMENT SYSTEMS

When a site does not meet the minimum criteria for a Conventional OWTS, an Engineered or Supplemental treatment system may be considered for approval. The design shall be based on the site characteristics (including but not limited to soil texture, structure, percolation rate, slope, etc.) and the required level of treatment to ensure water quality and public health.

2. L. OWTS LEACH LINE DISPERSAL SYSTEMS

Dispersal systems for conventional OWTS in Sierra County typically consist of leach lines. Dispersal systems for alternative OWTS can also include subsurface drip dispersal, mounds, shallow pressure distribution trenches (with rock or sand), and At-grade systems. The qualified professional hired by the property owner to conduct the necessary soils tests shall designate and properly size the type of dispersal system to be used, including, but not limited to, construction trench and backfill depths. The State OWTS Policy prohibits the installation of dispersal systems with less than 2 feet of

separation between the bottom of the dispersal system and the highest elevation of a seasonal water table.

2. M. SETBACKS/ VARIANCES (OWTS Policy9.2.3)
Setbacks required in the siting and construction of septic tanks, alternative treatment units, and dispersal systems are given in the charts in **Appendix B**. It is anticipated that repairs to some failing OWTS will require a variance from these setbacks. Variances are evaluated by staff, and if deemed necessary, may be approved. SCEHD is committed to meeting setbacks to the greatest extent practicable while maintaining the continued use or occupation of the property by owners.

2. N. PROXIMITY TO PUBLIC SEWERS (OWTS Policy 9.2.10) (OWTS Policy 9.4.9)
SCEHD staff will require connection to a public sewer whenever a project is proposed near public sewers. SCEHD staff will rely on the agency operating the public sewer to make the determination of availability as guided by Section 1.C. of this LAMP.

SECTION 3. FAILING OWTS AND CORRECTIVE ACTION (OWTS Policy 9.1) (OWTS Policy 9.4.11) (OWTS Policy 9.4.12)

All OWTS have the potential to fail due to age, misuse, improper design, and/or construction. The failure may result in wastewater backing up into plumbing fixtures, wastewater discharge to the ground surface, effluent surfacing over a dispersal system area, or wastewater or effluent discharge into, and contamination of, potable groundwater or surface water. These failure conditions will require corrective action to mitigate potential risk to public health and/or contamination of the groundwater and the environment. Corrective action will be required in the event that an OWTS fails. Subsequently, enforcement actions may be necessary if corrective action is not completed within acceptable time frames.

Traditional leach field systems, even when designed and constructed correctly, progressively fail resulting in diminished capacity of some or all of the leach lines. Effluent from septic tanks distributed into leach lines eventually forms a clogging biomat, restricting the flow of effluent into the soil for treatment. Effluent would then need to travel further into a leach line to find porous soil. Eventually, all of the leach lines would be clogged by this biomat-coated soil and the system would no longer accept liquid, resulting over time in a failing system with sewage backing up into a structure or surfacing above a leach field.

Tree roots are another cause for system failure. Tree roots can enter the pipe and rock of a leach line and over time totally plug the leach line, again resulting in either a sewage backup to structures or surfacing effluent.

Less frequently, some change may have been made to site contours or drainage that adversely impacted the leach field, such as site grading or driving vehicles over the leach field, or shallow groundwater was present at the site but was not evident in soil pits or other tests again resulting in a failing system. These, and other similar causes of a failing system, are referred to as a major failure generally resulting in the need to replace the entire leach line or other dispersal system.

Other examples of major failure would be a septic tank that was somehow damaged or was no longer watertight allowing the discharge of untreated sewage or the infiltration of groundwater into the tank. These could possibly be the result of the tank settling over time, the growth of tree roots into the tank, driving heavy vehicles or storing heavy items over the top of the tank, or improper setting of the tank when the system was originally constructed.

Examples of less serious or minor failures, and more easily repaired defects, would be a cracked distribution box or a crushed solid line between the septic tank and the distribution box.

Whatever the reason or severity, a failing system, or component, that may result in surface or groundwater contamination or a public health hazard shall be corrected, without delay, under a valid OWTS permit issued by Sierra County.

For replacement OWTS that do not meet these horizontal separation requirements, the replacement OWTS shall meet the horizontal separation to the greatest extent practicable. In such cases, the replacement OWTS shall utilize treatment and other mitigation measures, unless the permitting authority finds that there is no indication that the previous system is adversely affecting the public water source, and there is limited potential that the replacement system could impact the water source based on topography, soil depth, soil texture, and groundwater separation. (OWTS Policy 9.4.11)

3. A. PROGRESSIVE FAILURE OF A LEACH FIELD

As discussed above, a newly constructed leach field progressively fails through normal use over time. Every system is different, depending on the soil type and construction variables, as is every household's use of a system. Progressive failure(s) may take several years to many decades to completely result in a failing leach field with sewage backups or surfacing onto the ground surface. This is the normal life span of a leach

field system with the time span being somewhat unpredictable due to the variables. This progressive failure or diminished capacity is expected and is perfectly normal. This does not mean that the system is failing until liquid is no longer accepted into the soil. It does mean that the system is working as designed and as expected, yet reaches the end of its use. Short of excavating into a leach field, or measuring liquid levels in inspection wells into leach fields (when equipped), there is no accepted test that can demonstrate the degree toward which a system has progressed towards total failure and measure how the capacity of the leach field has diminished.

Today, there are some simple things that can be done to limit or delay this diminished capacity by progressive failure and extend the life of a leach field or other dispersal system. One inexpensive way is to install an outlet filter on a septic tank or pump tank. This filter will remove larger solids particles not removed in the septic tank to delay the formation of a thick, plugging biomat in a dispersal system. Another, but more costly method, is to pressure dose the entire leach or dispersal system equally. This will dose the entire dispersal system equally instead of dosing only the first few feet of a leach line as has been the practice up to now. Many alternate dispersal systems use one or both of these methods to extend the life span of dispersal systems by delaying the formation of a thick biomat.

All OWTS require periodic pumping, inspections, or maintenance to keep the system in proper working order and assure adequate treatment of effluent. Owners of property served by an OWTS must maintain their OWTS in good working order as failures may result in groundwater or local surface water contamination, health hazards, and costly corrective actions. Owners of OWTS that utilize an engineered or supplemental treatment system shall contract with a service provider, who is capable of operating, monitoring, and maintaining an OWTS in compliance with this LAMP, and carrying out the appropriate inspections, maintenance, monitoring, and reporting required in the OWTS Permit conditions.

3. B. CORRECTIVE ACTION REQUIREMENTS (OWTS Policy 3.3.1) (OWTS Policy 9.2.1)

A. SCEHD will conduct an investigation in a timely manner to determine the validity of an OWTS repair/replacement permit application, complaint report, or other notification of a failing OWTS or component, or the discovery of a cesspool in use. Upon receipt of a complaint report from a member of the public or a notification by a property owner or service provider, a violation file will be generated with an assigned tracking number.

B. Upon investigation and confirmation of a failing OWTS, SCEHD will issue a Notice of Violation directing the property owner to eliminate the immediate health hazard through pumping of the septic tank by a licensed septic tank pumper or by the elimination of wastewater flows from the structure. These actions shall continue until the system has been repaired/replaced and final approval granted by SCEHD. If known, the Notice of Violation shall note why the system is failing and with specific corrective actions needed. SCEHD will also require proper destruction of any cesspool found in use by issuing a Notice of Violation directing abatement. A new OWTS will be required for use.

The Notice of Violation shall require repairs to the OWTS, as needed, within a reasonable time frame. An Inspection Report or Warning Notice may also be issued to the property owner at the time of the site inspection. Subsequently, a Notice of Violation detailing required corrective actions and time frames may be issued if the identified failure cannot be corrected immediately.

C. The proposed repair/replacement by a property owner and/or contractor in an OWTS Permit Application shall be evaluated by SCEHD to ensure it meets the minimum design requirements of this LAMP or that the proposed repair is otherwise in substantial conformance to the greatest extent practicable.

D. Any OWTS component failure, other than those listed in E and F below, such as a broken distribution box or broken piping connection (a minor failure), shall have that specific component repaired in a timely manner, under permit and inspection from SCEHD, so as to return the OWTS to proper functioning condition without the requirement to bring the entire OWTS into compliance with this LAMP.

E. In the event of failure of a septic tank (a major failure), such as a baffle, or loss of structural integrity, or groundwater intrusion or sewage/effluent discharge, SCEHD will require that the septic tank be repaired or replaced to bring the tank into compliance with the septic tank specifications in this LAMP within a timely manner. An OWTS Permit Application will be required and a permit must be issued by Sierra County noting the corrections required. The system may not be backfilled or placed into use without an inspection and final approval from SCEHD.

F. In the event of the failure of a supplemental treatment system or a dispersal system (a major failure), the failing system and/or components shall be brought into compliance with this LAMP within a timely manner. Replacement of the failing system with a conventional, engineered or supplemental treatment system will be specified in an OWTS Permit issued by SCEHD. The system may not be backfilled

or placed into use without an inspection and final approval from SCEHD. Supplemental treatment may be required in situations where ground or surface waters have been impacted by the failing OWTS.

G. Failure of OWTS components (septic tank, treatment or dispersal system) may lead to a major failure, requiring replacement of one or more components of the OWTS. Proper pumping, inspections, maintenance, and monitoring of the OWTS would be expected to reduce the frequency and severity of a failing component or multiple components.

H. Soils test by a qualified professional may be required, at the discretion of SCEHD, to properly characterize the site with a failing OWTS. Groundwater separation requirements from the bottom of the dispersal system and the highest anticipated groundwater level for repairs are the same as newly constructed systems: five (5) to twenty (20) feet (based on soil percolation rates) for conventional systems and as little as two (2) feet for systems with supplemental treatment and/or an alternate dispersal system and must be repaired to meet the LAMP requirements to the greatest extent practicable.

I. Required correction(s) shall be completed under permit and inspection from SCEHD within specified time frames. No component of an OWTS shall be backfilled and placed into use until authorized in writing by SCEHD staff after an inspection confirms substantial compliance with valid permit conditions and the standards in this LAMP.

J. Failure to complete the required corrective action within the time frames given will result in enforcement action which may include referral to the Sierra County District Attorney and could ultimately result in condemnation of the structure for immediate health hazard to residents and/or the public.

K. SCEHD will pursue, but cannot guarantee the availability, of potential funding for required corrective actions, such as the State Water Board's Clean Water Revolving Fund for mini-loans, and upon request, will advise property owners of other known funding sources depending on their situation.

3.C. SUBSTANDARD SYSTEMS (OWTS Policy 9.4.12)

Parcels with OWTS that are found to be substantially out of compliance with this LAMP shall be prohibited from having future additions to structures or other modifications to the property that would potentially increase wastewater flow to the OWTS or decrease the amount of useable area available for the OWTS. A new OWTS permit may be

required to repair, replace, or add OWTS components to bring the system into compliance with this LAMP to the greatest extent practicable. The permit application requirements are included in Section 2.F.

SECTION 4. LAND DIVISIONS OF PARCELS SERVED BY OWTS (OWTS Policy 9.1.2) (OWTS Policy 9.1.10)

4.A. LAND DIVISIONS (CREATION OF NEW PARCELS)

The Sierra County General Plan allows the creation of new parcels as small as ½ acre in the Rural Residential land use designation within existing, designated "community core areas" in locations that have suitable soils, access to public water systems, and are sufficiently setback from water resources and lack other environmental constraints. However, most Rural-designated lands that permit further subdivisions, but without feasible access to a community water system, require a minimum density of one (1) dwelling unit per two (2) acres—with 5 to 10-acre minimum parcel size being more common. Any proposal for a large development with smaller acreage parcels served by OWTS systems would receive greater scrutiny by SCEHD of pathogen transport and cumulative nitrogen and hydraulic mounding impacts.

All **tentative parcel maps** shall show for each parcel the location, boundaries and calculated acreage of the disposal area(s) as determined by the qualified professional based on the testing performed. The test results shall be submitted concurrently with the tentative land division application. If individual wells are proposed, the map shall show all existing and proposed well sites. The map shall be to scale and show topography in the disposal area at five (5) feet contour intervals and location of the test pits, percolation tests, and any piezometers.

For **final parcel maps**, each parcel shall clearly identify (delineated and labeled) the qualifying disposal area(s) on the final or parcel map. If recordation of a parcel map is waived and developable parcels are proposed, a plot plan showing equivalent information shall be attached as an exhibit to, and recorded with, the notice of approval of waiver of parcel map. The face of each map or plot plan shall be annotated: "An onsite sewage disposal system shall be located only within the disposal area indicated for each parcel unless an alternative site is specifically approved by the Sierra County Director of Environmental Health." If individual wells are proposed, the map shall show all existing and proposed well sites.

4.B. REQUIRED CONNECTION TO PUBLIC SEWER (OWTS Policy 9.2.10)
SCEHD staff will require connection to a public sewer whenever a project is proposed near public sewers. SCEHD staff will rely on the agency operating the public sewer to make the determination of availability as guided by Section 1. C. 9. of this LAMP (Installation of new or replacement OWTS where public sewer is available).

SECTION 5. MININUM SITE EVALUATION AND SITING STANDARDS FOR ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS Policy 9.5)

These requirements will be used for determining soil depths and groundwater levels when siting and designing Onsite Wastewater Treatment Systems (OWTS) on existing parcels to accomplish the following:

- Protect the groundwater quality by ensuring proper treatment of the sewage effluent prior to its entering into groundwater.
- Protect the public health from failing OWTS caused by high groundwater.
- Provide a methodology for the evaluation of potential building sites using OWTS with regards to maintaining minimum groundwater separation requirements of the Adopted State OWTS Policy.

5.A. QUALIFIED PROFESSIONAL (OWTS Policy 9.2.4) (OWTS Policy 9.1.1)
A qualified professional shall perform all necessary soil and site evaluations for all new OWTS and for existing OWTS where the treatment or dispersal system will be replaced or expanded.

“Qualified professional” means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered qualified professionals.

Qualifications generally cover requirements for education, training, and licensing. Additional information on education and training is available from the California Onsite Water Association (COWA), see: http://www.cowa.org/

5.B. SITE EVALUATION (OWTS Policy 9.1.1) (OWTS Policy 9.1.3) (OWTS Policy 9.1.5) (OWTS Policy 9.1.6) (OWTS Policy 9.5)

Unless a Parcel already has documentation on the suitability for wastewater dispersal, every parcel SHALL have soils tests to determine suitability for wastewater dispersal. This may include, depending on the type of OWTS proposed, soil profile pits, soil borings, percolation tests, and/or may require groundwater monitoring. The soil test guidelines detailed in Sections 5.A. and 5.B. are applicable to all parcels.

Testing requirements to create new parcels (land divisions) are discussed in Section 4 of this LAMP.

(1) **Soil Profile (soil mantle):** (OWTS Policy 9.1.1) (OWTS Policy 9.1.3) (OWTS Policy 9.1.5) (OWTS Policy 9.1.6)

A site evaluation shall determine that adequate soil depth is present in the dispersal area. Soil depth is measured vertically to the point where bedrock, hardpan, impermeable soils, or saturated soils are encountered or an adequate depth has been determined. Soil depth shall be determined through the use of soil profile(s) in the dispersal area and the designated dispersal system replacement area, as viewed in excavations exposing the soil profiles in representative areas, unless the SCEHD has determined through historical or regional information that a specific site soil profile evaluation is unwarranted.

a. The results of soil profile pits and borings will assist in determination of site soil depth and the highest anticipated depth to a water table. Soil borings, conducted by a qualified professional, and with experience in boring interpretation, must be used to determine overall soil depth and depth to groundwater where deeper depths and unsafe site/soil conditions exist.

b. At least one test pit shall be excavated on each lot. It shall be at least two (2) feet wide and five (5) feet deep. It shall slope towards one end at a rate no greater than 3:1. Soil borings are not limited to this five (5) foot depth. The soil profile shall be logged by a Qualified Professional and backfilled. At the request of the Director, pits/borings will be excavated for examination by SCEHD staff.

c. The profile or boring shall have enough information to allow a determination of whether or not groundwater is present and, if so, the highest anticipated depth to water and the overall depth of soil at the site. Soil pits/borings are to be excavated a minimum of five (5) feet in depth. Deeper borings to determine overall soil depth and depth to groundwater would be recommended if it is believed that soils at the site meet the minimum depth beneath the bottom of the dispersal system for a

conventional OWTS.

d. All soil profile pits and deep borings shall have soils described as follows:

i. For each pit or deep boring identify the property owner, pit/deep boring number, the slope percent of the area of the pit/boring, the date logged, and the qualified professional logging the pit/boring.

ii. All pit or deep boring logs, including failing pits/borings are to be submitted to EHD for review.

iii. Within each pit/boring, from the surface to bottom of the excavation, the following is to be provided for each horizon:

a. Depth of each horizon within the pit/boring;
b. Color(s) within each horizon;
c. Amount (by percent) and size of gravels;
d. Soil texture;
e. The number, size, and prominence of soil mottles, where present;
f. Soil structure;
g. Consistence;
h. Roots by number and size;
i. Pores by number and size; and,
j. Boundary thickness between horizons.

e. The end result is to have knowledge of the useable soil depth and depth to groundwater at the site. It is not always possible to determine the depth to a seasonal water table by observing soil pits or borings. If this is the case, then it may be necessary to have a possible water table depth determined by actual measurements in groundwater monitoring wells.

(2) **Groundwater Site Evaluation** (OWTS Policy 9.1.1) (OWTS Policy 9.1.3)

Site evaluation shall determine the anticipated highest level of groundwater within the dispersal field.

a. Direct observation of the highest extent of soil mottling observed in the examination of soil profiles, recognizing that soil mottling is not always an indicator of the uppermost extent of high groundwater; or

b. Direct observation of groundwater levels during the anticipated period of high

groundwater. Methods for groundwater monitoring and determinations may include visible observations and/or installation of piezometers.

c. Other methods, such as historical records, if deemed acceptable to by SCEHD.

d. When a conflict in the above methods of examination exists, the direct observation method indicating the highest level shall govern.

e. GROUNDWATER MONITORING

When the highest anticipated depth to groundwater cannot be determined with the use of pits, or is in dispute, groundwater monitoring wells, for monitoring and determining the highest anticipated depth to groundwater, will be required.

Examples of the need for groundwater monitoring in wells include:

i. Vegetation tolerant of, or indicative of, a high water table present on or in the vicinity of the parcel.

ii. High groundwater has previously been found in the vicinity.

iii. The test pits show cracked or creviced formations but no clear delineation of the top of the table.

iv. Other conditions or historical data preclude accurate determination of the groundwater levels by dry weather observations.

v. The test pits indicate less than five feet of disposal material over an impervious stratum (for a proposed land division).

vi. Free water from seepage is observed in the test pit.

f. Maps showing the locations of monitoring wells constructed at the site, and their monthly or weekly monitoring results, are to be submitted to SCEHD along with soil profile information and percolation test results. Groundwater monitoring, as with other soil tests, is to be conducted by a qualified professional.

g. The height of seasonal high groundwater shall be determined by actual measurements of observation wells during periods of maximum soil moisture content, or by mathematical modeling after sufficient precipitation has occurred to meet or exceed field capacity of the soil, and produce a response in observation

wells acceptable to the Director.

(3) **Percolation Test Results** in the effluent disposal area shall not be faster than one minute per inch (1 MPI) or slower than one hundred twenty minutes per inch (120 MPI). Percolation testing must be performed at the depth of the proposed drainage system. Areas with percolation rates faster than five (5) minutes per inch or ranging from sixty-one (61) to 120 minutes per inch will require an engineered design or supplemental treatment system. Areas where percolation rates exceed 120 minutes per inch are unacceptable. For the creation of new lots or parcels, rates faster than five (5) minutes per inch or slower than one hundred twenty (120) minutes per inch are unacceptable.

Percolation testing must be conducted by a qualified professional such as a California Professional Engineer, California Professional Geologist, Certified Soil Scientist or Registered Environmental Health Specialist and in accordance with standard percolation test procedures to determine the stabilized percolation rate.

Sizing requirements (based on percolation test results) are included in Section 5C (**Table 1**). In lieu of conducting percolation testing, soil texture analysis can be utilized to determine the maximum soil application rate in gallons per day per square foot. Section 5C (**Table 2**) includes the Design for Soil Application Rates.

Once the sizing of the OWTS has been determined, the applicant must develop and submit an accurate site plan for the proposed building project and the proposed OWTS. All percolation test rates shall be performed by presoaking of percolation test holes and continuing the test until a stabilized rate is achieved.

a. Number of Percolation Holes

1. A minimum of three (3) percolation tests are required when percolation rates are 60 minutes per inch (MPI) or less. Four (4) tests are required when percolation rates exceed 60 minutes per inch.
2. Additional tests may be required on a site specific basis for reasons that include the following:
   a) Unacceptable or failed tests
   b) Areas of the dispersal field requiring defined limits for exclusion
   c) The dispersal field is located out of a concentrated area
   d) Soil conditions are variable or inconsistent
   e) To verify suitable soil permeability beneath the chosen leach field depth

b. Depth of Percolation Test Holes

1. Percolation test-hole depth shall be representative of the proposed dispersal system trench bottom depth or twelve (12) inches for systems such as an at-grade or drip dispersal system.
2. For each lot of proposed land divisions (see LAMP Section 4), two to three tests are to be conducted at the depth representative of the proposed dispersal system trench bottom.
3. Conditions which may require percolation testing deeper than dispersal depth include:
   a) Consolidated rock or suspected impervious soil layers beneath the site;
   b) Slopes exceeding 30 %;
   c) Other factors as might be determined by sound site evaluation practices.

c. Location of Percolation Test Holes

1. Percolation test holes shall be excavated in the area representing the proposed location of the dispersal system or within an expected disposal area of a proposed parcel to be created by a land division. Percolation tests shall be conducted in soils suitable for dispersal of effluent that otherwise meet soil depth and groundwater depth for the type of system proposed for construction.
2. Test holes shall be representative of the dispersal area demonstrating site conditions throughout the entire wastewater treatment system or sewage dispersal area (land divisions) with equal consideration of primary and reserve dispersal systems.

d. Identification of Percolation Test Holes

1. When specifically requested, locations are to be staked and flagged so the test-hole locations can be located.
2. They are to be identified as to location on the site plan with:
   a) A test hole number or letter;
   b) Depth of the test hole;
   c) Proposed lot/parcel number or letter if associated with a subdivision or other land use project requiring soil testing.

e. Results Reporting

1. All test data and other required information is to be submitted to the SCEHD on forms and format acceptable to the SCEHD with appended data or information as needed.
2. Reports shall be signed with an original signature from the qualified professional who either performed or supervised the testing.
3. Qualified professionals who employ technicians are responsible for the work

performed by the technician. It is incumbent upon the qualified professional to properly train, equip, and supervise anyone performing work under his or her direction and license.

4. The percolation test is only one of several critical factors in siting an OWTS. Site considerations may require special evaluation by a qualified professional to technically address issues such as high groundwater, steep slope, nitrate impacts, and cumulative impacts such as mounding and loading.

(4) **The Minimum Horizontal Setback Distances** from any OWTS treatment component and dispersal systems are summarized in the **Appendix B** (Horizontal Setbacks). Alternative minimum setbacks consistent with the Sierra County Code 15.12.060 (Water Resources setbacks) are included in this Tier 2 LAMP. The horizontal setbacks include, but are not limited to those: (OWTS Policy 9.4.10.4) (OWTS Policy 9.4.10.5)

i. 5 feet for septic tank, dosing/pump tank and 8 feet for disposal field from buildings and structures;
ii. 5 feet from parcel property lines;
iii. 50 feet for septic tank, dosing/pump tank and 100 feet for disposal field from individual water wells and monitoring wells;
iv. 100 feet for septic tank, dosing/pump tank and 150 feet for disposal field from a public water well where the depth of the effluent dispersal system does not exceed 10 feet;
v. 100 feet from any unstable land mass or any areas subject to earth slides identified by a registered engineer or registered geologist; other setback distance are allowed, if recommended by a geotechnical report prepared by a qualified professional;
vi. *Outside of Community Areas.* In areas of unincorporated Sierra County outside of community areas, sewage disposal facilities shall be set back a minimum of 50 feet from the high water line of intermittent streams, wetlands and swales. Sewage disposal facilities shall be set back a minimum of 150 feet from the high water line of perennial streams, lakes, ponds, and reservoirs, unless a greater set back is required by the County Environmental Health Department or State Regional Water Quality Control Board
vii. *Within Community Areas.* In areas of unincorporated Sierra County within a community area, sewage disposal facilities shall be set back a minimum of 50 feet from the high water line of intermittent streams, wetlands and swales. Sewage disposal facilities shall be set back a minimum of 100 feet from the high water line of perennial streams, lakes, ponds, reservoirs, and other

existing or potential potable water sources unless a lesser set back has been approved by the County Environmental Health Department, the California Department of Public Health, and/or the California Regional Water Quality Control Board, as appropriate;

viii. Where the effluent dispersal system is within 1,200 feet from a public water systems' surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 400 feet from the high water mark of the reservoir, lake or flowing water body.

ix. Where the effluent dispersal system is located more than 1,200 feet but less than 2,500 feet from a public water systems' surface water intake point, within the catchment of the drainage, and located such that it may impact water quality at the intake point such as upstream of the intake point for flowing water bodies, the dispersal system shall be no less than 200 feet from the high water mark of the reservoir, lake or flowing water body.

(5) **OWTS Within 1,200 feet of Intake Point for Surface Water Treatment System:** (OWTS Policy 9.2.11) (OWTS Policy 9.2.12) (OWTS Policy 9.4.10.4) (OWTS Policy 9.4.10.5)

Horizontal setbacks from public water system's surface water intake point are included in Section 5.B.4 (Horizontal setbacks) and also included in **Appendix B** (Horizontal Setbacks). If the required setbacks cannot be met, supplemental treatment systems shall be designed to mitigate any impairment of the surface water due to nitrogen or pathogens.

Prior to issuing a permit to install an OWTS the permitting agency shall determine if the OWTS is within 1,200 feet of an intake point for a surface water treatment plant for drinking water, is in the drainage catchment in which the intake point is located, and is located such that it may impact water quality at the intake point such as being upstream of the intake point for a flowing water body:

i. The permitting agency shall provide a copy of the permit application to the owner of the water system of their proposal to install an OWTS within 1,200 feet of an intake point for a surface water treatment. If the owner of the water system cannot be identified, then the permitting agency will notify California Department of Public Health Drinking Water Program.

ii. The permit application shall include a topographical plot plan for the parcel showing the OWTS components, the property boundaries, proposed structures, physical address, and name of property owner.

iii. The permit application shall provide the estimated wastewater flows, intended use of proposed structure generating the wastewater, soil data, and estimated depth to seasonally saturated soils.
iv. The public water system owner shall have 15 days from receipt of the permit application to provide recommendations and comments to the permitting agency.

(6) **Natural Ground Slope** in all areas used for effluent disposal shall not be greater than 30 percent.

(7) **Parcel Density:** The average density for any subdivision of property made by Tentative Approval pursuant to the Subdivision Map Act occurring after the effective date of this Policy shall be consistent with the Sierra County General Plan. The Sierra County General Plan allows the creation of new parcels as small as one-half (½) acre in the Rural Residential land use designation within existing, designated "community core areas" in locations that have suitable soils, access to public water systems, and are sufficiently setback from water resources and lack other environmental constraints. However, most Rural-designated lands that permit further subdivisions, but without feasible access to a community water system, require a minimum density of one (1) dwelling unit per two (2) acres—with 5 to 10-acre minimum parcel size being more common. Any proposal for a large development with smaller acreage parcels served by OWTS systems would receive greater scrutiny by SCEHD of pathogen transport and cumulative nitrogen and hydraulic mounding impacts.

(8) **Vertical Separation to Impermeable Layer or Bedrock**
The minimum vertical separation between the bottom of the dispersal system to impermeable layer or bedrock for a conventional OWTS shall be at least four (4) feet of native soil. A conventional OWTS must be installed in native soil, where the site has not been filled nor the soil modified. Additional vertical separation may be required based on site characteristics (including but not limited to soil texture, structure, percolation rate, slope, etc.).

When a site does not meet the minimum criteria for a conventional OWTS, an engineered or supplemental treatment system may be considered for approval. The design shall be based on the site characteristics (including but not limited to soil texture, structure, percolation rate, slope, etc.) and the required level of treatment to ensure water quality and public health. For engineered or supplemental treatment systems, the minimum vertical separation between the bottom of the dispersal system to impermeable layer or bedrock shall be no less than two (2) feet.

(9) **Vertical Separation to Groundwater**

The minimum vertical separation between the bottom of the dispersal system to groundwater for a conventional OWTS shall be at least four (4) feet of native soil. A conventional OWTS must be installed in native soil, where the site has not been filled nor the soil modified. Additional vertical separation may be required based on site characteristics (including but not limited to soil texture, structure, percolation rate, slope, etc.).

When a site does not meet the minimum criteria for a conventional OWTS, an engineered or supplemental treatment system may be considered for approval. The design shall be based on the site characteristics (including but not limited to soil texture, structure, percolation rate, slope, etc.) and the required level of treatment to ensure water quality and public health. For engineered or supplemental treatment systems, the minimum vertical separation between the bottom of the dispersal system to groundwater shall be no less than two (2) feet, in accordance with OWTS Policy 9.4.8.

5. C. MINIMUM OWTS DESIGN REQUIREMENTS

1. A qualified professional shall design all new OWTS and modifications to existing OWTS where the treatment or dispersal system will be replaced or expanded. A qualified professional employed by a local agency, while acting in that capacity, may design, review, and approve a design for a proposed OWTS.

2. OWTS shall be located, designed, and constructed in a manner to ensure that effluent does not surface at any time, and that percolation of effluent will not adversely affect beneficial uses of waters of the State.

3. The design of new and replacement OWTS shall be based on the expected influent wastewater quality with a projected flow not to exceed 3,500 gallons per day, unless a qualified professional provides hydraulic loading verification. Verification of the hydraulic loading components shall include the peak wastewater flow rates and the projected average daily flow for purposes of sizing the dispersal system, the characteristics of the site, and the required level of treatment for protection of water quality and public health.

4. All dispersal systems shall have at least twelve (12) inches of soil cover, except for pressure distribution systems, which must have at least six (6) inches of soil cover.

5. Dispersal systems shall utilize leach lines (trenches 24”-36” wide) of leachbeds using the square footage of the bottom area as the infiltrative area. If deeper absorption trenches are used, credit may be given for the added absorption area provided in deeper trenches with a resultant decrease in length of trench. Such credit shall be given in accordance with Table 3 in the *Manual of Septic Tank Practice* or other cited sources. Leach pits and other dispersal systems may only be authorized for repairs where siting limitations require a variance.

6. Maximum application rates (square feet per bedroom) shall be determined from stabilized percolation rate with sizing in accordance with Percolation Conversion Chart as provided in **Table 1**, or from Maximum Soil Application Rate (gallons per day per square foot) based on soil texture and structure determination as provided in **Table 2**.

7. Dispersal systems shall not exceed a maximum depth of 10 feet as measured from the ground surface to the bottom of the trench. If the parcel requires a design greater than 10-feet in depth due to geological constraints, then an Alternative design will be required supporting the engineering conclusion that a septic tank/leaching system on the parcel(s) in question will provide adequate treatment and disposal of the sewage effluent.

8. All new dispersal systems shall have 100 percent replacement area that is equivalent and separate, and available for future use.

9. No dispersal systems or replacement areas shall be covered by an impermeable surface, such as paving, building foundation slabs, plastic sheeting, or any other material that prevents oxygen transfer to the soil. If limiting parcel constraints necessitate the dispersal system being covered by an impermeable surface, then an engineered design will be required supporting the engineering conclusion that a septic tank/leaching system on the parcel (s) in question will provide adequate treatment and disposal of the sewage effluent.

10. Rock fragment content of native soil surrounding the dispersal system shall not exceed 50 percent by volume for rock fragments sized as cobbles or larger and shall be estimated using either the point-count or line-intercept methods. Parcels with native soil conditions exceeding 50% by volume will require mitigation measures designed by a qualified professional.

11. Increased allowance for IAPMO certified dispersal systems using a multiplier of less than 0.70 is not allowed.

Table 1: PERCOLATION RATE CONVERSION CHART *

as Determined from Stabilized Percolation rate

(Required square foot per bedroom of leach area)

5 min/in = 125 sq.ft/bdrm	33 min/in = 260 sq.ft/bdrm
6 min/in = 130 sq.ft/bdrm	34 min/in = 265 sq.ft/bdrm
7 min/in = 140 sq.ft/bdrm	35 min/in = 270 sq.ft/bdrm
8 min/in = 150 sq.ft/bdrm	36 min/in = 275 sq.ft/bdrm
9 min/in = 160 sq.ft/bdrm	37 min/in = 275 sq.ft/bdrm
10 min/in = 165 sq.ft/bdrm	38 min/in = 280 sq.ft/bdrm
11 min/in = 170 sq.ft/bdrm	39 min/in = 280 sq.ft/bdrm
12 min/in = 175 sq.ft/bdrm	40 min/in = 285 sq.ft/bdrm
13 min/in = 180 sq.ft/bdrm	41 min/in = 285 sq.ft/bdrm
14 min/in = 185 sq.ft/bdrm	42 min/in = 290 sq.ft/bdrm
15 min/in = 190 sq.ft/bdrm	43 min/in = 290 sq.ft/bdrm
16 min/in = 195 sq.ft/bdrm	44 min/in = 300 sq.ft/bdrm
17 min/in = 200 sq.ft/bdrm	45 min/in = 300 sq.ft/bdrm
18 min/in = 205 sq.ft/bdrm	46 min/in = 300 sq.ft/bdrm
19 min/in = 210 sq.ft/bdrm	47 min/in = 305 sq.ft/bdrm
20 min/in = 215 sq.ft/bdrm	48 min/in = 305 sq.ft/bdrm
21 min/in = 220 sq.ft/bdrm	49 min/in = 310 sq.ft/bdrm
22 min/in = 220 sq.ft/bdrm	50 min/in = 315 sq.ft/bdrm
23 min/in = 225 sq.ft/bdrm	51 min/in = 315 sq.ft/bdrm
24 min/in = 230 sq.ft/bdrm	52 min/in = 320 sq.ft/bdrm
25 min/in = 230 sq.ft/bdrm	53 min/in = 320 sq.ft/bdrm
26 min/in = 235 sq.ft/bdrm	54 min/in = 320 sq.ft/bdrm
27 min/in = 240 sq.ft/bdrm	55 min/in = 325 sq.ft/bdrm
28 min/in = 245 sq.ft/bdrm	56 min/in = 325 sq.ft/bdrm
29 min/in = 245 sq.ft/bdrm	57 min/in = 325 sq.ft/bdrm
30 min/in = 250 sq.ft/bdrm	58 min/in = 330 sq.ft/bdrm
31 min/in = 255 sq.ft/bdrm	59 min/in = 330 sq.ft/bdrm
32 min/in = 255 sq.ft/bdrm	60 min/in = 330 sq.ft/bdrm

(Percolation Rate Conversion Chart –Based on from Sizing from *Manual of Septic Tank Practice*)

Table 2: Design Soil Application Rates

Soil Texture (per the USDA soil classification system)	Soil Structure Shape	Grade	Maximum Soil Application Rate (gallons per day per square foot)[1]
Coarse Sand, Sand, Loamy Coarse Sand, Loamy Sand	Single grain	Structureless	0.8
Fine Sand, Very Fine Sand, Loamy Fine Sand, Loamy Very Fine Sand	Single grain	Structureless	0.4
Coarse Sandy Loam, Sandy Loam	Massive	Structureless	0.2
	Platy	Weak	0.2
		Moderate, Strong	Prohibited
	Prismatic, Blocky, Granular	Weak	0.4
		Moderate, Strong	0.6
Fine Sandy Loam, Very Fine Sandy Loam	Massive	Structureless	0.2
	Platy	Weak, Moderate, Strong	Prohibited
	Prismatic, Blocky, Granular	Weak	0.2
		Moderate, Strong	0.4
Loam	Massive	Structureless	0.2
	Platy	Weak, Moderate, Strong	Prohibited
	Prismatic, Blocky, Granular	Weak	0.4
		Moderate, Strong	0.6
Silt Loam	Massive	Structureless	Prohibited
	Platy	Weak, Moderate, Strong	Prohibited
	Prismatic, Blocky, Granular	Weak	0.4
		Moderate, Strong	0.6
Sandy Clay Loam, Clay Loam, Silty Clay Loam	Massive	Structureless	Prohibited
	Platy	Weak, Moderate, Strong	Prohibited
	Prismatic, Blocky, Granular	Weak	0.2
		Moderate, Strong	0.4
Sandy Clay, Clay, or Silty Clay	Massive	Structureless	Prohibited
	Platy	Weak, Moderate, Strong	Prohibited
	Prismatic, Blocky, Granular	Weak	Prohibited
		Moderate, Strong	0.2

(Source: USEPA Onsite Wastewater Treatment Systems Manual, February 2002)

[1] Soils listed as prohibited may be allowed under the authority of the Regional Water Board, or as allowed under an approved Local Agency Management Program per Tier 2.

5.D. OWTS CONSTRUCTION AND INSTALLATION STANDARDS

a. All new or replacement septic tanks and new or replacement oil/grease interceptor tanks shall comply with the standards contained in Appendix H (Private Sewage Disposal Systems) of the 2016 California Plumbing Code and/or subsequent revisions as adopted by Sierra County.

1. All new septic tanks shall comply with the following requirements:
   i. Access openings shall have watertight risers, the tops of which shall be set at most 6 inches below finished grade; and
   ii. Access openings at grade or above shall be locked or secured to prevent unauthorized access.

2. Capacity of Septic Tanks shall comply with the following requirements (**Table 3**):

Table 3 : Capacity of Septic Tanks [1,2]

Single-family dwellings - number of bedrooms	Multiple dwelling units or apartments – one bedroom each	Minimum septic tank capacity (gallons)
1 or 2	----	750
3	----	1000
4	2 units	1200
5 or 6	3	1500
----	4	2000
----	5	2250
----	6	2500
----	7	2750
----	8	3000
----	9	3250
----	10	3500

Notes: [1]Extra bedroom, 150 gallons each.
[2]Septic tank sizes in this table include sludge storage capacity and the connection of domestic food waste disposers without further volume increase.

b. New and replacement OWTS septic tanks shall be limited to those approved by the International Association of Plumbing and Mechanical Officials (IAPMO) or stamped and certified by a California registered civil engineer as meeting the industry standards, and their installation shall be according to the manufacturer's instructions.

c. New and replacement OWTS septic tanks shall be designed to prevent solids in excess of three-sixteenths (3/16) of an inch in diameter from passing to the dispersal system. Septic tanks that use a National Sanitation Foundation/American National Standard Institute (NSF/ANSI) Standard 46 certified septic tank filter at the final point of effluent discharge from the OWTS and prior to the dispersal system shall be deemed in compliance with this requirement.

d. A Licensed General Engineering Contractor (Class A), General Building Contractor (Class B), Sanitation System Contractor (Specialty Class C- 42), or Plumbing Contractor (Specialty Class C-36) shall install all new OWTS and replacement OWTS in accordance with California Business and Professions Code Sections 7056, 7057, and 7058 and Article 3, Division 8, Title 16 of the California Code of Regulations. A property owner may also install his/her own OWTS if the as-built diagram and the installation are inspected and approved by the Regional Water Board or local agency at a time when the OWTS is in an open condition (not covered by soil and exposed for inspection).

SECTION 6. WAIVER AND VARIANCE PROCESS (OWTS Policy 9.2.3) (OWTS Policy 9.2.11) (OWTS Policy 9.4.1-9.4.9)

When granted, waivers are typically issued in response to mitigating a health and safety concern. In cases where a replacement OWTS cannot meet current installation requirements, waivers may also be issued provided the setback distance is greater for the replacement system than the failing system, and provided the replacement system meets the requirements to the greatest extent practical. Other mitigating factors are also considered, such as alternative OWTS treatment systems, off-site disposal options, or other restrictions necessary to protect groundwater quality and public health in accordance with Section 9.4.11 of the OWTS Policy. However, alternative OWTS treatment systems are not practical or even possible in all cases. Property owners on fixed incomes, with upside down mortgages or when the cost of an alternative OWTS treatment approaches total property values, the property owner may not be able to afford such systems. Enforcement action and potentially vacating such residences is not a viable solution. In these cases, professional judgment and discretion are used to make the most of a bad situation and gain the most water quality and public health improvements that are practical in the current situation. This may include meeting replacement standards to the greatest extent practicable as determined by the Director of Environmental Health.

These restrictions on the local variance process generally satisfy Section 9.2.3 of the OWTS Policy. However, with the implementation of this Tier 2 LAMP and concurrence from the CVRWQCB, the prohibited items listed in Section 9.4.1 through 9.4.9 of the OWTS Policy cannot be considered for variances to Sierra County Code. Furthermore, the variance of replacement OWTS located within prescribed setbacks to public water wells and surface water intakes will specifically require engineered or supplemental treatment as part of the waiver (see Separation distances and setbacks, below).

Sierra County currently has code sections related to variance procedures including a variance procedure (SCC 12.04.085), as well as another section (SCC 12.04.086) that establishes special provisions that will allow construction of all or part of septic systems on abutting property and/or on public property when no other reasonable options can be found for onsite sewage disposal. This code section is specific to the Townsite of Downieville.

SCEHD will maintain records of the number, location, and description of permits issued for OWTS where a variance or waiver is granted in accordance with Section 9.3.1 of the OWTS Policy.

APPENDICES

APPENDIX A. DEFINITIONS

The following definitions apply to this LAMP:

"At-grade system" means an OWTS dispersal system with a discharge point located at the preconstruction grade (ground surface elevation). The discharge from an at- grade system is always subsurface.

"Average annual rainfall" means the average of the annual amount of precipitation for a location over a year as measured by the nearest National Weather Service station for the preceding three decades. For example the data set used to make a determination in 2012 would be the data from 1981 to 2010.

"Basin Plan" means the same as "water quality control plan" as defined in Division 7 (commencing with Section 13000) of the Water Code. Basin Plans are adopted by each Regional Water Board, approved by the State Water Board and the Office of Administrative Law, and identify surface water and groundwater bodies within each Region's boundaries and establish, for each, its respective beneficial uses and water quality objectives. Copies are available from the Regional Water Boards, electronically at each Regional Water Boards website, or at the State Water Board's *Plans and Policies* web page (http://www.waterboards.ca.gov/plans_policies/).

"Bedrock" means the rock, usually solid, that underlies soil or other unconsolidated, surficial material.

"CEDEN" means California Environmental Data Exchange Network and information about it is available at the State Water Boards website or http://www.ceden.org/index.shtml.

"Cesspool" means an excavation in the ground receiving domestic wastewater, designed to retain the organic matter and solids, while allowing the liquids to seep into the soil. Cesspools differ from seepage pits because cesspool systems do not have septic tanks and are not authorized under this Policy. The term cesspool does not include pit-privies and out-houses which are not regulated under this Policy.

"Clay" means a soil particle; the term also refers to a type of soil texture. As a soil

particle, clay consists of individual rock or mineral particles in soils having diameters
<0.002 mm. As a soil texture, clay is the soil material that is comprised of 40 percent or more clay particles, not more than 45 percent sand and not more than 40 percent silt particles using the USDA soil classification system.

"Cobbles" means rock fragments 76 mm or larger using the USDA soil classification systems.

"Conventional OWTS" means an OWTS which employs a septic tank and gravity fed leaching trenches or beds, whether aggregate filled or chambered. A conventional system may include a lift station if the discharge does not pressure dose the dispersal trenches or beds. This OWTS must be installed in native soil, where the site has not been filled nor the soil modified.

"Dispersal system" means a leachfield, seepage pit, mound, at-grade, subsurface drip field, evapotranspiration and infiltration bed, or other type of system for final wastewater treatment and subsurface discharge.

"Domestic wastewater" means wastewater with a measured strength less then high-strength wastewater and is the type of wastewater normally discharged from, or similar to, that discharged from plumbing fixtures, appliances and other household devices including, but not limited to toilets, bathtubs, showers, laundry facilities, dishwashing facilities, and garbage disposals. Domestic wastewater may include wastewater from commercial buildings such as office buildings, retail stores, and some restaurants, or from industrial facilities where the domestic wastewater is segregated from the industrial wastewater. Domestic wastewater may include incidental RV holding tank dumping but does not include wastewater consisting of a significant portion of RV holding tank wastewater such as at RV dump stations. Domestic wastewater does not include wastewater from industrial processes.

"Dump Station" means a facility intended to receive the discharge of wastewater from a holding tank installed on a recreational vehicle. A dump station does not include a full hook-up sewer connection similar to those used at a recreational vehicle park.

"Domestic well" means a groundwater well that provides water for human consumption and is not regulated by the California Department of Public Health.

"Earthen material" means a substance composed of the earth's crust (i.e. soil and rock).

"EDF" see "electronic deliverable format."

"Effluent" means sewage, water, or other liquid, partially or completely treated or in its natural state, flowing out of a septic tank, aerobic treatment unit, dispersal system, or other OWTS component.

"Electronic deliverable format" or **"EDF"** means the data standard adopted by the State Water Board for submittal of groundwater quality monitoring data to the State Water Board's internet-accessible database system Geotracker (http://geotracker.waterboards.ca.gov/).

"Engineered system" means an OWTS that utilizes one or more special design features, such as pressure distribution or mound dispersal that provides additional treatment prior to dispersal to the ground.

"Escherichia coli" means a group of bacteria predominantly inhabiting the intestines of humans or other warm-blooded animals, but also occasionally found elsewhere. Used as an indicator of human fecal contamination.

"Existing OWTS" means an OWTS that was constructed and operating prior to the effective date of this Policy, and OWTS for which a construction permit has been issued prior to the effective date of the Policy.

"Flowing water body" means a body of running water flowing over the earth in a natural water course, where the movement of the water is readily discernible or if water is not present it is apparent from review of the geology that when present it does flow, such as in an ephemeral drainage, creek, stream, or river.

"Groundwater" means water below the land surface that is at or above atmospheric pressure.

"High-strength wastewater" means wastewater having a 30-day average concentration of biochemical oxygen demand (BOD) greater than 300 milligrams-per-liter (mg/L) or of total suspended solids (TSS) greater than 330 mg/L or a fats, oil, and grease (FOG) concentration greater than 100 mg/L prior to the septic tank or other OWTS treatment component.

"IAPMO" means the International Association of Plumbing and Mechanical Officials.

"Impaired Water Bodies" means those surface water bodies or segments thereof that are identified on a list approved first by the State Water Board and then approved by US EPA pursuant to Section 303(d) of the federal Clean Water Act.

"Local agency" means any subdivision of state government that has responsibility for permitting the installation of and regulating OWTS within its jurisdictional boundaries; typically a county, city, or special district.

"Major failure" means the state of an OWTS's dispersal system or a septic tank that requires major repair.

"Major repair" means either: (1) for a dispersal system, repairs required for an OWTS dispersal system due to surfacing wastewater effluent from the dispersal field and/or wastewater backed up into plumbing fixtures because the dispersal system is not able to percolate the design flow of wastewater associated with the structure served, or (2) for a septic tank, repairs required to the tank for a compartment baffle failure or tank structural integrity failure such that either wastewater is exfiltrating or groundwater is infiltrating.

"Mottling" means a soil condition that results from oxidizing or reducing minerals due to soil moisture changes from saturated to unsaturated over time. Mottling is characterized by spots or blotches of different colors or shades of color (grays and reds) interspersed within the dominant color as described by the USDA soil classification system. This soil condition can be indicative of historic seasonal high groundwater level, but the lack of this condition may not demonstrate the absence of groundwater.

"Mound system" means an aboveground dispersal system (covered sand bed with effluent leachfield elevated above original ground surface inside) used to enhance soil treatment, dispersal, and absorption of effluent discharged from an OWTS treatment unit such as a septic tank. Mound systems have a subsurface discharge.

"New OWTS" means an OWTS permitted after the effective date of this Policy.

"NSF" means NSF International (a.k.a. National Sanitation Foundation), a not for profit, non-governmental organization that develops health and safety standards and

performs product certification.

"Oil/grease interceptor" means a passive interceptor that has a rate of flow exceeding 50 gallons-per-minute and that is located outside a building. Oil/grease interceptors are used for separating and collecting oil and grease from wastewater.

"Onsite wastewater treatment system(s)" (**OWTS**) means individual disposal systems, community collection and disposal systems, and alternative collection and disposal systems that use subsurface disposal. The short form of the term may be singular or plural. OWTS do not include "graywater" systems pursuant to Health and Safety Code Section 17922.12.

"Percolation test" means a method of testing water absorption of the soil. The test is conducted with clean water and test results can be used to establish the dispersal system design.

"Permit" means a document issued by a local agency that allows the installation and use of an OWTS, or waste discharge requirements or a waiver of waste discharge requirements that authorizes discharges from an OWTS.

"Person" means any individual, firm, association, organization, partnership, business trust, corporation, company, State agency or department, or unit of local government who is, or that is, subject to this Policy.

"Pit-privy" (a.k.a. outhouse, pit-toilet) means self-contained waterless toilet used for disposal of non-water carried human waste; consists of a shelter built above a pit in the ground into which human waste falls.

"Policy" means this Policy for Siting, Design, Operation and Management of OWTS.

"Pollutant" means any substance that alters water quality of the waters of the State to a degree that it may potentially affect the beneficial uses of water, as listed in a Basin Plan.

"Projected flows" means wastewater flows into the OWTS determined in accordance with any of the applicable methods for determining average daily flow in the *USEPA Onsite Wastewater Treatment System Manual, 2002,* or for Tier 2 in accordance with an approved Local Agency Management Program.

"Public Water System" is a water system regulated by the California Department of Public Health or a Local Primacy Agency pursuant to Chapter 12, Part 4, California Safe Drinking Water Act, Section 116275 (h) of the California Health and Safety Code.

"Public Water Well" is a ground water well serving a public water system. A spring which is not subject to the California Surface Water Treatment Rule (SWTR), CCR, Title 22, sections 64650 through 64666 is a public well.

"Qualified professional" means an individual licensed or certified by a State of California agency to design OWTS and practice as professionals for other associated reports, as allowed under their license or registration. Depending on the work to be performed and various licensing and registration requirements, this may include an individual who possesses a registered environmental health specialist certificate or is currently licensed as a professional engineer or professional geologist. For the purposes of performing site evaluations, Soil Scientists certified by the Soil Science Society of America are considered qualified professionals.

"Regional Water Board" is any of the Regional Water Quality Control Boards designated by Water Code Section 13200. Any reference to an action of the Regional Water Board in this Policy also refers to an action of its Executive Officer, including the conducting of public hearings, pursuant to any general or specific delegation under Water Code Section 13223.

"Replacement OWTS" means an OWTS that has its treatment capacity expanded, or its dispersal system replaced or added onto, after the effective date of this Policy.

"Sand" means a soil particle; this term also refers to a type of soil texture. As a soil particle, sand consists of individual rock or mineral particles in soils having diameters ranging from 0.05 to 2.0 millimeters. As a soil texture, sand is soil that is comprised of 85 percent or more sand particles, with the percentage of silt plus 1.5 times the percentage of clay particles comprising less than 15 percent.

"Seepage pit" means a drilled or dug excavation, three to six feet in diameter, either lined or gravel filled, that receives the effluent discharge from a septic tank or other OWTS treatment unit for dispersal.

"Septic tank" means a watertight, covered receptacle designed for primary treatment of wastewater and constructed to:

1. Receive wastewater discharged from a building;

2. Separate settleable and floating solids from the liquid;

3. Digest organic matter by anaerobic bacterial action;

4. Store digested solids; and

5. Clarify wastewater for further treatment with final subsurface discharge.

"Service provider" means a person capable of operating, monitoring, and maintaining an OWTS in accordance to this Policy.

"Silt" means a soil particle; this term also refers to a type of soil texture. As a soil particle, silt consists of individual rock or mineral particles in soils having diameters ranging from between 0.05 and 0.002 mm. As a soil texture, silt is soil that is comprised as approximately 80 percent or more silt particles and not more than 12 percent clay particles using the USDA soil classification system.

"Single-family dwelling unit" means a structure that is usually occupied by just one household or family and for the purposes of this Policy is expected to generate an average of 250 gallons per day of wastewater.

"Site" means the location of the OWTS and, where applicable, a reserve dispersal area capable of disposing 100 percent of the design flow from all sources the OWTS is intended to serve.

"Site Evaluation" means an assessment of the characteristics of the site sufficient to determine its suitability for an OWTS to meet the requirements of this Policy.

"Soil" means the naturally occurring body of porous mineral and organic materials on the land surface, which is composed of unconsolidated materials, including sand-sized, silt-sized, and clay-sized particles mixed with varying amounts of larger fragments and organic material. The various combinations of particles differentiate specific soil textures identified in the soil textural triangle developed by the United

States Department of Agriculture (USDA) as found in Soil Survey Staff, USDA; *Soil Survey Manual, Handbook 18,* U.S. Government Printing Office, Washington, DC, 1993, p. 138. For the purposes of this Policy, soil shall contain earthen material of particles smaller than 0.08 inches (2 mm) in size.

"Soil Structure" means the arrangement of primary soil particles into compound particles, peds, or clusters that are separated by natural planes of weakness from adjoining aggregates.

"Soil texture" means the soil class that describes the relative amount of sand, clay, silt and combinations thereof as defined by the classes of the soil textural triangle developed by the USDA (referenced above).

"State Water Board" is the State Water Resources Control Board

"Supplemental treatment" means any OWTS or component of an OWTS, except a septic tank or dosing tank, that performs additional wastewater treatment so that the effluent meets a predetermined performance requirement prior to discharge of effluent into the dispersal field.

"SWAMP" means Surface Water Ambient Monitoring Program and more information is available at: http://www.waterboards.ca.gov/water_issues/programs/swamp/

"Telemetric" means the ability to automatically measure and transmit OWTS data by wire, radio, or other means.

"Total coliform" means a group of bacteria consisting of several *genera* belonging to the family *Enterobacteriaceae*, which includes Escherichia coli bacteria.

"USDA" means the U.S. Department of Agriculture.

"Waste discharge requirement" or **"WDR"** means an operation and discharge permit issued for the discharge of waste pursuant to Section 13260 of the California Water Code.

APPENDIX B. MINIMUM HORIZONTAL SETBACK DISTANCES

(in feet) from OWTS treatment component and dispersal systems

Minimal horizontal distance (in feet) required from:	Building Sewer	Septic Tank, Dosing/Pump tank		Disposal Field	
Buildings or structures	2	5		8	
Parcel property lines	clear	5		5[1]	
On-site domestic water lines	1	5		5	
Public water supply main	10[2]	10		10	
Distribution box	-----	-----		5	
Individual water wells and monitoring wells	50	50		100	
Public water wells	50	100		150[3]	
Springs	50	50		100	
Drainage ways[4]	25	25		50	
Lined ditches[5]	15	15		15	
Cut or fill banks	10	10		4xh[6]	
Trees	-----	10		-----	
Unstable land mass or any areas subject to earth slides[7]	100	100		100	
		*Outside of community areas**	*Within community areas***	*Outside of community areas**	*Within community areas***
High water line of intermittent streams, wetlands and swales	-----	50		50	
High water line of perennial streams, lakes, ponds, and reservoirs	-----	150	100	150	100

[1]The setback distance shall be increased to 50 feet, if needed, to not infringe upon the development potential of the adjacent property.

[2] For parallel construction. For crossings, approval by the Health Department shall be required.

[3] The setback shall be 150 feet where the depth of the effluent dispersal system does not exceed 10 feet. For depths greater than 10 feet and less than 20 feet, the distance shall be 200 feet.

[4] Drainage ways, drainage swale (from edge of flow path), unlined irrigation ditch, unlined irrigation canals or unlined culverts.

[5] Lined ditches, lined canals or watertight culverts or conduits.

[6] The setback from the disposal field shall be four times bank height, with a maximum of 50 feet.

[7] The setback from OWTS treatment component and dispersal systems shall be 100 feet from any unstable land mass or any areas subject to earth slides identified by a registered engineer or a registered geologist; other setback distances are allowed, if recommended by a geotechnical report prepared by a qualified professional.

* In areas of unincorporated Sierra County outside of community areas, sewage disposal facilities shall be set back a minimum of 50 feet from the high water line of intermittent streams, wetlands and swales. Sewage disposal facilities shall be set back a minimum of 150 feet from the high water line of perennial streams, lakes, ponds, and reservoirs, unless a greater set back is required by the County Environmental Health Department or State Regional Water Quality Control Board. SCC 15.12.060 (Water Resources Setbacks)

** In areas of unincorporated Sierra County within a community area, sewage disposal facilities shall be set back a minimum of 50 feet from the high water line of intermittent streams, wetlands and swales. Sewage disposal facilities shall be set back a minimum of 100 feet from the high water line of perennial streams, lakes, ponds, reservoirs, and other existing or potential potable water sources unless a lesser set back has been approved by the County Environmental Health Department, the California Department of Public Health, and/or the California Regional Water Quality Control Board, as appropriate. SCC 15.12.060 (Water Resources Setbacks)

APPENDIX C. COMPLETENESS CHECKLIST FOR LAMPS
(For use by RWCB Staff)

GENERAL REQUIREMENTS FOR LAMPS							
OWTS Policy Section	**OWTS Policy Section Summary**	**Region 5 Comments (These do not replace your review of OWTS Policy. Italics and websites are specific explanations, more detailed than in the Policy.)**	**Relevant LAMP Section**	**Legal Authority/ Code Section**	**Deficiency; Address Prior to Our Scheduling for Board Approval**	**Potential Concern; Address in First Water Quality Assessment Report**	**Resolution, 18 April 2018 teleconference with Elizabeth Morgan, Sierra Co. Environmental Health Director, Vickie Clark, Public Health Director (SCEHD), and Evelyn De Mello, Environmental Health Specialist Trainee, Scott Armstrong, Dina Calanchini, and Eric Rapport, Region 5 staff, and Rob Tucker, Region 6 staff.**
3.3	Annual Reporting	For Section 3.3 et seq, describe your program for annual reporting to Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff **in a tabular spreadsheet format.**	1.F.(4) Reporting to RWQCB, page 15	LAMP to be adopted by reference in County Code.		Coordinate with Linda Turkatte, CCDEH IT Committee Chair, on Reporting Format. Ensure that data compilations in Annual Reports will be sufficient to support future Water Quality Assessment Reports.	SCEHD has current CCDEH Annual Reporting format, and will use.
3.3.1	Complaints	Include **numbers and locations of complaints, related investigations, and means of resolution.**	1.F.(1) Reporting to RWQCB - Complaints, page 14, and 3.B. Corrective Action Requirements, page 36	LAMP to be adopted by reference in County Code.			
3.3.2	OWTS Cleaning	Include applications and registrations issued as part of the **local cleaning registration pursuant to California Health and Safety Code §117400 et seq.**	1.E. OWTS Cleaning/ Septage Capacity and Septic Pumper Truck Applications and Registrations, page 13	LAMP to be adopted by reference in County Code.			
3.3.3	Permits for New and Replacement OWTS	Include numbers and locations of permits for new and replacement OWTS, **and their Tiers.**	2.C. Permits Issued, page 27	LAMP to be adopted by reference in County Code.			
3.4	Permanent Records	Describe your program for permanently retaining records, and means of making them available to Central Valley Water Board staff **within 10 working days of a written request.**	1.F.(3) Records Retention, page 15	LAMP to be adopted by reference in County Code.			

3.5	Notifications to Municipal Water Suppliers	Describe your program for notifying public well and water intake owners, and the California Department of Public Health. Notification shall be as soon as practicable, **but no later than 72 hours upon discovery of a failing OWTS,** as described in Sections 11.1 and 11.2, within setbacks described in Sections 7.5.6 through 7.5.8.	1.F.(5) Reporting to Owners of Water Systems, page 17, and 3. Failing OWTS and Corrective Action, page 33	LAMP to be adopted by reference in County Code.	Also cite Section 3, *Failing OWTS and Corrective Action*, page 33. Further clarify in 1F that only failures as defined in OWTS Policy §§ 11.1. and 11.2 prompt notification. Under these Policy sections, OWTS would no longer meet the primary purpose of protecting public health and require major repair. Consider defining 'failure' and 'major failure' in Appendix A in context of OWTS Policy.		In LAMP Section titled Reporting to Owners of Water Supplies, SCEHD has added appropriate text, and will discern in the section between a failure, and major failure in need of major repair, where the latter correlates with OWTS Policy Sections 11.1 and 11.2 definitions of failure. SCEHD will also add an appropriate definition of major failure in Appendix A.
9.0	Minimum OWTS Standards	This Section is an introduction; we require no specific LAMP Section citation here.					
9.1	Considerations for LAMPs	For Section 9.1 et seq., provide your commitment to evaluate complaints, variances, failures, and inspections in Section 9.3.2 (Water Quality Assessment*);* and your proposed means of assessment to achieve this Policy's purpose of protecting water quality and human health.	1.E. OWTS Cleaning – Reporting of Failures , page 14, 3. Failing OWTS and Corrective Action, page 33, and 5.B. Site Evaluation, page 40	LAMP to be adopted by reference in County Code.			
9.1.1	Degree of vulnerability due to local hydrogeology	*Describe your commitment, and proposed means to identify* hydrogeologically vulnerable areas for Section 9.3.2, *after compiling monitoring data*. Discuss appropriate related siting restrictions and design criteria to protect water quality and public health. **Qualified professionals** ("Definitions," page 9 in the Policy) **should identify hydrogeologically vulnerable areas**. *Such professionals, where appropriate during a Water Quality Assessment, should generally consider locally reasonable percolation rates of least permeable relevant soil horizons, best available evidence of seasonally shallowest groundwater (including, but not limited to, soil mottling and gleying, static water levels of nearby wells and springs, and local drainage patterns), threats to receptors (supply wells and surface water), and potential geotechnical issues (including, but not limited to, potentially adverse dips of bedding, foliations, and fractures in bedrock).*	5.B. Site Evaluation, page 40, and Appendix A. Qualified Professional, page 61	LAMP to be adopted by reference in County Code.			

9.1.2	High quality waters and other environmental conditions requiring enhanced protection	Describe special restrictions to meet water quality and public health goals pursuant to all Federal, State, and local plans and orders. *Especially consider appropriate alternatives to those provided in Section 7.8, Allowable Average Density Requirements under Tier 1. See also: State Water Resources Control Board Resolution No. 68-16*.	1.H. Parcel/ Lot Size Requirements, page 23, and 4. Land Divisions of Parcels Served by OWTS, page 38	LAMP to be adopted by reference in County Code. SCC 15.12.060		Does surface water in Downieville warrant enhanced protection?	SCEHD will work with Central Valley Water Board staff to address surface water in Downieville in the first Water Quality Assessment Report. SCEHD currently evaluates repairs to existing systems there (e.g., with dye tests). SCDEH also requires supplemental treatments for replacement systems within 100 feet of surface water.
9.1.3	Shallow soils requiring non-standard dispersal systems	*We interpret "shallow" soils generally to mean thin soils overlying bedrock or highest seasonal groundwater. Dependent on threats to receptors, highest seasonal groundwater can locally include perched and intermittent saturated zones, as well as the shallowest local hydraulically unconfined aquifer unit. See Section 8.1.5 for Minimum Depths to Groundwater under Tier 1.* Qualified professionals should make appropriate determinations on the design and construction of non-standard dispersal systems due to shallow soils.	5.B. Site Evaluation, page 40	LAMP to be adopted by reference in County Code.			
9.1.4	High domestic well usage areas	*Our key potential concerns are nitrate and pathogen transport toward receptor wells, especially in areas with existing OWTS already prone to soft failures (OWTS failures not evident at grade). Appropriate qualified professionals should consider reasonable pollutant flow paths toward domestic wells, at minimum based on; publically available nitrate concentrations in local wells, published technical literature on local wastewater and non-wastewater nitrate sources, well constructions, pumping demands, and vulnerability of wells due to local hydrogeology. For pathogens, qualified professionals should ensure that field methods are sufficient to mitigate the potential for false positives.*	1.F.10.(b) Qualified Professional, page 21, and 1.I. High Domestic Well Usage Areas, page 23	LAMP to be adopted by reference in County Code.			
9.1.5	Fractured bedrock	*Where warranted, appropriate qualified professionals should assess permeability trends of water-bearing fractures, and related potential pathways of effluent toward receptors, including but not limited to, domestic wells and surface water. The professionals should also consider potential geotechnical issues. We suggest consideration of fractured bedrock in concert with percolation rates of overlying soils; either very high or low percolation rates might warrant siting restrictions or non-standard dispersal systems. See also State Water Resources Control Board Order WQ 2014-0153-DWQ, Attachment 1, page 1-3, Item A-3.*	5.B. Site Evaluation, page 40	LAMP to be adopted by reference in County Code.			
9.1.6	Poorly drained soils	*Appropriate qualified professionals should give criteria for determination of representative percolation rates, including but not limited to, general site evaluation, trench logging, pre-soak and measurement methods of percolation tests, and acceptable alternatives for percolation tests*.	5.B. Site Evaluation, page 40	LAMP to be adopted by reference in County Code.			

9.1.7	Vulnerable surface water	*Our key potential concern is eutrophication of fresh surface water. While typically with relatively low mobility in groundwater and recently informally banned in dishwater detergents, phosphate is a common cause. At minimum, describe appropriate qualified professionals who will consider potential pathways of wastewater-sourced phosphate and other nutrients toward potentially threatened nearby surface bodies*.	1.F.10.(b) Qualified Professional, page 21	LAMP to be adopted by reference in County Code.		See also comments, OWTS Policy §9.1.2; does surface water in Downieville warrant enhanced protection?	SCEHD will work with Central Valley Water Board staff to address surface water in Downieville in the first Water Quality Assessment Report. SCEHD currently evaluates repairs to existing systems there (e.g., with dye tests). SCDEH also requires supplemental treatments for replacement systems within 100 feet of surface water.
9.1.8	Impaired water bodies	*Wolf Creek, Nevada County, and Woods Creek, Tuolumne County will require Tier 3 Advanced Protection Management Programs. This applies to* ***Nevada, Placer, and Tuolumne Counties****. See Attachment 2 of the OWTS Policy.*			N/A		
9.1.9	High OWTS density areas	*Where nitrate is an identified chronic issue, at minimum, consider nitrogen loading per area; for example, see Hantzsche and Finnemore (1992), Crites and Tchobanoglous (1998), and more recent publications as appropriate.*	1.F.10.(b) Qualified Professional, page 21, 1.H. Parcel/ Lot Size Requirements, page 23, and 1.I. High Domestic Well Usage Areas, page 23	LAMP to be adopted by reference in County Code.			
9.1.10	Limits to parcel size	At minimum, consider hydraulic mounding, nitrate and pathogen loading, and sufficiency of potential replacement areas.	1.F.10.(b) Qualified Professional, page 21, 1.H. Parcel/ Lot Size Requirements, page 23, and 4. Land Divisions of Parcels Served by OWTS, page 38	LAMP to be adopted by reference in County Code.			
9.1.11	Areas with OWTS that predate adopted standards	This refers to areas with known, multiple existing OWTS.	1.D. Existing Parcels, page 12, and 1.I. High Domestic Well Usage Areas, page 23	LAMP to be adopted by reference in County Code.			
9.1.12	Areas with OWTS either within prescriptive, Tier 1 setbacks, or within setbacks that a Local Agency finds appropriate	This refers to areas with known, multiple existing OWTS.	1.D. Existing Parcels, page 12, and 1.I. High Domestic Well Usage Areas, page 23	LAMP to be adopted by reference in County Code.			
9.2	Scope of Coverage:	For Section 9.2 et seq, provide details on scope of coverage, for example maximum authorized projected flows, allowable system types, and their related requirements for site evaluation, siting, and design and construction requirements.	1.B.(1) Scope of Coverage, page 9	LAMP to be adopted by reference in County Code.			

9.2.1	Installation and Inspection Permits	Permits generally cover procedures for inspections, maintenance and repair of OWTS, including assurances that such work on failing systems is under permit; see Tier 4.	2. Onsite Wastewater Treatment System Permitting Process, page 24, and 3.B. Corrective Action Requirements, page 36	LAMP to be adopted by reference in County Code. SCC 12.04.050			
9.2.2	Special Provision Areas and Requirements near Impaired Water Bodies	***Wolf Creek**, Nevada County, and **Woods Creek**, Tuolumne County will require **Tier 3 Advanced Protection Management Programs**.This applies to **Nevada, Placer, and Tuolumne Counties**. See Attachment 2 of the OWTS Policy.*	1.G. OWTS Near Impaired Water Bodies, page 22	LAMP to be adopted by reference in County Code.	N/A		
9.2.3	LAMP Variance Procedures	Variances for new installations and repairs should be in substantial conformance to the Policy, to the greatest extent practicable. Variances cannot authorize prohibited items in Section 9.4.	1.D. Existing Parcels, page 12, and 2.G. Permit Application Review & Permit Issuance, page 31	LAMP to be adopted by reference in County Code. SCC 12.04.085 SCC 12.04.086			
9.2.4	Qualifications for Persons who Work on OWTS	Qualifications generally cover requirements for education, training, and licensing. *We suggest that Local Agencies review information available from the California Onsite Water Association (COWA), see*: http://www.cowa.org/	1.F.10.(b) Qualified Professional, page 21	LAMP to be adopted by reference in County Code.			
9.2.5	Education and Outreach for OWTS Owners	Education and Outreach generally supports owners on locating, operating, and maintaining OWTS. At minimum, ensure that you will require OWTS designers and installers to **provide owners with sufficient information to address critical maintenance, repairs, and parts replacements within 48 hours of failure**; *see also Tier 4*. Also, provide information to appropriate volunteer groups. *At minimum, we suggest providing this information on your webpage.*	1.F.(7) Outreach Program, page 18	LAMP to be adopted by reference in County Code.	Contact information on a website should include emergency (after-hours) telephone numbers of service providers.		SCEHD will add emergency contact information to its website.
9.2.6	Septage Disposal	Assess existing and proposed disposal locations, and their **adequacy**.	1.E. OWTS Cleaning/ Septage Capacity and Septic Pumper Truck Applications and Registrations, page 13	LAMP to be adopted by reference in County Code.			
9.2.7	Maintenance Districts and Zones	*These generally refer to Homeowners Associations, special maintenance districts, and similar responsible entities. Requirements for responsible entities should generally reflect the Local Agency's judgment on minimum sizes of subdivisions that could potentially cause environmental impacts. LAMPs should ensure that responsible entities have the **financial resources, stability, legal authority, and professional qualifications** to operate community OWTS.*	1.G.(1) Onsite Maintenance Districts, page 22	LAMP to be adopted by reference in County Code.			

9.2.8	Regional Salt and Nutrient Management Plans	Consider development and implementation of, or coordination with, Regional Salt and Nutrient Management Plans; *see also State Board Resolution 2009-0011:* http://www.waterboards.ca.gov/centralvalley/water_issues/salinity/laws_regs_policies/rw_policy_implementation_mem.pdf	1.G.(2) Regional Salt and Nutrient Management Plans, page 22	LAMP to be adopted by reference in County Code.			
9.2.9	Watershed Management Groups	Coordinate *with volunteer well monitoring programs* and similar watershed management groups.	1.G.(3) Watershed Management Groups, page 23	LAMP to be adopted by reference in County Code.		Advise Central Valley Water Board staff of any future watershed management groups, for example volunteer groups. We note that LAMP 1.F.(2) Water Quality Assessment Program, page 15, refers in part to local watershed management groups.	SCEHD will notify Central Valley Water Board staff of future watershed management groups.
9.2.10	Proximity of Collection Systems to New or Replacement OWTS	Evaluate proximity of sewer systems to new and replacement OWTS. S*ee also Section 9.4.9*.	2.N. Proximity to Public Sewers, page 33, and 4.B. Required Connection to Public Sewer, page 39	LAMP to be adopted by reference in County Code.			
9.2.11	Public Water System Notification prior to permitting OWTS Installation or Repairs	Give your notification procedures to inform public water services of pending OWTS installations and repairs within prescribed setback distances.	1.C.(10) Horizontal Setback Requirements (Exceptions) , page 11, 1.F.(5) Reporting to Owners of Public Water Systems, page 17, and 5.B.(5) OWTS within 1,200 feet of intake point for Surface Water Treatment System, page 46	LAMP to be adopted by reference in County Code.		Follow up with DDW District Engineer. See also, DDW Workshop Minutes, 14 March 2018, bottom of LAMPs Tracking Website, https://www.waterboards.ca.gov/centralvalley/water_issues/owts/lamp_reviews?	SCEHD will follow up on action items in 14 March 2018 meeting minutes.
9.2.12	Policies for Dispersal Areas within Setbacks of Public Wells and Surface Water Intakes	Discuss supplemental treatments; see Sections 10.9 and 10.10. A Local Agency can propose alternate criteria; *however we will need rationale in detail.*	1.F.(5) Reporting to Owners of Public Water Systems, page 17, and 5.B.(5) OWTS within 1,200 feet of intake point for Surface Water Treatment System, page 46	LAMP to be adopted by reference in County Code.		Follow up with DDW District Engineer. See also, DDW Workshop Minutes, 14 March 2018, bottom of LAMPs Tracking Website, https://www.waterboards.ca.gov/centralvalley/water_issues/owts/lamp_reviews/	SCEHD will follow up on action items in 14 March 2018 meeting minutes.
9.2.13	Cesspool Discontinuance and Phase-Out	Provide plans and schedule.	2.D. Cesspools, page 28	LAMP to be adopted by reference in County Code.			

9.3	Minimum Local Agency Management Responsibilities:	For Section 9.3 et seq, discuss minimum responsibilities for LAMP management. Responsibilities should generally cover data compilation, water quality assessment, follow-up on issues, and reporting to the Central Valley Water Board.	1.F. Data Collection/ Reporting/ Notifications/ Responsibilities, page 14	LAMP to be adopted by reference in County Code.			
9.3.1	Permit Records, OWTS with Variances	Describe your records maintenance; numbers, locations, and descriptions of permits **where you have granted variances**.	1.F. Data Collection/ Reporting/ Notifications/ Responsibilities, page 14, and 2.G. Permit Application Review & Permit Issuance, page 31	LAMP to be adopted by reference in County Code.			
9.3.2	Water Quality Assessment Program:	In the Water Quality Assessment Program, generally focus on areas with characteristics covered in Section 9.1. Include monitoring and analysis of water quality data, complaints, variances, failures, and inspections. Also include appropriate monitoring for nitrate and pathogens; you can use information from other programs. *We are available to provide further guidance on reporting requirements. In the interim, to assist with analyses and evaluation reports (Section 9.3.3), we suggest posting data on appropriate maps; for example consider the following links*: http://www.nrcs.usda.gov/wps/portal/nrcs/site/ca/home/ http://www.cdpr.ca.gov/docs/emon/grndwtr/gwpa_maps.htm http://ngmdb.usgs.gov/maps/mapview/ http://www.conservation.ca.gov/cgs/information/publications/ms/Documents/MS58.pdf http://www.water.ca.gov/groundwater/data_and_monitoring/northern_region/GroundwaterLevel/SacValGWContours/100t400_Wells_Spring-2013.pdf http://www.water.ca.gov/waterdatalibrary/ http://www.waterboards.ca.gov/gama/docs/hva_map_table.pdf http://geotracker.waterboards.ca.gov/gama/ http://msc.fema.gov/portal	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.		Ensure that domestic, community, and municipal well data are at minimum representative of groundwater quality in Alleghany, Downieville, Sierra City, Calpine, Sierraville, Loyalton, and the Sierra Brooks Subdivision. Analyte list should at minimum include nitrate and coliform bacteria. Data from municipal wells should also include EC, TDS, pH, general minerals, and phosphate.	SCEHD will work with Central Valley Water Board staff to address representative sampling for first Water Quality Assessment Report. SCEHD will propose candidate wells to Central Valley Water Board staff. Candidate wells should sample shallow drinking water sources with potential threats from wastewater impacts. SCEHD will also propose appropriate surface water samples.

9.3.2.1	Domestic Well Sampling	*Apply your best professional judgment to ensure that well sampling focuses on hydrogeologically reasonable pollutant (primarily nitrate) flow paths. A qualified professional should generally design an appropriate directed, judgmental, sample (i.e., statistically non-random). Of the links provided, the Geotracker GAMA website might be particularly useful to the professional; at minimum we suggest reviews of available nitrate data in relevant domestic wells, up-gradient, within, and down-gradient of an area of interest. For some instances, for example where a developer proposes a relatively large project, a Local Agency might require a special study to distinguish between wastewater and non-wastewater sourced nitrate. In such cases, we suggest your consideration of requiring focused sampling and analyses, for example of $\delta^{18}O$ and $\delta^{15}N$ of nitrate (Megan Young, USGS, 2014 pers comm), and the artificial sweeteners sucralose and acesulfame-K (Buerge et al 2009, Van Stempvoort et al 2011, and more recent publications as they become available)*.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.2.2	Domestic Well Sampling, Routine Real Estate Transfer Related	This applies only if those samples are routinely performed and reported.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.2.3	Water Quality of Public Water Systems	Reviews can be by you or another municipality.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.2.4	Domestic Well Sampling, New Well Development	This applies if those data are reported.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.2.5	Beach Water Quality Sampling, H&S Code §115885	*Public beaches include those on freshwater.*	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.2.6	Receiving Water Sampling Related to NPDES Permits	This refers to existing data from other monitoring programs.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.2.7	Data contained in California Water Quality Assessment Database	This refers to existing data from other monitoring programs.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			

9.3.2.8	Groundwater Sampling Related to Waste Discharge Requirements	This refers to existing data from other monitoring programs.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.2.9	Groundwater Sampling Related to GAMA Program	This refers to existing data from other monitoring programs.	1.F.(2) Water Quality Assessment Program, page 15	LAMP to be adopted by reference in County Code.			
9.3.3	Annual Status Reports Covering 9.3.1-9.3.2	Reports are due 1 February, annually beginning one year after Regional Board approves LAMP. Every fifth year also include an evaluation report. Submit all groundwater monitoring data in Electronic Delivery Format (EDF) for Geotracker; submit all surface water data to CEDEN.	1.F.(4) Reporting to the RWQCB, page 15	LAMP to be adopted by reference in County Code.			
9.4	Not Allowed or Authorized in LAMP:	For Section 9.4 et seq, ensure that your LAMP covers prohibitions.	1.C. Prohibitions, page 10	LAMP to be adopted by reference in County Code.			
9.4.1	Cesspools	Local Agencies cannot authorize cesspools of any kind or size.	1.C.(1) Prohibitions - Cesspools, page 10, and 2.D. Cesspools, page 28	LAMP to be adopted by reference in County Code.			
9.4.2	Projected Flow >10,000 gpd	*Apply professional judgment to further limit projected flows.*	1.C. (2) Prohibitions - OWTS receiving a projected flow over 10,000 gallons per day, page 10	LAMP to be adopted by reference in County Code.			
9.4.3	Effluent Discharger Above Post-Installation Ground Surface	For example, Local Agencies cannot authorize effluent disposal using sprinklers, exposed drip lines, free-surface wetlands, and ponds.	1.B.(1) Scope of Coverage, page 9, and 1.C.(3) Prohibitions - Effluent discharger above post installation ground surface, page 10	LAMP to be adopted by reference in County Code.			
9.4.4	Installation on Slopes >30% without Registered Professional's Report	*See also earlier comments, Section 9.1.1, regarding potential geotechnical concerns.*	1.C.(4) Prohibitions-Prohibitions on slopes > 30%, page 10	LAMP to be adopted by reference in County Code.			
9.4.5	Decreased Leaching Area for IAPMO-Certified Dispersal System with Multiplier < 0.70	IAPMO, International Association of Plumbing and Mechanical Officials. *Decreased leaching area refers to alternatives to conventional (stone-and-pipe) dispersal systems; these alternatives require relatively less area. The multiplier, <1, allows for a reduction in dispersal field area relative to a conventional system.*	1.C.(5) Prohibitions-Prohibitions for decreased leaching area , page 10	LAMP to be adopted by reference in County Code.			

9.4.6	Supplemental Treatments without Monitoring and Inspection	*Therefore, ensure that the LAMP describes periodic inspection and monitoring for OWTS with supplemental treatments*.	1.C.(6) Prohibitions – Prohibitions Monitoring supplemental treatments without monitoring and Inspection, page 10, 1.F.(6) Reporting to SCEHD by OWTS Owners and/ or Service Providers, page 17, and 1.F.(8) Operating Permits, page 18	LAMP to be adopted by reference in County Code.	Region 6 requested distinction between *advanced treatments* and *engineered systems*.		SCEHD will globally replace *advanced treatment* with *supplemental treatment*. SCEHD will describe its criteria for *engineered systems* based on site conditions (e.g., depth to groundwater or other limiting surface), and discern between '*advanced treatment*' (i.e., supplemental treatment) and *engineered systems* in Appendix A Definitions.
9.4.7	Significant Wastes from RV Holding Tanks	*We interpret **significant amounts** to mean amounts greater than incidental dumping, **such that volume, frequency, overall strength, or chemical additives preclude definition as domestic wastewater**; see Definitions in OWTS Policy. See also, State Water Resources Control Board Order WQ 2014-0153-DWQ, Attachment B-2.*	1.C.(7) Prohibitions - Significant Wastes from RV Holding Tanks, page 10, and 2.E. RV Holding Tank Waste, page 28	LAMP to be adopted by reference in County Code.			
9.4.8	Encroachment Above Groundwater	Bottom of OWTS dispersal systems **cannot be less than 2 feet above groundwater, or bottom of seepage pits, less than 10 feet above groundwater**. *We interpret groundwater to include inter-flow and perched zones, along with the shallowest main unconfined aquifer. Degree of vulnerability to pollution due to hydrogeological conditions, Section 9.1.1, and the Water Quality Assessment, Section 9.3.2., should cover in detail means of assessing seasonally shallowest depth to groundwater.*	1.C.(8) Prohibitions - Groundwater Separation less than feet, page 10	LAMP to be adopted by reference in County Code.			
9.4.9	Installations Near Existing Sewers	New and replacement OWTS cannot occur on any lot with available public sewers less than 200 feet from a building or exterior drainage facility (exception; connection fees plus construction costs are greater than 2 times the replacement OWTS costs, and Local Agency determines no impairment to any drinking water.)	1.C.(9) Prohibitions- Sewers separation less than feet, page 10, and 2.N. Proximity to Public Sewers, page 33	LAMP to be adopted by reference in County Code.			
9.4.10	Minimum Setbacks:	These setbacks are from public water systems.	1.C.(10) Prohibitions - Horizontal Setbacks, page 11	LAMP to be adopted by reference in County Code.			
9.4.10.1	From Public Supply Wells	If the dispersal system is less than 10' in depth, then the setback must be greater than150' from public water supply well.	1.C.(10) a - Horizontal setback 150 feet from public well, page 11	LAMP to be adopted by reference in County Code.			
9.4.10.2	From Public Supply Wells	If the dispersal system is greater than 10' in depth, then the setback must be greater than 200' from public water supply well.	1.C.(10) b - Horizontal setback 200 from public well, page 11	LAMP to be adopted by reference in County Code.			

9.4.10.3	From Public Supply Wells, Regarding Pathogens	If the dispersal system is greater than 20' in depth, and less than 600' from public water supply well, then the setback must be greater than the distance for two-year travel time of microbiological contaminants, as determined by qualified professional. In no case shall the setback be less than 200'.	1.C.(10) c - Setback from public wells for pathogens, page 11	LAMP to be adopted by reference in County Code.			
9.4.10.4	From Public Surface Water Supplies	If the dispersal system is less than 1,200' from public water system's surface water intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 400' from the high water mark of the surface water body.	1.C.(10) Prohibitions - Horizontal Setbacks, page 11, 5.B.(4) Horizontal Setbacks, page 45, and 5.B.(5) OWTS within 1,200 feet of surface water treatment system, page 46	LAMP to be adopted by reference in County Code.			
9.4.10.5	From Public Surface Water Supplies	If the dispersal system is greater than1, 200', but less than 2,500', from public water system's surface water intake, within its drainage catchment, and potentially threatens an intake, then the setback must be greater than 200' from high water mark of surface water body.	1.C.(10) Prohibitions - Horizontal Setbacks, page 11, 5.B.(4) Horizontal Setbacks, page 45, and 5.B.(5) OWTS within 1,200 feet of surface water treatment system, page 46	LAMP to be adopted by reference in County Code.			
9.4.11	Supplemental Treatments, Replacement OWTS That Do Not Meet Minimum Setback Requirements	Replacement OWTS shall meet minimum horizontal setbacks to the maximum extent practicable.	1.C. Prohibitions - Exceptions, page 11, 2.G. Permit Application Review and Permit Issuance, page 31, and 3. Failing OWTS and Corrective Action, page 33	LAMP to be adopted by reference in County Code.			
9.4.12	Supplemental Treatments, New OWTS That Do Not Meet Minimum Setback Requirements	New OWTS shall meet minimum horizontal setbacks to the maximum extent practicable, and meet requirements for pathogens as specified in Section 10.8. and any other Local Agency's mitigation measures.	1.C. Prohibitions - Exceptions, page 11, 2.G. Permit Application Review and Permit Issuance, page 31, and 3. Failing OWTS and Corrective Action, page 33	LAMP to be adopted by reference in County Code.			
9.5	Technical Support of LAMP	Include **adequate detail** to ensure that the combination of all proposed criteria will protect water quality and public health sufficiently **to warrant** the Central Valley Water Board's **waiver of Waste Discharge Requirements**, pursuant to §13269, California Water Code.	5. Minimum Site Evaluation and Siting Standards for Onsite Wastewater Treatment Systems, page 39	LAMP to be adopted by reference in County Code.			
9.6	Regional Water Quality Control Board Consideration of LAMP	Regional Boards shall consider past performance of local programs to protect water quality. *We will generally consider past performance based on our reviews of annual status and evaluation reports; see Section 9.3.3.*		LAMP to be adopted by reference in County Code.			

References:

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Crites, R and G. Tchobanoglous (1998), Small and Decentralized Wastewater Management Systems, McGraw-Hill, ISBN 0-07-289087-8, 1084 pages (see especially pages 919-920).

Young, Megan, USGS Menlo Park, mbyoung@usgs.gov, (650-329-4544)

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401, pages 126 to 133.