



Marin County Community
Development Agency

**ENVIRONMENTAL
HEALTH SERVICES**

Onsite Wastewater Program



REMODEL & ADDITIONS POLICY

This booklet provides guidance for property owners who wish to remodel or add on to residences served by onsite wastewater systems.

INSIDE YOU WILL FIND POLICY DETAILS RELATING TO:

- Maintenance and Repairs ■
- Minor Internal Residential Remodels ■
- Major Internal Remodels and the Modest Expansion of Residences ■
- Bedroom Additions or Major Residential Expansions ■

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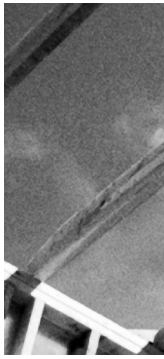


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■ HOW TO USE THIS BOOKLET

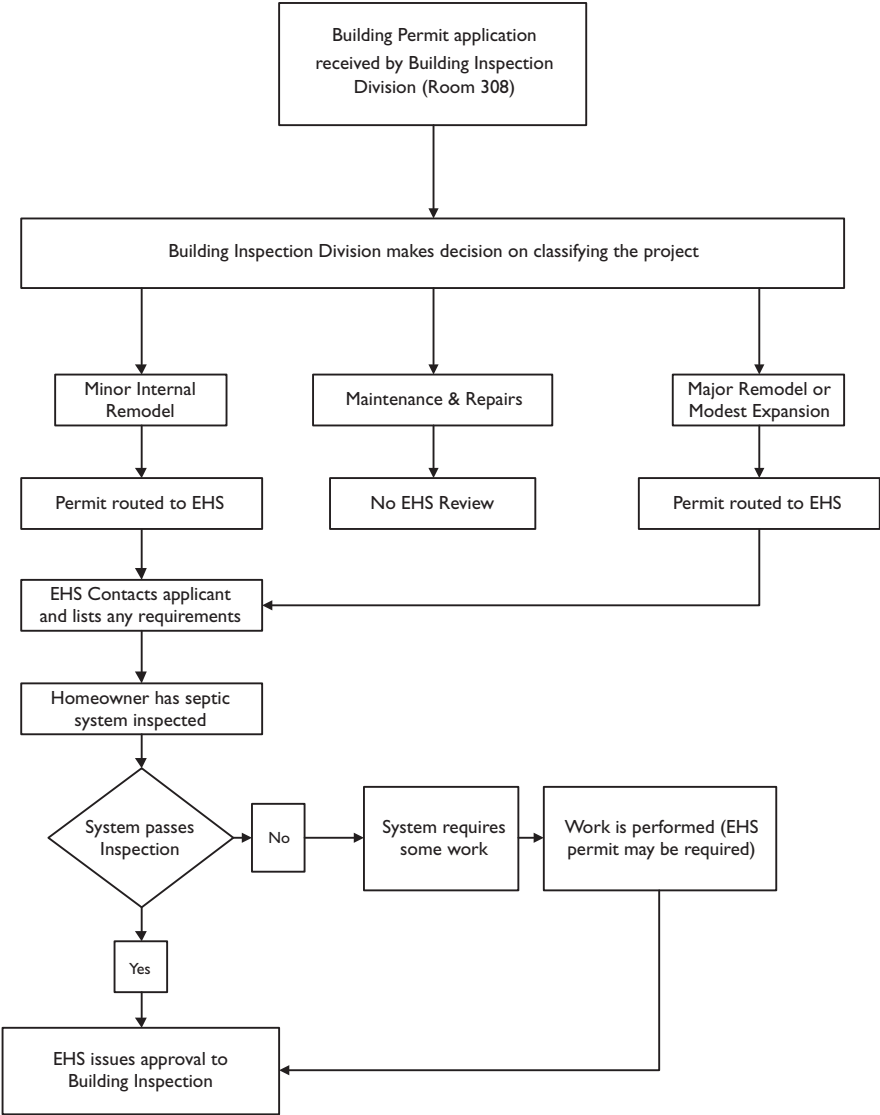
First, refer to the next few pages on remodels, expansions, and additions to see which category your project falls into. You will find the septic system requirements for most projects listed within each section.

You will notice that we refer to classes of septic systems. Septic systems are divided into four classes.

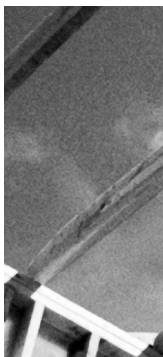
Here is a quick overview of the four classes:

- **Class I:** A system that complies fully with the most current regulations (that became effective in 1984 and were amended in 1996 to include Section 800).
- **Class II:** A system that may not fully comply with the current regulations, but does meet the current repair standards.
- **Class III:** An existing septic system that has a permit on file with EHS.
- **Class IV:** This could be a system without a permit or other documentation, a septic tank made of unapproved materials, or a cesspool.

BRIEF OVERVIEW



Not intended to be a complete summary — see booklet text for full details.



RESIDENTIAL REMODELS

As defined here, an internal remodel does not change the building's square footage or footprint, the footprint of any habitable accessory structures, or result in any change to the anticipated sewage flow (as measured by the number of bedrooms).

Please note that this document replaces the residential remodel provisions of Policy Memorandum #1 issued on Feb. 1, 1996.

Commercial remodels will continue to follow the provisions of Policy Memorandum #1.

Internal remodels fall into one of the following three categories:

1. Maintenance and repairs
2. *Minor* internal remodels
3. *Major* internal remodels

Please see the following pages for explanations of the requirements for each type of remodel.

■ MAINTENANCE AND REPAIRS

Projects that constitute typical maintenance and repair activities are listed in Table 1. These projects do not require any permit from, or review by Environmental Health Services. Although these activities are exempt from EHS septic review or permit, they may require a permit from the Building Department.

TABLE 1. MAINTENANCE & REPAIRS

PROJECT DESCRIPTION
Foundation repair
Plumbing permit
Electrical permit
Re-roofing (roof covering)
New siding
New windows or doors
Mechanical permit only
Limited minor remodeling such as a kitchen or bathroom
Installation of new flooring
Seismic safety improvements
Energy efficiency improvements
Americans with Disability Act (ADA) Improvements
Installation of new siding, roofing
Minor repairs with no change in the floor plan, such as termite damage or minor fire or storm reconstruction (<\$10,000)

A project that involves a combination of several of these items may be considered a minor internal remodel, as described on the next page.

■ MINOR INTERNAL REMODELS

A minor internal remodel is one that affects less than 50% of the wall footage of the existing residence.

The County’s Building Inspection Division determines whether a project is categorized as a minor internal or major internal remodel. They use the following definition for a minor internal remodel:

“The renovation of a structure which affects a lineal footage of existing walls that is less than or equal to fifty percent of the base lineal footage of existing walls in the structure.”

The formula for determining the percentage of lineal footage is illustrated in the following example:

EXAMPLE

Total base lineal footage of existing walls	1400 ft.
50% of base equals	700 ft.
Walls removed (feet)	281 ft.
Walls added (feet)	312 ft.
Total walls altered	593 ft.

In this example, the total length of walls altered or added is less than 50% of the base so this is a minor internal remodel.

A minor internal remodel requires approval of the building permit by EHS. Approval will be issued if the following conditions are met:

- 1. Sewage Flow:** There is no increase in the number of bedrooms, square footage of the residence, habitable accessory structures, building footprint or increase in sewage flow. (The addition of a bathroom within the existing footprint is acceptable).
- 2. Inspection:** Provide an inspection report from a County-registered septic system inspector, state licensed C-42 contractor, Registered Geologist (RG), Registered Soil Scientist (RSS), Registered Environmental Health Specialist (REHS), or Registered Civil Engineer documenting that the home is not served by a cesspool and has a septic tank made of approved materials (concrete or fiberglass). The inspection report form is provided by EHS. Please ask for a copy of this form. The septic tank is required to have waterproof inspection risers and an effluent screen or filter. The water level should be at the invert of the outlet and there should be no apparent signs of septic system malfunction or failure.

If the system does not pass the inspection, depending upon what is wrong, repairs could involve a minor fix (with no permit required) or a more substantial repair requiring a repair permit and the ability to meet at least the Class III standards for existing systems. For system classifications, see the later section “Defining your Onsite Wastewater System.”

- 3. Plot Plan:** The applicant shall provide an accurate plot plan showing septic tank(s), disposal fields, wells, springs or waterbodies (if any), and the dimensions of the disposal field (through probing, excavating at the edges or other suitable methods). Plot plans may already be on file with EHS and these may be used if they are complete and accurately reflect current conditions. You may be able to obtain one from your real estate documents or the County Assessor-Recorder.
- 4. Proximity to Water:** If the system is within 100 feet of a waterbody (creek, bay, or reservoir) – Pass a hydraulic load test (with a rating of satisfactory or better). Applicants with parcels within 100 feet of a waterbody will be required to show a satisfactory (or better) result on the hydraulic load test unless they can demonstrate that no part of their *system* is within 100 feet of a body of water. The hydraulic load test may be performed by a County-registered septic system inspector, C-42 contractor, Registered Environmental Health Specialist (REHS), or Registered Civil Engineer. The procedures for the hydraulic load test are provided in the Septic System Performance Evaluation Guidelines issued on (11/3/95). Please ask for a copy of this document.

The intent of the hydraulic load test is to confirm that there is no discharge to a waterbody or the ground surface. If the system receives a marginal rating on the hydraulic load test, a more detailed examination will be required to determine the cause of the sluggishness. If the system does not pass the hydraulic load test, applicants will be required to meet the Class II (Repair) standards before qualifying for an internal minor remodel permit.

Please contact the County EHS office for a list of inspectors and contractors that can perform the inspection for you.

County-registered septic system inspectors have passed a national certification test and meet certain experience requirements.

The State of California licenses contractors. The two main categories applicable to septic systems are C-42 (sanitation systems and “A” – General Engineering.

■ MAJOR INTERNAL REMODELS

A major internal remodel is one that affects more than 50% of the wall footage of the existing residence.

The Building Inspection Division will determine whether a project is categorized as a minor internal or major internal remodel (using the same criteria used to determine whether fire sprinklers must be installed).

They use the following definition for a major internal remodel:

“Renovation of any structure, which, combined with any additions to the structure affects a lineal footage of existing walls that exceeds fifty percent (50%) of the base lineal footage of the existing walls.”

The formula for determining the percentage of floor area is illustrated in the following example:

EXAMPLE

Total lineal footage of existing walls	1000 ft.
50% of this equals	500 ft.
Walls removed (feet)	281 ft.
Walls added (feet)	312 ft.
Total of walls altered	593 ft.

In this example, the total length of walls altered or added is *greater than 50%* of the base so this is a *major* internal remodel.

What are the Requirements for a Major Internal Remodel or Modest Expansion?

An expansion of up to 500 square feet in the floor area OR a major internal remodel of over 50% of the building is allowable, provided that the following conditions are met:

- 1. Sewage Flow:** There is **no increase** in the sewage flow (number of bedrooms), or change in the septic system reserve area. The building must remain within the gross floor area limitations contained in the table on page 8.
- 2. Plot Plan:** The applicant shall provide an accurate plot plan showing septic tank(s), disposal fields, wells, springs or waterbodies (if any), and the dimensions of the disposal field (through probing, excavating at the edges or other suitable methods). Plot plans may already be on file with EHS and these may be used if they are complete and accurately reflect current conditions. You may also be able to obtain one from your real estate documents or the County Assessor-Recorder.
- 3. Tanks & Risers:** The system must have a watertight septic tank made of approved materials (fiberglass or concrete), an effluent screen or filter, and a waterproof inspection riser. The liquid level in the tank should be at the invert of the outlet.

4. Hydraulic Load & Dye Test: A review of the septic system and the reserve area are required. The review includes a hydraulic load & dye test (according to the procedures in the Septic System Performance Evaluation Guidelines) and may be conducted by a County-registered inspector, a C-42 septic system contractor, a Registered Civil Engineer (RCE), Registered Geologist or Soil Scientist, or a Registered Environmental Health Specialist (REHS). The hydraulic load test will be based on the number of legally permitted bedrooms on the property. If the septic system is sluggish and receives a marginal rating on the hydraulic load test, EHS staff will ask for a more detailed examination to determine the cause of the sluggishness. Owners whose systems do not pass the hydraulic load test will be required to upgrade the system to meet the Class II (Repair) standards.

5. Groundwater: For the building permit to be approved, no portion of the system may be in contact with the groundwater. A brief site visit by County EHS staff is required, and portions of the system may need to be exposed if the location or construction is unclear. Siting a reserve area, and determining depth to groundwater must be accomplished by either EHS staff or a qualified private consultant (REHS or RCE), Registered Geologist or Soil Scientist.

On a case-by-case basis, EHS staff may request that the owner provide a trench at least 2 feet below trench depth to observe soils and check for signs of current groundwater or seasonal saturation of the system. During the site visit, EHS staff will confirm the location of the septic tank and wells/springs using a GPS system. Ground water determination and GPS location services may also be provided by a qualified private consultant. Owners whose systems are found to be in contact with the groundwater will be required to upgrade them to meet at least the Class II (Repair) standards before a building permit can be approved.

6. For parcels within 100 ft. of a waterbody (creek, bay, or reservoir):

A determination must be made as to whether any part of the septic system is within 100 feet of a waterbody. If any part of the septic system is within 100 feet of a waterbody, the applicant may choose one of the following options:

- a. Obtain a septic permit and relocate the system away from the 100-foot zone.
- b. Upgrade the system to meet the Class II (Repair) Standards (this is likely to require a septic permit)
- c. Show that the septic system passes a Performance Evaluation with a rating of Good or Excellent. To assist you, EHS staff will provide a copy of the Septic System Performance Evaluation Guidelines. Only registered Civil Engineers, Registered Geologists, Soil Scientists, or Environmental Health Specialists may carry out Performance Evaluations.

7. Further Tests: For particular circumstances such as landslides, cut banks, changes in the site or other concerns that may affect the tank, leachfield, reserve area or any other part of the system, EHS staff may request further testing or evaluation.

Please contact the County EHS office for a list of registered inspectors and qualified contractors that can perform the inspection for you.

■ RESIDENTIAL EXPANSIONS

Expansions are divided into the following two categories:

- 1. Modest expansions** – adding 500 square feet or less to a residence.
- 2. Major expansions** – adding a bedroom or more than 500 sq. ft. of addition.

Modest Expansions or Major Internal Remodels

A modest expansion means an addition of square footage to the residence, either through an increase in the footprint of the house, or by an addition, such as a second floor or the conversion of non-habitable space to a habitable use.

An expansion could also be combined with an internal remodel.

The expansion must not interfere with the septic system or its reserve area, or be likely to cause an increase in sewage flow. Therefore, the addition of bedrooms, other construction or a change in use that may increase the sewage flow is not included in this category.

After the expansion, the new total floor area of the structure cannot exceed the gross floor area for the number of bedrooms specified in Section 204 of the Marin County septic regulations. See the table below.

Septic system size (no. of bedrooms)	Allowable floor area in sq. ft.
1	1450
2	2000
3	2900
4	See EHS staff

EXAMPLES:

Your house is 1100 square feet and has two actual bedrooms. Your septic system must be sized to handle the flow from two bedrooms.

A second example: The floor area of your house is 2000 square feet and it has two actual bedrooms. From the table above you will see that a septic system with a capacity of at least 3 bedrooms is required, because the floor area exceeds the 1900 square feet allowed for a 2 bedroom septic system.

The requirements for a modest expansion are the same as for a major remodel, and are described in the previous section.

Bedroom Additions or Major Expansions

Owners whose projects involve the addition of a bedroom will be required to bring their septic systems up to the current code, also known as a Class I system.

Similarly, a residence may be expanded by more than 500 square feet if the septic system meets the current Code. It may be possible to upgrade an older system to conform to current codes. See EHS staff or consult a septic system designer if you would like more information regarding this type of project.

■ FREQUENTLY ASKED QUESTIONS

Maintenance, Repairs and Minor Internal Remodels

What if I want to replace my flooring, put in energy efficient windows and conduct seismic safety improvements?

These activities are considered maintenance and repair activities and will NOT need to be reviewed or approved by EHS.

What if I have a redwood or steel tank and I want a minor internal remodel?

The tank would have to be replaced with an approved, watertight fiberglass or concrete tank before receiving a building permit. If your system is within 100 feet of a waterbody, your system will also need to pass a hydraulic load and dye test or meet the Class II (Repair) standards.

Suppose the inspector notices a problem with my tank or leachfield?

Depending on what the problem is, repairs could be minor or more substantial and require a repair permit from EHS. Your inspector and County staff can assist you in deciding the most appropriate course of action to repair the system.

What if I want to use an inspector or Contractor not registered with the County?

Information from an inspector or Contractor not registered with the County cannot be used to request any type of permit from the County. EHS will provide a list of those inspectors or contractors that are registered for this purpose.

Major Internal Remodels and/or Modest Expansions

What if I have a redwood, steel, or plastic tank?

The tank must be replaced by an approved, watertight fiberglass or concrete septic tank before the project may be permitted. Your contractor can usually quickly obtain the permit for this work, and there is usually only one short inspection on site to verify the work.

What if I have a cesspool, failing septic system or my system is inundated with groundwater?

A new system or an upgrade meeting at least the Class II (Repair) standards will be required before the building permit can be issued.

What if my system passes the hydraulic load test but is found to be in groundwater during the rainy season? Or, what if my system fails the hydraulic load and dye test?

Steps must be taken to provide separation between the bottom of the leaching trench and the groundwater. See EHS staff or your septic system consultant for more details and suggestions. A system upgrade to meet at least the Class II (Repair) standards will be required before the project may be permitted.

What if my property is within 100 feet of a creek?

If your **septic system** is within 100 feet of a waterbody, you may relocate your septic system, or meet the Class II (Repair) standards. To relocate your system, you must obtain a permit to do so from EHS. Alternatively, you may also demonstrate that your system can pass a septic system Performance Evaluation (with a rating of good or excellent). A Registered Civil Engineer or Environmental Health Specialist must perform the Performance Evaluation. A copy of the guidelines is available on request.

If your **septic system** is greater than 100 feet from a waterbody, then your system must satisfactorily pass a hydraulic load and dye test. If your system does not satisfactorily pass the hydraulic load and dye test and/or is in contact with groundwater then it must be upgraded to meet at least the Class II (Repair) standards.

Can I combine a major internal remodel with a modest expansion?

Yes, provided all the conditions for the major internal remodel and modest expansion are met.

What if my septic system was installed or upgraded without permits?

Applicants are required to retroactively apply for a permit and meet at least Class II (Repair) standards. County staff will assist you in obtaining the necessary permits.

What if I want to expand my house by adding 200 square feet this year, 300 square feet next year, and another 300 square feet the following year?

The modest expansion allows each home to be expanded by no more than 500 square feet in total. However, the 500 square feet can be added in separate projects/applications. If an applicant can show that their system can meet the current codes, then additional expansion may be allowed. Please see staff for more details.

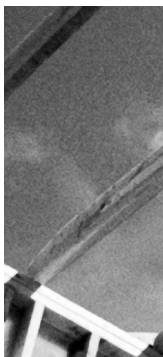
How is the square footage of my home calculated?

We use the “inside wall” area calculated from the surface of one internal wall to the opposite internal wall.

We do not count storage areas, unfinished basements, external stairways, garages or external decking. We do include closets and most other internal habitable space.

I'd like to remodel or add onto my home, but I've heard that I may have difficulty because of the County's Stream Conservation Area policies or ordinances.

If you have any doubts about whether your project would be affected by the Stream Conservation Area requirements, we recommend checking with a Planner at the Planning Division (499-6269). Generally speaking, if you have structures or a septic system that are within 100 feet of a fish creek, or your property is in a planned zoning district, we recommend that you check with the Planning Division.



DEFINING YOUR ON-SITE WASTEWATER SYSTEM

Here are the four classes of onsite wastewater system and the definitions for each:

■ CLASS I: CURRENT CODE

A Class I system is an individual sewage disposal system that complies fully with the current Marin County Regulations for Design, Construction and Repair of Individual Sewage Disposal Systems (effective October 1984 and including Section 800 amendments). The septic system could be a standard system or an Alternative System listed in Category 2 or 3 in the Section 800 regulations. A Class I system can be either an existing system or a new system that has a permit under these regulations.

■ CLASS II: REPAIR STANDARDS

A Class II system is an individual sewage disposal system that does not fully comply with current regulations, but does meet many of the siting and design criteria.

A Class II system may be one of the following three alternatives:

- A)** An existing system that has been issued a permit under the current Marin County Regulations for Design, Construction and Repair of Individual Sewage Disposal Systems (effective October 1984 and including Section 800 amendments) and classified in that permit as a Class II system OR;
- B)** An existing system that has been issued a permit and meets the Class II minimum standards provided below OR;
- C)** An existing system that is presently undocumented, but meets the Class II minimum standards provided below. The applicant must submit a permit application accompanied by three sets of engineered plans and supporting calculations. The system must pass the protocol provided in the Septic System Performance Evaluation Guidelines with a rating of satisfactory or better. The test shall be conducted within the preceding 12 months by an REHS or RCE. EHS Staff can supply a list of individuals and companies who can provide this service.

Please note that seepage pits do not qualify as Class II systems.

What are the minimum standards for a Class II Septic System?

- 1.** A watertight 1200-1500 gallon two compartment septic tank, watertight pump chamber if applicable, a primary disposal area consisting of at least 100% of the leachfield area required for the number of bedrooms of the residence. Leachfield area is calculated from tables provided in the regulations. The calculation takes into account the soil type, trench depths, soil percolation rates and whether septic tank effluent is given additional treatment before dispersal in the soil absorption system.

2. Where possible, a full dual leachfield is required. If an approved effluent pretreatment unit is installed, the primary disposal area may be reduced to not less than 50% of the leachfield area required for the number of bedrooms. If a reduction of the leachfield area is proposed, this must be accomplished in accordance with siting and design criteria contained in the Section 800 Alternative System Regulations. Examples of pretreatment units include sand filters, textile filter systems and aerobic treatment units. In no case shall the application rate for pretreated effluent exceed 2 gallons per square foot per day.
3. A contingency plan is provided in case of malfunction or failure, or alternatively a 100% reserve area is set aside for possible future use.
4. There is at least 24 inches of separation between the bottom of the disposal field and the high seasonal ground water. This is determined by field morphology, historical ground water information, or actual field measurements conducted during wet weather testing.

If it is not possible for the disposal field to maintain this setback, a reduced setback may be accepted under the following conditions. If there is a separation of between 12 and 24 inches from the bottom of disposal field to the high seasonal groundwater, an approved pretreatment unit will be required, and an Operating Permit may also be required for a specified period of time. For systems that cannot provide any of the above-mentioned separations, but have at least some separation between the disposal field and groundwater, a pretreatment unit and some method of disinfection, (U.V. etc.) will be required along with an Operating Permit.

5. Actual percolation tests or soil textural evaluations will be used to determine the effluent application rate. Please see note 2 above.
6. The septic tank and pump chambers must be watertight and shall be equipped with, waterproof risers and for pressure-dosed systems, the outlet of the septic tank shall have an approved biofilter or effluent screen. The water level should be at the invert of the outlet and there should be no apparent sign of septic system malfunction or failure.
7. Approved innovative systems can be used as Class II systems. See EHS staff for a list of these systems.

Class II Minimum Horizontal Setbacks

Site Feature	Setback to Septic Tank	Setback to Disposal Field
Downslope property line	5 feet	10 feet
Adjoining property line	1 – 5 ft.	1 – 5 ft.
Building	3 – 5 ft.	3 – 5 ft.
Water well	50 ft.*	100 ft.
Cut, Embankment or Natural Bluff	10 ft.	4 x height of cut
Domestic water line (sleeved)	1 – 5 ft.	5 – 10 ft.
Driveway or paved surface	1 – 5 ft.	1 – 5 ft.
Swimming pool	5 – 10 ft.	5 – 10 ft.
Unstable Land Form	50 ft.	50 ft.
Ocean, Bay or Tidal Estuary	30 ft.*	75 ft.
Perennial Watercourse	25 ft.*	50 ft.**
Ephemeral Watercourse or Seasonal Wetland	25 ft.*	35 ft.**
Intermittent Watercourse	25 ft.*	35 ft.**
Natural Lake or Water Supply Reservoir	75 ft.*	150 ft.

*With proof or certification that the tank is watertight.

**With installation of an approved effluent pretreatment unit

If it is not possible to maintain these setbacks, additional mitigation measures may be required.

■ CLASS III: EXISTING SYSTEMS

- A Class III system is one that received a permit under the current or previous regulations. (Marin County Code Chapter 18.04 or 18.06). The system does not have to be in full compliance with the current regulations or meet the Class II minimum standards.
- In addition, a performance evaluation performed according to the Septic System Performance Evaluation Guidelines, prepared by a qualified professional shows that the system is in good working condition, and does not pose a threat to water quality or public health.
- It may be necessary to gather additional information such as property slope, water use data, wastewater strength, or other information

What are the minimum standards for a Class III Septic System?

- A watertight septic tank made of approved materials, (concrete or fiberglass). The minimum capacity of the septic tank shall be 810-1200 gallons.
- A disposal field that may be less than or equal to 100% of the required leaching area for the number of bedrooms of the residence.
- A seepage pit may qualify as a Class III system.

- The system may incorporate some type of approved pretreatment unit with a disposal field that does not meet the Class II minimum setbacks. Any proposal to reduce the size of the disposal field shall consider the soil characteristics, the amount of flow, setbacks and shall follow the procedures provided in the Section 800 Alternative Systems regulations for enhanced effluent application rates.
- The bottom of the disposal field provides some separation to the high seasonal ground water.
- Class III systems may incorporate innovative technology that is not on the County's approved innovative technology List. See staff for details.

■ **CLASS IV SYSTEMS:**

- A system may be classified as Class IV for one or more of the following reasons.
- The septic tank is made of unapproved materials such as redwood, steel, plastic, or cinder blocks.
- The system uses a cesspool.
- The system has no documentation i.e. permit record etc.

■ **SEPTIC SYSTEM UPGRADE PROCEDURES:**

For an existing system that has no documented records, the system may be reclassified to Class III if the following requirements are satisfied:

- The current system must have a septic tank that meets at least the Class III septic tank standards. Otherwise, a new septic tank can be installed under permit.
- The system must have a disposal field.
- The system must pass the Septic System Performance Evaluation Guidelines protocol and have a reserve area identified and set aside. In lieu of the reserve area requirement, a contingency plan may be provided. This report must be prepared by an REHS or RCE within the preceding 12 months.
- A plot plan showing the location of the system components shall be submitted.
- Some separation (at least three inches and preferably more) is maintained between the bottom of the disposal field and the high seasonal groundwater.

If the applicant wishes, the system may be reclassified to Class II, if the following three requirements are satisfied:

- The system meets the Class II minimum standards (see previous pages)
- The applicant submits a septic permit application and fee, accompanied by three sets of engineered plans and supporting calculations.
- The system passes the Septic System Performance Evaluation Guidelines protocol with at least a satisfactory rating. This report must have been prepared by an REHS or RCE within the preceding 12 months.

■ **WHO CAN DESIGN REPAIRS FOR AN EXISTING SEPTIC SYSTEM?**

- If repair or replacement of a standard sewage disposal system is necessary (one that has no pump or dosing siphon, and uses gravity serial overflow to transport effluent to the disposal field) the design may be submitted by a licensed and experienced sewage disposal contractor (C-42 or “A” Engineering).
- All other type of sewage disposal system incorporating a pump, dosing siphon, equal pressure dosing system or alternative system must be designed by a Registered Civil Engineer, Registered Soil Scientist, Registered Geologist or Registered Environmental Health Specialist.

■ **SITE REVIEWS FOR NEW SYSTEMS, SYSTEM REPAIRS OR REPLACEMENT SYSTEMS:**

Standard gravity septic systems

- Soil profiles, for determining soil suitability for sewage disposal, location of percolation test and depth, and highest seasonal ground water determination may be conducted by trained REHS land use staff with the design contractor or the applicant’s sewage disposal consultant (REHS, RCE, RSS or RG).

Advanced, Innovative and Alternative systems

- For properties that require more than a standard gravity sewage disposal system, the site review procedure for repair/replacement for gravity septic systems can be used as described above. The actual system shall be designed by a RCE or REHS.
- Examples of advanced and alternative septic systems:
Equal pressure dosing systems, dosing siphon systems, mounds, sand filters, bottomless sand filters, approved packed bed filters, (AdvanTex etc.) Also included are approved aerobic treatment units, and drip dispersal systems which can be used if standard trench or mound systems are not suited for the site.

■ **NOTES**

