



To: Sorrel Marks, Regional Water Quality Control Board

From: SLO Green Build: Appropriate Technology Committee  
Date: April 7, 2008

Re: Recommendations to RS-2008-0005 Regional Septic System updates- dated 4/7/08

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The linkages between healthy hydrologic cycles, energy cost, and climate change mitigation have become increasingly clear over the last several years. This clarity is allowing us to begin to recognize the environmental and economic advantages that optimizing these linkages offer. Therefore SLO Green Build, the Surfrider Foundation and the Santa Lucia Chapter of the Sierra Club have developed a committee on appropriate technology regarding water that is working together with governmental agencies to educate the community on achieving these advantages.

**Appropriate technology defined:** “Technology appropriate to sustain a society of finite resources at a human scale”, utilizing triple bottom line accounting of– economy, ecology and equity. Design For Life – Sim Van der Ryn, (California State Architect 1970 – 1980) Gibbs Smith, Salt Lake City, 2005.

The use of appropriate technology can help make possible energy optimization, water conservation and affordable housing- statement from the State of California Office of Appropriate Technology (OAT) 1972.

**Examples of appropriate technology to maintain a healthy water cycle:**

1. Low impact development strategies
2. Ultra low-flow toilets or high efficiency 1.28 gallons per flush (gpf)
3. Rainwater harvesting
4. Dual flush toilets .9 / 1.6 gallons per flush (gpf)
5. Graywater reuse systems
6. Energy Star Appliances (Clothes washer and dishwasher)
7. Composting and dry toilets
8. Advanced septic treatment systems utilizing bioremediation strategies

A working document for appropriate technology applications was constructed with input from government representatives (table 1.1) to allow evaluation and prioritization by our committee based upon the following criteria:

1. Public health and safety
2. Least amount of occupant behavior change
3. Availability of local technologies and professional services
4. Financial constraints
5. Community awareness
6. Government support and existing permit process

This table (1.1) lists the approaches on the “Y” axis and the requirements on the “X” axis. A full set of recommendations will be developed from these priorities. Our committee is aware of the “notice for filing” a draft environmental document however, the time period for accepting recommended changes is too brief. Therefore, the present timeline for review and implementation of appropriate technologies and inclusion of them in Resolution R3-2008-0005 is not included. SLO Green Build recommends that the present Water Board hold the updates as written until appropriate technologies and energy mitigations can be included in publication R3-2008-0005.

**SLO GREEN BUILD RECOMMENDED CHANGES IN Resolution R3-2008-0005 REGIONAL SEPTIC SYSTEM UPDATES DATED 4/7/08**

1. Many Appropriate technologies are more energy compliant than the limited changes the RWQCB3 has proposed. SLO Green Build recommends the Water Board return the CEQA exemption request to staff until Appropriate Technologies are represented in the Resolution R3-2008-0005 CEQA documentation along with comparative green house gas (GHG) mitigation analysis as required in AB 32-2006.
2. SLO Green build recognizes that the RWQCB3 has not published or to our knowledge evaluated the environmental mitigation of on-site use of composting toilets, grey water use, constructed water habitats, source separation and other bioremediation systems that offer greater energy and greenhouse gas mitigation than Resolution R3-2008-0005 offers in its environmental exemption documents to the State Secretary and OCR.
3. SLO Green Build recognizes that the RWQCB3 has not published or to our knowledge evaluated energy evaluations and greenhouse gas inventories comparing different methods of mitigation for on-site wastewater systems and methods of compliance.
4. SLO Green Build recommends that the RWQCB3 include in the **Water Quality Control Plan** an open process that promotes or enables the safe and healthy use of appropriate technologies for on-site systems to prevent environmental impacts related to implementation of Resolution R3-2008-0005.
5. When submitting an on-site system design, SLO Green Build recommends that the applicant provide a water conservation design plan. Plan to include listing of low-flow fixtures and toilets, water efficient appliances (EPA Energy Star), landscaping plant choices and irrigation methods. It will also include graywater design requiring at a minimum pre-plumbing dual plumbing for future graywater use. More importantly outline water reuse methods such as graywater leech fields, irrigation and in house toilet re-use in pamphlet to homeowners.

Proposed process for on-site wastewater system design-

Plan to include but not limited to the following as articulated above,

- a. Baseline conservation listing of water efficient fixtures
  - b. Grey water
    - leech use
    - irrigation use and reuse
    - toilet flushing use and reuse
  - c. Water production
    - rain water harvesting
    - fog collection
    - contour harvesting
  - d. Appropriate technology implementation includes on-site wastewater alternatives to conventional systems.
6. SLO Green Build recognizes that grey water is allowed throughout California through Appendix G: Grey water Systems- Title 24, Part 5, California Administrative Code. A grey water component of Resolution R3-2008-0005 is necessary to meet mitigation requirements of the RWQCB3's CEQA exemption. Definition and processes for proper grey water installation are necessary additions to the RWQCB plan.

7. SLO Green Build recognizes that most States and Counties require that a composting toilet be certified in accordance with NSF/ANSI Standard 41. Composting toilets and sequestering composting toilets certified under this standard should be approved as an appropriate technology implementation in Resolution R3-2008-0005 and be fully represented as a choice to homeowners as it is in many areas of the United States.

8. SLO Green Build recognizes that the definitions section of the document intended for environmental exemption omits key definitions related to appropriate technology. SLO Green Build recommends the following additions as they represent advanced energy and water conservation mitigations related to CEQA not covered in Resolution R3-2008-0005.

Although the document specifically addresses on-site wastewater systems, SLO Green Build recommends language to include a holistic and integrated process to achieve sustainable resource management.

9. SLO Green Build believes that in an effort to promote the safe and healthy use of potential new appropriate technologies, local agencies and the RWQCB3 need to implement a series of memorandums of understanding (MOUs) to clarify administration of continuing on-site system protection programs for emerging technologies to help designate best practices which will lead to improved water quality and reuse. To these ends SLO Green Build recommends that experimental system guidelines be outlined by the RWQCB3 in Resolution R3-2008-0005 where homeowners may trial emerging technologies that represent advanced mitigation of water and energy resources under CEQA.

10. SLO Green Build recommends that appropriate technology uses are approved by the Central Coast Water Board Executive Officer.

11. SLO Green Build recommends that site suitability for all new land divisions, communities that have multifamily and single family residences and commercial facilities incorporate at a minimum dual plumbing for current and future grey water reuse. Whereas all open park space, community landscaping and other non-potable water needs within land divisions utilize grey water. To maintain safe use special hand operable keys shall be installed.

12. In order to promote emerging technologies that may lead to cleaner water using technologies with less green house gas emissions in a healthy and safe manner; SLO Green Build recommends that local agencies conduct on-site inspections via a program to monitor and maintain public health and safety of appropriate technology alternatives to conventional systems.