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

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. <u>Design For Life</u>—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. Greywater 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 central coast water coast

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|                                                           | Ť          | description | #lon         |                              |                   | <del>g</del> | application              | _                 | $\vdash$  | ă                         | Cedu                      | Tat Imp                  | procedual Implications | <b>1</b> 2   | P P              | ulator          | y impli                                | egulatory implications                                           |                   | ergy &                          | k clima  | te Impl           | energy & climate implications |                                                          |           |                                                  |            |
|-----------------------------------------------------------|------------|-------------|--------------|------------------------------|-------------------|--------------|--------------------------|-------------------|-----------|---------------------------|---------------------------|--------------------------|------------------------|--------------|------------------|-----------------|----------------------------------------|------------------------------------------------------------------|-------------------|---------------------------------|----------|-------------------|-------------------------------|----------------------------------------------------------|-----------|--------------------------------------------------|------------|
| APPROACHES                                                | context    | anoliniheb  | system types | technological<br>description | Vietes bas disser | Bujzis       | eonanamism<br>serubeoorq | asecond notheulev | Mangevity | atnebecenq<br>lsnoitsoube | striemerupen<br>feitnetog | sevitreoni<br>eonenamism | striementupen          | continuity   | pack-up          |                 | onjuctic                               | to be developed in<br>conjuction with<br>the County and<br>RWCCB | traingtoot nocheo | enil mottod eight<br>gnitnuccae | висилина | energy efficiency | carbon<br>sequestering        | capability                                               | eaninala) | ·                                                |            |
| . SMART USE PATTERNS                                      | 1          | 1           |              |                              | 1                 |              | 1 1                      | 1                 |           |                           | 1                         | 1                        | ┨╶├                    | ┨            |                  |                 |                                        |                                                                  |                   |                                 |          |                   |                               |                                                          |           | water use as an<br>essential                     |            |
| a. Appropriate use                                        |            | 1           | $\top$       |                              |                   | $\top$       | $\top$                   |                   | _         | $\dashv$                  | _                         |                          | +                      | _            | +                | +               | +                                      | _                                                                |                   | _                               | - -      |                   | _                             | -                                                        |           |                                                  |            |
| b. Appropriate fixtures and artifacts                     | +          | 1           |              |                              |                   | $\top$       | 1                        | $\top$            | +         | +                         | +                         | +                        | _                      | <del></del>  | -                | +-              | -                                      |                                                                  |                   | -                               | -        | <u> </u>          | -                             |                                                          | Π         | ;                                                |            |
| C. Date into consortation  B. WASTE TREATMENT PROCESSES   |            | 1 1         | 1            |                              |                   |              | 1                        | 1                 |           |                           | 1 1                       | <b> </b>                 |                        | }            |                  | <b> </b>        | -                                      | -                                                                |                   | _                               |          |                   |                               |                                                          | <u> </u>  | post use reconnection<br>to the hydrologic cycle | <b>c 0</b> |
| a. Sewer connection and use                               |            |             | 1            |                              |                   |              | 1                        | +                 |           | <del> </del>              |                           |                          | -                      | <del> </del> | -                | +               | +                                      | +                                                                |                   | -                               | -        |                   |                               |                                                          |           |                                                  |            |
| GIRAGINA                                                  | $\dagger$  | 1 1         |              | $\sqcap$                     |                   |              | $\dagger \dagger$        |                   |           |                           | -                         |                          | H                      | -            |                  | $\vdash \vdash$ | $\vdash$                               |                                                                  |                   |                                 |          |                   | -                             | $\dashv$                                                 |           |                                                  |            |
| d. Nitrogen sequestration/ septic tank<br>management plan |            | $\top$      |              |                              |                   |              |                          |                   | 十         | _                         | +                         |                          | -                      |              | <del>-  </del> - | +               | -                                      | +                                                                |                   |                                 |          |                   | -                             |                                                          | <u> </u>  |                                                  |            |
| e. Advanced waste water treatment. 1.Centralized          |            |             |              |                              |                   |              |                          |                   | 1         | 1 1                       | ++                        | +                        | +                      | $\vdash$     |                  | +               | +                                      |                                                                  |                   |                                 |          |                   |                               |                                                          |           |                                                  |            |
| 2. Decentralized                                          |            |             |              |                              |                   |              |                          |                   |           | -                         |                           | $\dashv$                 | $\dashv$               | -            | +                |                 | $\dashv$                               | -                                                                | _                 | -                               | $\dashv$ | _                 | _                             | -                                                        | T         |                                                  |            |
| IL LOW IMPACT DEVELOPMENT                                 |            |             |              |                              |                   |              |                          |                   |           |                           | +                         | <u> </u>                 | -                      | _            |                  |                 | -                                      |                                                                  |                   | -                               |          | _                 | -                             | 10 P                                                     |           | site implications of the<br>hydrologic cycle     | ወ          |
| a. On site drainage<br>b. Storm water mitgation           |            |             |              |                              |                   |              |                          |                   |           | ++                        |                           | 11                       | +                      | +            | +                | +-              | +                                      | +                                                                |                   | +-                              |          | 4-4               | -                             |                                                          |           |                                                  |            |
| c. Aquifer recharge                                       |            |             |              |                              |                   |              |                          |                   | +-        |                           | +                         | +                        | +                      | _            | <del>- </del>    | -               |                                        |                                                                  |                   | -                               | -        |                   |                               |                                                          |           |                                                  |            |
| a. Appropriate terroscaping a. Watershed health           |            |             |              |                              |                   |              |                          | П                 |           | T                         |                           | H                        |                        |              |                  | H               | H                                      |                                                                  |                   |                                 |          |                   | -                             |                                                          |           |                                                  | 4,         |
| IV WATER HARVES IING                                      |            |             |              |                              |                   |              |                          | 1                 |           |                           | -                         | <b>-</b>                 |                        |              |                  |                 | . 57 <u> </u>                          | -                                                                |                   | -                               |          | 1                 |                               |                                                          |           | water production on<br>site                      |            |
| a. Rain water collection                                  |            |             |              |                              |                   |              |                          |                   |           | $\top$                    | $\dashv$                  | 1                        | $\top$                 | -            | +                | +               | +                                      |                                                                  |                   | +-                              | +        | -                 | -                             |                                                          |           |                                                  |            |
| b. Fog collection                                         |            |             |              |                              |                   |              |                          |                   |           | $\top$                    | 1                         | $\top$                   | +                      |              | +                | +               | -                                      | +-                                                               | -                 | +                               | +        | $\perp$           | -                             | -                                                        |           |                                                  |            |
| c Contour harvesting V. WATER WASTE PROCESSING            | 7 . 72<br> |             |              |                              |                   |              | ] [                      |                   |           |                           | † †                       |                          | <b> </b>               | <b>-</b>     |                  |                 | ###################################### |                                                                  |                   |                                 | -        |                   |                               | 3, 5, 7, C)<br>3, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, |           | decoupling from the hydrologic cycle             |            |
| a. Conserving appliances                                  |            |             |              |                              |                   | $\perp$      |                          |                   |           |                           | +                         | +                        | 十                      | $\dagger$    | 十                | +               | +                                      | +                                                                | +                 | +                               | +        | +                 | +                             | +                                                        |           |                                                  |            |
| b. Waterless urinals                                      |            |             |              |                              | ightharpoons      | $\perp$      |                          |                   |           | $\Box$                    | $\top$                    | _                        | $\dashv$               | +            | $\dashv$         | $\dashv$        | +                                      | $\dashv$                                                         | $\dashv$          |                                 | +        | $\downarrow$      | +                             |                                                          |           |                                                  |            |
| c. Composting toilets & dry toilets                       |            |             |              |                              |                   |              |                          |                   |           |                           |                           |                          | $\dashv$               | $\dashv$     | $\dashv$         | $\dashv$        | $\dashv$                               | -                                                                | $\dashv$          | -                               | -        | -                 | _                             | 1                                                        |           |                                                  |            |
| ,                                                         |            |             |              |                              |                   |              |                          |                   |           |                           |                           |                          |                        |              |                  |                 |                                        |                                                                  |                   |                                 |          |                   |                               |                                                          |           |                                                  |            |

Table 1.1 SLO GREEN BUILD RECOMMENDED CHANGES IN Resolution R3-2008-0005 REGIONAL SEPTIC SYSTEM UPDATES DATED 4/7/08