

Wastewater Management Program for Impaired Water Bodies

Outline of Presentation to COWA, March 18, 2009

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Santa Cruz County Environmental Health Services

1. Overview

- a. 303d Impaired Water Bodies, TMDL's and why they are important
- b. Wastewater Management, AB 885 and other State Mandates
- c. How do we know if onsite systems are contributing to impairment?
- d. History of San Lorenzo Wastewater Management Program
- e. Components of San Lorenzo Wastewater Management Program
 - i. System Inspection and Water Quality Monitoring Efforts
 - ii. Repair/Upgrade Standards
 - iii. Alternative Technology Systems
 - iv. Onsite Service Providers
 - v. County Service Area Fee Support
 - vi. Program Successes
- f. Sources of Additional Information

2. Impaired Water Bodies

- a. Section 303(d) of the Federal Clean Water Act
- b. Listing updated by State and EPA every 3 years
- c. More Stringent Requirements for Listing now
- d. Opportunity for Public and Agency Input
- e. Listing requires preparation of Total Maximum Daily Load (TMDL)
- f. TMDL evaluates sources, establishes plan to control sources and attain standards
- g. TMDLs prepared by Regional Boards, adopted by State Board and EPA

3. Wastewater Management, AB 885 and other State Mandates

- a. AB 885 requires special measures for onsite systems "adjacent" to 303d impaired water bodies (13291.b.2)
- b. Proposed regulations require evaluation, disinfection, and/or nitrogen removal for any system within 600 ft of an impaired waterbody, where onsite systems are contributing to impairment by nitrogen or pathogens
- c. The regulations provide an exemption for systems managed under a wastewater management plan that includes monitoring, repair, and reduction of impairment
- d. The "new" regulations will also have special requirements for impaired water bodies.
- e. The Central Coast Regional Water Quality Control Board provides for flexibility in their Basin Plan requirements where the local agency adopts and implements a wastewater Management Plan

4. When are Onsite Systems Contributing to Impairment?

- a. Nutrients, Nitrate, Nitrogen; or Pathogens, Fecal coliform, indicator bacteria
- b. Santa Cruz County is blessed with at least 6-10 impaired water bodies, impacted by those constituents
- c. Even with 23,000 onsite systems, Only 2-5 have been deemed to be impacted by onsite systems
- d. Analysis based on land use, extensive water sampling, nitrogen budgeting, and genetic source analysis (ribotyping) (20% human in San Lorenzo, 0% elsewhere)

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5. San Lorenzo River (and tributaries) is the major impaired water body
 - a. Primary municipal supply for 90,000 people
 - b. Recreational resource for swimming, fishing and kayaking
 - c. Discharges on Santa Cruz Main Beach (Boardwalk)
 - d. 140 square miles, 13,500 onsite systems in watershed, many dating to the 1920's.
 - e. Highest density of onsite systems in California, 15% within 100 ft of a waterway

6. History of San Lorenzo Wastewater Management
 - a. State Protected Waterway, 1975
 - b. San Lorenzo River Watershed Management Plan, 1979
 - c. Wastewater discharge Prohibition, 1982 (Resolution 82-10)
 - d. Failed sewer project, 1984
 - e. Onsite Wastewater Management program initiated -1986
 - f. Water quality grants for problem characterization
 - g. Wastewater Management Plan adopted by State in 1995
 - h. Nitrogen and pathogen TMDL's completed
 - i. Wastewater management plan applied countywide
 - j. County Service Area for onsite system management formed in 1989 (before Prop 218)
 - k. Memorandum of Understanding with Regional Board, 2001, 2009
 - l. Regional Board Waiver, 2009

7. Components of Santa Cruz County Wastewater Management Program
 - a. Inspection and Monitoring Efforts
 - b. One acre minimum for new development on existing parcels
 - c. Repair/Upgrade Standards
 - d. Alternative Technology Systems
 - e. Onsite Service Providers
 - f. County Service Area
 - g. Public Education
 - h. Data Management and Reporting

8. System inspection and water quality monitoring
 - a. Initially all systems, then every 3-6 years
 - b. Now just in response to complaints, bad pumpers reports
 - c. 22 regular surface water quality stations
 - d. Shallow monitoring wells
 - e. Municipal wells
 - f. Ditch sampling and follow up sampling investigations
 - g. Total of 800-1200 samples per year for nitrate and/or fecal coliform

9. Repair/Upgrade Standards
 - a. Significant improvement but not as stringent as new system standards
 - b. Negotiated with Regional Board
 - c. Reduced groundwater separation 1-3 ft.
 - d. Reduced stream separation 50 ft.
 - e. Based on results from 100 shallow monitoring wells

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- f. If can't meet standards: nonconforming system with annual inspection, no remodel
- g. Otherwise alternative technology system required
- h. Require upgrade for any bedroom addition or addition > 500 sq. ft.

10. Alternative technology/enhanced treatment systems

- a. 300 alternative systems installed, 400 county-wide
- b. 10-15% of system repairs in watershed are alternative
- c. Enhanced treatment required for reduced groundwater separation, stream separation, slow percolation or inadequate leaching area (50% reduction allowed)
- d. 50% nitrogen reduction required for new or upgrade systems with sandy soil
- e. Systems used:
 - i. Sand filters
 - ii. Mounded Bed
 - iii. Multi-flo
 - iv. Bio-microbics FAST
 - v. Advantex
 - vi. Geo flow dispersal
 - vii. Hoot
 - viii. Bord na Mona

11. Oversight/Management of Alternative Systems

- a. Requirement for service contract with Certified Onsite System Service Providers
- b. Annual inspection and maintenance report
- c. Oversight and 3 year inspection by County staff
- d. OSSP needs to be local, responsible, and approved by manufacturer
- e. Moving toward telemetry on systems
- f. Annual fee on tax-bill to cover county costs (development related fee exempt from Prop 218)
- g. Owner agrees to annual fee, service contract, and other requirements as a condition of installation permit approval
- h. Agreement recorded on deed as notice binding on future owners
- i. Some new owners now balking, moving into enforcement.

12. Use of County Service Area Fees to Finance Program

- a. Small CSA 12 was expanded to cover whole county in 1989
- b. Basic fee of \$6.90 on all properties with onsite systems in county to finance septage disposal, data management, permit tracking and oversight
- c. Additional fee within San Lorenzo Watershed of \$18.54 to finance inspections, water quality monitoring, reporting
- d. Additional fee on nonstandard systems to cover inspections and oversight – considered a development related fee which is exempt from Prop 218.
- e. Prior fees established prior to Prop 218 and exempt.
- f. Agencies could consider establishing fees as development related fees or regulatory fees.

13. Program Successes

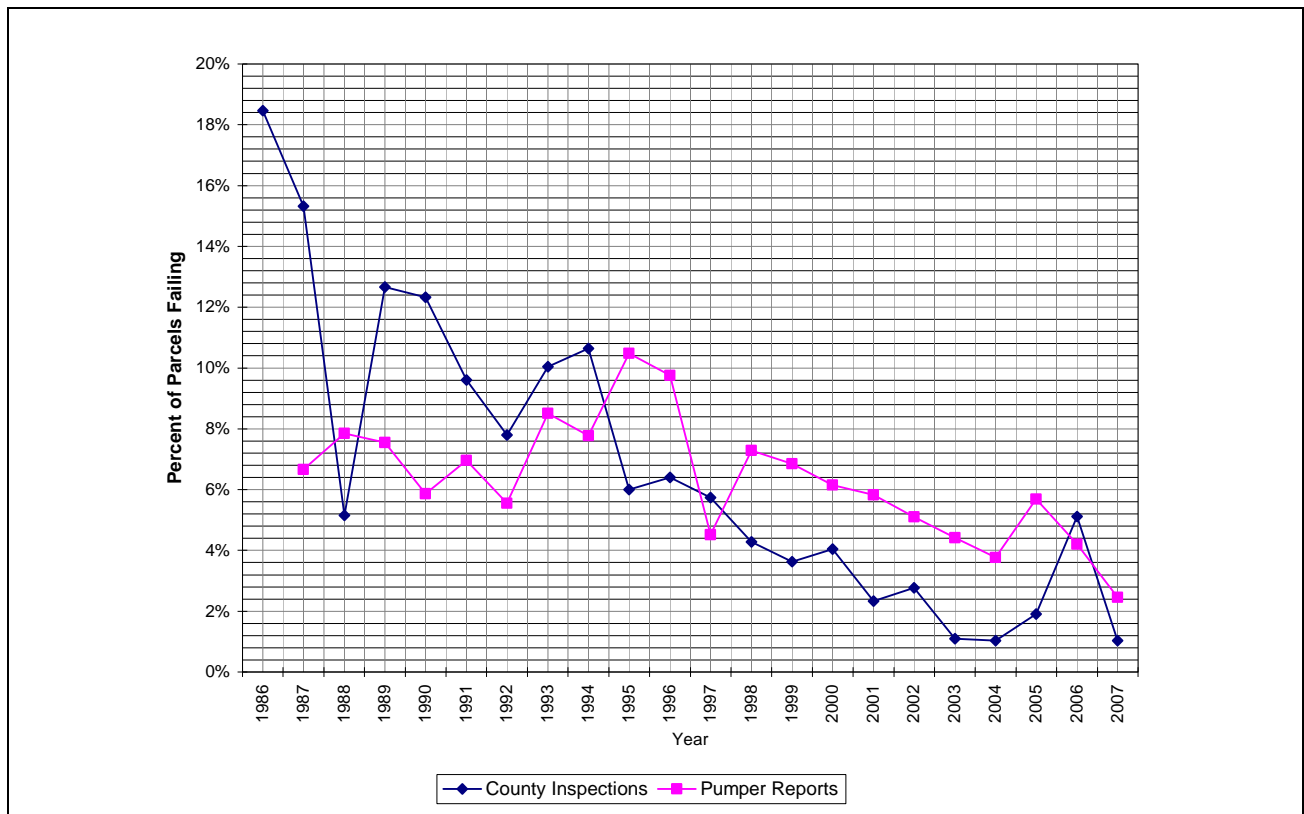
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- Failure rate has dropped from 18% to 1-2%
- Number of complaints has dropped
- Number of repair permits has declined, problems have been fixed
- Bacteria levels generally meet standards, barely meet criteria for impairment
- Nitrogen levels in River fluctuate, but low
- Nitrate in groundwater down and holding at 12 mg/l, 25% of standards
- Still more work to do: 20% of fecal contamination in spring is human

Observed Septic Failures During County Parcel Surveys and Rechecks and Private Pumper Inspections in the San Lorenzo Watershed



14. Additional Information

- John Ricker: john.ricker@co.santa-cruz.ca.us ; (831)454-2750
- Alternative And Enhanced Treatment System Regulations
- Draft San Lorenzo Wastewater Management Plan Program Status Report 2002-2007
- Website: http://sccounty01.co.santa-cruz.ca.us/eh/environmental_water_quality/env_water_quality_home.htm
- San Lorenzo Wastewater Management Plan, 1995 (on website)
- Standards and Procedures for the Repair and Upgrade of Septic Systems (website)