

## **Strategy #5: Watershed/Aquifer Restoration**

This submission recommends watershed restoration as a strategy for aquifer recharge.

The Water Supply Advisory Committee has committed to do water supply planning in the context of an uncertain future climate. Climate modeling points towards a shorter wet season for this region, even in models that envision similar or increased total precipitation. A shorter wet season means reduced aquifer (groundwater) recharge. Lower aquifer levels mean lower stream flows, since the aquifers feed the springs that run off into creeks.

Desal Alternatives takes it as a matter of common sense that a key strategy to prepare for climate change is to restore our aquifers to previous levels. The Purisima Aquifer, source water for the City's Live Oak wells, is overdrafted and threatened with salt water intrusion. The Santa Margarita Aquifer, source water for the San Lorenzo River is 200 feet lower than historic levels in the Scotts Valley area.

### **Low Impact Development**

Several aquifer recharge strategies were evaluated in a recent study by Kennedy/Jenks.<sup>1</sup> The study ranked the top ten strategies according to cost/benefit and feasibility. The study's #1 alternative reflects the understanding that it is not only pumping that depletes aquifers. Aquifer depletion occurs when impervious surfaces prevent rainwater from penetrating the ground. Alternative #1 is *Enhanced Stormwater Recharge through Low Impact Development in Scotts Valley*. This involves retrofitting streets and parking lots to allow rainwater to penetrate the sandy soils of Scotts Valley.

The fact that *low impact development* was named the most cost effective aquifer recharge strategy should give us a wake-up call. Our water agencies invest in *low impact development* if there is state grant money available. But if retrofitting paved surfaces is a cost-effective strategy for protecting and enhancing our water supply, it should be considered for direct ratepayer funding.

### **Sediment Reduction Strategies**

In the past the Water Department has had the luxury of avoiding water from streams and river during and after storms when the water is too muddy. Instead of diverting turbid river water, the City has used reservoir water during these events. The City is now considering water treatment upgrades to enable it to treat turbid water.



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<sup>1</sup> Kennedy/Jenks study, *Conjunctive Use and Enhanced Aquifer Recharge Project, Phase One* (2011)  
[http://sceh.com/Portals/6/Env\\_Health/water\\_resources/FINAL\\_SCCUP\\_Phase1\\_Report\\_082211\\_small.pdf](http://sceh.com/Portals/6/Env_Health/water_resources/FINAL_SCCUP_Phase1_Report_082211_small.pdf)

Lowering turbidity in our source water would ease the burden on water treatment technology. So it makes sense to consider investments in strategies to reduce human-caused sediment runoff into our streams. This would also benefit fish habitat, since sedimentation is a major factor in preventing steelhead and coho salmon from successful reproduction.

Sediment runoff in the San Lorenzo River watershed is a formidable problem. A Metro Santa Cruz article, *Roads to Ruin*, reported, “Santa Cruz County environmental planner Dave Hope ... echoes an opinion widely held among geologists, biologists and even foresters that disastrous erosion problems stem from an estimated hundreds of miles of both new and abandoned logging roads and illegally constructed roads that snake throughout Santa Cruz County.”<sup>2</sup>



The County developed a San Lorenzo Watershed Management Plan in 1979 that called for watershed restoration. An update to the plan in 2000 reports:

Stronger regulations were implemented to reduce erosion from new development, but many of the recommendations for funding and technical assistance to address existing chronic erosion sources were not fully implemented due to significant funding cutbacks in local and federal programs. Stream sedimentation has not improved substantially since adoption of the 1979 Plan. Chronic sediment contribution from public and private roads remains as a significant source of stream degradation.<sup>3</sup>

Recent monitoring indicates that there has been some improvement in stream sedimentation during storm events.<sup>4</sup>

We note that there exists a huge backlog of needed watershed restoration work alongside a need for local youth employment. We recommend that the City convene a joint effort with Scotts Valley Water District and San Lorenzo Valley Water District to contract with the California Conservation Corps to engage in watershed restoration, including restoration of roads; storm water infiltration projects; and partnering with schools and community groups to do restoration.

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<sup>2</sup> “Roads to Ruin”, Kelly Luker, Metro Santa Cruz, April 16, 1998

<sup>3</sup> San Lorenzo Watershed Management Plan Update, p 4

<sup>4</sup> Balance Hydrologics, *Suspended Sediment Monitoring for Zayante, Bean and Valencia Creeks* (2010)