

**Strategy #3:
Building Code Revisions & Onsite Water Systems**

This strategy calls for the City of Santa Cruz to adopt conservation measures that go beyond the California Building Code, so that new buildings are highly water-efficient---and can capture and re-use water onsite. In addition, the City can pass an ordinance requiring efficient fixtures in existing buildings. A precedent for the ordinance idea was created in 1991, when the City passed an ordinance requiring toilets in existing buildings to have a minimum efficiency.



**Oakes Hall, Vermont Law School, 2300 sq ft.
Daily municipal water consumption=16 gals.**

Recent revisions in the California Building Code will make a big impact on water conservation. According to Maddaus Associates, the author of the City's draft Master Conservation Plan, savings in the Santa Cruz water service area resulting from California Building Code revisions will amount to 242 million gallons per year in 2030. That's six percent lower than the previous estimated water demand for 2030. Building code revisions will save more water than the sum of all the new conservation measures that Maddaus has identified in the Draft Master Conservation Plan.¹ Building codes are powerful tools to influence water conservation. And unlike financial incentives for conservation measures, the cost to the water utility is minimal.

Maddaus identified some potential building code requirements early in the process of drafting the Conservation Plan that didn't get included in the final draft.²

¹ New measures identified by Maddaus amount to a total 192 million gallons/year savings in 2030.

² Measures that didn't get included in the final draft:

- a) Require .25 gal/flush urinals in new development
- b) Require hot water on demand in new development
- c) Require efficient dishwashers in new development
- d) Require plumbing for gray water in new development
- e) Ordinance requiring fixture replacement in existing buildings

The last measure on the Maddaus list, *requirements for existing buildings*, could be combined with City rebates. For example:

- Require efficient dish wash sprayers in restaurants.
- Require replacement of all toilets using more than 1.6 gallons per flush in existing buildings.
- Require low-flush urinals in existing buildings.

The Final EIR for the La Bahia Hotel (2014) recommends measures that go beyond existing building code:

Recommended Condition of Approval: Require incorporation of high efficiency water and energy-saving plumbing fixtures and appliances (toilets, urinals, washing machines, etc.) that go beyond current plumbing codes to minimize indoor water use.

Recommended Condition of Approval: As part of the landscaping and irrigation plan, require that only weather-based (ET) controllers be used on automatic irrigation systems to insure that irrigation is at the highest rate of efficiency.

Onsite Water Systems

David Sedlak, author of the book, *Water 4.0*, suggests that water agencies need to start looking towards decentralized water systems in order to avoid the increasing financial and environmental costs of centralization. He writes,

“If we can figure out ways to meet our water needs with local resources, to safely treat our wastes close to where they are produced, and to drain the streets without a centralized storm sewer system, we might break free of the cycle of costly investments and environmental damage that currently plague our current water and wastewater systems.”

Sedlak reports that “closed loop water systems in buildings have the potential to help cities break free of the need for centralized water treatment and distribution.”

The San Francisco Public Utilities Commission, with funding the Water Research Foundation, and the Water Environment Research Foundation, has created the *Blueprint for Onsite Water Systems, a Step-by-Step Guide for Developing a Local Program to Manage Onsite Water Systems*. It is available online at <http://sfwater.org/modules/showdocument.aspx?documentid=6057>

The first step in this guide is to create a working group that includes representatives of the water & wastewater utilities, health department, planning & building dept., non-profit and citizen stakeholders.

In conclusion, the Water Supply Advisory Committee should recommend the formation of a working group to consider building code revisions that include onsite water systems.