



Recycled Water/ North Coast Groundwater Exchange (RCGE) (/initiative/4Wc2/recycled-water-north-coast-groundwater-exchange--rcge)

This option includes two separate construction projects. The first is a 4-5 million gallon per day tertiary wastewater treatment plant, and associated facilities to deliver that water to North Coast farmers for irrigation purposes. In all years, the farmers would use reclaimed water rather than groundwater to irrigate their fields. In return, the City would get access to the groundwater supplies currently being used by the farmers. The second City construction project would involve the wells and associated facilities necessary to extract this groundwater. Based on limited information, the 2003 IWP assumes an annual yield from this source of 700 million gallons.

Comments

Jim Mekis 4w ago

NEUTRAL

Proposes swapping secondary treated wastewater to North coast farmers for well rights. Does not meet "organic" requirements. Unless the proposal included tertiary treatment, why would farmers consider the swap?

Civonomics Facilitator 2d, 19h ago

From Dana Ripley: Nothing prevents organic farmers from using recycled water. Example of one organic farmer in Watsonville area that has used recycled water for about seven years is seen in new film "Water for Santa Cruz County" (youtube link below). As far as tertiary treatment, there is nothing in the RCGE plan that says tertiary would not be included. The California Title 22 code of regulations and state health guidelines specify treatment levels for recycled water used on various food crops. Current code and guidelines require "tertiary-2.2" effluent quality for spray irrigation of Brussel sprouts, for instance.

<https://www.youtube.com/watch?v=Anmelljf8NA>
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Jim Mekis 2d, 17h ago

Dana Ripley said: "Nothing prevents organic farmers from using recycled water. Example of one organic farmer in Watsonville area that has used recycled water for about seven years is seen in new film "Water for Santa Cruz County"

I think that argument is flawed: The Watsonville farmer is getting "advanced tertiary treatment for direct food crop irrigation" which Santa Cruz does not have, and only "advanced secondary treatment level for ocean discharge." From their website <http://cityofwatsonville.org/public-works-utilities/wastewater-treatment-plant> (<http://cityofwatsonville.org/public-works-utilities/wastewater-treatment-plant>) The current RCGE plan does not include upgrading our wastewater plant with tertiary treatment, though that upgrade would allow what Dana proposes.

Our current secondary treatment is likely to produce excessive coliform counts for direct application onto food crops.

Civinomics Facilitator 2d, 19h ago

Barry Kane 1d, 23h ago

NEUTRAL

Not sure on this one due to waste water plant required

Fred Martinez 2w, 6d ago

CON

Still thinking small.

Civinomics Facilitator 2d, 19h ago

From Dana Ripley: For the SCWD, 90,000 af of managed aquifer storage and a potential >2,000 afy of groundwater exchange potential both located immediately adjacent to the western city limit is hardly "small" in my opinion. I would dispute Mr. Martinez' characterization of the RCGE plan as "small."

Jan Karwin 2w ago

This proposal is worthy of further research and evaluation by the panel of experts.

Civinomics Facilitator 2d, 19h ago

From Dana Ripley: I agree particularly with comment on need for further research. The existing hydrogeology studies need to be updated and groundwater monitoring, all consistent with the new Sustainable Groundwater Management Act just signed by the Governor, needs to start now. State Parks needs to get on board with this immediately, particularly if this winter is below average precipitation. Even if SCWD declares Stage 5 next spring, it still needs a supplemental supply asap and the RCGE could be implemented in an incremental fashion with the first increment online in Spring 2015 if necessary. No one can predict precipitation levels for this winter, and we all should start thinking conservatively that it may be another dry year.

Robert Bosso 3d, 23h ago

CON

This proposal assumes that the Wilder aquifer extends up the coast when, in fact, the North Coast above Laguna has had very little groundwater to use for agriculture. Historically, water from Laguna, San Vincente and Molino Creek were used for those operations.

Civinomics Facilitator 2d, 19h ago

From Dana Ripley: I agree that my writings on this have been unclear on boundaries of the "western Santa Cruz" and "Wilder" aquifers, and I see how misunderstanding exists as to the northern limit of the Wilder aquifer. I would refer Jan to the work by Nicholas Johnson (HEA 1985) for mapping and cross-sections of these two aquifers. I have observed very significant agricultural activity both for 2013 and 2014 above Laguna Creek to Davenport Landing, and would be very interested in determining the extent of creek and/or aquifer sources used for those ag operations. That information should be available from State Parks.

Leslie Smith 2d, 22h ago

CON

I'm pretty sure I don't want to eat food that has been grown in recycled water and would make sure I did not buy or eat food grown with it

Purea Koenig 2d, 20h ago

NEUTRAL

Keep researching feasibility of this idea

Jude Todd 2d, 20h ago

CON

Although Title 22 permits this, it is NOT safe. Title 22 bases permit levels on pathogens, ignoring man-made chemicals and antibiotic-resistance genes. It's a public health hazard.

Bill Smallman 2d, 18h ago

NEUTRAL

From what I have read all the pharma is so small in drinking water sources that it does not present a health hazard. Conventional sewage treatment removes 20% to 90%. Out in the environment, these chemicals continue to break down. Reverse Osmosis removes 99%. I would argue that it is more of a health hazard dumping untreated water into the ocean vs. treating it and using it for irrigation. If you don't want to eat the produce grown from recycled water, you should include not eating any fish out of the ocean.

Civinomics Facilitator 2d, 15h ago

From Dana Ripley: Dr. Todd's comment is contrary to the California Water Code, contrary to the California Health and Safety Code, and contrary to the >4 decade California history of agricultural use of recycled water for irrigation of food crops including uncooked strawberries, lettuce, and cabbage. The concern over pharmaceuticals and personal care products (PPCPs) is noted, however ongoing research has demonstrated that the health risk exposure is small to negligible. The recent September 2014 PPCP study conducted by researchers at UC Riverside and Texas A&M University (see Resources) concludes as follows:

"In summary, although previous studies under laboratory or greenhouse conditions showed that plants could substantially accumulate various kinds of PPCPs from nutrient solutions or soils, results from this study suggested that the accumulation of 19 frequently occurring PPCPs in 8 common vegetables irrigated with tertiary treated wastewater was limited under field conditions, and that human exposure to PPCPs through daily consumption of these PPCP-contaminated vegetables was likely to be small. This finding may help to promote the implementation of agricultural irrigation with disinfected, tertiary treated wastewater in arid and semiarid regions. The use of treated wastewater in agriculture may further allow the allocation of fresh water for more crucial purposes (e.g., drinking) and concurrently reduce the contamination of aquatic ecosystems from the discharge of treated wastewater into these systems."

As noted by Bill Smallman, these PPCP's are significantly reduced by tertiary treatment combined with soil microbiology to reduce concentrations to receiving surface water and/or groundwater. The existing condition discharges 8 mgd of secondary effluent to the marine sanctuary with little or no PPCP reduction beyond secondary treatment.

Jim Mekis 2d, 17h ago

NEUTRAL

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Fred Yukic 2d, 13h ago

PRO

This is a good idea. There is groundwater in this area, as evidenced by the acreage of crops being grown. Not all the acreage is organic. Also, the water could be treated to higher level to meet needs of organic farmers. This is part of the holistic solution which considers the entire hydrologic cycle. We need to stop putting pharmaceuticals in the wastewater, or removing them during wastewater treatment, whether the treated wastewater is discharged to the bay or re-used on crops.

Barry Kane 1d, 23h ago

NEUTRAL

Not sure on this one due to waste water plant required