

When the district begins pumping water from the new system, it should produce about 60 million gallons of drinking water a day for 2.3 million customers in northern and central O.C.

The treatment system is remarkable for its sheer muscle power: Once the sewer water arrives – pretreated to remove solids, viruses, bacteria, protozoa and pharmaceuticals – enormous amounts of electricity are needed to push the water through stacks upon stacks of reverse osmosis filters. That's just one step.

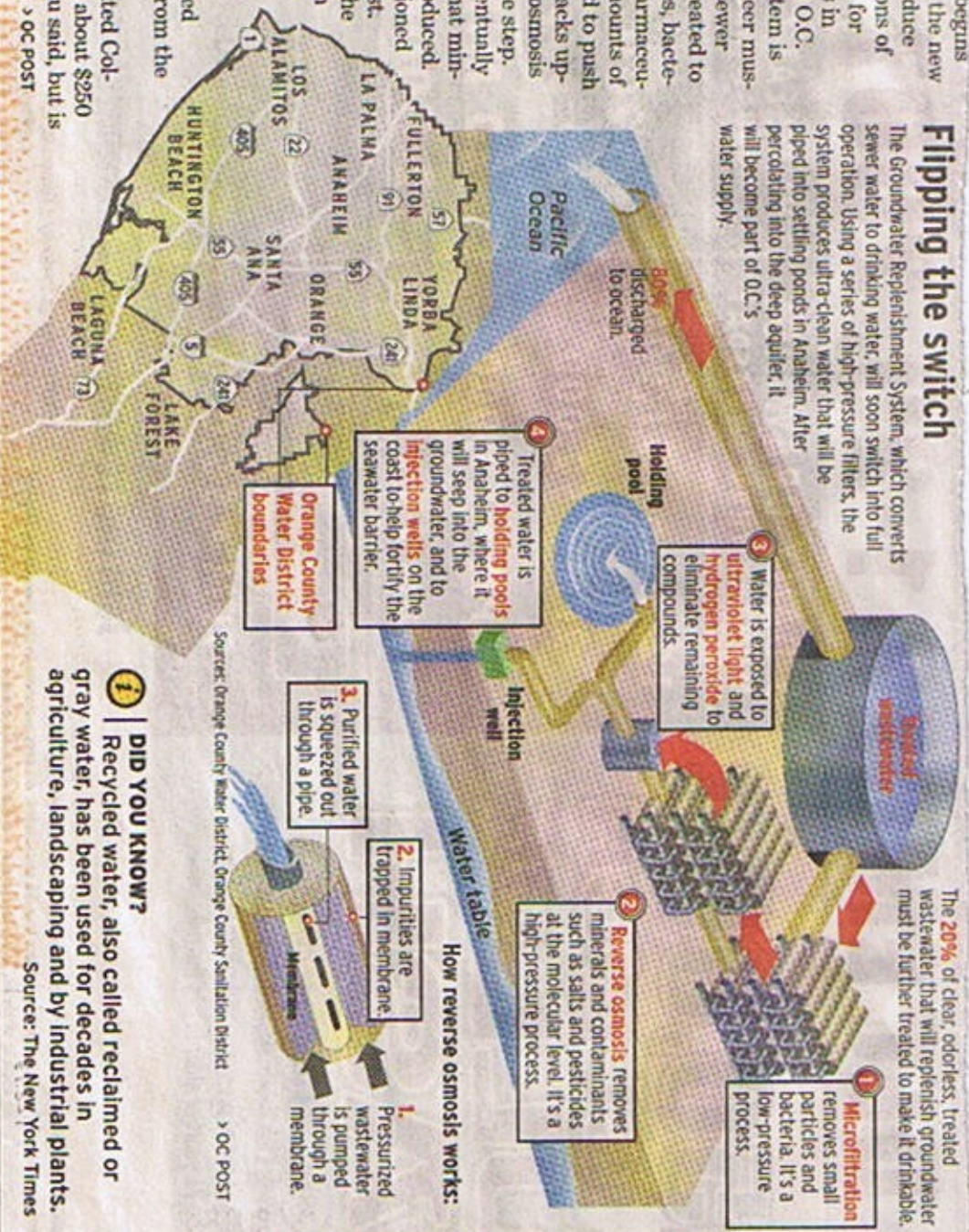
The water that eventually emerges is so pure that minerals must be reintroduced. Critics have questioned the project's high cost.

The district says the water emerging from the system costs about \$518 an acre-foot. That compares with about \$540 an acre-foot when treated water is purchased from the region's wholesaler.

The cost of untreated Colorado River water is about \$250 an acre-foot, Bliedean said, but is not always available. > OC POST

Fipping the switch

The Groundwater Replenishment System, which converts sewer water to drinking water, will soon switch into full operation. Using a series of high-pressure filters, the system produces ultra-clean water that will be piped into settling ponds in Anaheim. After percolating into the deep aquifer, it will become part of O.C.'s water supply.



The 20% of clear, odorless, treated wastewater that will replenish groundwater must be further treated to make it drinkable.

1. Microfiltration removes small particles and bacteria. It's a low-pressure process.

2. Reverse osmosis removes minerals and contaminants such as salts and pesticides at the molecular level. It's a high-pressure process.

3. Purified water is squeezed out through a pipe.

1. Pressurized wastewater is pumped through a membrane.

2. Impurities are trapped in membrane.

3. Impurities are trapped in membrane.

How reverse osmosis works:

1. DID YOU KNOW? Recycled water, also called reclaimed or gray water, has been used for decades in agriculture, landscaping and by industrial plants.

Source: The New York Times

Sources: Orange County Water District, Orange County Sanitation District

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Test yourself

(answers below)

- A. Water weighs how much per gallon?
- B. How much water has been added to the Earth since the age of the dinosaurs?
- C. What percentage of California's water comes from groundwater?
- D. How many gallons of water does it take to produce a car?
- E. Of water that comes into the home, what percentage do we drink?

Answers:
 A. 8 pounds
 B. none
 C. 40%
 D. 32,000
 E. 2%

Source: O.C. Water District