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Cleaning up dirty water: City diverting runoff to treatment plant

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Contaminated water flowing out of two storm drains, one each on Mission and Arroyo Burro creeks, is being diverted into city sewers as part of a continuing effort to clean up ocean and creek pollution, officials said Friday.

The two drains -- one under the Haley Street and De la Vina bridge and the other at Hope Avenue, opposite La Cumbre Plaza -- have long been known as hot spots that harbor high levels of fecal bacteria. But until the release of a UCSB study this summer, no one was sure whether the pollution came from humans or from dogs, cats, raccoons and seagulls.

The study by Patricia Holden, an associate UCSB professor of environmental microbiology, shows that some of the fecal bacteria in the runoff from the two drains come from humans. And because contact with human waste can cause disease, the city last week diverted the water in the Haley Street drain into the sewer system for treatment at the El Estero wastewater plant.

A similar diversion for the Hope Avenue drain will be completed before the end of the month.

There are at least 100 times more fecal bacteria in the runoff from both drains than the federal safe swimming standard allows. Ms. Holden also found the DNA of human waste bacteria at several locations downstream in lower Mission Creek, Laguna Channel and Mesa Creek at the Arroyo Burro lagoon.

"Nobody swims in our creeks, which is a good thing," said Jill Zachary, city creeks manager. "So we're taking a fairly conservative approach here. None of that water is going into the creek anymore."

Up to now, bacterial testing of the creek and ocean has been broad-brush at best, signaling the general presence of fecal bacteria but not the source. Using a DNA-based methodology developed by Ms. Holden, the city will now be able to pinpoint which hot spots are contaminated with human waste, Ms. Zachary said.

On Wednesday, the city's creeks advisory committee gave Ms. Holden a green light to look for human waste "markers" in the Carrillo Street drain on Mission Creek and in the sediments downstream of the Haley Street storm drain.

The city has set aside \$339,000 for the research, which began in 2004. Most of the funding comes from Measure B, a 2 percent increase in the hotel bed tax that goes toward improvements in ocean and creek water quality.

"One thing that is still important to learn is where human waste is entering the Haley Street storm drain system," Ms. Holden said. "We could find it upstream, but we still don't know where it's entering. The same is true for the Hope Avenue drain. And we want to know if the sediments are a place in the creek where the bacteria we're concerned about are being stored."

The city's diversion of contaminated runoff from the Haley Street and Hope Avenue drains is only a temporary solution during dry weather. During the rainy months, city officials said, the flow would be too great for El Estero to handle.

In an attempt to find the source of the pollution from human waste, city crews inserted a small television camera into the pipe upstream of the Haley Street outlet, but no cause could be identified. A similar inspection will be conducted in the Hope Avenue drain.

There are no septic systems in the vicinity of the two drains, and officials say they do not know whether homeless people may be to blame.

"We need to find the source this summer and fix it," Ms. Zachary said. "What happens on these streets that could potentially create a water quality problem? It will be tricky to figure that out. The work we've done so far is really a snapshot."

Scientists do not know whether the fecal bacteria in the storm drain runoff make their way downstream into the ocean. On three separate days when Ms. Holden sampled both the Haley Street drain and the ocean, she did not find human fecal bacterial DNA downstream, either in the Mission Creek lagoon or in the surf at the beach. During three days of testing at the Hope Avenue drain, Ms. Holden found human fecal bacteria DNA in the surf at Arroyo Burro Beach on only one day.

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