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Vegas' Growth Is Gamble for Lake

- Some fear sprawl will put more pollutants in Lake Mead and want treated sewage dumped deeper in it. Others say it'll just shift problems.

By Bettina Boxall, Times Staff Writer

Las Vegas' relentless growth has raised concerns that the city's expansion will send more pollutants into Lake Mead, hurting water quality in the nation's biggest reservoir and the source of drinking supplies for millions in Southern California and the Southwest.

With each new subdivision in the southern Nevada desert, more wastewater and urban runoff drains into Mead, a sparkling blue national recreation area but also the receptacle for all of metropolitan Las Vegas' treated sewage.

A wastewater coalition is proposing a solution: a massive pipeline that would take most of the effluent from a wash that now empties into a shallow bay and instead dump it directly into the cold depths of the lake closer to Hoover Dam. There, in theory, it would undergo more dilution and be less likely to feed surface algal blooms.

But some experts fear the pipeline project could simply export the pollution threat out of Mead to the lower Colorado River, where Southern California and Arizona draw water. "It's not a good situation for those downstream," said Alexander J. Horne, a UC Berkeley professor emeritus in environmental engineering and part of a team that reviewed computer modeling of the proposed pipeline project.

He and others argue that moving the wastewater outfall several miles south, closer to the dam, will eliminate natural scrubbing that now occurs in the wash and the lake. That could make it more likely that algae-breeding nutrients such as phosphorous will migrate out of Mead and reach the lower Colorado.

Douglas W. Karafa, program administrator for the Las Vegas Valley wastewater coalition that is overseeing the pipeline project, said that while

phosphorous levels might rise slightly, they would remain well within water quality standards. "Saying there is a little more phosphorous going out of Hoover Dam doesn't necessarily relate to anything that is going to happen environmentally," Karafa said.

The ever-increasing volume of effluent draining out of the Las Vegas Valley makes it imperative, he said, that the outfall be moved from Las Vegas Wash, which carries a steady stream of treated sewage into Mead from the region's three water reclamation plants.

The daily effluent flow has swelled to 170 million gallons from 40 million gallons in the 1970s. It is projected to hit 300 million gallons by 2030 and 400 million gallons by 2050. There will be so much wastewater that planners want to use it to power an underground hydroelectric plant that would be built as part of the pipeline project.

The flow has eroded the 12-mile wash, cutting deep channels, tearing out wetlands and dumping sediment into the lake that hurts water quality.

Researchers have found that fish living near the wash's outlet in Las Vegas Bay have lower sex hormone levels and trace amounts of birth control chemicals and other compounds present in the wastewater.

Algae, which can be a pollution problem, has at times reached troubling levels in the bay, probably stoked by nutrients found in the discharge — a situation expected to worsen as the wastewater flow increases.

To ease the effect on the wash and the relatively shallow bay, the wastewater coalition is proposing a $600-million project that would divert most of the effluent into a 12-foot-wide pipeline nearly 20 miles long. The pipe would extend seven miles through the River Mountains and release the waste into the lake about 1 1/2 miles off Boulder Beach, at a depth of roughly 260 feet.

Designed to encourage dilution and to keep the effluent in an algae-hostile dark layer of the lake, the new outfall would also move the wastewater flows downstream, away from the intakes that Las Vegas uses to draws its drinking water from Mead.

But like Horne, Mic Stewart, the water quality manager for the Metropolitan Water District of Southern California, worries that moving the wastewater discharge to within about 3 1/2 miles of Hoover Dam would leave more phosphorous and other nutrients in the water to flow through the dam to

the lower Colorado.

"Even a little bit of increase in phosphorous in the river could stimulate algal growth," Stewart said.

G. Chris Holdren, a U.S. Bureau of Reclamation lake expert who was on the modeling review team, says the outfall move might even pose a threat to the lake above the dam. "The problems as I see them — depending on how the discharge eventually gets mixed into Lake Mead — is a potential increase in the algal blooms in the open part of the lake where it could impact recreation."

Algae can be toxic, although Mead's blooms so far have not been. Much of Mead, normally a clear blue, turned a cloudy pea green in 2001 when a giant bloom spread across its western portions. But fish and water quality were not affected.

Still, the 2001 bloom — the cause of which remains unclear — illustrated Mead's long reach. "The bloom was so extensive that it spread throughout the lower Colorado River system … and even into reservoirs in the Southland region as far south as San Diego, a distance of about 400 miles," Stewart said.

The best solution to the algae threat, he said, was to increase treatment at the wastewater plants that serve the Las Vegas Valley.

Arizona water officials have not expressed concern about the outfall move. The National Park Service, which manages the Lake Mead National Recreation Area, said it had confidence in the modeling, which indicates the new outfall area would meet water quality standards — whereas continuing to discharge all the effluent in the wash would lead to pollution problems in Las Vegas Bay.