Water Consumption in Southern Nevada

By Paul Conyers

Overview

With its massive hotels, casinos, restaurants, and dramatic architecture it can be easy to forget that Las Vegas resides in the middle of a desert receiving just 4.5 inches of rain per year. Its population has grown immensely to nearly 2 million as of 2012 and that is without including the more than 30 million tourists visiting every year. With this growth more and more water is needed to keep yards and golf courses green, to keep the fountains of Bellagio flowing, to support the habitats of Mandalay Bay and the Flamingo, and to allow Las Vegas to maintain its position as a shining oasis of the desert. 90% of the water comes from the same place it has for decades, Lake Mead. The population growth combined with a 12-year drought has made the need for water conservation more important every year.

The iconic fountains of the Bellagio need to be replenished by roughly 12 million gallons of fresh water each year 3

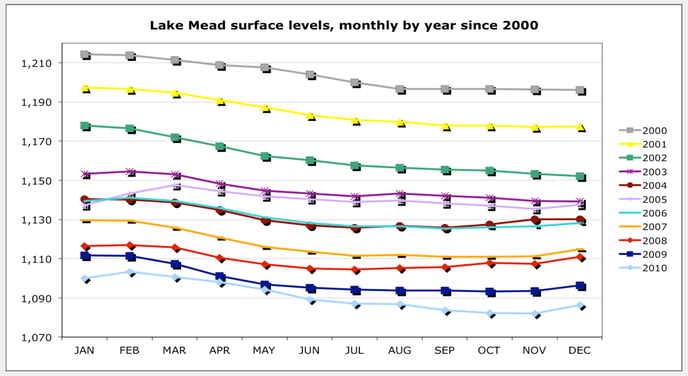
Contacts

Paul Conyers
University of Nevada Las Vegas
conyersp@unlv.nevada.edu
Professor Ahmet L. Atici
Department of Anthropology

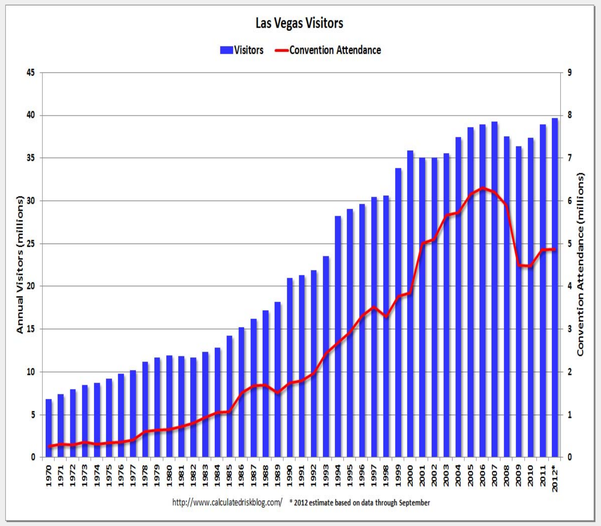
Poster Template Designed by Genigraphics ©2012
1.800.790.4001 www.genigraphics.com

Questions

1. How has the growth in population and tourism put a strain on the area's water supply?
2. How has the drought exasperated the problem?
3. What steps are being taken to conserve the ever shrinking water supply?
4. Besides Lake Mead, what alternative water sources are being considered?



Lake Mead surface levels through 10 years of drought



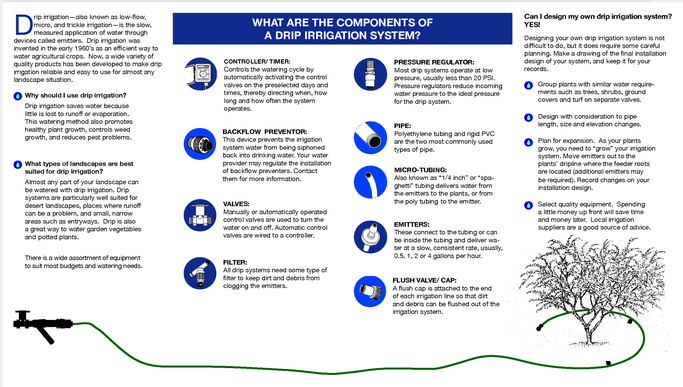
Las Vegas has seen a massive spike in tourism over the last 30 years 4

Problems

- Situated in the middle of the Mohave Desert, the City of Las Vegas and the surrounding area recvive an average of just 4.49 inches per year
- The construction of some 4,700 wells through the 1970s has severely depleted the massive Las Vegas Aquifer, there is nowhere near enough water to supply the valley
- Lake Mead is dependent on snowmelt from the mountains of Utah and Colorado, no amount of conservation can make up for a lack of snowfall
- Lake Mead is currently at just 56.75 % of full-pool capacity
- There are no other nearby sources of water large enough to replace Lake Mead
- Several million people are dependent on a single source of water

Conservation Efforts

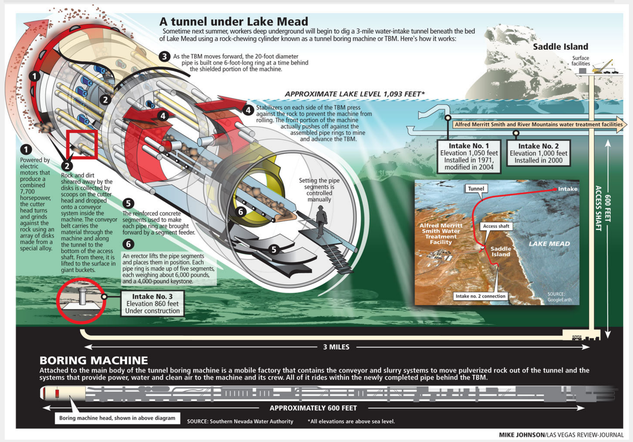
- Formation of the Southern Nevada Water Authority in 1991 to oversee water use
- Turf and watering regulations, new grass is prohibited, restricted, and/or strongly discouraged, grass can only be watered on certain specified days
- The use of recycled water to water golf courses, schools, and parks
- Coupons, rebates, and tax-incentives for pool covers, super-efficient irrigation systems, and removal of grass in place of desert fauna
- Installation of drip irrigation systems
- Leak detecting sensors in intake and irrigation pipes
- Controlled water pricing to control demand and penalties for excessive water usage
- Formation of the Water Efficient Technologies (WET) Program in 2001 2



Drip irrigation is being increasingly used as a water efficient way plants growing with little loss to evaporation

Possible Long Term Solutions

- A third intake pipe will allow the valley to continue drawing water from Lake Mead through 2021 even if drought worsens
- A water pipeline to draw from the groundwater of the sparsely populated White Pine County in Northern Nevada 5
- Purchasing water from the Imperial Valley in Southern California
- Cloud seeding to encourage additional rainfall



As the water levels of Lake Mead threaten to fall below existing Intake pipes a third pipe will alleviate the immediate problem 1

Conclusions

A record breaking drought and an explosion of growth have strained the water resources of Southern Nevada to their limits. Despite this challenge Las Vegas has taken great strides in rising to the occasion, its water system has become one of the most efficient in the nation. Many worry that Las Vegas has reached it's limit, but ever increasing conservation along with new public works projects will ensure that the city will continue to thrive into the foreseeable future.

References

1. Johnson, Mike (Dec. 14, 2009) "Water authority digs deep for third intake pipe at Lake Mead" Las Vegas Review-Journal
2. Southern Nevada Water Authority (May 2009) "SNWA Conservation Plan 2009-2013" http://www.snwa.com
3. MGM Resorts International (Jan. 2012) "Bellagio Environmental Responsibility" www.bellagio.com
4. www.calculatedriskblog.com; original source: Las Vegas Convention and Visitors Authority (Sept. 2012)
5. Bureau of Land Management (Aug. 1, 2011) "Clark, Lincoln, and Whitepine Counties Groundwater Development Project"