

Las Vegas: A Sustainable Urban Environment for Health?

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Abstract

The rapid growth of Las Vegas has resulted in negative consequences for the health of its residents to a level that threatens the area's sustainability. This article reviews key indicators of population health in Las Vegas through the framework of the US Centers for Disease Control and Prevention's Healthy People in Healthy Places and concludes that public health professionals, citizens, businesses, and political leaders must act now to protect and improve population health.

Key words: Urban sustainability, urban health, public health

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Las Vegas is a post-modern city; that is, one built on a central core of consumerism (Clark, 2003). With its 24-hour casinos, its fantasy architecture simulating world landmarks, its sex-oriented entertainment, and its high-end stores, Las Vegas has transformed an arid patch of desert into an adult-themed sandbox. But to what extent is this postmodern city sustainable when considering public health? According to McMichael (2007), "sustainable urban environments will support healthy living now and into the future" (p.41). Benchmarking area population statistics against the eight health protection goals of the Centers for Disease Control and Prevention (n.d.) highlights the challenges ahead.

1. Public Health and Health Promotion Capacity

Las Vegas is located in Clark County, Nevada. The Southern Nevada Health District reports that the population increased more than 70 percent between 1994 and 2004 and is projected to reach 3.3 million by 2026, when an estimated 36% of the population will be Hispanic. Several key indicators of its population health are worse than national averages (Southern Nevada Health District, 2007a).

- The number of those without health insurance (19%) is higher than the national median.
- County residents self-report poorer health status than the rest of the nation.
- County residents have lower life expectancies than Americans in general.
- Age-adjusted death rates for cancer, chronic lower respiratory disease, and chronic liver disease and cirrhosis are consistently higher than the nation.
- Suicide accounted for 2.2% of all deaths in Clark County in 2003, compared to 1.3% of all deaths in the US (Southern Nevada Health District, 2007b). Nevada is one of only three states that have more deaths from suicide than from motor vehicle crashes (Southern Nevada Health District, 2005).
- The county has the lowest rate of childhood vaccinations (59%) compared to other urban areas (Wells, 2007).

2. Health Care Services

The majority of hospitals are owned by for-profit chains. The county-run institution is perennially in debt with a \$53.7 million deficit projected for 2008 (J.L. Smith, 2007). In September 2007, the Metropolitan Police Department gave county prosecutors evidence warranting a criminal prosecution of its former chief executive officer for directing contracts to friends (Haynes, 2007). The county recently transferred to the hospital \$60 million designated for parks, reducing quality of life for residents (Geary, 2007).

3. Health Care Access

Health care access for Clark County residents is hampered by having the fewest generalist physicians per 100,000 population in national metropolitan areas (US General Accounting Office, 2003) and the nation's next to worst ratio of employed registered nurses per 100,000 population (HRSA, 2007). The sole state-supported medical school admits just 52 students per year. As noted above, nearly 20% of the population lacks health insurance. With 21% of its children under 18 uninsured, Nevada ranks 46th highest compared to other states (Mascaro, 2007).

4. Injury and Violence

Las Vegas doesn't fare well for the safety of its citizens. The Las Vegas Metropolitan Police Department reported to the Federal Bureau of Investigation (2007) that violent crime incidents went up from 9,530 in 2005 to 12,931 between 2005 and 2006, a 35% increase, whereas the population grew only 3% during this period. Other communities in Clark County (Henderson, North Las Vegas) showed similar increases. Nevada's prisons are so overcrowded that it has been forced to allocate \$285 million to build six new ones (Whaley, 2007).

5. Work Related Deaths, Injuries, and Illnesses

The Nevada construction industry, which employs a large segment of the Clark County workforce, had an injury incidence rate 8.5 per 100 workers in 2005 (Nevada Division of Industrial Relations, 2007), compared to 5.9 cases per 100 construction workers nationally (US Bureau of Labor Statistics, 2007). This indicates a disparity in occupational health and safety, one that may reflect communication difficulties in the large influx of non-English speaking Hispanics into this industry.

6. Social Determinants of Health

Lifestyle factors known to result in disease are higher in Clark County than the nation. The prevalence of current smokers was 26% from 2000 to 2005, compared to the national prevalence of 20.5%. This figure does not take into consideration the large number of casino workers who are exposed to second-hand smoke as part of their jobs. Excessive tobacco exposure contributes to the high incidence of lung/bronchus cancer deaths in Clark County. The prevalence of binge drinking during the same time period was 18%, also higher than the national prevalence of 14.4%. Heavy drinking prevalence (7%) was also higher in Clark County than nationally (4.9%). Excessive alcohol use is associated with liver disease and unintentional injuries, which are both higher in Clark County than the nation (Southern Nevada Health District, 2007b).

Educational attainment is lower in Clark County than the US with only 19.9% holding a bachelor's degree or higher, compared to 27.7% in the nation (US Census Bureau, 2005). The low educational attainment of Clark County residents may be due to the economy (largest employment sector: arts, entertainment, recreation, accommodation, and food services, according to the US Census Bureau in 2005), which offers jobs that do not require higher education. Many of these service jobs do not pay a living wage (Poverty in America, n.d.), despite the

efforts of service worker unions. Life expectancy is positively correlated with socioeconomic status, with the more-deprived having an average life expectancy at birth 4.5 years shorter than the less-deprived (Singh & Siahpush, 2006). In September 2007, Las Vegas's unemployment rate (5.2%) was higher than that of the US (4.6%) (Nevada Department of Employment, Training, and Rehabilitation, 2007).

While the population increases, the Clark County school system faces challenges building and staffing sufficient public schools to meet demand (Planas, 2007). At the same time, Nevada ranks near the bottom (46th) of all states in per pupil spending (US Census Bureau, 2004). Its high school drop out rate (11%) is the highest in the nation (7% national average) (The Annie E. Casey Foundation, 2006).

There are no statistics on the number of illegal immigrants, but there are indicators of the magnitude of immigration, legal and illegal. At the county hospital last year, 77% of all patients not giving social security numbers were Hispanic (Geary, 2007a). The Clark County School District budget for English Language Learners has increased 196% in the past decade at the expense of other programs. There has been a 132% increase in Hispanic students in the public schools in the last 10 years, with more than half of them in the English Language Learners program (Geary, 2007b).

Las Vegas (population 1.7 million) has over 11,000 homeless people ("Head count," 2007), which is about three times higher than the 3,700 unhoused individuals in New York City (population 8.2 million) (Chan, 2007). This shocking per capita disparity occurs for many reasons, primarily the lack of transitional/affordable housing and scarcity of social and mental services in Clark County. As construction of casinos, condominiums, and housing has expanded, single room occupancy hotels, boarding houses, and lower cost temporary housing have been obliterated, driving many low wage workers onto the streets. In addition, Las Vegas is a magnet for alcoholics, drug abusers, and others attracted by its get-rich-quick reputation (personal communication, social service providers at the Las Vegas Salvation Army, 2007).

Although Clark County's median household income of \$49,571 is slightly above the US median of \$46,242 (US Census Bureau, 2005), this relative advantage is negated by the expense of housing. The median price of a new single family home is \$312,639 (Robison, 2007) and for an existing home, \$278,000 (H. Smith, 2007), both far higher than the

national median home price of \$216,000 (National Association of Realtors, 2007).

7. Air, Water, Food, and Waste Disposal

Clark County faces several environmental challenges, the most serious of which is its water supply, now drawn from Lake Mead, the source for which is the Colorado River. Some experts have made a worst-case projection that Lake Mead will be empty in a decade due to drought from global warming and increased demand from development (Duggan & Brean, 2007). The Southern Nevada Water Authority is building a deeper intake pipe to be completed by 2012. "Building the new intake is a race against the clock, or rather a race against a lake that keeps going down, down, down" (Gertner, 2007). Although water quality meets federal Safe Drinking Water Act standards (Las Vegas Valley Water District, 2007), the current drinking water intake is located immediately downstream from the sewage outflow discharge. As the lake level drops, known contaminants in the water, such as perchlorate and cryptosporidium, will increase due to concentration (Rake, 2003).

Clark County's air quality is poor, contributing to the disparity in respiratory disease. The county has been designated as a non-attainment area for the criteria air pollutants in Table 1.

Table 1

Pollutant	Severity	Source	Health Effects
Carbon monoxide	Serious	77% from motor vehicles	Adverse effect on those with cardiovascular disease
Particulate matter- PM 10 (Dust, dirt, soot, smoke and liquid droplets smaller than 10 micrometers; able to reach lower region of respiratory tract)	Serious	Factories, power plants, cars, construction activity, fires, and windblown dust	Severe effect on breathing. Most affected: those with chronic obstructive pulmonary or cardiovascular disease or influenza, asthmatics, the elderly and children. Particulate exposure has been linked to an increased risk for heart attacks.
8- hr. ozone (prime ingredient in smog)	Not stated	Volatile organic compounds, motor vehicles, power plant emissions reacting with sunlight	Respiratory distress and asthma

Source: United States Environmental Protection Agency (US EPA), 2007.

Nevada has the worst management of waste of any state (Zero Waste America, 1998). According to a report prepared for the US EPA, Clark County has a contract with a trash hauler that requires pickup of recyclables only once every two weeks, leading to low participation (Tellus Institute, 2002).

Agriculture is virtually non-existent in Las Vegas, requiring it to import all food from outside the area, usually outside the state. As food must be trucked in, diesel and other exhaust emissions pollute the air, while traffic congestion and accidents increase.

Travel, Transportation, and Recreation

Contributing to the air pollution from motorized vehicles is the lack of dependable, fast mass transit, forcing almost all workers into their automobiles for commuting on the county's congested roads. The existing mass transit system relies on buses primarily, although a small, privately funded monorail system

was built to connect some hotels. The highway budget the state awarded in 2007 is inadequate to handle the growth in traffic projected to occur prior to the next legislative session in 2009. In addition, Clark County's tourism economy depends on visitors flying or driving into the area, resulting in more air pollution (and greenhouse gasses).

Clark County ranks as one of the dirties/worst counties in the US for chemical releases or waste generation (Scorecard, 2005). The largest polluters are the coal-fired power plants in Laughlin and Moapa.

The weather in Clark County poses extreme heat and radiation danger to its residents, with the mercury routinely registering above 100 degrees F. for six months of the year. The scorching heat prevents many citizens from participating in outdoor activities during daylight hours. Those that do exercise during the day risk heat-related illnesses and dermal skin damage, as well as exposure to the respiratory irritant ozone, which is higher when the sun is shining.

Built Environment

There is an anomie about Las Vegas, with an estimated net population gain of 89,000 yearly (Clark County, 2006). In a recent report by the Corporation for National and Community Service (2007), Nevada ranked last for the rate of its citizens volunteering (17.5%), with Las Vegas having a rate even lower (13.7%). The region appears to lack a sense of community, an isolation that is reinforced by large numbers of gated communities with garages facing the street and walled in outdoor living spaces in back. These housing developments do not have shopping within walking distance, which reduces the chance for community interaction. Many lack sidewalks, presenting a safety danger to walkers and reducing opportunities to meet neighbors.

The local government has a reputation for corruption, with three county commissioners convicted on bribery charges between 2003 and 2006 (Packer, 2006). In addition, the Las Vegas judiciary is notorious for cronyism and favoritism (Goodman & Rempel, 2006). This corruption and judicial partiality has many adverse societal impacts, including land use decisions that have had a negative impact on growth, residential zoning, and open space availability. The state legislature meets every two years for 120 days, forcing state agencies to operate with budgets set far in advance of need.

8. Negative Consequences of Climate Change

The Nevada Power Company and Sierra Pacific Power Company plan to build a \$3.7 billion coal-fired power plant in Ely, 250 miles north of Las Vegas. The Nevada Public Utilities Commission (PUC) barred environmental groups from participating in hearings about the plant, while it allowed the Nevada Resort Association (a trade group for casinos) and the MGM Mirage (Edwards, 2006a) to participate. The PUC gave the plant regulatory approval to proceed (Edwards, 2006b). Two other coal fired power plants are in the planning stages, one as close as Mesquite (80 miles from Las Vegas). Coal fired power plants release hazardous emissions (sulfur dioxide, nitrous oxides, carbon dioxide, particulates, and mercury) and use massive amounts of water. There are no alternative energy sources being planned for Southern Nevada, causing U.S. Senator Harry Reid to vow to fight the planned power sources that will increase pollution and global warming (Riley, 2007).

Conclusions

These statistics identify Las Vegas as an urban environment that is not sustainable for public health. Poor population health has negative implications for the area's productivity and economic diversification. Many low wage service workers will find the area too inhospitable to stay or may become too disabled to work. More highly paid knowledge workers may be repelled by the poor quality of life the area offers and either leave or refuse to relocate here. To combat these threats to sustainability, Las Vegas must reinvent itself as a healthy place that supports healthy people.

Recommendations

Citizens, especially public health professionals, must become more informed about and advocate for legislative and community actions to:

- manage growth
- conserve old and locate new water supplies,
- reduce health risk behaviors,
- improve the socioeconomic status of county residents,
- increase access to health care,
- provide affordable housing,
- raise the educational level of the population,
- weaken the power of casinos to influence public policy and laws,
- secure open space,
- increase mass transit,
- control the flow of illegal immigration, and
- decrease air pollution.

The Nevada Public Health Association (NPHA), particularly the Southern Nevada Chapter, should take an active role in improving Las Vegas's sustainability for public health. This includes members advocating for health policy legislation and funding for social services, education, and public health infrastructure; conducting research; educating the public, businesses, and regulators about sustainability issues; and promoting ballot initiatives for public health measures. These activities are in line with the objectives of the NPHA, one of which is "to bring into close association those persons and organizations interested in the promotion, protection and expansion of public health throughout the State of Nevada" (NPHA, 2005.).

The University of Nevada, Las Vegas has a new Office of Urban Sustainability Initiatives (USI) (<http://urban21.unlv.edu/about/>), which grew from a grassroots movement to ensure Las Vegas's future. Public health professionals must become active participants in this effort to ensure that USI's resources are devoted not only to ecological and economic sustainability but also to population health, which is at the heart of the sustainability of any city.

References

Chan, S. (2007, May 22). A consultant withdraws, challenging city's methods in counting of the homeless. *New York Times*. Retrieved on July 14, 2007 from <http://select.nytimes.com/search/restricted/article?res=F30F12FA34550C718EDDAC0894DF404482>

Clark, D.B. (2003). *The consumer society and the postmodern city*. London: Routledge.

Clark County. (2006) Comprehensive planning website: Demographics. Retrieved on July 15, 2007 from http://www.co.clark.nv.us/comprehensive_planning/05/Demographics.htm

Corporation on National & Community Service. (2007). *Volunteering in America: 2007 city trends and rankings*. Retrieved on July 15, 2007 from <http://www.nationalservice.gov/about/volunteering/cities.asp>

Duggan, B., & Brean, H. (2007, June 9). Warming's drain on Lake Mead outlined. *Las Vegas Review Journal*. Retrieved on July 14, 2007 from <http://www.lvrj.com/news/7917607.html>

Edwards, J.G. (2006a). Ely power plant hearings start. *Las Vegas Review-Journal*. Retrieved on July 15, 2007 from http://www.reviewjournal.com/lvrj_home/2006/Aug-23-Wed-2006/business/9215619.html

Edwards, J.G. (2006b). Utilities get regulators' OK to start Ely plant. *Las Vegas Review-Journal*. Retrieved on July 15, 2007 from http://www.reviewjournal.com/lvrj_home/2006/Nov-09-Thu-2006/business/10713169.html

Federal Bureau of Investigation. (2007). 2006 Preliminary annual uniform crime report. Retrieved on July 13, 2007 from <http://www.fbi.gov/ucr/06prelim/t4neh.htm>

Geary, F. (2007a, July 15). Illegal immigration: Counting the cost. Data show hospital bear burden. *Las Vegas Review-Journal*, In Depth, p. 3J.

Geary, F. (2007b, July 15). Illegal immigration: Counting the cost. Education for all. *Las Vegas Review-Journal*, In Depth, p. 1J.

Gertner, J. (2007, October 21). The future is drying up. *New York Times*. Retrieved on November 15, 2007 from <http://www.nytimes.com/2007/10/21/magazine/21water-t.html?pagewanted=1&ref=magazine>

Haynes, B. (2007, September 7). Possible prosecution: Police finish UMC probe. *Las Vegas Review-Journal*, Retrieved November 15, 2007 from <http://www.lvrj.com/news/9638492.html>

Head count finds average of 11,369 homeless in Las Vegas. (2007, April 20). *Las Vegas Sun*. Retrieved on July 14, 2007 from <http://www.lasvegassun.com/sunbin/stories/nevada/2007/apr/20/042010218.html>

HRSA. (2007). *The Registered Nurse population: Findings from the 2004 national sample survey of Registered Nurses*. Table 51. Retrieved on July 13, 2007 from <http://bhpr.hrsa.gov/healthworkforce/rnsurvey04/appendixa.htm#51>

- Las Vegas Valley Water District. (2007). Clean, reliable water. Retrieved on July 24, 2007 from http://www.lvvwd.com/html/wq_index.html
- Mascaro, L. (2007, July 29). Kids health bill rouses fear of 'Hillary-care.' Las Vegas Sun. Retrieved on July 29, 2007 from <http://www.lasvegassun.com/sunbin/stories/v-other/2007/jul/29/566646978.html>
- McMichael, A.J. (2007, 8 June). Will considerations of environmental sustainability revitalize the policy links between the urban environment and health? *NSW Public Health Bulletin*, 18 (3-4), 41-45.
- National Association of Realtors. (2007). First-quarter metro home prices & state sales show broad stabilization. Retrieved on July 15, 2007 from http://www.realtor.org/press_room/news_releases/2007/mhp_2007q1_first_quarter_metro_home_prices.html
- Nevada Department of Employment, Training, and Rehabilitation. (2007). Labor force/unemployment. Retrieved September 23, 2007 from <http://www.nevadaworkforce.com/?PAGEID=67&SUBID=141>
- Nevada Division of Industrial Relations. (2007). Table 1: Incidence rates of nonfatal occupational injuries and illnesses by selected industries and case types, 2006. Retrieved on November 15, 2007 from <http://dirweb.state.nv.us/bls1/2006ASTables.pdf>
- NPHA Online (2005). Objectives of NPHA. Retrieved November 17, 2007 from <http://www.nphaonline.org/>
- Packer, A. (2006). Corruption charges: Malone discussing plea deal. *Las Vegas Review-Journal*. Retrieved July 13, 2007 from http://www.reviewjournal.com/lvrj_home/2006/Sep-14-Thu-2006/news/9636252.html
- Planas, A. (2007, Jul. 14). Clark County shortfall of teachers improving. *Las Vegas Review-Journal*. Retrieved on July 14, 2007 from <http://www.lvrj.com/news/8507072.html>
- Poverty in America. (n.d.). Living wage calculator. Retrieved on July 14, 2007 from <http://www.livingwage.geog.psu.edu/results.php?location=2013>
- Rake, L. (2003, May 23). As lake level dips, so does quality of water. *Las Vegas Sun*. Retrieved on July 24, 2007 from <http://www.lasvegassun.com/sunbin/stories/v-other/2003/may/23/515122353.html>
- Robison, J. (2007, November 17). Single Family Homes: Housing at under \$200,000. Entry-level buyers courted with more affordable prices. *Las Vegas Review Journal*. Retrieved November 17, 2007 from <http://www.lvrj.com/news/11516421.html>
- Riley, B. (2007, July 27). Energy: Reid vows to fight coal plants: Senate majority leader raps use of air, water by 'power moguls.' *Las Vegas Review-Journal*. Retrieved on July 27, 2007 from <http://www.lvrj.com/business/8757347.html>
- Scorecard. (2005). Pollution report card. Retrieved on July 14, 2007 from [scorecard.org](http://www.scorecard.org)
- Singh, G.K., & Siahpush, M. (2006). Widening socioeconomic inequalities in US life expectancy, 1980 – 2000. *International Journal of Epidemiology*, 35 (4), 969-979.
- Smith, H. (2007, July 15). Struggling sector: Outlook for housing: Gloomy and likely to worsen. *Las Vegas Review-Journal*. Retrieved on July 15, 2007 from <http://www.lvrj.com/business/8516877.html>
- Smith, J.L. (2007, May 6). Huge advertising budget shows struggling UMC's priorities out of whack. *Las Vegas Review Journal*. Retrieved November 15, 2007 from <http://www.lvrj.com/news/7358336.html>
- Southern Nevada Health District, Office of Chronic Disease Prevention and Health Promotion. (2005). Injury prevention. Retrieved July 13, 2007 from http://www.southernnevadahealthdistrict.org/health_education.htm
- Southern Nevada Health District. (2007a). Clark County: Health status report, Vol. I. Retrieved on July 13, 2007 from

- http://www.southernnevadahealthdistrict.org/download/disease_factsheets/hsr_v1.pdf
- Southern Nevada Health District. (2007b). Clark County: Health status report, Vol. II. Retrieved on July 13, 2007 from http://www.southernnevadahealthdistrict.org/download/disease_factsheets/hsr_v2.pdf
- Tellus Institute. (2002). Assessing the potential for resource management in Clark County, Nevada. Retrieved on July 26, 2007 from <http://www.epa.gov/region09/waste/solid/nevadarm.pdf>
- The Annie E. Casey Foundation. (2006). Kids Count: State level data online. Retrieved on July 26, 2007 from http://www.kidscount.org/sld/compare_results.jsp?i=440&dt=2&yr=6&s=a&dtype=&x=165&y=11
- US Bureau of Labor Statistics. (2007). Workplace injuries and illnesses in 2006. Retrieved on November 15, 2007 from <http://www.bls.gov/iif/oshwc/osh/os/osnr0028.pdf>
- US Census Bureau. (2005). Clark County, Nevada: Selected social characteristics in the United States: 2005. Retrieved on 7/14/2007 from <http://factfinder.census.gov/>
- US Census Bureau. (2004). Public school spending. Retrieved on July 14, 2007 from http://www.epodunk.com/top10/per_pupil/index.html
- US Centers for Disease Control and Prevention. (n.d.). Health protection goals: Criteria and objectives. Retrieved on September 23, 2007 from <http://www.cdc.gov/osi/goals/places/placesCommunities.html>
- US Environmental Protection Agency. (2007). Non attainment areas for criteria pollutants. Retrieved July 14 from <http://www.epa.gov/oar/oaqps/greenbk/>
- US General Accounting Office. (2003). Physician workforce. Retrieved July 14, 2007 from <http://www.gao.gov/new.items/d04124.pdf>
- Wells, A. (2007, Jan. 7). Clark County: Vaccination rate lags. Las Vegas Review-Journal. Retrieved on July 24, 2007 from http://www.reviewjournal.com/lvrj_home/2007/Jan-07-Sun-2007/news/11815893.html
- Whaley, S. (2007, June 1). Money for prison projects approved. Las Vegas Review-Journal. Retrieved on July 26, 2007 from <http://www.lvrj.com/news/7782786.html>
- Zero Waste America. (1998) Top ten! Retrieved on July 26, 2007 from <http://www.zerowasteamerica.org/MunicipalWasteManagementReport1998.htm>