

***Shaping the Future of Southern Nevada:
Economic, Environmental, and Social Sustainability***

**Environmental Sustainability and Las Vegas
October 24, 2007**

Moderator: Stan Smith, Associate Vice President for Research, UNLV

Panelists:

Dale Devitt, UNLV School of Life Sciences

David James, UNLV Department of Civil Engineering

Pat Mulroy, Las Vegas Valley Water District & the Southern Nevada Water Authority

Alan O'Neill, Outside Las Vegas Foundation

Tom Piechota, UNLV Department of Civil and Environmental Engineering

Doug Selby, City of Las Vegas

Krystyna Stave, UNLV Department of Environmental Studies

Bruce Turner, Regional Transportation Commission

Michael Yackira, Sierra Pacific Resources

Scribe: Crystal Jackson, UNLV Department of Sociology

To the panel of business professionals, university researchers, and community members discussing the environmental impact of Las Vegas growth, sustainability means the proactive, responsible management of natural resources. A sustainable framework for the valley and state necessitates active collaboration and partnerships between UNLV, businesses, and the community at large. The panel addressed how to build partnerships to tackle the problems facing Las Vegas and the state in terms of air quality, water, power, transportation, and environment. The academics warned about current and future issues, such as drought. The business members pointed out what is already being done to begin to address the problems within a growing desert city.

Dr. Krystyna Stave (UNLV Department of Environmental Studies) believes that sustainability requires us to think about how to reduce inputs, manage and reduce waste, and manage pollution. Not only must we expand our short term plans, but we must look to long term survivability of the Las Vegas region. We must work within the environmental context that exists. We must involve more of the community in our decision making.

While Las Vegas is uniquely situated in the middle of public lands, many people in Las Vegas are not accustomed to desert ecosystems. We landscape lakes and mountains to support economic growth, but we do this with little regard for the environmental context. Centers of population are not always located ideally next to natural resources, and Las Vegas particularly needs to embrace this fact. Las Vegas is good at creating a vision and instituting it, which means we can do so just as easily with a sustainable approach.

There is ignorance about how to recreate responsibly, according to Alan O'Neill (Outside Las Vegas Foundation). We must develop plans that ensure people enjoy recreation in a sustainable way. The Southern Nevada Public Lands Management Act offers financial support to develop public areas. Supporting a green infrastructure is important to the quality of life of people living in any city. Connecting people to open spaces and trails, offering alternative modes of transportation, helping to promote health and wellness, and tying individuals to the larger community are all important components of trails and natural areas. At a summit last week, 14 government agencies signed a pledge to build an integrated system of open space and trails, a watershed mark and commitment to sustainability. We need these special corridors of natural open space in increasingly densified cities like Las Vegas.

Pat Mulroy (Las Vegas Valley Water District) and Michael Yackira (Sierra Pacific Resources) both emphasized community involvement and education about environmental issues to cultivate personal responsibility. We must ask ourselves, where do the resources come from that we rely on? How can we enjoy the public lands responsibly? Further outreach to private philanthropists in the valley and state is also needed to help conservation efforts succeed, according to Mr. O'Neill. People need to be active in defining how we live and how we use natural resources. Assuming that the ubiquitous "someone else" is taking care of it will not help us develop sustainable living.

Bruce Turner (Regional Transportation Commission) noted his agency is increasing ridership while reducing time, making use of federal matching funds, and implementing

nationally recognized programs like increased ridership in North Las Vegas (up 140%). We need continued research into the causes and consequences of the environmental impacts of Las Vegas and Nevada; we need better collaboration between UNLV, businesses, and community organizations. Las Vegas is not self-sustaining; we cannot sustain ourselves in a regional context. We import our energy, we import our water, we cannot grow our own food. We rely on inputs from outside regions. The very way we grow may change significantly in the next 20 years; climate change itself over the next 30 years will dramatically impact our sustainability plans. The challenge is to put together sustainability programs in such a dynamic environment.

But as Doug Selby (City of Las Vegas) pointed out, cities are leading the way in sustainability efforts. Our cities are vibrant nodes of activity, which consume most of the natural resources and produce most of the pollution. Cities have stepped up to play a role in the sustainability push, and Las Vegas is no exception. Las Vegas is a part of the International Council for Local Environmental Initiatives and is committed to lowering its carbon footprint through the Conference of Mayors' Climate Protection Plan. Through a balance of environmental, economic, and social considerations, the initiatives can succeed.

The City of Las Vegas has received national recognition for its alternative fuel program with progressive emphasis on using hydrogen gas, fuel cell powered cars, biodiesel for heavy vehicles, and hydrogen enriched gas for our buses. The city converted traffic signal lights to LEDs to save energy. The city council adopted resolutions to require city buildings to be LEED certified at least at the silver level – an expensive proposition, but one which should pay back with energy savings.

City planners are working on traditional neighborhood developments with emphases on walkability, natural drainages, fewer fences, and a respect of the desert environment. The city council is reviewing codes to identify where we are unwittingly creating barriers to creative development and housing ideas. The city aims to reduce CO₂ emissions by 150,000 pounds. Recognizing the “heat island” effect of unnatural building materials, the city is pushing for the

planting of more trees. A Green Council will be organized to advise the mayor and the city council on sustainability matters.

Dr. Tom Piechota (UNLV Department of Civil & Environmental Engineering) said we are already on the way to becoming a sustainable community. We have learned a lot of lessons from the current drought by instituting changes in water use and educating the community on what to do. But with the climate change accelerating in the last 30 years, we need to understand more. There are many unknowns from a research standpoint in terms of baseline conditions. What baseline temperatures should we plan for? What baseline water availability? How much recharge (when rain goes back into the ground) can we plan for? The future will be drier, but there is much uncertainty ahead.

For Michael Yackira (Sierra Pacific Resources), the challenge for sustainable power lies in Southern Nevada. How can we match the need for power as the valley grows while ensuring that the environment is protected and keeping costs as low as possible? Shortfalls in fuels, combined with more than 20 years where the valley failed to build its own generation to match its need, result in quite a conundrum for the power company.

Through conservation efforts, a focus on renewable energy, and construction of new power plants, we can produce reliable, clean energy at predictable prices. Sierra Pacific Resources is expanding programs for conservation and energy efficiency, offering tools and rebates to reduce consumption, and earmarking \$35 million for the effort over the next few years.

Nevada is in a great position to develop renewable resources. The state has all three major forms of renewable resources at its disposal: geothermal, wind, and solar. The state's largest solar plant in the last 16 years, Nevada Solar One, came online this summer. Nellis Air Force Base is home to the largest photovoltaic plant in the U.S., and Northern Nevada has 25 geothermal plants that generate almost 500 megawatts of power – but this is only one-third of

the estimated geothermal potential of the state. We must still rely on more conventional forms of generation, like power plants.

Dr. David James (UNLV Department of Civil & Environmental Engineering) said we must develop a set of attitudes, policies, and practices to reduce both water consumption and energy consumption, reduce waste, and create waste assimilation systems with minimal impact on the environment. Our per capita consumption of energy, water, and land must decline to keep our impact the same or less, and we must do so in face of population increases. We must continue to step up our commitments to energy conservation, building construction, transportation, adopt LEED™ standards, promote alternative fuels, and replace high water use vegetation with low water use landscapes.

There is a significant relationship between energy consumption and water usage. The less water we use, the less energy we use. The connection between these two resources means that if we extract less from the environment then we impact it less with waste. We must value our ecosystems and try to leave the smallest footprint possible. This is a hard task for Western society; Europe and Japan are much more successful than we are.

Pat Mulroy (Las Vegas Valley Water District) wants an adaptable, flexible water district, one that is part of the larger ecosystem. We talk about “the environment,” but we *are* the environment. The question is, can human life as it exists today continue? From a water utilities perspective, the water district is looking at its own carbon footprint. The water district has a partnership with Sierra Pacific Resources to build 90 megawatts of renewable energy for Nevada. Individuals must understand that the water security of the past is now the flexibility, adaptability, and responsibility of today. We are interdependent on one another, and we must consciously learn about the sustainability issues of our region and those around us.

Las Vegans’ understanding of water supply needs to take on a new dimension. Water is our most precious resource, and we need to find a balance in our communities. High density housing, minimal desert landscaping, and better irrigators will help achieve that balance. The

population growth continues to erode at savings that new programs have tried to accomplish.

People in Las Vegas use too much water per person on a daily basis. UNLV plays a key role in developing new science and technologies that, effectively implemented, can be used for sustainable water usage.