

## TOPICAL BRIEF: **SUSTAINABLE PLANNING DESIGN CONSIDERATIONS**

University of Nevada, Reno – Comprehensive Master Plan

---

### **PURPOSE**

This topical brief summarizes what it means to be “sustainable” and what policies and standards have been established on the global, regional, and local levels to promote sustainable development. This study will serve as a basis for developing sustainable planning and design policies in support of the master plan.

### **MAJOR CONCLUSIONS AND RECOMMENDATIONS**

- Sustainable development is a holistic approach to planning and design that balances the relationship of ecology, economy, and equality with short-term and long-term benefits for all.
- The State of Nevada established a program through the [Renewable Portfolio Standard](#) to accelerate the installation and use of photovoltaic systems with an emphasis on schools and public buildings.
- The [University of Nevada, Reno](#) (UNR) has begun to address sustainability for the campus in the draft Environmental Policy and through the integration of environment-based programs for students and research.
- Extensive resources are available for UNR to advance their goals and develop policies to be a leader as a sustainable campus. The [Blueprint for a Green Campus](#) is a valuable tool to establish a framework of sustainable principles.
- The [University of California](#) has adopted sustainable goals and policies that could serve as a model for the University of Nevada system.
- UNR should strive to promote sustainable development on campus by developing goals and establishing policies that: promote compact development for new growth; infill existing sites to utilize existing infrastructure; minimize the use of single-occupancy vehicles on campus and encourage alternative transportation; develop guidelines for energy-efficient buildings; and use environmentally friendly construction materials.

### **METHODOLOGY AND ASSUMPTIONS**

This study was compiled based on the consultant’s experience and research found on the internet through federal and state government, state institution, and grass root organizations websites.

## DISCUSSION OF FINDINGS

Although the emergence of the sustainability movement has been around since the United Nation's Conference on the Human Environment in Stockholm, Sweden in 1972, it wasn't until 1987 when the World Commission on the Environment and Development (WCED) popularized the term. The WCED published its report, *Our Common Future*, which defined sustainable development as "...development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This report established the characteristic of sustainability – evaluating any proposed action with reference to the simultaneous structural interaction of three fundamental criteria; ecology, economy, and equality. These are known today as the three E's of sustainability. This innovated way of thinking about global, regional, and local issues and their interrelatedness is what distinguishes sustainability from the earlier environmental movement.

### Green Campuses

In February 1994, the Campus Earth Summit, held at Yale University, brought together a group of faculty, staff, student delegates and environmental leaders from around the world to develop the [Blueprint for a Green Campus](#). This document established a set of ten recommendations for institutions of higher education to work towards a more environmentally responsible campus and curriculum. Within this list of recommendations, one speaks to the environmental sustainability at the land-use/planning level for a campus to make environmental sustainability a top priority in campus land-use, transportation, and building planning. The four primary objectives of this recommendation include:

- Incorporate sustainable design principles into existing and future land-use, transportation, and building plans
- Include guidelines in the land-use plans to promote compact development for future growth of the campus and insure proposed development will not have a negative impact on the environmental systems that exist on or around the campus.
- Provide incentives for alternative means of transportation to and around campus, and discourage the use of single-occupancy cars on campus.
- Incorporate guidelines for energy-efficiency, proper ventilation, and the use of non-toxic, environmentally sound construction materials for proposed buildings and renovations.

As sustainability addresses the physical and operational aspects of a campus, these objectives need to be achieved by all bodies related to the system, from campus officials, to staff (Land-Use Planners, Transportation Coordinators, Building Managers), faculty, and students. It is the integration of sustainable ideas in the classroom and throughout the campus environment that will provide the greatest benefit to the campus and the global ecology.

### Regional Context

The state of Nevada has developed several plans to ensure the achievement of sustainable natural resource conservation with development goals for the state. The State of Nevada Department of Conservation & Natural Resources developed the [Natural Resources Plan](#) to provide a process for gathering people and information to resolve priority natural resource issues and improve the public and private stewardship of the state's natural resources. The Nevada State Office of Energy (NSOE) launched the [Nevada Wind Energy Initiative](#) to facilitate economic wind power system

development. In an examination of the stock of renewable resources in Nevada, it was found that the state has tremendous potential to be a leader in renewable electric generation. Solar, wind, and geothermal resources prove to be abundant throughout the state. The State of Nevada recently passed legislation to establish a [Renewable Portfolio Standard](#) (RPS – state mandate to generate a percent of its electricity from renewable sources) with efforts focused on three-year pilot program to accelerate the market development for distributed photovoltaic installations in schools, public buildings, residential and small business establishments. Additionally, the program seeks to build public awareness of the benefits of photovoltaic systems.

At the University of California (UC), sustainable goals and policies have been adopted to make UC a national leader in environmental leadership. Recently, the Regents of the University of California adopted a [Green Building Policy and Clean Energy Standard](#) for all proposed and potentially renovated buildings. Renewable energy and energy-efficient projects provide a means to sustain campus budgets, increase environmental awareness, and educational leadership. This action is considered the first step toward developing a more comprehensive policy in sustainability for the UC system.

At UC Berkeley, the recently developed [New Century Plan](#) (NCP) provides vision and strategic goals, supported by a set of policies and initiatives, to direct campus growth in the 21<sup>st</sup> century. Outlined in the Strategic Goals of the NCP are the principles of sustainable design for capital investment projects. They include the protection of natural systems, minimizing energy and water use, adaptive reuse of existing facilities, and the development of infill sites to take advantage of existing infrastructure. It is understood that these goals require a holistic approach to design and the collaborative efforts of a multidisciplinary team.

As a new UC campus emerges in the Central Valley, UC Merced will begin to address sustainable planning and design issues to organize this new campus. The campus will utilize the latest techniques and technology to create buildings and landscapes that are environmentally friendly. Efforts include energy efficiency, water conservation, smart buildings (latest technology to control mechanical and building systems), designs that promote better air quality, and the use of recycled construction materials.

### **The University and Community College System of Nevada**

The University and Community College System of Nevada (UCCSN) approved a Master Plan for Higher Education in April 2002, which established six interrelated goals for the UCCSN to support Nevada's growth and future development, however, the issue of sustainable development is not included in these goals. In sharp contrast, the UCCSN system does offer a broad range of environmental programs throughout many of the colleges for both graduate and undergraduate students.

### **The University of Nevada, Reno**

Although the terms "sustainability" or "sustainable development" do not occur within recent Strategic Planning reports or the Mission and Goals Statement for the University of Nevada, Reno, there are underlying policies and actions addressing environmental awareness. In a draft version of the [Environmental Policy](#) for UNR, a mission has been established to incorporate environmentally responsible procedures in all campus activities, including the general curriculum, energy use,

purchasing, recycling and waste disposal, and capital improvements. The objective is to build a culture of environmental responsibility to educate students on this campus.

The Reno campus has an extensive curriculum that supports environment-related programs and research. The university, under direction of the Facilities Management Department, strives to minimize energy consumption and reduce the consumption of fossil fuels and non-renewable resources. In addition, the Department aims to minimize water consumption in future landscape designs and maintenance. The Department encourages the use of alternative fuels and transportation to help reduce emissions on campus. New buildings are designed using the [Leadership in Energy & Environmental Design](#) (LEED) standards to minimize the ecological impact of demolition, construction, maintenance, and operations of buildings. Operations also seek alternative products that are more environmentally friendly.

## REFERENCES

- *Sustainability Today: A Compass for the Future*, Andres R. Edwards, 2000 (<http://www.tew.org/publications/st.toc.html>)
- *Vital Signs – A Framework for Sustainability*, New Century Region, 1999 report ([http://www.newcentury.org/publications/vitalsigns1999/vitalsigns1999\\_sustdev.pdf](http://www.newcentury.org/publications/vitalsigns1999/vitalsigns1999_sustdev.pdf))
- *Nevada Natural Resource Plan – 2000 Brochure*, State of Nevada Department of Conservation & Natural Resources (<http://www.dcnr.nv.gov>)
- *The Potential Economic Impact of Nevada’s Renewable Energy Resources – Executive Summary*, Center for Business and Economic Research, UNLV (<http://energy.state.nv.us>)
- *Nevada Wind Power Development Strategic Plan*, Nevada State Office of Energy, November 2002 (<http://energy.state.nv.us/workgroups/wind/default.htm>)
- *Renewable Energy Policy Project*, Center for Renewable Energy and Sustainable Technology (<http://www.crest.org>)
- *Blueprint for a Green Campus*, Yale University Campus Earth Summit, Jan 1995 ([http://www.hfp.heinz.org/aboutus/campus\\_summit.html](http://www.hfp.heinz.org/aboutus/campus_summit.html))
- *Update on Feasibility Study to Recommend a Systemwide Green Building Policy and Clean Energy Standard*, Office of the President, University of California, June 2003 (<http://www.ucop.edu/facil/greenbldgs>)
- *New Century Plan*, University of California, Berkeley (<http://www.cp.berkeley.edu/ncp>)
- *Public Draft Long Range Development Plan*, University of California, Merced, August 2001 (<http://www.ucmercedplanning.net>)
- *Sustainability & Resource Management*, University of California, Merced ([http://www.ucmerced.edu/campus\\_planning/environment\\_sustain.asp](http://www.ucmerced.edu/campus_planning/environment_sustain.asp))

- *Draft Environmental Policy*, University of Nevada, Reno  
([http://www.ehs.unr.edu/programs/envt\\_affairs/envpolicy.pdf](http://www.ehs.unr.edu/programs/envt_affairs/envpolicy.pdf))
- *Our Best Effort for Nevada: President's Written Report on Strategic Planning for 2001-2002*, University of Nevada, Reno, May 2002 (<http://www.unr.edu/planning>)
- *The Mission and Goals Statement of the University of Nevada, Reno*  
([www.unr.edu/assess/PlanResources/ResourcesPages/UNR\\_Mission.asp](http://www.unr.edu/assess/PlanResources/ResourcesPages/UNR_Mission.asp))

**FIGURES ATTACHED**

None

***End of Topical Brief***