

Sustainable Las Vegas

Introduction

Las Vegas is rapidly becoming known for its progressive environmental policies. Fleet services, green building, climate protection, and other strategies are setting a new standard for sustainability in Las Vegas city government. With a solid foundation to build on, Las Vegas is ready to evolve its program to the next level. Coordination among city departments, with input from select public, private and quasi-public agencies, will create a robust program to begin changing the cultural mindset within city government towards more sustainable practices, and eventually spread throughout the community.

The individual programs that make up an informal environmental agenda for the city are directly linked to the Strategic Plan of the Mayor and City Council. The Strategic Plan identifies Strategic Priorities intended to guide city programs and budgets. A formal arrangement of city resources to promote the Strategic Priorities, particularly regarding sustainability, can best be achieved through a coordinated effort within the city and among community interests. This will provide the necessary framework for establishing an environmental agenda with objectives, implementation strategies and measurable performance outcomes that are aligned with the Strategic Plan Priorities.

Once the objectives are in place, City departments will have the autonomy to develop their programs and implementation strategies to meet sustainability objectives, while working within a framework that encourages collaboration and sharing of ideas across functions. City departments and organizations representing a cross-section of the Las Vegas community will come together to implement and promote a well thought out environmental agenda promoting sustainable living for the city and its citizens.

With numerous successful comprehensive sustainability programs from around the country to choose from, the Program Framework and Background sections borrow best practices that are well suited to Las Vegas. Following the Program Framework section, the Background section presents strategies currently employed by the city and new strategies that could be presented to an Environmental Advisory Committee for its consideration while developing an environmental agenda that becomes the city's comprehensive sustainability program.

Program Framework

Sustainability Coordinator. *Senior Planner-level position or above to be central coordinator, provide staff support to committee, manage objectives and performance outcomes, and provide for program promotion and public outreach.*

Technical Committee. *City staff from all departments to provide input and advice for program objectives and to identify department strategies that implement program objectives. In addition to city*

staff, other public agencies could be represented including Clark County Department of Air Quality Management, Regional Transportation Commission, Clark County Health District, and the Southern Nevada Water Authority. Meets quarterly.

Environmental Advisory Committee. Members of this committee should represent professional, academia, business, health, utilities and community organizations. Examples include: UNLV Desert Research Institute, AIA Committee on the Environment, ULI, and the Las Vegas Chamber of Commerce. This committee will make recommendations to City Council on strategic objectives for sustainability in Las Vegas, monitor progress and participate in promotional activities. Meets semi-annually.

<i>Program Framework</i>	<i>Chicago</i>	<i>Seattle</i>	<i>Austin</i>	<i>Philadelphia</i>	<i>Las Vegas (Proposed)</i>
<i>Office of Sustainability</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	
<i>Advisory Committee</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>
<i>Technical Committee</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>	<i>X</i>

Next Steps

- *January 2007 – Kick-off meeting of the Technical Committee.*
- *March 2007 – Kick-off meeting of the Environmental Advisory Committee.*
- *April 2007 – Publish Technical Report outlining current sustainability practices and potential future initiatives. The report should provide quantitative evidence for past successes and direction for future initiatives. This research will serve as the foundation for Environmental Advisory Committee to establish Environmental Action Agenda.*
- *June 2007 – Report from Environmental Advisory Committee to City Council on Environmental Action Plan for the coming fiscal year. Some initiatives requiring funding will be included in Strategic Planning, Capital Improvement Planning and Budgeting for the following fiscal year.*

Background

Energy and Green Building Existing Strategies

- *City of Las Vegas Green Building Program*
 - ◇ *City to achieve a LEED silver equivalent level of design for all new city structures.*
 - ◇ *A green building fund made up of any incremental increase in franchise fees from gas, electricity and solid waste disposal in an amount annually not to exceed \$2.5 million. This fund will help offset costs of achieving LEED, could potentially be used for promotion, outreach, education, and grant programs for green building.*
 - ◇ *Partnership with the Southern Nevada Homebuilders Association for residential construction. In conjunction with city of Las Vegas, U.S. Green Building Initiative and other stakeholders, the SNHBA established the Southern Nevada Green Building Partnership. Homes built under the program criteria will be recognized by the City, and the builder will be provided with marketing on the City's website, television station, and other promotional materials.*
- *US Green Building Council LEED Certified Buildings*
 - ◇ *Four buildings, totaling over 617,000 square feet, were approved or completed in 2005, and are in the process for LEED certification for green building, including:*
 - *The 75,000 square foot Regional Animal Shelter at 3000 Harris;*
 - *The 325,000 square foot, 17 story Molasky Corporate Center office project at Grand Central Parkway and City Parkway; and*
 - *A 10,678 square foot furniture showroom with Live/Work unit at 815 and 817 S. Main Street.*
- *SNWA Water Smart Home*
 - ◇ *In 2005, KB Home, Southern Nevada's highest volume residential builder, signed on to be Southern Nevada Water Authority's first Water Smart Builder.*
 - ◇ *KB Home, with six active subdivisions in the city of Las Vegas will build every home and community to the standards of Water Smart Home.*
 - ◇ *Several other builders have either signed on or are in planning stages with the Water Authority to begin building Water Smart Homes this fall.*
 - ◇ *According to SNWA, 300 Water Smart Homes have been constructed to date within the city.*
- *EnergyStar*
 - ◇ *There are over 50 active EnergyStar subdivisions in the city of Las Vegas.*

Energy and Green Building Potential Initiatives

- *Perform commissioning on City buildings. Building commissioning, in the broadest sense, is a process for achieving, verifying, and documenting that the performance of a building and its various systems meet the design intent and the functional operational needs of the owner and occupants. It is the systematic process for ensuring that building systems (e.g., HVAC, lighting) are designed, built and operate as intended. Because all building systems are integrated, a deficiency in one component can result in sub-optimal operation and performance among other components. Remedying these deficiencies can result in a variety of benefits including:*
 - ◊ *Improved occupant comfort*
 - ◊ *Energy savings*
 - ◊ *Improved environmental conditions*
 - ◊ *Improved system and equipment function*
 - ◊ *Improved building operation and maintenance*
 - ◊ *Improved building productivity*
- *Identify savings and payback period on conservation measures related to LEED new structures and LEED maintenance. Upon payback, reinvest savings into sustainability programs.*
- *Implement green roofs program.*
- *Develop Energy Plan for the city.*
- *Update the Conservation Element of the Master Plan.*

Climate Protection Existing Strategies

- *Continuing to increase the percentage of vehicles that use alternative fuel in the City's non-emergency fleet.*
- *Expanding the availability and use of mass transit for the employees, residents and visitors of the City of Las Vegas.*
- *Developing neighborhood parks in areas with deficient service levels and develop mini-parks/urban parks in areas of high density.*
- *Requiring that new residential development provide adequate neighborhood parks as development occurs.*
- *Improving streetscape enhancements in the highly urbanized areas of the City.*
- *Maintaining recognition by the National Arbor Day Foundation as a Tree City USA.*
- *Establishing programs and incentives to encourage builders and developers to implement green building practices.*

Climate Protection Potential Initiatives

- *Promoting the efforts of the City of Las Vegas in reducing greenhouse gas emissions.*
- *Encourage the Board of County Commissioners, and the Mayors of Henderson, North Las Vegas, Boulder City and Mesquite to support the U.S. Mayors Climate Protection Agreement.*
- *Set paving reduction standards.*

Mobility Existing Strategies

- *The city of Las Vegas actively promotes the development of mass transit options throughout the city and the Southern Nevada region including light rail, monorail, and Bus Rapid Transit. In addition, a Super Speed Train connecting Las Vegas with Primm, Nevada and ultimately with Barstow and Anaheim, California is in the planning stages.*
- *The city of Las Vegas provides incentives and subsidies to employees who commute by mass transit, van pool or car pool, and increased employee enrollment in the Club Ride Program in May of 2006 by 18%, and is recognized by the EPA as one of America's "Best Workplaces for Commuters."*
- *The city of Las Vegas is a leader in the reduction of greenhouse gas emissions through the use of alternative fuel vehicles, with 87% of the City's non-emergency fleet running on alternative fuels and comprising a significant portion of the 7,000 alternative fuel vehicles operating in Southern Nevada.*

Mobility Potential Initiatives

- *Increase number of alternative fuel vehicles*
- *Increase average fuel economy*
- *Reduce vehicle emissions*
- *Improve sustainability of fleet facilities*
- *Transit Oriented Development/Mixed Use ordinance.*

Traditional Neighborhood Design Existing Strategies

- *Kyle Canyon Gateway is a 1,700 acre project envisioned to be a sustainable master planned community. To achieve a sustainable community, the Mayor and City Council adopted design principles that were made available to potential master developers for the site. The resolution included, among other items:*
 - ◇ *Retention of natural arroyos and washes and the use of pedestrian linkages between natural open space areas.*
 - ◇ *Reduce per capita water consumption to 150 gallons per person per day.*
 - ◇ *Provision of plumbing for irrigation by reclaimed water so that it can be used once available.*
 - ◇ *Use of irrigation systems which are centrally controlled, connected to on-site weather stations and do not spray hard surfaces.*
 - ◇ *Options for photovoltaic panels, fluorescent lighting and indoor motion-sensor lighting in all buildings.*
 - ◇ *Required use of renewable resources, low volatile organic compound components, and formaldehyde-free fiberglass.*
 - ◇ *Development of transportation and recreation trail system linking homes with parks, schools and commercial districts.*
 - ◇ *Pedestrian friendly streets as part of integrated circulation system.*

Traditional Neighborhood Design Potential Initiatives

- *Master plan future land sales and reserve rights-of-way and land for other public amenities. Establish a land use plan, street network and design guidelines for development consistent with the objectives of TND. Land for rights-of-way, parks, schools and other public amenities would be identified and set aside. Developer parcels would then be sold to individual builders.*
- *New design standards and incentives for infill.*
- *Strategy to redesign infill areas to provide transit, auto and pedestrian connectivity.*

Infrastructure and Resource Management Existing Strategies

- *Recognized as Tree City USA.*

Infrastructure and Resource Management Potential Initiatives

- *Explore potential for permeable hardscape*
- *Reduce impermeable hardscape*
- *Reduce hardscape to minimize urban heat island*
- *Set goals for tree planting*

Sustainability Indicators Existing Strategies

- *As part of the Mayor and City Council Strategic Planning program, a series of Key Performance Indicators have been established to measure outcomes. Some of these measures are loosely tied to the sustainability priorities.*

Sustainability Indicators Potential Initiatives

- *A series of performance outcomes need to be identified that are directly linked to the environmental agenda objectives and implementation strategies identified by the Technical Committee and Environmental Advisory Committee.*

Education and Outreach Existing Strategies

- *The Mayor has established the Urban Design Award Program to honor projects that incorporate urban design principles that foster pedestrian-friendly developments and mixed-use projects within the City limits.*
- *The Public Information Office coordinates Public Information Officers within each of the departments. These coordinated efforts produce press releases, website postings, television programming, newsletters, brochures and other publications that discuss and promote existing strategies within the various departments.*

Education and Outreach Potential Initiatives

- *Sustainability Awards*
- *Efficiency Incentive Program (e.g. accelerated review process or density bonus for Green Building projects)*
- *Partner with building supply stores to offer rebates linked to in store sales promotions for*

sustainable materials, for example: energy star appliances, fluorescent bulbs, materials with high recycled content, high efficiency plumbing fixtures, native or drought tolerant plants, potassium for water softeners, and low VOC paints.

- *Partner with building supply stores to promote rebates and sales of sustainable materials.*
- *Develop subsidized loan program for achieving green building objectives or use of sustainable materials in remodel projects. Interest rates could be tied to level of effort.*
- *Establish demand for green building technologies – builders, suppliers, designers, etc.*
- *Establish economic development program and incentives aimed at bringing green technologies to Las Vegas – solar research and development, light manufacturing of green building materials.*
- *Establish green building grant program.*
- *Coordinate with school district to introduce education program into the school science curriculum.*
- *Establish sustainable speakers bureau including representatives from the Environmental Advisory Committee to give presentations to civic groups, in the schools, and professional organizations.*
- *Develop a webpage to promote sustainability, provide information to businesses and citizens, and serve as a clearinghouse of information.*

Model Sustainable City Initiatives

Philadelphia

Philadelphia's sustainability initiative was an important model in the development of the city of Las Vegas Climate Protection Resolution. Housed in the city's Municipal Energy Office (MEO), the Energy Conservation Initiative includes the following components:

- *Energy Efficiency & Capital Projects*
- *High Performance Green Buildings*
- *High Performance Building Renovation*
- *Energy Planning*
- *R&D on Exterior Insulation*
- *Focus on Embodied Energy Content*
- *Urban Heat Island (UHI) initiative*
- *Alternative Fuels: Mini-Electric Utility Vehicles (EUVs)*
- *Alternative Fuels: National & Regional partnerships*

The Energy Conservation Initiative is designed to capture cost saving opportunities by implementing Department level energy conservation practices in building and equipment operations. Monthly energy use pattern reports will help Departments identify opportunities for energy management measures. The ultimate goal is for city departments to save 5-10% from their historical energy use benchmark.

Measures include:

- *Turning off office equipment when not in use and always at the end of the day.*
- *EPA's Power Management Program (an Energy Star initiative) – employees are able to activate computer monitor power management software from the City's intranet.*
- *Review of equipment scheduling (e.g., implementing weekend and night setbacks for heating and cooling equipment).*
- *Review of equipment temperature set points.*
- *Establishment of indoor and outdoor lighting schedules.*

For Energy Efficiency and Capital Projects, the MEO works with the City's Capital Program Office to identify, design and fund energy saving measures such as the installation of energy efficient heating and cooling equipment for a range of discreet renovation projects. For large renovation or new construction projects, MEO strives to ensure an overall integrated design process and the use of the U.S. Green Building Council's Leadership in Energy & Efficient Design (LEED) standards (see High Performance Green Buildings for more details).

MEO's capital program provides incentive funding to departments for high performance building designs that minimize resource impacts, improve energy efficiency and contribute to worker health and productivity. The building trend is often referred to as a high performance, sustainable or green building practice. One accomplishment is the City's first high performance, green building, the Police

Forensic Science Center opened in the Fall of 2003. The facility includes a highly efficient gas and electric hybrid HVAC system and the City's first solar-electric energy system. LEED standards have also influenced every major new construction and renovation project since 2002.

MEO has established a High Performance Building Renovation Guide as well as a Sustainable Energy Management Plan. The office has also established several important partnerships with research institutions and other organizations to tackle specific projects. These include:

- The International Council for Local Environmental Initiative's Urban Heat Island Peer Exchange.*
- Penn State University's Hamer Center and the Institute for Local Self Reliance to study and implement a pilot focused on Embodied Energy Content through "Optimized Deconstruction," diversion of C&D Waste and options for building material reuse.*
- The City partnered with Philadelphia University and secured a grant for the design and application of a cost-effective exterior insulation that can be applied to exposed party walls.*
- Like Las Vegas, the Philadelphia has partnered with the EPA's Clean Cities program in developing an alternative fuel vehicle fleet. Philadelphia has further secured a grant for mini Electric Utility Vehicles.*

Responsibility for the sustainability initiatives in Philadelphia lies with the executive director of the MEO and the director of energy policy.

Model Sustainable City Initiatives

Seattle

The Office of Sustainability and Environment (OSE) was established “to provide leadership, tools, information and ideas to help City agencies, residents, households and businesses use natural resources efficiently, prevent pollution, and improve the economic, environmental, and social well-being of current and future generations.” According to the OSE website. The OSE Director is responsible for implementation of these initiatives.

The OSE mission which includes three major initiatives, each with several components:

- *Save Seattle’s Public Forests*
- *Create the Green Seattle Partnership with the Cascade Land Conservancy to fund and implement intensive forest restoration.*
- *Significantly increase our forest restoration efforts to about 150 acres per year.*
- *Provide volunteer and youth training opportunities.*
- *Encourage people to remove ivy in their own back yards.*
- *Make Seattle’s Neighborhoods Greener*
- *Expand the Clean Seattle Initiative to include a green neighborhood project every month.*
- *Provide City grants to businesses and community groups for greening projects especially in neighborhoods where trees and plantings are scarce.*
- *Partner with downtown property managers to promote healthier landscapes.*
- *Continue urban greening programs such as open space acquisition, reservoir-burying and P-Patch.*
- *Promote Green Urban Development*
- *Promote more green buildings, green roofs, green streets and low impact development through education, assistance, incentives and regulations.*
- *Initiate pilot projects to create pedestrian-friendly green streets in the Center City.*

The OSE is further responsible for the development and implementation of the Seattle Climate Action Plan which was the model for the U.S. Conference of Mayors’ Climate Protection Agreement of which the city of Las Vegas is a signatory. The Office is the lead on the city’s Urban Forest Management Plan and the Mayor’s Environmental Action Agenda.

OSE has partnered with the Cascade Land Conservancy to establish the Green Seattle Partnership, and in partnership with several city departments and agencies developed the Green Seattle Guide: 101 Actions for a Healthy Urban Environment.

Additional initiatives are being added to the OSE’s portfolio as a result of the Mayor’s Green Ribbon Commission on Climate Protection and a recently launched “Restore Our Waters” strategy.

Model Sustainable City Initiatives

Chicago

Chicago's sustainability initiatives are housed in the Department of the Environment (DOE), which is led by an appointed commissioner. The department is divided into eight divisions, described below.

Commissioner's Office

The Commissioner's Office ensures that DOE fulfills its mission of protecting human health and the environment, improving the urban quality of life, and promoting economic development in Chicago. The Office sets strategic direction for DOE and oversees all of the department's initiatives, policies, and operations. In addition, the Commissioner's Office works with other City departments and agencies to implement policies and programs that will help the City achieve its environmental goals.

Energy Management & Air Quality

The Energy Management and Air Quality Division implements clean air programs and initiatives to improve air quality in the City. The Division also administers programs to assist nonprofit, residential, commercial, industrial, and governmental consumers in becoming more energy efficient. Programs range from green buildings guidance, energy management, co-generation, energy audits, and retrofits in City and industrial buildings to alternative sources of energy, such as solar PV and solar thermal. In addition, the Division is responsible for identifying and analyzing energy issues facing the City and its residents, and oversees the City's franchise with ComEd to assure reliable delivery of energy.

Permitting & Enforcement

The Permitting and Enforcement Division exists to further compliance with the environmental provisions of the Chicago Municipal Code. The Division encourages proactive compliance through its extensive permitting authority. All permits issued by the Division contain restrictive operating conditions that require best environmental practices. In cases where proactive permitting is inadequate to ensure compliance, the Division also has an extensive enforcement arm. Twenty-three inspectors, investigators, and engineers are responsible for responding to complaints, inspecting sites, and, where appropriate, initiating enforcement. In 2003, the Division's field personnel inspected approximately 12,000 sites and issued approximately 1,000 citations. The Division also files dozens of lawsuits and administrative cases annually.

Natural Resources & Water Quality

The Natural Resources & Water Quality Division sets policy, plans, and supervises activities designed to protect, restore, and enhance natural resources. The Division's initiatives include greening neighborhoods through community education and provision of materials; managing grounds and public programming at the Chicago Center for Green Technology; coordinating research, outreach, and rehabilitation efforts for the Calumet area's ecological parcels; and establishing policies and programs that conserve and enhance water quality in Chicago's rivers, lakes and groundwater systems.

Urban Management & Brownfields Redevelopment

The Urban Management & Brownfields Redevelopment Divisions evaluates, remediates and provides for the redevelopment of properties for City projects. The Division provides professional project management, technical advice, and support to City departments and agencies to rehabilitate sites where development is complicated by real or perceived environmental contamination, reducing pressure on undeveloped land. The Division also regulates certain waste management facilities within the City through permitting and inspection activities; develops and implements programs to support the City's recycling initiative; and manages the Chicago Shoreline Protection Project.

Government Relations & Policy

The Government Relations & Policy Divisions analyzes existing environmental legislation and policy and provides strategic direction for new policy initiatives. The Division liaises with the Mayor's Office of Intergovernmental Affairs, other City departments, and sister agencies to advise on environmental issues and their impacts on Chicago. The Division does this by monitoring state and federal environmental legislation and regulations, and providing analysis and comment as necessary; advancing inter/intra-governmental agreements in an efficient and effective manner; and creating environmental policy positions for DOE. Most importantly, the Division provides a centralized point of contact for all of DOE's divisions to ensure the coherent development and advancement of policy and legislation.

Administrative, Fiscal & Communications Division

The Administrative, Fiscal & Communications Division manages all administrative and financial processes for DOE, including personnel, payroll, accounts payable and receivable, contract administration, office management, and grants administration. The Division also manages the information technology program and community programming and education outreach.

Community Programming & Education Outreach

The Community Programming & Education Outreach Division increases public awareness of DOE's ongoing environmental, educational, and outreach initiatives by informing Chicagoans about the programs DOE offers and the importance of everyone's contribution to protecting and enhancing our environment. The Division is responsible for developing curricula-based education projects for DOE programs; actively ensuring accessibility of DOE programs to the diversity of Chicago's residents through the implementation of presentations, information kits, and the Freedom of Information Act; offering public programs that meet the needs of current audiences, and attract new and expanded audiences; and consistently informing Chicagoans of DOE program and activities through the expanded use of printed resources and materials.

DOE initiatives are divided into four sections:

- *Energy and Green Building including green building, energy efficiency, and renewable energy.*
- *Mobility, covering maintenance of vehicles and infrastructure that make this movement possible, including city fleets, airports, the transit system, and bike infrastructure.*
- *Infrastructure and Resource Management initiatives relate to the management, conservation, and preservation of natural resources in both urban and natural areas. including sustainable infrastructure, natural lands, water resources, waste and recycling, and procurement.*
- *Education and Outreach focuses on informing the public about environmental issues and what the role they can play in improving the environment.*

