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**MEMORANDUM**

DATE: March 10, 2010  
TO: Members of the Nevada Vision Stakeholder Group  
FROM: Dave Ziegler, Principal Policy Analyst *DZ*  
Research Division  
SUBJECT: **Quality-of-Life Indicators: Energy, Environment, and Transportation**

This memorandum provides information on three inter-related quality-of-life categories—energy, the environment, and transportation. This information may be useful for your deliberations on goals and strategies at the meeting of March 12, 2010, and future meetings. At the March 12 meeting, guest speakers will elaborate on these general subjects.

**ENERGY**

**Energy Use and Prices**

According to the United States Energy Information Administration (EIA), Nevada's total energy consumption in 2007 was 777 trillion British thermal units (Btu) or 0.8 percent of the United States' consumption. Per capita energy use in 2007 was 304 million Btu, ranking Nevada 36th among the 50 states. Nevada consumed 7,500 Btu per dollar of gross State product in 2007; ranking Nevada 39th in this measure of energy consumption. The EIA says, "Nevada's population and total energy consumption are low and the State's economy is not energy intensive. Due in part to the Las Vegas tourism industry, the transportation sector is the leading energy-consuming sector in the State."<sup>1</sup>

Nevada's energy prices are relatively high; the EIA ranked Nevada 11th highest in prices in 2007. In September 2009, Nevada's residential electricity price was the 15th highest among the 50 states and higher than the national average.<sup>2</sup>

EXHIBIT I NevadaStakeholder Document consists of 7 pages.

☒ Entire document provided.

A copy of the complete document is available through the Research Library (775/684-6827) or e-mail [library@lcb.state.nv.us](mailto:library@lcb.state.nv.us). Meeting Date: 3/12/10

## **Green Building Indicators**

The United States Green Building Council's Leadership in Energy and Environmental Design (LEED) program is the most widely known green building certification program. Nevada is home to a growing number of projects that have registered for or have been certified as LEED projects. The following is a partial list, compiled from news reports:

- Animal Foundation regional campus (certified silver)
- Cashman Equipment Company headquarters
- Clark County School District, Tom Williams Elementary School
- College of Southern Nevada New Telecommunications Building (certified)
- Core Construction Building
- Desert Living Center at Springs Preserve (certified platinum)
- Desert Research Institute building, northern campus
- LaPour Corporate Center
- MGM Mirage, CityCenter (four buildings certified)
- Molasky Corporate Center (certified gold)
- Tate Snyder Kimsey Architects Design Studio (certified)
- Sierra Nevada College, Tahoe Center for Environmental Sciences
- Somerset Town Square
- United States Department of Veterans Affairs regional office (certified silver)
- University of Nevada, Las Vegas, Science, Engineering and Technology Building and Greenspun Hall

In 2007, Union Park, a 61-acre mixed-use master-planned urban center on land owned by the City of Las Vegas was accepted into the LEED-Neighborhood Development pilot program of the United States Green Building Council.

Much future green building will consist of retrofits and renovations of existing structures. Green buildings presently make up less than 10 percent of the real estate development market, but one report says that share could reach 30 percent within five years.<sup>3</sup>

Green building indicators could measure either conditions (e.g., cubic feet of certified building space) or outcomes (e.g., non-transportation energy use per capita).<sup>4</sup>

## **Renewable Energy**

According to the EIA, Nevada has large geothermal resources, is second only to California in the generation of electricity from geothermal energy, and has also become a substantial producer of solar energy.<sup>5</sup> In December 2009, the Geothermal Energy Association named Reno as one of the ten leading geothermal cities in the world. The list also included Klamath Falls, OR, and Boise, ID.<sup>6</sup>

Nevada and a number of other states have adopted renewable portfolio standards (RPS). In Nevada, the RPS applies to the largest retail provider, NV Energy, but not cooperatives, government-owned utilities, and other smaller providers. As amended in June 2009, the RPS requires 25 percent of the electricity delivered to NV Energy's retail customers to come from renewable sources or conservation measures by 2025, and at least 6 percent from solar energy sources by 2016. For calendar years 2009 and 2010, the RPS standard is 12 percent.<sup>7</sup> The State receives detailed reports on RPS compliance annually.

## **ENVIRONMENT**

### **Greenhouse Gas Emissions**

A report by Stanton, *et al.*, using data from 2004, said that Nevada's greenhouse gas (GHG) per capita emissions were the 22nd lowest among the 50 states and were just under the national average. The report said Nevada's residential and transportation GHG emissions per capita were just over the national average.<sup>8</sup>

According to the Metropolitan Policy Program at Brookings, the carbon footprint of the Las Vegas-Paradise metropolitan area in 2005 was below the national and regional average, at 2.16 million metric tons of carbon emitted per capita. In that report, emissions in the Las Vegas-Paradise area compared favorably with the Colorado Springs and Phoenix-Mesa-Scottsdale areas and were well below the Denver-Aurora, Salt Lake City, and Tucson areas.<sup>9</sup>

Pursuant to legislation enacted in 2007, Nevada's State Environmental Commission must adopt regulations establishing a statewide registry of greenhouse gas (GHG) emissions and requiring GHG emission reporting. Beginning December 31, 2008, Nevada's State Department of Conservation and Natural Resources must issue a statewide GHG inventory at least once every four years.<sup>10</sup>

### **Safe Drinking Water**

In 1974, the United States Congress enacted the Safe Drinking Water Act (SDWA), to protect the safety of public drinking water through the enforcement of national standards known as maximum contaminant levels (MCL). In 1978, the State of Nevada was granted primary enforcement authority for the SDWA in Nevada. In 1986, the SDWA was amended to require regulations for surface water treatment. The resulting Surface Water Treatment Rule affects systems serving the majority of Nevada's urban population and brought about many changes and upgrades to Nevada's community water systems.<sup>11</sup>

In 2001, the United States Environmental Protection Agency set a final rule reducing the MCL for arsenic, effective in January 2006. The State Environmental Commission adopted final regulations covering arsenic and other contaminants on October 31, 2005.<sup>12</sup> At the present

time, compliance with the arsenic standard is one of Nevada's most difficult safe drinking water challenges.

Since 1999, all community public water systems must issue annual Consumer Confidence Reports.<sup>13</sup>

### **Solid Waste Recycling**

In 1991, Nevada's Legislature enacted a goal of a 25 percent recycling rate for counties with populations over 100,000. In 2007, the statewide recycling rate was 21.6 percent, up 4.4 percent from 2006. The State was 3.4 percent away from the 25 percent goal. In 2007, the recycling rates for the five affected counties were as follows:

- Carson City                40.3 percent
- Clark County             19.4 percent
- Douglas County         50.5 percent
- Elko County              7.2 percent
- Washoe County         25.0 percent

In 2007, Nevada's total municipal solid waste from in-State sources in all counties was 3.45 million tons. In the counties with required recycling programs, nearly 900,000 tons were recycled.<sup>14</sup>

### **Unhealthy Air Quality Days**

For the period 2005 through 2007, the American Lung Association gave Clark County a grade of "F" for high ozone days, and Washoe and White Pine Counties a grade of "C." For short-term particulate pollution, the Association gave Clark County a grade of "B" and Washoe County a grade of "C." The Association listed Clark County as 18th in a list of the 25 most ozone-polluted counties. The Association listed Carson City second on a list of the cleanest cities for ozone air pollution.<sup>15</sup>

In January 2010, the U.S. Environmental Protection Agency proposed a new, more stringent, standard for ozone, to protect public health. According to news reports, the Las Vegas and Reno metropolitan areas would potentially violate the new standard, along with Churchill and White Pine Counties.<sup>16</sup>

### **Water Use**

The Southern Nevada Water Authority (SNWA) predicts that, without conservation savings, water demands in its service area will more than double between 2009 and 2060, from about 600,000 acre-feet per year (AFY) in 2009. Applying its most recent conservation goal of reaching 199 gallons per capita per day (GPCD) by 2035, the SNWA predicts that demand would be reduced by 276,000 AFY in 2035 and by roughly 400,000 AFY in 2060.

Since 1990, conservation measures have reduced SNWA's demand from about 350 GPCD to about 250 GPCD.<sup>17</sup>

Colorado River water and Las Vegas Valley groundwater were used to meet demand in the SNWA service area in 2009. Additional resources and conservation will be needed to meet future demands. The SNWA lists these future resources: the Muddy and Virgin Rivers, Coyote Springs, in-State groundwater, the Arizona bank, and Colorado River augmentation.<sup>18</sup>

In northern Nevada, the Truckee Meadows Water Authority (TMWA) is the largest provider. After a period of very rapid population growth in 2003 through 2006, the TMWA service area is experiencing a slowdown in economic activity. TMWA's water production is not projected to exceed the 2001 peak of 86,000 AFY for seven to nine years, and TMWA does not foresee a need to acquire new water resources for some time.<sup>19</sup>

In 2030, TMWA will deliver water to about 400,000 persons in the retail area and about 67,000 persons in the wholesale area, corresponding to a water demand of about 97,000 AFY. According to TMWA's current Water Resource Plan, these production targets can be achieved by replacing diversion works and effluent pumps at one water treatment facility and constructing an additional phase at another facility.<sup>20</sup>

## **TRANSPORTATION**

### **Bicycle Facilities and Programs**

A recent report on bicycle-friendly states ranked Nevada 25th among the 50 states in 2009. In the bicycle infrastructure category, the report ranked Nevada 35th. Nevada scored well in the categories of education and enforcement.<sup>21</sup>

### **Transit Ridership and Spending**

According to the American Public Transportation Association's Transit Ridership Report for the third quarter of 2009<sup>22</sup>, Las Vegas and Reno compared favorably with other cities in the Intermountain West for transit ridership:

- Albuquerque (New Mexico Department of Transportation) – 5,500 average weekday passenger trips
- Boise (Valley Regional Transit) – 4,900
- Denver (Regional Transportation Commission) – 276,300
- Las Vegas (Regional Transportation Commission [RTC] of Southern Nevada) – 172,600
- Phoenix-Glendale-Tempe (four systems) – 219,600
- Reno (RTC) – 21,500
- Salt Lake City (Utah Transit Authority) – 133,800
- Tucson (City of Tucson Metropolitan Transit System) – 54,900

According to a report of the Natural Resources Defense Council, in 2006 Nevada ranked 48<sup>th</sup> among the 50 states in transit spending prioritization, with transit spending representing 0.25 percent of highway spending.<sup>23</sup>

### **Traffic Congestion**

According to the Texas Transportation Institute<sup>24</sup>, the Las Vegas urban area ranked 14<sup>th</sup> nationally in annual hours of delay per traveler in 2007, with a figure of 44 hours. Among 29 large urban areas with populations between 1 million and 3 million persons, the average annual delay per traveler was 35 hours. Other urban areas in the Intermountain West experienced these levels of annual delay per traveler in 2007:

Albuquerque — 34 hours  
Denver-Aurora — 45 hours  
Phoenix — 44 hours  
Salt Lake City — 27 hours  
Tucson — 41 hours

### **Traffic Fatalities**

According to the United States Census Bureau, Nevada's 2006 traffic fatality rate of 2.0 fatalities per 100 million vehicle miles was the 10th highest among the 50 states. The national average was 1.4 fatalities per 100 million vehicle miles.<sup>25</sup>

### **Vehicle Miles of Travel**

The previously-cited report by Stanton, *et al.*, using 2004 data, said that Nevada's per capita vehicle miles of travel were the 6th lowest among the 50 states.<sup>26</sup>

## **CONCLUDING REMARKS**

I hope this information is helpful. Please do not hesitate to contact me if you have any questions or need additional information (telephone: 775/684-6825; e-mail: [dziegler@lcb.state.nv.us](mailto:dziegler@lcb.state.nv.us)).

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<sup>1</sup> United States Energy Information Administration, State Energy Profiles, March 2010.

<sup>2</sup> United States Energy Information Administration, selected indicators reported by Moody's Analytics, Inc., January 2010.

<sup>3</sup> Illia, T., 2009, "Study projects green building will triple by 2013," in *Las Vegas Business Press*, December 14, 2009.

<sup>4</sup> Vilkin, P., 2010, pers. comm.

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- <sup>5</sup> See note 1.
- <sup>6</sup> Geothermal Energy Association, 2009. "From Copenhagen to Reno: The Geothermal Energy Association (GEA) Salutes the World's Leading Geothermal Cities."
- <sup>7</sup> See *Nevada Revised Statutes* (NRS) 704.7821.
- <sup>8</sup> Stanton, E.A., F. Ackerman, and K. Sheeran, 2009, *Greenhouse Gases and the American Lifestyle: Understanding Interstate Differences in Emissions*, Ecotrust and Stockholm Environment Institute.
- <sup>9</sup> Muro, M., 2010, "Metropolitan Las Vegas, Challenges and Opportunities," presentation to Nevada Vision Stakeholder Group, February 11, 2010, Metropolitan Policy Program at Brookings.
- <sup>10</sup> See NRS 445B.370 and 445B.380.
- <sup>11</sup> State of Nevada, undated, "History of the Nevada Safe Drinking Water Program," Bureau of Safe Drinking Water, Division of Environmental Protection, State Department of Conservation and Natural Resources.
- <sup>12</sup> See note 11.
- <sup>13</sup> See note 11.
- <sup>14</sup> State of Nevada, 2009, *2009 Recycling and Waste Reduction Report*, Bureau of Waste Management, Division of Environmental Protection, State Department of Conservation and Natural Resources.
- <sup>15</sup> American Lung Association, 2009. *State of the Air 2009*.
- <sup>16</sup> DeLong, J., 2010, "Officials: Nevada won't meet new federal smog standards," in *Reno Gazette-Journal*, January 25, 2010.
- <sup>17</sup> Southern Nevada Water Authority, 2009, *Water Resource Plan 09*.
- <sup>18</sup> See note 17.
- <sup>19</sup> Truckee Meadows Water Authority, 2009, *2010-2030 Water Resource Plan*.
- <sup>20</sup> See note 19.
- <sup>21</sup> League of American Bicyclists, 2009, *U.S. Bicycle-Friendly State Rankings*, Washington, D.C.
- <sup>22</sup> American Public Transportation Association, 2009, *Transit Ridership Report, Third Quarter 2009*, November 23, 2009, Washington, D.C.
- <sup>23</sup> Natural Resources Defense Council, 2009, *Fighting Oil Addiction: Ranking States' Oil Vulnerability and Solutions for Change*.
- <sup>24</sup> Schrank, D., and T. Lomax, 2009, *2009 Urban Mobility Report*, Texas Transportation Institute, The Texas A&M University System.
- <sup>25</sup> United States Census Bureau, State Rankings, Statistical Abstract of the United States, Traffic Fatalities per 100 Million Vehicle Miles, 2006.
- <sup>26</sup> See note 8.